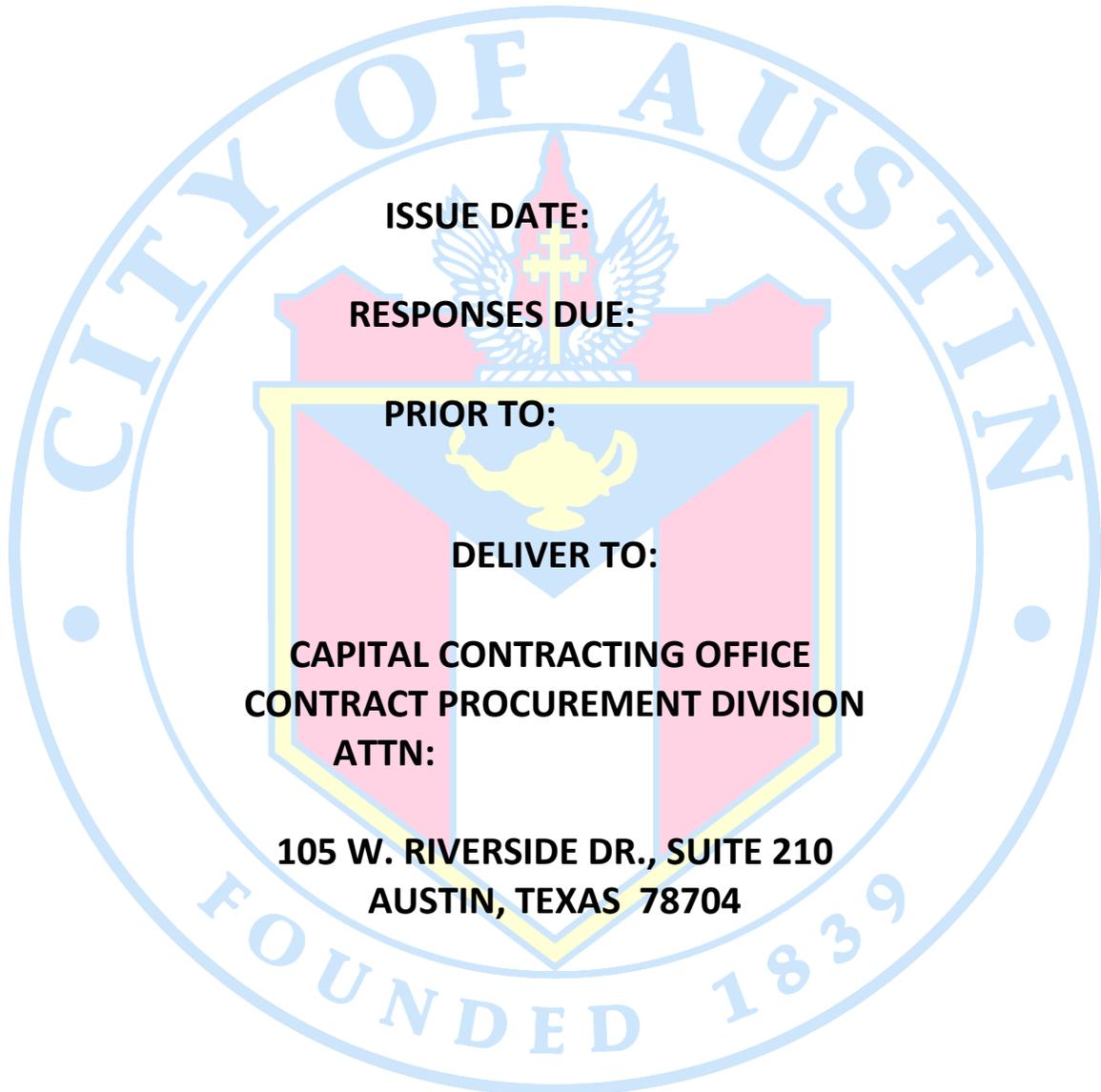


**REQUEST FOR QUALIFICATIONS**

**FOR ENGINEERING SERVICES**



**ISSUE DATE:**

**RESPONSES DUE:**

**PRIOR TO:**

**DELIVER TO:**

**CAPITAL CONTRACTING OFFICE  
CONTRACT PROCUREMENT DIVISION  
ATTN:**

**105 W. RIVERSIDE DR., SUITE 210  
AUSTIN, TEXAS 78704**



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# City of Austin

Founded by Congress, Republic of Texas, 1839  
Capital Contracting Office, PO Box 1088, Austin, Texas 78767 Telephone 512/974-7181

October 14, 2015

Re: Announcement  
Request for Statements of Qualifications (RFQ) for Providing Professional Engineering Services: Albert H. Ullrich Water Treatment Plant (WTP) Conversion to On-Site Generation of Sodium Hypochlorite (OSGSH)  
Solicitation Number: CLMP191

The City of Austin, Austin Water Utility, through its Capital Contracting Office, is requesting statements of qualifications for the selection of a professional engineering firm for the above referenced project. Statement of qualifications will be due **PRIOR to 3:00 p.m.**, Thursday, November 12, 2015 at 105 W. Riverside Drive, Suite 210, Austin, TX 78704. All SOQs not received and stamped prior to the date and time set forth above **will not be accepted for consideration.** The time stamp clock in the Suite 210 Reception Area is the time of record and is verified with [www.time.gov](http://www.time.gov), the Official U.S. time. The selection process for this project is anticipated to be completed for City Council action in February 2016.

**A Mandatory Pre-Response Meeting and Site Visit will be held beginning at 9:30 am on Wednesday, October 28, 2015** at the Albert H. Ullrich WTP located at 1000 Forest View Drive, Austin, Texas. Respondents must attend the Mandatory Pre-Response Meeting and Site Visit to ensure their understanding of the City's Request for Qualifications, contracting requirements and the MBE/WBE Procurement Program. The purpose of the meeting will also be to respond to consultants' questions about the project and the procurement process. To be qualified to submit a response, an authorized agent of the Respondent must attend the Pre-Response Meeting and Site Visit. An authorized agent is defined as a knowledgeable person who is on the Respondent's payroll at the time of submission. Respondents must arrive and sign in within fifteen (15) minutes of the scheduled start time of the meeting and must attend the site visit; otherwise, the Respondent will not be allowed to submit a Response for the project.

The Albert H. Ullrich WTP is a secured facility. Respondents are instructed to abide by the following entrance procedures:

- Enter through Gate 1 and announce your arrival and purpose using the intercom located at the gate.
- Proceed to Building 7 and park in any available parking space.
- Enter through the main entrance door and proceed to the reception desk where you will register your name and arrival time in the visitor log book.
- The receptionist will direct you to the meeting room.

**All prime firms and subconsultants must be registered to do business with the City of Austin prior to the contract award.** Prime firms are responsible for ensuring that their subconsultants are registered as vendors with the City of Austin. You may register through the City of Austin's online Vendor Registration system. Log on to [www.austintexas.gov/financeonline/vendor\\_connection/index.cfm](http://www.austintexas.gov/financeonline/vendor_connection/index.cfm) and follow the directions.

A Request for Statements of Qualifications (RFQ) for these services is available which provides project background and requirements for submittal. For a copy of the RFQ, log on to Vendor Connection at [www.austintexas.gov/financeonline](http://www.austintexas.gov/financeonline). The complete RFQ packet is located as an attachment under the solicitation CLMP191. Copies may also be obtained through the City's Vendor Connection website: [https://www.ci.austin.tx.us/financeonline/vendor\\_connection/index.cfm](https://www.ci.austin.tx.us/financeonline/vendor_connection/index.cfm). The authorized contact persons for this solicitation are Robyn Smith, Project Manager, at 512-974-2624 or [robyn.smith@austintexas.gov](mailto:robyn.smith@austintexas.gov) or Sofie Johnson, Buyer II, at 512-974-9143 or [sofie.johnson@austintexas.gov](mailto:sofie.johnson@austintexas.gov). Please contact Robyn Smith for all project related questions and me for any RFQ procurement process questions.



# City of Austin

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*Founded by Congress, Republic of Texas, 1839  
Capital Contracting Office, PO Box 1088, Austin, Texas 78767 Telephone 512/974-7181*

Sincerely,

Sofie Johnson, Buyer II  
Contract Procurement Division  
Capital Contracting Office

cc: Robyn Smith, Public Works





## REQUEST FOR QUALIFICATIONS

Solicitation Number: CLMP191

Project Name: Engineering Services for Albert H. Ullrich WTP Conversion to OSGSH

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The following is a summary of information for this Solicitation. The Consultant is cautioned to refer to other sections of this Request for Qualifications (RFQ) packet for further details.

The City of Austin, through its Capital Contracting Office, is requesting Statements of Qualifications (SOQs) for the selection of engineering services for the above-noted project.

Submittals will be received at 105 W. Riverside Drive, Suite 210 Austin, Texas 78704, Capital Contracting Office.

**ALL SUBMITTALS ARE DUE ON: NOVEMBER 12, 2015 PRIOR TO 3:00 PM**

**ATTENTION: SOFIE JOHNSON**

**ALL SUBMITTALS NOT RECEIVED PRIOR TO THE DATE AND TIME SET FORTH ABOVE WILL NOT BE ACCEPTED FOR CONSIDERATION.** The time stamp clock in the **Suite 210** Reception Area is the time of record and is verified with [www.time.gov](http://www.time.gov), the Official U.S. time. The qualification statement evaluation criteria for this project are included in this packet for your information. The selection process for this project is anticipated to be complete for City Council action in March 2016. Contract execution is anticipated for June 2016.

All prime firms and subconsultants must be registered to do business with the Owner prior to the contract award. Prime firms are responsible for ensuring that their subconsultants are registered as vendors with the City of Austin. You may register through the Owner's on-line Vendor Registration system. Log on to the following link and follow the directions:  
[https://www.austintexas.gov/financeonline/vendor\\_connection/index.cfm](https://www.austintexas.gov/financeonline/vendor_connection/index.cfm).

All City procurements are subject to the City's Minority-Owned and Women-Owned Business Enterprise Procurement Program (Chapter 2-9-B of the MBE/WBE Ordinance, revised June 15, 2006). The program provides Minority-Owned and Women-Owned Business Enterprises (MBEs/WBEs) opportunity to participate in all City contracts. Information on achieving the MBE/WBE participation goals or documenting good faith efforts to achieve the goals is contained in the MBE/WBE Procurement Program Package included in this RFQ packet. Entities submitting statements of qualifications are required to complete and return the MBE/WBE Compliance Plan with their response.

The selected consultant will be required to execute a standard City of Austin professional services agreement. A copy of this document is included in this RFQ packet. Prior to contract execution, the selected firm must submit either their existing or an updated personnel policy (on letterhead) documenting conformity with City Code, 5-4, § 5-4-2. If the Consultant does not submit a copy of their personnel policy incorporating the non-discrimination policy, the company will not be in compliance and the City will exercise its option to cease contract negotiations.

The selected consultant shall carry insurance in the following types and amounts for the duration of the Agreement, and furnish certificates of insurance along with copies of policy declaration pages and policy endorsements as evidence thereof:

- Workers' Compensation and Employers' Liability Insurance with coverage consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Section 401). The minimum policy limits for Employers' Liability Insurance are \$100,000 bodily injury each accident, \$500,000 bodily injury by disease policy limit and \$100,000 bodily injury by disease each employee. The firm's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
  - (a) Waiver of Subrogation, form WC 420304.
  - (b) 30 day Notice of Cancellation, form WC 420601.
- Commercial General Liability Insurance with a minimum combined bodily injury and property damage per occurrence limit of \$500,000 for coverage A & B. The policy shall contain the following provisions:
  - (a) Contractual liability coverage for liability assumed under the Agreement and all contracts relative to this project.
  - (b) Products/Completed Operations Liability for the duration of the warranty period.
  - (c) If the project involves digging or drilling, Explosion, Collapse, and Underground (XCU) coverage
  - (d) Independent Contractors coverage (Contractors/ Subcontractors work).The policy shall contain the following endorsements in favor of the City of Austin:
  - (a) Waiver of Subrogation, endorsement CG 2404.
  - (b) 30 day Notice of Cancellation, endorsement CG 0205.
  - (c) Additional Insured, endorsement CG 2010.
- Business Automobile Liability Insurance for all owned, non-owned and hired vehicles with a minimum combined single limit of \$500,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are \$250,000 bodily injury per person, \$500,000 bodily injury per occurrence and at least \$100,000 property damage liability per accident. The policy shall contain the following endorsements in favor of the City of Austin:
  - (a) Waiver of Subrogation, endorsement CA 0444.
  - (b) 30 day Notice of Cancellation, endorsement CA 0244.
  - (c) Additional Insured, endorsement CA 2048.
- Professional Liability Insurance with a minimum limit of \$5,000,000.00 per claim and in aggregate to pay on behalf of the assured all sums which the assured shall become legally obligated to pay as damages by reason of any negligent act, error, or omission committed or alleged to have been committed with respect to estimates, schedules, analyses, reports, surveys, designs or specifications prepared or alleged to have been prepared by the assured. Coverage, including any renewals, shall have a retroactive date coincident with or prior to the date of the Agreement. The consultant shall provide the City of Austin annually with a certificate of insurance as evidence of such insurance. The policy shall provide for 30 day notice of cancellation in favor of the City of Austin. The consultant shall provide a discovery period on professional liability policies that is commensurate with the warranty period of the project.

A mandatory pre-response meeting and site visit will be held at 9:30 am on Wednesday, October 28, 2015 at the Albert H. Ullrich WTP located at 1000 Forest View Drive, Austin, Texas. A representative from your firm must attend the pre-response meeting in order to be qualified to submit an SOQ.

Thank you for requesting the RFQ and your interest in the City of Austin. For information about other professional services procurement actions of this office, please visit us at [https://www.austintexas.gov/financeonline/vendor\\_connection/index.cfm](https://www.austintexas.gov/financeonline/vendor_connection/index.cfm).

**AUTHORIZED CONTACT PERSONS**

**BUYER II: Sofie Johnson**

**TELEPHONE: (512) 974-9143**

**EMAIL: [sofie.johnson@austintexas.gov](mailto:sofie.johnson@austintexas.gov)**

**PROJECT MANAGER: Robyn K. Smith**

**TELEPHONE: (512) 974-2624**

**EMAIL: [robyn.smith@austintexas.gov](mailto:robyn.smith@austintexas.gov)**

**SMALL AND MINORITY BUSINESS RESOURCES REPRESENTATIVE: LaVonia Horne**

**TELEPHONE: (512) 974-9183**

**EMAIL: [lavonia.horne-williams@austintexas.gov](mailto:lavonia.horne-williams@austintexas.gov)**

**END**



## INSTRUCTIONS TO CONSULTANTS

Solicitation Number: CLMP191

Project Name: Engineering Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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### I. Preparation of Response

- a. **Request for Qualifications (RFQ) Response Forms.** Enclosed are the RFQ response forms which are to be completed and returned as part of your firm's response. Please use the enclosed current forms and organize your response in the order in which the forms are presented in the Table of Contents. **Forms may be recreated; however, all requested information must be included.**
- b. **Statement of Qualifications (SOQ):** Please submit **one (1) original, stamped "ORIGINAL"; one (1) copy, stamped "COPY"; and one (1) copy on CD or flash drive** of the RFQ response. Wherever used, "page" refers to single-sided, single-spaced, 10 point minimum font printed on 8 ½ x 11 inch pages. Sections should be divided by tabs for ease of reference.

Responses sent to the City of Austin are subject to disclosure pursuant to the Public Information Act, Government Code, Chapter 552.

- c. **Disclosure of Proprietary Information.** All materials submitted to OWNER become public property and are subject to the Texas Public Information Act, Government Code Chapter 552, upon receipt. If Consultant does not desire proprietary information in the Proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. OWNER will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.
- d. **Further Information.** Information may be secured by contacting the authorized contact persons listed in the RFQ. Persons desiring further information or interpretation of the solicitation requirements shall make a written request for such information to OWNER no later than seven (7) working days before submittal due date and time. Interpretation of Solicitation Documents will be made by Addendum or Clarification and a copy of each document will be emailed to each person to whom has obtained a RFQ packet. The addendum or clarification will also be available through the City's Vendor Connection.
- e. **Anti-Lobbying and Procurement.** Entities submitting statements of qualifications, including their agents and representatives, shall not undertake any activities or actions to promote or advertise their statement of qualifications to any member of the Austin City Council or City staff except in the course of City-sponsored inquiries, briefings, interviews, or presentations between the statement of qualifications submission date

and award by City Council. Any violation of this provision may result in disqualification of the entity. Entity shall execute by signature the following Entity's Affidavit of Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying and return the signed affidavit with their statement of qualifications. The Affidavit form is Form 4 under Proposal Forms. Article 6, Chapter 2-7, Austin City Code, prohibits lobbying activities or representations by the Consultant between the date that the Request for Qualifications (RFQ) is issued and the date of contract execution. The text of the pertinent City Ordinance may be viewed at the following link:

<http://www.cityofaustin.org/edims/document.cfm?id=161145>.

(1) Definitions

- (A) "Authorized Contact Person" means the Project Manager listed in the Cover Letter of the RFQ, or other persons specifically named and designated in the RFQ as the contact for questions and comments regarding the RFQ.
- (B) "No-Contact Period" means the period of time from the date the RFQ is issued until a contract is executed. If the City withdraws the RFQ or rejects all responses with the stated intention to reissue the same or a similar RFQ for the same or similar project, the no-contact period continues during the time period between the withdrawal and reissue.
- (C) "Response" means a statement of qualifications.
- (D) "Respondent" means a person responding to a City solicitation including a bidder, a quoter, responder, or a proposer. The term "respondent" also includes:
- (i) an owner, board member, officer, employee, contractor, subsidiary, joint enterprise, partnership, agent, lobbyist, or other representative of a respondent;
  - (ii) a person or representative of a person that is involved in a joint venture with the respondent, or a subconsultant in connection with the respondent's response; and
  - (iii) a respondent who has withdrawn a Response or who has had a Response rejected or disqualified by the City.
- (E) "Representation" means a communication related to a response to a council member, official, employee, or City representative that is intended to or that is reasonably likely to:
- (i) provide information about the Response;
  - (ii) advance the interests of the Respondent;
  - (iii) discredit the Response of any other respondent;
  - (iv) encourage the City to withdraw the RFQ;
  - (v) encourage the City to reject all of the responses;

- (vi) convey a complaint about a particular response; or
- (vii) directly or indirectly ask, influence, or persuade any City official, City employee, or body to favor or oppose, recommend or not recommend, vote for or against, consider or not consider, or take action or refrain from taking action on any vote, decision, or agenda item regarding the solicitation.

(F) "City" means Owner.

(2) Restrictions on Contacts

- (A) During a no-contact period, a Respondent shall make a representation only through the authorized contact person.
- (B) During the no-contact period, a Respondent may not make a representation to a City official or to a City employee other than to the authorized contact person. This prohibition also applies to a vendor that communicates and then becomes a Respondent.
- (C) The prohibition of representation during the no-contact period applies to a representation initiated by a Respondent, and to a representation made in response to a representation initiated by a City official or a City employee other than the Authorized Contact Person.
- (D) If the City withdraws an RFQ or rejects all Responses with a stated intention to reissue the same or similar RFQ for the same or similar project, the no-contact period shall expire after the ninetieth day after the date the RFQ is withdrawn or all Responses are rejected if the RFQ has not been reissued during the 90-day period.
- (E) For a single vendor award, the no-contact period shall expire when the first of the following occurs: contract is executed or solicitation is cancelled
- (F) For a multiple vendor award, the no-contact period shall expire when the last of the following occurs: all contracts are executed, negotiations have been fully terminated, or the ninetieth day after the solicitation is cancelled.
- (G) The purchasing officer or the director may allow respondents to make representations to city employees or city representatives in addition to the authorized contact person for a solicitation that the purchasing officer or the director finds must be conducted in an expedited manner; an expedited solicitation is one conducted for reasons of health or safety under the shortest schedule possible with no extensions. The purchasing officer's or director's finding and additional city employees or city representative who may be contacted must be included in the solicitation documents.
- (H) Representation to an independent contractor hired by the City to conduct or assist with a solicitation will be treated as representations to a City employee.
- (I) A current employee, director, officer, or member of a respondent, or a person related within the first degree of consanguinity or affinity to a current employee,

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director, officer or member of a respondent, is presumed to be an agent of the respondent for purposes of making a representation. This presumption is rebuttable by a preponderance of the evidence as determined by the purchasing officer or director.

- (J) A respondent's representative is a person or entity acting on a respondent's behalf with the respondent's request and consent. For example, a respondent may email their membership list and ask members to contact council members on the respondent's behalf. The members are then acting per respondent's request and with their consent, and the members have become respondent representatives.

(3) Permitted Representations

- (A) If City seeks additional information from respondent, the Respondent shall submit the representation in writing **only** to the authorized contact person. The contact person will then distribute the written representation in accordance with the terms of the RFQ. A Respondent cannot amend or add information to a Response after the Response deadline.
- (B) If respondent wishes to send a complaint to the City, the respondent shall submit the complaint in writing only to the authorized contact person. The authorized contact person will then distribute a complaint regarding the process to members of the City Council or members of the City board, to the director of the department that issued the solicitation, and to all respondents of the RFQ. However the director shall not permit distribution of any complaint that promotes or disparages the qualifications of a respondent, or that amends or adds information to a response. A determination what constitutes promoting or disparaging the qualifications of a respondent or constitutes amending or adding information is at the director's sole discretion.
- (C) If a Respondent submits a written inquiry regarding an RFQ, the authorized contact person will provide a written answer and distribute both the inquiry and answer to all Respondents on the RFQ.
- (D) If a Respondent does not receive a response from the authorized contact person, the Respondent may contact the director as appropriate.
- (E) A respondent may ask a purely procedural question, for example a question regarding the time or location of an event or where information may be obtained, of a City employee other than the authorized contact person. No suggestions or complaints about the contract process that constitute a representation to a City employee is allowed. A respondent may not ask a procedural question to a Council member, a council member's aide, or of a City board member except in a meeting held under the Texas Government Code, Chapter 551 (Open Meetings Act).

- (F) The Anti-Lobbying ordinance allows representations:
- (1) made at a meeting convened by the authorized contact person, including meetings to evaluate responses or negotiate a contract;
  - (2) required by protest procedures for vendors;
  - (3) made at a protest hearing;
  - (4) provided to the Small & Minority Business Resources Department in order to obtain compliance with the MBE/WBE Procurement Program Ordinance;
  - (5) made to the City Risk Management coordinator about insurance requirements for a solicitation;
  - (6) made public at a meeting held under the Open Meetings Act; or
  - (7) made from a respondent's attorney to an attorney in the Law Department in compliance with Texas Disciplinary Rules of Professional Conduct.
- (G) Nothing in the Anti-Lobbying Ordinance prohibits communications regarding the solicitation between or among City official or City employees acting in their official capacity.
- (H) A contribution or expenditure defined in Chapter 2-2 (Campaign Finance) is not a representation.
- (4) Contract Voidable. If a contract is awarded to a Respondent who has violated these Anti-Lobbying & Procurement provisions, the contract is voidable by the Owner.
- (5) Debarment. If a Respondent has been disqualified under these provisions more than two times in a sixty month period the purchasing officer shall debar the responder from responding for a period not to exceed three years, provided the Respondent is given written notice and a hearing in advance of the debarment.

## II. Rejection of Proposals

OWNER reserves the right to reject any or all responses received for this RFQ and to waive any minor informality in any submittal or solicitation procedure (a minor informality is one that does not affect the competitiveness of the Consultants).

I. The following **will** cause your firm to be deemed non-responsive:

- Form 2 – Affidavit of Authentication is not included with original signature and notarized.
- Form 3 – Prime Firm's EEO Program and Title VI Assurances is not included with original signature certifying firm conforms to City Code 5-4-2.
- The required Key Personnel do not have a current license/registration in the State of Texas at the time of submittal.

- The required Key Personnel are not employed by the prime firm as stated in the evaluation criteria.
- Failure to submit MBE/WBE or DBE Compliance Plan (or other MBE/WBE Procurement Program documents) in accordance with the MBE/WBE Procurement Program Package or DBE Procurement Program Package.
- Failure to have an authorized agent of the Proposer attend the mandatory Pre-Response Meeting, if applicable.
- Statement of Qualifications (SOQs) received from a Proposer who has been debarred or suspended by OWNER's Purchasing Officer.
- SOQs received from a Proposer when Proposer or principals are currently debarred or suspended by Federal, State or City governmental agencies.

II. The following **may** cause your firm to be deemed non-responsive:

- Failure to provide a SOQ stamped "ORIGINAL".
- Failure to provide the correct number of "COPY" SOQs.
- Failure to provide an electronic version on CD or Flash Drive of your complete SOQ.
- Form 4 - Affidavit of Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying is not included with original signature and notarized.
- Form 5 - Affidavit of Availability is not included with original signature and notarized.
- Form 6 – Affidavit of Contract Execution is not included with original signature and notarized.
- Failure to provide a response to one or more of the Consideration Items.
- Response failed to show the prime firm performing the plurality of the services.
- Prime firm and/or subconsultants did not provide the number of projects required for an evaluation criteria item.
- Exceeding the maximum number of page limitations in any of the sections designated.
- Including projects that have not been completed within the specified time period.
- Combining forms.
- Failure to use the current City of Austin forms.
- Failure to acknowledge receipt of Addenda on Form 1 – Prime Firm General Information.
- Listing a subconsultant's qualifications in the body of the SOQ, yet failing to list the subconsultant on the compliance plan.

- Form – 12 Texas Ethics Commission Interested Parties Disclosure Form is not included with original signature and notarized.

### III. Release of Information

Under Texas law, information relating to this Solicitation may be kept confidential until a contract has been executed. OWNER shall not release information relative to this Solicitation during the proposal evaluation process or prior to contract execution, except as otherwise required by law.

### IV. Award and Execution of Contract

Capital Contracting Director shall submit recommendation for award to the City Council for those project awards requiring City Council action. Contract will be signed by City Manager or his/her designee after award and submission of required documentation by consultant. Contract will not be binding upon OWNER until it has been executed by both parties. OWNER will process the Contract expeditiously. However, OWNER will not be liable for any delays prior to the award or execution of Contract. The consultant must adhere to the terms stated in Form 6 – Affidavit of Contract Execution.

Upon contract award, the selected consultant must submit either their existing or an updated personnel policy (on letterhead) documenting conformity with City Code, Chapter 5-4, § 5-4-2. If the company does not submit a copy of their personnel policy incorporating the non-discrimination policy, the company will not be in compliance and will not receive a contract award.

### V. Protest Procedures

The OWNER's Capital Contracting Director has the authority to settle or resolve any claim of an alleged deficiency or protest. The procedures for notifying the City of an alleged deficiency or filing a protest are listed below. If you fail to comply with any of these requirements, the Capital Contracting Director may dismiss your complaint or protest.

Prior to Solicitation Due Date: If you are a prospective Respondent and you become aware of the facts regarding what you believe is a deficiency in the solicitation process before the Solicitation is due, you must notify the City in writing, through the authorized contact person, of the alleged deficiency before that date, giving the City an opportunity to resolve the situation prior to the Solicitation Due Date.

After Solicitation Due Date: If you submit a response to the City and you believe that there has been a deficiency in the solicitation process or the award, you have the opportunity to protest the solicitation process or the recommended award as follows:

1. You must file written notice of your intent to protest within four (4) calendar days of the date that you know or should have known of the facts relating to the protest. If you do not file a written notice of intent within this time, you have waived all rights to protest the solicitation process or the award.

2. You must file your written protest within fourteen (14) calendar days of the date that you know or should have known of the facts relating to the protest unless you know of the facts before the Solicitation was due. If you know of the facts before that date, you must notify the City as stated above.
3. You must submit your protest in writing, through the authorized contact person, and must include the following information:
  - a. your name, address, telephone, and fax number;
  - b. the solicitation number and the CIP number, if applicable;
  - c. a detailed statement of the factual grounds for the protest, including copies of any relevant documents.
4. Your protest must be concise and presented logically and factually to help with the City's review.
5. When the City receives a timely written protest, the Capital Contracting Director will determine whether the grounds for your protest are sufficient. If the Capital Contracting Director decides that the grounds are sufficient, the Capital Contracting Office will schedule a protest hearing, usually within five (5) working days. If the Capital Contracting Director determines that your grounds are insufficient, you will be notified of that decision in writing.
6. The protest hearing is informal and is not subject to the Open Meetings Act. The purpose of the hearing is to give you a chance to present your case, it is not an adversarial proceeding. Those who may attend from the City are: representatives from the department that requested the purchase, the Law Department, the Capital Contracting Office and other appropriate City staff. You may bring a representative or anyone else that will present information to support the factual grounds for your protest with you to the hearing.
7. A decision will usually be made within fifteen (15) calendar days after the hearing.
8. The Capital Contracting Director will send you a copy of the hearing decision after the appropriate City staff have reviewed the decision.
9. When a protest is filed, the City usually will not make an award until a decision on the protest is made. However, the City will not delay an award if the City Manager or the Capital Contracting Director determines that:
  - a. The City urgently requires the supplies or services to be purchased, or
  - b. Failure to make an award promptly will unduly delay delivery or performance.In those instances, the Capital Contracting Office will notify you and make every effort to resolve your protest before the award.
10. The protest or notice of intent and the protest shall be submitted in writing to the following address:

P.O. Address for U.S. Mail:

City of Austin  
ATTN: Director, Capital Contracting Office  
P.O. Box 1088  
Austin, Texas 78767-0845

PHONE: (512) 974-7181

**END**

Street Address for Hand Delivery/Courier Service:

City of Austin  
ATTN: Director, Capital Contracting Office  
105 W. Riverside Dr., Suite 205  
Austin, Texas 78704

## 1. Payment

### A. Classification Definitions, Building and Heavy and Highway

Definitions for Building Construction and Heavy and Highway classifications shall conform to the current "Dictionary of Occupational Titles" as published by the U.S. Department of Labor.

### B. Minimum Wages

Workers on Project shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) for Building Construction and Heavy and Highway Trades. Such wage rates shall be used throughout the Contract. If a classification is to be used, which is not listed in the attached wage rates, CONTRACTOR shall submit to OWNER rates and classification proposed for use, for approval, **prior** to performance of the Work.

NOTE: The terms journeyman and apprentice apply to both union and independent workers, and are not intended to imply that these positions are union workers only.

All laborers and mechanics working upon the Work for this Project shall be paid unconditionally and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by Secretary of Labor under the Copeland Act, Title 29 CFR, Part 3) full wages accrued and when due, computed at rates not less than wage rates bound herein pertaining to type of Work being performed. When Work is of such a nature that both Building and Heavy and Highway wage scales are incorporated into contract, CONTRACTOR shall pay wage rates to mechanics or laborers performing Work in more than one classification at the rate indicated for each classification for time actually worked as determined by area practice applicable to type (Site Construction Crafts or Building Construction Crafts) of Work being performed without regards to skill. Salaried specialists (project superintendent and administrative personnel only) in the permanent employment of CONTRACTOR do not fall under any Wage Classification. Wage rates shall be posted by CONTRACTOR at site(s) of Work in prominent, easily accessible places where they can be seen by all workers. The following shall also be posted by the CONTRACTOR alongside prevailing wage rates: City of Austin wage contact posters (English and Spanish), City of Austin Equal Employment Opportunity posters (English and Spanish).

### C. Overtime Requirements

No CONTRACTOR, Subcontractor, or Sub-subcontractor contracting for any part of contract Work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he is employed on such Work, to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours in excess of forty hours in such workweek.

## 2. Apprentices

### Locally & Federally Funded Projects

Apprentices and Trainees will be permitted to work as such only when they are registered, individually, under a bonafide Apprenticeship or Trainee program registered with the Bureau

of Apprenticeship and Training, United States Department of Labor. The allowable ratio of Apprentices or Trainees to journeymen in any craft classification shall not be greater than the ratio permitted to CONTRACTOR as stated in the registered apprenticeship program standards. Any employee listed on a payroll at an Apprentice or Trainee wage rate, who is not registered as above, shall be paid the wage rate provided in Contract for Work employee actually performed. CONTRACTOR, Subcontractor, or Sub-subcontractor shall furnish to OWNER written evidence of registration of his program for Apprentices and Trainees as well as of the appropriate ratios and wage rates, for the area of construction **prior** to using any Apprentices or Trainees on this Contract.

### 3. Withholding of Payments

OWNER may withhold or cause to be withheld from CONTRACTOR as much of the accrued payments as necessary to pay laborers and mechanics employed by CONTRACTOR, Subcontractors, or Sub-subcontractors the amount of wages required to comply with the Contract. In the event of nonpayment of wages to laborers or mechanics working on the site of the Work of this Contract, OWNER may, after Written Notice to CONTRACTOR, take such action as may be necessary to cause suspension of any further payments or advance of funds to CONTRACTOR until such violations have ceased and until restitution has been made. Payments may also be withheld if CONTRACTOR fails to maintain weekly payroll reports or fails to provide copies in a timely manner upon request of Owner.

### 4. Payrolls

A. CONTRACTOR shall keep records showing:

1. the name, address and occupation of each worker employed by the CONTRACTOR or subcontractor(s) in the construction of the public work.
2. the actual per diem wages paid to each worker.
3. Employee Certification. CONTRACTOR, all levels of Subcontractors shall identify in writing, the classification agreed to by all laborers and mechanics employed by them in the execution of the Contract, and pay not less than rates specified in the attached Building Construction and Heavy and Highway Wage Rate Schedule(s). Contractor shall prepare a completed form for the signature of Employee and a witness shall sign the form in the presence of Employee. If work performed by worker is different than the trade classification agreed upon, the worker shall be paid for that work no less than the minimum prevailing wage for that specified trade.
4. Payroll Deduction Authorization Form. CONTRACTOR, Subcontractor, and Subsubcontractor shall prepare for employee signature a payroll deduction authorization form to identify all payroll deductions excluding those required by statute, such as federal income taxes, medicare and social security.

B. The record shall be open at all reasonable hours to inspection by the officers and agents of the Owner as requested. CONTRACTOR will be responsible to provide copies of records as requested by the Owner within two (2) working days. Payrolls relating to this Work shall be maintained during term of Contract and preserved for a period of three (3) years thereafter by CONTRACTOR for all laborers and mechanics working on the Work.

C. A Statement of Compliance, a letter signed and dated by party responsible for supervising the payment of persons employed by CONTRACTOR or subcontractor

shall accompany payrolls required by Owner. The Statement of Compliance letter shall identify but is not limited to:

1. name of signatory party and title,
2. name of project, payroll period and
3. name of CONTRACTOR or Subcontractor.

The signed letter attests that the payroll complies with 29CFR issued by the Secretary of Labor.

**D. Federal Funding**

In the event that federal funding is used:

1. Contractor and all levels of Subcontractors shall submit weekly certified payroll reports and signed wage compliance statements to the Owner’s designated office no later than seven (7) calendar days after the scheduled payday.
2. Contractors and all levels of Subcontractors shall pay all “mechanics and laborers” not less often than once per week, for work performed the previous week.
3. Submit to the Owner’s designated office Standard Form 1413, Statement and Acknowledgement, from each subcontractor prior to the subcontractor performing work on the project.

**5. Complaints and Penalties**

A public body awarding a contract, and an agent or officer of the public body, shall, take cognizance of complaints of all violations of Chapter 2258 Texas Government Code Title 10 or applicable Federal Statutes committed in the execution of the contract; and withhold money forfeited or required to be withheld under this chapter from the payments to the CONTRACTOR under the contract. A CONTRACTOR or subcontractor(s) who violates this section shall pay to the political subdivision on whose behalf the contract is made, \$60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter. Confirmed Disciplinary action taken by CONTRACTOR against employees who provide information during an interview or investigation by the Owner on wages received, may result in suspension or debarment from consideration of award of City contracts.

**6. Area Practice**

- A. Heavy and Highway Construction Rates shall be used on this Project, unless the Project consists primarily of Building Construction and Building Construction Rates are to be used.
  1. Building Construction consists generally of all aspects of construction of buildings, which are sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment or supplies, including without limitation the installation of utilities and equipment, both above and below grade level, as well as incidental demolition, grading, utilities, paving and other site work. Buildings need not be “habitable” to be classified as Building Construction and the installation of heavy machinery and/or equipment will not generally change a Building Construction project’s classification.
  2. The determination of Building Construction Wage Rates includes all construction trades and work necessary to complete a building, regardless of the number of

contracts involved, so long as all such contracts are closely related in purpose, time and place.

- B. For projects that involve both Building Construction and Heavy and Highway trades, the following classifications shall be used:
  - 1. A multiple classification shall be used if Building Construction items are more than 20% of the Heavy and Highway project cost.
  - 2. A multiple classification shall be used if Heavy and Highway Construction items are more than 20% of the Building Construction Project cost.
- C. Split classifications/multiple wage rate schedules: When construction work requires that an employee perform work under multiple classifications or multiple wage scales, the employer must pay that worker (at least) the highest prevailing wage or the employer payroll records must accurately set forth the times spent performing the work of each classification and under each scale. For those projects that involve both Building Construction and Heavy and Highway trades, the Heavy and Highway wage rates may only be applied to workers when engaged in site work at least five (5) feet beyond the building.

#### **7. Texas Open Records Act**

Unless covered by an exception to mandatory disclosure under the Texas Public Information Act, Chapter 552, Texas Government Code, any and all documents submitted to the City of Austin become Public Records and are, therefore, subject to public disclosure.

**Wage Rates For This Project Are Attached**

**End**

**Bidding Requirements, Contract Forms Conditions of the Contract**  
**WAGE RATES AND PAYROLL REPORTING**  
Section 00830HH

**PREVAILING WAGE RATE DETERMINATION**

HEAVY AND HIGHWAY CONSTRUCTION

COUNTY NAME: TRAVIS

Wages based on DOL General Decision:TX150016 01/02/2015 TX16

Classification	Wage Rate	Classification	Wage Rate
Agricultural Tractor Operator	\$ 12.69	Laborer, Utility	\$ 12.27
Asphalt Distributor Operator	\$ 15.55	Loader/Backhoe Operator	\$ 14.12
Asphalt Paving Machine Operator	\$ 14.36	Mechanic	\$ 17.10
Asphalt Raker	\$ 12.12	Milling Machine	\$ 14.18
Boom Truck Operator	\$ 18.36	Motor Grader Operator - Fine Grade	\$ 18.51
Broom or Sweeper Operator	\$ 11.04	Motor Grader Operator - Rough	\$ 14.63
Cement Mason/Concrete Finisher	\$ 12.56	Painter - Structures	\$ 18.34
Concrete Pavement Finishing Machine Operator	\$ 15.48	Pavement Marking Machine Operator	\$ 19.17
Crane, Hydraulic 80 tons or less	\$ 18.36	Pipelayer	\$ 12.79
Crane, Lattice Boom, 80 tons or less	\$ 15.87	Reclaimer/Pulverizer	\$ 12.88
Crane, Lattice Boom, over 80 tons	\$ 19.38	Reinforcing Steel Setter	\$ 14.00
Crawler Tractor	\$ 15.67	Roller Operator, Asphalt	\$ 12.78
Directional Drilling Locator	\$ 11.67	Roller Operator, Other	\$ 10.50
Directional Drilling Operator	\$ 17.24	Scraper Operator	\$ 12.27
Electrician	\$ 26.35	Servicer	\$ 14.51
Excavator, 50,000 lbs. or less	\$ 12.88	Spreader Box Operator	\$ 14.04
Excavator, over 50,000 lbs.	\$ 17.71	Structural Steel Worker	\$ 19.29
Flagger	\$ 10.10	Traffic Signal Installer/Light Pole Worker	\$ 16.00
Form Builder/ Setter, Structures	\$ 12.87	Trenching Machine Operator, Heavy	\$ 18.48
Form Setter - Paving & Curb	\$ 12.94	Truck Driver Tandem Axle Semi-Trailer	\$ 12.81
Foundation Drill Operator, Truck Mounted	\$ 16.93	Truck Driver, Lowboy-Float	\$ 15.66
Front End Loader Operator, 3CY or less	\$ 13.04	Truck Driver, Single Axle	\$ 11.79
Front End Loader Operator, over 3 CY	\$ 13.21	Truck Driver, Off Road Hauler	\$ 11.88
Laborer, Common	\$ 10.50	Truck Driver, Single or Tandem Axle Dump Truck	\$ 11.68
		Welder	\$ 15.97
		Work Zone Barricade Servicer	\$ 11.85

<http://www.wdol.gov/wdol/scafiles/davisbacon/tx.html>

The Wage Compliance information detailed below was excerpted from General Decision TX20070043 or other DOL sources.

**1. Additional Trade information:**

Unlisted classifications needed for work not listed within the scope of the classifications listed may be added upon the advance approval of Contract Procurement. CONTRACTOR shall submit to City of Austin Contract Procurement the following: classification, a bona fide definition of work to be performed and a proposed wage with sample payrolls conforming to area practice **prior** to the start of the job for that type of work. Proposed trade may not be performed by any trade already listed.

**2. Wages**

For overtime, the basic hourly rate listed in the contract wage determination must be used in computing pay obligations.

**3. Proper Designation of Trade**

A work classification from the Prevailing Wage Poster for each worker must be made based on the actual type of work he/she performed on the job. In summary the work performed, not the "title" determines the correct worker classification and wage. Each worker must be paid no less than the wage rate on the wage decision for that classification **regardless** of his/her level of skill (exclusive of a bona fide apprentice currently registered in a DOL approved apprentice program - proof of individual registration must be supplied in advance to the City of Austin).

**4. Split Classification**

If a firm has employees that perform work in more than one classification, it can pay the wage rates specified for each classification ONLY if it maintains accurate time records showing the amount of time spent in each classification. If accurate time records are not maintained, these employees must be paid the highest wage rate of all the classifications of work performed by each worker. Accurate time records tracking how many hours a worker performed the work of one trade and then switched to another trade must be accounted for on a daily basis and reflected on Employer Certified Payroll accordingly.

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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**WAGE DETERMINATION APPEALS PROCESS**

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor

200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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## SCOPE OF SERVICES

Solicitation Number: CLMP191

Project Name: Engineering Services for the Albert H. Ullrich WTP Conversion To On-Site Generation Of Sodium Hypochlorite (OSGSH)

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### **PROJECT FOR:**

CITY OF AUSTIN, AUSTIN WATER, THROUGH ITS CAPITAL CONTRACTING OFFICE

### **PROJECT TITLE:**

Albert H. Ullrich WTP Conversion to On-Site Generation of Sodium Hypochlorite (OSGSH)

### **OBJECTIVES OF THE PROJECT:**

The City of Austin (City) seeks a qualified professional engineering firm (Consultant) to convert the existing chlorine process at the A. H. Ullrich Water Treatment Plant (WTP) to an on-site generation and use of sodium hypochlorite process. Pending available funds, the Consultant shall also provide for the conversion from the existing anhydrous ammonia process to a liquid ammonia sulfate (LAS) process.

### **BACKGROUND:**

The City utilizes surface water resources from impoundments of the Colorado River for its drinking water supply. The City operates three (3) major water treatment plants; Ullrich WTP, Davis WTP and Water Treatment Plant No. 4.

The Ullrich WTP has a firm treatment capacity of 167 million gallons per day (MGD) and utilizes chloramine for disinfection. The chloramine process requires the combined use of a chlorine system and an ammonia system. The chlorine system includes bulk storage of liquid chlorine (Cl<sub>2</sub>), evaporators, chlorinators and an injector water pump feed system that delivers chlorine solution to one of five possible injection points along the raw water pipelines. The ammonia system consists of liquid/gas storage of ammonia (NH<sub>3</sub>), vaporizers, ammoniators and pressure reducing and backpressure valves that maintain feed of ammonia gas to various injection points in the process. As a preventive maintenance measure, the plant also alternates chlorine solution feed to the upflow clarifier (UFC) basins through the lime slurry feed lines in order to prevent lime buildup in these lines.

The chlorine process was replaced in whole as part of the 2003 Ullrich WTP 160 MGD Expansion project and has been in continuous operation since that time. As part of this project, a scrubber system (neutralization with sodium hydroxide) was included as part of the life safety system for the building. Although the City has successfully and safely used chlorine throughout its various treatment facilities for more than 80 years, the City desires to incorporate inherently safer technologies when available and where feasible. Environmental sensitivities, issues associated with the transport, supply and price volatility of liquid chlorine and the recent implementation of OSGSH at Water Treatment Plant No. 4 also led to the decision to

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implement this change. Furthermore, the City initiated a feasibility study for implementing OSGSH at the Davis and Ullrich Water Treatment Plants. Results of the Ullrich WTP study may be referenced as **Attachment A: Technical Memorandum: “On-Site Generation of Sodium Hypochlorite (OSGSH) Evaluation”, August 2011 by Carollo Engineers.**

### **ANTICIPATED SERVICES:**

The selected Consultant shall develop at a minimum three options and make recommendations. Subsequently, the selected Consultant shall perform design and develop construction documents that shall achieve the option the City has selected. Proposed options shall maximize the repurposing and reuse of existing systems, structures and processes, where practical. The selected firm shall also develop options and make recommendations to convert the existing ammonia system to liquid ammonia sulfate (LAS) as part of the preliminary design phase. Depending on available budget, the City will determine whether to proceed with the proposed LAS improvements in the final design and construction of this project. Flow pacing of the disinfection process with limited to no need for manual operation/interaction in the field or at the top end control system is an additional goal of this project.

### **PRELIMINARY PHASE**

- Review & utilize the Technical Memorandum: “On-Site Generation of Sodium Hypochlorite (OSGSH) Evaluation”, August 2011 by Carollo Engineers, as a basis for preliminary engineering. The selected Consultant shall build on recommendations, provide any additional options related to OSGSH improvements and perform a life-cycle cost analysis for each.
- Develop alternatives for LAS improvements that integrate with proposed sodium hypochlorite improvements and perform a life-cycle cost analysis for each of the alternatives.
- Address demolition and repurposing/modifications of existing chemical processes, systems and structures.
- Identify necessary improvements/modifications to the existing chemical feed and distribution systems for both OSGSH and LAS, including how maintenance of the lime slurry feed lines to the UFC basins will be accommodated.
- Recommendations to be based upon TCEQ requirements, COA and AW standards, record documents, field surveys, geotechnical evaluations (previous geotechnical reports and additional field investigations, as needed), and a hydraulic analysis of the chemical distribution systems.
- Identify field I&C, electrical service, and changes to the plant’s top end control system necessary to achieve flow pacing of the disinfection process.
- Codify preliminary engineering efforts into a Draft Preliminary Engineering Report (PER) and incorporate City comments and selected recommendations for design into a Final PER, following the City’s review. This Final PER will be used as the basis for design.
- Deliverables
  - Draft PER and Final PER that presents recommended improvements complete with supporting data such as calculations, condition assessment, hydraulic

analysis, monetary and non-monetary evaluations performed for estimated life cycle and construction costs.

### DESIGN PHASE

- Design the decommissioning and demolition/repurposing plan of the existing chlorine system (including the chlorine scrubber) while maintaining the City's ability to feed disinfectant during the conversion to OSGSH.
- Complete all engineering investigations and analysis required to ensure a fully operating OSGSH system and chemical feed system including design of all civil, structural, mechanical, Electrical and Instrumentation & Controls engineering, security, architectural elements and applicable permitting requirements of the proposed improvements.
- Deliverables:
  - Detailed engineering documents and associated services required for the bidding and construction of the proposed improvements. Engineering documents shall be delivered to the City for review at 30%, 60%, 95% and 100% stages of completion.
  - Design schedule that includes the above noted progress milestones together with anticipated advertise/award and construction timelines.
  - Opinion of Probable Construction Cost with each associated design deliverable (30%, 60%, 95% and 100%) based on the AACE (formerly known as the Association for the Advancement of Cost Engineering) Estimate Classification System, per AACE International.
  - Responsibility Assignment Matrix that fully integrates the responsibilities of the Owner, Engineer, Programmer and Contractor necessary for the complete start-up and commissioning of the proposed improvements.
  - Monthly updates of design schedule and Resource Allocation Plan (RAP), submitted with each payment application.

### BID PHASE

- Support the City during the Bid, Award and Execution of a construction contract(s) by responding to technical/design questions, issuing addenda, participating in pre-bid meetings and review of contractor bids.

### CONSTRUCTION PHASE

- Provide construction phase support to the City, to include the processing and review of submittals, requests for information and change orders, attending construction meetings, making periodic site visits to ensure project is constructed in accordance with engineer's design intent, supporting and participating in start-up and commissioning efforts and other construction-related activities, as requested by Owner.
- Deliverables:
  - Monthly construction status reports, submitted with each payment application.

**WARRANTY PHASE**

- Provide support to City, as needed, to evaluate and make engineering recommendations regarding project-related warranty issues.

**PROPOSED PROJECT SCHEDULE:**

The architectural and engineering services are anticipated to last at approximately four and one-half (4½) years: Anticipated schedule is:

- PRELIMINARY PHASE: 6 months
- DESIGN PHASE 10 months
- BID PHASE 6 months
- CONSTRUCTION PHASE 18-24 months
- WARRANTY PHASE 12 months

**PROPOSED PROCUREMENT SCHEDULE**

Pre-Response Meeting - Wednesday, October 28, 2015

Interview, if applicable - Thursday, January 21, 2016

Council Award - March 2016

Contract Execution - June 2016

**COST ESTIMATE:**

Estimated budget for Consultant services for all phases of work is \$2M.

**MAJOR AND OTHER SCOPES OF WORK:**

Below is a list of the major scopes of work that the City has identified for this project. ***\*There must be representation for all major scopes of work listed in the prime's statement of qualifications. The experience of the firms listed to perform the Major Scopes of Work, whether a subconsultant or prime firm, will be evaluated under Consideration Item 6 – Major Scopes of Work – Comparable Project Experience.***

In addition, the City has identified Other Scopes of work that MAY materialize during the course of the project. The City does not guarantee that the scopes listed under Other Scopes of work will materialize on this contract. If the prime consultant intends to enter into a subconsulting agreement on a scope of work not listed below, the prime consultant is required to contact SMBR and request an updated availability list of certified firms in each of the scopes of work for which the prime consultant intends to utilize a subconsultant.

**\* Major Scopes of Work**

Environmental Engineering

Civil Engineering  
Structural Engineering  
Electrical Engineering  
Instrumentation Engineering  
Controls Engineering

**Other Scopes of Work**

Mechanical Engineering  
Geotechnical Soils Engineering  
Architectural Services  
Scheduling Services  
Land Surveying Services  
Cost Estimating Services

**Notes:**

- Construction Inspection and Public Information and Communications are **NOT** a subconsultant opportunity . These services will be performed in-house or under a separate contract, if needed, and will be determined when project assignment is made.
- Participation at the prime or subconsultant level may create a conflict of interest and thus necessitate exclusion from any contracts resulting from the work performed in the design phase.
- If the City determines that a conflict of interest exists at the prime or subconsultant level, the City reserves the right to replace/remove the prime or instruct the prime consultant to remove the subconsultant with the conflict of interest and to instruct the prime consultant to seek a post-award change to the prime consultant’s compliance plan as described in City Code § 2-9B-23. Such substitutions will be dealt with on a case-by-case basis and will be considered for approval by Small and Minority Business Resources (SMBR) in the usual course of business. The City’s decision to remove a prime or subconsultant because of a conflict of interest shall be final.
- For Subproject assignments that include construction activities performed by the CONSULTANT or Subconsultants, workers shall be paid not less than the prevailing wage rates, as referenced in Section 00830.
- A consultant performance evaluation will be performed on all professional services contracts. This evaluation will be conducted at the end of each Preliminary, Design and Construction phase.



## EVALUATION CRITERIA STAND ALONE SOLICITATIONS

Solicitation Number: CLMP191

Project Name: Engineering Services for the Albert H. Ullrich WTP Conversion to On-Site Generation of Sodium Hypochlorite (OSGSH)

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The following is a description of items to receive consideration in the evaluation of responses for providing professional engineering/architectural/planning services to the City of Austin. Following each description are the evaluation points associated with the item. TOTAL POSSIBLE POINTS EQUALS 100 (plus 15 points for interviews, if conducted). Wherever used, "prime firm" denotes a single firm or a joint venture responding as the prime consultant. Wherever used, "page" refers to single-sided, single spaced, 10-point minimum font printed 8-1/2 x 11-inch pages. The prime firm shall perform the largest share of the assignment (on an estimated percentage of total agreement basis). Responses failing to show the prime firm performing the plurality of the services shall be rejected as non-responsive.

**Limitations on volume of requested information apply equally to single firms and joint ventures regardless of the number of firms partnering in the joint venture. Responses with excess volume or which do not include information for the evaluation of all consideration items may not be thoroughly reviewed or may be rejected as non-responsive.**

All prime firms and subconsultants must be registered to do business with the Owner prior to contract award. Prime firms are responsible for ensuring that their subconsultants are registered as vendors with the City of Austin. You may register through the Owner's on-line Vendor Registration system. Log on to the link below and follow the directions: [https://www.ci.austin.tx.us/financeonline/vendor\\_connection/index.cfm](https://www.ci.austin.tx.us/financeonline/vendor_connection/index.cfm)

### NOTES:

- ❖ Firms and individuals, who are proposed as staff on this RFQ, must adhere to the requirements of Subchapter A of the Texas Professional Engineering Practice Act regarding the use of the term "engineer". The full text of the Texas Professional Engineering Act may be found at: <http://www.engineers.texas.gov>.
- ❖ Firms and individuals who are proposed as staff on this RFQ, must adhere to the requirements of Subchapter A of the Texas Architecture Practice Act regarding the use of the term "Architect". The full text of the Texas Architecture Practice Act may be found at: <http://www.statutes.legis.state.tx.us/Docs/OC/word/OC.1051.doc>

### DEFINITIONS:

The following definitions are meant to assist the prime firm in determining the appropriate key team members for this project. These definitions are not exhaustive and are meant only as a guide.

