REQUEST FOR PROPOSALS (RFP) FOR

CIVIC CENTER STORMWATER LIFT STATION RENOVATION DESIGN SERVICES

RFP NO. 18-041

CITY OF SANTA ANA
Santa Ana Public Works Agency
20 Civic Center Plaza
Santa Ana, CA 92701

Monica M. Suter
Project Manager
(714) 647-5645 Office
msuter@santa-ana.org

KEY RFP DATES (Subject to change at discretion of City):

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Issue Date</td>
<td>Monday, May 7, 2018</td>
</tr>
<tr>
<td>Letter of Intent</td>
<td>Tuesday, May 15, 2018</td>
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<tr>
<td>Deadline for Requests for Information</td>
<td>Monday, May 21, 2018</td>
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<tr>
<td>Proposal Due Date</td>
<td>Thursday, May 24, 2018; 4:00pm</td>
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<tr>
<td>Projected Award Date</td>
<td>Tuesday, July 17, 2018</td>
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Approved for Release:

Jason Gabriel
Principal Civil Engineer
Public Works Agency
NOTICE INVITING PROPOSALS

NOTICE IS HEREBY GIVEN that proposals will be received from qualified firms for Civic Center Stormwater Lift Station Renovation Design Services.

Responses to this Request for Proposals (RFP) will be accepted until Thursday, May 24, 2018 at 4:00 p.m. Proposals received after this date/time will not be considered. It is the responsibility of the proposer to ensure that any proposals submitted have sufficient time to be received by the City of Santa Ana prior to this proposal due date and time.

Proposals shall be enclosed in a sealed envelope and marked clearly with following information, formatted as follows:

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“SEALED PROPOSAL FOR
CIVIC CENTER STORMWATER LIFT STATION RENOVATION DESIGN SERVICES
RFP NO. 18-041
IN THE CITY OF SANTA ANA
DO NOT OPEN WITH REGULAR MAIL.”

City of Santa Ana
Attn.: Monica Suter
Public Works Agency;
20 Civic Center Plaza; 3rd Floor Reception, Ross Annex
Santa Ana, CA 92701
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Proposals shall be mailed, hand delivered, or sent by courier service. Proposals shall NOT be sent via telegraphic, electronic or facsimile.

All notifications, updates and addenda will be posted on PlanetBids and the City’s RFP Bid page at www.santa-ana.org/bids-rfps. Proposers shall be responsible for monitoring the site to obtain information regarding this solicitation. Failure to respond to required updates may result in a determination of a nonresponsive proposal.

LETTER OF INTENT - Interested firms shall submit a Letter of Intent of their pending proposal to the noted Project Manager by the required date as shown on the cover page of this RFP. Letters shall be forwarded via certified mail or email and shall include the following information:

1. Use formal company letterhead.
2. Indication of company interest in the RFP.
3. Acknowledgement of candidate's responsibility to monitor the City's website for any amendments or modifications to the RFP.
4. Provision of correct, complete contact information.
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I. INTRODUCTION / PROJECT DESCRIPTION

Nature of Work:

The City of Santa Ana is seeking a qualified professional engineering design firm to develop design PS&E Contract Documents and to provide recommendations for the replacement of two existing Civic Center storm drain lift stations and to ensure compliance with all permit and regulatory requirements for mechanical, electrical and civil work. A detailed Scope of Work is included in the Appendix of this RFP as Attachment 1.

Number of Proposals and Signature:

Five (5) hard copies and one (1) digital file on labeled USB Flash Drive (or equivalent). One of the hard copies shall be marked as “ORIGINAL” and shall be signed by a company official with the power to bind the company and submitted to the City of Santa Ana. One (1) copy of your Fee Proposal shall be submitted.

The Statement of Qualifications shall be limited to a maximum of (10) double-sided pages (excluding front and back covers, section dividers and attachments such as resumes, forms). Font size shall be minimum 11-point Arial. Proposal exhibits shall be maximum 11” x 17”.

Proposal Evaluation and Rating:

The criteria for evaluating the proposals submitted will take the following items into consideration:

- Firm/Team Experience 25%
- Understanding of Need 30%
- Relevant Project Experience 25%
- Schedule 15%
- References 5%

The City has established a proposal review committee to evaluate proposers based on the response to the RFP, which includes adherence to outlined directions and format, and the City evaluation criteria set forth above. A final score will be calculated for each submitted proposal and used to rank the proposers.

The Evaluation Committee may interview the top ranking proposers. The City will recommend award of the contract to the proposer who will provide the best value to the City. City reserves the right to begin negotiations and enter into a contract without interview or further discussions.
Project Funding:

Refer to Attachment 1 (Scope of Work) in the Appendix of this RFP.

Prevailing Wages:

In accordance with the California State Labor Code, prevailing wage rates apply. Copies of the prevailing rate of per diem wages are on file with the Public Works Agency and shall be made available to any interested party on request.
II. INSTRUCTIONS TO PROPOSERS

A. CITY RESPONSIBILITIES
The City will provide information in its possession relevant to preparation of required information in RFP. The City will provide only the staff assistance and documentation specifically referred to herein.

B. PROPOSER RESPONSIBILITIES
Point of Contact: The selected proposer will assume responsibilities for all services in its proposal. The selected proposer shall identify a sole point of contact with the greatest knowledge in regard to the required service operations and contractual matters, including payment of any and all charges resulting from the Agreement.

Evidence of Financial Capacity: Proposer may be requested to submit its most recent audited financial statement, evidencing proposer’s financial capacity to fully perform the required services, including provision of equipment and personnel expenses over a ninety (90) day period. If said financial statement does not reflect full ninety (90) day operational capacity, proposer may include a letter of credit as evidence of supplemental capacity.

C. REQUEST FOR INFORMATION OR CLARIFICATION
All questions or requested clarifications shall be made in writing via e-mail to the Project Manager (contact information as noted on the cover page to this RFP) no fewer than five (5) calendar days prior to the date and time set for opening of proposals. No verbal requests or responses will be accepted. Significant interpretations or clarifications will be addressed via addenda to this RFP.

D. ADDENDA
Any changes in RFP from the date of release to date of submittal will result in an addendum or amendment. Notification of such addendum or amendment shall be posted on City’s website, santa-ana.org/bids-rfps as set forth in the Notice Inviting Proposals. Addenda shall become part of the agreement documents.

E. LICENSES & PERMITS
The selected proposer shall be required to obtain a City of Santa Ana Business license within ten (10) business days of selection and must provide a copy to the City projects manager or designee prior to commencing any work in Santa Ana.

Additionally, Proposer will be responsible for obtaining any licenses/permits required by the Scope of Work.

F. INSURANCE
The Selected Proposer shall provide the required evidence of insurance coverage as set forth in the Scope of Work within ten (10) business days after receipt of notice that the contract has been awarded. Failure to provide the required insurance certificates shall be cause for the annulment of the award and the forfeiture of the proposal guaranty.
G. PAYMENT INFORMATION PACKET
The selected proposer shall return a completed payment information packet within ten (10) business days after the successful proposer has received notice that the contract has been awarded. The packet is available on the City’s website: santa-ana.org/bids-rfps.

H. PRE-PROPOSAL MEETING
Should a pre-proposal be scheduled, the date, time and location is identified on the cover page of this RFP. The meeting will include discussion of the project scope and a question-and-answer session. It is highly recommended that the Proposer’s key team members attend this meeting. Significant interpretations or clarifications will be addressed via addenda to this RFP, as described above in “Section D: Addenda.”

I. CITY RIGHT TO REJECT
The City reserves the right to reject any or all proposals submitted and no representation is made hereby that any contract will be awarded pursuant to this RFP or otherwise.

The City reserves the right to accept or reject the combined or separate components of this proposal in part or in its entirety or to waive any minor inconsistency, informality or technical defect in the proposal.

The City reserves the right to reject, replace and approve any and all subcontractors. All subcontractor(s) shall be identified in the response to the RFP. Subcontractors shall be the responsibility of the successful proposer and the City shall assume no liability of such subcontractors.

J. BID PROTESTS
Proposers with concerns or rebuttal of any staff determination of non-responsiveness or non-responsibility may submit, in writing within five (5) business days, to the Project Manager, any concerns regarding the RFP process or staff determination. Such writing shall be considered by the City Manager or his designated representative, and may be acted upon within five (5) business days. If no action is taken within such time, there shall be no change to the staff determination. The exercise by Proposer of its right to submit written concerns shall be a condition precedent to seeking judicial review of any award of a contract hereunder.
III. SUBMITTAL REQUIREMENTS

A. GENERAL

I. The number of Proposal Copies and signature is specified in:
RFP SECTION I - INTRODUCTION / PROJECT DESCRIPTION.

II. Deadline:
Proposals are due to the City of Santa Ana at the date, time, and location specified in the
Notice Inviting Proposals.

B. PROPOSAL CONTENTS

The proposal format and page limitation, if any, is specified in:
RFP SECTION I - INTRODUCTION / PROJECT DESCRIPTION.

1. STATEMENT OF QUALIFICATIONS

a. Cover Letter – Proposals shall include a letter signed by a principal or authorized
representative who can make legally binding commitments for the entity.

b. Contract Agreement Statement: Proposal shall include a statement outlining your
concurrence or concerns with any and all provisions as contained in the Agreement
attached herein as Attachment 2 in the Appendix.

c. Firm and Team Experience: Proposal shall include a profile of the firm’s experience.
Include resumes of project team/sub-consultants that will be providing services which
outline their technical and design experience. At a minimum, this should include the
project manager/principal agent, associates in charge when project manager/principal
agent is unavailable, key personnel, firm size, and an organization chart identifying
only those who will perform work for the proposed project and the percentage of each
individual’s time devoted to this project. The project manager/principal agent shall
be the primary contact person to represent your firm and will be the person to conduct
the presentation, if invited for an interview.

d. Understanding of Need: Proposal shall include an outline which demonstrates the
firm’s understanding of the work. This outline should include anticipated approach,
tasks necessary for successful completion, deliverables, and suggestions or special
concerns that the City should be made aware of. Identify any assumptions and/or
exclusions used in preparation of the scope of work and associated fee estimate.

e. Relevant Project Experience: Proposal shall include a list of projects which your firm
or personnel have completed within the last 5 years, including significant work with
public agencies. Project information should include project description, year
completed, client name, along with a person to contact and their telephone number.
f. References: Proposal shall include a listing of relevant projects with references for three public entities for which Proposer has performed similar work within the past five (5) years.

