Commission Meeting Agenda

Mayor
Samuel D. Cobb

City Commission

R. Finn Smith – District 1
Christopher R. Mills – District 2
Larron B. Fields – District 3
Joseph D. Calderón – District 4
Dwayne Penick – District 5
Don R. Gerth – District 6

City Manager
Manny Gomez

February 21, 2023

Hobbs City Commission

Regular Meeting
City Hall, City Commission Chamber
200 E. Broadway, 1st Floor Annex, Hobbs, New Mexico

Tuesday, February 21, 2023 - 6:00 p.m.

Sam D. Cobb, Mayor

R. Finn Smith Commissioner – District 1	Christopher R. Mills Commissioner – District 2	Larron B. Fields Commissioner – District 3
Joseph D. Calderón Commissioner – District 4	Dwayne Penick Commissioner – District 5	Don R. Gerth Commissioner – District 6

A G E N D A

City Commission Meetings are
Broadcast Live on KHBX FM 99.3 Radio and
Available via Livestream at **www.hobbsnm.org**

CALL TO ORDER AND ROLL CALL

INVOCATION AND PLEDGE OF ALLEGIANCE

APPROVAL OF MINUTES

1. Minutes of the February 6, 2023, Regular Commission Meeting *(Jan Fletcher, City Clerk)*

PROCLAMATIONS AND AWARDS OF MERIT

2. Recognition of City Employees - Milestone Service Awards for the Month of February, 2023 *(Manny Gomez, City Manager)*

   - 5 years – Jason Ulrich, Water Distribution
   - 5 years – Elena Dominguez, CORE
   - 5 years – Lyndsey Henderson, CORE
   - 10 years – R. P. Hopper, Hobbs Police Department
   - 15 years – Carol Gober, Meters & Service

- 15 years – Royce Finney, Streets/Highways
- 15 years – Amanda Gonzales, Police Detention/Jail
- 25 years – Wade Whitehead, Parks and Open Spaces Department

PUBLIC COMMENTS *(Citizens who wish to speak must sign the Public Comment Registration Form located in the Commission Chamber prior to the beginning of the meeting.)*

CONSENT AGENDA *(The consent agenda is approved by a single motion. Any member of the Commission may request an item to be transferred to the regular agenda from the consent agenda without discussion or vote.)*

3. Consideration of Approval of Bid No. 1603-23 to Furnish Polyelectrolyte Coagulant Aids and Recommendation to Accept Bid from Polydyne, Inc., in the Projected Total Annual Cost of $74,000.00 *(Tim Woomer, Utilities Director)*

DISCUSSION

4. Parks and Open Spaces Department, 2022 Annual Report *(Bryan Wagner, Parks and Open Spaces Director)*

5. Library Department, 2022 Annual Report *(Bob Hamilton, Interim Library Director)*

ACTION ITEMS *(Ordinances, Resolutions, Public Hearings)*

6. Resolution No. 7312 – Approving the Final Plan for the Trinity Estates Subdivision, Unit One, as Recommended by the Planning Board *(Kevin Robinson, Planning Department)*

7. Resolution No. 7313 – Approving the Final Plan for the Bender Trails Summary Subdivision as Recommended by the Planning Board *(Kevin Robinson, Planning Department)*

8. Consideration of Approval of a CES Contract with Ramirez & Sons, Inc., for Reconstruction of West Berry Street *(Todd Randall, City Engineer)*

9. Consideration of Approval of RFP 537-23 for Water System and Wastewater Collection System Master Plan and Recommendation to Accept Proposal Submitted by Freese & Nichols, Inc. *(Anthony Henry, Deputy City Engineer)*

10. Consideration of Approval of RFP 536-23 to Provide Materials, Labor, Programming and Associated Engineering Services for the City of Hobbs Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project and Recommendation to Accept Proposal Submitted by IPS, Inc. *(Tim Woomer, Utilities Director)*