1. "Completed Project" - The City will consider a project complete when:
  - a) The specified discipline for which you are working has been completed; or,
  - b) All phases or scopes of work have been completed.
2. "Project Manager": The COA defines a project manager as an individual in the prime firm who:
  - ◆ Sets deadlines, assigns responsibilities and monitors and summarizes progress of project.
  - ◆ Has the responsibility of the planning, execution and closing of a project.
  - ◆ Responsible for accomplishing the stated project objectives and deliverables.
  - ◆ Leads project meetings to collect and disseminate information pertaining to the project.
  - ◆ Coordinates the collection and dissemination of information between/within the company and COA.
  - ◆ Manages all aspects of the project, including subconsultants.

## EVALUATION CRITERIA – STAND ALONE

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3. "Project Principal": The COA defines a project principal as an individual in the prime firm who:
  - ◆ Has executive oversight of projects.
  - ◆ Has the authority to remove the PM and/or Project Professional (PE or PA) assigned to this project.
  - ◆ Has the authority to secure additional resources to the project.
4. "Project Professional": The COA defines a project professional as an individual in the prime firm who:
  - ◆ Serves as lead Engineer, Architect, Landscape Architect, Planner or other professional on the proposed team who designs and develops project specifications.
  - ◆ Creates, reviews and provides resolution of technical specifications.
  - ◆ Directs other professional activities.
  - ◆ Is responsible for the preparation of probable construction cost estimates.
  - ◆ Has all required licenses, certifications or registrations from the State of Texas at the time of submittal.

**CONSIDERATION ITEM 1**  
**MBE/WBE PROCUREMENT PROGRAM**

Were Goals achieved or did response indicate that a Good Faith Effort was made to achieve the Goals?

- No** - Response **will not** be evaluated.  
**Yes** - Evaluation of the response will continue.

Attach the following:

- **MBE/WBE Compliance Plan**
- **Letters from subconsultants confirming contact/commitment to the project.**

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**CONSIDERATION ITEM 2**  
**TURNED IN ALL REQUIRED DOCUMENTS**

Did respondent turn in the requested documents as required by this Consideration Item and the forms and submittal requirements for all other consideration items?

- No** - Response **will not** be evaluated.  
**Yes** - Evaluation of the response will continue.

Respondent must attach the following to Consideration Item 2:

- **Form 1 – Prime Firm General Information**
- **Form 2 – Affidavit of Authentication**
- **Form 3 - Prime Firm’s EEO Program and Title VI Assurances**
- **Form 4 - Affidavit of Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying**
- **Form 5 - Affidavit of Availability**
- **Form 6 - Affidavit of Contract Execution**
- **Form 12 – Texas Ethics Commission Interested Parties Disclosure**

**NOTE: Other forms and submittal documents required in the remaining consideration items should be attached to that respective consideration item.**

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**CONSIDERATION ITEM 3a**  
**TEAM’S STRUCTURE**  
**10 Points Maximum**

City is interested in team's organizational structure. Identify project leadership, reporting

responsibilities, how prime firm will interface with City's project manager, and how subconsultants will work within the team structure. Describe the roles of the key individuals proposed to work on this project.

- **Provide an organizational chart and brief narrative. The total number of pages should not exceed three (3) pages. Indicate activities, responsibilities and key personnel on the organizational chart. Organizational chart may be submitted on 11 x 17 paper. Response should align with team's proposed MBE/WBE Compliance Plan provided in Consideration Item 1 above.**
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**CONSIDERATION ITEM 3b**

**TEAM'S PROJECT APPROACH**

**20 Points Maximum**

City is interested in team's overall understanding of the project scope and issues. Describe any significant project issues and the team's approach in addressing those issues. **Team's approach should address design considerations that will allow construction to occur without negatively impacting plant production.** Reference issues seen on similar scoped projects and the overall approach to mitigate those and other issues. Describe your team's methods to successfully complete the work; your team's understanding of the techniques and sequencing required; and how the prime firm will interface with the City's appointed representative. Please describe the major subconsultants' placement in the overall approach to the project.

- **Provide a narrative not to exceed five (5) pages.**
- 

**CONSIDERATION ITEM 4**

**EXPERIENCE OF PROJECT MANAGER AND PROJECT PROFESSIONAL (past 10 Years)**

**20 Points Maximum**

***(Project Manager – 12 points; Project Professional – 8 points)***

City is interested in the experience of the Project Manager and Project Professional that demonstrates history and success with projects of similar programs, budgets, and/or clients as the project described in this solicitation. Points will be awarded as indicated above. Only one individual per job responsibility should be designated. Project Manager and Project Professional must be employed by the prime firm and may be the same individual. Project Professional must be licensed as a professional engineer in the State of Texas at the time of submittal.

Demonstrated experience retrofitting chlorine disinfection to on-site generation/use of sodium hypochlorite is of primary interest.

List three (3) projects meeting these criteria which have been completed in the past ten (10) years for each individual.

- **Complete Form 7 – Experience of Project Manager. Please provide no more than one (1) page per project.**
  - **Complete Form 8 – Experience of Project Professional. Please provide no more than one (1) page per project.**
  - **Attach a resume of no more than two (2) pages for each individual.**
- 

**CONSIDERATION ITEM 5**

**PRIME FIRM'S COMPARABLE PROJECT EXPERIENCE (past 5 years)**

**15 points maximum**

City is interested in the prime firm's history and success with projects of similar programs, budgets, and/or clients as the project described in this solicitation. List three (3) projects meeting these criteria which have been completed in the past five years. In addition, City may consider history of firm in complying with project programs, schedules, and budgets on previous City projects.

Demonstrated experience retrofitting chlorine disinfection to on-site generation/use of sodium hypochlorite is of primary interest.

- **Provide a narrative not to exceed one (1) page. Complete Form 10 and provide no more than one (1) page per project.**
- 

**CONSIDERATION ITEM 6**

**MAJOR SCOPES OF WORK - COMPARABLE PROJECT EXPERIENCE (past 5 years)**

**15 points maximum**

The City has identified Major Scopes of Work to be provided for this project, which are included in the Scope of Services. Each scope of work can be accomplished through subcontracting other firms or utilizing the prime firm. The City is interested in the history and success of the firm proposed to perform the scope of work (subconsultant or prime), with projects of similar programs, budgets, and/or clients as the areas identified. List three (3) projects per Major Scope of Work meeting these criteria which have been completed in the past five years. In

addition, City may consider history of firms in complying with project programs, schedules, and budgets based on previous City projects. If more than one firm is listed for a particular Major Scope of Work, the City expects the work will be divided evenly among them. If more than one firm is listed for a particular Major Scope of Work, list three (3) projects per firm per scope of work. Provide no more than one page per firm per scope.

- Complete Form 11 for each Major Scope of Work listed in the Scope of Services. Provide no more than one page per Major Scope of Work, per firm. All major subconsultants listed in this item must also be included in your MBE/WBE compliance plan.
- 

**CONSIDERATION ITEM 7**

**TEAM’S EXPERIENCE WITH AUSTIN ISSUES**

**10 Points Maximum**

City is interested in team’s (including subconsultants) experience with Austin issues, as may be evidenced by work in the Austin area during the past five (5) years. Briefly describe experience in the following areas and reference projects relating to that experience:

- ◆ City of Austin site development and/or building permit requirements.
- ◆ Austin area construction in the public right-of-way.
- ◆ Austin area construction costs and practices.
- ◆ Austin environmental community, conditions and constraints.
- ◆ Public awareness and involvement in project development in the Austin area.
- ◆ Responsiveness due to proximity of projects to local office.

- Provide a brief narrative of no more than four (4) pages.
- 

**CONSIDERATION ITEM 8**

**CITY OF AUSTIN’S EXPERIENCE WITH PRIME FIRM (past 5 years)**

**10 Points Maximum**

The City will consider the history of the firm in complying with project programs, schedules, and budgets on previous City of Austin projects within the last five (5) years. Firms with previous projects with the City of Austin and have had no issues will receive 10 points. Points will be deducted if the City has had negative experience with the prime firm’s performance on City projects. Deductions are based on Consultant Evaluations completed by Project Managers at the end of each phase of the project.

Specific consideration items by phase may include:

- ◆ Timely completion of projects and timeliness of performance per PSA and

- authorized amendments.
- ◆ Timely, accurate, and complete payment applications and payments to subconsultants.
- ◆ Deliverables met criteria established in contract / resolution of significant issues in writing.
- ◆ Compliance with City ordinances on substitution/addition/deletion of subconsultants.
- ◆ Compliance with Minority and Women-Owned Business Procurement Program.
- ◆ Compliance with City standards, including regulatory compliance and permitting requirements.
- ◆ Conformance to City budget/cost requirements.
  - Preliminary, Design, and Bid/Award - estimates were within Fixed Construction Budget.
  - Construction - dollar value of change orders were <=5% of construction contract amount.
- ◆ Quality of work performed.

Firms who have had no previous projects with the City of Austin will receive a score equal to the average of all engineering firms in the data base with previous City projects.

---

## **CONSIDERATION ITEM 9**

### **INTERVIEWS (OPTIONAL)**

#### **15 Points Maximum**

The City may determine that it is necessary to interview short-listed firms prior to making a recommendation to the City Council. Staff intends to use the following guidelines for the optional interview process:

- ◆ The point difference between the first and second ranked firm is less than three points.
- ◆ The number of firms interviewed will depend on the closeness of the scores following evaluation of the written proposals.
- ◆ Staff will consider significant gaps in point separation between the top ranked firms in determining the number of firms to be interviewed.
- ◆ Only firms that are considered qualified to perform the work, on the basis of their written proposal, will be invited for interviews.
- ◆ No more than five firms will be interviewed.
- ◆ Staff may conduct interviews in other cases where staff believes it is in the best interest of the City.
- ◆ The City reserves the right to determine whether an interview will be conducted for every solicitation/project.

# CITY OF AUSTIN



## CITY CODE CHAPTER 2-9B MBE/WBE PROCUREMENT PROGRAM PROFESSIONAL SERVICES



**Project Name:**

**Project/Solicitation Number:**

**Date:**



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**MBE/WBE GOALS**

Annual/Project Participation Goals:		Annual/Project Participation Subgoals:	
MBE	%	African American	%
_____			
WBE	%	<b>OR</b>	Hispanic
_____			%
		Asian/Native American	%
		_____	
		WBE	%
		_____	

**OVERVIEW**

This document should be read in conjunction with the City of Austin’s Minority-owned and Women-owned Business Enterprise Procurement Program Ordinance for Professional Services (Chapter 2-9B of the Austin City Code) and the Small and Minority Business Resources Department (SMBR) Rules. The definitions contained in Chapter 2-9B apply to this document. The City Code and Rules are amended from time to time and the Proposer is responsible for ensuring they have the most up to date version. The City Code and Rules are incorporated into this document by reference. Copies of Chapter 2-9B and SMBR Rules may be obtained online at <http://www.austintexas.gov/department/small-and-minority-business/about> or from SMBR, 4201 Ed Bluestein, Austin, Texas 78721 (512) 974-7600.

Firms or individuals submitting responses to this Request for Bid agree to abide by the City’s Minority-owned and Women-owned Business Enterprise (MBE/WBE) Procurement Program and Rules. The City’s MBE/WBE Program is intended (1) to promote and encourage MBEs and WBEs to participate in business opportunities with the City of Austin; (2) to afford MBEs and WBEs an equal opportunity to compete for work on City contracts; and (3) to encourage contractors to provide subcontracting opportunities to certified MBEs and WBEs by soliciting such Firm for subcontracting opportunities. The City of Austin and its contractors shall not discriminate on the basis of race, color, national origin, disability, or gender in the award and performance of contracts.

The City encourages Proposers to achieve the MBE/WBE participation goals and subgoals for this contract. However, Proposers may comply with the City Code and Rules without achieving the participation goals so long as they make and document Good Faith Efforts that would allow MBE and WBE participation per Section 2-9B-21 of the City Code and Section 9.1 of the Rules. Proposers that do not meet the project’s goals and subgoals are subject to Good Faith Efforts review.

Prior to the due date and time specified in the City’s solicitation documents, all Proposers (including those Firms certified as MBE/WBEs) shall submit: (1) an *MBE/WBE Compliance Plan* (Appendix A); and (2) if it is anticipated the project goals will not be met, all appropriate documentation to demonstrate Good Faith Efforts to meet the project goals. Any questions regarding preparation of the *Compliance Plan* should be directed to SMBR at [SMBRComplianceDocuments@austintexas.gov](mailto:SMBRComplianceDocuments@austintexas.gov). Such contact will not be a violation of the Anti-Lobbying Ordinance.

The City has implemented Anti-Lobbying Ordinance (Chapter 2-7 of the Austin City Code). Under Chapter 2-7, there is a “no-contact” period from the date the City issues a solicitation until the contract is executed. During the

“no-contact” period, a person responding to a City solicitation can speak only to the contract’s authorized contact person regarding their solicitation response. Chapter 2-7 allows certain exceptions; for instance, a person responding to a City solicitation may speak to SMBR regarding this *Compliance Plan*. See the full language of the City Code or solicitation documents for further details.

**If the *Compliance Plan* and Good Faith Efforts documentation are not submitted prior to the due date specified in the solicitation documents, the bid will be deemed non-responsive and not be accepted for consideration.**

## **COMPLIANCE PLAN INSTRUCTIONS**

**(See Appendix A)**

SMBR may request written clarification of items listed on the *Compliance Plan*. However, there will be no further opportunity for the Proposer to augment the MBE/WBE participation originally listed in the *Compliance Plan* or to demonstrate Good Faith Efforts that were not made prior to the submission of the *Compliance Plan*. Changes to the *Compliance Plan* are permitted only after contract execution and only with prior written approval of SMBR.

Please type or clearly print all information, use “none” or “N/A” where appropriate, and sign and date the *Compliance Plan* as indicated. ***Compliance Plans not complying with the Compliance Plan Instructions shall be rejected as non-responsive. Submissions not utilizing the forms provided with the solicitation may render the submission nonresponsive or noncompliant.***

### **Section I Project Identification and Goals**

This section includes the pre-printed Project Name, Project/Solicitation Number, and goals and/or subgoals. The Proposer does not need to fill in any information under Section I.

### **Section II Proposer Information**

The Proposer should complete this section with its information and sign in the space provided. The portion of Section II marked as “Reserved for City of Austin SMBR Only” should be left blank.

### **Section III Compliance Plan Summary**

This section is a summary of subconsultant participation in this solicitation. Proposers should complete Sections IV-VII, described below, before attempting to complete Section III. After completing Sections IV-VII, calculate the percentage of MBE/WBE participation for each goal and enter the information in the blanks provided. Because Section III is a summary, if there are any inconsistencies between Sections IV-VII and Section III, the calculations contained in Sections IV-VII will prevail. If the Proposer indicates that they do not anticipate meeting the goals with certified MBE/WBE firms, then the Proposer shall submit documentation detailing their Good Faith Efforts to meet the established MBE/WBE goals. The Compliance Plan will be reviewed and approved by the Small and Minority Business Resources Department.

### **Section IV Disclosure of MBE and WBE Participation**

Please list all certified MBE/WBEs subconsultants, using the legal name under which they are registered to do business with the City of Austin, to be used in the performance of this contract. Please list the percentage of the overall contract that corresponds with the value of the work the subconsultants will be performing themselves. Do not include the value of work that the MBE/WBEs subconsultants will be subcontracting to second-level subconsultants.

By listing certified MBE and WBE Firms on the Compliance Plan, the Proposer indicates that both parties acknowledge the price and scope of work and that they are prepared to contract for that price and scope if the City awards the project to the Proposer. A Letter of Intent (LOI) does not replace a binding contract between a prime consultant and a subconsultant.

Before completing Section IV of the Compliance Plan, please read the following instructions regarding how to count MBE/WBE participation:

(A) Only the value of the work actually performed by the MBE/WBE shall be counted toward the goals. This includes:

- (1) work performed by the MBE/WBE's own forces;
- (2) the cost of supplies, materials, or equipment purchased, leased, or otherwise obtained by the MBE/WBE for the work of the contract (except that supplies, materials, and equipment purchased or leased from the prime consultant or its affiliate may not be counted toward the goal); and
- (3) fees or commissions charged by an MBE/WBE for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a contract, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

(B) When a Proposer purchases supplies, materials, or equipment from an MBE/WBE, the cost of those supplies, materials, or equipment shall be counted toward the goals as follows:

- (1) If the supplies, materials, or equipment are obtained from an MBE/WBE that is a Manufacturer or Regular Dealer, 100 percent of the payment for the supplies, materials, or equipment shall be counted toward the goals.
- (2) If the supplies, materials, or equipment are obtained from an MBE/WBE that is neither a Manufacturer nor a Regular Dealer, the cost of the materials and supplies themselves shall not be counted toward the goals. However, fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, may be counted toward the goals if the payment of such fees is a customary industry practice and such fees are reasonable and not excessive as compared with fees customarily allowed for similar services.

(C) When an MBE/WBE subconsultant listed on the Compliance Plan subcontracts part of the work of its contract to another Firm, the value of that second-level subcontracted work may not be counted toward the goals based on the initial subconsultant's MBE/WBE certification. Please see Section VI for an explanation of how to count the value of second-level subconsultants' work.

(D) A Firm owned by a minority woman may be certified as both an MBE and a WBE (dual certified). On a single contract, the value of the work performed by a dual certified subconsultant may not be counted toward both the MBE and the WBE goals. The Proposer must decide whether to designate the dual certified subconsultant as an MBE or a WBE in the Compliance Plan for the purpose of meeting the goals set for that contract. That designation may not be changed for the duration of the contract.

(E) When an MBE/WBE performs as a participant in a certified Joint Venture, only the portion of the contract value that is the result of the distinct, clearly defined portion of the work that the MBE/WBE performs with its own forces and for which it is at risk shall be counted towards the project goals. For more specific information regarding requirements and evaluations of certified MBE/WBE Joint Ventures, please see the City's MBE/WBE Procurement Program Rules or contact SMBR's Certification Division.

(F) Only expenditures to an MBE/WBE contractor that is performing a Commercially Useful Function shall be counted toward the project goals. If SMBR makes an initial determination that an MBE/WBE is not performing a Commercially Useful Function given the type of work involved and normal industry practices, the MBE/WBE may present evidence to rebut this presumption.

(G) To be counted toward project goals, MBE/WBEs must be certified by SMBR prior to the due date to submit the Compliance Plan as specified in the City's solicitation documents. A Firm that is certified as an MBE/WBE at the time that the Compliance Plan is filed may cease to be a certified Firm before the contract is completed. Only the value of the work performed by such a Firm while it is certified may be counted toward the project goals.

## **Section V Disclosure of Non-Certified Subconsultants**

Please list all known non-certified subconsultants, using the legal name under which they are registered to do business with the City of Austin, to be used in the performance of this contract. If Proposer will not use any non-certified Firms, please write "N/A" in the first box on this page. If Proposer is not completing this *Compliance Plan* in response to a Rotation List solicitation, please list the percentage of the overall contract that corresponds with the value of the work the subconsultants will be performing themselves. Do not include the value of work that the MBE/WBE subconsultants will be subcontracting to second-level subconsultants. **If Proposer is completing this *Compliance Plan* in response to a Rotation List solicitation, do not list the percentages.**

**If additional scopes of work are identified in this section as available for subcontracting beyond those identified in the availability lists provided, Proposer must contact SMBR to request an availability list of certified Firms for those additional scopes of work.**

The scopes of work indicated in Section V will be considered subcontracting opportunities for MBEs and WBEs, unless it is demonstrated that certified MBEs or WBEs are unavailable or do not possess the requirements in the technical portion of the solicitation to perform the work involved. If Proposer did not meet the project goals, Proposer must explain in the space provided why MBEs/WBEs were not used as subconsultants. If Proposer did meet the project goals, please write "Goals Met" in the space provided.

## **Section VI Disclosure of Second-Level Subconsultants**

Please complete this section if Proposer knows that one or more of Proposer's subconsultants will subcontract part of the work of their contracts to second-level subconsultants. In the last line of each entry box, please write the name of the first-level subconsultant that will be subcontracting work to the second-level subconsultant. Identify second-level contractors by the legal name under which they will be registered to do business with the City. The first-level subconsultant should be listed in Section IV or Section V. If Proposer is not aware of any second-level subconsultants, please write "N/A" in the first box on this page.

If Proposer is not completing this *Compliance Plan* in response to a Rotation List solicitation, please list the percentage of the overall contract that corresponds with the value of the work the second-level subconsultants will be performing themselves. **If Proposer is completing this *Compliance Plan* in response to a Rotation List solicitation, do not list the percentages.**

As discussed in Section IV above, when an MBE/WBE subconsultant subcontracts part of the work of its contract to another Firm, the value of that second-level subcontracted work may not be counted toward the goals based on the initial subconsultant's MBE/WBE certification. The value of the second-level subcontracted work may be counted toward the project goals only based on the second-level subconsultant's own MBE/WBE certification, if any. Work that an MBE/WBE subcontracts to a non-certified Firm does not count toward the goals. Work that an MBE/WBE subconsultant contracts to another certified Firm shall not be counted twice towards the goal.

## **Section VII MBE/WBE *Compliance Plan* Check Sheet**

Please complete the MBE/WBE *Compliance Plan* Check Sheet with the information requested.

## **GOOD FAITH EFFORTS INSTRUCTIONS**

**(See Appendices B and D)**

The Proposer has a responsibility to make a portion of the work available to MBE/WBE subconsultants so as to facilitate meeting the goals or subgoals. If the Proposer cannot achieve the goals or subgoals, documentation of the Proposer's Good Faith Efforts to achieve the goals or subgoals must be submitted at the same time as the *Compliance Plan*. The SMBR Director will review the documentation provided and determine if the Proposer made sufficient Good Faith Efforts. That there may be some additional costs involved in soliciting and using MBEs and WBEs is not a sufficient reason for a Proposer's failure to meet the goals and subgoals, as long as such costs are reasonable. However, a Proposer is not required to accept a higher quote from a subconsultant order to meet a goal or subgoal.

### **Contacting Potential MBE/WBE Subconsultants**

The City has determined the scopes of work for this project and provided an Availability List of all the MBE and WBE firms certified to perform those scopes. The Availability List is found at Appendix D and has two sections: *Vendors Within the Significant Local Business Presence (SLBP) Area* and *Vendors Outside the Significant Local Business Presence (SLBP) Area*. As part of Good Faith Efforts, Proposers **must** contact **all** firms listed in the *Vendors Within the SLBP Area* section. Please note that every firm on the Availability List – outside the SLBP – is City-certified as an MBE or WBE for purposes of meeting the project goals, and Proposers are encouraged to contact all the firms. If a Proposer identifies an additional scope of work for this project not identified in the solicitation, the Proposer must request from SMBR an Availability List for that scope of work and contact all firms, if any, on such list. The SMBR Director determines whether the Proposer has made sufficient Good Faith Efforts if goals or subgoals are not met.

**The City neither warrants the capacity or availability of any Firm, nor does the City guarantee the performance of any Firm indicated on the availability list.**

The availability list is sorted in numerical sequence by National Institute of Governmental Purchasing (NIGP) Commodity Code. It includes all certified MBE/WBE vendors for the scopes of work identified by the City as being potentially applicable to this project. However, the availability list is not a comprehensive identification of all areas of potential subconsulting opportunities. If a Proposer identifies one or more work areas that are appropriate subconsulting opportunities that not included on the availability list, the Proposer shall contact SMBR to request the availability list for MBE and WBE Firms in those areas. Requests for supplemental availability lists will be evaluated as a part of the Proposer's Good Faith Efforts to meet the goals.

If the Proposer believes any of the work areas on the availability list are not applicable to the project's scope of work or if the Proposer believes that the lists are inaccurate, the Proposer shall notify the authorized contact person of the concern immediately and prior to submission of the response to the solicitation. All Proposers will be notified in writing of any inaccuracy by addendum to the solicitation. Concerns about a particular MBEs/WBE's certification status may be addressed to SMBR at [SMBRComplianceDocuments@austintexas.gov](mailto:SMBRComplianceDocuments@austintexas.gov). If the Proposer wants to use a certified subconsultant that does not appear on this list, Proposer may either request the certified subconsultant to furnish proof of certification and the specific work areas for which it has been certified or request such information from SMBR.

Appendix B shows the format for collecting required information from the subconsultants on the *Vendors Within SLBP Area* availability list. The information must be obtained at least seven (7) business days prior to the submission of the *Compliance Plan*; alternate formats may be acceptable as long as they gather the same required information. Attached to the Subconsultant Vendor List at Appendix D is a list containing the names and addresses of all these MBE/WBE Firms in alphabetical order. This list is in label format and is designed to facilitate the printing of mailing labels.

The following codes are used on the availability lists:

G	Gender code	LOC	A firm's two-digit location code (e.g., SL or TX)
F	Female	AU	Austin
M	Male	SL	Significant Local Business Presence (SLBP)
		TX	Outside SLBP
MBE	A firm certified as a Minority-owned Business Enterprise	WBE	A firm certified as a Woman-owned Business Enterprise
MWB	A firm certified as both a Minority-owned & Woman-owned Business Enterprise	WMB	A firm certified as both a Woman-owned & Minority-owned Business Enterprise
MWDB	A firm certified as a Minority-owned, Woman-owned, and Disadvantaged Business Enterprise	WMDB	A firm certified as a Woman-owned, Minority-owned, and Disadvantaged Business Enterprise

### Good Faith Efforts Review

If goals are not met, SMBR will examine the *Compliance Plan* and the Good Faith Efforts documentation submitted with the *Compliance Plan* to ensure that the Proposer made Good Faith Efforts to meet the project goals or subgoals. In determining whether the Proposer has made Good Faith Efforts, SMBR will consider, at a minimum, the Proposer's efforts to do the following:

- (A) Solicit certified MBE/WBE subconsultants with a Significant Local Business Presence (SLBP) and request a response from those interested subconsultants who believe they have the capability to perform the work of the contract through at least two reasonable, available, and verifiable means. The Proposer must solicit this interest more than seven (7) business days prior to submission of the Compliance Plan to allow sufficient time for the MBEs or WBEs to respond. (The date bids/proposals are due to the City should not be included in the seven day solicitation criteria.) The Proposer must state a specific and verifiable reason for not contacting each certified Firm with a significant local business presence.
- (B) Provide interested MBEs/WBEs with adequate information about the plans, specifications, and requirements of the contract, including addenda, in a timely manner, to assist them in responding and submitting a proposal.
- (C) Negotiate in good faith with interested MBEs/WBEs that have submitted bids/proposals to the Proposer. An MBE/WBE that has submitted a bid to a Proposer but has not been contacted within five (5) business days of submission of the bid may contact SMBR to request a meeting with the Proposer. Evidence of good faith negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subconsulting; and evidence as to why additional agreements could not be reached for MBEs/WBEs to perform the work. Bid shopping is prohibited.
- (D) Select portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the MBE/WBE goals or subgoals will be met. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE/WBE participation, even when the Proposer might otherwise prefer to perform these work items with its own forces.

- (E) Publish solicitation notice in a local publication (i.e. newspaper, trade association publication, or via electronic/social media).
- (F) Use the services of available community organizations; minority persons/women consultants' or groups in the applicable field for the type of work described in this solicitation; local, state, and federal minority persons/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs.
- (G) Seek guidance from SMBR on any questions regarding compliance with this section.

The following factors may also be considered by SMBR in determining compliance through good faith efforts; however, they are not intended to be a mandatory checklist, nor are they intended to be exclusive or exhaustive:

- (A) Whether the Proposer made efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the City or consultant.
- (B) Whether the Proposer made efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

In assessing minimum good faith efforts, SMBR may consider whether the Proposer sought assistance from SMBR on any questions related to compliance with this section. In addition, SMBR may also consider the performance of other Proposers successfully meeting the goals.

The ability or desire of a Proposer to perform the work of a contract with its own organization does not relieve the Proposer of the responsibility to make Good Faith Efforts.

Proposers may reject MBE/WBEs as unqualified only following thorough investigation of their capabilities. The MBE/WBE's membership or lack of membership in specific groups, organizations, or associations, and political or social affiliations (for example union or non-union employee status), are not legitimate causes for the rejection or non-solicitation of bids/proposals in the Proposer's efforts to meet the project goals or subgoals.

**At a minimum, the following should be submitted to support Good Faith Effort documentation (documentation is not limited to this list):**

- Fax logs, emails, and/or copies of documents sent to firms within the SLBP area.
- Copies of written correspondence to certified firms (include names, addresses, and other identifying information).
- Phone logs with responses (*Phone contacts, alone, will not be sufficient.*).
- Lists and copies of letters sent by mail, hand delivered, or e-mailed.
- Breakdown of negotiations made with certified firms.
- Copies of advertisements with local newspapers, trade associations, Chambers of Commerce and/or any other public media.
- Other communications regarding contacts with trade associations and Chambers of Commerce.

**The following additional Good Faith Efforts factors may also be considered**

- Copies of emails or phone logs regarding assistance in bonding, lines of credit, or insurance (as required by City or Consultant).
- Copies of emails or phone logs regarding assistance in obtaining equipment, supplies, materials, or services.
- Copies of all proposals received in response to Proposer contacting other Firms.

## **POST-AWARD INSTRUCTIONS**

**(See Appendix C)**

### **Confirmation Letters**

All Proposers are required to include copies of the confirmation letters received from subconsultants, confirming the Subconsultants' willingness to provide services should the contract be awarded.

Changes to the *Compliance Plan* including additions, deletions, contract changes, or substitutions of subconsultants are permitted only after contract execution and only with prior written approval of SMBR. Request for changes to the *Compliance Plan* must be submitted on the *Request for Change of Compliance Plan Form* for all levels of subconsulting and must be approved by the SMBR Director prior to adding, deleting, changing or substituting any subconsultant.

### **Post-Award Monitoring**

The City will monitor post-award compliance information regarding the use of certified MBE/WBE Firm(s) listed on the *Compliance Plan*. The Consultant will be required to submit post award reports detailing the utilization of all subconsultants. The reports and other information regarding post-award compliance will be discussed with the successful Proposer. The following information on Payment Verification, Change Order/Contract Amendments, and Progressive Sanctions provides an overview of some of the post-award monitoring process.

#### **▪ Payment Verification**

Proposers are advised that the contract resulting from this solicitation includes a subconsultant payments clause. This clause requires all subconsultants to be paid within ten (10) calendar days from the date that the Proposer has been paid by the City for invoices submitted by subconsultants.

The Consultant shall submit a *Subconsultant/Supplier Awards and Expenditures Report* to the project manager and/or contract administrator at the time specified by the managing department. The report shall be in the format required by the City and shall include all awards and payments to subconsultants for goods and services provided under the contract during the previous month. This report may be used by the City to verify utilization of and payment to MBEs and WBEs.

The Consultant and/or any subconsultant whose subcontracts are being counted toward the MBE/WBE requirements shall allow the City access to records relating to the contract, including but not limited to, subcontracts, payroll records, tax information, and accounting records, for the purpose of determining whether the MBEs/WBEs are performing the scheduled subcontract work.

In determining achievement of MBE/WBE goals, the participation of an MBE/WBE subconsultant shall not be counted until the amount being counted toward the goal has been paid.

#### **▪ Change Order/Contract Amendments**

The goals on this contract shall also apply to change orders that require work beyond the scope(s) of trades originally required to accomplish the project. The Proposer is required to make Good Faith Efforts to obtain MBE/WBE participation for additional scopes of work.

Change orders that do not alter the type of trades originally required to accomplish the project may be undertaken using the subconsultants already under contract to the Consultant. Project managers will have automatic SMBR

approval to authorize any change order that **increases** the contract amount for an **existing** certified subconsultant and is **within** the existing scope being performed by that subconsultant.

▪ **Progressive Sanctions**

The successful Proposer's *Compliance Plan* will be incorporated into the resulting contract with the City and shall be considered part of the consultant's performance requirements. Progressive sanctions may be imposed for failure to comply with Chapter 2-9B of the City Code, including:

- Providing false or misleading information in Good Faith Efforts documentation, post award compliance, or other Program operations;
- Substituting Subconsultants without first receiving approval for such substitutions, which may include the addition of an unapproved Subconsultant and failure to use a Subconsultant listed in the approved *Compliance Plan*; and
- Failure to comply with the approved *Compliance Plan* without an approved Request for Change, an approved Change Order, or other approved change to the Contract.

Please refer to Section 2-9B-25 of the City Code and SMBR Rule 11.5 for additional information.

**MBE/WBE COMPLIANCE PLAN**

*All sections (I-VII) must be completed and submitted prior to the due date in the solicitation documents*

**Section I — Project Identification and Goals**

<b>Project Name</b>	
<b>Solicitation Number</b>	

Project Goals or Subgoals	
MBE	%
African American	%
Hispanic	%
Asian/Native American	%
WBE	%

**Section II — Proposer Company Information**

Name of Company	
Vendor Code	
Address	
City, State Zip	
Phone	
Fax & E-Mail	
Name of Contact Person	
Is your company registered on Vendor Connection?	Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If yes, provide Vendor ID #: _____</i> If No, please note: All vendors and subconsultants/consultants must register with COA's Vendor Connect prior to award. See Link for registration information at <a href="https://www.ci.austin.tx.us/financeonline/finance/index.cfm">https://www.ci.austin.tx.us/financeonline/finance/index.cfm</a>
Is your company COA M/WBE certified?	Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If yes, please indicate:</i> MBE <input type="checkbox"/> WBE <input type="checkbox"/> MBE/WBE Joint Venture <input type="checkbox"/>

**I certify that the information included in this *Compliance Plan* is true and complete to the best of my knowledge and belief. I further understand and agree that this *Compliance Plan* shall become a part of my contract with the City of Austin.**

\_\_\_\_\_  
Name and Title of Authorized Representative

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**For SMBR Use Only:**

*I have reviewed this compliance plan and found that the Proposer **HAS**  or **HAS NOT**  complied as per the City Code Chapter 2-9B.*

Reviewing Counselor \_\_\_\_\_

Date \_\_\_\_\_

*I have reviewed this compliance plan and **Concur**  or **Do Not Concur**  with recommendation.*

Director/Assistant Director \_\_\_\_\_

Date \_\_\_\_\_

**Section III — Compliance Plan Summary**

**Note:**

- Fill in all the blanks.
- For project participation numbers use an EXACT number. DO NOT USE: approximate, plus or minus (+ -), up to, to be determined (TBD), < >, or any other qualifying language.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.

**Total Base Bid (if applicable):** \$ \_\_\_\_\_

<b>Goals: Proposed Participation</b>		
MBE	\$	%
WBE	\$	%
Non-Certified	\$	%

<b>SubGoals: Proposed Participation</b>		
African American	\$	%
Hispanic	\$	%
Native/Asian American	\$	%
WBE	\$	%
Non-Certified	\$	%

**Proposer's own participation in base bid (less any amount subcontracted):**

**Amount:** \$ \_\_\_\_\_ **Percentage:** \_\_\_\_\_%

**Are the stated goals or subgoals of the solicitation met?** *(If no, attach documentation of Good Faith Efforts)*

Yes  No

**For SMBR Use Only:**

Verified Goals OR Subgoals:

MBE \_\_\_\_\_ %      WBE \_\_\_\_\_ %      Prime \_\_\_\_\_ %      Non-Certified \_\_\_\_\_ %

African-American \_\_\_\_\_ %      Hispanic \_\_\_\_\_ %      Native/Asian American \_\_\_\_\_ %;      WBE \_\_\_\_\_ %

**Section IV — Disclosure of MBE and WBE Participation  
Duplicate As Needed**

**Note:**

- Fill in all the blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of MBE/WBE Certified Firms as registered with Vendor Connection.
- Select either MBE or WBE for dually certified firms to indicate which certification will count towards the MBE or WBE goal.
- Contact SMBR to request an availability list of certified Firms for additional scopes of work that were not included on the original availability list.

<b>Name of MBE/WBE Certified Firm</b>	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/ Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Commodity codes/describe services	
Percent of Subcontract	%

<b>Name of MBE/WBE Certified Firm</b>	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/ Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Commodity codes/describe services	
Percent of Subcontract	%

<b>Name of MBE/WBE Certified Firm</b>	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/ Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Commodity codes/describe services	
Percent of Subcontract	%

<b>Name of MBE/WBE Certified Firm</b>	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/ Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Commodity codes/describe services	
Percent of Subcontract	%

**Section V — Disclosure of Non-Certified Subconsultants  
Duplicate As Needed**

**Note:**

- Fill in all the blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of Non-Certified Subconsultants as registered with the City of Austin.

**Are Goals Met?**      Yes  No  If no, state reason(s) below and attach documentation:

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<b>Subconsultant</b>	
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
Reason MBE/WBE not used	

<b>Subconsultant</b>	
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
Reason MBE/WBE not used	

<b>Subconsultant</b>	
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
Reason MBE/WBE not used	

<b>Subconsultant</b>	
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
Reason MBE/WBE not used	

**Section VI — Disclosure of Second-Level Non-Certified Subconsultants  
Duplicate As Needed**

**Note:**

- Fill in all the blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of Non-Certified Subconsultants as registered with the City of Austin.

<b>Second-Level Subconsultant</b>	
City of Austin Certified?	No <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
First-Level Subconsultant	

<b>Second-Level Subconsultant</b>	
City of Austin Certified?	No <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
First-Level Subconsultant	

<b>Second-Level Subconsultant</b>	
City of Austin Certified?	No <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
First-Level Subconsultant	

<b>Second-Level Subconsultant</b>	
City of Austin Certified?	No <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Percent of Subcontract	%
Commodity codes/describe services	
First-Level Subconsultant	

## Section VII — MBE/WBE Compliance Plan Check List

The MBE/WBE *Compliance Plan* must be completed and submitted by the time specified in the solicitation documents. If the goals or subgoals were not achieved, Good Faith Efforts documentation must be submitted with the MBE/WBE *Compliance Plan*. All questions in Section VII **must** be completed and submitted with the *Compliance Plan* if goals or subgoals are not met.

- 
1. Were written notices sent to all MBE/WBEs from the Significant Local Business Presence (SLBP) availability list at least seven (7) business days prior to the submission of this *Compliance Plan*? Yes  No
2. Were two separate methods used to contact all MBE/WBEs from the SLBP availability list at least seven (7) business days prior to the submission of this *Compliance Plan*? Please list the two methods used to contact MBE/WBEs. (*i.e. fax, email, mail, and/or phone*)  
List Methods: \_\_\_\_\_ Yes  No
3. Were steps taken to follow up with interested MBE/WBEs? Yes  No
4. Were advertisements placed with a local publication? (*i.e. newspaper, minority or women organizations, or electronic/social media*)? **If no, please attach.** Yes  No
5. Were written notices sent to Minority or Women organizations? **If no, please attach.** Yes  No
6. Were additional elements of work identified to achieve the goals or subgoals? Yes  No   
If yes, please explain: \_\_\_\_\_
7. Was SMBR contacted for assistance? Yes  No   
If yes, complete following:  
Contact Person: \_\_\_\_\_  
Date of Contact: \_\_\_\_\_  
Summary of Request: \_\_\_\_\_
8. Were Minority or Women organizations contacted for assistance? Yes  No   
If yes, complete following:  
Organization(s): \_\_\_\_\_  
Date of Contact: \_\_\_\_\_  
Summary of Request: \_\_\_\_\_
9. Is the following documentation attached to support good faith effort requirements to achieve goals or subgoals? (**Documentation is not limited to this list.**)
- Copy of written solicitation sent to MBE/WBEs in SLBP area Yes  No
- Two separate methods of notices sent to MBE/WBEs in SLBP area (fax transmittals, emails, and/or phone log). Yes  No
- Copy of advertisements Yes  No
- Copy of notices sent to Minority and Women organizations Yes  No
- Documentation that demonstrates efforts made to reach agreements with the MBE/WBEs who responded to Proposer's written notice? (*i.e. copy of bids/proposals, spreadsheet breakdown of MBE/WBEs considered follow-up emails/phone logs and/or correspondence between Proposer and interested MBE/WBEs*) Yes  No



**CONFIRMATION LETTER**

(Printed on Subconsultant Letterhead)

Date

Contact Name  
Business Name  
Street Address  
City, State Zip

Re: Solicitation # \_\_\_\_\_

Dear (Contact Name):

This letter is to confirm that (insert Subcontractor name here) is pleased to provide (insert Prime Contractor name here) (insert service here) for the above-referenced project.

We understand that we will be completing \_\_\_% of the work on this project and look forward to working with you and the City of Austin should your team be awarded the project.

Sincerely,

(insert signature)

Contact Name  
Title  
Business Name

**City of Austin  
Subcontract Vendor List - VCRCVS**

Solicitation No.: RFQS 6100 CLMP191 Albert H. Ullrich WTP Conversion to OSGSH

Version No.: 1

Phase: 1

C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
<b>Vendors Within the SLBP Area</b>					
<b>90607 Architect Services, Professional</b>					
EMI7074695 ACME ARCHITECTURE 1001 E 8th St Austin Tx 78702-3249		512-477-1727 512-477-9876 EMILY@CLAYTONLANDLITTLE.COM	WDB	F/Caucasian	AU
TAN4546250 ALAN Y TANIGUCHI ARCHITECT & Assoc Inc 1609 W 6th St Austin Tx 78703-5059		512-474-7079 512-474-7579 evan@taniguchi-arch.com	MB	M/Asian	AU
V00000909861 ANA D GALLO 1501 Barton Springs Rd #230 Austin Tx 78704		512-236-0868 5122360868 ana@anagallo.com	MWDB	F/Hispanic	AU
ASD7048240 ASD CONSULTANTS INC 8120 N Ih 35 Austin Tx 78753		512-836-3329 512-836-3802 curtis2aia@aol.com	MDB	M/African American	AU
ARC7068555 AUSTIN ARCHITECTURE PLUS INC 1907 N Lamar Blvd Ste 260 Austin Tx 78705-4900		512-478-0970 512-478-0920 info@austinarchplus.com	WDB	F/Caucasian	AU
VS0000029061 B+V Design, LLC 208 W. 4th St., 3a Austin Tx 78701		512-293-6290 5124741988 stephi@b-vdesign.com	WB	F/Caucasian	AU
BAR7168210 BARNES GROMATZKY KOSAREK 1508 W. 5th Street, Suite 200 Austin Tx 78703-5137		512-476-7133 512-478-2624 albin@bgkarchitects.com	MB	M/Hispanic	AU
VC0000102050 BENZ RESOURCE GROUP INC 1101-B E 6th St Austin Tx 78702		512-220-9542 512-220-9543 BENZ@BENZRESOURCEGROUP.COM	WDB	F/Caucasian	AU
BLG0714750 BLGY INC 2204 Forbes Dr Ste 101 Austin Tx 78754-5143		512-977-0390 512-977-0838	MB	M/African American	AU
V00000929802 Bhavani Singal 5409 Woodrow Ave Apt C Austin Tx 78756		5127109705 vani@workshopno5.com	MWDB	F/Asian	AU

## City of Austin Subcontract Vendor List - VCRCVS

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
CAR8304844 CARTER DESIGN ASSOC INC 817 W 11th St Austin Tx 78701-2009		512-476-1812 512-476-1819 CDA@CARTERDESIGN.NET	MWDB	F/African American	AU
COT8308600 COTERA + REED ARCHITECTS INC 812 San Antonio St., Ste. 406 Austin Tx 78701		512-472-3300 512-472-3611 info@coterareed.com	MDB	M/Hispanic	AU
V00000909095 DK Studio, pc 611 West 15th Street Austin Tx 78701		512-473-8909 dkett@studiodk.com	WB	F/Caucasian	AU
ELI7156085 ELIZABETH SALAIZ ARCHITECT INC 2305 Rundell Pl Austin Tx 78704-3027		512-761-4546 esarch@sbcglobal.net	MWB	F/Hispanic	AU
FAC8301027 FACILITIES RESOURCE INC 9737 Great Hills Trail Suite 305 Austin Tx 78759		512-371-1232 512-371-9155 dross@fri-texas.com	WDB	F/Caucasian	AU
V00000906830 Gamble Osgood Collaborative, LLC 4015 Avenue D Austin Tx 78751		512-203-6110 sarah.gamble@gocoaustin.com	WB	F/Caucasian	AU
CAS7072670 JAIME BEAMAN AIA INC 3821 Juniper Trace, Suite 104 Austin Tx 78738-		512-458-5700 512-458-5755 JBEAMAN@CASABELLA-ARCHITECTS.COM	MDB	M/Hispanic	SL
VS0000027746 Jacqui Dodson AIA Architecture and Interior Design Inc 2105 Arpdale St Austin Tx 78704		512-699-9708 jacqui@jdaistudio.com	WB	F/Caucasian	AU
KCD8308712 K+CDA ASSOCIATED ARCHITECTS 817 W 11th St Austin Tx 78701-2009		512-476-1812 512-476-1819	MWB	F/African American	AU
VS0000011600 Karen A McGraw 4315 Ave C Austin Tx 78751		5124592261 mcgrawka@earthlink.net	WB	F/Caucasian	AU
LIM7079715 LIMBACHER & GODFREY INC 2124 E 6th St Unit 102 Austin Tx 78702		512-450-1518 512-320-1916 info@limbacher-godfrey.com	WB	F/Caucasian	AU

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LOP8322397 LOPEZ SALAS ARCHITECTS INC 9901 Brodie Lane, Suite 160 Austin Tx 78748		5125221959 lenz@lopezsalas.com	MDB	M/Hispanic	AU
VS0000025782 Land Interactive, LLC 608 West Monroe Suite C Austin Tx 78704		512-428-6738 spartridge@ndlitx.com	WDB	F/Caucasian	AU
VC0000101572 MCCANN ADAMS STUDIO 515 Congress Ave, Ste 1600 Austin Tx 78701		512-732-0001 512-732-0004 JANAM@MCCANNADAMSSTUDIO.COM	WDB	F/Caucasian	AU
MIR7167890 MIRO RIVERA ARCHITECTS INC 505 Powell St Austin Tx 78703-5121		512-477-7016 512-476-7672 rosa@mirorivera.com	MDB	M/Hispanic	AU
MAR3044500 MWM DESIGNGROUP INC 305 E Huntland Dr Ste 200 Austin Tx 78752		512-453-0767 512-453-1734 juliah@mwminc.com	WDB	F/Caucasian	AU
VIL5001500 NEGRETE & KOLAR ARCHITECTS LLP 11720 North Ih35 Austin Tx 78753		512-474-6526 512-474-6761 dnegrete@nekoarch.com	MDB	M/Hispanic	AU
VS0000036953 OFFICE FOR LOCAL ARCHITECTURE LLC 4105 Ave G Apt B Austin Tx 78751		512-786-1101 contact@ola-austin.com	WB	F/Caucasian	AU
SIT4249250 SITE SPECIFICS INC 700 N Lamar Blvd Ste 200a Austin Tx 78703-5430		512-472-5252 512-472-2224 specificsites@aol.com	WDB	F/Caucasian	AU
VC0000103087 STUDIO 8 ARCHITECTS INC 611 W 15th St Austin Tx 78701		512-473-8989 512-473-8982 MILTON.HIME@STUDIO8ARCHITECTS.COM	MB	M/Hispanic	AU
VC0000103455 STUDIO BALCONES LLC 702 San Antonio Street Austin Tx 78701		512-383-8815 jennifer@studiobalcones.com	WB	F/Caucasian	AU
SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752		512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU

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	VC0000102925 SUSAN H WELKER 4911 Rollingwood Dr Austin Tx 78746	512-329-5998 512-329-5998 SWELKER@HARRISWELKERARCHITECTS.COM	WDB	F/Caucasian	AU
	V00000918095 Spring Architects, Inc. 2003 S. Lamar Blvd. Ste. 9 Austin Tx 78704	512-626-2197  andrea@springarchitects.com	WB	F/Caucasian	AU
	V00000913709 Studio D Consulting+Design, LLC Po Box 340183 Lakeway Tx 78734	512-970-6180 5122849651 deb@studiodconsulting.com	WDB	F/Caucasian	AU
	ARI0290800 THE ARIZPE GROUP INC 6330 E Hwy 290 Ste 375 Austin Tx 78723-1156	512-339-3707 512-339-3709 Robert.Arizpe@Arizpe.com	MDB	M/Hispanic	AU
	THI8305569 THIRD LAND INC P.O. Box 162137 Austin Tx 78716-	512-306-8885 512-732-0853 EFRANKE@THIRDLAND.COM	WDB	F/Caucasian	AU
	VS0000029419 VEALENZUELA PRESERVATION STUDIO LLC 4401 Hoffman Drive Austin Tx 78749	512-291-8108 5122918108 beth@v-preservationstudio.com	WDB	F/Caucasian	AU
	V00000924512 fuseARCH Studio, PLLC 702 San Antonio Austin Tx 78701	5126993083  beth@fuse-arch.com	WDB	F/Caucasian	AU
<b>90779 Surveying Services (Not Aerial or Research)</b>					
	V00000907236 360 Professional Services, Inc. P.O. Box 3639 Cedar Park Tx 78630	512-354-4682 103  tammy.foster@360psinc.com	WDB	F/Caucasian	SL
	CHA7128190 CHAPARRAL PROFESSIONAL LAND SURVEYING INC 3500 McCall Lane Austin Tx 78744	512-443-1724 512-389-0943 sharon@chapsurvey.com	WDB	F/Caucasian	AU
	V00000907852 GarzaBury, L.L.C. 221 W. Sixth Street, Suite 380 Austin Tx 78701	512-298-3284 5122982592 rgarza@garzabury.com	MB	M/Hispanic	AU

**City of Austin  
Subcontract Vendor List - VCRCVS**

Solicitation No.: RFQS 6100 CLMP191 Albert H. Ullrich WTP Conversion to OSGSH

Version No.: 1

Phase: 1

C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
HEJ7022940 HEJL LEE & ASSOC INC 321 Ed Schmidt Blvd., Suite 100 Hutto Tx 78634		512-642-3292 512-642-4230 hlainc@austin.rr.com	MDB	M/Asian	SL
ITG8318552 I T GONZALEZ ENGINEERS 3501 Manor Rd Austin Tx 78723-5815		512-447-7400 11 512-447-6389 itgonz@swbell.net	MDB	M/Hispanic	AU
VS0000036360 INDUSTRIAL LAMINATES CORPORATION Po Box 9616 Austin Tx 78766		5124767568 5124749038 kwimbish@ilcor.com	WDB	F/Caucasian	AU
V00000923526 INLAND GEODETICS LLC 1504 Chisholm Trail Rd Ste 103 Round Rock Tx 78681		5122381200 5122381251 brenda@inland-geo.com	WDB	F/Caucasian	SL
WAT8308391 LANDESIGN SERVICES INC 1220 Mcneil Road, Suite 200 Round Rock Tx 78681		512-238-7901 512-238-7902 s.beavers@lndsgn.com	MWDB	F/Native American	SL
LAN7050345 LANDMARK SURVEYING L P 2205 E. 5th Street Austin Tx 78702		512-328-7411 104 512-328-7413 dana@landmarksurveying.com	WDB	F/Caucasian	AU
MAC2981000 MACIAS & ASSOCIATES LP 5410 S 1st St Austin Tx 78745-3040		512-442-7875 512-442-7876 gino.macias@macsurv.com	MDB	F/Hispanic	AU
MCG3115750 MCGRAY & MCGRAY LAND SURVEYORS INC 3301 Hancock Dr Ste 6 Austin Tx 78731-5441		512-451-8591 512-451-8791 mcgray@mcgray.com	WDB	F/Caucasian	AU
MAR3044500 MWM DESIGNGROUP INC 305 E Huntland Dr Ste 200 Austin Tx 78752		512-453-0767 512-453-1734 juliah@mwminc.com	WDB	F/Caucasian	AU
UNI8318182 UNINTECH CONSULTING ENGINEERS INC 3737 Executive Center Dr Ste 101 Austin Tx 78731		512-579-0722 210-641-8279 echan@unintech.com	MWDB	F/Asian	AU
V00000928407 URBAN DESIGN GROUP PC 3660 Stoneridge Rd Ste E101 Austin Tx 78746		5123470040 107 5123471311 ltoups@udg.com	WDB	F/Caucasian	AU