2. SCOPE OF SERVICES AND SCHEDULE:
Proposal shall include a Scope of Services and Schedule which details the work phases to be completed, the tasks to be accomplished, the deliverables to be provided, and the schedule / timeline to complete the project, based upon the requested Scope of Work detailed in Attachment 1 of this RFP.

3. FEE PROPOSAL:
The fee proposal shall be submitted concurrently with the technical proposal, but in a separately sealed envelope, clearly labeled as “Fee Proposal.” This shall include the firm’s Standard Hourly Fee Schedule, a table outlining the tasks and team hourly effort for each of the major tasks, and a Project Fee Schedule as outlined in the Scope of Work.

The fee proposal will not be opened until the proposals have been evaluated by the proposal selection committee. The City will select the consultant based on qualifications, and then negotiate a contract price based on available funding.

4. CERTIFICATIONS:
The following forms shall be signed and included as part of the proposal submittal package:

- Attachment 3-1: Non-Collusion Affidavit
- Attachment 3-2: Non-Lobbying Certification
- Attachment 3-3: Non-Discrimination Certification

IV. PROPOSAL REVIEW (CONSULTANT SELECTION)

A. EVALUATION AND RATING
The criteria for evaluating the proposals are specified in:

RFP SECTION I - INTRODUCTION / PROJECT DESCRIPTION.

B. SELECTION
The committee may interview the top ranking proposers. The City will recommend award of the contract to the proposer who will provide the best value to the City. City reserves the right to begin negotiations and enter into a contract without interview or further discussions.

V. CONTRACT AWARD

A. REQUEST FOR COUNCIL ACTION
Following evaluation and rating by the proposal review committee, the Project Manager will recommend award of a contract to the proposer providing the best value to the City.

B. EXECUTION OF AGREEMENT
The Scope of Services, Schedule, and Fees submitted in the proposal will be the basis of any negotiation of final terms which will lead to a completed agreement ready for execution based on the standard Agreement attached herein as Attachment 2 in the Appendix.

VI. IMPLEMENTATION
A. KICK-OFF MEETING
A kick-off meeting will be held after award of contract. Consultant and its team will meet with City of Santa Ana staff to conduct introductions, discuss scope of services, and implementation process.

B. NOTICE TO PROCEED
Following the kick-off meeting, a formal Notice to Proceed (NTP) may be issued after the agreement is fully executed, and all required bonds, insurance documents and contents of the Information Packet have been received and approved.

For “On-Call” contracts, Consultant will be notified by individual City Project Managers on a case-by-case basis to request project/task specific proposals. Written NTPs will be then issued accordingly.

VII. PUBLIC RECORDS
All data, documents and other products used, developed, or produced during response preparation of the RFP will become property of the City. All responses to the RFP shall become property of the City. Proposer information identified as proprietary information shall be maintained confidential, to the extent allowed under the California Public Records Act.

Proposals will become public record after award of contract. Proposer information identified as proprietary information shall be maintained confidential, to the extent allowed under the California Public Records Act.
INTRODUCTION / PROJECT DESCRIPTION

The City of Santa Ana is seeking an engineering firm to provide design services which will result in the provision of “ready to advertise,” Plans, Specifications & Estimates (PS&E) Contract Documents for the “Civic Center Stormwater Lift Station Renovation” project. This contract will also include providing construction support.

The Parks Department of the City of Santa Ana (City) owns and operates two (2) stormwater pump stations located within the Civic Center area. Each pump station has been experiencing leakage and flooding problems during the El Nino season of 2016 and the City would like to upgrade the lift stations before the next large storm event. A preliminary study was conducted and consisted of on-site inspections and visual assessments of the structure, electrical equipment, mechanical equipment, and general conditions of each facility.

The City is soliciting design service proposals of the Civic Center Storm Water Pump Stations upgrades based on the visual inspection of major components of each pump station. The Preliminary Study Assessment made on August 31, 2016 is attached for reference. Please note, the City considers this project urgent and therefore, the ability to perform this work in a time-sensitive manner is important to the City.

Improvements are anticipated to be within the City’s Property and/or established easements. The work shall include:

Santa Ana Boulevard Pump Station:

The Santa Ana Pump Station (Santa Ana PS) is located adjacent to the retaining wall on the north side of Santa Ana Boulevard; it pumps storm water to a nearby culvert in Santa Ana Boulevard.

The City’s Parks Department has selected Alternative SA1 for the replacement and upgrade of all associated equipment of the Santa Ana PS renovation located in Appendix 4.

Flower Street Pump Station:

The Flower Pump Station (Flower PS) is located in the south-west corner of the Civic Center parking lot, adjacent to the retaining wall at the intersection of Flower Street and Sixth Street; it pumps storm water to a 16-inch gravity pipe in Flower Street.
The City’s Parks Department has selected Alternative F1 for the replacement and upgrade of all associated equipment for the Flower PS’s renovation found in Appendix 4.

**CONSULTANT SERVICES**

In your proposal include a breakdown of your services for Alternative SA1 and F1. These services shall include, but not be limited to, the following:

A. **PROJECT KICK-OFF & SITE VISIT.** The Consultant shall conduct a site visit to the extent accessible prior to proposing on this project. The Consultant shall also review the prior study prior to proposing on this project and offer any additional perspective during both the proposal and Project Kick-off phases of this project. After project award, a more detailed team site visit will be scheduled. During the proposal phase and for the project kick-off meeting, the consultant shall have given thought on how to address the unique challenges and opportunities of this project.

B. **VALUE ENGINEERING SUMMARY.** After visiting the site, the initial meeting with the City, and after fully reviewing the 2016 study, the Consultant shall provide additional perspective and provide a value engineering summary with recommendations indicating any changes and/or acceptance of the 2016’s and City’s recommended alternatives inclusive of any additions or modifications to those alternatives.

C. **PROJECT COORDINATION.** The Consultant shall be fully responsible for the overall management, coordination and schedule (according to the City’s requirements) for the project, which may include, but is not limited to project development team meetings, liaison with affected agencies, and utility companies. Prepare progress reports and schedules, invoices as required and secure permits for all site work and studies and to comply with any and all other required regulations from affected or adjacent utilities and entities.

D. **RECORDS, UTILITIES & FACILITIES RESEARCH.** The Consultant shall research all utility information pertinent to the project including, but not limited to existing field conditions, as-built plans and record drawings, right-of-way data and all future improvement plans adjacent to or affecting the project site. The selected Consultant shall identify all existing and proposed facilities within the projects limits and potential conflicts and coordinate proposed improvements with proposed project.

E. **ENVIRONMENTAL CLEARANCE DOCUMENT.** The Consultant shall prepare the necessary environmental documents to comply with California Environmental Quality Act (CEQA), as appropriate, and advise what level of Environmental Document is required.

F. **SITE PLAN DESIGN PS&E--CONSTRUCTION DOCUMENTS.** The Consultant shall prepare the necessary site plan and title sheet for the project design PS&Es work for the areas of expertise noted elsewhere in this RFP. The package shall include submittals as noted in the CONSTRUCTION DOCUMENT REQUIREMENTS Section.

G. **MECHANICAL DESIGN PS&E--CONSTRUCTION DOCUMENTS.** The Consultant shall prepare the necessary Mechanical project design PS&Es work for the areas of expertise noted elsewhere in this RFP. The package shall include submittals as noted in the CONSTRUCTION DOCUMENT REQUIREMENTS Section.
H. ELECTRICAL DESIGN PS&E--CONSTRUCTION DOCUMENTS. The Consultant shall prepare the necessary Electrical project design PS&Es work for the areas of expertise noted elsewhere in this RFP. As a part of this project, the Consultant shall recommend if any upgrades to the existing electrical system are required to be in compliance and to meet the latest code. The package shall include submittals as noted in the CONSTRUCTION DOCUMENT REQUIREMENTS Section.

I. SCADA CONTROL PLAN DESIGN PS&E--CONSTRUCTION DOCUMENTS. The Consultant shall prepare the necessary Pump Station project design PS&Es work for the areas of expertise noted elsewhere in this RFP. The package shall include submittals as noted in the CONSTRUCTION DOCUMENT REQUIREMENTS Section.

J. OPERATIONS & MAINTENANCE (O&M) PLAN/REPORT. The Consultant shall prepare the necessary O&M documents for best practices recommended following project acceptance.

K. PERMITS COMPLIANCE. The Consultant shall recommend which, if any, permits are required to ensure compliance with the latest standards, manuals, regulations, and safety requirements. Permits include, but are not limited to, City, planning and building, electrical, mechanical, plumbing, air quality, water quality, plumbing, structural and safety codes and regulations. The Consultant shall also obtain the required permits and advise of others may be required. Also see GENERAL REQUIREMENTS, Item E.

L. OSHA AND/OR OTHER REQUIRED SAFETY TRAININGS & PPEs. The Consultant shall identify and obtain all the trainings for any staff encroaching into the work area as required and obtain necessary Personal Protection Equipment (PPE) for affected personnel. The consultant shall arrange for PPE and any other required training events in conjunction with the City’s availability so that consultant and City staff can jointly participate, at no cost to the City, to ensure that their PPE approvals are brought up-to-date. The consultant shall also arrange any other safety trainings as required related to the intended project scope and requirements.

M. BID & CONSTRUCTION SUPPORT. The Consultant shall provide Bid and Construction Support services.

CONSTRUCTION DOCUMENT REQUIREMENTS.

The City’s expectations of the PS&E work is to only two submittals where the first one is a 90% level of quality and the 2nd and final submittal is ready for project advertisement. Note, that if the first or final submittal is not of this quality, additional submittals may be required, but at the expense of the consultant, with no additional payment therefore. The Cost Estimate shall be provided within each of the two submittals where the Final (and ready-to-advertise) submittal shall be at a high level of accuracy. All required workshop drawings and details shall be included with the PS&E contract documents for each discipline and to meet the intended design purpose of the project.