11. Consideration of Approval of Bid No. 1601-23 to Furnish One Emergency/Standby Diesel Generator Unit and One Automatic Transfer Switch, Including Installation, Testing, Training and Commissioning of All Equipment, to be Located at the City of Hobbs' HIAP Booster Pump Station and Reservoir and Recommendation to Reject All Bids *(Tim Woomer, Utilities Director)*

COMMENTS BY CITY COMMISSIONERS, CITY MANAGER

12. Next Meeting Date:

    - City Commission Regular Meeting:
        - **Monday, March 6, 2023, at 6:00 p.m.**

ADJOURNMENT

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the above meeting, please contact the City Clerk's Office at (575) 397-9200 at least 72 hours prior to the meeting or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact the City Clerk's Office if a summary or other type of accessible format is needed.

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: **February 21, 2023**

SUBJECT: **City Commission Meeting Minutes**

DEPT. OF ORIGIN: City Clerk's Office
DATE SUBMITTED: February 15, 2023
SUBMITTED BY: Jan Fletcher, City Clerk

Summary:

The following minutes are submitted for approval:

- Regular Commission Meeting of February 6, 2023

Fiscal Impact:

Reviewed By: _____
Finance Department

N/A

Attachments:

Minutes as referenced under "Summary".

Legal Review:

Approved As To Form: _____
City Attorney

Recommendation:

Motion to approve the minutes as presented.

Approved For Submittal By:

_____
Department Director

_____
City Manager

CITY CLERK'S USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____
Ordinance No. _____
Approved _____
Other _____

Continued To: _____
Referred To: _____
Denied _____
File No. _____

Minutes of the regular meeting of the Hobbs City Commission held on Monday, February 6, 2022, in the City Commission Chamber, 200 East Broadway, 1st Floor Annex, Hobbs, New Mexico. This meeting was also available to the public via Livestream on the City's website at www.hobbsnm.org with audio only. The City experienced Livestream video difficulties at the beginning of the meeting and the electronic voting system did not function. Mayor Cobb stated votes would be taken verbally and the meeting would continue as viewers could listen to the meeting via Livestream.

Call to Order and Roll Call

Mayor Sam Cobb called the meeting to order at 6:00 p.m. and welcomed everyone to the meeting. The City Clerk called the roll and the following answered present:

Mayor Sam D. Cobb
Commissioner R. Finn Smith
Commissioner Christopher Mills
Commissioner Larron B. Fields
Commissioner Joseph D. Calderón
Commissioner Dwayne Penick
Commissioner Don Gerth

Also present:
Manny Gomez, City Manager
Efren Cortez, City Attorney
Valerie Chacon, Deputy City Attorney
August Fons, Police Chief
Shane Blevins, Deputy Police Chief
Danny Garrett, Police Captain
Marina Barrientes, Police Captain
Chad Wright, Police Captain
Barry Young, Fire Chief
Mark Doporto, Deputy Fire Chief
Kevin Shearer, Fire Battalion Chief
Toby Spears, Finance Director
Nicholas Goulet, Human Resources Director
Bob Hamilton, Acting Library Director
Bobby Arther, Municipal Judge
Tim Woomer, Utilities Director
Shelia Baker, General Services Director
Todd Randall, City Engineer
Julie Nymeyer, Executive Assistant
Bryan Wagner, Parks and Open Spaces Director
Matt Hughes, Rockwind Golf Course Superintendent
Doug McDaniel, Recreation Director
Christa Belyeu, I.T. Director
Amanda Ponce, GIS Technician
Kristen Salas, Clerk Record Specialist
Mollie Maldonado, Deputy City Clerk
19 citizens

Invocation and Pledge of Allegiance

Commissioner Fields delivered the invocation and Commissioner Gerth led the Pledge of Allegiance.

Approval of Minutes

Commissioner Smith moved the minutes of the regular meeting of January 3, 2023, be approved as written. Commissioner Gerth seconded the motion and the vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried.

Proclamations and Awards of Merit

None.

Public Comments

Mr. Tracy Grimmett expressed concern to the Commission regarding loud noise in the area of the business location of Prestige Car Wash, especially during the late hours of the night. Mayor Cobb stated Mr. Manny Gomez, City Manager, would assist and look into the matter.