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Version No.: 1

Phase: 1

C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	VIC7091950 VICKREY & ASSOC INC 1717 W 6th St Ste 260, Hartland Plaza Austin Tx 78703	512-494-8014 512-494-8054 austin@vickreyinc.com	WDB	F/Caucasian	AU
	WAL8312258 WALKER TEXAS SURVEYORS INC Po Box 324 Cedar Park Tx 78630-0324	512-259-3361 walkertxsurvey@earthlink.net	WDB	F/Caucasian	SL
	ZAM8305129 ZAMORA LLC 1435 S Loop 4 Buda Tx 78610	512-295-6201 26 512-295-6091 GRZAMORA@ZWA-TEXAS.COM	MDB	M/Hispanic	SL
<b>92517 Civil Engineering</b>					
	V00000907236 360 Professional Services, Inc. P.O. Box 3639 Cedar Park Tx 78630	512-354-4682 103 tammy.foster@360psinc.com	WDB	F/Caucasian	SL
	AGU8313738 AGUIRRE & FIELDS LP 12708 Riata Vista Circle Ste A-109 Austin Tx 78727	5126091507 5126108903 dave.lubitz@aguirre-fields.com	MDB	M/Hispanic	AU
	ALL7111300 ALLIANCE-TEXAS ENGINEERING COMPANY 11500 Metric Blvd Bldg M1, Ste 150 Austin Tx 78758	512-821-2081 512-821-2085 GHEATH@EMAILATG.COM	WDB	F/Caucasian	AU
	ROD8321224 ANDREW A RODRIGUEZ 8137 Osborne Dr Austin Tx 78729-8074	512-989-3336 512-989-9192 RODZENG@AOL.COM	MDB	M/Hispanic	AU
	AXI8316197 AXIOM ENGINEERS INC 13276 Research Blvd Ste 208 Austin Tx 78750	512-506-9335 512-506-9377 NCF@AXIOMTEXAS.COM	WDB	F/Caucasian	AU
	BAE7086810 BAER ENGINEERING & ENVIRONMENTAL CONSULTING INC 7756 Northcross Dr Ste 211 Austin Tx 78757-1725	512-453-3733 512-453-3316 tbaer@BaerEng.com	WDB	F/Caucasian	AU
	CEP8319715 BOWMAN ENGINEERING & CONSULTING INC 902 Rio Grande Austin Tx 78701	512-263-5677 214-382-9410 SHAUNA@BOWMANENGINEERS.COM	WDB	F/Caucasian	AU

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754		512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
VC0000103053 CHAN & PARTNERS ENGINEERING LLC 4319 James Casey St Ste 300 Austin Tx 78745		512-480-8155 512-480-8811 RAYMONDC@CHANPARTNERS.COM	MDB	M/Asian	AU
VC0000102500 CIVIL LAND GROUP LLC 206 W Main St Ste 101 Round Rock Tx 78664		512-992-0118 512-246-1856 BFRYE@CIVLNDGRP.COM	MWB	F/Hispanic	SL
CLO8320728 CLOTTEY ENGINEERING INC 210 N Kings Canyon Dr Cedar Park Tx 78613-3043		512-996-9020 512-996-9520 CCLOTTEY@CLOTTEYENGINEERING.COM	MDB	M/African American	AU
V00000930698 CONVEYANCE/PROVIDENCE (JOINT VENTURE) 112 Las Colinas Drive Georgetown Tx 78628		5126580628 providenceenvironmental@suddenlink.net	WB	F/Caucasian	SL
CRE7038055 CRESPO CONSULTING SERVICES INC 4131 Spicewood Springs Rd #B2 Austin Tx 78759-8658		512-343-6404 512-343-8120 SSTECHER@CRESPOINC.COM	MDB	M/Hispanic	AU
VS0000011100 Castleberry Engineering & Consulting, P.L.L.C. P.O. Box 40546 Austin Tx 78704		512-751-9272 c.castleberry@castleberryengineering.com	WDB	F/Caucasian	AU
V00000908664 Cook-Joyce, Inc. 812 W. 11th Street Austin Tx 78701		512-474-9097 2494 elizabeth.rabaey@cook-joyce.com	WB	F/Caucasian	AU
V00000905281 Corsair Consulting LLC 9442 Capital Of Texas Hwy N Plaza One, Suite 500 Austin Tx 78759		512-342-8877 clinharris@corsairus.com	MDB	M/Asian	AU
V00000904121 D. F. Noble Consulting, LLC 1185 Taylor Ranch Road Wimberley Tx 78676		512-809-8226 txdotnoble@yahoo.com	MWDB	F/Hispanic	SL
DAT8307094 DATUM GOJER ENGINEERS L L C 5929 Balcones Dr Ste 100 Austin Tx 78731		512-469-9490 erikap@datumengineers.com	MB	M/Hispanic	AU

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
DAV1449500 DAVCAR INC 1010 Land Creek Cove Ste 200 Austin Tx 78746-		512-328-4428 512-306-8330 DAVID@DAVCAR.COM	MDB	M/Hispanic	AU
ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759		512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
VC0000102911 FAYEZ S KAZI 411 W Saint Elmo Rd Unit #1 Austin Tx 78745		512-761-6161 5127616167 fayez@civiltitude.com	MDB	M/Asian	AU
FRA8312411 FRANK LAM & ASSOC INC 508 W 16th St Austin Tx 78701-1502		512-476-2717 512-476-2714 FRANK@FRANKLAMINC.COM	MDB	M/Asian	AU
V00000915371 G Sylva, LLC 9712 Indina Hills Dr. Austin Tx 78717		512-934-3860 gilbert.sylva@gsylva.com	MDB	M/Hispanic	AU
GLE7011195 GLENROSE ENGINEERING INC Po Box 1948 Austin Tx 78767-1948		512-326-8880 LAUREN@GLENROSE.COM	WDB	F/Caucasian	AU
VS0000008581 GLOBAL ENGINEERS INC 4219 Pebblestone Trl Round Rock Tx 78665-5027		512-417-3172 512-246-2212 munirmkhan@gmail.com	MDB	M/Asian	AU
V00000907852 GarzaBury, L.L.C. 221 W. Sixth Street, Suite 380 Austin Tx 78701		512-298-3284 5122982592 rgarza@garzabury.com	MB	M/Hispanic	AU
HAR8321937 HARKINS ENGINEERING INC 3300 Lost Oasis Hollow Austin Tx 78739-7603		512-291-8219 512-280-1462 VHARKINS@HARKINSENGINEERING.COM	WDB	F/Caucasian	AU
HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730		512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
HEJ7022940 HEJL LEE & ASSOC INC 321 Ed Schmidt Blvd., Suite 100 Hutto Tx 78634		512-642-3292 512-642-4230 hlainc@austin.rr.com	MDB	M/Asian	SL

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VC0000102904 HILARIO N ARRIAGA 6708 Dubuque Lane Austin Tx 78723		512-926-4066  HILARIOARRIAGA@ATT.NET	MDB	M/Hispanic	AU
HOL2400500 HOLT ENGINEERING INC 2220 Barton Skyway Austin Tx 78704-5737		512-447-8166 512-447-0852 l.holt@holteng.com	WB	F/Caucasian	AU
ITG8318552 I T GONZALEZ ENGINEERS 3501 Manor Rd Austin Tx 78723-5815		512-447-7400 11 512-447-6389 itgonz@swbell.net	MDB	M/Hispanic	AU
JON8316038 JONES MCMULLEN ENGINEERING INC 1412 Payton Falls Dr Austin Tx 78754		512-914-4793  catherinemcmullen99@yahoo.com	WDB	F/Caucasian	AU
GUE2157000 JOSE I GUERRA INC 2401 S Ih-35 Ste 210 Austin Tx 78741-3823		512-445-2090 512-445-2099 RGUERRA@GUERRA.COM	MDB	M/Hispanic	AU
KFR8309453 K FRIESE & ASSOC INC 1120 S Capital Of Texas Hwy, Cityview 2, Ste 100 Austin Tx 78746		512-338-1704 512-338-1784 kfriese@kfriese.com	WDB	F/Caucasian	AU
V00000906667 KB PIKE ENGINEERING LLC 105 W Riverside Drive Suite 110 Austin Tx 78704		512-794-6787  jennifer@kbpike.com	WB	F/Caucasian	AU
V00000907693 LEAP Structures, PLLC 3001 S. Lamar Blvd Suite 230 Austin Tx 78704		512-298-3999 1  tchu@leapstructures.com	MDB	M/Asian	AU
VS0000031993 LOC Consultants Civil Division, Inc. 1000 E Cesar Chavez Street Suite 100 Austin Tx 78702		512-587-7236 512-499-0907 sergio@loccivil.com	MB	M/Hispanic	AU
V00000929980 Longaro & Clarke / Civiltude JV 1701 Directors Blvd., Suite 400 Austin Tx 78744		5127616161  candace@civiltude.com	MB	M/Asian	AU
MAR8305101 MARTHA FERRERO JUCH P E INC 1706 Walsh Dr Round Rock Tx 78681-1434		5126334183  mfjuch@austin.rr.com	WDB	F/Caucasian	SL

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MAR3044500 MWM DESIGNGROUP INC 305 E Huntland Dr Ste 200 Austin Tx 78752		512-453-0767 512-453-1734 juliah@mwminc.com	WDB	F/Caucasian	AU
VS0000011481 Maldonado-Burkett Intelligent Transportation Systems, LLP 2205 Western Trails Blvd. Ste B Austin Tx 78745-1638		512-916-1386 ramon@mbitsgroup.com	MDB	M/Hispanic	AU
V00000925715 McKinney Engineering, Inc 18101 Angel Valley Dr Leander Tx 78641		5124612632 melisa.mckinney@gmail.com	WDB	F/Caucasian	SL
V00000929649 NICOLE FRANCOIS CONSULTING 1008 Sundance Ridge Dripping Springs Tx 78620		5129658887 nfranconsulting@gmail.com	WDB	F/Caucasian	SL
VS0000014928 Nellor Environmental Associates, Inc 4024 Walnut Clay Dr Austin Tx 78731		512-374-9330 margie@nellorenvironmental.com	WDB	F/Caucasian	AU
VS0000037698 PROFESSIONAL STRUCIVIL ENGINEERS INC 12710 Research Blvd. Suite 390 Austin Tx 78759		512-238-6422 psce@psceinc.com	MDB	M/Asian	AU
PRO8301100 PROVIDENCE ENVIRONMENTAL CONSULTING INC 112 Las Colinas Dr Georgetown Tx 78628-1019		512-863-3492 512-869-0576 providenceenvironmental@suddenlink.net	WDB	F/Caucasian	SL
VS0000004650 RGT Engineering, Inc. 1000 Heritage Center Circle Round Rock Tx 78664		512-689-2341 512-382-6851 rgonzalez@rgtengineering.com	MDB	M/Hispanic	SL
ROD7082460 RODRIGUEZ TRANSPORTATION GROUP Inc 11211 Taylor Draper Ln Ste 100 Austin Tx 78759		512-231-9544 512-231-9133 MRODRIGUEZ@RTG-TEXAS.COM	MDB	M/Hispanic	AU
V00000901562 Regional Engineering Inc. 818 Wagon Trail Suit # 102 Austin Tx 78758		512-507-9355 5126708915 reiaustx@gmail.com	MDB	M/Asian	AU

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VS0000026253 Rios Engineering, LLC 609 Irma Dr Austin Tx 78752		512-944-3023  ed@riosengineering.com	MDB	M/Hispanic	AU
VS0000015805 Rogers Moore Engineers, LLC 221 West 6th Street Suite 826 Austin Tx 78701		512-330-1282 512-330-1295 utuladhar@rogersmoorellc.com	WB	F/Caucasian	AU
STA8322362 STANSBERRY ENGINEERING CO. Po Box 309 Manchaca Tx 78652-0309		512-292-8000 512-292-7270 INFO@STANSBERRYENGINEERING.COM	WDB	F/Caucasian	AU
STR8322676 STRUCTURESPE L L P 1018 W 11th St Ste 100 Austin Tx 78703-4987		512-499-0919 512-320-8521 JERRY@STRUCTURESTX.COM	MDB	M/Hispanic	AU
SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752		512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU
VC0000103065 SUSAN ROTH CONSULTING LLC 4111 Tablerock Dr Austin Tx 78731		512-796-6692  SUSAN@SROTHCONSULTING.COM	WDB	F/Caucasian	AU
VS0000030160 Seiler/Lankes Group 901 Round Rock Avenue Suite C100 Round Rock Tx 78681		512-785-8564  glankes@slg-eng.com	MDB	M/Hispanic	SL
V00000925313 Smith Turrieta, PLLC Po Box 5902 Austin Tx 78763		5125699022  susan@smithturrieta.com	WDB	F/Caucasian	AU
ARI0290800 THE ARIZPE GROUP INC 6330 E Hwy 290 Ste 375 Austin Tx 78723-1156		512-339-3707 512-339-3709 Robert.Arizpe@Arizpe.com	MDB	M/Hispanic	AU
VS0000022046 THOMPSON-HAMILTON ENGINEERING LLC 283 Catalina Lane Austin Tx 78737		5127911175 512-350-2641 admin@atlasdgn.com	MDB	M/Hispanic	SL
TRA8311787 TRANSTEC GROUP INC 6111 Balcones Dr Austin Tx 78731-		512-451-6233 512-451-6234 DAN@THETRANSTECGROUP.COM	MDB	M/Hispanic	AU

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	TRI4738850 TRICIA ALTAMIRANO Consulting Engineer Inc 1101 S Cap Of Tx Hwy Ste 210d Austin Tx 78746-6438	512-328-2203 512-327-2947 taltamirano@austin.rr.com	WB	F/Caucasian	AU
	VS0000022197 Texas Engineering Solutions, LLC 5000 Bee Caves Rd Suite 206 Austin Tx 78746	512-904-0505 205 512-904-0509 sdelgado@txengs.com	MDB	M/Hispanic	AU
	UNI8318182 UNINTECH CONSULTING ENGINEERS INC 3737 Executive Center Dr Ste 101 Austin Tx 78731	512-579-0722 210-641-8279 echan@unintech.com	MWDB	F/Asian	AU
	V00000928407 URBAN DESIGN GROUP PC 3660 Stoneridge Rd Ste E101 Austin Tx 78746	5123470040 107 5123471311 ltoups@udg.com	WDB	F/Caucasian	AU
	URB7038110 UTE CONSULTANTS INC 2007 S 1st Street Austin Tx 78704	512-789-5018 joan@uteconsultants.com	WDB	F/Caucasian	AU
	VIC7091950 VICKREY & ASSOC INC 1717 W 6th St Ste 260, Hartland Plaza Austin Tx 78703	512-494-8014 512-494-8054 austin@vickreyinc.com	WDB	F/Caucasian	AU
<b>92522 Control Systems Engineering</b>					
	VC0000101538 DOROTHY M BOTHNE 14201 Sandy Meadow Circle Leander Tx 78641	512-259-8476 512-259-8781 DBOTHNE@AUSTIN.RR.COM	WB	F/Caucasian	SL
	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
	HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730	512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
	GUE2157000 JOSE I GUERRA INC 2401 S Ih-35 Ste 210 Austin Tx 78741-3823	512-445-2090 512-445-2099 RGUERRA@GUERRA.COM	MDB	M/Hispanic	AU

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	VS0000028414 Lackey Commercial Properties, LLC Po Box 41270 Austin Tx 78704	512-971-1201 8883817794 mwlackey@lc-cx.com	MDB	M/Hispanic	AU
	VS0000011481 Maldonado-Burkett Intelligent Transportation Systems, LLP 2205 Western Trails Blvd. Ste B Austin Tx 78745-1638	512-916-1386 ramon@mbitsgroup.com	MDB	M/Hispanic	AU
	V00000917037 Quality Power, LLC 407 Hurst Creek Rd. Lakeway Tx 78734	5122940885 basheerm@qualitypowerllc.com	MB	M/Asian	AU
	VS0000011064 Texas Energy Engineering Services, Inc. 1301 S. Capital Of Texas Highway Suite B-325 Austin Tx 78746	512-328-2533 201 512-328-2544 Saleem@teesi.com	MDB	M/Asian	AU
<b>92531 Electrical Engineering</b>					
	V00000925196 A-PLUS POWER CONSULTING, LLC 12305 Pleasant Hill Ct Austin Tx 78738	5127314468 apluspowerconsulting@aol.com	MB	M/Asian	SL
	V00000921397 APTUS ENGINEERING LLC 3400 Tavistock Dr Austin Tx 78748	5128504770 sujay@aptuseng.com	MB	M/Asian	AU
	VS0000015522 AYS Engineering, LLC 203 E. Main Street Ste 204 Round Rock Tx 78664	512-961-6835 raleman@ayseng.com	MB	M/Hispanic	SL
	VC0000101538 DOROTHY M BOTHNE 14201 Sandy Meadow Circle Leander Tx 78641	512-259-8476 512-259-8781 DBOTHNE@AUSTIN.RR.COM	WB	F/Caucasian	SL
	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
	V00000907852 GarzaBury, L.L.C. 221 W. Sixth Street, Suite 380 Austin Tx 78701	512-298-3284 5122982592 rgarza@garzabury.com	MB	M/Hispanic	AU

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	HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730	512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
	JAS2584500 JASMINE ENGINEERING INC 100 Congress Ave Ste 2000 Austin Tx 78701	512-326-2900 512-326-2906 JASMINE@JASMINEENGINEERING.COM	WDB	F/Caucasian	AU
	GUE2157000 JOSE I GUERRA INC 2401 S Ih-35 Ste 210 Austin Tx 78741-3823	512-445-2090 512-445-2099 RGUERRA@GUERRA.COM	MDB	M/Hispanic	AU
	VS0000011481 Maldonado-Burkett Intelligent Transportation Systems, LLP 2205 Western Trails Blvd. Ste B Austin Tx 78745-1638	512-916-1386 ramon@mbitsgroup.com	MDB	M/Hispanic	AU
	POW8300999 POWER QUALITY ENGINEERING INC 3061 Woodall Dr Bldg A Cedar Park Tx 78613-7225	512-267-6656 512-267-0989 vbloom@pqeinc.com	MWB	F/Hispanic	AU
	V00000917037 Quality Power, LLC 407 Hurst Creek Rd. Lakeway Tx 78734	5122940885 basheerm@qualitypowerllc.com	MB	M/Asian	AU
	ARI0290800 THE ARIZPE GROUP INC 6330 E Hwy 290 Ste 375 Austin Tx 78723-1156	512-339-3707 512-339-3709 Robert.Arizpe@Arizpe.com	MDB	M/Hispanic	AU
	VS0000011064 Texas Energy Engineering Services, Inc. 1301 S. Capital Of Texas Highway Suite B-325 Austin Tx 78746	512-328-2533 201 512-328-2544 Saleem@teesi.com	MDB	M/Asian	AU
	VS0000035423 W&D Enterprises, L.L.C. 1747 Fort Grant Dr. Round Rock Tx 78665	512-563-1720 vwinston@mavaengineering.com	MDB	M/African American	AU
	V00000927461 YOU SEOK SON 3517 Arvin Dr Austin Tx 78738	5129190358 pson@vitenergy.net	MB	M/Asian	SL

**92535 Environmental Engineering**

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V00000907236 360 Professional Services, Inc. P.O. Box 3639 Cedar Park Tx 78630		512-354-4682 103  tammy.foster@360psinc.com	WDB	F/Caucasian	SL
AXI8316197 AXIOM ENGINEERS INC 13276 Research Blvd Ste 208 Austin Tx 78750		512-506-9335 512-506-9377 NCF@AXIOMTEXAS.COM	WDB	F/Caucasian	AU
BAE7086810 BAER ENGINEERING & ENVIRONMENTAL CONSULTING INC 7756 Northcross Dr Ste 211 Austin Tx 78757-1725		512-453-3733 512-453-3316 tbaer@BaerEng.com	WDB	F/Caucasian	AU
CEP8319715 BOWMAN ENGINEERING & CONSULTING INC 902 Rio Grande Austin Tx 78701		512-263-5677 214-382-9410 SHAUNA@BOWMANENGINEERS.COM	WDB	F/Caucasian	AU
CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754		512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
VC0000103053 CHAN & PARTNERS ENGINEERING LLC 4319 James Casey St Ste 300 Austin Tx 78745		512-480-8155 512-480-8811 RAYMONDC@CHANPARTNERS.COM	MDB	M/Asian	AU
CRE7038055 CRESPO CONSULTING SERVICES INC 4131 Spicewood Springs Rd #B2 Austin Tx 78759-8658		512-343-6404 512-343-8120 SSTECHER@CRESPOINC.COM	MDB	M/Hispanic	AU
VS0000011100 Castleberry Engineering & Consulting, P.L.L.C. P.O. Box 40546 Austin Tx 78704		512-751-9272  c.castleberry@castleberryengineering.com	WDB	F/Caucasian	AU
V00000908664 Cook-Joyce, Inc. 812 W. 11th Street Austin Tx 78701		512-474-9097 2494  elizabeth.rabaey@cook-joyce.com	WB	F/Caucasian	AU
GLE7011195 GLENROSE ENGINEERING INC Po Box 1948 Austin Tx 78767-1948		512-326-8880  LAUREN@GLENROSE.COM	WDB	F/Caucasian	AU
HAR8321937 HARKINS ENGINEERING INC 3300 Lost Oasis Hollow Austin Tx 78739-7603		512-291-8219 512-280-1462 VHARKINS@HARKINSENGINEERING.COM	WDB	F/Caucasian	AU

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SAN2347000 HICKS & CO ENVIRONMENTAL/ARCHEOLOGICAL CONSULTANTS 1504 W 5th St Austin Tx 78703-5157		512-478-0858 512-474-1849 HICKS@HICKSENV.COM	WDB	F/Caucasian	AU
JON8316038 JONES MCMULLEN ENGINEERING INC 1412 Payton Falls Dr Austin Tx 78754		512-914-4793 catherinemcmullen99@yahoo.com	WDB	F/Caucasian	AU
V00000929980 Longaro & Clarke / Civilitude JV 1701 Directors Blvd., Suite 400 Austin Tx 78744		5127616161 candace@civilitude.com	MB	M/Asian	AU
VS0000014928 Nellor Environmental Associates, Inc 4024 Walnut Clay Dr Austin Tx 78731		512-374-9330 margie@nellorenvironmental.com	WDB	F/Caucasian	AU
VS0000037698 PROFESSIONAL STRUCIVIL ENGINEERS INC 12710 Research Blvd. Suite 390 Austin Tx 78759		512-238-6422 psce@psceinc.com	MDB	M/Asian	AU
PRO8301100 PROVIDENCE ENVIRONMENTAL CONSULTING INC 112 Las Colinas Dr Georgetown Tx 78628-1019		512-863-3492 512-869-0576 providenceenvironmental@suddenlink.net	WDB	F/Caucasian	SL
VS0000004650 RGT Engineering, Inc. 1000 Heritage Center Circle Round Rock Tx 78664		512-689-2341 512-382-6851 rgonzalez@rgtengineering.com	MDB	M/Hispanic	SL
SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752		512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU
VC0000103065 SUSAN ROTH CONSULTING LLC 4111 Tablerock Dr Austin Tx 78731		512-796-6692 SUSAN@SROTHCONSULTING.COM	WDB	F/Caucasian	AU
V00000925313 Smith Turrieta, PLLC Po Box 5902 Austin Tx 78763		5125699022 susan@smithturrieta.com	WDB	F/Caucasian	AU

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	ARI0290800 THE ARIZPE GROUP INC 6330 E Hwy 290 Ste 375 Austin Tx 78723-1156	512-339-3707 512-339-3709 Robert.Arizpe@Arizpe.com	MDB	M/Hispanic	AU
	V00000928407 URBAN DESIGN GROUP PC 3660 Stoneridge Rd Ste E101 Austin Tx 78746	5123470040 107 5123471311 ltoups@udg.com	WDB	F/Caucasian	AU
	URB7038110 UTE CONSULTANTS INC 2007 S 1st Street Austin Tx 78704	512-789-5018  joan@uteconsultants.com	WDB	F/Caucasian	AU
	VS0000022768 Zander Engineering and Consulting, Inc. 12713 Belcara Place Austin Tx 78732	512-779-3459  martha@zander-ec.com	MWB	F/Hispanic	AU
<b>92544 General Construction: Management, Scheduling, Cost</b>					
	V00000921397 APTUS ENGINEERING LLC 3400 Tavistock Dr Austin Tx 78748	5128504770  sujay@aptuseng.com	MB	M/Asian	AU
	V00000909871 ARCHE LLC 5700 North Hampton Rd Austin Tx 78723	512-350-4845  cescamilla@archeeng.com	MWB	F/Hispanic	AU
	AXI8316197 AXIOM ENGINEERS INC 13276 Research Blvd Ste 208 Austin Tx 78750	512-506-9335 512-506-9377 NCF@AXIOMTEXAS.COM	WDB	F/Caucasian	AU
	BAE7086810 BAER ENGINEERING & ENVIRONMENTAL CONSULTING INC 7756 Northcross Dr Ste 211 Austin Tx 78757-1725	512-453-3733 512-453-3316 tbaer@BaerEng.com	WDB	F/Caucasian	AU
	BLG0714750 BLGY INC 2204 Forbes Dr Ste 101 Austin Tx 78754-5143	512-977-0390 512-977-0838	MB	M/African American	AU
	CEP8319715 BOWMAN ENGINEERING & CONSULTING INC 902 Rio Grande Austin Tx 78701	512-263-5677 214-382-9410 SHAUNA@BOWMANENGINEERS.COM	WDB	F/Caucasian	AU

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754		512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
VC0000102500 CIVIL LAND GROUP LLC 206 W Main St Ste 101 Round Rock Tx 78664		512-992-0118 512-246-1856 BFRYE@CIVLNDGRP.COM	MWB	F/Hispanic	SL
V00000930698 CONVEYANCE/PROVIDENCE (JOINT VENTURE) 112 Las Colinas Drive Georgetown Tx 78628		5126580628  providenceenvironmental@suddenlink.net	WB	F/Caucasian	SL
V00000908664 Cook-Joyce, Inc. 812 W. 11th Street Austin Tx 78701		512-474-9097 2494  elizabeth.rabaey@cook-joyce.com	WB	F/Caucasian	AU
DAV1449500 DAVCAR INC 1010 Land Creek Cove Ste 200 Austin Tx 78746-		512-328-4428 512-306-8330 DAVID@DAVCAR.COM	MDB	M/Hispanic	AU
ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759		512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
VC0000102911 FAYEZ S KAZI 411 W Saint Elmo Rd Unit #1 Austin Tx 78745		512-761-6161 5127616167 fayez@civilitude.com	MDB	M/Asian	AU
FOS7156650 FOSTER CM GROUP INC 111 Congress Ave 4th Fl Austin Tx 78701-4050		210-804-1004 210-828-5484 alindsey@fostercmgroup.com	MDB	M/African American	AU
V00000915371 G Sylva, LLC 9712 Indina Hills Dr. Austin Tx 78717		512-934-3860  gilbert.sylva@gsylva.com	MDB	M/Hispanic	AU
HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730		512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
ITG8318552 I T GONZALEZ ENGINEERS 3501 Manor Rd Austin Tx 78723-5815		512-447-7400 11 512-447-6389 itgonz@swbell.net	MDB	M/Hispanic	AU

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JAS2584500 JASMINE ENGINEERING INC 100 Congress Ave Ste 2000 Austin Tx 78701		512-326-2900 512-326-2906 JASMINE@JASMINEENGINEERING.COM	WDB	F/Caucasian	AU
KFR8309453 K FRIESE & ASSOC INC 1120 S Capital Of Texas Hwy, Cityview 2, Ste 100 Austin Tx 78746		512-338-1704 512-338-1784 kfriese@kfriese.com	WDB	F/Caucasian	AU
VS0000028414 Lackey Commercial Properties, LLC Po Box 41270 Austin Tx 78704		512-971-1201 8883817794 mwlackey@lc-cx.com	MDB	M/Hispanic	AU
V00000929980 Longaro & Clarke / Civilitude JV 1701 Directors Blvd., Suite 400 Austin Tx 78744		5127616161 candace@civilitude.com	MB	M/Asian	AU
MAR3044500 MWM DESIGNGROUP INC 305 E Huntland Dr Ste 200 Austin Tx 78752		512-453-0767 512-453-1734 julia@mwminc.com	WDB	F/Caucasian	AU
V00000929649 NICOLE FRANCOIS CONSULTING 1008 Sundance Ridge Dripping Springs Tx 78620		5129658887 nfranconsulting@gmail.com	WDB	F/Caucasian	SL
PRO8301100 PROVIDENCE ENVIRONMENTAL CONSULTING INC 112 Las Colinas Dr Georgetown Tx 78628-1019		512-863-3492 512-869-0576 providenceenvironmental@suddenlink.net	WDB	F/Caucasian	SL
VS0000004650 RGT Engineering, Inc. 1000 Heritage Center Circle Round Rock Tx 78664		512-689-2341 512-382-6851 rgonzalez@rgtengineering.com	MDB	M/Hispanic	SL
V00000901562 Regional Engineering Inc. 818 Wagon Trail Suite # 102 Austin Tx 78758		512-507-9355 5126708915 reiaustx@gmail.com	MDB	M/Asian	AU
SQU8302982 SQUARE ONE CONSULTANTS INC 1000 Westbank Dr Ste 4a Austin Tx 78746-7994		512-708-1162 512-708-1517	MB	M/Native American	AU
SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752		512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	V00000925313 Smith Turrieta, PLLC Po Box 5902 Austin Tx 78763	5125699022  susan@smithturrieta.com	WDB	F/Caucasian	AU
	VS0000011064 Texas Energy Engineering Services, Inc. 1301 S. Capital Of Texas Highway Suite B-325 Austin Tx 78746	512-328-2533 201 512-328-2544 Saleem@teesi.com	MDB	M/Asian	AU
<b>92546 GEOTECHNICAL - SOILS</b>					
	ARI8319669 ARIAS & ASSOCIATES INC 13581 Pond Springs Road Austin Tx 78729	5124285550 5124285525 eramirez@ariasinc.com	MDB	M/Hispanic	AU
	CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754	512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
	HOL2400500 HOLT ENGINEERING INC 2220 Barton Skyway Austin Tx 78704-5737	512-447-8166 512-447-0852 l.holt@holteng.com	WB	F/Caucasian	AU
	PAV8303934 PAVETEX ENGINEERING & TESTING INC 3989 Hwy 290 E Dripping Springs Tx 78620-4287	512-894-3040 512-858-2921 saraht@pavetex.com	MWDB	F/Hispanic	SL
	V00000911256 Rodriguez Engineering Laboratories LLC 13809 Turbine Drive Austin Tx 78728	512-251-4454 5122511380 rodriguezlab@aol.com	MDB	M/Hispanic	AU
<b>92557 Instrumentation/Engineering</b>					
	V00000921397 APTUS ENGINEERING LLC 3400 Tavistock Dr Austin Tx 78748	5128504770  sujay@aptuseng.com	MB	M/Asian	AU

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	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
	HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730	512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
	POW8300999 POWER QUALITY ENGINEERING INC 3061 Woodall Dr Bldg A Cedar Park Tx 78613-7225	512-267-6656 512-267-0989 vbloom@pqeinc.com	MWB	F/Hispanic	AU
	V00000917037 Quality Power, LLC 407 Hurst Creek Rd. Lakeway Tx 78734	5122940885 basheerm@qualitypowerllc.com	MB	M/Asian	AU
<b>92567 Mechanical Engineering</b>					
	V00000921397 APTUS ENGINEERING LLC 3400 Tavistock Dr Austin Tx 78748	5128504770 sujay@aptuseng.com	MB	M/Asian	AU
	VS0000015522 AYS Engineering, LLC 203 E. Main Street Ste 204 Round Rock Tx 78664	512-961-6835 raleman@ayseng.com	MB	M/Hispanic	SL
	CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754	512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
	CLO8320728 CLOTTEY ENGINEERING INC 210 N Kings Canyon Dr Cedar Park Tx 78613-3043	512-996-9020 512-996-9520 CCLOTTEY@CLOTTEYENGINEERING.COM	MDB	M/African American	AU
	VC0000101538 DOROTHY M BOTHNE 14201 Sandy Meadow Circle Leander Tx 78641	512-259-8476 512-259-8781 DBOTHNE@AUSTIN.RR.COM	WB	F/Caucasian	SL
	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU

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VS0000031778 ENGINEERED EXTERIORS, PLLC 13740 Research Blvd. Suite C2 Austin Tx 78750		5125713530  jen@engineeredexteriors.com	WB	F/Caucasian	AU
V00000907852 GarzaBury, L.L.C. 221 W. Sixth Street, Suite 380 Austin Tx 78701		512-298-3284 5122982592 rgarza@garzabury.com	MB	M/Hispanic	AU
HUR2455500 HARUTUNIAN ENGINEERING INC 305 E Huntland Dr Ste 500 Austin Tx 78752-3730		512-454-2788 512-454-6434 PROCURE@HEIWORLD.COM	WB	F/Caucasian	AU
JAS2584500 JASMINE ENGINEERING INC 100 Congress Ave Ste 2000 Austin Tx 78701		512-326-2900 512-326-2906 JASMINE@JASMINEENGINEERING.COM	WDB	F/Caucasian	AU
GUE2157000 JOSE I GUERRA INC 2401 S Ih-35 Ste 210 Austin Tx 78741-3823		512-445-2090 512-445-2099 RGUERRA@GUERRA.COM	MDB	M/Hispanic	AU
VS0000028414 Lackey Commercial Properties, LLC Po Box 41270 Austin Tx 78704		512-971-1201 8883817794 mwlackey@lc-cx.com	MDB	M/Hispanic	AU
V00000917399 Nodal Partners, LLC 13640 Briarwick Dr. Suite 180 Austin Tx 78729		512-364-0688 128  lindsaypalinsky@beeusa.com	MB	M/Asian	AU
POW8300999 POWER QUALITY ENGINEERING INC 3061 Woodall Dr Bldg A Cedar Park Tx 78613-7225		512-267-6656 512-267-0989 vbloom@pqeinc.com	MWB	F/Hispanic	AU
STE8305142 STEINMAN LUEVANO STRUCTURES LLP 5901 Old Fredericksburg Rd B101 Austin Tx 78749		512-891-6766 512-891-6966 john@slstructures.com	MDB	M/Hispanic	AU
ARI0290800 THE ARIZPE GROUP INC 6330 E Hwy 290 Ste 375 Austin Tx 78723-1156		512-339-3707 512-339-3709 Robert.Arizpe@Arizpe.com	MDB	M/Hispanic	AU

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	VS0000011064 Texas Energy Engineering Services, Inc. 1301 S. Capital Of Texas Highway Suite B-325 Austin Tx 78746	512-328-2533 201 512-328-2544 Saleem@teesi.com	MDB	M/Asian	AU
	VS0000035423 W&D Enterprises, L.L.C. 1747 Fort Grant Dr. Round Rock Tx 78665	512-563-1720  vwinston@mavaengineering.com	MDB	M/African American	AU
<b>92588 Structural Engineering</b>					
	AGU8313738 AGUIRRE & FIELDS LP 12708 Riata Vista Circle Ste A-109 Austin Tx 78727	5126091507 5126108903 dave.lubitz@aguirre-fields.com	MDB	M/Hispanic	AU
	BAE7086810 BAER ENGINEERING & ENVIRONMENTAL CONSULTING INC 7756 Northcross Dr Ste 211 Austin Tx 78757-1725	512-453-3733 512-453-3316 tbaer@BaerEng.com	WDB	F/Caucasian	AU
	CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754	512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
	CLO8320728 CLOTTEY ENGINEERING INC 210 N Kings Canyon Dr Cedar Park Tx 78613-3043	512-996-9020 512-996-9520 CCLOTTEY@CLOTTEYENGINEERING.COM	MDB	M/African American	AU
	DAT8307094 DATUM GOJER ENGINEERS L L C 5929 Balcones Dr Ste 100 Austin Tx 78731	512-469-9490  erikap@datumengineers.com	MB	M/Hispanic	AU
	ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759	512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
	VS0000031778 ENGINEERED EXTERIORS, PLLC 13740 Research Blvd. Suite C2 Austin Tx 78750	5125713530  jen@engineeredexteriors.com	WB	F/Caucasian	AU
	FRA8312411 FRANK LAM & ASSOC INC 508 W 16th St Austin Tx 78701-1502	512-476-2717 512-476-2714 FRANK@FRANKLAMINC.COM	MDB	M/Asian	AU

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V00000915371 G Sylva, LLC 9712 Indina Hills Dr. Austin Tx 78717		512-934-3860  gilbert.sylva@gsylva.com	MDB	M/Hispanic	AU
V00000907852 GarzaBury, L.L.C. 221 W. Sixth Street, Suite 380 Austin Tx 78701		512-298-3284 5122982592 rgarza@garzabury.com	MB	M/Hispanic	AU
GUE2157000 JOSE I GUERRA INC 2401 S Ih-35 Ste 210 Austin Tx 78741-3823		512-445-2090 512-445-2099 RGUERRA@GUERRA.COM	MDB	M/Hispanic	AU
VS0000033389 JQ+TSEN LLC 1608 West 6th St Suite 200 Austin Tx 78703		5124744001 5124749179 stsen@jqtsen.com	MWB	F/Asian	AU
V00000913547 Kings Struarchural, Inc. 555 Round Rock West Dr Suite E227 Round Rock Tx 78681		5122717331 5122717133 patricka@kingsse.com	MDB	M/African American	SL
VS0000037916 LAM+DCI, LLC 508 W 16th St Austin Tx 78701		512-476-2717 512-476-2714 franklam@franklaminc.com	MDB	M/Asian	AU
V00000907693 LEAP Structures, PLLC 3001 S. Lamar Blvd Suite 230 Austin Tx 78704		512-298-3999 1  tchu@leapstructures.com	MDB	M/Asian	AU
V00000929980 Longaro & Clarke / Civilitude JV 1701 Directors Blvd., Suite 400 Austin Tx 78744		5127616161  candace@civilitude.com	MB	M/Asian	AU
V00000927152 Martinez Engineering, LLC 106 East Sixth Street Suite 841 Austin Tx 78701		5123223970  ruben@martinezengineeringllc.com	MDB	M/Hispanic	AU
VS0000029260 Oakhill Engineering, LLC 5705 Janabyrd Lane Austin Tx 78749		512-497-5256 512-747-8916 dchen@oakhillengineering.com	MDB	M/Asian	AU

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	PES8307381 P E STRUCTURAL CONSULTANTS INC 8436 Spicewood Springs Rd Austin Tx 78759-6050	512-250-5200 512-250-5222 LPOWELL@PESTRUCTURAL.COM	WDB	F/Caucasian	AU
	VS0000037698 PROFESSIONAL STRUCIVIL ENGINEERS INC 12710 Research Blvd. Suite 390 Austin Tx 78759	512-238-6422 psce@psceinc.com	MDB	M/Asian	AU
	VS0000015805 Rogers Moore Engineers, LLC 221 West 6th Street Suite 826 Austin Tx 78701	512-330-1282 512-330-1295 utuladhar@rogersmoorellc.com	WB	F/Caucasian	AU
	STE8305142 STEINMAN LUEVANO STRUCTURES LLP 5901 Old Fredericksburg Rd B101 Austin Tx 78749	512-891-6766 512-891-6966 john@slstructures.com	MDB	M/Hispanic	AU
	STR8322676 STRUCTURESPE L L P 1018 W 11th St Ste 100 Austin Tx 78703-4987	512-499-0919 512-320-8521 JERRY@STRUCTURESTX.COM	MDB	M/Hispanic	AU
	SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752	512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU
	UNI8318182 UNINTECH CONSULTING ENGINEERS INC 3737 Executive Center Dr Ste 101 Austin Tx 78731	512-579-0722 210-641-8279 echan@unintech.com	MWDB	F/Asian	AU
<b>96121 Cost Estimating</b>					
	AKY5262000 A K YOUNG ASSOC Po Box 201265 Austin Tx 78720-1265	512-476-6686 512-478-8009 General-AKYA@att.net	WB	F/Caucasian	AU
	V00000909861 ANA D GALLO 1501 Barton Springs Rd #230 Austin Tx 78704	512-236-0868 5122360868 ana@anagallo.com	MWDB	F/Hispanic	AU

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APP8308926 APPLIEDTECH GROUP L L C 12059 Lincolnshire Dr Austin Tx 78758-2217		512-577-2468 512-837-8603 RMORA@APPLIEDTECHGROUP.NET	MB	M/Hispanic	AU
ASD7048240 ASD CONSULTANTS INC 8120 N Ih 35 Austin Tx 78753		512-836-3329 512-836-3802 curtis2aia@aol.com	MDB	M/African American	AU
BLG0714750 BLGY INC 2204 Forbes Dr Ste 101 Austin Tx 78754-5143		512-977-0390 512-977-0838	MB	M/African American	AU
CEP8319715 BOWMAN ENGINEERING & CONSULTING INC 902 Rio Grande Austin Tx 78701		512-263-5677 214-382-9410 SHAUNA@BOWMANENGINEERS.COM	WDB	F/Caucasian	AU
V00000917827 BUSINESS & FINANCIAL MANAGEMENT SOLUTIONS LLC Po Box 151708 Austin Tx 78715-1708		512-366-8183 mara.ash@bafolutions.com	MWDB	F/Hispanic	AU
CAS7170685 CAS CONSULTING & SVCS INC 7908 Cameron Rd Austin Tx 78754		512-836-2388 512-836-4515 channys@casengineers.com	MDB	M/Asian	AU
VC0000103053 CHAN & PARTNERS ENGINEERING LLC 4319 James Casey St Ste 300 Austin Tx 78745		512-480-8155 512-480-8811 RAYMONDC@CHANPARTNERS.COM	MDB	M/Asian	AU
VC0000102500 CIVIL LAND GROUP LLC 206 W Main St Ste 101 Round Rock Tx 78664		512-992-0118 512-246-1856 BFRYE@CIVLNDGRP.COM	MWB	F/Hispanic	SL
DAV1449500 DAVCAR INC 1010 Land Creek Cove Ste 200 Austin Tx 78746-		512-328-4428 512-306-8330 DAVID@DAVCAR.COM	MDB	M/Hispanic	AU
ENC1735650 ENCOTECH ENGINEERING CONSULTANTS INC 8500 Bluffstone Cove, #B-103 Austin Tx 78759		512-338-1101 101 512-338-1160 KHATAW@ENCOTECHENGINEERING.COM	MB	M/Asian	AU
VC0000102911 FAYEZ S KAZI 411 W Saint Elmo Rd Unit #1 Austin Tx 78745		512-761-6161 5127616167 fayez@civiltitude.com	MDB	M/Asian	AU

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HEJ7022940 HEJL LEE & ASSOC INC 321 Ed Schmidt Blvd., Suite 100 Hutto Tx 78634		512-642-3292 512-642-4230 hlainc@austin.rr.com	MDB	M/Asian	SL
JAS2584500 JASMINE ENGINEERING INC 100 Congress Ave Ste 2000 Austin Tx 78701		512-326-2900 512-326-2906 JASMINE@JASMINEENGINEERING.COM	WDB	F/Caucasian	AU
VS0000031993 LOC Consultants Civil Division, Inc. 1000 E Cesar Chavez Street Suite 100 Austin Tx 78702		512-587-7236 512-499-0907 sergio@loccivil.com	MB	M/Hispanic	AU
MAR3044500 MWM DESIGNGROUP INC 305 E Huntland Dr Ste 200 Austin Tx 78752		512-453-0767 512-453-1734 juliah@mwminc.com	WDB	F/Caucasian	AU
V00000915343 Majestic Services Inc 8120 North Ih 35, Suite 101 Austin Tx 78753		512-470-9221 5128363802 majesticvcinc@aol.com	WMDB	F/African American	AU
V00000929649 NICOLE FRANCOIS CONSULTING 1008 Sundance Ridge Dripping Springs Tx 78620		5129658887 nfranconsulting@gmail.com	WDB	F/Caucasian	SL
VS0000032495 O-SDA Industries, LLC 5714 Sam Houston Circle Austin Tx 78731		8303300762 mdeluna@o-sda.com	MWB	F/Native American	AU
POW8300999 POWER QUALITY ENGINEERING INC 3061 Woodall Dr Bldg A Cedar Park Tx 78613-7225		512-267-6656 512-267-0989 vbloom@pqeinc.com	MWB	F/Hispanic	AU
VS0000004650 RGT Engineering, Inc. 1000 Heritage Center Circle Round Rock Tx 78664		512-689-2341 512-382-6851 rgonzalez@rgtengineering.com	MDB	M/Hispanic	SL
VC0000102824 RZ COMMUNICATIONS INC 1400 Smith Rd Ste 101b Austin Tx 78721-3563		512-386-7336 512-386-7350 aramirez@rzaustin.com	MDB	M/Hispanic	AU
CPM8310942 SOHEIR S MICHEL Po Box 200548 Austin Tx 78720		512-474-5377 smichel@cpmconsultants.com	MWDB	F/African American	AU
SOL8307852 SOLIS CONSTRUCTORS INC 9100 United Dr Ste 106 Austin Tx 78758-7716		512-450-0280 512-380-9670 ELOWENBERG@SOLISCONSTRUCTORS.COM	MDB	M/Hispanic	AU

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SUN4499350 SUNLAND GROUP INC 1033 La Posada Drive Suite 370 Austin Tx 78752		512-590-7951 512-494-0406 cthompson@sunlandgrp.com	WDB	F/Caucasian	AU
VS0000030160 Seiler/Lankes Group 901 Round Rock Avenue Suite C100 Round Rock Tx 78681		512-785-8564 glankes@slg-eng.com	MDB	M/Hispanic	SL
V00000925313 Smith Turrieta, PLLC Po Box 5902 Austin Tx 78763		5125699022 susan@smithturrieta.com	WDB	F/Caucasian	AU
ETM1783000 THOMAS DUKES 9905 Fm 973 North Manor Tx 78653		512-272-4551 512-272-4546 ETMASONRY@EARTHLINK.NET	MDB	M/African American	AU
VS0000011064 Texas Energy Engineering Services, Inc. 1301 S. Capital Of Texas Highway Suite B-325 Austin Tx 78746		512-328-2533 201 512-328-2544 Saleem@teesi.com	MDB	M/Asian	AU
VS0000022197 Texas Engineering Solutions, LLC 5000 Bee Caves Rd Suite 206 Austin Tx 78746		512-904-0505 205 512-904-0509 sdelgado@txengs.com	MDB	M/Hispanic	AU
V00000905765 The Salinas Group, LLC 1706 Bouldin Ave. Austin Tx 78704		512-619-6696 5127077796 sal78704@yahoo.com	MDB	M/Hispanic	AU
UNI8318182 UNINTECH CONSULTING ENGINEERS INC 3737 Executive Center Dr Ste 101 Austin Tx 78731		512-579-0722 210-641-8279 echan@unintech.com	MWDB	F/Asian	AU
UNI7027985 UNISM DEVELOPMENT CO INC Po Box 14145 Austin Tx 78761-4145		512-255-3726 512-255-1451 unism@sbcglobal.net	MB	M/African American	AU
URB7038110 UTE CONSULTANTS INC 2007 S 1st Street Austin Tx 78704		512-789-5018 joan@uteconsultants.com	WDB	F/Caucasian	AU

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Solicitation No.: RFQS 6100 CLMP191 Albert H. Ullrich WTP Conversion to OSGSH

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	V00000924512 fuseARCH Studio, PLLC 702 San Antonio Austin Tx 78701	5126993083  beth@fuse-arch.com	WDB	F/Caucasian	AU

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
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**Vendors Outside the SLBP Area**

**90607 Architect Services, Professional**

DUR8311134 DURAND-HOLLIS RUPE ARCHITECTS INC Building 18 San Antonio Tx 78230	210-308-0080 210-697-3309 office@dhrarchitects.com	MDB	M/Hispanic	TX
VS0000018898 MADELINE ANZ SLAY ARCHITECTURE PLLC 123 Altgelt Avenue San Antonio Tx 78201	2107363009 113 2107346401 madeline@slayarchitecture.com	WDB	F/Caucasian	TX
V00000907873 REED FIRE PROTECTION ENGINEERING LLC 14135 Midway Road Ste. G260 Addison Tx 75001	214-638-7599 102 2146384710 droberts@reedfire.com	MDB	M/Hispanic	TX
V00000923543 Tavkars Global Design Corp 9410 Worfield Court Sugar Land Tx 77498	2815643229 2815643229 tavkarsgdc@yahoo.com	MB	M/Asian	TX
WES8311414 WESTEAST DESIGN GROUP L L C 200 E Grayson St Ste 207 San Antonio Tx 78215-1267	210-530-0755 210-530-9427 katherinek@westeastdesign.com	MDB	M/Asian	TX