The City has included the preliminary assessment in Appendix 4. A meeting will be held with the Consultant and City to review this document to strategize on the assumptions of the work going forward. The Consultant shall make recommendations, as appropriate, to update this
concept. Work on the 90% and final submittals shall not begin until there is agreement on the updated conceptual (similar to a 30% plan).

A. Development of Detail Plans, Specifications and Estimate (PS&E):

1. Design of the project PS&E Contract Documents shall include all required plans and disciplines for the intended project purpose along with a project title sheet and any required construction details.

2. Constructability and critical path challenges and/or anticipated issues of the work shall be evaluated and addressed in the value engineering phase. The consultant shall make early-on recommendations following the site walk-through and after review of the 2016 report and value engineer the project. The goal of this project is to finish design and construction prior to the rainy season.

3. All reports, plans, specifications and quantity calculations shall conform to criteria, policies, procedures and standards of the City, the industry standards for each discipline area, and shall be made available to the City at stages specified in the schedule. Consultant shall submit backup calculations for the project quantities and analyses.

4. Each plan sheet shall bear the State of California Registered Professional Engineer for the appropriate discipline registration seal within signatures, license number and registration certificate expiration date of the Engineer who is in responsible charge for developing the design. Each plan sheet shall be signed by the licensed engineer.

5. As appropriate, calculations for the design shall be submitted as part of the PS&E submittal requirements. The respective calculations shall bear the State of California Registered Professional Engineer registration seal with the signature, license number and registration certificate expiration date of the design engineer.


7. A list of contract pay items with the descriptions, and estimated quantities shall be included in the front of the special provisions.

8. The Consultant shall prepare quantity calculations for items that are applicable to this project, and prepare cost estimates.

9. Quantities for all contract pay items shall be substantiated by calculations. Quantity calculations shall be neat and orderly.

10. Electronic files for all CADD, reports, and calculations shall be submitted at the end of the contract or when requested by the City. The City uses Microstation.

11. All electronic software developed, databases generated, spreadsheets and intellectual properties developed during the life of the Agreement shall become the properties of the City.

B. Utility Coordination

1. Prepare utility conflict plans and notices/questionnaires to be sent to utility companies, and coordinate to resolve the conflict.
2. Pothole information, where required, shall be coordinated by the Consultant, and the Consultant shall recommend which borings should be completed prior to the design work commencing.

C. Construction Documents:

1. 90% PS&E
   a) The Consultant shall submit the following documents for review and approval of the level that includes required independent design checks:

   Four sets (4) full size (24”x36”) signed and sealed prints of checked design
   Electronic copies of Special Provisions (SSPs) (in MS Word showing tracked changes) with electronic submittals: as SSPs, with 90% level quantities and estimates, pay item list, design calculations, and draft Reports
   Electronic copies of cost estimate and check quantity calculations
   Electronic copies of design calculations
   Electronic copies of design check calculations
   Electronic copies of all reports to a 90% level
   Other reports or recommendations as required by the City of Santa Ana

   Calculations shall be checked/confirmed, signed, and stamped by a Registered Civil Engineer(s) and/or Registered Structural Engineer(s) who is duly licensed by the State of California and not involved with the original design. The independent checker shall reanalyze the structure and complete the following:

   - Review relevant background and supporting information;
   - Review plans for completeness and consistency with the design;
   - Resolve design issues;
   - Check the corrected plans for conformance with prior comments;
   - Review the PROJECT special provisions to ensure all associated items of work are adequately addressed, and
   - Prepare Quantity calculations.

   b) The City will review and comment on the PS&E package as feasible. The turnaround goal is within two (2) to four (4) weeks of receipt of the complete PS&E package. One (1) copy of those documents with comments will be returned to the Consultant.

2. Final PS&E

   The Consultant shall submit the following documents for review and approval:

   - Electronic sets of signed final design plans
   - Electronic copies of signed final specifications
   - Electronic copies of final cost estimate and final quantity calculations
   - Electronic copies of final design calculations
   - Electronic files in its original format and in PDF of all plans, specifications, and estimates
These construction documents shall be of the quality such that the City shall be able to advertise the project for construction

D. Construction Advertisement and Bid Phase:

Bidding procedures will be the responsibility of the City. While the PS&E construction package is being advertised for bids, all questions concerning the intent shall be referred to the City for resolution. However, the Consultant shall be available to respond to any questions or items requiring interpretation in the drawings or specifications are discovered during the bidding period. The Consultant shall respond to any RFIs (Requests for Information) throughout the Construction and advertisement phases of the project within 3 working days. Any said items shall be analyzed by the Consultant for decision by the City, or through a change order after the award of the construction contract. The Consultant shall also be available to review any proposed addenda.

E. Construction Support Phase:

1. All construction support work shall be coordinated with the City.

2. Consultant shall furnish, at the consultant’s sole cost and expense, all necessary drawings for corrections and change orders required by errors and omissions of the Consultant. The original tracing(s) of the drawings and contract wording for the change orders shall be submitted to the city for duplication and distribution.

3. Consultant will receive written notification of the award of a construction contract. Upon such notification, Consultant shall proceed with the services required by the Agreement.

4. Consultant is required to attend the pre-construction meeting with the successful construction contractor upon notification by the City.

5. Consultant shall review and approve all submittals and shop plan drawings required supporting the construction contract. Consultant shall complete shop drawings reviews within two (2) weeks of receipt. Contract Change Order reviews shall be completed within two (2) working days of receipt.

6. Consultant shall be available as requested by the City to resolve discrepancies in the contract documents. Consultant shall bring to the attention of the City any defects or deficiencies in the work by the construction contractor which the Consultant may observe. Consultant shall have no authority to issue instruction on behalf of the City, or to deputize another to do so.

7. The Consultant shall prepare and deliver to the City the final as-built plans incorporating field marked prints supplied by the City. Upon completion of construction, the City will submit field-marked prints to Consultant. Consultant shall incorporate all changes to the plans electronically with all necessary revision notations.
and submit to the City. An electronic file shall be submitted to the City in Microstation V8i CADD and pdf formats for the final as-built plans via CD, email or through an FTP site as required by the City.

**GENERAL REQUIREMENTS**

A. All work shall be performed in conformance with the State of California policies, procedures and standards and key grant and accounting requirements.

B. The Consultant has total responsibility for the accuracy and completeness of the plans and related designs, specifications and estimates prepared and shall check all such materials accordingly. The plans will be reviewed by the City for conformity with the requirements of the Agreement. Reviews by the city do NOT include detailed review or checking of design or the accuracy with which such designs are depicted on the plans. The responsibility for accuracy and completeness of such items remains solely that of Consultant.

C. Consultant or its subconsultants shall not incorporate in the design any materials or equipment of single or sole source origin without written approval of the City.

D. The plans, specifications, estimates, calculations, and other documents furnished under the Agreement shall be of a quality acceptable to the City and State. The criteria for acceptance shall be a product of neat appearance, well organized, technically and grammatically correct, checked, dated, and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that of similar types produced by the State and set forth in related Caltrans manuals. The Consultant shall modify its work as necessary to meet the level of acceptability defined by the criteria above.

E. The Consultant shall have a quality control plan in effect during the entire time work is being performed under the Agreement. The Quality control plan shall establish a process whereby plans are independently checked, corrected and back checked, and all job related correspondence and memoranda dated and received by affected persons and then bound in appropriate job files. Plan checks will be provided by the City of Santa Ana’s Design, Planning and Building Agency, Water, Sanitary, and Construction Engineering Divisions in addition to the Parks and Recreation Divisions. The City will coordinate reviews by Orange County Fire Authority. However the Consultant shall recommend and ensure reviews by any other utility and regulatory agencies, the County, Southern California Edison, Southern California Gas Company, phone, Cable, and other Telecommunications entities, in addition to water quality and air quality boards, the County of Orange (if applicable), and other key entities as required.

**Manuals/Standards/Specifications/Regulations**

Where applicable, engineering design of all PROJECT improvements shall be compatible and in accordance with the following:

2. City of Santa Ana Standard Plans and Specifications Boilerplate.
(3) Relevant Industry standards and specifications for the type of work included in this project, including but not limited to: the CA Plumbing Code (CPC), the California Building Code (CBC), the National Electrical Code (NEC), the Santa Ana Regional Water Quality Control Board, the City of Santa Ana’s Planning and Building Codes/Standard Plans, Occupational Safety and Health Administration (OSHA), South Coast Air Quality Management District (AQMD), and the National Fire Protection Association’s (NFPA) requirements, etc.

(4) Additional Technical Special Provisions as appropriate for the PS&E Design Package.

It shall be the responsibility of the Consultant to verify that it has received the latest version or update of these documents, unless indicated otherwise.

F. Standard plans shall be utilized where applicable and may be called out on the plans as reference. Plans shall adhere to City of Santa Ana Standard Plans and the Standard Special Provisions for Public Works Construction where relevant.

G. Plans shall be computer drafted on Microstation and shall adhere to the current City of Santa Ana Public Works Agency Interagency CAD standards. Using Microstation V8i and .PDF formats.

H. The Special provisions shall be prepared in Microsoft Word and the City will provide the boilerplate special provisions to the Consultant. However, the Consultant shall identify any recommended changes to these special provisions that may be relevant to the success of this project. Within the Boilerplate specifications, it is required to provide a Definition of Bid Items in addition to the Bid Proposal Schedule.

I. The Consultant’s work shall be subject to inspections by representatives of the City, County, Utility companies and any other regulatory entities as required for this type of work.

J. Project progress

1. Meetings - Progress Review Meetings shall be held at intervals deemed appropriate by the City (four (4) anticipated throughout the project including the preconstruction meeting). At or before each of these meetings, the Consultant shall furnish two (2) copies of all completed or partially completed, plans, specifications and estimates which have been developed or altered since the last Progress Review Meeting.

2. Progress Reporting - Progress Reports shall be regularly submitted to the City and with all Invoices. Invoices shall include the State’s project number and City’s Activity Code(s) with a summary of work billed for in the current invoice, a summary of all work billed previously and as compared to the remaining project budget.

3. Project Schedule - The Consultant shall prepare the project schedule in Microsoft Project format utilizing the Caltrans Work Breakdown Structure (WBS). The project schedule shall be updated and distributed at the meetings where the critical path items are identified. The project schedule shall show key tasks and subtasks.

**PAYMENT AND INVOICING:**
Selected Consultant shall invoice the City based on time and material according to the City’s standard invoice template. Tasks and hours shall be clearly identified and all rates must match those included in the approved agreement. City shall retain ten percent (10%) of the invoice amount from each payment until the completed Project has been accepted by the City.

CITY’S RESPONSIBILITIES:

The City will guide the consultant to the available City plans and documents. However, the Consultant shall obtain them. The City shall provide:

- The electronic design file with the City Title Block and title sheet.
- The latest boilerplate special provisions.
- Coordinate Internal Plan-checks within the City with the exception of review and coordination with the utility companies or other regulatory entities that shall be provided and led by the Consultant.

Fee Proposal:

In addition to Section III.B.3 (Submittal Requirements: Fee Proposal) fee schedule shall be structured to correspond to the following tasks as described below, and under “Consultant Responsibilities” (above):

<table>
<thead>
<tr>
<th>Phase</th>
<th>Task Description</th>
<th>Subtask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Pre-Design (Tasks A-E)</td>
<td></td>
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<tr>
<td>Phase 2</td>
<td>Design Phase (Tasks F-I)</td>
<td></td>
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<tr>
<td>Phase 3</td>
<td>Permits/Compliance/O&amp;M (Tasks J-L)</td>
<td></td>
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<tr>
<td>Phase 4</td>
<td>Bid &amp; Construction Support Services/As-Builts (Task M)</td>
<td></td>
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<tr>
<td>Total Fee:</td>
<td></td>
<td>_____________</td>
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</tbody>
</table>

The Fee schedule for each Phase and subtask shall include an hourly breakdown by position/title that corresponds to the Project total. Additionally, if relevant, include sub-consultant names and contact information (if any) and total fee cost analysis for the scope of work by each project phase and subtask.
CONSULTANT AGREEMENT
CITY OF SANTA ANA

THIS AGREEMENT is made and entered into this _____ day of __________, 2018 by and between ______________________, (“Consultant”), and the City of Santa Ana, a charter city and municipal corporation organized and existing under the Constitution and laws of the State of California (“City”).

RECITALS

A. The City desires to retain a consultant having special skill and knowledge in the field of:

The City of Santa Ana is seeking a qualified professional engineering design firm to develop design PS&E Contract Documents and to provide recommendations for the replacement of two existing Civic Center storm drain lift stations and to ensure compliance with all permit and regulatory requirements for mechanical, electrical and civil work.

B. Consultant represents that Consultant is able and willing to provide such services to the City.

C. In undertaking the performance of this Agreement, Consultant represents that it is knowledgeable in its field and that any services performed by Consultant under this Agreement will be performed in compliance with such standards as may reasonably be expected from a professional consulting firm in the field.

NOW THEREFORE, in consideration of the mutual and respective promises, and subject to the terms and conditions hereinafter set forth, the parties agree as follows:

1. SCOPE OF SERVICES

Consultant shall perform during the term of this Agreement, the tasks and obligations including all labor, materials, tools, equipment, and incidental customary work required to fully and adequately complete the services described and set forth in Scope of Services - Exhibit A, attached hereto and incorporated by reference.

2. COMPENSATION

a. City agrees to pay, and Consultant agrees to accept as total payment for its services for City, the rates and charges identified in Compensation - Exhibit B. The total amount to be expended under this Agreement shall not exceed $xxxxxx during the term of this Agreement, including any extension periods exercised under Section 3.
b. Payment by City shall be made within 45 days (forty-five) days following receipt of proper invoice evidencing work performed, subject to City accounting procedures. Payment need not be made for work which fails to meet the standards of performance set forth in the Recitals which may reasonably be expected by City.

3. TERM

This Agreement shall commence on [enter a Start Date or “the date first written above”] for a number (#) year term with the option for the City to grant up to a number (#)-year renewals, exercisable by a writing by the City Manager and the City Attorney, unless terminated earlier in accordance with Section 16, below.

4. PREVAILING WAGES

Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., (“Prevailing Wage Laws”), which require the payment of prevailing wage rates and the performance of other requirements on “public works” and “maintenance” projects. If the services being performed are part of an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. Consultant shall defend, indemnify and hold the City, its elected officials, officers, employees and agents free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

5. INDEPENDENT CONTRACTOR

Consultant shall, during the entire term of this Agreement, be construed to be an independent contractor and not an employee of the City. This Agreement is not intended nor shall it be construed to create an employer-employee relationship, a joint venture relationship, or to allow the City to exercise discretion or control over the professional manner in which Consultant performs the services which are the subject matter of this Agreement; however, the services to be provided by Consultant shall be provided in a manner consistent with all applicable standards and regulations governing such services. Consultant shall pay all salaries and wages, employer's social security taxes, unemployment insurance and similar taxes relating to employees and shall be responsible for all applicable withholding taxes.

6. OWNERSHIP OF MATERIALS

This Agreement creates a non-exclusive and perpetual license for City to copy, use, modify, reuse, or sublicense any and all copyrights, designs, and other intellectual property embodied in plans, specifications, studies, drawings, estimates, and other documents or works of authorship fixed in any tangible medium of expression, including but not limited to, physical drawings or data magnetically or otherwise recorded on computer diskettes, which are prepared or caused to be prepared by Consultant under this Agreement (“Documents & Data”). Consultant shall require all subcontractors to agree in writing that City is granted a non-exclusive and perpetual license for any Documents & Data the subcontractor prepares under this Agreement. Consultant represents and warrants that Consultant has the legal right to license any and all Documents & Data. Consultant makes no such representation and warranty in regard to Documents & Data which were provided to Consultant by the City. City shall not
be limited in any way in its use of the Documents and Data at any time, provided that any such use not within the purposes intended by this Agreement shall be at City’s sole risk.

7. INSURANCE

Prior to undertaking performance of work under this Agreement, Consultant shall maintain and shall require its subcontractors, if any, to obtain and maintain insurance as described below:

a. Commercial General Liability Insurance. Consultant shall maintain commercial general liability insurance naming the City, its officers, employees, agents, volunteers and representatives as additional insured(s) and shall include, but not be limited to protection against claims arising from bodily and personal injury, including death resulting therefrom and damage to property, resulting from any act or occurrence arising out of Consultant’s operations in the performance of this Agreement, including, without limitation, acts involving vehicles. The amounts of insurance shall be not less than the following: single limit coverage applying to bodily and personal injury, including death resulting therefrom, and property damage, in the total amount of $1,000,000 per occurrence, with $2,000,000 in the aggregate. Such insurance shall (a) name the City, its officers, employees, agents, and representatives as additional insured(s); (b) be primary and not contributory with respect to insurance or self-insurance programs maintained by the City; and (c) contain standard separation of insureds provisions.

b. Business automobile liability insurance, or equivalent form, with a combined single limit of not less than $1,000,000 per occurrence. Such insurance shall include coverage for owned, hired and non-owned automobiles.

c. Worker’s Compensation Insurance. In accordance with the provisions of Section 3700 of the Labor Code, Consultant, if Consultant has any employees, is required to be insured against liability for worker’s compensation or to undertake self-insurance. Prior to commencing the performance of the work under this Agreement, Consultant agrees to obtain and maintain any employer’s liability insurance with limits not less than $1,000,000 per accident.

d. If Consultant is or employs a licensed professional such as an architect or engineer: Professional liability (errors and omissions) insurance, with a combined single limit of not less than $1,000,000 per claim with $2,000,000 in the aggregate.

e. The following requirements apply to the insurance to be provided by Consultant pursuant to this section:
   i. Consultant shall maintain all insurance required above in full force and effect for the entire period covered by this Agreement.
   ii. Certificates of insurance shall be furnished to the City upon execution of this Agreement and shall be approved by the City.
   iii. Certificates and policies shall state that the policies shall not be canceled or reduced in coverage or changed in any other material aspect without thirty (30) days prior written notice to the City.
   iv. Consultant shall supply City with a fully executed additional insured endorsement.
f. If Consultant fails or refuses to produce or maintain the insurance required by this section or fails or refuses to furnish the City with required proof that insurance has been procured and is in force and paid for, the City shall have the right, at the City’s election, to forthwith terminate this Agreement. Such termination shall not affect Consultant’s right to be paid for its time and materials expended prior to notification of termination. Consultant waives the right to receive compensation and agrees to indemnify the City for any work performed prior to approval of insurance by the City.

8. INDEMNIFICATION

Consultant agrees to defend, and shall indemnify and hold harmless the City, its officers, agents, employees, contractors, special counsel, and representatives from liability: (1) for personal injury, damages, just compensation, restitution, judicial or equitable relief arising out of claims for personal injury, including death, and claims for property damage, which may arise from the negligent operations of the Consultant, its subcontractors, agents, employees, or other persons acting on its behalf which relates to the services described in section 1 of this Agreement; and (2) from any claim that personal injury, damages, just compensation, restitution, judicial or equitable relief is due by reason of the terms of or effects arising from this Agreement. This indemnity and hold harmless agreement applies to all claims for damages, just compensation, restitution, judicial or equitable relief suffered, or alleged to have been suffered, by reason of the events referred to in this Section or by reason of the terms of, or effects, arising from this Agreement. The Consultant further agrees to indemnify, hold harmless, and pay all costs for the defense of the City, including fees and costs for special counsel to be selected by the City, regarding any action by a third party challenging the validity of this Agreement, or asserting that personal injury, damages, just compensation, restitution, judicial or equitable relief due to personal or property rights arises by reason of the terms of, or effects arising from this Agreement. City may make all reasonable decisions with respect to its representation in any legal proceeding. Notwithstanding the foregoing, to the extent Consultant’s services are subject to Civil Code Section 2782.8, the above indemnity shall be limited, to the extent required by Civil Code Section 2782.8, to claims that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Consultant.

9. INTELLECTUAL PROPERTY INDEMNIFICATION

Consultant shall defend and indemnify the City, its officers, agents, representatives, and employees against any and all liability, including costs, for infringement of any United States’ letters patent, trademark, or copyright infringement, including costs, contained in the work product or documents provided by Consultant to the City pursuant to this Agreement.