**90779 Surveying Services (Not Aerial or Research)**

VS0000019943 JQ INFRASTRUCTURE LLC 2105 Commerce Steet Suite 200 Dallas Tx 75201	972-392-7340 214-550-2536 rmehta@jqiang.com	MDB	M/Asian	TX
V00000911438 Lamb-Star Engineering, LP Suite 1000 Plano Tx 75093	214-440-3600 2144403601 john.lamb@lamb-star.com	MDB	M/Native American	TX
V00000914457 MHR Engineering, LLC. 16845 Blanco Road, Suite 106 San Antonio Tx 78232	210-641-0734 2104972227 hrashid@mhreng.com	MDB	M/Asian	TX
POZ8319072 POZNECKI-CAMARILLO INC 5835 Callaghan Rd Ste 200 San Antonio Tx 78228-1224	210-349-3273 210-349-4395 fcamarillo@pozcam.com	MDB	M/Hispanic	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
<b>92517 Civil Engineering</b>					
	AVI0530500 AVIATION ALLIANCE INC Po Box 799 Colleyville Tx 76034-0799	817-498-0388 817-281-1867 Shirley@AviationAllianceInc.com	WDB	F/Caucasian	TX
	VC0000103077 BRIONES CONSULTING & ENGINEERING LTD 8118 Broadway San Antonio Tx 78209	210-828-1431 210-828-1432 RBRIONES@BRIONESENGINEERING.COM	MDB	M/Hispanic	TX
	VS0000022641 Chica & Associates, Inc 505 Orleans Suite 106 Beaumont Tx 77701	409-833-4343 409-833-8326 twallace@chicaandassociates.com	MDB	M/Hispanic	TX
	VS0000032809 EBG Engineering, LLC. Po Box 104 Allen Tx 75013	9724290006 support@ebgeng.com	WDB	F/Caucasian	TX
	VS0000014891 Eckermann Engineering, Inc. 202 Spring Ho Avenue Lampasas Tx 76550	512-556-8160 5125565122 derrek@eckermannengineering.com	MB	M/Native American	TX
	V00000904921 Fivengineering LLC 3535 Briarpark, Suite 210 Houston Tx 77042	713-775-7701 liz@5engineering.com	WDB	F/Caucasian	TX
	VC0000101227 GONZALEZ - DE LA GARZA & ASSOCIATES 115 E. Travis Street, Suite 800 San Antonio Tx 78205	2102089400 210-208-9401 agonzalez@gd-us.com	MWDB	F/Hispanic	TX
	V00000908561 Goetting Rowe Engineering, LLC 130 Regents Park San Antonio Tx 78230	210-530-7800 bkellyrowe@goettingrowe.com	WB	F/Caucasian	TX
	HVJ2459750 HVJ ASSOCIATES INC 6120 S Dairy Ashford Houston Tx 770072	512-447-9081 281-933-7293 HJOHNSON@HVJ.COM	MDB	M/African American	TX
	VS0000023267 Hayden Consultants, Inc. 5005 Greenville Ave Suite 100a Dallas Tx 75206	214-753-8100 214-750-9329 bhart@haydenconsultants.com	WB	F/Caucasian	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
IBA7153325 IBARRA CONSULTING ENGINEERS INC 3131 Turtle Creek Blvd #1151 Dallas Tx 75219-5445		214-219-1030 214-219-1035	MWDB	F/Hispanic	TX
VS0000019943 JQ INFRASTRUCTURE LLC 2105 Commerce Steet Suite 200 Dallas Tx 75201		972-392-7340 214-550-2536 rmehta@jqiang.com	MDB	M/Asian	TX
VS0000025710 LDP Consultants, Inc. 2115 Chantilly Ln Houston Tx 77018		832-489-9928 linda.pechacek@sbcglobal.net	WB	F/Caucasian	TX
V00000911438 Lamb-Star Engineering, LP Suite 1000 Plano Tx 75093		214-440-3600 2144403601 john.lamb@lamb-star.com	MDB	M/Native American	TX
MAE8319636 MAESTAS & ASSOCIATES INC 11550 Ih 10 W Ste 350 San Antonio Tx 78230		210-366-1988 210-366-1980 almaestas@maesce.com	MDB	M/Hispanic	TX
V00000914457 MHR Engineering, LLC. 16845 Blanco Road, Suite 106 San Antonio Tx 78232		210-641-0734 2104972227 hrashid@mhreng.com	MDB	M/Asian	TX
V00000915161 Mendez Engineering, PLLC 2342 Mountain Fall San Antonio Tx 78258-4912		830-438-0337 8304381135 rmendez@mendezengineering.com	MDB	M/Hispanic	TX
POZ8319072 POZNECKI-CAMARILLO INC 5835 Callaghan Rd Ste 200 San Antonio Tx 78228-1224		210-349-3273 210-349-4395 fcamarillo@pozcam.com	MDB	M/Hispanic	TX
RJR8317892 RJ RIVERA ASSOC INC 601 Nw Loop 410, Suite 410 San Antonio Tx 78216		210-785-0888 2103405664 melissa.barton@rjrivera.com	MDB	M/Hispanic	TX
VS0000011185 RODS Subsurface Utility Engineering, Inc. 6810 Lee Road Suite 300 Spring Tx 77379		713-560-6933 hilda@rodssue.cc	MWDB	F/Hispanic	TX
VS0000034345 SE3, LLC 230 Sw Main St. Suite 213 Lees Summit Mo 64063		630-464-9900 708 469-2566 mspires@se3.us	MDB	M/African American	OS
V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063		713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537	9564644710 9564644714 cgonzalez@uigtexas.com	MB	M/Hispanic	TX
	VAC8317945 V&A CONSULTING ENGINEERS INC 155 Grand Ave Ste 700 Oakland Ca 94612-3592	510-903-6600 510-903-6001 KBell@vaengineering.com	MDB	M/Hispanic	OS
	V00000912661 Verdunity, Inc. Suite #110 Dallas Tx 75248	214-729-8733  kristin@verdunity.com	WDB	F/Caucasian	TX
	VS0000028307 Watearth, Inc. P.O. Box 10194 Houston Tx 77206-0194	832-444-0663 8005193774 jwalker@watearth.com	WB	F/Caucasian	TX
<b>92522 Control Systems Engineering</b>					
	V00000904851 MS ENGINEERING, LLC. 208 Chattington Ct. San Antonio Tx 78213	210-885-9270 2103204191 msquire@msengineeringus.com	MWDB	F/Asian	TX
	V00000915700 Signature Automation, LLC Suite 205 Addison Tx 75001	469-619-1241 101 4696191242 hjhidalgo@sig-auto.com	MDB	M/Hispanic	TX
	V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063	713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX
	V00000913751 Team One Integration, LLC P.O. Box 117370 Carrollton Tx 75011	214-718-7253  hli@teamoneintegration.com	MDB	M/Asian	TX
<b>92531 Electrical Engineering</b>					
	AVI0530500 AVIATION ALLIANCE INC Po Box 799 Colleyville Tx 76034-0799	817-498-0388 817-281-1867 Shirley@AviationAllianceInc.com	WDB	F/Caucasian	TX
	VS0000020957 Azcarate & Associates Consulting Engineers, LLC 7920 Belt Line Road, Suite 930 Dallas Tx 75254	214-217-9993  razcarate@aace-eng.com	MDB	M/Hispanic	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	CNG8321131 CNG ENGINEERING P L L C 1917 N New Braunfels Ave Ste 201 San Antonio Tx 78208-1419	210-224-8841 210-224-8824 TRAVIS.WILTSHIRE@CNGENGINEERING.COM	MDB	M/African American	TX
	GUP7149060 GUPTA & ASSOC INC 13717 Neutron Road Dallas Tx 75244	972-490-7661 972-490-7125 vkgupta@gaiconsulting.com	MB	M/Asian	TX
	V00000908561 Goetting Rowe Engineering, LLC 130 Regents Park San Antonio Tx 78230	210-530-7800 bkellyrowe@goettingrowe.com	WB	F/Caucasian	TX
	VS0000014377 Mbroh Engineering Inc. 12830 Hillcrest Road Suite 111 Dallas Tx 75230	972-364-9090 972-364-9091 ambroh@mbroh.com	MDB	M/African American	TX
	VS0000037668 PGA Engineers, Inc. 13201 Northwest Freeway, Suite 800 Houston Tx 77040	713-269-3182 rpayne@pgaengineers.com	MWDB	F/Asian	TX
	V00000907873 REED FIRE PROTECTION ENGINEERING LLC 14135 Midway Road Ste. G260 Addison Tx 75001	214-638-7599 102 2146384710 droberts@reedfire.com	MDB	M/Hispanic	TX
	VS0000035278 RGM Engineering, LLC 700 N Saint Marys Suite 1225 San Antonio Tx 78205	210-299-4522 204 210-299-4525 elizabeth@rgmengineering.net	MB	M/Hispanic	TX
	SWA8303727 SWAYZER ENGINEERING INC 3102 Maple Ave Ste 450 Dallas Tx 75201-1261	2148807929 2148809005 michele.swayzer@swayzer.com	MWDB	F/African American	TX
	V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063	713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX
	V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537	9564644710 9564644714 cgonzalez@uigtexas.com	MB	M/Hispanic	TX
<b>92535 Environmental Engineering</b>					
	AVI0530500 AVIATION ALLIANCE INC Po Box 799 Colleyville Tx 76034-0799	817-498-0388 817-281-1867 Shirley@AviationAllianceInc.com	WDB	F/Caucasian	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
VC0000103077 BRIONES CONSULTING & ENGINEERING LTD 8118 Broadway San Antonio Tx 78209		210-828-1431 210-828-1432 RBRIONES@BRIONESENGINEERING.COM	MDB	M/Hispanic	TX
DOU7126025 DOUGHERTY SPRAGUE 3902 Industrial St Rowlett Tx 75088		972-412-8666 972-412-8660 cfranklin@dsei.com	WDB	F/Caucasian	TX
GRE8308847 GREEN ENVIRONMENTAL CONSULTING INC 202 Vanderpool Lane Houston Tx 77024		713-932-8950 713-932-8950 info@green-envi.com	WB	F/Caucasian	TX
GRE8304338 GREEN PLANET INC 6371 Hwy 276 W Royse City Tx 75189-5204		972-636-1515 972-636-3948 HAICHA@GREENPLANETINC.COM	WDB	F/Caucasian	TX
VS0000008262 Gainco, Inc. P.O. Box 309 Portland Tx 78374		361-643-4378	WB	F/Caucasian	TX
VS0000025710 LDP Consultants, Inc. 2115 Chantilly Ln Houston Tx 77018		832-489-9928  linda.pechacek@sbcglobal.net	WB	F/Caucasian	TX
V00000904851 MS ENGINEERING, LLC. 208 Chattington Ct. San Antonio Tx 78213		210-885-9270 2103204191 msquire@msengineeringus.com	MWDB	F/Asian	TX
RJR8317892 RJ RIVERA ASSOC INC 601 Nw Loop 410, Suite 410 San Antonio Tx 78216		210-785-0888 2103405664 melissa.barton@rjriviera.com	MDB	M/Hispanic	TX
V00000915700 Signature Automation, LLC Suite 205 Addison Tx 75001		469-619-1241 101 4696191242 hjhidalgo@sig-auto.com	MDB	M/Hispanic	TX
V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063		713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX
V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537		9564644710 9564644714 cgonzalez@uigtexas.com	MB	M/Hispanic	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
<b>92544 General Construction: Management, Scheduling, Cost</b>					
	VS0000020957 Azcarate & Associates Consulting Engineers, LLC 7920 Belt Line Road, Suite 930 Dallas Tx 75254	214-217-9993  razcarate@aace-eng.com	  MDB	  M/Hispanic	  TX
	VS0000014891 Eckermann Engineering, Inc. 202 Spring Ho Avenue Lampasas Tx 76550	512-556-8160 5125565122 derrek@eckermannengineering.com	  MB	  M/Native American	  TX
	V00000904851 MS ENGINEERING, LLC. 208 Chattington Ct. San Antonio Tx 78213	210-885-9270 2103204191 msquire@msengineeringus.com	  MWDB	  F/Asian	  TX
	SWA8303727 SWAYZER ENGINEERING INC 3102 Maple Ave Ste 450 Dallas Tx 75201-1261	2148807929 2148809005 michele.swayzer@swayzer.com	  MWDB	  F/African American	  TX
	V00000920091 Tejas Premier Building Contractor, Inc. 1711 S. Laredo St. San Antonio Tx 78207	2108215858 2108215862 julissa@tejaspremierbc.com	  MWDB	  /Hispanic	  TX
	V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537	9564644710 9564644714 cgonzalez@uigtexas.com	  MB	  M/Hispanic	  TX
<b>92546 GEOTECHNICAL - SOILS</b>					
	HVJ2459750 HVJ ASSOCIATES INC 6120 S Dairy Ashford Houston Tx 770072	512-447-9081 281-933-7293 HJOHNSON@HVJ.COM	  MDB	  M/African American	  TX
<b>92557 Instrumentation/Engineering</b>					
	GUP7149060 GUPTA & ASSOC INC 13717 Neutron Road Dallas Tx 75244	972-490-7661 972-490-7125 vkgupta@gaiconsulting.com	  MB	  M/Asian	  TX
	V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063	713-868-6900 7138680001 tonycouncil@tlceng.com	  MDB	  M/African American	  TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	V00000913751 Team One Integration, LLC P.O. Box 117370 Carrollton Tx 75011	214-718-7253  hli@teamoneintegration.com	MDB	M/Asian	TX
<b>92567 Mechanical Engineering</b>					
	VS0000020957 Azcarate & Associates Consulting Engineers, LLC 7920 Belt Line Road, Suite 930 Dallas Tx 75254	214-217-9993  razcarate@aace-eng.com	MDB	M/Hispanic	TX
	CNG8321131 CNG ENGINEERING P L L C 1917 N New Braunfels Ave Ste 201 San Antonio Tx 78208-1419	210-224-8841 210-224-8824 TRAVIS.WILTSHIRE@CNGENGINEERING.COM	MDB	M/African American	TX
	V00000908561 Goetting Rowe Engineering, LLC 130 Regents Park San Antonio Tx 78230	210-530-7800  bkellyrowe@goettingrowe.com	WB	F/Caucasian	TX
	VS0000035278 RGM Engineering, LLC 700 N Saint Marys Suite 1225 San Antonio Tx 78205	210-299-4522 204 210-299-4525 elizabeth@rgmengineering.net	MB	M/Hispanic	TX
	SWA8303727 SWAYZER ENGINEERING INC 3102 Maple Ave Ste 450 Dallas Tx 75201-1261	2148807929 2148809005 michele.swayzer@swayzer.com	MWDB	F/African American	TX
	V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063	713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX
	V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537	9564644710 9564644714 cgonzalez@uigtexas.com	MB	M/Hispanic	TX
<b>92588 Structural Engineering</b>					
	AVI0530500 AVIATION ALLIANCE INC Po Box 799 Colleyville Tx 76034-0799	817-498-0388 817-281-1867 Shirley@AviationAllianceInc.com	WDB	F/Caucasian	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	VC0000103077 BRIONES CONSULTING & ENGINEERING LTD 8118 Broadway San Antonio Tx 78209	210-828-1431 210-828-1432 RBRIONES@BRIONESENGINEERING.COM	MDB	M/Hispanic	TX
	VS0000032809 EBG Engineering, LLC. Po Box 104 Allen Tx 75013	9724290006 support@ebgeng.com	WDB	F/Caucasian	TX
	IBA7153325 IBARRA CONSULTING ENGINEERS INC 3131 Turtle Creek Blvd #1151 Dallas Tx 75219-5445	214-219-1030 214-219-1035	MWDB	F/Hispanic	TX
	VS0000019943 JQ INFRASTRUCTURE LLC 2105 Commerce Steet Suite 200 Dallas Tx 75201	972-392-7340 214-550-2536 rmehta@jqeng.com	MDB	M/Asian	TX
	V00000919663 OUTLIER ENGINEERING INC 240 Oak Court New Braunfels Tx 78132	830-625-5947 amys@outliereng.com	WDB	F/Caucasian	TX
	VS0000035278 RGM Engineering, LLC 700 N Saint Marys Suite 1225 San Antonio Tx 78205	210-299-4522 204 210-299-4525 elizabeth@rgmengineering.net	MB	M/Hispanic	TX
	V00000917428 TLC Engineering Inc. 8204 Westglen Drive Houston Tx 77063	713-868-6900 7138680001 tonycouncil@tlceng.com	MDB	M/African American	TX
	V00000924928 Urban Infrastructure Group, Inc. Po Box 729 Donna Tx 78537	9564644710 9564644714 cgonzalez@uigtexas.com	MB	M/Hispanic	TX
<b>96121 Cost Estimating</b>					
	APE8320387 APEX COST CONSULTANTS INC Suite 1105 Fort Worth Tx 76102	4697185562 214-242-2585 hracct@eudacorp.com	MB	M/African American	TX
	AVI0530500 AVIATION ALLIANCE INC Po Box 799 Colleyville Tx 76034-0799	817-498-0388 817-281-1867 Shirley@AviationAllianceInc.com	WDB	F/Caucasian	TX

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C Code & Description	Vend Code/Adr	Phone/Fax/Email	W/MB Code	G/E	LCTN
	VS0000030471 Garza Program Management LLC 5910 North Central Expressway, Suite 1670 Dallas Tx 75206	214-346-0694 2147220695 info@garzapm.com	MDB	M/Hispanic	TX
	HAL8322344 HALFORD BUSBY, LLC 17350 State Highway 249, Suite 110 Houston Tx 77064	281-920-1100 281-920-1123 sgnoinski@halfordbusby.com	WDB	F/Caucasian	TX
	VS0000019943 JQ INFRASTRUCTURE LLC 2105 Commerce Steet Suite 200 Dallas Tx 75201	972-392-7340 214-550-2536 rmehta@jqiang.com	MDB	M/Asian	TX
	PRO7148615 PROJECT COST RESOURCES 2800 Fm 359 Richmond Tx 77406	281-497-4171 281-497-3522 bwilliams@pcrcost.com	WB	F/Caucasian	TX
	SWA8303727 SWAYZER ENGINEERING INC 3102 Maple Ave Ste 450 Dallas Tx 75201-1261	2148807929 2148809005 michele.swayzer@swayzer.com	MWDB	F/African American	TX
	WES8311414 WESTEAST DESIGN GROUP L L C 200 E Grayson St Ste 207 San Antonio Tx 78215-1267	210-530-0755 210-530-9427 katherinek@westeastdesign.com	MDB	M/Asian	TX
				Total in SLBP:	292
				Total Outside SLBP:	97

360 Professional Services, Inc.  
P.O. Box 3639  
Cedar Park Tx 78630

A K Young Assoc  
Po Box 201265  
Austin Tx 78720-1265

A-Plus Power Consulting, Llc  
12305 Pleasant Hill Ct  
Austin Tx 78738

Acme Architecture  
1001 E 8th St  
Austin Tx 78702-3249

Aguirre & Fields Lp  
12708 Riata Vista Circle Ste A-109  
Austin Tx 78727

Alan Y Taniguchi Architect  
& Assoc Inc 1609 W 6th St  
Austin Tx 78703-5059

Alliance-Texas Engineering Company  
11500 Metric Blvd Bldg M1, Ste 150  
Austin Tx 78758

Ana D Gallo  
1501 Barton Springs Rd #230  
Austin Tx 78704

Andrew A Rodriguez  
8137 Osborne Dr  
Austin Tx 78729-8074

Apex Cost Consultants Inc  
307 W. 7th Street Suite 1105  
Fort Worth Tx 76102

Appliedtech Group L L C  
12059 Lincolnshire Dr  
Austin Tx 78758-2217

Aptus Engineering Llc  
3400 Tavistock Dr  
Austin Tx 78748

Arche Llc  
5700 North Hampton Rd  
Austin Tx 78723

Arias & Associates Inc  
13581 Pond Springs Road  
Austin Tx 78729

Asd Consultants Inc  
8120 N Ih 35  
Austin Tx 78753

Austin Architecture Plus Inc  
1907 N Lamar Blvd Ste 260  
Austin Tx 78705-4900

Aviation Alliance Inc  
Po Box 799  
Colleyville Tx 76034-0799

Axiom Engineers Inc  
13276 Research Blvd Ste 208  
Austin Tx 78750

Ays Engineering, Llc  
203 E. Main Street Ste 204  
Round Rock Tx 78664

Azcarate & Associates Consulting Engineers,  
Llc  
7920 Belt Line Road, Suite 930  
Dallas Tx 75254

B+V Design, Llc  
208 W. 4th St., 3a  
Austin Tx 78701

Baer Engineering & Environmental Consulting  
Inc  
7756 Northcross Dr Ste 211  
Austin Tx 78757-1725

Barnes Gromatzky Kosarek  
1508 W. 5th Street, Suite 200  
Austin Tx 78703-5137

Benz Resource Group Inc  
1101-B E 6th St  
Austin Tx 78702

Blgy Inc  
2204 Forbes Dr Ste 101  
Austin Tx 78754-5143

Bowman Engineering & Consulting Inc  
902 Rio Grande  
Austin Tx 78701

Briones Consulting & Engineering Ltd  
8118 Broadway  
San Antonio Tx 78209

Business & Financial Management Solutions  
Llc  
Po Box 151708  
Austin Tx 78715-1708

Bhavani Singal  
5409 Woodrow Ave Apt C  
Austin Tx 78756

Carter Design Assoc Inc  
817 W 11th St  
Austin Tx 78701-2009

Cas Consulting & Svcs Inc  
7908 Cameron Rd  
Austin Tx 78754

Chan & Partners Engineering Llc  
4319 James Casey St Ste 300  
Austin Tx 78745

Chaparral Professional Land Surveying Inc  
3500 Mccall Lane  
Austin Tx 78744

Civil Land Group Llc  
206 W Main St Ste 101  
Round Rock Tx 78664

Clotey Engineering Inc  
210 N Kings Canyon Dr  
Cedar Park Tx 78613-3043

Cng Engineering P L L C  
1917 N New Braunfels Ave Ste 201  
San Antonio Tx 78208-1419

Conveyance/Providence (Joint Venture)  
112 Las Colinas Drive  
Georgetown Tx 78628

Cotera + Reed Architects Inc  
812 San Antonio St., Ste. 406  
Austin Tx 78701

Crespo Consulting Services Inc  
4131 Spicewood Springs Rd #B2  
Austin Tx 78759-8658

Castleberry Engineering & Consulting, P.L.L.C.  
P.O. Box 40546  
Austin Tx 78704

Chica & Associates, Inc  
505 Orleans Suite 106  
Beaumont Tx 77701

Cook-Joyce, Inc.  
812 W. 11th Street  
Austin Tx 78701

Corsair Consulting Llc  
9442 Capital Of Texas Hwy N Plaza One, Suite  
500  
Austin Tx 78759

D. F. Noble Consulting, Llc  
1185 Taylor Ranch Road  
Wimberley Tx 78676

Datum Gojer Engineers L L C  
5929 Balcones Dr Ste 100  
Austin Tx 78731

Davcar Inc  
1010 Land Creek Cove Ste 200  
Austin Tx 78746-

Dk Studio, Pc  
611 West 15th Street  
Austin Tx 78701

Dorothy M Bothne  
14201 Sandy Meadow Circle  
Leander Tx 78641

Dougherty Sprague  
3902 Industrial St  
Rowlett Tx 75088

Durand-Hollis Rupe Architects Inc  
14603 Huebner Rd Building 18  
San Antonio Tx 78230

Ebg Engineering, Llc.  
Po Box 104  
Allen Tx 75013

Elizabeth Salaiz Architect Inc  
2305 Rundell Pl  
Austin Tx 78704-3027

Encotech Engineering Consultants Inc  
8500 Bluffstone Cove, #B-103  
Austin Tx 78759

Engineered Exteriors, Pllc  
13740 Research Blvd. Suite C2  
Austin Tx 78750

Eckermann Engineering, Inc.  
202 Spring Ho Avenue  
Lampasas Tx 76550

Facilities Resource Inc  
9737 Great Hills Trail Suite 305  
Austin Tx 78759

Fayez S Kazi  
411 W Saint Elmo Rd Unit #1  
Austin Tx 78745

Foster Cm Group Inc  
111 Congress Ave 4th Fl  
Austin Tx 78701-4050

Frank Lam & Assoc Inc  
508 W 16th St  
Austin Tx 78701-1502

Fivengineering Llc  
3535 Briarpark, Suite 210  
Houston Tx 77042

G Sylva, Llc  
9712 Indina Hills Dr.  
Austin Tx 78717

Glenrose Engineering Inc  
Po Box 1948  
Austin Tx 78767-1948

Global Engineers Inc  
4219 Pebblestone Trl  
Round Rock Tx 78665-5027

Gonzalez - De La Garza & Associates  
115 E. Travis Street, Suite 800  
San Antonio Tx 78205

Green Environmental Consulting Inc  
202 Vanderpool Lane  
Houston Tx 77024

Green Planet Inc  
6371 Hwy 276 W  
Royse City Tx 75189-5204

Gupta & Assoc Inc  
13717 Neutron Road  
Dallas Tx 75244

Gainco, Inc.  
P.O. Box 309  
Portland Tx 78374

Gamble Osgood Collaborative, Llc  
4015 Avenue D  
Austin Tx 78751

Garza Program Management Llc  
5910 North Central Expressway, Suite 1670  
Dallas Tx 75206

Garzabury, L.L.C.  
221 W. Sixth Street, Suite 380  
Austin Tx 78701

Goetting Rowe Engineering, Llc  
130 Regents Park  
San Antonio Tx 78230

Halford Busby, Llc  
17350 State Highway 249, Suite 110  
Houston Tx 77064

Harkins Engineering Inc  
3300 Lost Oasis Hollow  
Austin Tx 78739-7603

Harutunian Engineering Inc  
305 E Huntland Dr Ste 500  
Austin Tx 78752-3730

Hejl Lee & Assoc Inc  
321 Ed Schmidt Blvd., Suite 100  
Hutto Tx 78634

Hicks & Co Environmental/Archeological  
Consultants  
1504 W 5th St  
Austin Tx 78703-5157

Hilario N Arriaga  
6708 Dubuque Lane  
Austin Tx 78723

Holt Engineering Inc  
2220 Barton Skyway  
Austin Tx 78704-5737

Hvj Associates Inc  
6120 S Dairy Ashford  
Houston Tx 770072

Hayden Consultants, Inc.  
5005 Greenville Ave Suite 100a  
Dallas Tx 75206

I T Gonzalez Engineers  
3501 Manor Rd  
Austin Tx 78723-5815

Ibarra Consulting Engineers Inc  
3131 Turtle Creek Blvd #1151  
Dallas Tx 75219-5445

Industrial Laminates Corporation  
Po Box 9616  
Austin Tx 78766

Inland Geodetics Llc  
1504 Chisholm Trail Rd Ste 103  
Round Rock Tx 78681

Jaime Beaman Aia Inc  
3821 Juniper Trace, Suite 104  
Austin Tx 78738-

Jasmine Engineering Inc  
100 Congress Ave Ste 2000  
Austin Tx 78701

Jones McMullen Engineering Inc  
1412 Payton Falls Dr  
Austin Tx 78754

Jose I Guerra Inc  
2401 S Ih-35 Ste 210  
Austin Tx 78741-3823

Jq Infrastructure Llc  
2105 Commerce Steet Suite 200  
Dallas Tx 75201

Jq+Tsen Llc  
1608 West 6th St Suite 200  
Austin Tx 78703

Jacqui Dodson Aia Architecture And Interior  
Design Inc  
2105 Arpdale St  
Austin Tx 78704

K Friese & Assoc Inc  
1120 S Capital Of Texas Hwy, Cityview 2, Ste  
100  
Austin Tx 78746

K+Cda Associated Architects  
817 W 11th St  
Austin Tx 78701-2009

Kb Pike Engineering Llc  
105 W Riverside Drive Suite 110  
Austin Tx 78704

Karen A Mcgraw  
4315 Ave C  
Austin Tx 78751

Kings Struarchural, Inc.  
555 Round Rock West Dr Suite E227  
Round Rock Tx 78681

Lam+Dci, Llc  
508 W 16th St  
Austin Tx 78701

Landesign Services Inc  
1220 Mcneil Road, Suite 200  
Round Rock Tx 78681

Landmark Surveying L P  
2205 E. 5th Street  
Austin Tx 78702

Ldp Consultants, Inc.  
2115 Chantilly Ln  
Houston Tx 77018

Leap Structures, Pllc  
3001 S. Lamar Blvd Suite 230  
Austin Tx 78704

Limbacher & Godfrey Inc  
2124 E 6th St Unit 102  
Austin Tx 78702

Loc Consultants Civil Division, Inc.  
1000 E Cesar Chavez Street Suite 100  
Austin Tx 78702

Lopez Salas Architects Inc  
9901 Brodie Lane, Suite 160  
Austin Tx 78748

Lackey Commercial Properties, Llc  
Po Box 41270  
Austin Tx 78704

Lamb-Star Engineering, Lp  
5700 W. Plano Parkway Suite 1000  
Plano Tx 75093

Land Interactive, Llc  
608 West Monroe Suite C  
Austin Tx 78704

Longaro & Clarke / Civilitude Jv  
1701 Directors Blvd., Suite 400  
Austin Tx 78744

Macias & Associates Lp  
5410 S 1st St  
Austin Tx 78745-3040

Madeline Anz Slay Architecture Pllc  
123 Altgelt Avenue  
San Antonio Tx 78201

Maestas & Associates Inc  
11550 Ih 10 W Ste 350  
San Antonio Tx 78230

Martha Ferrero Juch P E Inc  
1706 Walsh Dr  
Round Rock Tx 78681-1434

Mccann Adams Studio  
515 Congress Ave, Ste 1600  
Austin Tx 78701

Mcgray & Mcgray Land Surveyors Inc  
3301 Hancock Dr Ste 6  
Austin Tx 78731-5441

Mhr Engineering, Llc.  
16845 Blanco Road, Suite 106  
San Antonio Tx 78232

Miro Rivera Architects Inc  
505 Powell St  
Austin Tx 78703-5121

Ms Engineering, Llc.  
208 Chattington Ct.  
San Antonio Tx 78213

Mwm Designgroup Inc  
305 E Huntland Dr Ste 200  
Austin Tx 78752

Majestic Services Inc  
8120 North Ih 35, Suite 101  
Austin Tx 78753

Maldonado-Burkett Intelligent Transportation Systems, Llp  
2205 Western Trails Blvd. Ste B  
Austin Tx 78745-1638

Martinez Engineering, Llc  
106 East Sixth Street Suite 841  
Austin Tx 78701

Mbroh Engineering Inc.  
12830 Hillcrest Road Suite 111  
Dallas Tx 75230

Mckinney Engineering, Inc  
18101 Angel Valley Dr  
Leander Tx 78641

Mendez Engineering, Pllc  
2342 Mountain Fall  
San Antonio Tx 78258-4912

Negrete & Kolar Architects Llp  
11720 North Ih35  
Austin Tx 78753

Nicole Francois Consulting  
1008 Sundance Ridge  
Dripping Springs Tx 78620

Nellor Environmental Associates, Inc  
4024 Walnut Clay Dr  
Austin Tx 78731

Nodal Partners, Llc  
13640 Briarwick Dr. Suite 180  
Austin Tx 78729

O-Sda Industries, Llc  
5714 Sam Houston Circle  
Austin Tx 78731

Office For Local Architecture Llc  
4105 Ave G Apt B  
Austin Tx 78751

Outlier Engineering Inc  
240 Oak Court  
New Braunfels Tx 78132

Oakhill Engineering, Llc  
5705 Janabyrd Lane  
Austin Tx 78749

P E Structural Consultants Inc  
8436 Spicewood Springs Rd  
Austin Tx 78759-6050

Pavetex Engineering & Testing Inc  
3989 Hwy 290 E  
Dripping Springs Tx 78620-4287

Pga Engineers, Inc.  
13201 Northwest Freeway, Suite 800  
Houston Tx 77040

Power Quality Engineering Inc  
3061 Woodall Dr Bldg A  
Cedar Park Tx 78613-7225

Poznecki-Camarillo Inc  
5835 Callaghan Rd Ste 200  
San Antonio Tx 78228-1224

Professional Strucivil Engineers Inc  
12710 Research Blvd. Suite 390  
Austin Tx 78759

Project Cost Resources  
2800 Fm 359  
Richmond Tx 77406

Providence Environmental Consulting Inc  
112 Las Colinas Dr  
Georgetown Tx 78628-1019

Quality Power, Llc  
407 Hurst Creek Rd.  
Lakeway Tx 78734

Reed Fire Protection Engineering Llc  
14135 Midway Road Ste. G260  
Addison Tx 75001

Rgm Engineering, Llc  
700 N Saint Marys Suite 1225  
San Antonio Tx 78205

Rgt Engineering, Inc.  
1000 Heritage Center Circle  
Round Rock Tx 78664

Rj Rivera Assoc Inc  
601 Nw Loop 410, Suite 410  
San Antonio Tx 78216

Rodriguez Transportation Group  
Inc 11211 Taylor Draper Ln Ste 100  
Austin Tx 78759

Rods Subsurface Utility Engineering, Inc.  
6810 Lee Road Suite 300  
Spring Tx 77379

Rz Communications Inc  
1400 Smith Rd Ste 101b  
Austin Tx 78721-3563

Regional Engineering Inc.  
818 Wagon Trail Suit # 102  
Austin Tx 78758

Rios Engineering, Llc  
609 Irma Dr  
Austin Tx 78752

Rodriguez Engineering Laboratories Llc  
13809 Turbine Drive  
Austin Tx 78728

Rogers Moore Engineers, Llc  
221 West 6th Street Suite 826  
Austin Tx 78701

Se3, Llc  
230 Sw Main St. Suite 213  
Lees Summit Mo 64063

Site Specifics Inc  
700 N Lamar Blvd Ste 200a  
Austin Tx 78703-5430

Soheir S Michel  
Po Box 200548  
Austin Tx 78720

Solis Constructors Inc  
9100 United Dr Ste 106  
Austin Tx 78758-7716

Square One Consultants Inc  
1000 Westbank Dr Ste 4a  
Austin Tx 78746-7994

Stansberry Engineering Co.  
Po Box 309  
Manchaca Tx 78652-0309

Steinman Luevano Structures Llp  
5901 Old Fredericksburg Rd B101  
Austin Tx 78749

Structurespe L L P  
1018 W 11th St Ste 100  
Austin Tx 78703-4987

Studio 8 Architects Inc  
611 W 15th St  
Austin Tx 78701

Studio Balcones Llc  
702 San Antonio Street  
Austin Tx 78701

Sunland Group Inc  
1033 La Posada Drive Suite 370  
Austin Tx 78752

Susan H Welker  
4911 Rollingwood Dr  
Austin Tx 78746

Susan Roth Consulting Llc  
4111 Tablerock Dr  
Austin Tx 78731

Swayzer Engineering Inc  
3102 Maple Ave Ste 450  
Dallas Tx 75201-1261

Seiler/Lankes Group  
901 Round Rock Avenue Suite C100  
Round Rock Tx 78681

Signature Automation, Llc  
14679 Midway Road Suite 205  
Addison Tx 75001

Smith Turrieta, Pllc  
Po Box 5902  
Austin Tx 78763

Spring Architects, Inc.  
2003 S. Lamar Blvd. Ste. 9  
Austin Tx 78704

Studio D Consulting+Design, Llc  
Po Box 340183  
Lakeway Tx 78734

The Arizpe Group Inc  
6330 E Hwy 290 Ste 375  
Austin Tx 78723-1156

Third Land Inc  
P.O. Box 162137  
Austin Tx 78716-

Thomas Dukes  
9905 Fm 973 North  
Manor Tx 78653

Thompson-Hamilton Engineering Llc  
283 Catalina Lane  
Austin Tx 78737

Tlc Engineering Inc.  
8204 Westglen Drive  
Houston Tx 77063

Transtec Group Inc  
6111 Balcones Dr  
Austin Tx 78731-

Tricia Altamirano  
Consulting Engineer Inc 1101 S Cap Of Tx Hwy  
Ste 210d  
Austin Tx 78746-6438

Tavkars Global Design Corp  
9410 Worfield Court  
Sugar Land Tx 77498

Team One Integration, Llc  
P.O. Box 117370  
Carrollton Tx 75011

Tejas Premier Building Contractor, Inc.  
1711 S. Laredo St.  
San Antonio Tx 78207

Texas Energy Engineering Services, Inc.  
1301 S. Capital Of Texas Highway Suite B-325  
Austin Tx 78746

Texas Engineering Solutions, Llc  
5000 Bee Caves Rd Suite 206  
Austin Tx 78746

The Salinas Group, Llc  
1706 Bouldin Ave.  
Austin Tx 78704

Unintech Consulting Engineers Inc  
3737 Executive Center Dr Ste 101  
Austin Tx 78731

Unism Development Co Inc  
Po Box 14145  
Austin Tx 78761-4145

Urban Design Group Pc  
3660 Stoneridge Rd Ste E101  
Austin Tx 78746

Ute Consultants Inc  
2007 S 1st Street  
Austin Tx 78704

Urban Infrastructure Group, Inc.  
Po Box 729  
Donna Tx 78537

V&A Consulting Engineers Inc  
155 Grand Ave Ste 700  
Oakland Ca 94612-3592

Vealenzuela Preservation Studio Llc  
4401 Hoffman Drive  
Austin Tx 78749

Vickrey & Assoc Inc  
1717 W 6th St Ste 260, Hartland Plaza  
Austin Tx 78703

Verdunity, Inc.  
17000 Preston Road Suite #110  
Dallas Tx 75248

W&D Enterprises, L.L.C.  
1747 Fort Grant Dr.  
Round Rock Tx 78665

Walker Texas Surveyors Inc  
Po Box 324  
Cedar Park Tx 78630-0324

Westeast Design Group L L C  
200 E Grayson St Ste 207  
San Antonio Tx 78215-1267

Watearth, Inc.  
P.O. Box 10194  
Houston Tx 77206-0194

You Seok Son  
3517 Arvin Dr  
Austin Tx 78738

Zamora Llc  
1435 S Loop 4  
Buda Tx 78610

Zander Engineering And Consulting, Inc.  
12713 Belcara Place  
Austin Tx 78732

Fusearch Studio, Pllc  
702 San Antonio  
Austin Tx 78701



**FORM 1**  
**Prime Firm General Information**

Solicitation Number: CLMP191

Project Name: Eng. Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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Firm Legal Name: <b>(MUST MATCH VENDOR REGISTRATION AND BE THE EXACT LEGAL NAME)</b>	
Firm Address:	
Headquarter Address if parent company address is different than firm address listed:	
Telephone number:	
Federal Tax ID Number:	
Contact Person (Person City should contact for questions with submittal):	
COA Vendor Registration Number:	
Address of contact person:	
Phone number of contract person:	
E-mail Address of contact person:	
Year of Firm's Registration with the State of Texas	
Firm's Engineering/Architectural Registration Number:	
<i>If submitting as a joint venture, the following information is required for each joint venture firm.</i>	

Firm 1 <b>Legal Name</b>	
Participating Firms Percentage of Control:	
Number of Years in Business:	
Organization Type:	
Date of Organization (MM/YYYY):	
Date of Predecessor Organization:	

Add Additional Joint Venture Firm

**Office Personnel  
List of Principals and Titles:**

Name of Principal	
Title	

Personnel Other Than Principals	
Total number of employees in firm	
Number of registered Environmental Engineers	
Number of Registered Civil Engineers	
Number of other Registered Engineers	
Number of other Professionals	
Number of Support Personnel	

<b>Insurance Information</b>		
Worker's Compensation and Employers' Liability Insurance		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If "yes, please state limits.
Commercial General Liability Insurance		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If "yes", please state limits.
Business Automobile Liability Insurance		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If "yes", please state limits.
Professional Liability Insurance		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If "yes", please state limits.

**SUBCONSULTANT INFORMATION**

Complete the MBE/WBE Compliance Plan in the MBE/WBE Procurement Program package. All subconsultant recommendations will be subject to approval by the City. If for any reason an MBE or WBE subconsultant must be replaced, the prime consultant firm will be required to make good faith efforts to replace with another MBE or WBE.

Attach a letter from each subconsultant on the proposed team, confirming that they have been contacted and are prepared to provide services for the project.

The undersigned acknowledges receipt of the following addenda:			
Addendum No.	Date	Received By	
			Add another addendum

**OTHER CONSIDERATIONS**

Describe the quantity and nature of any work, interest in work, partnership interest, land ownership or other interest in any project, property or business dealing within the proposed project area or past or current business relationship which may give rise to a potential conflict of interest for your firm or associated firms in the execution of this project.

--



**FORM 2**  
**AFFIDAVIT OF AUTHENTICATION**

Solicitation Number: CLMP191

Project Name: Engineering Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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Entities submitting qualification statements shall provide authentication that the electronic version (CD or flash drive) of the Statement of Qualifications is an exact duplicate of the 'Original' hard copy submittal. The City of Austin is not responsible for discrepancies between the submitting firm's electronic version and 'Original' hard copy submittal. The City of Austin reserves the right to use the electronic version as an 'Original'.

I hereby certify that the electronic version of the Statement of Qualifications submitted is an exact duplicate of the 'Original' hard copy. I understand if there are discrepancies between the hard copy 'Original' and the electronic version, we may be deemed non-responsive.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Firm/Entity: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_

**END**



## FORM 3 - PRIME FIRM'S EEO PROGRAM AND TITLE VI ASSURANCES

Solicitation Number: CLMP191

Project Name: Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

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### City of Austin, Texas NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION

To: City of Austin, Texas, ("OWNER")

I hereby certify that our firm conforms to the Code of the City of Austin, Section 5-4-2, and the City's Non-Retaliation Policy as reiterated below:

- A. **Chapter 5-4. Discrimination in Employment by City Contractors, Section 5-4-2:** As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations and agrees:
- (1) Not to engage in any discriminatory employment practice defined in this chapter.
  - (2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter. Such affirmative action shall include, but not be limited to: all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising; selection for training and apprenticeship, rates of pay or other form of compensation, and layoff or termination.
  - (3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by OWNER setting forth the provisions of this chapter.
  - (4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, veteran status, sex or age.
  - (5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory or retaliation employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.
  - (6) To cooperate fully with OWNER's Human Rights Commission in connection with any investigation or conciliation effort of said Human Rights Commission to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.
  - (7) To require compliance with provisions of this chapter by all subcontractors having fifteen or more employees who hold any subcontract providing for the expenditure of \$2,000 or more in connection with any contract with OWNER subject to the terms of this chapter.

**B. Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy:**

For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

- (1) *As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.*
- (2) *The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.*
- (3) *The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.*

*Further, employees who experience discrimination, retaliation, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their complaint, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does not continue.*

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE A COPY TO THE CITY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, **OR** THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES (THE FORM OF WHICH HAS BEEN APPROVED BY THE CITY'S EQUAL EMPLOYMENT/FAIR HOUSING OFFICE), WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL.

**C. Sanctions:**

Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.

**D. Term:**

The Contractor agrees that this Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the Owner, will remain in force and effect for one year from the date of filling. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

CONTRACTOR \_\_\_\_\_  
Authorized  
Signature \_\_\_\_\_  
  
Title \_\_\_\_\_

**END**

## APPENDIX A

## OF THE TITLE VI ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor" agrees as follows:

1. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contract for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
4. Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its book, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:
  - (a) withholding of payments to the contractor under the contract until the contractor complies, and or
  - (b) cancellation, termination or suspension of the contract, in whole or in part.

6. Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States. (DOT 1050.2, 08/24/71)

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Date: \_\_\_\_\_

END



## FORM 4

# AFFIDAVIT OF NON-COLLUSION, NON-CONFLICT OF INTEREST AND ANTI-LOBBYING

Solicitation Number: CLMP191

Project Name: Eng. Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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State of Texas

County of Travis

The undersigned "Affiant" is a duly authorized representative of the Responder for the purpose of making this Affidavit, and, after being first duly sworn, has deposed and stated and hereby deposes and states, to the best of his or her personal knowledge and belief as follows:

The term "Respondent", as used herein, includes the individual or business entity submitting the response and for the purpose of this Affidavit includes the directors, officers, partners, managers, members, principals, owners, agents, representatives, employees, other parties in interest of the Respondent, and anyone or any entity acting for or on behalf of the Respondent, including a subconsultant in connection with this response.

The terms "City" and "Owner" are synonymous.

1. **Anti-Collusion Statement.** The Respondent has not and will not in any way directly or indirectly:
  - a. colluded, conspired, or agreed with any other person, firm, corporation, respondent or potential respondent to the amount of this response or the terms or conditions of this response.
  - b. paid or agreed to pay any other person, firm, corporation, respondent or potential respondent any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the prices in the attached response or the response of any other respondent.
2. **Preparation of Invitation for Response and Contract Documents .** The Respondent has not received any compensation or a promise of compensation for participating in the preparation or development of the underlying response or contract documents. In addition, the Respondent has not otherwise participated in the preparation or development of the underlying response or contract documents, except to the extent of any comments or questions and responses in the solicitation process, which are available to all respondents, so as to have an unfair advantage over other respondents, provided that the Respondent may have provided relevant product or process information to a consultant in the normal course of its business.
3. **Participation in Decision Making Process.** The Respondent has not participated in the evaluation of responses or proposals or other decision making process for this solicitation, and, if Respondent is awarded a contract hereunder, no individual, agent, representative, consultant or sub contractor or consultant associated with Respondent, who may have been

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involved in the evaluation or other decision making process for this solicitation, will have any direct or indirect financial interest in the Contract, provided that the Respondent may have provided relevant product or process information to a contractor or another consultant in the normal course of its business.

4. **Present Knowledge.** Respondent is not presently aware of any potential or actual conflicts of interest regarding this solicitation, which either enabled Respondent to obtain an advantage over other Respondents or would prevent Respondent from advancing the best interests of OWNER in the course of the performance of the Contract.
5. **City Code.** As provided in Sections 2-7-61 through 2-7-65 of the City Code, no individual with a substantial interest in Respondent is a City official or employee or is related to any City official or employee within the first or second degree of consanguinity or affinity.
6. **Chapter 176 Conflict of Interest Disclosure.** In accordance with Chapter 176 of the Texas Local Government Code, the Respondent:
  - a. does not have an employment or other business relationship with any local government officer of OWNER or a family member of that officer that results in the officer of family member receiving taxable income;
  - b. has not given a local government officer of OWNER one or more gifts, other than gifts of food lodging transportation or entertainment accepted as a guest, that have an aggregate value of more than \$250 in the twelve month period preceding the date the officer becomes aware of the execution of the Contract or that OWNER is considering doing business with the Respondent.

As required by Chapter 176, Respondent must have filed a Conflicts of Interest Questionnaire with the Purchasing Department no later than the seventh business day after the commencement of contract discussions or negotiations with the City or the submission of a Response, response to a request for proposals, or other writing related to a potential contract with OWNER. The questionnaire must be updated not later than the seventh day after the date of an event that would make a statement in the questionnaire inaccurate or incomplete. There are statutory penalties for failure to comply with Chapter 176.

7. **Anti-Lobbying Ordinance.** As set forth in Attachment 2 of the solicitation documents, between the date that the Invitation for Response was issued and the date of full execution of the Contract, Respondent has not made and will not make a representation to a member of the City Council, a member of a City Board, or any other official, employee or agent of the City, other than the authorized contact person for the solicitation, except as permitted by the Ordinance

If the Respondent cannot affirmatively swear and subscribe to the forgoing statements, the Respondent shall provide a detailed written explanation in the space provided below or, as necessary, on separate pages to be annexed hereto.

Signature \_\_\_\_\_ Date:

Printed Name:

Title:

Firm/Entity:

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public My Commission Expires \_\_\_\_\_

RESPONDENT'S EXPLANATION:

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Include the entire Affidavit, Pages 1 – 3.

END



# FORM 5 AFFIDAVIT OF AVAILABILITY

Solicitation Number: CLMP191

Project Name Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

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Entities submitting qualification statements, including prime firms and subconsultants, shall have adequate current staff (including professionals registered in applicable fields, other professionals, and technicians) to competently and efficiently perform the work. The prime firm and subconsultants must commit that staff proposed in this submittal will be available to perform the proposed work within the anticipated project schedule.

In addition, prime firms who list individuals in Consideration Item 4 - Experience of Key Personnel must commit that those individuals are indeed employed by the prime firm and are not contracted employees. Prime firms who use an affiliated firm to hire staff on behalf of the prime firm must inform the City of this fact in its executive summary and explain the affiliated relationship involved between the two firms.

I hereby certify that our staff and the staff of our subconsultants proposed in this submittal are available to perform the proposed work in a competent and efficient manner. In the event an individual proposed in this submittal is not available, I understand that after contract award we will be required to submit a change request with an individual equally or more qualified, which is subject to review and approval by the City. In the event the City does not approve the change request, I understand our firm will no longer be awarded the contract.

I hereby certify that the individuals listed in Consideration Item 4 - Experience of Key Personnel are employed by the prime firm and are not contracted employees.

Signature:

Date:

Printed Name:

Title:

Firm/Entity Name:

Subscribed and sworn to before me  
this

day of

,20

My Commission Expires

Notary Public

**END**



**FORM 6**  
**AFFIDAVIT OF CONTRACT EXECUTION**

Solicitation Number: CLMP191

Project Name: Eng. Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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Entities submitting qualification statements shall be prepared to be responsive to City staff following Council award in providing documents required for contract execution, including but not limited to insurance, corporate resolution, hourly rate information and non-discrimination policy. The prime firm must commit to meeting schedules and deadlines set by City staff in order to execute the contract in a timely manner. We anticipate contract execution on or before June 2016.

I hereby certify that following Council award, our firm will be responsive to City staff in submitting the required documents by the deadlines set forth by City staff. I understand that if we do not meet this requirement, contract negotiations will cease. I also understand if we do not submit this completed form with our Statement of Qualifications, we may be deemed non-responsive.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Firm/Entity: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_

**END**



**FORM 7  
EXPERIENCE OF PROJECT MANAGER**

Solicitation Number: CLMP191

Project Name: Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

Firm Name:	
*Name of Project Manager:	
Current Years of Experience:	
Registration Number:	
Year of Registration:	

**\*[If licensed, list name as shown on registration with Texas Board of Professional Engineers (TBPE) or Texas Board of Architectural Examiners (TBAE)]**

*(The following information is required for each project. Provide no more than one page per project. Refer to the Evaluation Criteria for the number of projects required and timeframe.)*

Project Name/Location:	
Firm Name Work Performed Under:	
Year Completed:	
Construction Cost:	
Name of Client/Owner's Representative:	
Title of Client/Owner's Representative	
Address of Client/Owner's Representative:	
Phone number of Client/Owner's Representative:	
Project Description:	
Work performed by Individual:	
Add Another Project	



**FORM 8  
EXPERIENCE OF PROJECT PROFESSIONAL**

Solicitation Number: CLMP191

Project Name: Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

Firm Name:	
*Name of Project Engineer	
Current Years of Experience:	
Registration Number:	
Year of Registration:	

**\*[List name as shown on registration with Texas Board of Professional Engineers (TBPE) or Texas Board of Architectural Examiners (TBAE)]**

*(The following information is required for each project. Provide no more than one page per project. Refer to the Evaluation Criteria for the number of projects required and timeframe.)*

Project Name/Location:	
Firm Name Work Performed Under:	
Year Completed:	
Construction Cost:	
Name of Client/Owner's Representative:	
Title of Client/Owner's Representative:	
Address of Client/Owner's Representative:	
Phone number of Client/Owner's Representative:	
Project Description:	
Work performed by Individual:	
Add Another Project	



**FORM 10  
PRIME FIRM'S COMPARABLE PROJECT EXPERIENCE**

Solicitation Number: CLMP191

Project Name: Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

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Firm Name:

*(The following information is required for each project. Provide no more than one page per project. Refer to the Evaluation Criteria for the number of projects required and timeframe.)*

Project 1	
Project Name/Location:	
Date Completed: Month/Year:	
Client or Owner's Representative	
Construction Cost:	
Project Description:	
Services Provided:	
<b>Add Another Project</b>	

**FORM 11****MAJOR SCOPE OF WORK - COMPARABLE PROJECT EXPERIENCE**

Solicitation Number:CLMP191

Project Name: Engineering Srvcs. for Albert H. Ullrich WTP Conversion to OSGSH

Scope of Work:	
Firm Name:	

*(The following information is required for each project. Provide no more than one page per scope of work per firm. Refer to the Evaluation Criteria for the number of projects required and timeframe.)*

Project 1	
Project Name/Location:	
Date Completed: Month/Year:	
Name of Client or Owner's Representative	
Construction Cost:	
Project Description:	
Services Provided:	
Add Another Project	



**FORM 12**  
**TEXAS ETHICS COMMISSION INTERESTED PARTIES DISCLOSURE**

Solicitation Number: CLMP191

Project Name: Eng. Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

This Disclosure Form is included in the Contract Documents in substantial compliance with the requirements of Section 2252.908 of the Texas Government Code. Upon receipt of a prescribed Disclosure Form from the Texas Ethics Commission, the Contractor constituting the Business Entity will use that form to make and reaffirm the following disclosure of Interested Parties.

“Interested Party” – means a person who has a controlling interest in a Business Entity with whom the Owner contacts or who actively participates in facilitating the Contract or negotiating the terms of the Contract, including a broker, intermediary, adviser, or attorney for the Business Entity.

“Business Entity” – means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership, or corporation.

In submitting the signed Professional Services Agreement, the “Business Entity” constituting the Contractor hereby discloses a list of the following “Interested Parties” of which the Business Entity is aware:

	X
	X
	X
	X
	X

(Add additional pages, if necessary)

**BUSINESS ENTITY SIGNATURE AND ACKNOWLEDGMENT**

, a Texas (form of business entity)  
(Contractor Name)

By:

Printed Name:   
(Authorized Representative)

Date:  , 20

The Disclosure Form must be signed by the authorized agent of the Business Entity with an acknowledgment that the disclosure is made under oath and under penalty of perjury.



**FORM 12**  
**TEXAS ETHICS COMMISSION INTERESTED PARTIES DISCLOSURE**

Solicitation Number: CLMP191

Project Name: Eng. Svcs. for Albert H. Ullrich WTP Conversion to OSGSH

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JURAT AND ACKNOWLEDGEMENT

THE STATE OF TEXAS §

COUNTY OF  §

Sworn, Subscribed, and Acknowledged before me, the undersigned authority, on this  day  
of  20 , by , the  of  
 on behalf of said Business Entity, acknowledging that the disclosure  
is made under oath and under penalty of perjury.

(SEAL)

Notary Public Signature

END

AGREEMENT BETWEEN THE CITY OF  
AUSTIN, TEXAS AND CONSULTANT

This AGREEMENT made as of this            day of            ,

BETWEEN:        The City of Austin, Texas, a Municipal Corporation situated in  
Travis County, Texas  
P.O. Box 1088  
Austin, Texas 78767

hereinafter referred to as "OWNER",

and:

**(Name of Firm)**

hereinafter referred to as "CONSULTANT",

For the following PROJECT: **<Name of Project>**: Various Projects assigned by the OWNER in subsequent written authorizations as defined in Section 6 of the **General Conditions of the Agreement**.

The OWNER is represented herein for all purposes of this AGREEMENT by the Director of the Department of Public Works, or such other representative as may be authorized by the City Manager of the City of Austin.

The OWNER has the need, on an as-designated and requested basis, for professional services in connection with design and construction services on capital improvement projects, and other projects to be subsequently assigned, individually referred to as the PROJECT.

The OWNER anticipates identifying projects involving **<Project Scope>** and consultation on any project to be performed by experienced professional and trained personnel to meet the PROJECT and OWNER's needs.

The CONSULTANT employs professionals duly licensed to practice in the State of Texas, has the professional abilities, experience, expertise and facilities to provide such professional services, and agrees to undertake and furnish said services in accordance with this AGREEMENT.

The OWNER and the CONSULTANT agree to the terms and conditions of AGREEMENT specified in the **General Conditions** and the **Supplemental Terms and Conditions**, attached hereto and made a part of this AGREEMENT.

This AGREEMENT is executed to be effective upon the date of the last party to sign.

City of Austin, OWNER  
P.O. Box 1088  
Austin, Texas 78767

**(Name of Firm), CONSULTANT**

**(Address of Firm)**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Approved As To Form:

Attest:

By: \_\_\_\_\_  
Assistant City Attorney

By: \_\_\_\_\_  
Secretary, if a Corporation

The CONSULTANT is bound by a Code of Ethics and guided by rules and restrictions of a State licensing board. Contact the appropriate licensing board if an issue regarding ethics or the practice of consulting arises.

**END**

TEMPLATE

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

**General Conditions Table of Contents**

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TEMPLATE

## **SECTION 1 - CONSULTANT'S RESPONSIBILITIES**

### **1.0 General**

The CONSULTANT will serve as the OWNER'S professional consultant in those phases of the PROJECT as stated in the **Supplemental Terms and Conditions of this AGREEMENT** and in subsequent written authorizations (as described in Section 6), and will consult and advise the OWNER during the performance of the CONSULTANT's services. The OWNER agrees to compensate the CONSULTANT for those services in accordance with Section 5. CONSULTANT shall report to OWNER's designated PROJECT Manager named in subparagraph 12.7.1.1 of the **Supplemental Terms and Conditions of this AGREEMENT**.

For the purposes of this AGREEMENT, individual assignments made by the OWNER to the CONSULTANT in subsequent written authorizations shall be referred to as "Subprojects".

### **1.1 Performance of Services**

The CONSULTANT will perform services under this AGREEMENT with the degree of skill and diligence normally practiced by professional engineers, architects, or other consultants performing the same or similar service.

1.1.1 The CONSULTANT's employees and the CONSULTANT's associated subconsultants to be used in the performance of PROJECT professional services (as described in subsection 1.4) are identified in Attachment 3. The CONSULTANT must disclose any potential conflict of interest relating to the CONSULTANT, the CONSULTANT's employees, a subconsultant or supplier. Failure to disclose any such conflicts may be grounds for termination under subsection 8.5 of this AGREEMENT by the OWNER.

1.1.2 The person identified as PROJECT manager by the CONSULTANT, identified in Attachment 3, must be employed by the CONSULTANT.

1.1.3 The CONSULTANT is registered to do business with the OWNER and is responsible for ensuring that all subconsultants are registered as vendors with the City of Austin. All subconsultants have been registered with the OWNER prior to execution of this AGREEMENT.

1.1.4 The CONSULTANT agrees not to modify subconsultants' designs after subconsultants' seals have been affixed except with written consent of the subconsultant. The CONSULTANT is fully responsible for the subconsultants' performance and obligations under this AGREEMENT.

1.1.5 The CONSULTANT's key employees and the CONSULTANT's associated subconsultants to be employed in the performance of professional services of the PROJECT and any Subprojects, shall not be changed except with the OWNER's prior written approval, which will not be unreasonably withheld.

1.1.6 The CONSULTANT agrees to obtain OWNER's written approval prior to terminating, adding or substituting subconsultants. In the event that the CONSULTANT proposes the termination or change of an identified "Minority-Owned Business Enterprise" (MBE) or a "Women-Owned Business Enterprise" (WBE) certified subconsultant firm from its employ on this PROJECT, the CONSULTANT shall comply with the City of Austin MBE/WBE Program, Chapter 2-9A, Austin City Code, and the goals established in the PROJECT solicitation. If the CONSULTANT is unable to substitute a subconsultant firm in compliance with the Austin City Code, the CONSULTANT shall provide OWNER with written documentation of their good faith efforts to acquire the services of a MBE/WBE replacement firm. All requests to change the CONSULTANT's MBE/WBE Compliance Plan must include documentation to support the request.