10. RECORDS

Consultant shall keep records and invoices in connection with the work to be performed under this Agreement. Consultant shall maintain complete and accurate records with respect to the costs incurred under this Agreement and any services, expenditures, and disbursements charged to the City for a minimum period of three (3) years, or for any longer period required by law, from the date of final payment to Consultant under this Agreement. All such records and invoices shall be clearly identifiable. Consultant shall allow a representative of the City to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement during regular business hours.
Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to this Agreement for a period of three (3) years from the date of final payment to Consultant under this Agreement.

11. CONFIDENTIALITY

If Consultant receives from the City information which due to the nature of such information is reasonably understood to be confidential and/or proprietary, Consultant agrees that it shall not use or disclose such information except in the performance of this Agreement, and further agrees to exercise the same degree of care it uses to protect its own information of like importance, but in no event less than reasonable care. “Confidential Information” shall include all nonpublic information. Confidential information includes not only written information, but also information transferred orally, visually, electronically, or by other means. Confidential information disclosed to either party by any subsidiary and/or agent of the other party is covered by this Agreement. The foregoing obligations of non-use and nondisclosure shall not apply to any information that (a) has been disclosed in publicly available sources; (b) is, through no fault of the Consultant disclosed in a publicly available source; (c) is in rightful possession of the Consultant without an obligation of confidentiality; (d) is required to be disclosed by operation of law; or (e) is independently developed by the Consultant without reference to information disclosed by the City.

12. CONFLICT OF INTEREST CLAUSE

Consultant covenants that it presently has no interests and shall not have interests, direct or indirect, which would conflict in any manner with performance of services. Conflict may be further specified in Certifications - Exhibit C, attached hereto and incorporated in this Agreement by reference.

13. DISCRIMINATION

Consultant shall not discriminate because of race, color, creed, religion, sex, marital status, sexual orientation, age, national origin, ancestry, or disability, as defined and prohibited by applicable law, in the recruitment, selection, training, utilization, promotion, termination or other employment related activities. Consultant affirms that it is an equal opportunity employer and shall comply with all applicable federal, state and local laws and regulations and as further specified in Certifications - Exhibit C, attached hereto and incorporated in this Agreement by reference.

14. EXCLUSIVITY AND AMENDMENT

This Agreement represents the complete and exclusive statement between the City and Consultant, and supersedes any and all other agreements, oral or written, between the parties. In the event of a conflict between the terms of this Agreement and any attachments hereto, the terms of this Agreement shall prevail. This Agreement may not be modified except by written instrument signed by the City and by an authorized representative of Consultant. The parties agree that any terms or conditions of any purchase order or other instrument that are inconsistent with, or in addition to, the terms and conditions hereof, shall not bind or obligate Consultant or the City. Each party to this Agreement acknowledges that no representations, inducements, promises or agreements, orally or
otherwise, have been made by any party, or anyone acting on behalf of any party, which is not embodied herein.

15. ASSIGNMENT

Inasmuch as this Agreement is intended to secure the specialized services of Consultant, Consultant may not assign, transfer, delegate, or subcontract any interest herein without the prior written consent of the City and any such assignment, transfer, delegation or subcontract without the City's prior written consent shall be considered null and void. Nothing in this Agreement shall be construed to limit the City’s ability to have any of the services which are the subject to this Agreement performed by City personnel or by other consultants retained by City.

16. TERMINATION

This Agreement may be terminated by the City upon thirty (30) days written notice of termination. In such event, Consultant shall be entitled to receive and the City shall pay Consultant compensation for all services performed by Consultant prior to receipt of such notice of termination, subject to the following conditions:

a. As a condition of such payment, the Executive Director may require Consultant to deliver to the City all work product(s) completed as of such date, and in such case such work product shall be the property of the City unless prohibited by law, and Consultant consents to the City's use thereof for such purposes as the City deems appropriate.

b. Payment need not be made for work which fails to meet the standard of performance specified in the Recitals of this Agreement.

17. WAIVER

No waiver of breach, failure of any condition, or any right or remedy contained in or granted by the provisions of this Agreement shall be effective unless it is in writing and signed by the party waiving the breach, failure, right or remedy. No waiver of any breach, failure or right, or remedy shall be deemed a waiver of any other breach, failure, right or remedy, whether or not similar, nor shall any waiver constitute a continuing waiver unless the writing so specifies.

18. JURISDICTION - VENUE

This Agreement has been executed and delivered in the State of California and the validity, interpretation, performance, and enforcement of any of the clauses of this Agreement shall be determined and governed by the laws of the State of California. Both parties further agree that Orange County, California, shall be the venue for any action or proceeding that may be brought or arise out of, in connection with or by reason of this Agreement.
19. **PROFESSIONAL LICENSES**

Consultant shall, throughout the term of this Agreement, maintain all necessary licenses, permits, approvals, waivers, and exemptions necessary for the provision of the services hereunder and required by the laws and regulations of the United States, the State of California, the City of Santa Ana and all other governmental agencies. Consultant shall notify the City immediately and in writing of its inability to obtain or maintain such permits, licenses, approvals, waivers, and exemptions. Said inability shall be cause for termination of this Agreement.

20. **MISCELLANEOUS PROVISIONS**

a. Additional provisions, if any, are identified as Additional Provisions, **Exhibit D**, attached hereto and incorporated into this Agreement by reference. No Exhibit D is attached in the absence of additional provisions.

b. Each undersigned represents and warrants that its signature herein below has the power, authority and right to bind their respective parties to each of the terms of this Agreement, and shall indemnify City fully, including reasonable costs and attorney’s fees, for any injuries or damages to City in the event that such authority or power is not, in fact, held by the signatory or is withdrawn.

c. All Exhibits referenced herein and attached hereto shall be incorporated as if fully set forth in the body of this Agreement.

21. **NOTICE**

Any notice, tender, demand, delivery, or other communication pursuant to this Agreement shall be in writing and shall be deemed to be properly given if delivered in person or mailed by first class or certified mail, postage prepaid, or sent by fax or other telegraphic communication in the manner provided in this Section, to the following persons:
To City:

Clerk of the City Council  
City of Santa Ana  
20 Civic Center Plaza (M-30)  
P.O. Box 1988  
Santa Ana, CA 92702-1988  
Fax: 714-647-6956

With courtesy copies to:

<table>
<thead>
<tr>
<th>William Galvez, P.E.</th>
<th>Sonia R. Carvalho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Director, Public Works Agency</td>
<td>City Attorney</td>
</tr>
<tr>
<td>City of Santa Ana</td>
<td>City of Santa Ana</td>
</tr>
<tr>
<td>20 Civic Center Plaza (M-21)</td>
<td>20 Civic Center Plaza (M-29)</td>
</tr>
<tr>
<td>P.O. Box 1988</td>
<td>P.O. Box 1988</td>
</tr>
<tr>
<td>Santa Ana, California 92702</td>
<td>Santa Ana, California 92702</td>
</tr>
<tr>
<td>Fax: 714-647-5635</td>
<td>Fax: 714-647-6515</td>
</tr>
</tbody>
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To Consultant:

<table>
<thead>
<tr>
<th>First &amp; Last Name</th>
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</thead>
<tbody>
<tr>
<td>Title</td>
</tr>
<tr>
<td>Consultant Firm Name</td>
</tr>
<tr>
<td>Address</td>
</tr>
<tr>
<td>City, State, Zip</td>
</tr>
<tr>
<td>Fax:</td>
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</tbody>
</table>

A party may change its address by giving notice in writing to the other party. Thereafter, any communication shall be addressed and transmitted to the new address. If sent by mail, communication shall be effective or deemed to have been given three (3) days after it has been deposited in the United States mail, duly registered or certified, with postage prepaid, and addressed as set forth above. If sent by fax, communication shall be effective or deemed to have been given twenty-four (24) hours after the time set forth on the transmission report issued by the transmitting facsimile machine, addressed as set forth above. For purposes of calculating these time frames, weekends, federal, state, County or City holidays shall be excluded.
IN WITNESS WHEREOF, the parties hereto have executed this Agreement the date and year first above written.

ATTEST:                      CITY OF SANTA ANA

__________________________  __________________________
Maria D. Huizar              Raul Godinez II
Clerk of the Council         City Manager

APPROVED AS TO FORM:

SONIA R. CARVALHO
City Attorney

By: _______________________
John Funk
Assistant City Attorney

CONSULTANT:

__________________________
(name)
(title)
Tax ID#____________________

RECOMMENDED FOR APPROVAL:

__________________________
EDWIN "WILLIAM" GALVEZ
Acting Executive Director
Public Works Agency

Rev. 9-20-2017
EXHIBIT A

SCOPE OF SERVICES
EXHIBIT B

COMPENSATION
Fee Proposal including hourly rates
EXHIBIT C
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ADDITIONAL PROVISIONS
Caltrans Forms
EXHIBIT D

ADDITIONAL PROVISIONS
NON-COLLUSION AFFIDAVIT
(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

To the CITY OF SANTA ANA DEPARTMENT OF PUBLIC WORKS

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the BIDDER declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the BIDDER has not directly or indirectly induced or solicited any other BIDDER to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived or agreed with any BIDDER or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the BIDDER has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the BIDDER or any BIDDER, or to fix any overhead, profit, or cost element of the bid price, or of that of any other BIDDER, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the BIDDER has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Non-collusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Non-collusion Affidavit. BIDDERS are cautioned that making a false certification may subject the certifier to criminal prosecution.

Signed ____________________________________________________________

State of California
County of __________

Subscribed and sworn to (or affirmed) before me on this ___ day of _____, 20___, by ____________________________, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Notary Public Signature ____________________________________________

Notary Public Seal ____________________________________________
Appendix
ATTACHMENT 3-2: NON-LOBBYING CERTIFICATION
CERTIFICATIONS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

2. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence any officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant loan, loan or cooperative agreement, the undersigned shall complete and submit a “Disclosure of Lobbying Activities”.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such sub recipients shall certify and disclose accordingly.