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

1.1.7 If the OWNER notifies the CONSULTANT that a member of the CONSULTANT's team, including subconsultants, is incompetent, disorderly, abusive, or disobedient, or has knowingly or repeatedly violated any federal, state, or local law, the CONSULTANT must immediately remove any such person from performing work on the PROJECT or any Subprojects. The OWNER's prior written consent must be obtained before any such person may be reinstated. Replacement of any subconsultant removed from the PROJECT or any Subprojects must be in accordance with paragraph 1.1.6. The OWNER may report any breaches of professional codes of ethics to the appropriate licensing board.

1.1.8 The CONSULTANT will attend and draft complete minutes of each PROJECT design and construction meeting and submit them to OWNER within seven (7) calendar days after each PROJECT meeting.

1.1.9 The CONSULTANT shall prepare and submit all appropriate permit applications and supporting drawings, specifications and other documents in the name of the City of Austin to utility companies and providers and governmental authorities having jurisdiction over the Subprojects and shall obtain all approvals and all development and building permits necessary to complete the Subprojects in accordance with the Subproject Resource Allocation Plan (RAP) described in Section 4, or as otherwise specified by OWNER. Development and permitting fees may be paid for in one of the following methods as mutually agreed:

- (a) Paid by CONSULTANT and billed to OWNER as a reimbursable or
- (b) Payment coordinated through the OWNER using an internal payment transfer document.

1.1.10 The CONSULTANT agrees to make those presentations, specified in the attached scope of services (Attachment 1) as Basic Services, including (i) Board and Commission meetings, (ii) public meetings, and (iii) internal City of Austin meetings. Any other Board or Commission presentations required by OWNER will be considered Additional Services in accordance with Paragraph 1.4.6 of the **Supplemental Terms and Conditions of this AGREEMENT** and paid for in accordance with Paragraph 5.1.3.

1.1.11 The CONSULTANT shall not knowingly specify, request or approve for use any asbestos containing materials or lead-based paint without the OWNER's prior written approval. For materials specified on the basis of performance criteria, the CONSULTANT shall include a requirement in the specifications effectively stating that "Asbestos containing materials or lead-based paint are prohibited from being used in the project." When a specific product is specified, the CONSULTANT shall make best efforts to verify that the product does not include asbestos containing material. The CONSULTANT agrees to execute a Statement of Non-Inclusion of Asbestos Containing Material, on a form provided by OWNER, both prior to design and upon completion of the Construction Documents Phase.

1.1.12 The CONSULTANT shall prohibit discrimination in employment based upon race, creed, color, religion, national origin, sexual orientation, gender identity, disability, veteran status, sex or age, in compliance with Chapter 5-4-2, Austin City Code. A copy of the CONSULTANT's non-discrimination policy has been provided prior to execution of this AGREEMENT.

## **1.2 Laboratory Services**

If laboratory services are provided for a Subproject by the CONSULTANT or its subconsultant(s), these services must be performed by a laboratory properly accredited in accordance with International Standards Organization (ISO)/International Electrotechnical Commission (IEC) Standard 17025:2005. The CONSULTANT agrees to provide evidence to the OWNER of such accreditation on an annual basis for the duration of this AGREEMENT. OWNER shall be allowed to inspect or audit the laboratories upon request.

## **1.3 Quality Control Plan (QCP)**

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

1.3.1 The CONSULTANT agrees to perform on each Subproject quality assurance-quality control/constructability reviews in accordance with the CONSULTANT's approved Subproject Quality Control Plan (QCP) described in Attachment 4, that is incorporated by reference and which includes any subsequent revisions approved by OWNER. The QCP is to be submitted to the OWNER for approval within fourteen (14) calendar days of OWNER's issuance of a Notice to Proceed to the CONSULTANT. In addition to providing the reports required by the QCP, the CONSULTANT agrees to address any QCP comments from the OWNER and provide resolution to the OWNER's satisfaction. In the event the OWNER retains its own consultant to perform additional QCP services for the OWNER, the CONSULTANT will provide all necessary information to the OWNER, address any comments from the OWNER's consultant, and provide resolution to the OWNER's satisfaction. The CONSULTANT must include this language in all its subconsultant contracts to ensure subconsultants understand their responsibility for complying with the OWNER's or OWNER's consultant's QCP requirements.

1.3.2 The QCP reviews must be performed by a staff member of the CONSULTANT not involved in day-to-day Subproject tasks. If the CONSULTANT does not have the internal staff capacity to provide for this independent review, the CONSULTANT must include a QCP subconsultant on the Subproject team. The person performing the QCP reviews must certify, seal and attest that the final construction bid documents have been drafted in full compliance with the QCP work plan.

1.3.3 The CONSULTANT must perform QCP reviews at intervals during the design phase, specified in the QCP, to ensure plans, specifications, and drawings satisfy accepted quality standards and meet the requirements of the Subproject scope. Based on the findings of the QCP reviews, the CONSULTANT must reconcile the Subproject scope and budget as needed. Documentation will be included that verifies interdisciplinary coordination has occurred.

1.3.4 The CONSULTANT must perform constructability reviews, using persons with construction experience, at appropriate intervals during the design phase specified in the QCP to ensure that the Subproject is buildable, as well as cost-effective, biddable, and maintainable. Based on the findings of the constructability reviews, the CONSULTANT must redesign the Subproject to conform to the Fixed Construction Budget as noted in Section 3.3. The CONSULTANT must provide interim construction estimates to verify that the Subproject is within the Fixed Construction Budget as further described in the phase descriptions in the **Supplemental Terms and Conditions of this AGREEMENT**.

1.3.5 Acceptance and/or approval of the CONSULTANT's QCP documentation by the OWNER do not constitute a release of the responsibilities and liability of the CONSULTANT for the accuracy and competency of its QCP reviews and final construction documents.

#### **1.4 Basic Services**

The CONSULTANT will, in the scope of their work and in conformance with the approved PROJECT Resource Allocation Plan (RAP) for each Subproject, perform the basic services described in 1.4.1 et seq of the **Supplemental Terms and Conditions of this AGREEMENT**. These basic services shall be provided in phases and/or parts only as authorized by the OWNER (in subsequent written authorizations to proceed).

### **SECTION 2 - OWNER'S RESPONSIBILITIES**

2.1 The OWNER will:

2.1.1 Provide its requirements for each Subproject.

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

2.1.2 Designate the OWNER's Project Manager.

2.1.3 Provide a "Fixed Construction Budget " for each Subproject as defined in subsection 3.1 prior to negotiation of this AGREEMENT.

2.1.4 Assist CONSULTANT by making available (i) reports; (ii) property, boundary, easement, right-of-way, topographic and utility surveys; (iii) zoning and deed restrictions; and (iv) other data relevant to the development of each Subproject.

2.1.5 Assist CONSULTANT in gaining entry to public property and private property, only when necessary, as may be required by the CONSULTANT in the performance of their services under this AGREEMENT.

2.1.6 Review and provide written comments on all submittals and other documents presented by the CONSULTANT and render decisions pertaining thereto within seven (7) calendar days. The OWNER will review and provide written comments on periodic plan and specifications submittals within fourteen (14) calendar days. OWNER shall immediately notify CONSULTANT if additional time is needed.

2.1.7 Give prompt written notice to the CONSULTANT whenever the OWNER observes or otherwise becomes aware of any defect in the CONSULTANT's work product or services.

2.1.8 Direct CONSULTANT by way of written supplemental amendment (described in Subsection 4.2) to provide any necessary Additional Services beyond those authorized in the approved Subproject RAP or as stipulated in the **Supplemental Terms and Conditions of this AGREEMENT**.

**SECTION 3 - FIXED CONSTRUCTION BUDGET**

3.1 The "Fixed Construction Budget" means the amount allocated by OWNER for each Subproject construction contract, which can only be adjusted by OWNER's prior written approval. The Fixed Construction Budget is shown in the approved PROJECT RAP (Attachment 1).

3.2 Fixed Construction Budget does not include the compensation of the CONSULTANT and the CONSULTANT'S subconsultants, the cost of the land, rights-of-way, or other costs which are the responsibility of the OWNER.

**3.3 Responsibility for Fixed Construction Budget**

3.3.1 CONSULTANT is responsible for designing each Subproject to be constructible within the Fixed Construction Budget. The CONSULTANT must determine what materials, equipment, component systems and types of construction to include in the Contract Documents, make reasonable adjustments in the scope of the Subproject with the OWNER's consent, and, with the OWNER's approval, develop bid alternates.

3.3.2 If the Fixed Construction Budget is exceeded by the lowest responsible bid, the OWNER shall either:

- (1) give written approval of an increase in the Fixed Construction Budget;
- (2) authorize rebidding of the Subproject within a reasonable time;
- (3) abandon the Subproject; or
- (4) cooperate in revising the Subproject's scope and quality as required to reduce the construction cost.

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

In the case of (2) and/or (4), the CONSULTANT, without additional compensation, shall perform those services to produce the Drawings and Specifications as necessary to comply with the Fixed Construction Budget provided that the bidding or rebidding processes occur within six (6) months of the date that the CONSULTANT delivered the final bid documents to OWNER. If the bidding or rebidding processes occur after that six (6) month period, the CONSULTANT is entitled to additional compensation.

**3.3.3 Bid Alternates**

3.3.3.1 If, under the OWNER's direction, the CONSULTANT prepares the Subproject bid documents to include bid alternates as a means to keep the Subproject cost within the Fixed Construction Budget, and such alternates are within the original Subproject scope, compensation remains the established fee amount irrespective of the outcome of bids. In the event the base bid is not within the Subproject Fixed Construction Budget, Paragraph 3.3.2 of this AGREEMENT governs. The OWNER's acceptance of the base bid or bid alternates does not change the CONSULTANT's Bid Phase fee amount.

3.3.3.2 If, under the OWNER's direction, the CONSULTANT prepares Subproject Bid Documents that include bid alternates, and OWNER has advised CONSULTANT that such alternates may not be within the Fixed Construction Budget or the original Subproject scope, the CONSULTANT must track the cost of any such alternates. Compensation for the requested bid alternates will be as follows:

(1) If the bid for the alternates requested by OWNER is within the Subproject Fixed Construction Budget, there is no change in the fee.

(2) Otherwise, the work to reconfigure the Subproject Bid Documents to include the requested bid alternates will be considered Additional Services with compensation to be determined in accordance with Subsection 5.1 of this AGREEMENT.

**SECTION 4 - RESOURCE ALLOCATION PLAN (RAP)**

4.1 The CONSULTANT shall provide a Resource Allocation Plan (RAP) for each assigned Subproject as shown in Attachment 1. The CONSULTANT agrees to complete phases of services in accordance with an approved Subproject RAP as described in Section 6.1, and the applicable standard of professional care. A specific time period will be set for each phase.

4.1.1 The Subproject RAP for each assigned Subproject shall follow the rate structure included as Attachment 3 unless a revised rate structure has been approved through a Supplemental Amendment in accordance with Subsection 4.2. The City will consider rate revisions only if requested to do so by the CONSULTANT. However, rate revisions will not be considered until at least one (1) year after the date of this AGREEMENT or any subsequent amendments relating to rate revisions.

**4.2 Supplemental Amendments**

4.2.1 Before additional work may be performed or additional costs incurred beyond what is specified in the approved Subproject RAP, both parties must execute a written Supplemental Amendment. The OWNER is not responsible for actions by the CONSULTANT or any costs incurred by the CONSULTANT relating to additional work prior to the execution of the Supplemental Amendment. Any Supplemental Amendment must be executed within the time period specified in the Subproject RAP.

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4.2.1.1 More Time Needed. If the CONSULTANT determines or reasonably anticipates that the Subproject cannot be completed before the specified completion date, the CONSULTANT shall submit a RAP revision to the OWNER for approval. The OWNER may, at its sole discretion, extend the authorized Subproject period.

4.2.1.2 Changes in Scope. Changes that would modify the scope of work authorized for the Subproject must be established by a Supplemental Amendment. If the change in scope affects the schedule or CONSULTANT's fee for the Subproject, the CONSULTANT shall prepare a revised Subproject budget and RAP for the OWNER's approval.

4.2.2 The OWNER may ask the CONSULTANT to submit a proposal for additional work that is within the defined scope of work for the Subproject. The amount to be paid for the proposed additional work will be a lump sum for each proposal. The CONSULTANT may, without penalty, elect not to submit a proposal. If both parties agree to the proposal for additional work, the parties must execute a written Supplemental Amendment and revise the Subproject RAP.

4.3 If the OWNER sustains actual damages as a result of willful or negligent failure of the CONSULTANT to furnish services in compliance with the approved Subproject RAP described in this Section 4 and subsequent Supplemental Amendments in accordance with Subsection 4.2, the CONSULTANT agrees to compensate the OWNER for the cost of such damages in accordance with Section 9, itemized costs of which will be provided to the CONSULTANT by the OWNER. The OWNER agrees to provide the CONSULTANT written notification of such damages as the cost is being incurred.

4.4 The CONSULTANT shall not be liable or responsible for OWNER delays or postponements. If the CONSULTANT is delayed by conditions beyond its reasonable control, written time extension requests may be submitted to the OWNER for approval. These requests will be reviewed only if submitted to OWNER at least fourteen (14) calendar days prior to any affected milestone date in the Subproject RAP. If the next milestone date is less than fourteen (14) calendar days from the date of the delay or suspension of service, the CONSULTANT will be allowed fourteen (14) calendar days from the date of the delaying event to submit the request to OWNER.

4.5 If the CONSULTANT fails to meet the approved Subproject RAP, including subsequently approved Supplemental Amendments, OWNER may elect to invoke remedies outlined in Section 9 of this AGREEMENT.

4.6 Time required by the OWNER to review and return documents to the CONSULTANT following their submittal during and after each phase will be included in the approved Subproject RAP.

**SECTION 5 - COMPENSATION**

**5.1 Basis of Compensation**

5.1.1 The OWNER shall compensate the CONSULTANT for the Scope of Services described in the approved Subproject RAP or as subsequently amended, in accordance with Subsection 5.3, *PAYMENTS TO THE CONSULTANT*, and the other Terms and Conditions of this AGREEMENT, as follows:

5.1.1.1 No advance payment will be paid to the CONSULTANT prior to rendering services.

5.1.1.2 Payments for Basic Services will be made monthly in proportion to services performed within each phase of services, as shown in the Subproject RAP.

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5.1.1.3 For services provided by subconsultants, a multiple of one and five hundredth (1.05) times the amounts billed to the CONSULTANT for such services will be paid.

5.1.2 The total amount of compensation to be paid the CONSULTANT will not exceed the amount stated in paragraph 5.1.2.1 of the **Supplemental Terms and Conditions of this AGREEMENT**.

5.1.3 *Compensation for Additional Services*

5.1.3.1 For *PROJECT REPRESENTATION BEYOND BASIC SERVICES* as described in Subparagraph 1.4.6 of the **Supplemental Terms and Conditions of this AGREEMENT**, compensation will be made as an Additional Service in accordance with the schedule of hourly rates shown in Attachment 3.

5.1.3.2 Principals may only bill at the hourly rate of Principals when acting in that capacity. Principals acting in the capacity of staff must bill at staff rates. The CONSULTANT shall provide documentation with each payment request that clearly indicates how that individual's time is allocated and the justification for that allocation.

5.1.3.3 For *ADDITIONAL SERVICES OF SUBCONSULTANTS* a multiple of one and five hundredth (1.05) times the amounts billed to the CONSULTANT for such services will be paid.

5.1.4 *Compensation for Reimbursable Expenses*

5.1.4.1 For *REIMBURSABLE EXPENSES*, as described in Subsection 5.2, a multiple of one and five hundredths (1.05) times the amounts expended by the CONSULTANT, the CONSULTANT'S employees and subconsultants in the interest of the Subproject will be paid.

5.1.4.2 The OWNER is a tax-exempt organization as defined by Chapter 11 of the Property Tax Code of Texas. OWENR will furnish CONSULTANT with a Sales Tax Exemption Certification to be issued to suppliers in lieu of the tax. If payment of the sales tax is unavoidable in a specific case, the CONSULTANT will be reimbursed by the OWENR for any such costs incurred.

5.1.5 OWNER and the CONSULTANT agree in accordance with the Terms and Conditions of this AGREEMENT that:

5.1.5.1 If OWNER determines the scope of the PROJECT or any Subproject's services are changed materially, compensation will be equitably adjusted through negotiation.

5.1.5.2 If OWNER determines the Services covered by this AGREEMENT and a subsequent written authorization have not been completed within the time specified in the Subproject RAP, through no fault of the CONSULTANT, the amounts of compensation, rates and multiples set forth herein may be adjusted through negotiation.

5.1.6 *Period of Service*

5.1.6.1 This AGREEMENT will remain in force for that period required to complete the PROJECT (including required extensions thereto) unless discontinued by any of the several provisions contained elsewhere in this AGREEMENT. The total period of service is stated in subparagraph 5.1.2.1 of the **Supplemental Terms and Conditions of the AGREEMENT**.

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5.1.6.2 CONSULTANT's failure to meet an approved Subproject RAP may result in the assessment of remedies as described in Sections 8 and 9 of this AGREEMENT.

**5.2 Reimbursable Expenses**

Reimbursable Expenses are part of Basic Services and include actual expenditures made by the CONSULTANT and the CONSULTANT's employees and subconsultants in performing services for the PROJECT and all Subprojects for the expenses listed in the following Subsections. CONSULTANT must submit invoices or other similar documentation for Reimbursable Expenses as part of a payment request. The OWNER is a tax exempt entity and will not reimburse the CONSULTANT for any tax expenses. The OWNER will consider exceptions on a case-by-case basis. **Reimbursable Expenses are limited to these specific items:**

5.2.1 By prior written approval of the OWNER, reasonable transportation and living expenses in connection with out-of-town travel.

5.2.1.1 All travel and lodging expenses in connection with the AGREEMENT for which reimbursement may be claimed will be reviewed against the City's Travel Policy and the current (at the time the travel occurs) General Services Administration (GSA) Domestic Per Diem Rates (the "GSA Rates") at [http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA\\_BASIC&contentId=17943&noc=T](http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BASIC&contentId=17943&noc=T). Amounts in excess of the Travel Policy or GSA Rates will not be paid. All invoices must be accompanied by copies of receipts (e.g. hotel bills, airline tickets).

5.2.1.2 Reimbursement will be made only for expenses actually incurred. Airline fares in excess of coach or economy will not be reimbursed.

5.2.1.3 Mileage charges for rental cars in connection with out-of-town travel may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations. Mileage costs for travel within the Austin metropolitan area are to be included in the CONSULTANT's overhead rate and not billed separately as a reimbursable expense.

5.2.2 Fees paid for securing approval of authorities having jurisdiction over the PROJECT and any Subproject.

5.2.3 Reproduction expenses for drawings, specifications and all other documents required for bidding, OWNER submittals, and for file copies of CONSULTANT, Contractor, and OWNER, and other parties approved by the OWNER.

5.2.4 Expense of renderings, models and mock-ups requested by the OWNER.

5.2.5 Expense of reproducing record drawings for the OWNER on sepia, mylars or plastic film.

5.2.6 Reproduction expense for drawings, specifications and any other documentation to be submitted to utility owners and governmental authorities having jurisdiction over the PROJECT and any Subproject.

**5.3 Payments to the Consultant**

5.3.1 *Payments for Basic Services*

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5.3.1.1 Payments for Basic Services, including Reimbursable Expenses, will be made monthly in accordance with the approved Subproject RAP on the basis set forth in Subsections 5.1 and 5.2. CONSULTANT shall submit the application for payment using the form supplied by OWNER.

5.3.2 *Payments for Additional Services*

5.3.2.1 Payments for the CONSULTANT'S Subproject Additional Services as described in Paragraph 1.4.6 of the **Supplemental Terms and Conditions of the AGREEMENT** may be made no more often than monthly upon presentation by CONSULTANT of an acceptable statement of Additional Services rendered and/or expenses incurred. Each statement must include the form supplied by the OWNER, copies of invoices, time sheets, and any other evidence of expense requested by the OWNER.

5.3.3 *Payments Withheld*

The OWNER may withhold, amend, or nullify any request for payment by the CONSULTANT under conditions that include those described in Subparagraphs 5.3.3.1 through 5.3.3.7 below.

5.3.3.1 Failure of the CONSULTANT to follow the approved schedule and meet all phase and milestone requirements specified in the Subproject RAP.

5.3.3.2 OWNER'S receipt of notice that, despite payment to CONSULTANT for services rendered by subconsultants, CONSULTANT has not paid subconsultants for services invoiced to and paid by OWNER within fourteen (14) calendar days of CONSULTANT's receipt of payment from OWNER.

5.3.3.3 Payments for subconsultants costs when those subconsultants are not included in the approved MBE/WBE compliance plan.

5.3.3.4 Failure of the CONSULTANT to submit timely and complete records of Subproject meeting proceedings as specified in Paragraph 1.1.8.

5.3.3.5 Failure of the CONSULTANT to submit timely and complete weekly reports of its Subproject job site observations containing detailed information as specified in subparagraph 1.4.4.5.2 of the **Supplemental Terms and Conditions of this AGREEMENT**, as appropriate to the Subproject assignment.

5.3.3.6 Failure of the CONSULTANT to provide updated Subproject record drawings and Contractor's record contract documents to the OWNER within thirty (30) calendar days after Contractor's record contract documents have been provided to the CONSULTANT by the Contractor upon substantial or final completion of the Subproject.

5.3.3.7 Failure to make timely payment to the City of Austin for taxes.

5.3.4 *Prompt Payments*

The OWNER shall make payment to CONSULTANT of the sum named in a payment application within thirty (30) calendar days after the day on which the OWNER received the mutually acceptable payment application. If the OWNER fails to make such prompt payment, then OWNER will pay CONSULTANT, in addition to the amount owed for the payment application, interest thereon at the rate specified in Government Code, Section 2251.025(b) from date due until fully paid, which shall fully liquidate any injury to CONSULTANT growing out of such delay in payment.

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The OWNER cannot make a partial payment on an invoice in dispute. The CONSULTANT may resubmit an invoice for the undisputed amount or wait for payment until the dispute has been resolved. The thirty (30) calendar days restarts after the OWNER receives a corrected payment application.

*5.3.5 Payment for Project Suspension or Termination*

5.3.5.1 If a Subproject is suspended or abandoned in whole or in part for more than three months, the CONSULTANT will be compensated for all services performed prior to receipt of written notice from the OWNER of such suspension or abandonment, together with Reimbursable Expenses then due. If the Subproject is resumed after being suspended for more than three months, the CONSULTANT'S compensation may be equitably adjusted through negotiation. If the parties cannot agree on an adjustment, OWNER may terminate the Subproject in accordance with Subsection 8.6.

**SECTION 6 - SUBSEQUENT WRITTEN AUTHORIZATIONS**

6.1 The procedure for establishing each Subproject assignment by negotiating subsequent written authorizations is as follows:

6.1.1 Proposal Request: Upon identifying a specific Subproject assignment, the OWNER will issue a written Proposal Request, as shown in Attachment 2, to the CONSULTANT describing the Subproject, services required, proposed schedule, and method of compensation selected by OWNER.

6.1.2 CONSULTANT Proposal: After being contacted by the OWNER, the CONSULTANT shall arrange with the OWNER to review the Proposal Request and provide a Proposal for the OWNER'S review within fourteen (14) calendar days of the OWNER'S contact. The CONSULTANT'S Proposal must include a Resource Allocation Plan (RAP), as described in Section 4, for the Subproject. The OWNER shall notify the CONSULTANT within seven (7) calendar days if the Proposal is acceptable or if revisions are needed. The approved CONSULTANT'S proposal will be attached to the OWNER'S Proposal Request and may include a clarification of the scope of services. The Proposal Request form, with the CONSULTANT'S signature indicating acceptance of the Subproject assignment and compensation, will be returned to the OWNER within seven (7) calendar days of OWNER approval.

6.1.3 Notice to Proceed: When the OWNER receives the accepted Proposal Request form signed by the Consultant, the OWNER will sign the Notice to Proceed section, as shown in Attachment 2, and provide a copy to the CONSULTANT within three (3) calendar days of the OWNER'S receipt. This Notice to Proceed will formally authorize the CONSULTANT to proceed with the initial phase of the Subproject services in accordance with the approved Subproject RAP included in the CONSULTANT'S Proposal. The CONSULTANT agrees to begin work within seven (7) calendar days from the date of the OWNER'S signature on the Notice to Proceed. The CONSULTANT will provide a Subproject QCP plan, as described in paragraph 1.3.1, within fourteen (14) calendar days of the OWNER'S issuance of the Subproject Notice to Proceed.

6.2 Execution of a Proposal Request constitutes a Supplemental Amendment to this AGREEMENT. For the purpose of administration of this AGREEMENT, for resolving technical matters, and for the execution of subsequent Proposal Requests, the OWNER shall mean the Division Manager, Project Management Division, Public Works Department, or their designee.

**SECTION 7 - INSURANCE REQUIREMENTS**

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7.1 The CONSULTANT shall carry insurance in the types and amounts indicated below for the duration of the AGREEMENT:

7.1.1 Workers' Compensation and Employers' Liability Insurance Coverage with limits consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Section 401) and (1) minimum policy limits for Employers Liability Insurance of \$100,000 bodily injury each accident, \$500,000 bodily injury by disease policy limit and \$100,000 bodily injury by disease each employee; or (2) as otherwise required in the **Supplemental Terms and Conditions of this AGREEMENT**. The CONSULTANT's policy must be issued by an insurer licensed or approved to do business in the State of Texas and include these endorsements in favor of the OWNER::

- (a) Waiver of Subrogation, form WC 420304, or equivalent.
- (b) 30 day Notice of Cancellation, form WC 420601, or equivalent.

7.1.2 Commercial General Liability Insurance with a minimum combined bodily injury and property damage per occurrence limit of \$500,000 for coverages A & B unless otherwise stated in the **Supplemental Terms and Conditions of this AGREEMENT**. The policy must contain the following provisions:

- (a) Blanket contractual liability coverage for liability assumed under this AGREEMENT and all contracts relative to this PROJECT.
- (b) Independent Contractors coverage.
- (c) OWNER listed as an additional insured, endorsement CG 2010, or equivalent.
- (d) 30 day Notice of Cancellation in favor of the OWNER, endorsement CG 0205, or equivalent.
- (e) Waiver of Transfer Right of Recovery Against Others in favor of the OWNER, endorsement CG 2404, or equivalent.
- (f) Aggregate limits of insurance per project, endorsement CG 2503, or equivalent

7.1.3 Business Automobile Liability Insurance for all owned, non-owned and hired vehicles (1) with a minimum combined single limit of \$500,000 per accident for bodily injury and property damage; or (2) \$250,000 bodily injury per person, \$500,000 bodily injury per occurrence and at least \$100,000 property damage liability; or (3) as otherwise required in the **Supplemental Terms and Conditions of this AGREEMENT**. The policy shall contain the following endorsements in favor of the OWNER:

- (a) Waiver of Subrogation endorsement TE 2046A, or equivalent.
- (b) 30 day Notice of Cancellation endorsement TE 0202A, or equivalent.
- (c) Additional Insured endorsement TE 9901B, or equivalent.

7.1.4 CONSULTANT's Professional Liability Insurance to pay on behalf of the assured all sums which the assured becomes legally obligated to pay as damages by reason of any negligent act, error, or omission committed or alleged to have been committed with respect to plans, maps, drawings, analyses, reports, surveys, change orders, designs or specifications prepared or alleged to have been prepared by the assured. The policy must provide for 30 day notice of cancellation in favor of the OWNER. The minimum limit is specified in subparagraph 7.1.4.1 of the **Supplemental Terms and Conditions of this AGREEMENT**.

## 7.2 General Requirements

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7.2.1 The CONSULTANT must complete and forward the OWNER'S standard certificate of insurance to the OWNER before the AGREEMENT is executed, as verification of coverage required in Paragraphs 7.1.1 through 7.1.4 above. The CONSULTANT shall not commence services until the required insurance has been obtained and until such insurance has been reviewed by the OWNER's Office of Contract and Land Management. Approval of insurance by the OWNER does not relieve or decrease the liability of the CONSULTANT hereunder and must not be construed to be a limitation of liability on the part of the CONSULTANT.

7.2.2 Applicable to all insurance policies: If coverage is underwritten on a claims-made basis, the retroactive date must be coincident with or prior to the date of this AGREEMENT and the certificate of insurance must state that the coverage is claims made and the retroactive date. The CONSULTANT shall maintain continuous coverage for the duration of this AGREEMENT and for not less than twenty-four (24) months following substantial completion of the PROJECT. Coverage, including any renewals, must have the same retroactive date as the original policy applicable to the PROJECT. The CONSULTANT shall, on at least an annual basis, provide the OWNER with a certificate of insurance as evidence of such insurance.

7.2.3 The CONSULTANT's insurance coverage must be written by companies licensed or approved to do business in the State of Texas at the time the policies are issued and must be written by companies with A.M. Best ratings of B+VII or better unless otherwise required in the **Supplemental Terms and Conditions of this AGREEMENT**. The OWNER will accept workers' compensation coverage written by the Texas Workers Compensation Insurance Fund.

7.2.4 All endorsements naming the OWNER as additional insured, waivers, and notices of cancellation endorsements as well as the certificate of insurance will indicate: City of Austin, Office of Contract and Land Management, P.O. Box 1088, Austin, Texas 78767.

7.2.5 The "other" insurance clause will not apply to the OWNER where the OWNER is an additional insured shown on any policy. It is intended that policies required in the AGREEMENT, covering both the OWNER and the CONSULTANT, be considered primary coverage as applicable.

7.2.6 If insurance policies are not written for amounts specified above, the CONSULTANT shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it must follow the form of the primary coverage.

7.2.7 The OWNER shall be entitled, upon request and without expense, to receive certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.

7.2.8 The OWNER reserves the right to review the insurance requirements set forth during the effective period of this AGREEMENT and to make reasonable adjustments to insurance coverage, limits and exclusions when deemed necessary and prudent by the OWNER based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as the CONSULTANT.

7.2.9 The CONSULTANT shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the AGREEMENT or as required in the AGREEMENT.

7.2.10 The CONSULTANT shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. All deductibles or self-insured retentions shall be disclosed on the certificate of insurance.

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7.2.11 The CONSULTANT shall provide OWNER thirty (30) days written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the AGREEMENT.

7.2.12 If OWNER-owned property is being transported or stored off-site by the CONSULTANT, then the appropriate property policy will be endorsed for transit and storage in an amount sufficient to protect OWNER's property.

7.2.13 The insurance coverages required under this AGREEMENT are required minimums and are not intended to limit the responsibility or liability of the CONSULTANT.

7.3 CONSULTANT shall determine appropriate types and levels of insurance coverage to be provided by subconsultants and advise the subconsultants of the documentation to be provided to CONSULTANT to verify coverage.

**SECTION 8 - TERMINATION OF AGREEMENT**

8.1 The rights to terminate provided in this Section 8 are in addition to, and cumulative of, all other rights and remedies available to the parties at law or in equity.

8.2 This AGREEMENT may be terminated by the CONSULTANT upon at least seven (7) calendar days written notice should the OWNER substantially fail to perform in accordance with the OWNER's responsibilities through no fault of the CONSULTANT.

**8.3 Notice to Cure.**

OWNER shall endeavor to provide a Notice to Cure to the CONSULTANT to cure an event of default described in this Section and/or an anticipatory breach of contract. The CONSULTANT must attend a meeting with the OWNER regarding the Notice to Cure, the event of default, and/or the anticipatory breach of contract. The Notice to Cure will set forth the time limit in which the cure is to be completed or commenced and diligently prosecuted. Upon receipt of any Notice to Cure, the CONSULTANT must prepare a report describing its program and measures to effect the cure of the event of default and/or anticipatory breach of contract within the time required by the Notice to Cure. The CONSULTANT's report must be delivered to the OWNER at least three (3) business days prior to any requested meeting with the OWNER.

8.4 This AGREEMENT may be terminated by the OWNER upon at least seven (7) calendar days' written notice to the CONSULTANT in the event that the PROJECT is abandoned or indefinitely postponed.

8.5 This AGREEMENT may be terminated by the OWNER for cause upon seven (7) calendar days' written notice. In the event OWNER terminates the AGREEMENT with cause, the OWNER may reject any and all proposals submitted by CONSULTANT for up to three (3) years. In the event that a termination for cause is found to be wrongful, the termination shall be converted to a termination without cause as set forth in Subsection 8.6 and CONSULTANT's remedy for wrongful termination is limited to the recovery of payments permitted under Subsection 8.6.

The OWNER may terminate for cause due to the occurrence of any one of the following:

8.5.1 If CONSULTANT persistently fails to perform the work in accordance with the AGREEMENT, in particular the approved Subproject RAP;

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8.5.2 If CONSULTANT disregards laws or regulations of any public body having jurisdiction;

8.5.3 If CONSULTANT makes fraudulent statements;

8.5.4 If CONSULTANT fails to make adequate progress and endangers timely and successful completion of the AGREEMENT;

8.5.5 CONSULTANT's failure under 8.5.4 includes failure of subconsultants to meet contractual obligations; or

8.5.6 If CONSULTANT otherwise violates in any substantial way any provisions of the AGREEMENT.

8.6 This AGREEMENT may be terminated at the OWNER'S convenience upon seven (7) calendar days written notice; in which event, the CONSULTANT will be compensated for all services performed to termination date, together with Reimbursable Expenses then due, in accordance with Subsection 8.7, and the OWNER retains the right to continue the PROJECT consistent with paragraph 12.2.4.

8.7 In the event of termination not the fault of the CONSULTANT, the CONSULTANT will be compensated for all services performed to termination date, together with Reimbursable Expenses then due. CONSULTANT will submit to the OWNER, within the timeframe set in the termination notice, all work and documents prepared to that point. Fixed-fee payment to the CONSULTANT shall be proportional to services performed to the date of termination.

## **SECTION 9 - OWNER REMEDIES**

9.1 The CONSULTANT and OWNER agree that in the event of a delay in completion for which the OWNER suffers actual damages, the OWNER may elect to pursue its actual damages and any other remedy allowed by law. Conditions under which the OWNER may seek other damages include, but are not limited to:

9.1.1 Failure of the CONSULTANT to make adequate progress in accordance with paragraph 8.5.4 above.

9.1.2 Failure of the CONSULTANT to design for compliance with the laws of City, State and federal governments as specified in paragraph 1.4.2 of the **Supplemental Terms and Conditions of this AGREEMENT**, such that subsequent compliance costs exceed expenditures which would have been involved had services been properly executed by the CONSULTANT. The CONSULTANT will financially participate in the OWNER'S financial losses for those non-value added compliance costs.

9.1.3 Losses are incurred, despite the Quality Control Plan (QCP), because of defects, errors and omissions in the design, working drawings, specifications or other documents prepared by the CONSULTANT to the extent that the financial losses are greater than the OWNER would have originally paid had there not been defects, errors and omissions in the documents. The CONSULTANT will financially participate in the OWNER'S financial losses for those non-value added work costs.

9.2 Pursuant to Section 7.1.4, the OWNER shall assert a claim against the CONSULTANT as appropriate when other remedies are not available or offered for design deficiencies discovered during and after Subproject

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construction. When the OWNER incurs non-value added work costs for change orders due to design errors or omissions, the OWNER will send the CONSULTANT a certified cost recovery letter that includes

- (1) summary of facts with supporting documentation;
- (2) instruction for CONSULTANT to revise design documents, if appropriate, at CONSULTANT's expense;
- (3) calculation of non-value added work costs incurred by the OWNER; and
- (4) deadline for CONSULTANT's response.

The CONSULTANT will provide a preliminary response to OWNER within seven (7) calendar days of receipt of the claim letter. The CONSULTANT must submit a formal documented response to the claim letter to the OWNER within fourteen (14) calendar days of the date of the preliminary response. The CONSULTANT will provide the payment requested by OWNER within thirty (30) calendar days of OWNER's acceptance of formal CONSULTANT response or the CONSULTANT will request alternative dispute resolution, as described in subsection 11.2 of this AGREEMENT, within fourteen (14) calendar days of OWNER's rejection of formal CONSULTANT response.

9.3 The CONSULTANT may be required to revise bid documents and re-advertise the Subproject at the CONSULTANT's sole cost (including printing) if, in the OWNER's judgment, the CONSULTANT generates excessive addenda, either in terms of the nature of the revisions or the actual number of changes due to the CONSULTANT's errors or omissions.

#### **9.4 Decisions to Withhold Payment**

9.4.1 OWNER may withhold or nullify the whole or part of any payment to such extent as may be necessary because of conditions outlined in paragraph 5.3.3 "Payments Withheld".

### **SECTION 10 - CONSULTANT REMEDIES**

10.1 If the CONSULTANT is prevented from completing any part of a Subproject within the time established in the Subproject RAP due to delays beyond the control of either the OWNER or the CONSULTANT, an extension of the Subproject schedule in an amount equal to the time lost due to such delay shall be the CONSULTANT's sole and exclusive remedy. Performance interrupted by an act of god or the result of war, riot, civil commotion, sovereign conduct, or the conduct of a third party, will be excused for a period of time necessary to remedy the effect of the precipitating occurrence. In such cases, a conference will be held within three (3) working days of the end of the occurrence to establish a revised schedule in the RAP

10.2 CONSULTANT's requests for remedies arising from the terms of this AGREEMENT for conditions other than those specified in subsection 10.1 must be done in accordance with the following:

10.2.1 Within thirty (30) calendar days after the CONSULTANT could be reasonably expected to know of the occurrence prompting the request, the CONSULTANT must deliver preliminary written notice to the OWNER describing the general nature of the request. Within thirty (30) calendar days after the preliminary notice, the CONSULTANT must provide the OWNER written supporting documentation stating all known amounts and/or time extensions to which the CONSULTANT is entitled.

10.2.2 Within thirty (30) calendar days of receipt of notice of the amount of the requested remedy with supporting data, OWNER and CONSULTANT will meet to discuss the request, after which an offer of settlement or notification of no settlement offer will be made to CONSULTANT. If CONSULTANT is not satisfied with the proposal presented, CONSULTANT will have thirty (30) calendar days in which to

- (1) submit additional supporting data requested by the OWNER;
- (2) modify the initial request for remedy; or
- (3) request Alternative Dispute Resolution.

## **SECTION 11 - DISPUTE RESOLUTION**

### **11.1 Filing of Claims**

11.1.1 Claims arising from the circumstances identified in this AGREEMENT, or other occurrences or events, shall be made by Written Notice delivered by the party making the Claim to the other party within thirty (30) calendar days after the start of the occurrence or event giving rise to the Claim and stating the general nature of the Claim. Notice of the amount of the Claim with supporting data shall be delivered in writing within thirty (30) calendar days after Written Notice of Claim is delivered by claimant and shall represent that the adjustment claimed covers all known amounts and/or extensions of time to which claimant is entitled.

11.1.2 Within thirty (30) calendar days of receipt of notice of the amount of the Claim with supporting data, the OWNER and CONSULTANT shall meet to discuss the Claim, after which an offer of settlement or notification of no settlement offer will be made to claimant. If claimant is not satisfied with the proposal presented, claimant shall have thirty (30) calendar days in which to: (i) submit additional supporting data requested by the other party; (ii) modify the initial Claim; or (iii) request Alternative Dispute Resolution.

### **11.2 Alternative Dispute Resolution**

11.2.1 If a dispute exists concerning a Claim, the parties agree to use the following procedure prior to pursuing any other available remedies.

#### *11.2.2 Negotiating with Previously Uninvolved Personnel*

Either party may make a written request for a meeting to be held between representatives of each party within fourteen (14) calendar days of the request or such later period that the parties may agree to. Each party shall endeavor to include, at a minimum, one (1) previously uninvolved senior level decision maker (an owner, officer, or employee of each organization) empowered to negotiate on behalf of their organization. If a previously uninvolved senior level decision maker is unavailable due to the size of the CONSULTANT's organization or any other reason, the CONSULTANT shall nonetheless provide an appropriate senior level decision maker for the meeting. The purpose of this and any subsequent meetings will be good faith negotiations of the matters constituting the dispute. Negotiations will be concluded within thirty (30) calendar days of the first meeting, unless mutually agreed otherwise.

### **11.3 Mediation**

11.3.1 If the procedure described in 11.2.2 proves unsuccessful or is waived pursuant to its terms, the parties shall initiate the mediation process. OWNER and CONSULTANT agree to select within thirty (30) calendar days a mediator trained in mediation skills and knowledgeable of the CONSULTANT's professional discipline, to assist with resolution of the dispute. OWNER and CONSULTANT agree to act in good faith in the selection of the mediator and to give consideration to qualified individuals nominated to act as mediator. Nothing in this AGREEMENT prevents the parties from relying on the skills of a person who also is trained in the subject matter of the dispute and/or a contract interpretation expert. Should the parties fail to agree on a mediator within thirty (30) calendar days of initiation of the mediation process, the parties agree to ask the Travis County Dispute Resolution Center to select a qualified individual, which selection is binding on the parties.

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

11.3.2 Mediation is a forum in which an impartial person, the mediator, facilitates communication between parties to promote reconciliation, settlement, or understanding among them. The parties hereby agree that mediation, at a minimum, shall provide for

- (1) conducting an on-site investigation, if appropriate, by the mediator for fact gathering purposes;
- (2) a meeting of all parties for the exchange of points of view; and
- (3) separate meetings between the mediator and each party to the dispute for the formulation of resolution alternatives.

The parties agree to participate in mediation in good faith for up to thirty (30) calendar days from the date of the first mediation session, unless mutually agreed otherwise. Should the parties fail to reach a resolution of the dispute through mediation, then each party is released to pursue other remedies available to them.

**11.4 Resolution of Disputes between CONSULTANT and Subconsultant:**

The CONSULTANT agrees to follow the procedures paralleling those outlined in subsections 11.1, 11.2 and 11.3 in the event of a dispute with a subconsultant. The OWNER is not a party to the dispute resolution process between the CONSULTANT and subconsultants. However, if the OWNER is notified of a subconsultant claim, the OWNER will withhold payments to the CONSULTANT in accordance with subparagraph 5.3.3.2 until receiving notification that the claim has been resolved.

**SECTION 12 - MISCELLANEOUS PROVISIONS**

**12.1 Owner's Right to Audit**

12.1.1 Records means all records generated by or on behalf of CONSULTANT and each subconsultant, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Agreement, including, without limitation:

- .1 accounting records;
- .2 written policies and procedures;
- .3 subcontract files;
- .4 correspondence;
- .5 supplemental amendments (as appropriate);
- .6 agreements between CONSULTANT and any subconsultant;
- .7 records necessary to evaluate: contract compliance; and any claim submitted by CONSULTANT or any of its subconsultants;
- .8 any other CONSULTANT record that may substantiate any charge related to this Agreement; and
- .9 technical work products in accordance with the approved Subproject RAP.

12.1.2 CONSULTANT shall allow OWNER's agent or its authorized representative to inspect, audit, and/or reproduce all Records generated by or on behalf of CONSULTANT and each subconsultant, upon OWNER's written request. Further, CONSULTANT shall allow OWNER's agent or authorized representative to interview any of CONSULTANT's employees, all subconsultants, and all their respective employees.

12.1.3 CONSULTANT shall retain all its Records, and require all its subconsultants to retain their respective Records, during this Agreement and for the longest of these specified periods: (i) three (3) years after final payment, (ii) until all audit and litigation matters that OWNER has brought to the attention of CONSULTANT are resolved, or (iii) longer as required by law. OWNER's right to inspect, audit, reproduce Records (at no cost to

**PROFESSIONAL SERVICES AGREEMENT  
GENERAL CONDITIONS OF THE AGREEMENT**

OWNER), or interview employees of CONSULTANT or its respective subconsultants exists for the same period described in the preceding sentence.

12.1.4 CONSULTANT must provide sufficient and accessible facilities during its normal business hours for OWNER to inspect, audit, and/or reproduce Records, and to interview any person about the Records.

12.1.5 CONSULTANT shall insert these requirements in each written agreement between CONSULTANT and any subconsultant and require each subconsultant to comply with these provisions.

## **12.2 Ownership and Use of Documents**

12.2.1 All Subproject Drawings and Specifications produced by the CONSULTANT under this AGREEMENT are the property of the OWNER. The CONSULTANT shall also provide the OWNER high quality mylar and digital computer copies on CD or other OWNER-approved media of updated drawings and reproducible copies of specifications as specified in paragraph 1.4.2 of the **Supplemental Terms and Conditions of this AGREEMENT**. The cost of such copies will be paid as specified in Section 5 of this AGREEMENT. The CONSULTANT may not provide copies of or otherwise use the work products covered by this subsection 12.2 without the express prior written approval of the OWNER.

12.2.2 The CONSULTANT agrees that items such as Subproject plans, drawings, photos, designs, studies, specifications, computer programs, schedules, technical reports, or other work products which is/are specified to be delivered under this AGREEMENT, and which is/are to be paid for by the OWNER, is/are subject to the rights of the OWNER in effect on the date of this AGREEMENT. These rights include the right to use, duplicate and disclose such items in whole or in part, in any manner and for whatever purpose, and to have others do so. The CONSULTANT shall not copyright or otherwise claim ownership of the work products covered by this subsection 12.2. The CONSULTANT shall include in its subconsultant contracts appropriate provisions to achieve the purpose of this subsection 12.2.

12.2.3 All such items furnished by the CONSULTANT pursuant to this AGREEMENT are considered instruments of its services in respect to the PROJECT. It is understood that the CONSULTANT does not represent such items to be suitable for reuse on any other project or for any other purpose(s). If the OWNER reuses such items without the CONSULTANT's specific written verification or adaptation, such reuse will be at the risk of the OWNER, without liability to the CONSULTANT.

12.2.4 Should the CONSULTANT be terminated under this AGREEMENT, the OWNER may continue the PROJECT and receive copies within fourteen (14) calendar days of the termination notice. Copies will be in the format designated by the OWNER, as specified in paragraph 1.4.2 or 1.4.5 of the **Supplemental Terms and Conditions of this AGREEMENT** (depending on the PROJECT's status at time of termination). The OWNER may have these documents completed, corrected, revised or added to by another design professional according to Title 22, Chapter 137.33(i) of the Texas Administrative Code.

12.2.5 Submission or distribution to meet official regulatory requirements or for other purposes in connection with the PROJECT is not to be construed as publication in derogation of the CONSULTANT's rights.

## **12.3 Venue**

**12.3.1 In the event of any suit at law or in equity involving the AGREEMENT, venue will be exclusively in Travis County, Texas and the laws of the State of Texas shall apply to the interpretation and enforcement of this AGREEMENT.**

## 12.4 Definitions

12.4.1 Terms in this AGREEMENT will have the same meaning as those in the standard purchasing and construction documents for the City of Austin, Texas. The applicable definitions may be viewed at <http://www.ci.austin.tx.us/purchase/downloads/ifb0100.pdf> and <http://www.ci.austin.tx.us/aeservices/toc.htm> respectively.

## 12.5 Severability

12.5.1 If any word, phrase, clause, sentence or provisions of this instrument, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, invalid or unenforceable, that finding only effects such word, phrase, clause, sentence or provision, and such finding does not effect the remaining portions of this instrument; this being the intent of the parties in entering into this instrument; and all provisions of this instrument are declared to be severable for this purpose.

## 12.6 Indemnification

**12.6.1 The CONSULTANT shall indemnify and hold harmless the OWNER, and its officers, agents and employees, from and against all claims, demands, costs, causes of action, and liability of every kind and nature, including reasonable attorney's fees for the defense of any and all claims and demands, arising directly or indirectly from, or in any way connected with, the negligent performance of or failure to perform services in connection with this AGREEMENT by CONSULTANT, its officers, agents, employees, and parties with whom it contracts.**

## 12.7 Notices

12.7.1 Any and all notices under this AGREEMENT must be in writing and shall be delivered to the party entitled to receive the same by hand or U.S. Certified Mail, return receipt requested, addressed as specified in the **Supplemental Terms and Conditions of this AGREEMENT**.

12.7.2. Mailed notice will be deemed effective three (3) business days after such notice is mailed by Certified Mail with return receipt requested. Hand delivered notice will be effective when received and acknowledged by signed receipt.

## 12.8 Successors and Assigns

12.8.1 The OWNER and the CONSULTANT bind themselves, their partners, successors, assigns and legal representatives to the other party to this AGREEMENT with respect to all covenants of this AGREEMENT. Neither the CONSULTANT nor the OWNER will assign, sublet or transfer any interest in this AGREEMENT without the prior written consent of the other party.

## 12.9 Extent of Agreement

12.9.1 This AGREEMENT represents the entire and integrated agreement between the OWNER and the CONSULTANT and supersedes all prior negotiations, representations or agreements, either written or oral. This AGREEMENT may be amended only by written instrument signed by authorized representatives of both OWNER and CONSULTANT.

**END**

Insert Supplemental Conditions here upon contract negotiation.

TEMPLATE

# ATTACHMENT 1: RESOURCE ALLOCATION PLAN

*Note: PM will advise Consultant of level of detail and payment benchmarks desired for Task Descriptions*

Task Description	Budget	Start Date	End Date	% Complete	% Paid	% Time
A. Preliminary Phase	\$0.00					
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
<i>Phase Total</i>				0.0%	0.0%	0.0%
B. Design Phase	\$0.00					
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
<i>Phase Total</i>				0.0%	0.0%	0.0%
C. Bid-Award Execution Phase	\$0.00					
				0.0%	0.0%	0.0%
<i>Phase Total</i>				0.0%	0.0%	0.0%
D. Construction Phase	\$0.00					
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%
<i>Phase Total</i>				0.0%	0.0%	0.0%
E. Post-Construction Phase	\$0.00					
				0.0%	0.0%	0.0%
<i>Phase Total</i>				0.0%	0.0%	0.0%
<b>Project Total</b>	\$0.00			0.0%	0.0%	0.0%

<b>APPROVED FIXED CONSTRUCTION BUDGET:</b>  <b>DATE OF CURRENT FCB:</b>
---

## ATTACHMENT 3: HOURLY RATES

### DOCUMENTATION OF PROVISIONAL / OVERHEAD RATES

**Overhead rate documentation has been provided to the City of Austin and was utilized by the COA in reviewing and approving the loaded hourly rates below.**

	Hourly Rate	TX Registration Number
PRINCIPAL(S):		
(Name) [REDACTED]	\$ / hr	[REDACTED]
(Name) [REDACTED]	\$ / hr	[REDACTED]
Project Consultant	\$ / hr	
CAD Technician	\$ / hr	
Clerical	\$ / hr	
Other - Specify [REDACTED]	\$ / hr	
<b>HOURLY RATE OF PRINCIPAL(S)- SUBCONSULTANTS:</b>		
<b>SUBCONSULTANT</b>		
(Name of Firm) [REDACTED]		
PRINCIPAL(S)		
(Name) [REDACTED]	\$ / hr	[REDACTED]
(Name) [REDACTED]	\$ / hr	[REDACTED]
Project Consultant	\$ / hr	
CAD Technician	\$ / hr	
Clerical	\$ / hr	
Other - Specify [REDACTED]	\$ / hr	
<b>SUBCONSULTANT</b>		
(Name of Firm) [REDACTED]		
PRINCIPAL(S)		
(Name) [REDACTED]	\$ / hr	[REDACTED]
(Name) [REDACTED]	\$ / hr	[REDACTED]
Project Consultant	\$ / hr	
CAD Technician	\$ / hr	
Clerical	\$ / hr	
Other - Specify [REDACTED]	\$ / hr	

**ADD ADDITIONAL SUBCONSULTANTS AS NEEDED**

## ATTACHMENT 4

### QUALITY CONTROL PLAN (QCP)

#### **Definitions**

##### *Quality Assurance*

A comprehensive program that verifies a facility, structure, system or component will perform satisfactorily and safely in service. A recognized benchmark for quality assurance programs is ISO 9000/9001.

##### *Quality Control*

The process of identifying and applying appropriate technical and professional standards when producing project design documents that meet or exceed the user's requirements.

##### *Constructability*

A review process using experienced personnel with extensive construction knowledge early and throughout the design phase to ensure projects are buildable, practical, and consistent with current construction practices while also being cost effective, biddable, and maintainable.

#### **Due Date:**

The Consultant must submit the QCP plan for the Owner's approval within fourteen (14) calendar days after the Owner issues a Notice to Proceed to the Consultant.

#### **Required Elements of QCP Plan** (Sec. 1.3 of PSA)

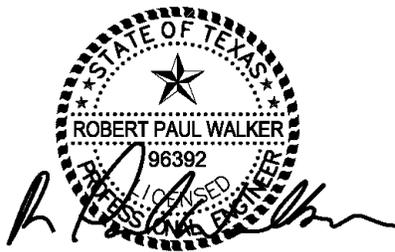
<b>Management Philosophy</b>	
1	<p><i>The QCP specifies how the organization's technical management philosophy supports its commitment to quality</i></p> <p><i>Needed: Certification by consultant firm's Board of Directors, president, owner, managing partner, or other executive-level staff that, to ensure quality of design products:</i></p> <ul style="list-style-type: none"><li><i>(a) firm is committing adequate manpower and resources</i></li><li><i>(b) Project Design Team (PDT) is accountable to Independent Technical Review Team (ITRT)</i></li><li><i>(c) Management and the PDT will emphasize quality control during the production of design documents</i></li><li><i>(d) Management and the PDT will establish internal quality checks and reviews</i></li><li><i>(e) Management and the PDT will assess independent quality control's contribution to the quality of design documents</i></li></ul>
<b>Management / Organization Structure</b>	
2	<p><i>The QCP specifies:</i></p>

	<ul style="list-style-type: none"> <li>• who manages the Independent Technical Review Team (ITRT) (internal or external to the design consulting firm)</li> <li>• if the ITRT is internal to the design consulting firm, that the ITRT is independent of the Project Design Team (PDT)</li> <li>• the ITRT reports to a management level the same or higher than the PDT</li> <li>• interrelationships of management, PDT, and ITRT (including all consultants)</li> </ul> <p><u>Needed:</u></p> <p>(a) An organization chart depicting the relationships of all parties noted above, identifying them by name and describing each person's responsibilities on the design project</p> <p>(b) Resumes for members of the ITRT</p>
<b>Quality Control Procedures</b>	
3	<p>The QCP specifies</p> <ul style="list-style-type: none"> <li>• management and control of design and QCP documents</li> </ul> <p><u>Needed:</u></p> <p>(a) Statement that access to design and QCP documents will be controlled</p> <p>(b) Procedures are defined to identify and track versions of documents</p> <p>(c) Document control plan</p> <p>(d) Also refer to "Documentation" section below</p>
4	<ul style="list-style-type: none"> <li>• internal and external communications, including an Issue Follow-Up Plan</li> </ul> <p><u>Needed:</u></p> <p>(a) description of management of QCP communications with all parties</p> <p>(b) Issue Follow-Up Plan to track problems identified and their resolution</p>
5	<ul style="list-style-type: none"> <li>• design coordination</li> </ul> <p><u>Needed:</u> Procedure must describe:</p> <p>(a) relationships, accountability, authority, and responsibilities within the Project Design Team</p> <p>(b) efforts to achieve interdisciplinary coordination</p>
6	<ul style="list-style-type: none"> <li>• design checks and reviews, specifically addressing: <ul style="list-style-type: none"> <li>▪ correct application of methods</li> <li>▪ validity of data and assumptions</li> <li>▪ accuracy of calculations</li> <li>▪ complete documentation</li> <li>▪ testing, modeling, assumptions, calculations, text &amp; graphical presentations in</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>▪ all documents</li> <li>▪ special project components</li> <li>▪ compliance with all applicable guidance, standards, regulations, codes &amp; laws</li> <li>▪ ensuring project is biddable, constructible and operable as well as environmentally compliant</li> </ul> <p><u>Needed:</u></p> <p>(a) types, intervals and frequency of reviews</p> <p>(b) identification of applicable guidance, standards, codes, specifications and laws</p> <p>(c) methodology for addressing constructability</p> <p>(d) description of testing, modeling, development of assumptions, calculations, and presentation methods in design documents to meet design criteria and standards of professional practice</p> <p>(e) methodology for identifying and addressing all appropriate environmental requirements</p>
7	<ul style="list-style-type: none"> <li>• independent technical reviews, specifically ensuring: <ul style="list-style-type: none"> <li>▪ seniority and technical qualifications of Independent Technical Review Team (ITRT) members and their separation from the Project Design Team (PDT)</li> <li>▪ concepts, assumptions and procedural details are accurate, appropriate and fully coordinated</li> <li>▪ examination of appropriate alternatives</li> <li>▪ definition and scoping of problems, issues and opportunities</li> <li>▪ validity of analytical methods</li> <li>▪ results and recommendations are reasonable, comply with all requirements, and are supported by the documents</li> <li>▪ any deviations from policy, guidelines or standards have been identified and approved by the appropriate parties</li> <li>▪ design documents result in project that is biddable, constructible, operable, environmentally sound, and cost-effective</li> <li>▪ design products meet City's needs</li> </ul> </li> </ul> <p><u>Needed:</u></p> <p>(a) Description of how the Independent Technical Review Team (ITRT) will validate the quality of the Project Design Team's (PDT) products prior to submission to the PM</p> <p>(b) Identification of any design components that will require special quality reviews</p> <p>(c) checklists for review of each design element</p>
8	<ul style="list-style-type: none"> <li>• managerial plan to maintain continuity of QCP effort</li> </ul> <p><u>Needed:</u></p> <p>(a) description of how management will maintain required level of effort and quality resources</p>

	(b) contingency plan for replacement of key PDT and/or ITRT staff
<b>Documentation</b>	
9	<p>The QCP specifies:</p> <ul style="list-style-type: none"> <li>• records control plan for all internal review documents, associated comments and responses, describing that: <ul style="list-style-type: none"> <li>▪ all documents retained in consultant's files</li> <li>▪ files are auditable and available to the City upon request</li> <li>▪ files are identified by document type and compiled according to a file index system</li> </ul> </li> </ul> <p><u>Needed:</u> Details on all items listed above</p>
10	<ul style="list-style-type: none"> <li>• upon project completion, the consultant will certify compliance with the QCP</li> </ul> <p><u>Needed:</u> Consultant submits draft Consultant Statement of Technical Review</p> <p>(a) verifying compliance with the QCP and</p> <p>b) agreeing to identify and assess issues that arise during later project phases with respect to the QCP</p> <p>The Statement must be signed by the Project Design Team (PDT), the Independent Technical Review Team (ITRT), and the Principal (or other executive-level official) of the consultant. The consultant will provide the City all Issues analyses from later phases</p>
<b>Schedule</b>	
11	<p>The QCP specifies that:</p> <ul style="list-style-type: none"> <li>• a design schedule showing the sequence of tasks to be completed within the time period specified by the City; must include <ul style="list-style-type: none"> <li>▪ design submittal dates to City</li> <li>▪ project design team (PDT) reviews</li> <li>▪ Independent Technical Review Team (ITRT) reviews</li> <li>▪ time for revisions prior to submittals to City</li> <li>▪ time for City review of submittals</li> </ul> </li> <li>• how all QCP measures will be tracked to avoid project delays</li> </ul> <p><u>Needed:</u> Items as described above</p>

ATTACHMENT A



08/31/2011

Texas Registered Engineering  
Firm No. F-882

City of Austin  
Ullrich Water Treatment Plant

**TECHNICAL MEMORANDUM**

**ON-SITE GENERATION OF  
SODIUM HYPOCHLORITE (OSGSH)  
EVALUATION**

**FINAL**  
August 2011





## **BACKGROUND**

The City of Austin (City) currently uses chlorine gas, either one ton cylinders or bulk storage systems, at its water treatment facilities for disinfection and has accrued a safe operating record of over 80 years without an incident that jeopardized life safety. Given environmental sensitivities, recent concerns associated with the transport of chlorine gas, concerns associated with chlorine supply, and price volatility and the decision to use On-Site Generation of Sodium Hypochlorite (OSGSH) at Water Treatment Plant No. 4; the City decided to evaluate the use of OSGSH for the Davis and Ullrich Water Treatment Plants (WTPs).

## **EVALUATIONS**

Carollo Engineers evaluated the implementation of OSGSH at the Ullrich WTP. This included evaluation to determine how the OSGSH system could be constructed within the existing facilities. Considerations were also given to implementation issues, such as transitioning from the existing chlorine gas to the OSGSH systems, safety concerns, environmental effects, operations and maintenance implications, system reliability, reusing existing equipment, and product deliveries. In addition, an evaluation of the OSGSH manufacturers with recommendations is provided. Finally, the cost to construct the OSGSH system was estimated.

## **ULLRICH WTP CONCLUSIONS AND RECOMMENDATIONS**

The existing chlorine facility at Ullrich has adequate space to accommodate an OSGSH system, however, several significant modifications and additions would be required. Besides the demolition of the existing bulk chlorine system, a building extension, complete with large foundations, would be required to accommodate several sodium hypochlorite storage tanks. The tank storage area would occupy space currently used as an existing parking area/drive located immediately northeast of the chlorine building. Several chlorine distribution lines are in this location and would require replacement and rerouting.

Having adequate space and optimizing the location for the brine tanks is another important consideration. Re-purposing the existing 80,000-gallon scrubber tank was studied. Converting this tank to a brine tank offers the advantage of utilizing an awkward space and frees up the existing loading area. Salt deliveries can be conducted within the existing loading area, minimizing the noise from loading salt. For these reasons, it is recommended

that the existing scrubber tank be converted to a salt storage/brine tank if an OSGSH system is constructed.

Currently, the plant chlorine solution is slightly acidic and is used to clean piping at the lime slurry delivery system. The sodium hypochlorite is basic; therefore, it cannot be used to clean lines. It is recommended that an Acid Magic<sup>®</sup> cleaning system be used since it is effective and relatively simple and easy to implement compared to other options.

The evaluation determined that OSGSH is feasible at the Ullrich WTP. Due to space constraints and working in and around the existing facilities, the implementation cost is higher when compared to construction at a new WTP. The estimated construction cost at Ullrich is \$12,330,000. Based strictly on economic considerations, continuing with chlorine gas using one ton containers or bulk storage systems would be the preferred choice given that it has the lowest capital cost. The existing chlorine gas system has the advantages of the familiarity to operational personnel, a safe operating record, and a proven method for meeting disinfection requirements. Based on the non-economic factors, such as safety and risk reduction, selecting OSGSH offers several advantages over chlorine gas. Assuming the additional cost of constructing and operating an OSGSH system is within the City's budget, this alternative is recommended for consideration based on the following reasons:

- Although the City's facilities using chlorine gas have a long history of safe operation, OSGSH has the lowest potential risk from a life safety perspective because no hazardous chemicals are delivered or used under this alternative.
- The public concern over using an OSGSH system should be less than continuing with chlorine gas.
- Deliveries of hazardous chlorine to the site would be replaced by salt deliveries, which are non-hazardous to humans.
- The availability and price of salt are not as volatile as bulk sodium hypochlorite or chlorine gas. Additionally, salt deliveries are not subject to potential price increases that could affect chlorine costs if proposed legislation to shift carrier liability is ever passed.
- This alternative provides the lowest potential risk to the surrounding environment from a leak.
- A Risk Management Plan (RMP) is not required when using an OSGSH system. However, an RMP for the ammonia system is still necessary.
- OSGSH is a proven, reliable, and effective technology for providing disinfection at water treatment plants.

**CITY OF AUSTIN**  
**ULLRICH WATER TREATMENT PLANT**  
**TECHNICAL MEMORANDUM**  
**ON-SITE GENERATION OF SODIUM HYPOCHLORITE (OSGSH)**  
**EVALUATION**

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# ON-SITE GENERATION OF SODIUM HYPOCHLORITE EVALUATION

## 1.0 INTRODUCTION

### 1.1 Background

A major component of Water Treatment Plant (WTP) operations is the selection of a disinfectant storage and feed system that will provide disinfection of the water. Disinfection is required to achieve pathogen inactivation requirements specified in the drinking water regulations (30 TAC 290 Subchapter F) administered by the Texas Commission on Environmental Quality (TCEQ). The City of Austin's (City's) WTPs currently feed gas chlorine for free chlorine disinfection followed by ammonia to form chloramines. While the use of chlorine gas relies on proven technology that is effective and safe, it requires that large quantities of chlorine, a toxic gas, be delivered and stored on site. Given the environmental, security, cost, and public concerns associated with the use of chlorine gas, the on-site generation of sodium hypochlorite (OSGSH) was evaluated as a potential option for the City's Ullrich WTP.

### 1.2 Purpose

The purpose of this study is to evaluate the possibility of replacing chlorine gas storage and feed at the City's Ullrich WTP with OSGSH technology.

Historically, chlorine gas has provided the primary source of disinfection at water plants in the United States and throughout Texas. While chlorine gas is a very effective agent for inactivating pathogens in water supplies, it is also a hazardous and dangerous chemical. The effects of chlorine on humans at various concentrations are listed in Table 1.1.

The risks of using chlorine dictate that several safety systems be integrated into the storage and feed system design. These generally include:

- Separate storage and feed rooms
- Well ventilated rooms
- Leak detection and alarms
- Enclosed chlorine off-loading
- Self-contained breathing apparatus (SCBA) and other safety equipment
- Emergency scrubber to convert the contents of a major leak to non-toxic products

<b>Table 1.1 Chlorine Exposure Concentration and Effects TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Exposure Concentration</b>	<b>Effects</b>
1 – 3 ppm <sup>1</sup>	Mild mucous membrane irritation
5 – 15 ppm	Moderate irritation of upper respiratory tract
30 ppm	Immediate chest pain, vomiting, dyspnea, and cough
40 – 60 ppm	Toxic pneumonitis and pulmonary edema
430 ppm	Lethal over 30 minutes
1,000 ppm	Death within a few minutes <sup>2</sup>
Notes: 1. ppm = parts per million 2. Death is possible from asphyxia, shock, reflex spasm in the larynx, or massive pulmonary edema.	

Due to these and other safety precautions, the City has successfully used chlorine gas for over 80 years without an incident that threatened the safety of those working at or living near its water facilities.

Several advantages and disadvantages of using chlorine gas are presented in Table 1.2. The disadvantages listed are the primary reasons that lead utilities to replace chlorine gas systems with an OSGSH system.

<b>Table 1.2 Advantages and Disadvantages of Chlorine Gas Disinfection TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin Water Treatment Plant No. 4</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Widely used and long history of successful operation for disinfection	Risk of accidental release of chlorine gas during transport and while handling at the plant <sup>1</sup>
Readily available and economical	Security concerns with respect to bulk chlorine transport
Reliable and effective disinfectant	Chlorine gas is toxic to humans and wildlife
Flexible and reliable monitoring, instrumentation, and automated control systems	Requires a Risk Management Plan (EPA)

<b>Table 1.2 Advantages and Disadvantages of Chlorine Gas Disinfection TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin Water Treatment Plant No. 4</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Simple equipment and controls	Safety equipment, special training, and significant safety precautions required
Relatively easy to apply and control	Scrubbers will greatly reduce but not entirely eliminate risk
Low power consumption	Price volatility
Lower chemical cost than other alternatives	Severely corrosive chemical
City personnel experienced and trained with storage and feed	
Notes: 1. A study conducted by RMT/Jones & Neuse, Inc. titled, "Hazardous Materials Accidental Release Human Health Risk Study" (June 2005) discusses potential chlorine risks in the City. This study provides an outside assessment that was not analyzed as part of this evaluation.	

In addition, chlorine is transported and stored as a liquefied gas under pressure, which contributes to the possibility of a sudden accidental release.

The primary characteristics of chlorine gas and liquid are listed in Table 1.3.

<b>Table 1.3 Characteristics of Chlorine Gas and Chlorine Liquid TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin Water Treatment Plant No. 4</b>	
<b>Chlorine Gas</b>	<b>Chlorine Liquid</b>
Specific Gravity: 2.482 (at 32°F and 1 atm)	Specific Gravity: 1.41 (at 68°F and 1 atm)
Density: 0.2006 lb/ft <sup>3</sup> (at 34°F and 1 atm)	Density: 91.67 lb/ft <sup>3</sup> (at 32°F)
Liquefying Point: -30.1°F (-34.5°C at 1 atm)	Freezing Point: -149.8°F (-101°C)

### 1.3 Scope

This Technical Memorandum (TM) summarizes the disinfection requirements and criteria, describes the OSGSH alternative systems that could be used to achieve those goals, and evaluates its implementation at the Ullrich WTP. This TM also describes the issues and concerns associated with replacing the existing chlorine gas systems with an OSGSH system. Estimated construction costs and schedules are also presented. Conclusions and recommendations are provided.

## 1.4 Abbreviations

The following is a list of abbreviations used in this TM.

- 316 SS – Type 316 Stainless Steel
- AACE – American Association of Cost Engineers
- AC – Alternating Current
- AWWA – American Water Works Association
- BPV – Backpressure-Regulating Valve
- DC – Direct Current
- DCS – Distributed Control System
- FCS – Field Control Station
- GHG – Greenhouse Gas
- gpd – gallons per day
- gph – gallons per hour
- gpm – gallons per minute
- HCl – Hydrochloric acid
- HEI – Harutunian Engineering, Inc.
- HID – High Intensity Discharge
- HVAC – Heating, Ventilation, and Air Conditioning
- I&C – Instrumentation and Controls
- IEEE – Institute of Electrical and Electronics Engineers
- IES – Instrumentation Engineering Standards
- LED – Light Emitting Diode
- MCC – Motor Control Center
- mgd – million gallons per day
- NaOCl – Sodium Hypochlorite

- NEC – National Electrical Code
- NFPA – National Fire Protection Association
- NSF – National Science Foundation
- OIU – Operator Interface Unit
- OSGSH – On-Site Generation of Sodium Hypochlorite
- PAC – Powdered Activated Carbon
- PLC – Programmable Logic Controller
- ppm – parts per million
- ppd – pounds per day
- PVC – Polyvinyl chloride
- RMP – Risk Management Plan
- SCBA – Self-Contained Breathing Apparatus
- SOP – Standard Operations Procedure
- TAC – Texas Administrative Code
- TCEQ – Texas Commission on Environmental Quality
- TM – Technical Memorandum
- UFC – Upflow Clarifier
- UPS – Uninterruptible Power Supply
- UV – Ultraviolet
- WTP – Water Treatment Plant

## **2.0 DISINFECTION REQUIREMENTS AND GOALS**

The size, components, and design of the disinfectant storage and feed system are governed by the City of Austin's goals for disinfection and regulatory requirements administered by TCEQ (30 TAC 290 Subchapter F). Additional requirements for safety and operations also dictate how each disinfection system is designed. The principal process-related requirements for disinfection are listed in Table 2.1.

<b>Table 2.1 Principal Disinfection Goals and Regulations TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>			
<b>Parameter</b>	<b>Units</b>	<b>TCEQ Regulation</b>	<b>City of Austin Goal</b>
<i>Giardia</i> Inactivation <sup>1</sup>	log	0.5	1.0 @ 8°C 0.75 @ 5°C
Total Chloramine Residual	mg/L	> 0.5	1.8 – 2.2 leaving WTP, >1.0 in distribution
Virus Inactivation <sup>2</sup>	log	2	3.0 @ 5°C 4.0 @ 8°C
Storage of Primary Disinfectant <sup>3</sup>	days	15	15
Feed Equipment Redundancy	---	50% greater than maximum dose	50% greater capacity, minimum of 1 unit in standby
Notes: 1. Assuming 2.5-log removal achieved through filtration. 2. Assuming 2.0-log removal achieved through filtration. 3. Based on maximum dose applied at maximum flow.			

### 3.0 ON-SITE GENERATION OF SODIUM HYPOCHLORITE

#### 3.1 Sodium Hypochlorite

The use of sodium hypochlorite avoids most of the handling and storage hazards associated with gaseous chlorine, while providing similar disinfection capabilities. The following paragraphs discuss the two common ways of using sodium hypochlorite at WTPs.

##### 3.1.1 Commercially Available Bulk Sodium Hypochlorite

Bulk Sodium Hypochlorite is a straw-yellow color solution generally purchased from commercial suppliers at a concentration between 10 and 15 percent. It is a caustic solution with a pH greater than 12. Sodium hypochlorite degrades rapidly during storage to form chlorate and chlorite. Due to health concerns (disruption of blood functions, others), chlorite is a regulated contaminant in drinking water with a maximum contaminant level (MCL) of 1.0 mg/L, and chlorate may be regulated in the future. The rate of bulk solution degradation increases with higher temperature, lower pH, longer storage durations, and higher solution strength. Literature indicates that a 12.5 percent solution can lose up to 25 percent of its strength in 20 days or less (White, *Handbook of Chlorination and Alternative Disinfectants*, 1999). Table 3.1 summarizes advantages and disadvantages associated with the use of bulk sodium hypochlorite.

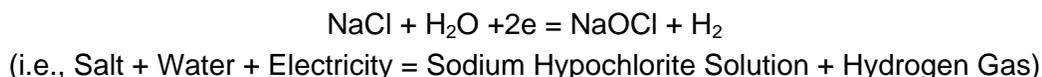
<b>Table 3.1 Bulk Sodium Hypochlorite Advantages and Disadvantages TM – On Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Widely used, proven disinfectant	Corrosive, hazardous, and subject to containment requirements
Eliminates safety concerns associated with the storage of gaseous chlorine (emergency scrubber not required)	By-products include hazardous chlorinated organic compounds (chlorite & chlorate)
Systems are reliable and flexible.	Toxic to aquatic life
Less equipment required than other alternatives	Solution off-gasses in piping and storage, creating safety and operating concerns
Relatively easy to apply and control	Hypochlorite solutions deteriorate rapidly and the rate of deterioration increases with heat, solution concentration, exposure to sunlight, and the presence of iron or copper in solution.
Risk Management Plan not required	High chemical cost
Low power consumption	Austin Water Utility staff not trained or experienced with its use
Low capital cost	

### 3.1.2 On-Site Generation of Sodium Hypochlorite

Liquid sodium hypochlorite (NaOCl) generated on site is a diluted liquid bleach solution (0.8 percent sodium hypochlorite). It is produced either through the reaction of chlorine with excess sodium hydroxide, or generated through electrolysis of salt (NaCl) and water. Chlorine gas hydrolyzes in aqueous solution to produce two active ingredients, hypochlorous acid (HOCl) and hypochlorite ion (OCl), and it generally slightly depresses pH in the process. Hypochlorite generated on-site, however, is produced at a pH such that OCl is predominately formed. Unlike the chlorine gas reaction, the hypochlorite reaction in water can slightly increase the pH of the water.

### 3.2 OSGSH Process and Description

OSGSH systems operate by electrolytically converting a salt brine solution into a weak (0.8 percent) sodium hypochlorite solution according to the following equation:



A high quality (solar- or food-grade) salt is delivered to a tank/brine maker. The brine solution is produced by feeding softened water into a brine dissolver (brine tank). The brine

solution flows from the brine tanks through electrolytic cells (generator units) that convert the brine to sodium hypochlorite. Low voltage direct current (DC) is applied to the electrolytic cells to accomplish the brine solution conversion to sodium hypochlorite. This solution is conveyed to storage tanks from which pumps meter it to the point(s) of application. Hydrogen gas is also generated during the electrolytic process, which is diluted below the flame ignition point by blowing air through the storage system. Overall advantages and disadvantages of an OSGSH system are presented in Table 3.2.

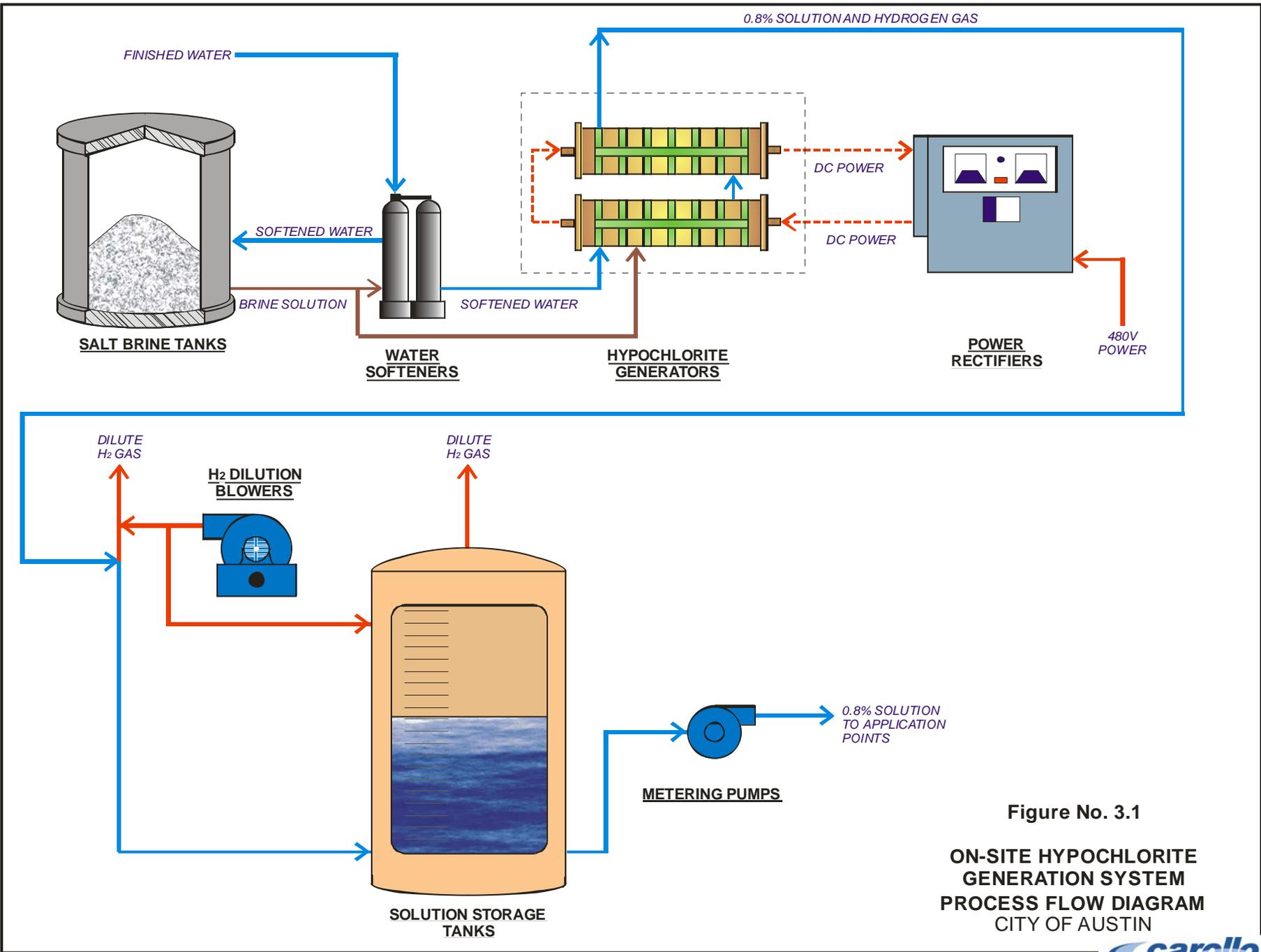
<b>Table 3.2 Advantages and Disadvantages of OSGSH                      TM – On Site Generation of Sodium Hypochlorite Evaluation                      City of Austin</b>	
Advantages	Disadvantages
Becoming more commonly used, proven disinfectant	Weak solution strength requires that large volumes of solution be generated and fed
Eliminates safety concerns associated with the storage of gaseous chlorine	By-product is hydrogen gas, which must be properly vented to avoid explosive potential
Eliminates gas chlorine deliveries	Product generated as it is used, requiring alternate means for redundancy
Eliminates product degradation and off-gassing problems associated with bulk hypochlorite	High power usage
Risk Management Plan not required	High capital cost
Equipment is not complex; easy to operate and maintain	Slightly increases sodium levels in finished water by up to 6 mg/L
Easy off-loading reduces operator handling time	Requires discharge of softener regeneration solution
Relatively easy to apply and control	Austin Water Utility staff not experienced or trained to operate equipment
Emergency scrubber not required	Increases truck traffic to WTP due to salt deliveries
	Requires more space than gas chlorine alternatives

### 3.3 System Components

The major components of an OSGSH system are shown in Figure 3.1. The following list describes each component and its function:

- Salt and Brine Storage. A solar- or food-grade salt must be dissolved to form brine solution to supply the generator cells. The salt is stored in large storage tanks (brine tanks), and softened water is added to form brine solution. Fiberglass-reinforced plastic tanks are typically used, although concrete tanks offer an alternative method of storage. Salt can be delivered using trucks that blow the salt directly into the tanks or dump the salt into a below ground storage tank. Softened water would be maintained at a pre-set level within the tanks to continuously dissolve the salt into a concentrated brine solution.
- Brine Pumps or Eductors. Brine Pump(s) or eductors (contained within the generator skids cells) are used to transfer brine solution from storage to the electrolytic cells. Both methods are proven ways to transfer the brine slurry to the cells. Using pumps adds additional equipment that is subject to repair and maintenance.
- Water Softeners. Finished water must be completely softened to avoid scaling within the generators. Mechanical disk- or electronic-type softeners would be installed, and brine solution from the storage tank would be used to regenerate the softeners. A softener is usually furnished for each sodium hypochlorite generator. The spent solution produced during regeneration would be sent to the sanitary sewer. It is estimated that an average flow of about 1,300 gallons per day of spent solution would be sent to the sanitary sewer (based on an average flow of 85 mgd at a dosage of 4.5 mg/L).
- Heaters. Heaters are used as necessary to maintain an optimal water temperature of the brine solution to improve the efficiency of the downstream generators. The optimum temperature is approximately 65 to 80 degrees Fahrenheit. Water heaters are not required for the City's application since water temperatures are not often below 65 degrees Fahrenheit.
- Chillers. Water chillers are used as needed to maintain an optimal water temperature of the brine solution to improve the efficiency of the downstream generators. As noted above, the optimum temperature is approximately 65 to 80 degrees Fahrenheit. Generators can be operated without chillers if a slight decrease in generator efficiency is acceptable.

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**Figure No. 3.1**  
**ON-SITE HYPOCHLORITE**  
**GENERATION SYSTEM**  
**PROCESS FLOW DIAGRAM**  
**CITY OF AUSTIN**

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- Generators (Electrolytic Cells). The conversion of brine to sodium hypochlorite occurs in the generator cells. The cells consist of a series of anode and cathode plates where the sodium hypochlorite solution is generated. Cells can be sized for different capacities and generators up to 2,000 pounds per day (ppd) production can be purchased.
- Rectifiers. The rectifiers convert 480-volt alternating current (AC) to DC used by the generators.
- Hydrogen Dilution Blowers. Blowers are used to continuously dilute the hydrogen gas with air to a concentration level that is below the concentration where the gas could be potentially ignited.
- Tanks. Tanks are used to store the sodium hypochlorite solution. Given the low concentrations of generated product, a relatively large volume of storage is needed. The tanks are sized to store a one-day supply of product. Secondary containment would be installed around the tanks.
- Metering. Two alternatives are used to meter the OSGSH solution to the point of application. Under the first option, metering pumps would draw sodium hypochlorite from the storage tanks and meter the solution directly to the point(s) of application. The pumps would be automatically controlled to provide flow pacing of the solution. Under the second option, chemical duty centrifugal pumps are used to pressurize a feed loop. Flow control valves and flow meters are then used to automatically flow pace the solution from the feed loop to the point(s) of application.
- Redundant Feed Components. Unlike chlorine gas and bulk sodium hypochlorite, an OSGSH system generates product as it is used. As such, a 15-day reserve storage capacity as required by the Texas Commission on Environmental Quality (TCEQ) is not provided. Redundancy is instead provided by installing 15 days of salt storage, a stand-by generator, storing a one-day supply of hypochlorite solution, and providing the ability to receive and dilute bulk hypochlorite in emergencies. This approach is consistent with other WTP facilities operating OSHGS systems and is accepted by TCEQ.

A conceptual layout of the OSGSH system for the Ullrich WTP site is shown in Section 4.0.

### 3.4 Operations and Maintenance

Operations and maintenance considerations include the ease of use, maintenance requirements, and the operational efficiency. The operational goal is to minimize operational difficulties and maintenance while optimizing efficiency.

An OSGSH system requires little operator intervention since the majority of components are operated automatically. The major components requiring attention are the metering or feed pumps, which can require hose change-outs if tube pumps are used. The low solution strength of the solution generated with this alternative does not present significant corrosion issues, which decreases maintenance requirements relative to commercial sodium hypochlorite and chlorine gas.

Due to scale formation (calcium and magnesium deposits), the electrodes can lose efficiency in the conversion of electrical energy to sodium hypochlorite over time. The rate of build-up is increased by poor functioning of water softening equipment and lower grade salt. However, efficiency is maintained if the electrodes are cleaned on a regular schedule as recommended by the OSGSH system manufacturer. The cleaning procedure involves isolating the generator cells and then circulating muriatic acid through the electrodes to dissolve the scale. This is accomplished by using a portable wash pump and tank. The pump and tank are connected to the cell inlet and outlet, and the pump circulates the muriatic acid solution throughout the cell. After cleaning, it is important that the cell is flushed to ensure acid does not mix with the 0.8-percent bleach solution being generated.

Besides cleaning the electrolytic cells, a limited number of other maintenance activities must be undertaken. Table 3.3 lists these activities. Also, implementing the OSGSH option will require a new training program for Water Utility personnel to familiarize them with operating and maintaining the system.

<b>Table 3.3 Maintenance Activities for OSGSH Systems TM – On Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>		
<b>Description</b>	<b>Interval</b>	<b>Labor (days)</b>
Clean or check strainers and filters / Changing out Filters	Daily / Monthly	---
Check inlet water pressure	Daily	---
Check unit for alarms by scrolling through alarm history	Daily	---
Inspect all plumbing, cells, tanks for leaks	Daily	---
Test softened water hardness	Weekly	---
Check, clean chiller condenser coils	Weekly	---
Rectifier service	Every 6 months	---

<b>Table 3.3 Maintenance Activities for OSGSH Systems TM – On Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>		
<b>Description</b>	<b>Interval</b>	<b>Labor (days)</b>
Acid Cleaning of the Electrolytic Cells	Yearly	3 – 4
Cleaning the Brine Tanks	Every 2 years	1 – 2
Cleaning the Sodium Hypochlorite Tanks	Every 2 years	2 – 3
Replacing Diodes	As needed	---

The electrolytic cells manufactured by leading suppliers have a typical lifespan of 8 to 10 years. Warranties are available up to seven years. Presently, the replacement cost for one 750-ppd cell ranges from about \$22,000 to \$26,000.

The system requires 480-Volt AC electrical power, which is converted to DC power to perform the electrolysis process. For electrical safety, the equipment manufacturers cover and insulate the electrical components. Safety protocol dictates that the system not be operated with equipment covers or panels removed. When maintenance and repairs require removal of covers and panel entry, the system must be disconnected from the power source and locked out and tagged at the main breaker.

### **3.5 Feed Pump Alternative Analysis**

Once produced, the sodium hypochlorite will require distribution to the plant’s disinfection application points. The selected pumping or distribution system must meter the NaOCl solution accurately (at the proper dosage), be capable of pacing the chemical at rates commensurate with the WTP flow rate, and pump the solution from the storage tanks to the plant’s application points.

The OSGSH system generates a 0.8-percent solution. The weak 0.8-percent solution requires larger volumes of solution to be stored and pumped. For example, a total pumping rate of 93 gallons per minute (gpm) (5,600 gallons per hour (gph)) will be required at the Ullrich WTP to supply an applied dosage of 6.5 mg/L (based on a maximum plant production rate of 167 million gallons per day (mgd)). This is beyond the capacity range of standard metering pumps and requires that multiple pumps be installed in parallel or alternate feed systems be constructed. Pumping options include the use of diaphragm metering pumps, peristaltic or tube pumps, or using a single larger centrifugal pump in a pressurized loop delivery system. These options are described further in the following paragraphs.

### **3.5.1 Diaphragm Metering Pumps**

This option would use diaphragm-metering pumps. This pump type is a positive displacement pump that uses a mechanically actuated diaphragm to pump the solution. These pumps are electric motor driven metering pumps with sturdy drive mechanisms and chemical resistant diaphragms for long life. These pumps are compact and easily serviceable. They are suitable for pumping the 0.8-percent NaOCl solution, but not recommended for the commercial grade NaOCl (12 to 15 percent). The diaphragm pumps are known to lock up/air bind due to off-gassing of the higher strength NaOCl solution.

The metering pump selected would have to be capable of meeting a range of flows depending on the dosage required and the plants' flow rate. The pump would be required to meet average, low, and maximum feed rates. With the 0.8-percent solution, a single application point would typically require a large flow rate (1,500 gph or more). The upward pumping range for a single diaphragm metering pump is limited to about 300 gph. Duplex pumps utilizing dual diaphragm heads are available that would extend the output of a single pump to a maximum flow range of about 600 gph. For the OSGSH system, one individual pump will not meet the larger pumping volumes required for a typical feed point. Using diaphragm pumps would be an option only if several were operated in parallel for each feed point. Installing numerous pumps would add complications and costs to the system.

The use of diaphragm pumps is not recommended for the OSGSH system due to the inability for one pump to have enough capacity to meet the required rates. Numerous pumps with their associated motors, valves, and controls would be required, resulting in a more complex system.

### **3.5.2 Pressurized Loop Delivery System**

This option would use a pressurized loop delivery system. This system consists of a pipeline/loop that circulates flow from the NaOCl storage tanks and back to the tanks as shown in Figure 3.2. The flow is circulated through the feed loop by a chemical-duty centrifugal pump, and a second pump provides backup. Several lines (one for each application point) are connected to and fed from the main loop.

The pressure in the loop is maintained by a pressure-sustaining valve, and any excess pumpage not metered to the point(s) of application is returned to the storage tanks.

The metering is accomplished in this system by a series flow meters in combination with automatic motorized valves that automatically adjust to maintain the flow rate set point. A meter and valve combination are installed for each line that feeds to a plant application point. The control valves used for the system are typically globe-style with high accuracy and large turn-down ratios. Several other elements are required for a complete functioning loop system. These elements include pressure-sustaining valves, pressure relief valves, check valves, isolation valves, and gauges.

The main pump that provides the pressurized flow through the loop system would be capable of meeting the highest sodium hypochlorite demand required by the plant. This flow range is dependent on the dosage required and the plant's flow rate. This main pump would be an end-suction, horizontal centrifugal pump, designed for chemical processing.

Another main component for this system includes a pressure-sustaining valve, which is a self-adjusting, backpressure-regulating valve (BPV) that is designed to open and close automatically to maintain a constant discharge pressure on the main pump. The BPV also smoothes the operation of the flow control valves by maintaining constant pressure to their inlets. Each solution feed line also has a flow meter, which would be installed with 10 straight pipe diameters upstream and downstream to avoid turbulent flow currents that will affect accuracy.

The use of a loop system is a viable option in that it can meet the flow rate demands required by OSGSH. The system has less maintenance with respect to the replacement of hoses that will occur with a peristaltic pump system. This option also requires the fewest amount of pumps, and it would match the system being installed at WTP 4. However, there are numerous flow meters, automatic valves, and components that will require calibration and eventual service.

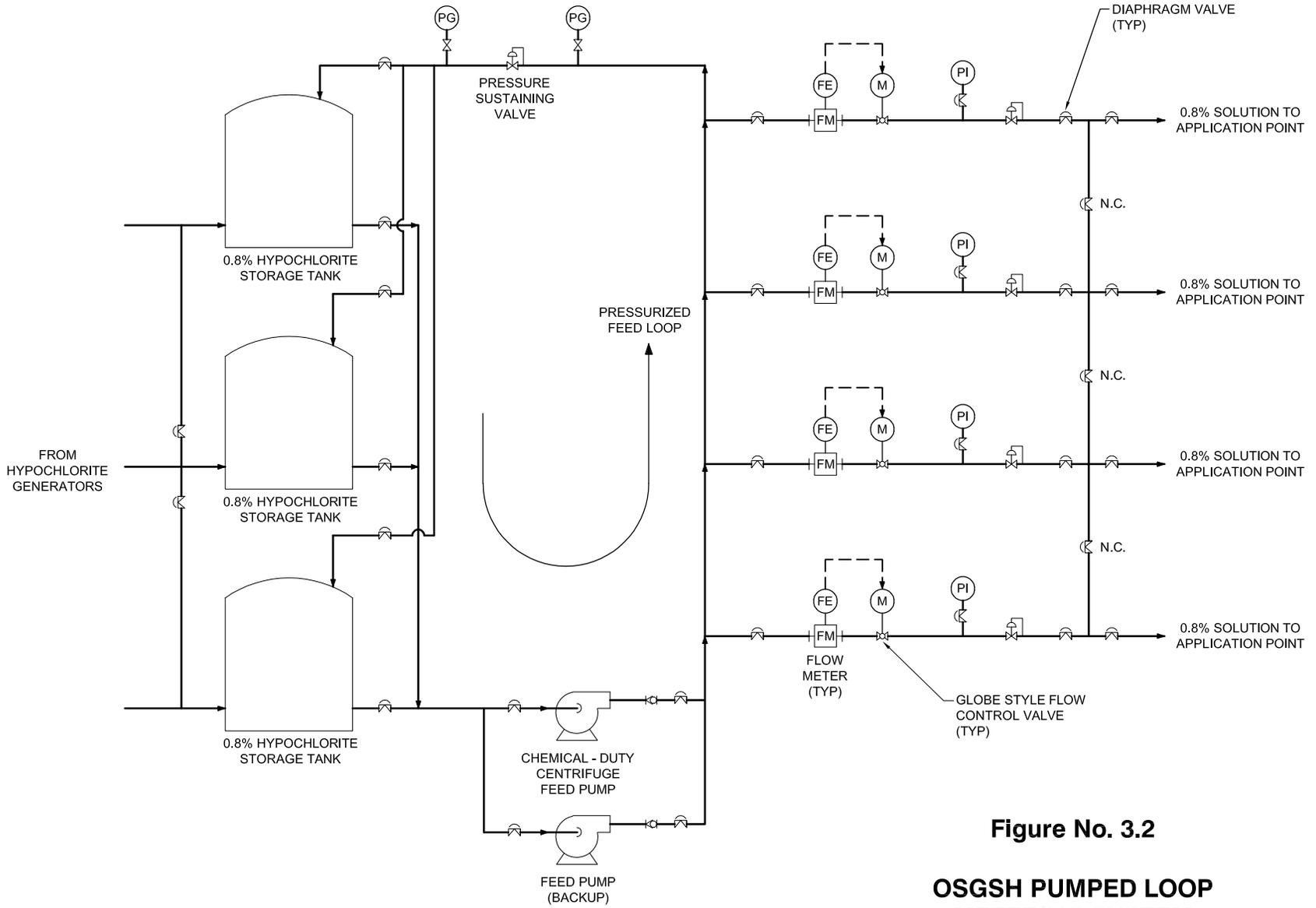
### **3.5.3 Peristaltic Metering Pumps**

This option would use peristaltic metering pumps as shown in Figure 3.3. This pump type uses a single rotary mechanism and a chemical resistant hose to pump the solution. These pumps are electric motor driven metering pumps with sturdy drives. These pumps are easily serviceable and compact. There are no valves, seats, or seals in contact with the pumping fluid to corrode or wear out.

Peristaltic pumps are suitable for pumping the 0.8-percent NaOCl solution. For pumping sodium hypochlorite, a composite reinforced EDPM or Hypalon hose is recommended. The EDPM is more available and less expensive.

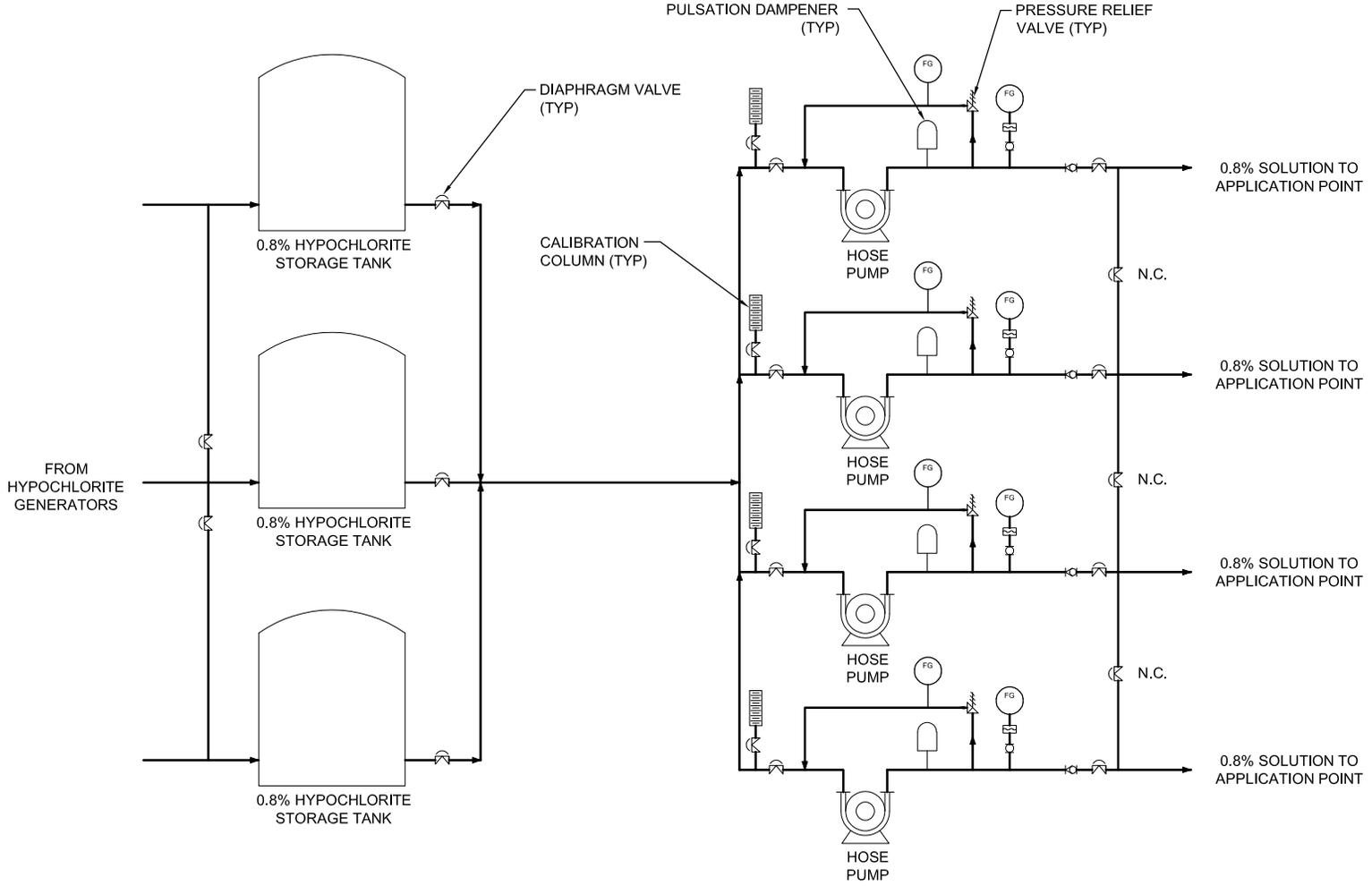
The metering pump selected would be capable of meeting a range of flows depending on the dosage required. Although the normal flow rate would be based on average plant flows and dosage conditions, there will be low and maximum dosage and flow rate conditions. Peristaltic pumps can meet various pumping ranges (for example, a range from 100 gph to 2,500 gph). The larger pump sizes have an upward flow range of 10,000 gph. For a typical application point, one pump will be able to cover the pumping range required between minimum and maximum conditions. This will simplify and reduce the costs to the system.

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**Figure No. 3.2**  
**OSGSH PUMPED LOOP**  
**METERING SYSTEM**  
**CITY OF AUSTIN**

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**Figure No. 3.3**

**SODIUM HYPOCHLORITE PUMPING  
PERISTALTIC METERING PUMP SYSTEM  
CITY OF AUSTIN**

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### 3.5.4 Recommended Pumping System

The use of the pumped loop system is the recommended option since this option is less complicated and relatively simple to operate. Additionally, this option requires the fewest number of pumps and is the least expensive system. This type of system has a proven track record at the 70-mgd Point of the Mountain Water Treatment Plant and other facilities. It is also the approach that will be used at WTP 4.

Table 3.4 summarizes the differences and features of the pumping/delivery system options.

<b>Table 3.4 Differences and Features of Pumping / Delivery System TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>			
<b>Criteria Description</b>	<b>Diaphragm</b>	<b>Pumped Loop System</b>	<b>Peristaltic</b>
Max. Pumping Rate (gph) (ea. pump)	300	240,000	10,000
Turn-Down Ratio (ea. pump)	100:1 <sup>1</sup>	N/A <sup>2</sup>	100:1
Accuracy (%)	1	1 – 5 <sup>3</sup>	0.5
Required Maintenance	Low	Meter Calibration	Low (hose replacement)
Required Calibration	Yes	Yes	Yes
Pump Cost (ea.)	\$7,000	\$9,000	\$18,000
Approximate System Cost <sup>4</sup>	\$170,000	\$100,000	\$120,000
<b>Notes:</b> 1. Maximum turn-down combining stroke length and frequency adjustment. 2. For the loop system, the flow rate is adjusted by a valve. 3. Accuracy will vary depending on the accuracy of several control and mechanical components in operation together. 4. Estimated pump, valve, and metering equipment costs only. Based on five pumps/stations and/or feed points.			

### 3.6 Environmental Impacts

Chlorine gas is a hazardous and dangerous chemical that is currently stored at both the Davis and Ullrich WTPs. The OSGSH uses a weak 0.8-percent sodium hypochlorite solution, which is less hazardous. Both the chlorine gas and the sodium hypochlorite can be stored safely. The sodium hypochlorite solution can be stored in a secondary containment facility in the unlikely possibility of a tank failure. The secondary containment would eliminate the risk to the surrounding environment. Chlorine gas uses caustic in a scrubber system to manage the risk associated with a possible chlorine leak.

With respect to Greenhouse Gas (GHG) emissions and to the impact to the atmosphere, the OSGSH system should be compared to generating the chlorine gas off site at a chlor-alkali plant. Both processes require electrical power, which contributes to carbon emissions. Both the on-site and off-site generation processes use rectifiers and generator cells to produce the chlorine gas or the sodium hypochlorite. Both methods use comparable amounts of electrical power.

One by-product of the OSGSH system is hydrogen gas, which is typically diluted and exhausted by air blowers in the interest of safety. However, hydrogen gas is a potential energy source. Now in an early stage of development is a hydrogen economy, which provides ways to use hydrogen gas as an alternative to hydrocarbon fuels. In the future, the hydrogen gas from the OSGSH process could potentially be captured and used as an alternative fuel source for small material handling equipment. While no equipment is currently commercially available to capture and use hydrogen gas at this scale, it is nonetheless a possibility for the future.

## 4.0 EVALUATION OF THE ULLRICH SYSTEM

### 4.1 Overall Plant Description

The Ullrich WTP is a lime-softening treatment facility. The treatment process consists of screening, disinfection, coagulation, softening, clarification, recarbonation, and filtration. The filtered water is collected and then stored in clearwells prior to being pumped out to the system. The Ullrich plant was built in 1969, and has recently been expanded from 100 mgd to its current capacity of 160 mgd.

### 4.2 Existing Chlorine Facilities

Currently, the chlorine is delivered via bulk tank trucks carrying about 32,000 pounds per delivery and then stored in three bulk tanks, each capable of holding 48 tons of chlorine. Some advantages and disadvantages of a bulk chlorine storage system are presented in Table 4.1.

<b>Table 4.1 Advantages and Disadvantages of Bulk Chlorine Storage TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Eliminates one-ton container change-outs	Only one supplier currently willing to deliver to Austin
Reduces frequency of deliveries	Cost per ton currently higher than one-ton containers
Reduces amount of time operators are required to work within chlorine storage area	Larger potential spill volume if a container fitting fails
Reduces storage area requirements	

The main components of the Ullrich bulk chlorine system are the following:

- **Storage tanks.** Three 48-ton tanks are used to store and feed chlorine in lieu of one-ton containers. Automatic switchover is not provided, although the number of tanks account for a redundant supply and allow one tank to be taken out-of-service and cleaned or inspected.
- **Scrubber.** The scrubber is large enough to handle the full contents of a 48-ton storage tank. The scrubber is the liquid type using sodium hydroxide. The sodium hydroxide is stored in an 80,000-gallon tank adjacent to the chlorine storage area. The scrubber tank is located in a 10-foot deep secondary containment structure, which is 6.6 feet lower than the adjacent chlorine facility. Presently, 69,000 gallons of

sodium hydroxide is stored in the tanks. This scrubber tank is manufactured from a premium-grade fiberglass-reinforced plastic resin called Hetron Vinylester 922.

- Chlorine Evaporators. Three 10,000-ppd liquid chlorine evaporators are used to convert liquid chlorine to gaseous chlorine when usage rates are high.
- Booster Pumps. Three centrifugal booster pumps are used to supply water to the chlorinators. The pumps design capacities are in the following ranges:
  - Primary – 600 gpm at 240-foot head
  - Secondary – 400 gpm at 270-foot head
  - Run-Out – 840 gpm at 176-foot head
- Chlorinators. The current system has 13 operational chlorinators of varying capacities. Eight chlorinators with capacities up to 500 ppd primarily feed the upflow clarifiers (UFCs) and provide chlorine solution for cleaning the lime piping. Five chlorinators with capacities up to 4,000 ppd primarily feed the raw water lines entering the plant.

Design criteria for the Ullrich bulk chlorine storage system are presented in Table 4.2.

<b>Table 4.2 Existing Chlorine Gas Bulk Storage Design Criteria TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>				
		<b>Existing System</b>		
<b>Description</b>	<b>Units</b>	<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>
<b>Feed Criteria</b>				
Process Flow Rate	mgd	20	85	160
Chemical Dosage	mg/L	1.0	4.5	6.5
Pounds of Chlorine per Day	lbs	334	3,190	8,674
<b>Container Storage and Delivery</b>				
15 Days of Storage <sup>1</sup>	lbs	5,010	47,850	130,110
No. of Tanks	no.	3	3	3
Days Between Deliveries <sup>2</sup>	days	96	10	3
<b>Chlorinators</b>				
No. of Chlorinators (Including 1 Standby)	no.	14	14	14
<b>Process Water Usage</b>				
Gallons of Water per Day <sup>3</sup>	gal	13,360	127,600	346,960

<b>Table 4.2 Existing Chlorine Gas Bulk Storage Design Criteria TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>				
<b>Description</b>	<b>Units</b>	<b>Existing System</b>		
		<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>
<b>Evaporators</b>				
Minimum No. of Evaporators <sup>4</sup> (Including 1 Standby)	no.	3	3	3
Power Use per Day <sup>5</sup>	kw-hr	4	19	27
Notes: 1. Required storage by TCEQ per 30 TAC 290 Subchapter D. 2. Based on 32,000 lbs. per delivery. 3. Based on 40 gallons water per lb. of chlorine. 4. 50 percent redundant feed capacity required per 30 TAC 290 Subchapter D. 5. Based on 12 kw-hr per lb. of chlorine.				