Firm

__________________________________________

Signed and Printed Name: ____________________________________________________________

Title

__________________________________________

Date

__________________________________________
Appendix
ATTACHMENT 3-3: NON-DISCRIMINATION CERTIFICATION
CERTIFICATIONS

The undersigned consultant or corporate officer, during the performance of this contract, certifies as follows:

1. The Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Consultant shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without, regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The Consultant shall, in all solicitations or advertisements for employees placed by or on behalf of the Consultant, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

3. The Consultant shall send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers’ representatives of the Consultant’s commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The Consultant shall comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The Consultant shall furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his/her books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation, to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Consultant’s non-compliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, the contract may be canceled, terminated, or suspended in whole or in part and the Consultant may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Execution Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law.

7. The Consultant shall include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted
by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontract or purchase order as the administering agency may direct as means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Consultant becomes involved in, or is threatened with, litigation with a sub-consultant or vendor as a result of such direction by the administering agency, the Consultant may request that the United States enter into such litigation to protect the interests of the United States.

8. Pursuant to California Labor Code Section 1735, as added by Chapter 643 Stats. 1939, and as amended,

No discrimination shall be made in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical handicaps, mental condition, marital status, or sex of such persons, except as provided in Section 1420, and any consultant of public works violating this Section is subject to all the penalties imposed for a violation of the Chapter.

Signed: ________________________________

Title: ________________________________

Firm: ________________________________

Date: ________________________________
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EXECUTIVE SUMMARY

BACKGROUND

The Parks Department of the City of Santa Ana owns (City) and operates two (2) stormwater pump stations located within the Civic Center area. Each pump station has been experiencing leakage and flooding problems during the El Nino season of 2016 and the City would like to solve the problems before the next large storm event. However, there are very few existing records that detail the pump stations’ original construction and existing conditions, so they have requested a preliminary study. The study consisted of on-site inspections and visual assessments of the structure, electrical equipment, mechanical equipment, and general conditions of each facility.

CONDITION ASSESMENT

Michael Baker International (Michael Baker) visited and conducted a visual inspection of the major components of each pump station.

Santa Ana Blvd Pump Station

The Santa Ana Pump Station (Santa Ana PS) is located adjacent to the retaining wall on the north side of Santa Ana Boulevard; it pumps stormwater to a nearby culvert in Santa Ana Blvd.

Conclusions, observations, and recommendations for the Santa Ana PS are listed as follows:

1. The structure was constructed in 1963 and is generally in good condition, minus a few defects around conduit and hatch penetrations. Gaskets and roof seals should be provided to prevent leaking and damage to the new equipment.
2. Metal enclosures over the isolation valves have been completely corroded through, they should be replaced in-kind.
3. Replace pipe and valves in-kind. If any pumps are upgraded, valves and piping should be upsized as well.
4. The pump station does not comply with NFPA 820 requirements related to separation of the wet well and electrical equipment.
5. The pump station’s electrical equipment includes one Motor Control Center (MCC), three Load Centers, one Bubbler System, one Remote Terminal Unit (RTU) Panel and three Pump Motors.
6. All of the electrical equipment, except the RTU, is very old and past the end of its useful life. It also violates safety hazards and NEC requirements.
7. All electrical equipment should be removed and replaced with NEC compliant equipment. The City has two alternatives when replacing the electrical equipment.
   a. Alternative SA1 – Install new electrical equipment inside the dry well. Explosion-proof motors and a new HVAC system will have to be installed to declassify the facility. Any openings where air from the wet well can enter the dry well will also have to be sealed.
b. Alternative SA2 – The new electrical equipment will be relocated into a NEMA 3R MCC on the building’s exterior and explosion-proof motors will be installed.

8. The pump station has an estimated maximum pumping capacity of 13,200 gpm. Based on the Santa Ana Stormwater Master Plan, the City can expect flows of 5,161 gpm during a 25-year storm and 6,732 gpm during a 100-year storm. The existing configuration is adequately sized to handle estimated future flows. The pumps should be replaced in-kind.
   a. The ½ hp sump pump should also be replaced with a ½ hp explosion-proof, solids handling sump pump.

Flower St Pump Station

The Flower Pump Station (Flower PS) is located in the south-west corner of the Civic Center parking lot, adjacent to the retaining wall at the intersection of Flower Street and Sixth Street; it pumps stormwater a 16-inch gravity pipe in Flower Street.

Conclusions, observations, and recommendations for the Santa Ana PS are listed as follows:

1. The structure is generally in good condition, minus a few defects on the roof. The concrete around the roof hoist shows signs of degradation and should be patch repaired.

2. The pump station has an expanded-metal grate that functions as both a debris filter and floor. The grate has become corroded, provides unsteady footing, and trash easily bypasses it.

3. A Continuous Deflection System (CDS) Stormwater Treatment Unit should be installed to capture debris before it reaches the wet well.

9. Replace pipe and valves in-kind. If any pumps are upgraded, valves and piping should be upsized as well.

4. The pump station does not comply with NFPA 820 requirements related to separation of the wet well and electrical equipment.

5. The pump station’s electrical equipment includes one Pump Starter Control Cabinet, two Pump Motors, one Load Center with 15 kVA 480V-120/240V Transformer, one Load Center with 7.5 kVA 480V-120/240V Transformer and a main disconnect switch.

6. All of the electrical equipment is very old and past the end of its useful life. It also violates safety hazards and NEC requirements.

7. All electrical equipment should be removed and relocated outside the building into a NEMA 3R MCC.

8. The existing pump station uses two horizontal-axial pumps driven by electric vertical motors. The City has two alternatives when replacing the pumps and motors.
   a. Alternative F1 – Explosion-proof submersible pumps will be installed on guide rails. The structure of the Flower PS would have to be heavily modified to accommodate this alternative. Structural reinforcement, a safety rail, and two access hatches would be added to the existing roof.
b. Alternative F2 – The pumps will be replaced in-kind with axial flow pumps and explosion-proof vertical motors. The expanded metal floor should be replaced with a new galvanized steel grating.

9. The pump station has an estimated maximum pumping capacity of 5,800 gpm. Based on the Santa Ana Stormwater Master Plan, the City can expect flows of 3,922 gpm during a 25-year storm and 5,167 gpm during a 100-year storm. The existing configuration is adequately sized to handle estimated future flows. The pumps should be replaced in-kind.

   a. A new ½ hp explosion-proof, solids handling sump pump should also be installed.

DESIGN AND CONSTRUCTION COSTS

A planning level cost estimate was developed for each alternative, shown below.

**Summary of Construction Costs for Each Pump Station**

<table>
<thead>
<tr>
<th></th>
<th>SA1</th>
<th>SA2</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>$20,000</td>
<td>$22,000</td>
<td>$38,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Mechanical</td>
<td>$165,100</td>
<td>$165,100</td>
<td>$123,400</td>
<td>$113,400</td>
</tr>
<tr>
<td>Electrical</td>
<td>$156,900</td>
<td>$156,900</td>
<td>$108,000</td>
<td>$108,000</td>
</tr>
<tr>
<td>Site Improvements</td>
<td>$26,400</td>
<td>-</td>
<td>$61,300</td>
<td>$57,600</td>
</tr>
<tr>
<td>Construction Cost¹</td>
<td>$407,300</td>
<td>$381,700</td>
<td>$367,700</td>
<td>$345,000</td>
</tr>
<tr>
<td>Total Cost²</td>
<td>$610,950</td>
<td>$572,550</td>
<td>$551,550</td>
<td>$489,900</td>
</tr>
</tbody>
</table>

1. Construction Cost includes 5% for mobilization and $20,000 for pressure testing and demobilization
2. Total Cost includes a 15% design allowance, 15% construction engineering allowance, and 20% project contingency.
1.0 INTRODUCTION

The Parks Department of the City of Santa Ana (City) owns and operates two (2) stormwater pump stations located within the Civic Center area. Each pump station has been experiencing leakage and flooding problems during the El Nino season of 2016 and the City would like to solve the problems before the next big storm. However, there are very few existing records that detail the pump stations’ original construction and existing conditions, so they have requested a preliminary study.

As part of the Stormwater Pumping Stations Preliminary Study (Study), Michael Baker International was to include the following:

- Describe the conditions of the existing pump station facilities
- Analyze the required pump sizes based on hydrology modeling (to be provided by others)
- Identify the recommended upgrades at each station including site improvements, structural, mechanical, and electrical upgrades
- Develop two (2) alternatives for each pump station
- Develop conceptual exhibits to show each alternative
- Estimate design and construction costs for each alternative

Two stormwater pump stations were included as part of the Study. Michael Baker visited and conducted a visual inspection of the major components of each station. A City operator was present during all of the inspections. The general layout, structure, electrical, controls and mechanical items were visually inspected at each pump station and the existing conditions were documented by photographs. A vicinity map of the study area is provided in Figure 1.

The first pump station, located adjacent to Santa Ana Boulevard, is the larger of the two considered in this Study. The Santa Ana PS was constructed in 1963 as part of the Civic Center Construction Program. The pump station is composed of a dry well and wet well. The dry well is set three feet below grade and houses three pumps and the electrical equipment; the pumps are 50 hp, 30 hp, and 15 hp in size and are driven by electric motors. The wet well and dry well are separated by a concrete slab floor. Metal hatches cover the manway opening and floor penetrations for the valve operators. The roof and walls are constructed from concrete.

The second pump station is the smaller of the two and is located adjacent to Flower Street. Details on the Flower PS’s original condition when it was constructed remains unknown, as there are no known as-builts for the facility. The pump station is composed of a single room, with an expanded metal grating that acts as the floor above the wet well. All of the mechanical and equipment is contained in the space above the wet well. Like the Santa Ana PS, the Flower PS has a concrete roof and concrete walls.
Figure 1 – Study Vicinity Map
2.0 STATION INSPECTIONS AND ASSESSMENTS

2.1 SANTA ANA PUMP STATION

2.1.1 General Information

The Santa Ana Stormwater Pump Station is located at the Civic Center, adjacent to the parking structure located off of Santa Ana Boulevard. The drainage system collects stormwater from the area south of the City Hall building and conveys it to the Santa Ana PS, which then pumps it into the drainage system in Santa Ana Boulevard. The station is located on City property, directly adjacent to a retaining wall for Santa Ana Blvd. The station entrance is located above grade, but the pump room was constructed approximately three feet below grade – there is evidence of overflows and leakage within the pump room. If the pump station does not operate during a storm, the parking structure and southern walkways will become flooded and inaccessible. The pump station is surrounded by security fencing and can only be accessed by City officials.