### 4.3 Proposed OSGSH System

#### 4.3.1 Design Criteria

The preliminary design criteria for the proposed Ullrich OSGSH system are presented in Table 4.3. The criteria indicate that at the existing maximum plant capacity (167 mgd), up to 9,050 pounds of chlorine would be required. The possibility exists that the plant will someday be expanded up to 225 mgd, which would increase chlorine usage up to 12,000 ppd.

<b>Table 4.3 On-Site Sodium Hypochlorite Generation Evaluation Preliminary Design Criteria TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>					
<b>Description</b>	<b>Units</b>	<b>Existing</b>			<b>Potential Future</b>
		<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>	<b>Max.</b>
<b>Feed Criteria</b>					
Process Flow Rate	mgd	40	85	167	225
Chemical Dosage	mg/L	1.0	4.5	6.5	6.5
Pounds of Chlorine per Day	lbs	334	3,190	9,050	12,200
Chemical Feed Rate (0.8% Solution)	gpm	3.48	33.2	93.2	125.0

<b>Table 4.3 On-Site Sodium Hypochlorite Generation Evaluation Preliminary Design Criteria TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>					
<b>Description</b>	<b>Units</b>	<b>Existing</b>			<b>Potential Future</b>
		<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>	<b>Max.</b>
<b>Salt Storage</b>					
Pounds of Salt Used per Day <sup>1</sup>	lbs	1,002	9,570	27,150	36,600
15 Days of Storage	lbs	15,030	143,550	407,250	549,000
Days between Deliveries <sup>2</sup>	Days	40	4	1.5	1
<b>Generators</b>					
No. of Generators (Including 1 Spare) <sup>3</sup>	no.	7	7	7	9
<b>Water Chillers</b>					
No. of Chillers	no.	2	2	2	3
<b>Softened Water Usage</b>					
Gallons of Water Used per Day <sup>4</sup>	gal	5,010	47,850	135,750	183,000
<b>Generator Power Usage</b>					
Kilowatt-Hours/Day <sup>5</sup>	Kw-hr/d	668	6,380	18,100	24,400
<b>Dilute Solution Storage (0.8% sodium hypochlorite)</b>					
Gallons Used per Day	gal	5,010	47,850	135,750	183,000
No. of Tanks <sup>6</sup>	no.	5	5	5	6
<b>Pumped Loop System</b>					
Minimum # of Pumps	no.	2	2	2	2
Notes: 1. Based on 3.0 pounds of salt per pound of chlorine. 2. Based on 40,000-pound deliveries. 3. Based on 1,500-ppd generators. 4. Based on 15 gallons of water per pound of chlorine (does not include chiller power draw). 5. Based on 2.0 kw-hr per pound of equivalent chlorine. 6. Based on 30,000-gallon tanks.					

### **4.3.2 Process Flow Diagram**

A process flow diagram for the proposed Ullrich OSGSH system is shown in Figures 4.1a and 4.1b. The diagram shows the major components of the system, including the brine tank, the generators, the water chillers, rectifiers, water softeners, blowers, and sodium hypochlorite solution storage tanks.

### **4.3.3 Site Layout**

The area considered for the OSGSH system is the existing chlorine handling building located on the east side of the plant. The facility is currently designed to accommodate bulk chlorine storage, feed, and deliveries. Several areas adjacent to the building are considered unavailable for the OSGSH system. The roadway immediately to the southwest and northwest must remain available for plant access. In addition, 48-inch and a 72-inch raw water pipelines lie directly below this roadway, northwest of the building.

A possible facility layout for the Ullrich OSGSH system is presented in Figures 4.2a, 4.2b, and 4.3. The layout is for a 9,000-ppd facility (167-mgd plant flow), however, space has been provided in the event a 12,000-ppd facility is ever needed for an expanded flow of 225 mgd. Figures 4.2a and 4.2b show the OSGSH equipment within the existing chlorine handling building. Figure 4.2a shows the rectifiers and their harmonic filters at floor level. A second option is to locate the rectifiers and harmonic filters on a built-out mezzanine above the generators. The layout shows the electrical room expanded, which requires one non load-bearing wall to be moved. This is shown in Figure 4.2b. Figure 4.3 shows the sodium hypochlorite tanks in relationship to the existing chlorine building and surrounding site.

The areas for the sodium hypochlorite storage and the generation system would be approximately 3,000 and 2,400 square feet, respectively. The area required by the brine tank is represented by the existing chlorine scrubber tank (24 feet in diameter). The proposed OSGSH system (for a 167-mgd plant) requires salt storage of 407,250 pounds and sodium hypochlorite storage of 135,750 gallons. To meet sodium hypochlorite storage requirements, five tanks, each with a minimum of 27,150-gallon capacity, will be required. However, the layout shows slightly larger 30,400-gallon tanks to meet future potential expansion requirement to a 225-mgd plant.

To meet the salt storage requirements, the existing chlorine scrubber tank could be used as a brine tank. In lieu of using the existing chlorine scrubber tank as the brine tank, three 68-ton brine tanks can be installed. The disadvantage of this option is locating these tanks within the limited available space. However, the brine makers could be located within the existing bulk chlorine loading area. With this option, the salt truck would have to be parked outside the building during the loading operations.

Another option is to construct an underground storage tank for the salt storage/brine maker that would allow salt to be delivered in belly dump trucks. Below-grade salt tanks should be located close to the NaOCl generators. The existing loading area could be demolished to

locate the proposed tank. Substantial cost would be involved to demolish and reconstruct the structure. In addition, underground tank construction would require excavation within limestone rock. Since brine creates a corrosive environment for concrete and rebar, the tanks must be lined. Due to these reasons, the below-grade brine maker is not recommended for the OSGSH at the Ullrich WTP.

## **4.4 Implementation Issues**

### **4.4.1 Safety**

OSGSH systems produce a weak solution of bleach with a strength less than that of bleaches that can be purchased retail for residential use. Additionally, hydrogen gas is generated but is immediately diluted to non-flammable levels by blowing large volumes of air through the piping and tanks downstream of the generator cells. The overall hazards associated with an OSGSH system are low with respect to other disinfection alternatives.

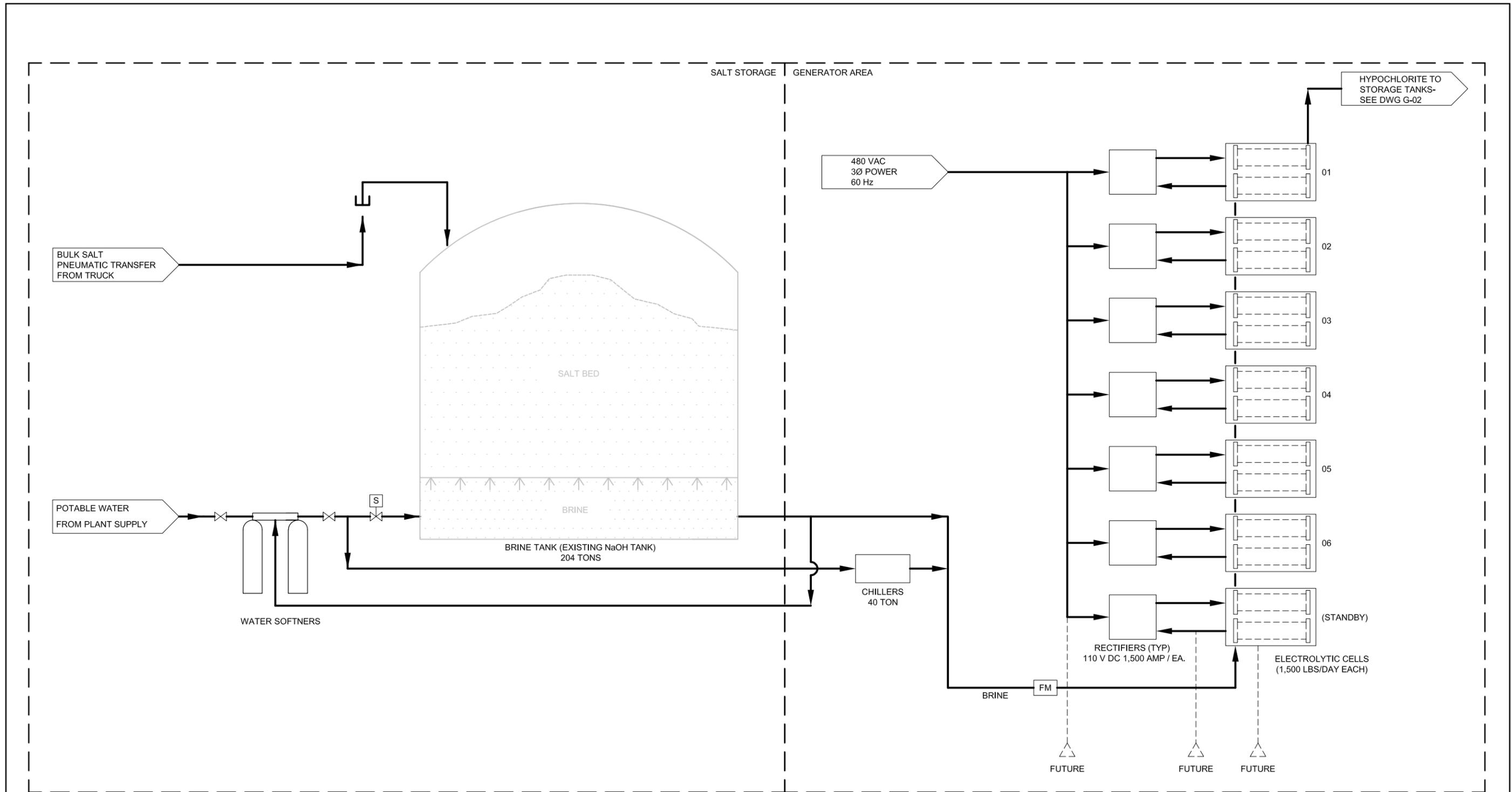
### **4.4.2 Environmental Protection**

Weak solutions of sodium hypochlorite and saturated salt brine will be stored on-site. The toxicity and potential effect to the surrounding environment from these solutions are less than those presented by chlorine that is currently stored under bulk storage. The hypochlorite solution storage tank would be constructed with secondary containment and redundant safety systems to prevent accidental release of the hypochlorite solution into the environment. If an accidental spill occurs, the already diluted NaOCl solution could be further diluted and the effects minimized compared to gas chlorine.

Secondary containment is not required for brine solution and salt. However, secondary containment serves as a housekeeping function. Secondary containment exists for the chlorine scrubber tank. If the scrubber tank is used as a salt storage/brine tank, secondary containment will already be provided.

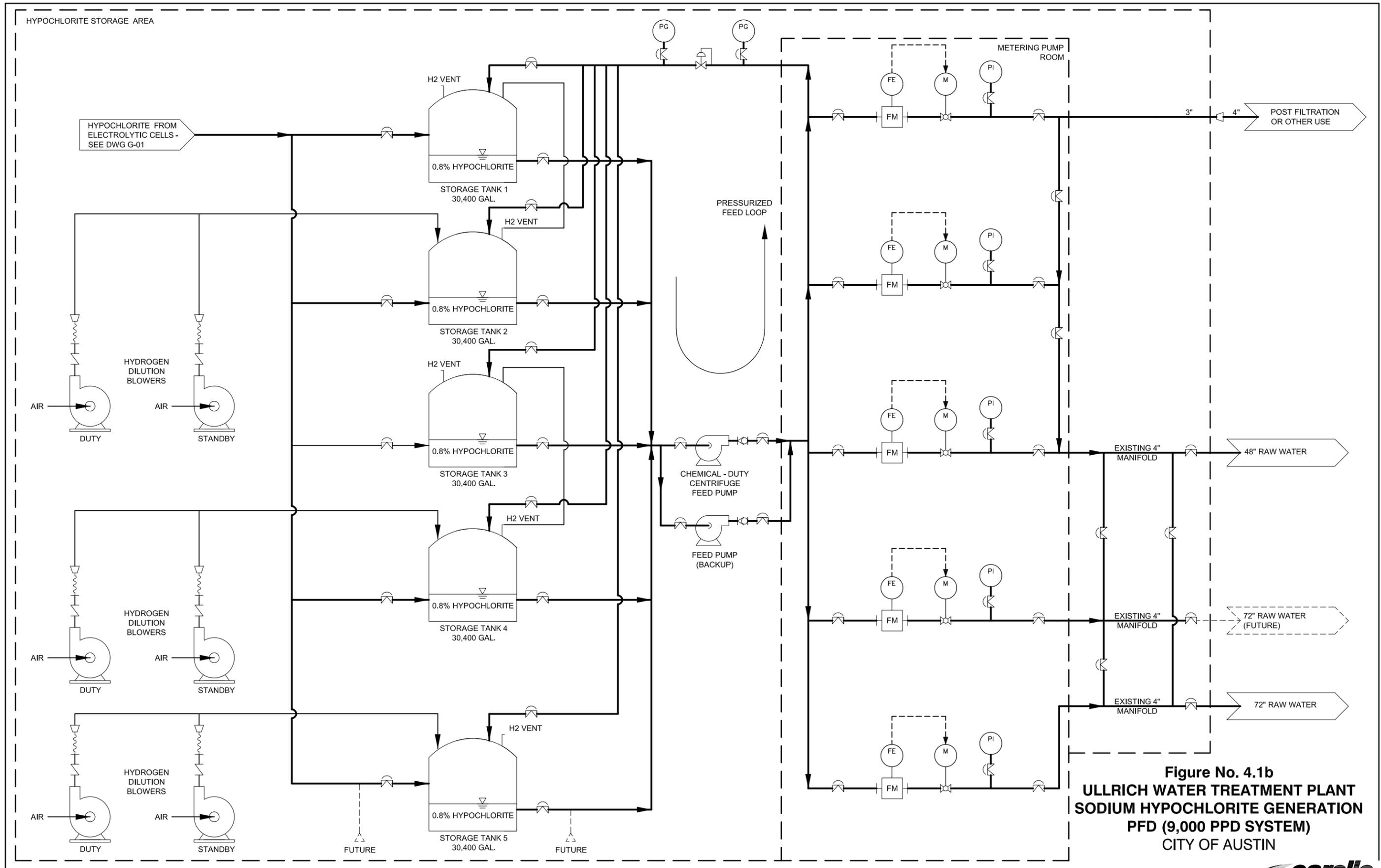
### **4.4.3 Equipment and Supply Reliability**

The reliability of the disinfection storage and feed equipment and the ability to receive uninterrupted supplies of bulk deliveries (chemical or salt) to keep the system operational are important factors in a disinfection storage and feed system. The goal for the disinfection system is to provide continuous operation for extended periods. OSGSH systems use equipment with a shorter history of operations than chlorine gas. However, the manufacturers of this equipment have continuously improved the reliability of the equipment and have extensive reference lists of users who are satisfied with the reliability. Availability of replacement parts is also a consideration and varies according to the manufacturer (discussed in Section 4.4.14). With respect to supply reliability, salt is abundant, readily available for bulk purchase, and not subject to any security concerns.



**Figure No. 4.1a**  
**ULLRICH WATER TREATMENT PLANT**  
**SODIUM HYPOCHLORITE GENERATION**  
**PFD (9,000 PPD SYSTEM)**  
**CITY OF AUSTIN**

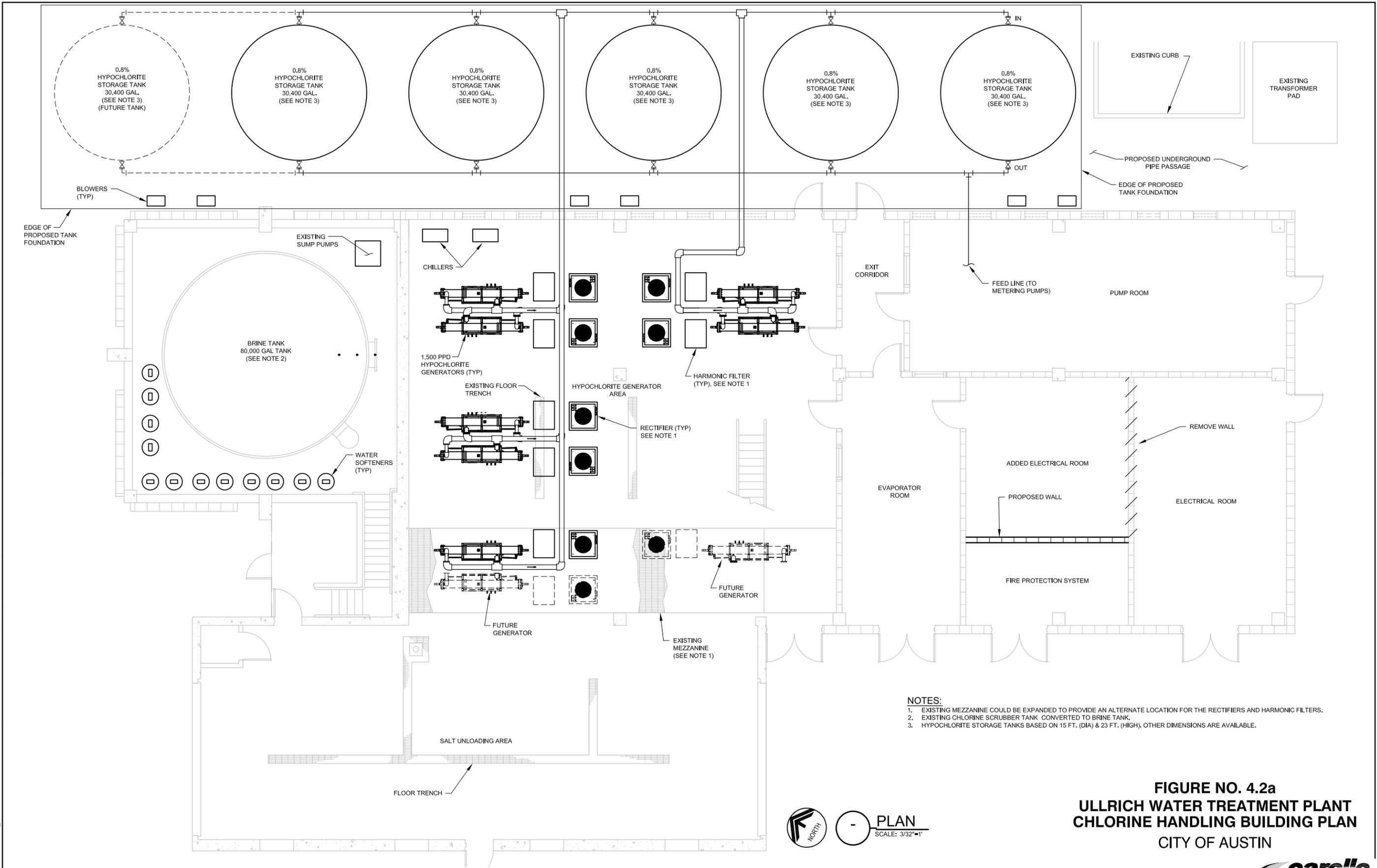
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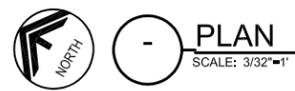
**Figure No. 4.1b**  
**ULLRICH WATER TREATMENT PLANT**  
**SODIUM HYPOCHLORITE GENERATION**  
**PFD (9,000 PPD SYSTEM)**  
**CITY OF AUSTIN**

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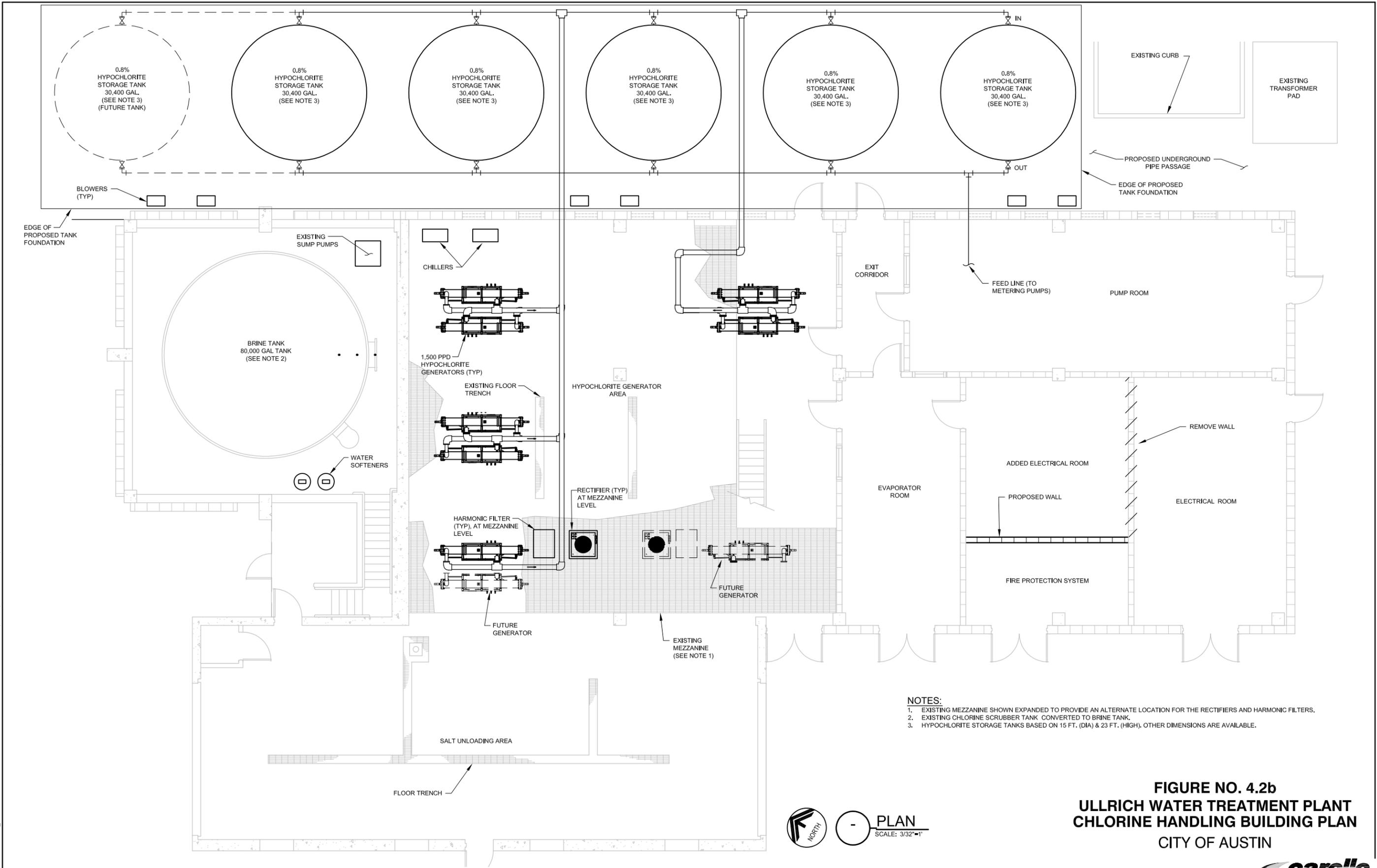
- NOTES:**
1. EXISTING MEZZANINE COULD BE EXPANDED TO PROVIDE AN ALTERNATE LOCATION FOR THE RECTIFIERS AND HARMONIC FILTERS.
  2. EXISTING CHLORINE SCRUBBER TANK CONVERTED TO BRINE TANK.
  3. HYPOCHLORITE STORAGE TANKS BASED ON 15 FT. (DIA) & 23 FT. (HIGH), OTHER DIMENSIONS ARE AVAILABLE.



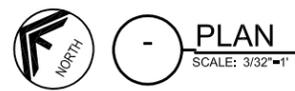
**FIGURE NO. 4.2a**  
**ULLRICH WATER TREATMENT PLANT**  
**CHLORINE HANDLING BUILDING PLAN**  
 CITY OF AUSTIN

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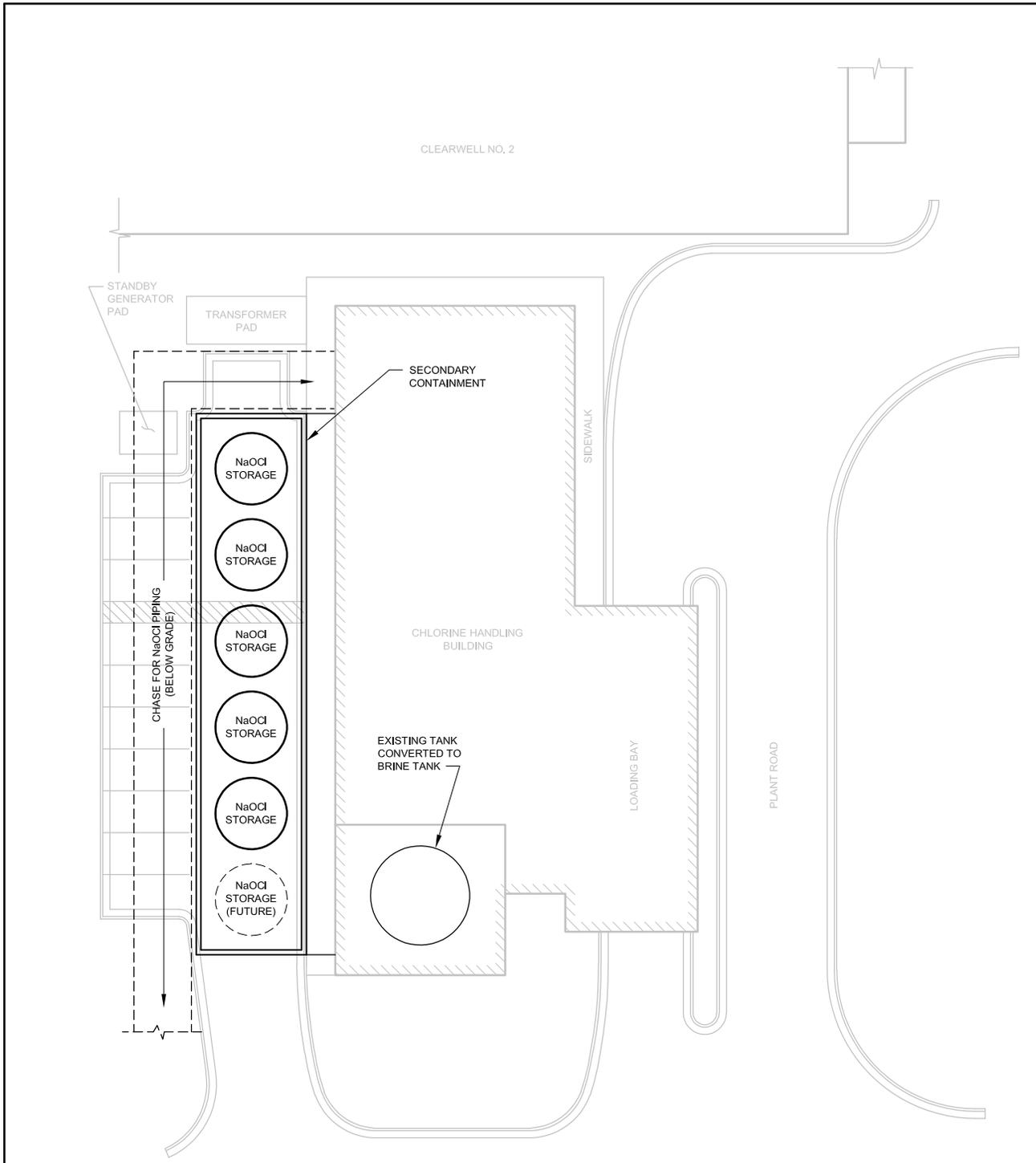


- NOTES:**
- EXISTING MEZZANINE SHOWN EXPANDED TO PROVIDE AN ALTERNATE LOCATION FOR THE RECTIFIERS AND HARMONIC FILTERS.
  - EXISTING CHLORINE SCRUBBER TANK CONVERTED TO BRINE TANK.
  - HYPOCHLORITE STORAGE TANKS BASED ON 15 FT. (DIA) & 23 FT. (HIGH). OTHER DIMENSIONS ARE AVAILABLE.



**FIGURE NO. 4.2b**  
**ULLRICH WATER TREATMENT PLANT**  
**CHLORINE HANDLING BUILDING PLAN**  
 CITY OF AUSTIN

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PLAN  
SCALE: 1/32"=1'

**Figure No. 4.3**  
**ULLICH WATER TREATMENT PLANT**  
**ON-SITE SODIUM HYPOCHLORITE SYSTEM**  
**CHLORINE HANDLING FACILITY LAYOUT**  
**CITY OF AUSTIN**

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#### **4.4.4 Redundancy**

Redundancy refers to the stand-by or back-up capabilities of an alternative if the primary equipment fails or is taken off-line for service or maintenance. The goal for the Ullrich WTP disinfection system is to provide complete feed redundancy coupled with 15 days of storage redundancy (based on maximum flow and maximum dosage feed conditions).

Rather than having a 15-day supply of disinfectant stored on-site, the OSGSH system has 15 days of salt storage, which must be converted to disinfectant. A one-day supply of sodium hypochlorite solution is stored downstream of the electrolytic generators. The electrolytic generators would be backed up by a spare electrolytic generator that can be brought on-line if one fails or is taken off-line.

The design could also incorporate the ability to receive bulk hypochlorite, which could be diluted to 0.8 percent product using softened water. This provides an alternate means of redundancy. Additional redundancy can be provided through back-up power, either by dual electrical feeders or by a back-up power generator.

#### **4.4.5 Transportation and Storage Security**

Homeland security requirements have affected the price and delivery of hazardous chemicals, such as chlorine gas, and have led to design considerations that must be incorporated into the storage of these materials on site. The security goal for a disinfection storage and feed system is to minimize security concerns.

Converting to an OSGSH system will eliminate the use of chlorine gas, which is lethal in concentrations above 1,000 ppm. While security programs and procedures are in place to prevent incidents associated with chlorine delivery, no approach can be guaranteed to be 100 percent effective. Additionally, chlorine deliveries are outside the direct control of the City of Austin.

The OSGSH system would require deliveries to the plant (see Section 4.4.8). The OSGSH system would use salt or possibly commercial-strength sodium hypochlorite occasionally as a back-up disinfectant, but neither possesses the lethality of chlorine gas.

#### **4.4.6 Re-Use of Existing Equipment**

The existing chlorine facility has an 80,000-gallon sodium hydroxide storage that is part of a chlorine scrubber system. The City requested that this tank be evaluated with respect to reuse for an OSGSH system. The tank currently stores 69,000 gallons of sodium hydroxide (20 percent by weight). Consideration was given to reusing the tank for either salt storage/brine maker or sodium hypochlorite storage.

#### **4.4.6.1 Existing Sodium Hydroxide Tank**

The sodium hydroxide storage tank for the chlorine scrubber is proposed for reuse as a brine/salt storage or sodium hypochlorite storage. The tank was manufactured by Belco Manufacturing Co. of Belton, Texas. The tank is made of a premium-grade vinylester resin (Hetron 922) and the design operating temperature ranges from 80 to 100 degrees Fahrenheit with a maximum temperature tolerance of 162 degrees Fahrenheit for six hours. The tank is located in the northwest end of the chlorine handling facility within a secondary containment area that is 6.5 feet lower than the rest of the facility.

The existing 80,000-gallon sodium hydroxide storage tank can be used to store the 0.8-percent sodium hypochlorite generated on site. However, according to the tank manufacturer, the tank is not capable of storing sodium hypochlorite in concentrations greater than 2 percent. Given that commercial-grade (12 percent) sodium hypochlorite could be received and then diluted as a back-up option, the tank is not a viable option for storing generated sodium hypochlorite.

One day of on-site storage of the 0.8-percent sodium hypochlorite solution is required. The 80,000-gallon capacity of the tank exceeds the 47,850 gallons per day (gpd) of the 0.8-percent sodium hypochlorite required to treat an average water production (85 mgd) with an average chlorine dose (4.5 mg/L). However, at maximum water production (167 mgd) at maximum dosage (6.5 mg/L), 135,750 gpd of 0.8-percent sodium hypochlorite storage is required. Therefore, the existing tank has insufficient storage and additional tanks would be required to meet the peak storage requirement. To satisfy the one-day storage requirement at the future maximum water production rate (225 mgd), the existing tank and four 26,000-gallon tanks (12-foot diameter and 30-foot height) would be required. The space for these additional tanks would be required within the existing chlorine building area. Also, the existing tank would be lower than the additional tanks, which would complicate the hydraulics of the storage system. Ideally, all tanks should be at the same elevation so the storage volume can act as one reservoir.

Based on the review of shop drawings and manufacturer data, the existing 80,000-gallon tank can be converted to brine/salt storage. To achieve this, the existing tank will have to be modified to incorporate brine collectors, a sludge bed, and a filtration zone, which will take up approximately the bottom 3 feet of the tank. In addition, a water distribution system will have to be installed, which distributes water evenly. A brine collector cistern/withdrawal system would have to be installed to provide uniform collection of the brine over the tank's cross-sectional area. During design, a final determination must be made to assure that all necessary modifications can be accomplished.

The effective quantity of salt that can be stored in the existing tank is approximately 513,000 pounds (256.5 tons). The 513,000-pound storage volume is based on two feet of free board (at center of tank) and the bottom three feet utilized for the brine distribution infrastructure.

The 513,000-pound capacity is capable of storing a 15-day supply of salt for the existing 167-mgd plant and a 14-day supply if the Ullrich WTP is ever expanded to the 225-mgd capacity. However, by filling within about one foot of free board, the tank would have a 15-day storage capacity for a 225-mgd plant expansion.

Based on the above considerations, the existing 80,000-gallon tank is recommended for use as a brine/salt storage tank if an OSGSH system is constructed.

#### **4.4.7 Transitioning Systems and Temporary Equipment**

A disinfection system is required to be operational while the proposed OSGSH system is installed. A temporary chlorine system would be in place during the transition period from the time the existing chlorine system is taken offline to the time the new OSGSH system is placed into service. The temporary system would have to be installed to handle the projected peak flow and dosage during the transition period. The use of commercial-grade 12-percent NaOCl is recommended.

The size of a temporary system would not only be based on the expected peak flow and dosage, but also on TAC Chapter 290 requirements. Chapter 290 requires that bulk storage at the plant be adequate to achieve at least a 15-day storage supply. Using the 167-mgd peak flow, this would represent approximately 148,000 gallons. The alternative to this option would be to obtain an exception from TCEQ to allow less than 15 days NaOCl storage. Having less than a 15-day supply on site is desirable in that large amounts stored on site will not be degrading and less space for storage tanks will be required. Commercial-grade NaOCl is readily available, making long-term, on-site storage a viable option.

Meeting the 15-day storage requirement could be accomplished by installing the proposed tanks for the OSGSH system (five 30,000-gallon tanks provides a total of 150,000 gallons) for the temporary system. This option would save material cost in implementing the temporary system. However, in order for these storage tanks to be placed into service, the existing chlorine solution lines would have to be temporarily relocated to build the tank foundation. Relocating the existing chlorine solution lines would add to the project cost. In addition, the project schedule would need to be extended since the tanks would have to be delivered prior to setting up the temporary system.

If an exception to 15 days' storage is acceptable, other options are available in respect to storage tanks. One option is to park a portable tank on a trailer. This tank would be on site during the transition period and be filled on a daily basis by a sodium hypochlorite supplier. The advantage of this option is that this type of tank is readily available and cost effective. The disadvantage of the tanker truck option is that the tank has a limited capacity of approximately 5,000 gallons. This represents a 1-day supply of NaOCl (12 percent active strength) for a 105-mgd plant production at a 6.5-mg/L dosage. Due to the limited storage capacity, this is not a viable option with higher plant flows.

A second option for temporary storage tanks is to place one or two aboveground storage tanks on site. These are available for lease from the sodium hypochlorite suppliers or the OSGSH manufacturer. Typical sizes would be 10,000 to 14,000 gallons. The main advantage of this option is that these tanks provide for more storage. For example, one 14,000-gallon tank would provide close to three days of storage for an average plant flow of 85 mgd at a 6.5 mg/L dosage. Figure 4.4 shows a site plan for the temporary system options. Two 14,000-gallon tanks are shown in Figure 4.4, which represent 6 days of storage at average plant conditions.

The space for locating a temporary system around the existing chlorine handling building is very limited. The location of a temporary system must be acceptable for NaOCl deliveries and not interfere with the proposed construction activities. Figure 4.4 shows a site plan with the footprint for two options: the proposed OSGSH tanks used for storage and an option with two temporary storage tanks. The space used for the temporary tanks could accommodate the tanker truck as an alternate option.

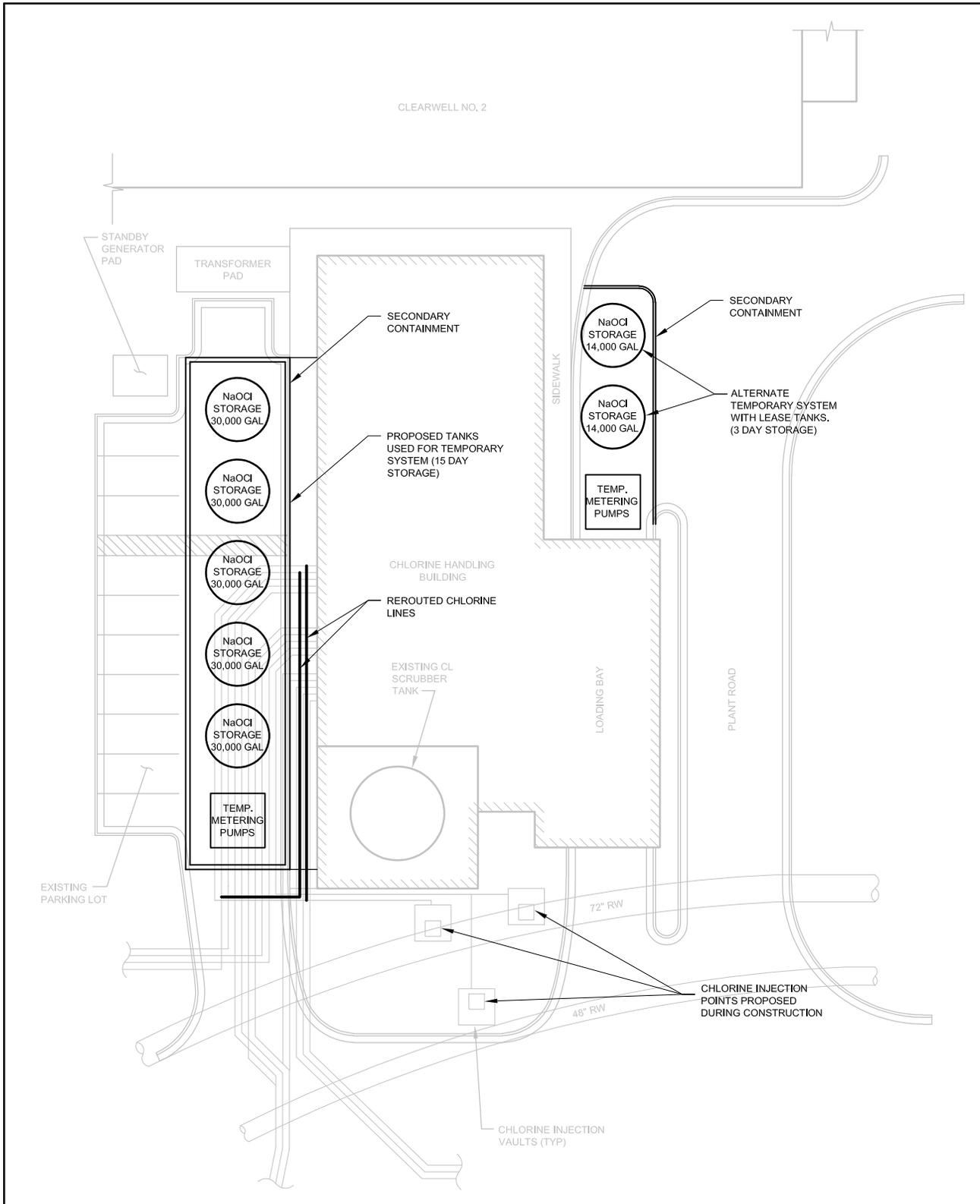
Figure 4.5 shows a schematic for a temporary sodium hypochlorite system. The components of the temporary system would consist of storage tank(s), metering pumps and associated calibration features and valves. Several metering pumps would be required. Figure 4.5 shows one pump for each distribution point and one back-up pump (other pumping options can be considered). It is recommended that these pumps be sheltered from the weather. A temporary fiberglass building or roofed structures could be installed for this purpose.

#### **4.4.8 Deliveries**

The OSGSH system requires salt to be delivered by truck. Typically, salt is delivered in approximately 40,000-pound installments. Site access and road use would be the same as for the chlorine gas deliveries. Loading the salt into the brine tank(s) is accompanied by an attachable hose and an air blower. The air blower is provided by the delivery truck; hence, one is not required at the OSGSH facility itself. However, if noise is a concern, a separate blower can be installed within an enclosed area to provide air for pneumatic off-loading. At Ullrich, keeping the existing loading bay free from the OSGSH equipment will provide an enclosed area for deliveries. This offers the advantage of further noise suppression and dust containment.

Two factors that must be considered with respect to the delivery truck parking and the salt storage tank are:

1. The delivery trucks must be within 30 feet of the brine tanks.
2. There can be no more than three bends or sweeps in the transfer line.

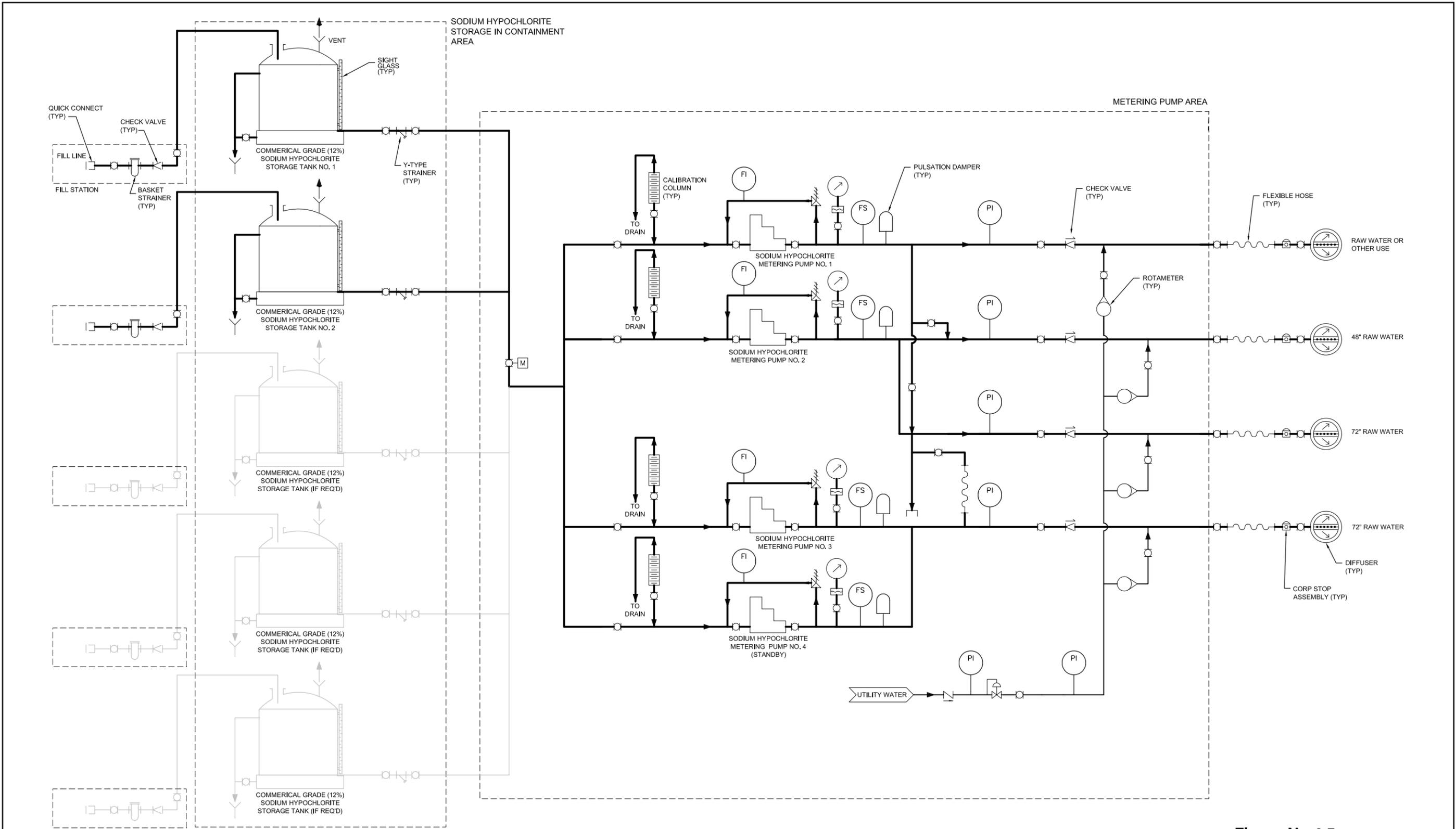




**PLAN**  
 SCALE: 1/32"=1'

**Figure No. 4.4**  
**ULLICH WATER TREATMENT PLANT**  
**TEMPORARY SODIUM HYPOCHLORITE**  
**SYSTEM SITE LAYOUT**  
**CITY OF AUSTIN**

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**NOTES**  
 1. METERING PUMP ARRANGEMENT MAY BE MODIFIED TO TWO PUMPS WITH FLOW PORTIONING TO INDIVIDUAL INJECTION POINTS.

**Figure No.4.5**  
**TEMPORARY SODIUM HYPOCHLORITE**  
**SYSTEM PROCESS FLOW DIAGRAM**  
 CITY OF AUSTIN

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#### **4.4.9 Code Issues**

The OSGSH system can be designed to meet all local, industry, and national code requirements. The existing building and existing facility would have to be significantly modified to accommodate the proposed OSGSH equipment. These building modifications would require City of Austin Building Department approval.

#### **4.4.10 Pilot Studies**

A pilot study could be conducted to further explore how OSGSH would work at the Ullrich WTP. The pilot study would consist of a skid-mounted system that could feed 0.8-percent sodium hypochlorite at a range up to about 100 ppd. The smaller pilots are offered by most manufacturers and are available by lease. A larger pilot system matching the OSGSH generator sizes required at Ullrich is not readily available and would be costly. A pilot study is not necessary to demonstrate the reliability of the OSGSH system since the technology has been previously established and proven at other facilities. However, it would provide the City with information on operational characteristics and water quality effects. The nearest OSGSH installation is a 1,500-ppd system located in Pflugerville, Texas that has been operational since 2006.

#### **4.4.11 Required Water Use**

At the plant's peak production rate, the proposed 9,500-ppd OSGSH system would require 135,750 gallons of water. This water would likely be transferred to the system by pumps. The water would be softened prior to use. The Ullrich WTP water contains low dosages of sodium hexmetaphosphate. The small amount present would not be a problem for the OSGSH system according to the OSGSH suppliers.

#### **4.4.12 Housekeeping of Lime Solution Lines**

The existing configuration of the lime feed system leads to scaling of the feed pipes, which must be removed on a regular basis. Presently, the lime scale is periodically removed/cleaned by the injection of chlorine gas solution into the lines. Since the chlorine solution is acidic, the reaction with the lime enables the breakdown and subsequent removal of the lime scale. If the OSGSH system is implemented, the chlorine gas will not be available to remove the lime scale. OSGSH solution is not acidic and will not be useful for removing scale from the lime slurry discharge lines. See Section 4.5, Associated Lime Feed Upgrades, for alternatives that could be implemented in lieu of using the chlorine gas solution.

#### **4.4.13 Existing Chlorine Distribution Lines**

One existing component to be considered with the OSGSH implementation is using the existing chlorine distribution lines. At Ullrich, several lines convey chlorine solution to the raw water lines (48-inch and 72-inch pipe lines), the UFCs, and for the lime slurry system.

With an OSGSH system, the chlorine solution would still be distributed to the raw water lines. The existing lines to the raw water are double-contained PVC lines with 4-inch and 6-inch carrier pipes. The length of piping ranges from a few hundred feet to over two thousand feet.

The existing pipe material, PVC, is compatible with the 0.8-percent solution. However, the pump flow rates with OSGSH would provide very slow velocities in the existing lines. At peak flow (167 mgd), the chlorine demand would be approximately 93 gpm. This would be delivered to the raw lines by at least two or more pumps, each providing a 46.5-gpm or less pumping capacity. With this pumping rate in the 6-inch line, the resulting velocity would be approximately 0.5 fps, which results in over an hour response time in a 2,000-foot pipe run. Due to the slow response times, using the existing feed lines is not recommended. Sections of these lines will require replacement as a result of placing new NaOCl storage tanks at the building's northwest side. The remaining pipeline sections will require replacing with smaller lines to achieve the faster velocities and response times.

#### **4.4.14 Recommended OSGSH Manufacturers**

The three primary manufacturers of OSGSH systems are:

- Clor Tec by Severn Trent Services, Torrance, California
- OSEC by Wallace and Tiernan (US Filter), Vineland, New Jersey
- Process Solutions, Inc. (PSI), Campbell, California

Established and proven manufacturers for larger systems are Clor Tec and OSEC, although PSI has recently been selected by several large systems throughout the U.S. The equipment and configurations of the Clor Tec and OSEC systems are almost identical. The Process Solutions, Inc. system has several innovative design variances that make this system worth considering. These include vertically mounted electrolytic cells/generators, which provide for a more efficient off-gassing as well as providing a slightly smaller footprint. PSI is the selected vendor for WTP 4. It is recommended that all three vendors be allowed to bid if the Ullrich OSGSH project moves forward.

## **4.5 Associated Lime Feed Upgrades**

### **4.5.1 Background**

The Ullrich WTP lime slurry delivery system to the UFC basins is a direct feed system. The slurry is pumped from the RDP Tekkem (RDP) lime slurry aging tanks using Watson-Marlow hose pumps. The lime slurry is conveyed using plant service water to the upflow clarifiers. The motive water reacts with the stable lime slurry and the slurry "softens" the motive water resulting in the deposition of calcium carbonate scale on the isolation ball valves and the piping downstream of the injection point of the motive water. The plant

currently uses the acidic chlorine solution produced using gaseous chlorine to clean the valves and piping subject to scaling problems.

If the plant converts from a liquid and gaseous chlorine system to an OSGSH system, the plant chlorine disinfection chemical solution would no longer be acidic but basic. The plant would therefore need to use an alternate method to either clean the lime piping or deliver the lime slurry such that cleaning of the conveyance piping was not required.

#### **4.5.2 Ullrich Lime Feed System and Cleaning Requirements**

The lime feed system including slakers, aging tanks, Watson-Marlow hose pumps, and conveyance piping has been delivering lime to the UFCs since September 2005. Recent modifications have been made to the lime feed pumps, including optimizing the number of shims and changing the direction of rotation. These modifications have increased the pump hose life. The delivery system has also been modified to reduce bends and improve utilization of all pumps and systems at lower plant flows. The lime slurry conveyance system consists of two pipelines connecting each dedicated pump to each basin. The conveyance piping system is open ended without valving. For every three dedicated feed pumps, there is one spare feed pump that delivers lime to the selected UFC using a dedicated overhead piping system.

The Standard Operations Procedure (SOP) for cleaning the piping is to use “housekeeping chlorine” from the chlorinators in the chlorine handling building. Just as there is a dedicated pump for each basin, there is a dedicated chlorinator for each basin. For example, Lime Feed Pump No. 1 (LFP-001) under routine operations would feed lime to Upflow Clarifier No. 1 (UFC-001) and the housekeeping chlorine would be provided using Chlorinator No. 1 (CL-001). SOPs call for feeding lime through one pipeline and the acidic chlorine solution through the other pipeline and switching the two pipelines weekly.

Historically at Ullrich, the acidic chlorine solution has been an excellent way to prevent lime scale buildup in the piping. The acidic chlorine solution is readily available and NSF approved. Cleaning is currently accomplished by applying 25 ppd of gaseous chlorine and using motive water, resulting in a pH of approximately 5. Years ago, when the plant slaked lime with the Wallace and Tiernan (W&T) paste slakers, SOPs included application of 100 to 150 ppd chlorine to each basin. The plant has been experimenting with reducing these feed rates. Since the RDP slakers were installed, the application rate has remained at about 50 ppd. Installation of sections of clear PVC piping in the conveyance piping to UFC-008 have allowed the plant to visually track the flow of lime slurry and observe the time required to remove lime buildup. From the clear PVC window in the piping, the piping was observed to be clean after less than 2 days at the 50-ppd chlorine solution concentration. The plant is currently feeding 25 ppd for the entire week to clean the piping and maintain the SOP to swap the pipelines weekly.

The plant also uses a proprietary product called Acid Magic<sup>®</sup> recommended by RDP which contains hydrochloric acid (HCl) for cleaning the slakers and aging tanks. Drums are stored on the slaker level of the lime handling building.

#### **4.5.3 Options for Operating and Maintaining the Lime Feed System in lieu of Delivered Gaseous Chlorine**

The following alternatives are identified for operating and maintaining the lime feed system in the event that gaseous chlorine is not used as the chlorine disinfection chemical.

1. Alternative 1. Provide an alternate acidic cleaning solution for the existing lime feed conveyance system to replace acidic chlorine solution in existing SOPs for swapping lime and chlorine feed piping weekly.
2. Alternative 2. Produce small amount of gaseous chlorine on site for housekeeping chlorine with a combination generation system (produces gaseous chlorine and sodium hypochlorite). Follow existing SOP for swapping lime and chlorine feed piping weekly.
3. Alternative 3. Modify the lime system to a neat (undiluted) loop feed system instead of a motive-water driven direct feed system. Provide provisions for an NSF-approved acid feed system for acid washing the piping if needed.
4. Alternative 4. Modify the lime system to minimize (not eliminate) use of motive water. Increase routine flushing of piping. Provide NSF-approved acid feed system for periodic cleaning of system.
5. Alternative 5. Modify the lime system to a direct feed neat system. Provide provisions for NSF-approved acid for acid washing piping if needed.

The impact of the change for each alternative is described below. Advantages and disadvantages are also identified.

#### **4.5.4 Alternative Descriptions**

1. Alternative 1 – Provide Acid Cleaning Solution. The plant currently uses Acid Magic<sup>®</sup>, which includes low-strength hydrochloric acid (HCl) for descaling valves and equipment, and operations and maintenance personnel are familiar with handling it. This product, which is an NSF-approved proprietary product, is recommended by RDP.

Acid Magic<sup>®</sup> is a good choice for acid cleaning the lime conveyance piping, although it is a more expensive product. The pH of the chlorine solution at 25 ppd is approximately 5. Dilution of the acid to a pH of 5 with plant service water would provide a solution that would be expected to clean the piping within one week allowing current SOPs for swapping the dual lime slurry pipelines to remain the same. The proposed system would include bulk delivery of chemical and on-site facilities very similar to those required for a fluorosilicic acid system (dual bulk storage tanks,

chemical feed pumps, and appurtenances). With this alternative, the existing chlorine piping in the lime handling building would be converted to dilute acid piping. No other modifications would be required. The advantages and disadvantages of this alternative are presented in Table 4.4.

<b>Table 4.4 Advantages and Disadvantages of Lime Feed System Alternative 1                      TM – On-Site Generation of Sodium Hypochlorite Evaluation                      City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
<p>No modifications to lime conveyance or cleaning piping required at the lime handling building</p> <p>Easy to pilot test to confirm design parameters</p> <p>System design similar to fluoride system</p> <p>Operations personnel familiar with handling muriatic acid and already used on site</p> <p>All required changes at chlorine handling building</p> <p>Small space requirements</p> <p>No modifications to cleaning SOP required</p> <p>Weekly SOP ensures no “surprises” with excessive scale buildup</p> <p>Cleaning system would not impact chloramine disinfection process or residual downstream of the upflow clarifiers</p> <p>No variation in disinfection residuals downstream of clarifiers due to different dosing of chlorine</p> <p>No disruption to plant production to make change</p> <p>Minimal training required</p> <p>Demolition of existing systems would be minimal, best use of existing investment</p> <p>Design, equipment, construction costs to achieve goals would be minimal</p>	<p>Acid handling required</p> <p>Dedicated feed and storage components required</p> <p>Storage must be vented outside of room</p>

2. Alternative 2 – Produce Small Amount of Gaseous Chlorine On Site for Cleaning.  
 Alternative OSGSH systems are manufactured that allow both production of sodium hypochlorite and gaseous chlorine. This option would allow all existing systems to remain in place, including the housekeeping chlorinators and all piping between the chlorine handling building and the lime building. As with Alternative 1, no modifications would be required to the conveyance piping or the lime system. When all of the plant basins were the same or similar capacity, addition of the so-called housekeeping chlorine did not typically cause any problems with chloramines disinfection residuals. The recent addition of housekeeping chlorine has resulted in some problems with uneven chlorine residuals in the different basins and problems when the basin effluents are mixed as reported by the plant manager. Table 4.5 presents the advantages and disadvantages of this alternative.

<b>Table 4.5 Advantages and Disadvantages of Lime Feed System Alternative 2 TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
No modifications to lime conveyance or cleaning piping required at the lime handling building	Gaseous chlorine on site which negates some of the safety advantages of converting to an OSGSH system
No modifications to cleaning SOP required	Equipment for dual system more expensive than just bleach conversion
All required changes at chlorine handling building	Existing chlorinator area may be needed for OSGSH system
No pilot testing needed; cleaning system proven	Dual generation system is more complicated than just bleach conversion system
Does not add another chemical or product for delivery or increase chemical delivery requirements from those needed for bleach system	Scrubber system required
No deliveries of gaseous chlorine Use of existing systems is highest, although upgrading of HVAC and safety systems, including scrubber, could be significant	Chlorine monitoring system required
	Not an “inherently safer” technology
	Significant training required
	Uneven dosing of housekeeping chlorine to the upflow clarifiers impacts chloramines process and effects chlorine residual downstream of the basins.

3. Alternative 3 – Modify Existing Lime Feed System to Be a Direct Feed System with a Slurry Loop. This option would require grit removal so that the slurry could be pumped at a scouring velocity of 4 to 5 feet per second and so that the pinch valves at the delivery points at the basin are workable. This would require extensive redesign of the feed system to include addition of a grit removal, centrifugal pumps, and installation of a CPVC loop system. All of the existing lime slurry feed pumps and piping would be demolished. Design would include provisions for an acid wash system. Table 4.6 presents the advantages and disadvantages of this alternative.

<b>Table 4.6 Advantages and Disadvantages of Lime Feed System Alternative 3 TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
<p>Addition of grit removal allows ongoing delivery of lime that does not meet the City specification for lime quality</p> <p>No space required at chlorine building for dedicated cleaning systems; frees up space at chlorine building</p> <p>Grit removal may provide some benefit to sludge feed pump stator life and centrifuge life</p>	<p>Unproven conveyance system for Austin</p> <p>Extensive demolition of a working system; Use of existing investment would be minimal</p> <p>Addition of centrifugal pumps and a grit removal system to be operated and maintained</p> <p>Disposal of grit increases routine operations personnel effort.</p> <p>No easy way to pilot test slurry loop feed system (centrifugal pumps, loop to UFC-008, velocities, pinch valves) prior to installation</p> <p>Provisions for acid wash system required; Frequency, best pH, and effectiveness unknown</p> <p>Most engineering redesign required of all the alternatives</p> <p>Disruption to existing water production during construction, plant shutdown required</p> <p>Operations personnel would need to work outside at basins 24/7 if problem at feed point.</p> <p>Least use of existing investment; highest cost of alternatives</p> <p>Periodic maintenance (acid cleaning) may not be done when needed and could result in excessive scale buildup and unexpected shutdowns. Temporary cleaning-type facilities may be harder to ensure optimal and safe handling practices.</p>

4. Alternative 4 – Use Existing Lime Slurry Feed System. This alternative uses the existing lime slurry feed system, but minimizes the use of motive water to reduce turbulence and scaling. Increased flushing with water is required, and an acid feed system must be installed for periodic use. Table 4.7 presents the advantages and disadvantages of this alternative.

<b>Table 4.7 Advantages and Disadvantages of Lime Feed System Alternative 4 TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Easy to pilot test effectiveness of just flushing with water	Minimizing motive water has not been proven to help control scale. May not reduce scaling sufficiently to weekly cleaning
Utilizes existing equipment investment	Provisions for acid cleaning system may not be an advantage over designed permanent piped acid system from chlorine handling building.
No weekly cleaning SOP for conveyance piping	Periodic maintenance (acid cleaning) may not be done when needed and could result in excessive scale buildup and unexpected shutdowns. Temporary cleaning-type facilities may be harder to ensure optimal and safe handling practices.
No impact on disinfection residuals	
No disruption to plant production to make change	
Minimal training required	
Demolition of existing systems would be minimal, best use of existing investment	
Design, equipment, construction costs to achieve goals would be minimal	

5. Alternative 5 – Modify Lime Feed System to a Direct Feed (No Loop) Neat Feed System. This alternative would not require changes to the lime slaking system (assuming the grit removal project is completed) or the lime slurry pumping system other than provisions for an acid cleaning system similar to Alternative 1. The piping to the basins would need to be downsized to provide a 2-feet per second (fps) velocity in the piping. The piping would need to be flushed consistently following use. A ball valve at each basin may need to be installed to allow the piping to remain full of water and residual neat product following flushing to prevent scaling. Table 4.8 presents the advantages and disadvantages of this alternative.

<b>Table 4.8 Advantages and Disadvantages of Lime Feed System Alternative 5 TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Utilize existing equipment	Unproven conveyance system
Cleaning system would not impact chloramine disinfection process or residual downstream of the upflow clarifiers	Could result in significant damage to system if operations personnel did not perform flushing consistently
No variation in disinfection residuals downstream of clarifiers due to variations in chlorine dosage	Small pipe diameters required to maintain velocity at low chemical flows, making scaling more likely
No disruption to plant production to make change	Requires acid cleaning system, similar disadvantages as noted in Table 4.4

#### 4.6 Electrical, Instrumentation, and Control System Requirements

HEI performed the preliminary electrical evaluation and conceptual design for the OSGSH system project as outlined in the following paragraphs. A total of two process/mechanical system design alternatives were evaluated for the OSGSH system. Each of these design alternatives corresponds to the system necessary to provide treatment for different values of overall WTP flow rate. Minimal provisions for future loads have been included in the design alternatives as described in the following paragraphs.

The proposed design was based upon the proposed process/mechanical electrical loads as shown in Table 4.9.

<b>Table 4.9 Proposed Process/Mechanical and HVAC Loads for On-Site Chlorine Generation System TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>				
<b>Process Equipment</b>	<b>Rated Power per Unit</b>	<b>Power Units</b>	<b>Total Quantity (167 mgd)</b>	<b>Total Quantity (225 mgd)</b>
<b>On-Site Chlorine Generation Process Area</b>				
Rectifier <sup>1</sup>	203.7	kVA	7	9
Rectifier Control Panel <sup>1</sup>	24.9	kVA	7	9
Water Softener <sup>1</sup>	4.2	kVA	2	2
Water Chiller <sup>1</sup>	83.2	kVA	3	3
Blower <sup>2</sup>	3	HP	10	12

<b>Table 4.9 Proposed Process/Mechanical and HVAC Loads for On-Site Chlorine Generation System TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>				
<b>Process Equipment</b>	<b>Rated Power per Unit</b>	<b>Power Units</b>	<b>Total Quantity (167 mgd)</b>	<b>Total Quantity (225 mgd)</b>
Brine Pump <sup>1</sup>	1	HP	7	9
Metering Pump	2	HP	5	6
Combination Facility HVAC Unit	93.1	kVA	1	1
Notes: 1. One unit is considered de-energized in the following design load calculations. 2. One-half of the proposed units are considered de-energized in the following design load calculations				

Key objectives of the electrical evaluation were to propose electrical design alternatives in order to support the proposed process/mechanical system design, to propose options or variations to the proposed design alternatives, and finally to present preliminary electrical and I&C construction cost opinions for each of the proposed design alternatives and options.

The first section of the electrical evaluation details the proposed electrical system to support the process/mechanical system. This is followed by a description of the design alternatives. The second section summarizes the proposed I&C system to support the process/mechanical system and its associated design alternatives.

#### **4.6.1 Summary of Proposed Electrical System**

This section summarizes the proposed electrical system. It begins with a brief overview description of the proposed system. Finally, the proposed design alternatives are described in more detail. HEI has developed the design alternatives as described below in order to support the proposed process/mechanical system design. The design alternatives provide an overall design concept for the proposed electrical improvements.

##### **4.6.1.1 *Power Distribution System – Introduction***

It is proposed that industry standard products be used where possible. This will help the City in the maintenance of the system and help reduce maintenance costs by facilitating standardization among components. Standardization of equipment is one of the objectives in this design.

#### **4.6.1.2 Power Distribution System – Electrical Analysis Concept**

The analysis of the process' electrical system is divided into electrical load zones congruent with the anticipated process/mechanical system. Based on the power requirements of the packaged system rectifier loads, all loads are proposed to operate at 480 VAC.

Based on the preliminary load data shown in Table 4.9, the OSGSH process operating at the proposed overall plant flow rate (167 mgd) will require at least 1,842.6 kVA, excluding system inrush. Operating at the OSGSH process at the future plant flow rate (225 mgd) will require 2,303.9 kVA, excluding system inrush. The largest loads are the rectifier units.

In reviewing the distribution of proposed and future loads, the majority process load is proposed for the initial construction while the minority process load is designated for the future expansion. Consideration has been given in the proposed design to incorporate this observation in the sizing and selection of equipment. The application of this concept and its corresponding impacts are explained in additional detail in the subsequent paragraphs.

#### **4.6.1.3 OSGSH System Power Distribution System – Overview**

It is the team's understanding that maximum use of the existing chlorine handling building, constructed in year 2003, should be made for the proposed electrical modifications associated with this project. The power distribution system infrastructure of the existing chlorine handling building is inadequately sized to handle the proposed load of the OSGSH system. Its salvage value in relation to the proposed power distribution system needs of this project is minimal and appears limited to possible reuse of low voltage power distribution panelboards and auxiliary 208/120-Volt transformers. It is proposed to demolish the existing power distribution system infrastructure.

The OSGSH process power distribution equipment are proposed to be indoor-located inside of the existing chlorine handling building (constructed in year 2003) in an environmentally controlled room. Building modifications to the existing chlorine handling building will be needed to facilitate the expansion of the existing electrical room.

Outdoor-located, pad-mounted, oil-filled service transformers are proposed for this facility. It is noted that the proposed transformers are at the upper limit of what is commonly available for pad-mounted transformers. These transformers are anticipated to be provided with oil containment.

The proposed distribution system will include the use of distribution and lighting panels and their applicable dry-type transformers that will distribute power to all other low voltage auxiliary equipment (transformers, loads, etc.) throughout the facility. All auxiliary 208/120-Volt transformers associated with the distribution equipment, as well as their associated distribution panels, are proposed to have a standard power capacity. It is proposed to reuse existing low voltage auxiliary power distribution equipment where possible.

The standardization of the auxiliary equipment is proposed to facilitate maintenance by minimizing the amount of equipment stocked and decreasing unit costs due to bulk purchases of similar equipment.

The majority of proposed process/mechanical equipment is being provided with packaged control systems, complete with starters and integral controls.

#### **4.6.1.3.1 Power Distribution System Design Alternative No. 1**

Design Alternative No. 1 establishes a dual-feed low voltage class (480 Volts) system distribution concept for the OSGSH process (see Figure 4.6).

To support the initial process/mechanical flow rate, the use of 480-Volt low voltage distribution equipment with a bus ampacity of 4,000 amperes is proposed to distribute power to all loads while keeping selected equipment sizes within that which is commonly available from distribution equipment manufacturers. It is proposed to install the distribution equipment arranged in a secondary selective (main-tie-main) configuration. The use of power-operated circuit breakers and a single-tie circuit breaker is anticipated. Fixed mounted circuit breakers are proposed to minimize the spatial requirements associated with the distribution equipment. The use of draw-out circuit breakers can be accommodated if desired and will also lead to the need of rear accessible power distribution equipment. The use of draw-out circuit breakers will lead to a corresponding increase in spatial requirements associated with the distribution equipment.

Refer to the one-line figures for additional information. The loads will be allocated to the various buses in conjunction with the anticipated flow rate growth increment of the process.

Each rectifier is served by a dedicated circuit breaker located in the proposed 480-Volt distribution equipment. This design alternative provides a foundation upon which additional rectifier units can be added in the future at a minimal incremental construction cost. The proposed service transformers are of a standard size that will help facilitate their replacement in the event of a failure. The service transformer size selected will facilitate the installation of the future rectifier units without requiring replacement, thus minimizing future incremental construction cost and maximizing equipment salvage value and return on investment.

The distribution equipment will serve an automatic transfer switch that is dedicated to serve a 480-Volt power distribution panel. The proposed power distribution panel will feed 480-Volt to 120/208-Volt distribution and control power transformers, panelboards, and other miscellaneous loads. The use of current-limiting circuit breakers is anticipated in order to reduce the available fault current to various loads/buses as applicable.

In the event of a failure in a transformer, switchboard bus, cable, etc., only specific rectifier units served by the failed equipment would be affected and the remaining rectifier units

would be unaffected. Fifteen percent spare capacity has also been included in the size selection of distribution equipment shown on the one-line diagram.

One common plant operations methodology is the alternation of run time between equipment. The distribution equipment sizes selected under this alternative permit the spare rectifier to be energized prior to de-energizing one of the group of active rectifiers.

The anticipated process/mechanical flow rate increment will lead to varying associated electrical and I&C system incremental construction costs. These incremental construction costs reflect the application of the flow rate increment to the power distribution design concept employed. Thus, the electrical construction cost increment will be disproportionate to the process flow rate increment. This design alternative has been included in the preliminary electrical and I&C construction cost opinion.

#### **4.6.1.3.2 Power Distribution System Design Alternative No. 1**

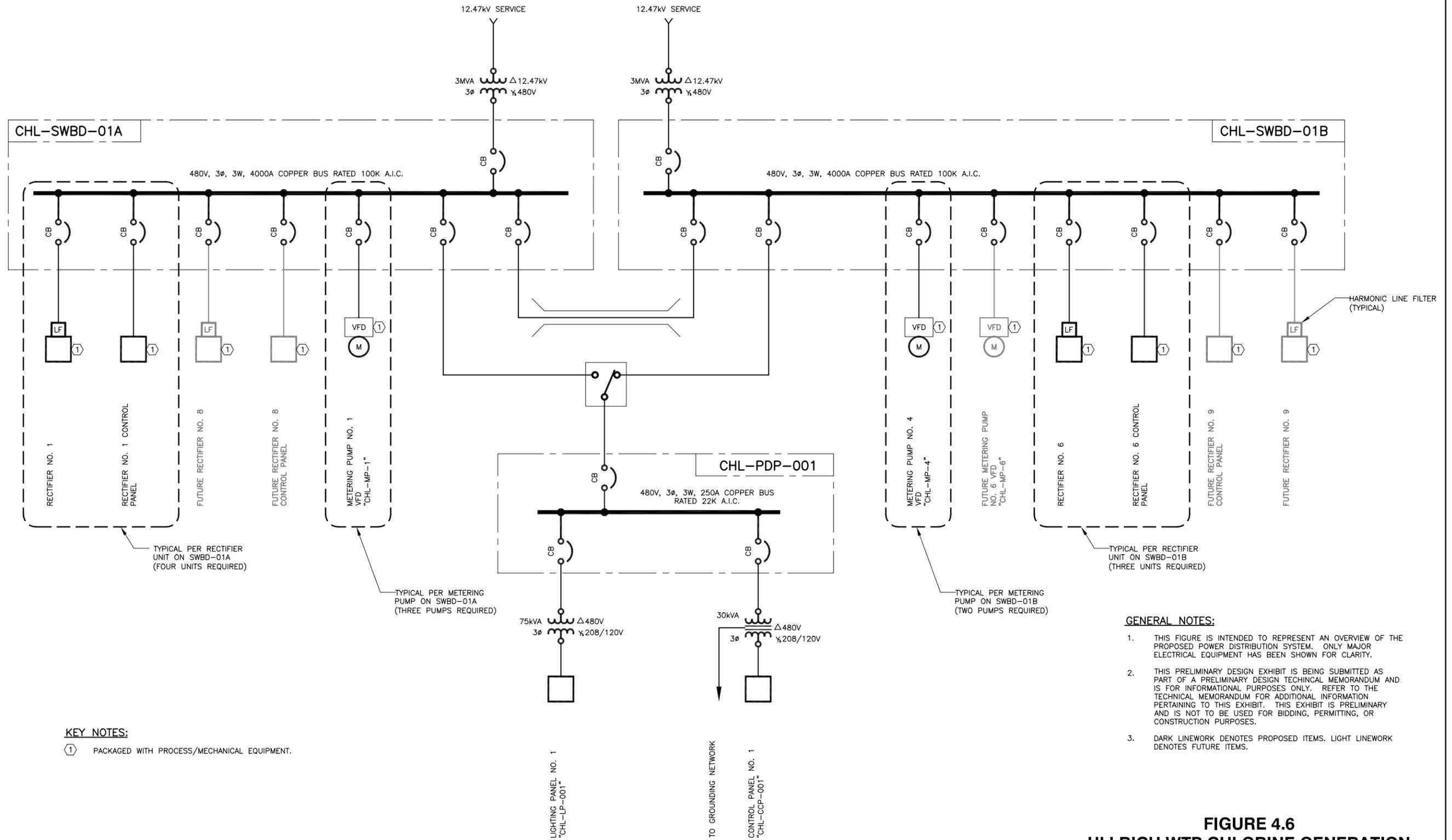
Under this design option, additional power distribution panels are proposed in order to supply the rectifier control panels and other process/mechanical loads, thereby reducing the quantity of circuit breakers required in the proposed switchboard/switchgear. Additionally, this design option provides means to help reduce the available fault current at each load served (see Figure 4.7). To help reduce construction costs, these proposed power distribution panels will be configured as main lug only.

It is anticipated that these power distribution panels could be located in the process/mechanical room, which may be more advantageous for space management purposes in consideration of the size of the existing chlorine handling building.

#### **4.6.1.4 Auxiliary Low Voltage Power Distribution System to Serve the Control Power Needs of the OSGSH Process**

It is proposed that an UPS system serve the I&C system's uninterruptible power needs for specific instrumentation and all proposed PLCs. The proposed UPS system will also allow the ability of the I&C system to monitor critical points in the process in the event of a short power outage. It is proposed that the UPS needs of each control panel will be served by a dedicated UPS located inside of that control panel.

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**KEY NOTES:**

① PACKAGED WITH PROCESS/MECHANICAL EQUIPMENT.

**GENERAL NOTES:**

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3. DARK LINEWORK DENOTES PROPOSED ITEMS. LIGHT LINEWORK DENOTES FUTURE ITEMS.

**FIGURE 4.6**  
**ULLRICH WTP CHLORINE GENERATION**  
**PROCESS DESIGN ALTERNATIVE NO. 1**  
**OVERALL ONE-LINE DIAGRAM**  
**CITY OF AUSTIN**

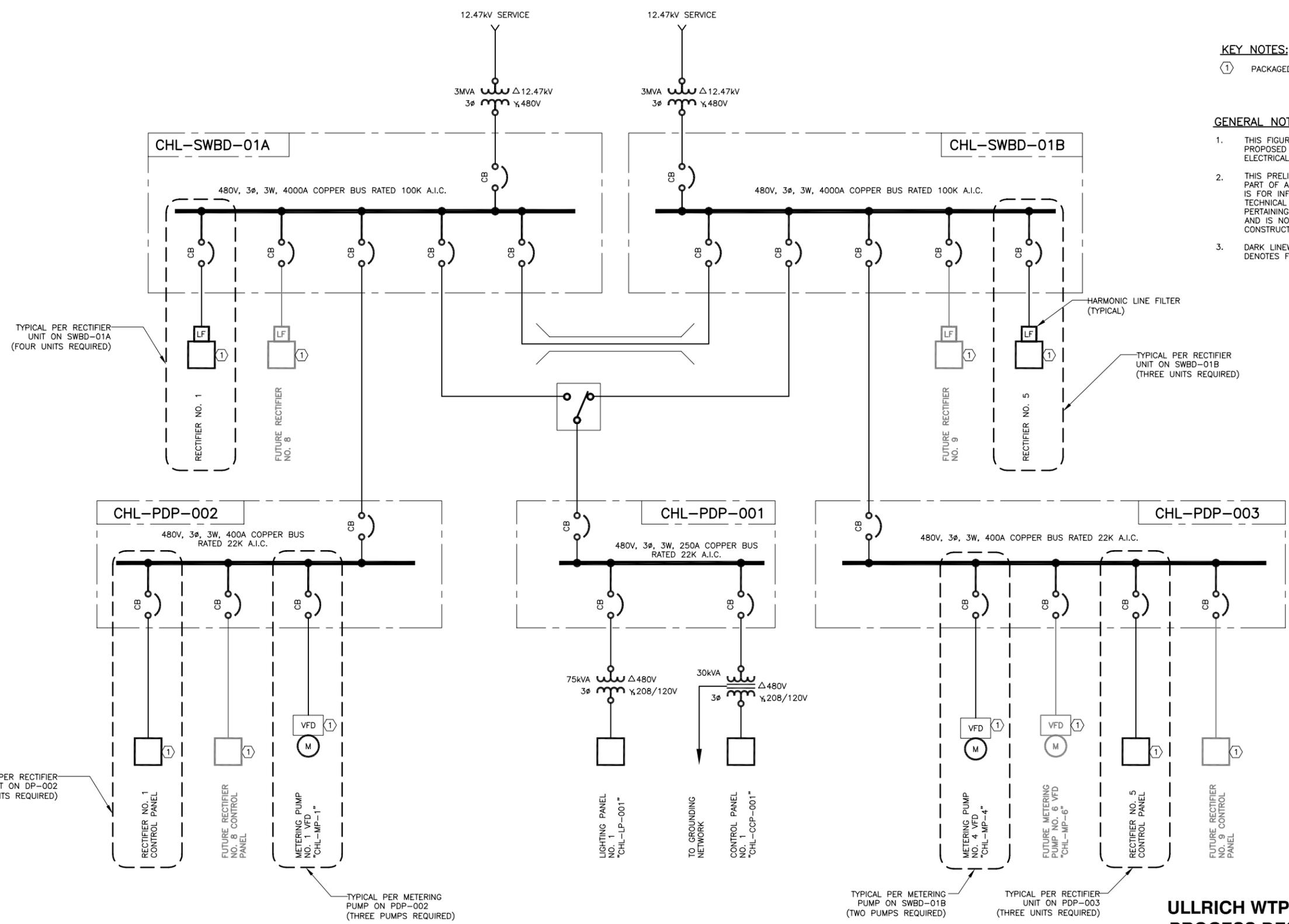
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3. DARK LINEWORK DENOTES PROPOSED ITEMS. LIGHT LINEWORK DENOTES FUTURE ITEMS.

**FIGURE 4.7**  
**ULLRICH WTP CHLORINE GENERATION**  
**PROCESS DESIGN ALTERNATIVE NO. 2**  
**OVERALL ONE-LINE DIAGRAM**  
**CITY OF AUSTIN**

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#### **4.6.1.5 Power Quality Issues**

##### **4.6.1.5.1 Power Factor Considerations**

All process equipment, ventilation equipment, and air-handling unit motors will be specified as high power factor motors where possible. Such motors shall be specified to minimize overall energy costs yielding a minimum power factor of 90 percent lagging, prior to the addition of any power factor correction, where possible. When it is not possible for the motors to be designated with a high power factor, the highest possible power factor motors will be employed.

As all process/mechanical and HVAC equipment are being provided with packaged controls, the inclusion of power factor correction capacitors into the proposed power distribution system equipment is not anticipated. It is anticipated that packaged process/mechanical equipment of 3 Horsepower and greater will be provided with power factor correction capacitors internal to the packaged equipment so that the overall process/mechanical equipment package maintains a power factor of 95 percent lagging or better. The operational nature of the process application will be taken into consideration when applying power factor correction.

##### **4.6.1.5.2 Proposed Motor and Power Distribution Equipment Efficiency**

To minimize overall energy costs, all process equipment, ventilation equipment, and air handling unit motors and distribution transformers will be specified as high efficiency where possible. When it is not possible or economically practical for such equipment to be high efficiency, the highest efficiency equipment possible or economically practical will be employed.

##### **4.6.1.5.3 Rectifier Harmonic Filtering**

It is proposed that each rectifier will have a dedicated harmonic filter to meet the requirements of IEEE Standard 519.

##### **4.6.1.6 Power Metering and Protection Issues**

Microprocessor-based power monitoring equipment is proposed to be installed at the incoming power source (line side) in the low voltage switchgear/switchboard, as applicable. The equipment is proposed to be a programmable device that measures and displays the following characteristics of incoming power:

- Voltage per phase
- Current per phase
- Power factor

- Frequency
- Active power
- Apparent power
- Reactive power

Each power-monitoring/protection unit is proposed to have standard control interface ports, including RS-232C and RS-485 serial communication ports for peripheral programming and data transfer via the Modbus communication protocol over a Modbus communication network. This network is proposed to interface with the respective PLCs. The above discussed values monitored by the power-monitoring units and motor protection relays will be telemetered to the top-end system by the PLC. Each unit will also have a digital display of measured/telemetered parameters for local display.

#### ***4.6.1.7 Miscellaneous Electrical Subsystems***

##### ***4.6.1.7.1 Indoor Lighting***

Limited modifications to the existing lighting of the chlorine handling building are anticipated. These modifications are anticipated to be limited to that needed to facilitate the necessary building modifications. Fixtures and their associated switching design concepts will be implemented as required to match the existing design concepts presently employed at the existing chlorine handling building. Maximum reuse of existing fixtures is anticipated.

##### ***4.6.1.7.2 Outdoor Lighting***

Additional exterior perimeter lighting will be provided as needed around the exterior of the existing chlorine handling building to facilitate entry/exit through the building and personnel access around the storage tanks. The proposed fixtures and their application will be selected to match the existing lighting fixtures. Additional outdoor task, perimeter, walkway, parking lot, landscape, etc., types of lighting are not anticipated.

Additional preliminary electrical and I&C construction cost opinion would be required in order to implement additional special lighting that may be required for any type of security system.

##### ***4.6.1.7.3 Convenience and Special-Purpose Maintenance Receptacles***

Maximum reuse of existing convenience and special-purpose receptacles is anticipated. Should additional receptacles be required, they will be selected to match those presently in use at the existing chlorine handling building in application and type.

#### **4.6.1.7.4 Raceway System**

The electrical wiring raceways will consist of a conduit system. Conduit routing methodology will be aboveground and exposed and/or underground in a duct bank system.

It is anticipated that raceways will be primarily routed in an exposed configuration for the modifications to the existing chlorine handling building. Raceways in process/mechanical rooms shall be corrosion resistant and shall be made of Schedule No. 80 PVC per NEC requirements. Conduit bodies and systems concealed below slab or buried underground shall be corrosion resistant and shall be made of Schedule No. 40 PVC per NEC requirements. In recognition of the facility life cycle, it is proposed to encase such conduit systems in a reinforced concrete-encased duct bank.

Conduits shall not be filled greater than the 40-percent maximum fill percentage as allowed by the NEC. Pull boxes located outdoors and in process/mechanical rooms will be constructed of 316 SS, while boxes located in the electrical room will be painted steel in order to reduce construction costs.

It is proposed that where possible, conduit stub-outs for future equipment will be made as practicable to facilitate the connection of future equipment.

#### **4.6.1.7.5 Electrical, Instrumentation, and Control Wiring**

All 600-Volt power wiring will be copper with 600-Volt insulation when serving equipment rated 600 Volts and below. All 600-Volt I&C system wiring will be copper. It is proposed to maintain separation between the power/control and instrumentation wiring to facilitate safety and maintenance of the process equipment during operation.

It is proposed to utilize 600-Volt-rated single conductor control/power cable all equipment. Fiber optic cable will be used where shown on the preliminary conceptual communications network figures for process area network communication.

For the non-fiber optic-based I&C wiring systems, it is proposed that the physical routing of the conduit/duct bank systems associated with the instrumentation and control systems be segregated from those of the power distribution system.

#### **4.6.1.7.6 Grounding System**

A single-point grounding network exists underneath the existing chlorine handling building. Minimal modifications to the existing single-point grounding network are anticipated in order to facilitate the interconnection of the proposed power distribution system to the existing grounding network.

#### **4.6.1.7.7 Lightning Protection System**

Provision for a lightning protection system is presently not included in the electrical, instrumentation, or control system design or corresponding preliminary construction cost opinion. Should the team elect to include provisions for this system, input is needed to define the composition of the system and the necessary provisions that need to be included.

#### **4.6.2 Summary of Proposed I&C System**

This section summarizes the proposed I&C system. It begins with a brief overview description of the proposed system. Finally, proposed design alternatives are described in further detail. HEI has developed the design alternatives as described below in order to support the proposed process/mechanical system design. The design alternatives provide an overall design concept for the proposed I&C system improvements.

##### ***4.6.2.1 Proposed I&C System Overview***

A Distributed Control System (DCS) with an overall Programmable Logic Controller (PLC) for the entire process is proposed for this project. It is the team's understanding that the use of the OSGSH system manufacturer's standard packaged control system is desired for this project. It is observed that certain additional process/mechanical equipment (chlorine metering pumps, etc.) located in the process are required to be monitored and controlled that are not part of the packaged OSGSH system.

It is proposed to locate each PLC and most I&C equipment (except field control stations and field instruments) inside a centralized control panel located indoors in an air conditioned environment. Should a control panel be located in a non-air conditioned environment, it is proposed to install packaged air conditioning unit(s) mounted to the control panel in order to maintain the design temperature parameters of the electronic equipment contained inside the control panel.

It is proposed that, depending on the application, most individual process equipment would have means to provide the operator the ability to engage or disengage the equipment from operation. Each Field Control Station (FCS), would be located near the equipment and generally would only be used should a particular PLC become nonfunctional or during maintenance activities for that process equipment. Operation at the FCS level of control will not include automatic coordination with the rest of the process and will require the operator's complete attention in order to operate the process. The proposed FCSs are described further in the following paragraphs.

It is anticipated that minimal additional primary sensing elements beyond those necessary for monitoring and controlling the packaged control system will be required. This additional instrumentation will be limited to flow measurement of each chlorine metering pump discharge. This variable will be made available at the field (at instrument level on the field

instrument), at an OIU, and at the top-end computer. The OIU provides a graphical presentation of the process with a touch-screen interface.

The following paragraphs describe specific features of the I&C system design concepts for this project.

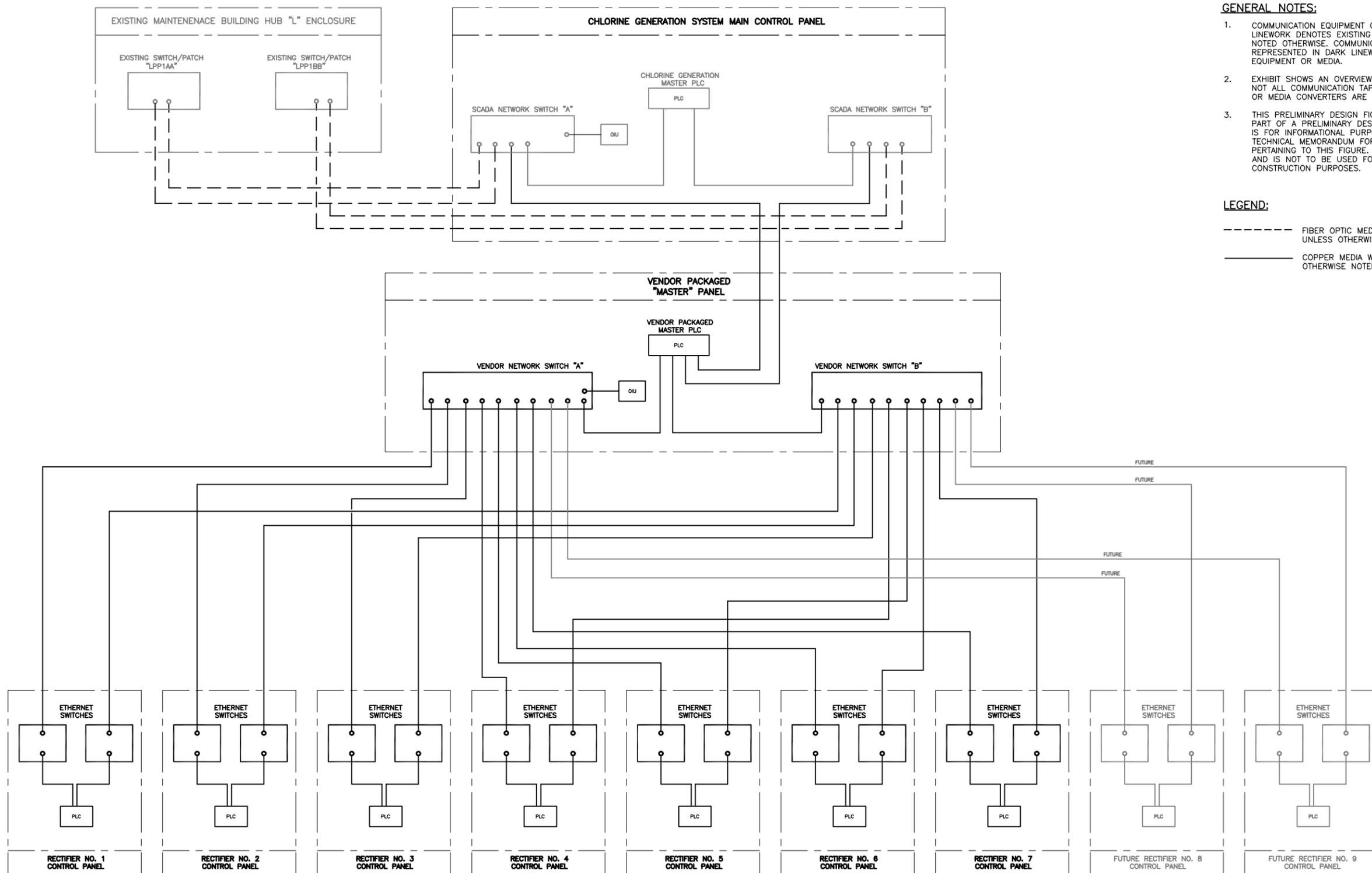
#### **4.6.2.2 I&C System Design Alternative**

Figure 4.8 shows a conceptual control system architecture design alternative for the OSGSH system for the Ullrich WTP. It is anticipated that the communication network associated with the OSGSH system will be a dual-channel single-mode Ethernet fiber optic network between the top-end computer system and the OSGSH system process area. It is proposed that the overall process area PLC will communicate with the top-end system using Ethernet. It is proposed that a second dual-channel Ethernet network will be established between the overall process area PLC and the packaged equipment PLC system(s).

As also shown on Figure 4.8, it is anticipated that a main control panel will be provided for the overall process area. This proposed main control panel will contain the proposed overall process area PLC and also house all of the I&C equipment dedicated to that particular process area and requiring custom design. The main control panel PLC will monitor and control non-packaged process/mechanical equipment, such as the chlorine metering pumps for the process area, as well as facilitate communication between the top-end system and packaged equipment PLC system(s). It is anticipated that the existing facility main control panel will be reused to the extent possible and expanded as necessary to serve the needs of this project. This will help to maximize equipment salvage value and return on investment.

Additionally, a master control panel is anticipated for the OSGSH system to coordinate the activities and monitoring associated within the packaged OSGSH system. It is anticipated that this control panel will be provided by the OSGSH system manufacturer as part of their standard product offering. It is anticipated that this panel will also monitor and control the combined blowers and chlorine solution storage portion of the process. Additional dedicated rectifier control panels are anticipated for each rectifier unit. These control panels are anticipated to be the standard product offering of the OSGSH system manufacturer.

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2. EXHIBIT SHOWS AN OVERVIEW OF THE PROPOSED NETWORK. NOT ALL COMMUNICATION TAPS, TERMINATORS, PATCH PANELS, OR MEDIA CONVERTERS ARE SHOWN.
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- COPPER MEDIA WITH ETHERNET PROTOCOL, UNLESS OTHERWISE NOTED.

**Figure No. 4.8**  
**ULLRICH WTP ON-SITE CHLORINE GENERATION**  
**PROCESS CONCEPTUAL CONTROL SYSTEM**  
**ARCHITECTURE DESIGN ALTERNATIVE NO. 1**  
**CITY OF AUSTIN**

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An OIU is proposed for the overall process area and is proposed to be located on the main control panel. An OIU is also anticipated for the OSGSH system master control panel. Additional OIUs can be provided for additional control panels of the OSGSH system if deemed necessary.

As shown on Figure 4.8, all network communication cabling between the process PLC and the top-end system shall be single-mode fiber optic cable. The proposed fiber optic network will interconnect with the existing maintenance building Hub "L." During subsequent phases of the project, the existing fiber optic cable length can be investigated for possible reuse for this project. All network communication cabling between controllers and their respective OIUs and power-monitoring/protection units shall be copper conductors. A dual-channel Ethernet media is recommended for reliability and ease of maintenance; however, a single-channel network may be implemented as a cost savings measure.

It is observed that in the event a single-channel network interconnection between the process area and the top-end is selected for implementation, the failure of the single-channel network communications system would affect plant operations. This failure could render the entire process area isolated from other treatment plant process areas with no data transfer between them. A failure of this type would have no affect on plant treatment capacity. This is due to the fact that each PLC in each process area would be able to monitor and control that area's associated mechanical processes. Each process area would require manual intervention at the OIU, main control panel, or individual process control panels to assure proper application of setpoints and manual coordination with other process areas that would normally have been transferred via the network communications system. However, all of the process equipment would be operational.

### 4.6.2.3 I&C Equipment Selection

Specific equipment selections for the implementation of the control and monitoring system have been recommended below in Table 4.10.

<b>Table 4.10 Proposed Type of Various Instrumentation and Control System Equipment TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
Proposed Equipment	Type of Equipment
Hydrogen, pH, Chlorine Residual Indicating Transmitter	Please refer to the process/mechanical TM for additional information regarding the process analytical instruments. It is anticipated that all process analytical instruments will consist of an indicating transmitter with a 4-20mA output signal.
Flow Indicating Transmitter	Please refer to the process/mechanical technical memorandum for additional information regarding the process flow instruments. It is anticipated that all process flow instruments will consist of an indicating transmitter with a 4-20mA output signal.
Control Relays	NEMA design (compact, Din mounted), industrial type with eight total field interchangeable contacts
Terminal Blocks	Normal density type, capable of 37 terminals per foot
Field Control Stations Selector Switches, Pilot Lights, Pushbuttons	NEMA 4X, 30 millimeters. Number of positions of selector switch depends on application and equipment. Color of pilot lights depends on application
24 VDC Power Supply	Redundant, isolated, and filtered power supplies
UPS	120-VAC input and output power
OIU	Magelis, with 10-in display, as manufactured by Schneider Automation, Inc.
PLC	Modicon Quantum, as manufactured by Schneider Automation, Inc. Different central processing units may be used for different process areas depending on the process application. The selection of central processing units will be made to optimize return on investment and maximize cost effectiveness.

**4.6.2.4 Parameters/Functions Monitored by Plant DCS System**

The DCS will monitor the ON/OFF and failure status of all equipment, process information, instruments, and field selector switch position status, as applicable. Recommended DCS monitoring points for specific equipment have been identified in Table 4.11, but should be finalized via an I&C workshop during the design.

<b>Table 4.11 Proposed Distributed Control System Design TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Process Equipment</b>	<b>Recommended DCS Monitoring Points per Unit</b>
<b>OSGSH</b>	
Metering Pump	<ul style="list-style-type: none"> <li>• Pump Discharge Flow</li> <li>• Pump Speed</li> <li>• Pump Run Status</li> <li>• Pump Common Alarm</li> </ul>
Combination Facility HVAC Unit	None

It is anticipated that all points associated with the packaged OSGSH system will be telemetered using a serial data network communication link.

**4.6.2.5 Field Control Station**

The FCS provides local ON/OFF control of all process equipment with associated ON/OFF indication, if required. As shown in Table 4.12, local controls may include a HAND/OFF/DCS selector switch for selection of control location or an ON/OFF selector switch. Local control allows the equipment to be operated locally at the equipment’s location. The OFF position will disable operation of the equipment from either the DCS or local controls. The DCS position allows the equipment to be operated through the DCS. The FCS design, including components for specific equipment, has been identified in Table 4.12, but should be finalized during an I&C workshop held during the design phase. All FCS enclosures will be NEMA 4X, 316 SS.

<b>Table 4.12 Proposed Field Control Station Design TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>		
<b>Process Equipment</b>	<b>Proposed Number of FCS per Equipment</b>	<b>FCS Features</b>
<b>OSGSH</b>		
Metering Pump	1	<ul style="list-style-type: none"> <li>• LOCAL/OFF/DCS Selector Switch</li> <li>• START Pushbutton</li> <li>• STOP Pushbutton</li> <li>• Speed adjustment potentiometer</li> <li>• Pump PERCENT SPEED indication</li> <li>• Pump ON indicating light</li> <li>• Pump OFF indicating light</li> </ul>

#### **4.6.2.6 Packaged Control Systems**

Various types of both custom and packaged control systems are proposed for this project. The major characteristics of each of these systems are described below along with an identifying letter for classification purposes.

##### **4.6.2.6.1 Type B**

Type B is a packaged control system. The starters and controls will be furnished in the packaged control panel by the manufacturer of the equipment and would require power from an external source (MCC, panelboard, etc.). In this type of packaged system, the control panel and also equipment sub-components would be provided by the manufacturer loose and assembled on site by the installation contractor. It follows that the packaged control panel would require mounting details and a conduit/wiring design between the packaged control panel and the proposed equipment sub-components. Should remote monitoring/control of the equipment be required, then additional conduit/wiring would be necessary between the packaged control panel and the DCS.

##### **4.6.2.6.2 Type C**

Type C is a packaged control system. The starter and controls will be furnished in the packaged control panel by the manufacturer of the equipment, mounted on a skid/frame, and pre-wired to the equipment shipped by the manufacturer. Under this type of packaged control system, the packaged control panel would require power from an external source (MCC, panelboard, etc.). Should remote monitoring/control of the equipment be required, additional conduit/wiring would be necessary between the packaged control panel and the DCS.

**4.6.2.6.3 Type H**

Type H is a non-packaged control system custom designed specifically for the process application as it pertains to this project. The starters associated with the process equipment will be provided with the process equipment. The associated controls will be located in a centralized cabinet (control panel, etc.) as described elsewhere in this TM. A minimal hardwired control relay logic system shall be provided to facilitate critical hydraulic functions, personnel safety/ protection, and machine protection. The PLC shall be employed for control/monitoring functions and also to facilitate remote control/monitoring. In the event of PLC failure, operation of the process equipment will be limited to the provisions described elsewhere in this report. It follows that mounting details and conduit/wiring design between all equipment is required for this type of system.

**4.6.2.6.4 Packaged Control System Types for each Major Process Equipment**

The packaged control system types for specific equipment have been identified in Table 4.13; however, as previously mentioned, an I&C workshop should be held during the design phase to finalize control strategy.

<b>Table 4.13 Proposed Type of Control System for each Major Process Equipment/System TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>	
<b>Process Equipment/System</b>	<b>Control System Type</b>
<b>OSGSH</b>	
Rectifier	C
Rectifier Control Panel	C
Water Softener	B
Water Chiller	B
Blower	B
Brine Pump	C
Metering Pump	H
Combination Facility HVAC Unit	B

**4.6.2.7 Miscellaneous I&C Systems**

Provisions for security and fire protection systems are presently not included in the electrical, instrumentation, or control system design or corresponding preliminary construction cost opinion. Should the team elect to include provisions for these systems, input is needed to define the composition of the system and the necessary provisions that need to be included.

## 5.0 ESTIMATED COST AND SCHEDULE

### 5.1 Construction Costs

Budgetary estimates of the construction costs were developed for replacing the existing chlorine systems with an OSGSH system at the Ullrich WTP. These costs are based on the layouts and preliminary design information presented in earlier sections. The following list identifies the cost elements included in the estimates along with the primary assumptions made to develop the estimated costs:

- Construction Costs. The cost of construction summarizes the contractor's full project fees, including labor, materials, mobilization/demobilization, bonds/insurance, taxes, testing/start-up, overhead, and profit. Construction costs were developed from other projects of similar scope and complexity and then adjusted to account for the location and base year of this project (2011). A 15-percent factor was used for the general contractor overhead, profit, and risk.
- Contingency. A contingency of 25 percent was assumed. This accounts for unforeseeable elements of cost within the defined project scope as well as known elements that are undefined at this stage of progress. Items such as variations in project configuration developed during the detailed design phase, unforeseen site conditions encountered during construction, and reasonable project changes during construction are included in the contingency.

The level of accuracy for construction cost estimates varies depending upon the level of detail to which the project has been defined. Feasibility studies, master plans, and conceptual designs represent the lowest level of accuracy, while pre-bid estimates (based on detailed plans and specifications) represent the highest accuracy level. The American Association of Cost Engineers (AACE) International publishes guidelines that define the class of estimate and the expected accuracy range. Based on these guidelines, the construction cost estimate presented herein is a Class 5 estimate, which should be considered a conceptual or order-of-magnitude estimate. The expected range of accuracy for this type of estimate is +50 percent to -30 percent of the actual project cost. Table 5.1 summarizes the estimated construction costs.

<b>Table 5.1 Opinion of Probable Construction Costs <sup>1</sup> TM – On-Site Generation of Sodium Hypochlorite Evaluation City of Austin</b>		
<b>Sl. No.</b>	<b>Phase</b>	<b>OSGSH System Estimated Costs at Ullrich WTP</b>
1	General Conditions	\$410,000
2	Removals / Demolition	\$80,000
3	Site Work	\$40,000
4	Yard Piping	\$75,000
5	Onsite Sodium Hypochlorite Generation	\$4,110,000
6	NaOCl Storage Tank Foundation and Other	\$165,000
7	Building, Modifications, and Additions	\$420,000
8	Retrofit Existing Tank	\$40,000
9	Removal of Sodium Hydroxide	\$655,000
10	Lime Feed System Modifications - Allowance	\$325,000
11	Temporary Chlorine Feed System	\$130,000
12	Existing Chlorine System Removal	N/A
13	Electrical (25%)	\$1,520,000
14	Instrumentation and Controls (10%)	\$610,000
Estimated Subtotal Cost		\$8,580,000
General Contractor Overhead, Profit & Risk (15%)		\$1,285,000
Subtotal		\$9,865,000
Contingency (25%)		\$2,465,000
<b>TOTAL</b>		<b>\$12,330,000</b>
Notes:		
1. Estimated cost of construction only in August 2011 dollars.		

## 5.2 Construction Schedule

Several factors will affect the schedule to replace the existing chlorine system with an OSGSH system. These include mobilization, the submittal preparation, submittal review, delivery of the OSGSH equipment, and OSGSH equipment installation, startup, and testing. The estimated time for submittal preparation is about 8 weeks. Additional time will be required for submittal reviews. The estimated time from submittal approval to OSGSH equipment delivery is 16 to 20 weeks. Actual equipment installation will take approximately 6 to 8 weeks. Other activities, such as demolition and new construction, will vary between projects, and will add additional time to the schedule.

Major activities that specifically impact the Ullrich schedule are implementing the temporary disinfection system, adding a cleaning system for the lime solution lines, retrofitting the existing tank, replacing chlorine delivery lines, and building the NaOCl storage tank foundation. Constructing a new building will not be required and will not be a factor.

At Ullrich, setting up a temporary disinfection system would also extend the schedule. Activities that can impact setting up a temporary disinfection system are ordering a new NaOCl storage tank (presently a long lead time) and submittal review and approval. For preliminary planning purposes, an 18-month construction schedule should be assumed. A large variable affecting the schedule is the implementation of the temporary system, which could add several months to the schedule.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Ullrich WTP Conclusions and Recommendations**

The chlorine facility at Ullrich has adequate space to accommodate an OSGSH system; however, several significant modifications and additions would be required. Besides the demolition of the existing bulk chlorine system, a substantial foundation with a building extension would be required to accommodate several sodium hypochlorite solution storage tanks. The tank foundation would occupy adjacent space northeast of the building and require replacement and rerouting of several chlorine distribution lines.

Providing adequate space and optimizing the location for the brine tank(s) is an important consideration. Using an existing 80,000-gallon scrubber tank was studied. Converting this tank to a brine tank offers the advantage of utilizing an awkward space and frees up the existing loading area. Salt deliveries can be conducted within the existing loading area, which helps minimize noise from salt loading. The alternative would be to use the existing loading area to install several smaller brine/salt storage tanks.

Currently, the plant chlorine solution is slightly acidic and is used to clean piping at the lime slurry delivery system. The sodium hypochlorite is basic; therefore, it cannot be used to clean the lines. It is recommended that an NSF-approved muriatic acid cleaning system be used since it will be simple, effective, and easy to implement compared to other options.

### **6.2 OSGSH Recommendations**

The main advantage that an OSGSH system offers over the existing chlorine gas systems is safety and eliminating the risk associated with an accidental chlorine gas release. The main disadvantage of implanting an OSGSH system is the high capital costs and the significant power costs. Assuming the additional capital cost of constructing and operating an OSGSH system is within the City's budget, this alternative is recommended for the following reasons:

- The City has a long and safe history of using chlorine gas at the Ullrich WTP. Therefore, the probability of accidental release on site would be low. However, potential off-site releases during transport and delivery are outside the City's control and any uncontained release could potentially lead to severe consequences. In contrast, no hazardous chemicals are used with an OSGSH system, which significantly reduces this risk.
- The public concern over the use of an OSGSH system is likely less than the other alternatives.
- Deliveries of hazardous chlorine to the site would be replaced by salt deliveries, which are non-hazardous to humans.
- The availability and price of salt are not as volatile as bulk sodium hypochlorite or chlorine gas. Additionally, salt deliveries are not subject to potential price increases that could affect chlorine costs if proposed legislation to shift carrier liability is ever passed.
- This alternative provides the lowest potential risk to the surrounding environment from a catastrophic leak.
- An RMP is not required for a disinfection system when using an OSGSH system.
- OSGSH is a proven, reliable, and effective technology for providing disinfection at WTPs.