The exact tributary area to the pump station is based on a review of as-builts, the Santa Ana Stormwater Master Plan, and the site inspection. Stormwater drains from 5 acres of the Civic Center property and terminates at the Santa Ana PS. The quantity of water collected depends on the intensity of the storm event. For this analysis, Michael Baker considered a 25-year storm and 100-year storm event.

Table 1 – Storm Flow Collected by Santa Ana PS

<table>
<thead>
<tr>
<th>Event</th>
<th>Drainage Area¹ (ac)</th>
<th>Precipitation (cfs/ac)</th>
<th>Total Flow (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-year Storm</td>
<td>5</td>
<td>2.3</td>
<td>5,161</td>
</tr>
<tr>
<td>100-year Storm</td>
<td>5</td>
<td>3.0</td>
<td>6,732</td>
</tr>
</tbody>
</table>

¹ Area was determined with as-built drawings and site visit inspection
2.1.2 Structure

The original structure was constructed in 1963 during the third phase of the Civic Center construction. The entire structure is constructed of cast-in-place concrete. The structure is a single story concrete enclosure drywell located above a below grade wet well. Inspection of the wet well was not performed, due to water present in the wet well at the time of the site visit.

Figure 3 – Roof Hatch Gasket Failure

The overall condition of the structure is good with some very minor cracks and corrosion.

There have been issues with leakage from the roof during storms events, caused by deterioration of the roof hatch rubber gaskets and also by an inadequate seal around a metal conduit penetration through the concrete roof, housing an antenna.

Figure 4 – Existing Roof Antenna Seal

2.1.3 Electrical and Controls

The existing pump station electrical equipment sits inside a partially below-grade vault. The equipment includes (1) Motor Control Center (MCC), (3) Load Centers, (1) Bubbler System, (1) Remote Terminal Unit (RTU) Panel and (3) Pump Motors. As-built records show the Pump Station is currently served by a 600A, 480/277V, 3-phase SCE Electrical Service upstream of the underground vault. The Motor Control Center currently distributes power to the pump station, parking lot lightings, walkway lights and street signs.

As noted in the picture, an overhanging hazardous safety sign is hung at the entrance of the underground vault, which reads “DANGER – DO

Figure 5 – Santa Ana Pump Station Pump Room
The Pump Station MCC is located in a partially below grade vault that has the following:

1. 600A main breaker
2. 200A feeder breaker for Panel “CC”
3. 200A feeder breaker for Panel “X”
4. 25 kVA, 480V-120/240V transformer w/ LP SL
5. 30 kVA, 480V-120/208V transformer w/ LP SP
6. 480V-277V power panel DD
7. 200A feeder breaker to MCC-B which feeds Pump 1 (50 HP), Pump 2 (30 HP) and Pump 3 (15 HP)
8. Existing Bubbler System

The existing pump starters for the (3) pump motors each have a Hand-Off-Auto switch located on the existing MCC. In hand, the pump operates until an overload or pump failure. In auto, the pumps operate based on the level of the wet well. The existing bubbler system is currently outdated. This panel is located at the entrance of the vault and adjacent to the MCC.

There is an existing RTU Panel located inside the vault and on the other opposite side of the MCC. The RTU currently monitors (6) alarms:

1. Wet Well Level High
2. Pump Station Power Failure
3. RTU Power Failure
4. Intrusion
5. Intrusion Bypass
6. Compressor Low Pressure

The current RTU communicates via radio and antenna as pictured below. The antenna is located on a pole that extends through the top of the vault.

The Santa Ana PS reports the alarm signals via Ethernet Radio and a Yagi Directional Antenna.
The Ethernet Radio is housed in the RTU Panel and connects to the Yagi Directional Antenna via a coaxial antenna cable.

2.1.4 Mechanical

This station contains three axial flow pumps and each is driven by a 60 HP, 30 HP, or 15 HP electric motor, respectively. The characteristics of each pump is shown in Table 2. It was not visible during the site visit, but the as-builts indicate that there is also a ½ HP submersible sump pump within the wet well.

Table 2 – Existing Pump Configuration at the Santa Ana PS

<table>
<thead>
<tr>
<th>Model</th>
<th>Power (hp)</th>
<th>Capacity (gpm)</th>
<th>Speed (rpm)</th>
<th>Design Head (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade 6MF</td>
<td>15</td>
<td>1,700</td>
<td>1,760</td>
<td>22</td>
</tr>
<tr>
<td>Verti-line L12</td>
<td>30</td>
<td>4,100</td>
<td>1,175</td>
<td>22</td>
</tr>
<tr>
<td>Cascade 16AP(^1)</td>
<td>60</td>
<td>7,325</td>
<td>1,760</td>
<td>22</td>
</tr>
<tr>
<td>All Pumps Online</td>
<td>95</td>
<td>13,125</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

\(^1\) The City replaced a 50 hp Cascade 16P with the Cascade 16AP after the initial site visit was performed.

Each axial flow pump uses a steel suction pipe – either 16-inches, 14-inches, or 10-inches in diameter – to draw water from the wet well. The pumps discharge into a 20-inch steel discharge header that conveys the flow to a curbside culvert in Santa Ana Boulevard. All suction and discharge piping is located within the wet well and is only accessible via a ladder. There are also gate and check valves for each pump. These valves are accessible from the pump room and are covered by metal hatches which have been corroded over the years by water leaking through the roof during heavy rains.

The site visit was performed the day after a heavy rain and there were signs of water intrusion on the floor of the pump room. It is not known whether this is due to over flowing, leakage, or a combination of the two. There are no sanitary facilities available onsite. There is a fire hydrant in the proximity of the pump station.

2.1.5 Assessment and Recommendations

The electrical equipment at the Santa Ana PS should be replaced because it violates safety hazards and NEC requirements, in additional to being out of date. The wet well and dry well are classified as a Class 1, Division 2 locations per NFPA 820 – explosion hazards may exist due to flammable gases being present in the air in quantities sufficient to produce explosive or ignitable mixtures at the pump station. Electrical equipment installed in these areas are specially designed to prevent an explosion due to arcing contacts or high surface temperature of equipment. An operator also risks electrocution if the Cascade 6MF is being operated while there is flooding in the dry well.

Leaving the electrical equipment in its current configuration presents electrocution and explosion risks to City staff. As such, Michael Baker developed two options to address the electrocution and explosion hazards at the existing pump station while replacing the electrical equipment.
Alternative SA1

Figure 8 – Santa Ana PS Alternative SA1

Alternative SA1 addresses the explosive hazard, assuming that the City would prefer to keep the electrical equipment inside the existing dry well. In order to install the electrical equipment inside the dry well, the wet well and dry well will have to be physically separated per NFPA 820 requirements. Any openings that would allow air from the two rooms to mix would be sealed. A new HVAC system will be installed to provide continuous ventilation at 6 air changes per hour in order to declassify the dry well.

The City replaced the largest pump and motor in 2016, however it was replaced in-kind; the newly installed pump and motor are not explosion proof, as required per NFPA requirements. All existing pump motors are to be replaced with explosion-proof vertical motors and conduit seals will be added to all conduits routed to the electrical equipment to ensure no gases are able to enter. The existing pumps, except the Cascade 16AP, will be replaced in-kind.

It should be noted that keeping the electrical equipment inside the facility does not completely eliminate the risk of electrocution, though the risk is reduced through the other improvements made to the facility.
Alternative SA2 mitigates both NFPA and flood/electrocution risks by installing the new electrical equipment outside of the vault. The existing pump motors would be replaced with explosion-proof motors, and all existing electrical equipment inside the dry well would be relocated above grade into a NEMA 3R MCC. Conduit seals would need to be added to all conduits routed to the MCC to ensure that no gases are able to enter. The Cascade 16AP pump, which the City installed in 2016, will not be replaced during the improvement; the two smaller pumps will be replaced in-kind.

In both alternatives, a new pressure transducer would be provided to replace the existing bubbler system and to monitor the security system of the underground vault access; an intrusion switch can be added to notify the City whenever the hatch door is open. If additional security is required, a security camera can be added to monitor the area.

The existing structural deficiencies in the roof should be repaired with gaskets and seals, which will prevent future damage to the facility due to leakage. The metal enclosures that cover each valve are completely corroded through and should be replaced along with the valves under them. Anchorage would also have to be provided for the new mechanical and electrical equipment.

The Santa Ana PS is currently able to convey peak flow from both a 25-year storm and 100-year storm event; no upgrades to pumping capacity at the Santa Ana PS are necessary. The valves and piping should be replaced in-kind.

A planning level cost estimate was developed for each alternative, as shown in Table 3.
<table>
<thead>
<tr>
<th>Item</th>
<th>Alternative SA1</th>
<th>Alternative SA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>$ 20,000</td>
<td>$ 22,000</td>
</tr>
<tr>
<td>Mechanical</td>
<td>$ 165,100</td>
<td>$ 165,100</td>
</tr>
<tr>
<td>Electrical</td>
<td>$ 156,900</td>
<td>$ 156,900</td>
</tr>
<tr>
<td>Site Improvements</td>
<td>$ 26,400</td>
<td>-</td>
</tr>
<tr>
<td>Construction Cost¹</td>
<td>$ 407,300</td>
<td>$ 381,700</td>
</tr>
<tr>
<td>Total Cost²</td>
<td>$ 610,950</td>
<td>$ 572,550</td>
</tr>
</tbody>
</table>

1. Construction Cost includes 5% for mobilization and $20,000 for pressure testing and demobilization
2. Total Cost includes a 15% design allowance, 15% construction engineering allowance, and 20% project contingency
2.2 FLOWER PUMP STATION

2.2.1 General Information

The Flower Stormwater Pump Station is located at the Civic Center, in a parking lot adjacent to the intersection of Flower Street and Sixth Street. Stormwater from the parking lot cascades through the floor grating into the pump station, which pumps it into the drainage system in Flower Street. The station is located City property, directly adjacent to a retaining wall for Flower Street. The station entrance is at grade but there isn’t a floor separating the wet well from the electrical equipment; instead, a metal grate acts as the floor of the pump station. A significant amount of debris consisting of leaves, plastic bottles, cups, cans, and trash was present on the grating and within the wet well. If the pump station does not operate during a storm, the parking lot will become flooded and inaccessible. The pump station is not surrounded by security fencing.

The pump station’s approximate tributary area was based on the Santa Ana Stormwater Master Plan, the site inspection, and aerial mapping; no as-builts for this site were available for review. Stormwater from 3.8 acres of the Civic Center property and terminates at the Santa Ana PS. The quantity of water collected depends on the intensity of the storm event. For this analysis, Michael Baker considered a 25-year storm and 100-year storm event. The flows generated by each event is detailed in Table 4.

<table>
<thead>
<tr>
<th>Event</th>
<th>Drainage Area(^1) (ac)</th>
<th>Precipitation (cfs/ac)</th>
<th>Total Flow (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-year Storm</td>
<td>3.8</td>
<td>2.3</td>
<td>3,922</td>
</tr>
<tr>
<td>100-year Storm</td>
<td>3.8</td>
<td>3.0</td>
<td>5,167</td>
</tr>
</tbody>
</table>

\(^1\) Area was determined through site visit and aerial mapping.

Figure 10 – Flower Stormwater Pump Station Exterior
2.2.2 Structure

The entire structure is constructed of cast-in-place concrete. The pump station is a single story concrete enclosure housing an extruded grating platform supported on the pumps support framing over the wet well. Inspection of the wet well was not performed, due to water present in the wet well at the time of the site visit.

The overall condition of the structure is good with some very minor cracks and corrosion.

![Figure 11 – Rusting Roof Anchor Plate](image)

The expanded metal platform is unsafe due to excessive deflection and it should be replaced. The underside of the roof shows signs of an existing steel plate connection. The metal louvers on the front face of the building are also rusted and bent out of alignment.

2.2.3 Electrical and Controls

![Figure 12 – Existing Grating at Flower PS](image)

The existing pump station electrical equipment is kept in a vault (as shown). The equipment inside the vault includes (1) Pump Starter Control Cabinet, (2) Pump Motors, (1) Main Disconnect switch, (1) Load Center with 15 kVA 480V-120/240V Transformer, (1) Load Center with 7.5 kVA 480V-120/240V Transformer and (1) main disconnect switch (as shown below).

The Pump Station has a 480V, 3 phase, 100A main disconnect just upstream of the vault. An SCE meter pedestal was not able to be located in our field investigations and no as-built record drawings were available for this pump station. Our assumption is that a 100A, 480V, 3-phase electrical service from SCE is providing power to this existing pump station based on the 100A main disconnect upstream on the vault and a 100A, 480V, 3-phase portable generator plug located on the outside of the vault.

The existing pump starter control cabinet operates two (2) pumps. The larger of the two pumps is 20 HP and the smaller is 10 HP. There is a Hand-Off-Auto switch for each pump located on the control
cabinet. In hand, the pump operates until an overload or pump failure. In auto, the pumps operate based on a simple float switch that starts the pumps on high level and stops on a low level.

2.2.4 Mechanical

This station contains two Cascade axial flow pumps – a Cascade 6MF and Cascade 12P. A steel pipe – 12-inches or 8-inches in diameter – is attached to the suction end of each pump and draws water from the wet well, discharging into a 12-inch steel header. There is also a check valve for each pump. The discharge header conveys flow to the gravity stormwater collection system in Flower Street. All suction piping is located within the wet well and is only accessible via a ladder. The discharge piping and valves are accessible while standing on the metal grating.

When the site visit was performed the wet well was completely full of storm water. Upon a brief inspection, it was determined that electricity was still being provided to the control equipment and the pumps were not engaging for another reason.

Table 5 – Existing Pump Configuration at the Flower PS

<table>
<thead>
<tr>
<th>Model</th>
<th>Power (hp)</th>
<th>Capacity (gpm)</th>
<th>Speed (rpm)</th>
<th>Design Head (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade 6MF</td>
<td>10</td>
<td>1,700</td>
<td>1,760</td>
<td>22</td>
</tr>
<tr>
<td>Cascade 12P</td>
<td>20</td>
<td>4,100</td>
<td>1,760</td>
<td>22</td>
</tr>
<tr>
<td>All Pumps Online</td>
<td>30</td>
<td>5,800</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2.5 Assessment and Recommendations

Other than old age, there are several issues with the existing configuration of the electrical equipment at the Flower PS. The power to the parking booths is being provided by a load center located in the pump station vault. An error by the pump station operator can turn off all power to the parking booths unintentionally. There is also no physical separation between the wet well and electrical, classifying the whole space as a Class 1, Division 2 location per NFPA 820 – explosion hazards may exist due to flammable gases being present in the air in quantities sufficient to produce explosive or ignitable mixtures at the pump station. Electrical equipment installed in these areas must specially designed to prevent an explosion due to arcing contacts or high surface temperature of equipment.

Leaving the electrical equipment in its current configuration presents significant hazards to City staff. As such, Michael Baker developed two options to address the explosion hazards at the existing pump station while replacing the electrical equipment. In order to keep the electrical panels inside the station, either all equipment would need to be Class 1, Division 2 rated, or a new floor deck and ventilation
system would need to be installed to isolate the wet well from dry well. Both of these options were
determined to be cost-prohibitive, so each option considered the relocation of the electrical equipment
to exterior enclosures.
**Alternative F1**

![Image of Alternative F1](image)

**Figure 15 – Flower PS Alternative F1**

The new electrical equipment will be relocated into a NEMA 3R MCC installed on the exterior of the facility. The MCC would be located to the south side of the vault as there exists an SCE meter for the traffic light on the north side of the vault. Conduit seals would need to be added to all conduits routed to the MCC to ensure that no gases are able to enter.

The existing pumps and motors would be replaced with explosion-proof submersible pumps installed on guiderails. The concrete roof slab will be reinforced and roof hatches installed to provide access to the wet well. The existing pump support framing would also be modified to accommodate the new submersible pumps. A safety rail would be constructed along the perimeter of the roof to ensure the safety of City staff.
Alternative F2

As a low-cost alternative, the existing pumps and motors can be replaced in-kind with explosion-proof motors. The new electrical equipment will also be relocated into a NEMA 3R MCC installed on the exterior of the facility. The MCC would be located to the south side of the vault as there exists an SCE meter for the traffic light on the north side of the vault. Conduit seals would need to be added to all conduits routed to the MCC to ensure that no gases are able to enter. The existing expanded metal grating floor would be replaced with a new galvanized steel grating, which would extend between the motors to improve safety during motor maintenance and shaft oil refill.

Both alternatives would address the minor issue of separating power to the parking booth from the vault by providing a separate section in the MCC to house the load center. Installing a new RTU panel to provide wet well high level, pump station power fail, RTU power fail, intrusion, and intrusion bypass signals is also recommended. These alarms would be consistent with RTU #26 at the Santa Ana PS. The RTU will also require a Yagi Directional Antenna to be pole mounted and connected to the panel via a coaxial cable. In order to determine the mounting height and direction of the pole mounted antenna that will achieve the highest attenuation signal back to the base station, it is recommended to hire a specialist to conduct a radio path survey. The specialist will conduct a study and provide a report that provides recommendations for suggested equipment to use, mounted height and direction, signal strengths and alarms/statuses that will be available. The RTU panel is recommended to be located in the outdoor MCC.

The City also indicated that security and theft could be an issue if the equipment is moved outside of the vault. If additional security is required, a security camera can be added to monitor the facility.

In addition, it is recommended that trash and debris be captured prior to entering the wet well, to prevent the pumps from becoming clogged during a storm event. The installation of a Continuous

Figure 16 – Flower PS Alternative F2
Deflection System (CDS) Stormwater Treatment unit with grated inlet adjacent to the wet well would help keep debris out of the wet well, and simplify trash removal.

Based on the calculated drainage area and storm intensity provided in the Stormwater Master Plan, the Flower PS is currently able to convey peak flow from both a 25-year storm and 100-year storm event; no upgrades to pumping capacity at the Santa Ana PS are necessary. It is likely that observed issues in pumping capacity are due to the existing equipment’s old age or clogging by debris – replacing the pumps and installing a CDS unit should address those problems. The existing valves and piping should also be replaced in-kind.

A planning level cost estimate was developed for each alternative, as shown in Table 6.

**Table 6 – Cost Estimate for the Improvement of the Flower PS**

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1. Construction Cost includes 5% for mobilization and $20,000 for pressure testing and demobilization
2. Total Cost includes a 15% design allowance, 15% construction engineering allowance, and 20% project contingency.
APPENDIX A: ALTERNATIVE RENDERS
Install Safety Handrail

Install CDS Unit and Re-grade to Inlet

Replace Electrical Equipment and Relocate into NEPA 3R Enclosure

Install New Submersible Pumps and Motors on Guiderails

Improve Steel Structure

Install Roofs Hatchs

Remove and Replace Valves and Piping
APPENDIX B: PRELIMINARY OPINION OF COST
## CITY OF SANTA ANA
### STORMWATER PUMP STATION PRELIMINARY STUDY

### SUMMARY OF COSTS

#### Engineer's Opinion of Probable Cost - Summary

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CITY OF SANTA ANA
STORMWATER PUMPING STATIONS PRELIMINARY STUDY

ALTERNATIVE SAI

Install HVAC system, install explosion proof motors, replace electrical equipment in kind, patch structural deficiencies

Engineer's Opinion of Probable Cost - Detail

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TOTAL PROBABLE COST 

$407,300.00
**CITY OF SANTA ANA**  
**STORMWATER PUMPING STATIONS PRELIMINARY STUDY**

**ALTERNATIVE SA2**  
Install explosion proof motors, replace electrical equipment and move outside, patch structural deficiencies

**Engineer's Opinion of Probable Cost - Detail**

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### CITY OF SANTA ANA
#### STORMWATER PUMPING STATIONS PRELIMINARY STUDY

**ALTERNATIVE F2**

Install explosion proof motors, replace electrical equipment and move outside, install CDS system, patch structural deficiencies

**Engineer's Opinion of Probable Cost - Detail**

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**TOTAL PROBABLE COST**

$345,000.00
APPENDIX C: AS-BUILTS AND RECORD DRAWINGS