Consent Agenda

Mayor Cobb explained the process for the consent agenda which is reserved for items which are routine when the agenda is lengthy. He stated any member of the Commission may request an item to be transferred to the regular agenda from the consent agenda without discussion or vote.

Commissioner Calderón moved for approval of the following Consent Agenda item(s):

Resolution No. 7303 – Approving the FY 2023 DFA 2nd Quarter Financial Report

Resolution No. 7304 – Approving the FY 2023 DFA 2nd Quarter Financial Report for Lodgers' Tax

Resolution No. 7305 – Determining that Certain Properties are Ruined, Damaged and Dilapidated Requiring Removal from the Municipality (818 West Gold)

Resolution No. 7306 – Authorizing the Appointment of Rachael Moon to the Community Affairs Board; Appointment of Richard Duran to the Veterans Advisory Board; and Appointment of Terry Sowell to the Lodgers' Tax Board

Resolution No. 7307 – Authorizing the Submission of a Grant Application with the Department of Homeland Security Federal Assistance to Firefighter Grant Program to Purchase P25 Compliant Portable Radios

Resolution No. 7308 – Voiding Resolution No. 7263 Concerning the Final Plat Approval of the Liberty Crossing Subdivision, Unit 2

There being no discussion, Commissioner Gerth seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried. Copies of the resolutions and supporting documentation are attached and made a part of these minutes.

Discussion

Mr. August Fons, Police Chief, presented a summary of activities for the Hobbs Police Department for FY 2022-2023. He outlined the mission statement and philosophy of the Hobbs Police Department. Chief Fons reviewed the operating budget and current staffing status of the department. He also reviewed the department organization and structure along with crime trends, statistical data and response. Chief Fons stated community outreach and engagement are important aspects in an effective response to crime which has become a priority of the department. Chief Fons also reviewed the goals and objectives of the divisions and department for FY 2023-2024. A copy of the PowerPoint Presentation is attached to these minutes for reference.

Action Items

Resolution No. 7309 – Approving a Development Agreement with ALJO, LLC, Concerning the Development of Market Rate Single-Family Housing

Mr. Kevin Robinson, Planning Director, stated ALJO, LLC has requested a Development Agreement concerning the development of single-family housing units located within the municipal boundaries. The developer proposes to produce market rate single family units and is requesting infrastructure incentives of $100,000.00.

Following a brief discussion, Commissioner Penick moved that Resolution No. 7309 be adopted as presented. Commissioner Fields seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried. Copies of the resolution and supporting documentation are attached and made a part of these minutes.

Resolution No. 7310 – Authorizing an Inter-Governmental Agreement Between the City of Hobbs and the State of New Mexico Motor Vehicle Division for Operation of the Local Motor Vehicle Department

Mr. Toby Spears, Finance Director, stated the City works as an agent for the State Taxation and Revenue Department, Motor Vehicle Division, for operation of the local Motor Vehicle Department and the existing contract between the parties is expiring. He explained the provisions of a proposed new contract with the State for a term from the current date until December 31, 2027. Mr. Spears stated the total trust collection by the City for the State is approximately $4,750,000.00 annually. Approximately 25,000 transactions are conducted at the local office with many other now being conducted using an online service. A local option fee of $4.00 per transaction is charged to customers which the City retains and the State pays the City a fee imposed by State Statute for each type of transaction. Overall, the operational budget for the local office is approximately $617,846.00 with a revenue offset of $440,000.00.

Commissioner Mills stated he is fine with approving the contract as written but the City should consider a long term plan to avoid duplication of services offered by the private sector and to avoid providing services for the State during a time of declining revenue.

There being no further discussion, Commissioner Smith moved that Resolution No. 7310 be adopted as presented. Commissioner Fields seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried. Copies of the resolution and supporting documentation are attached and made a part of these minutes.

Resolution No. 7311 – Adopting the Recommendation of the Veterans Advisory Board Related to Procedures for Commemorative Bricks Located at the Hobbs Veterans Memorial Park HAAF

Mr. Barry Young, Fire Chief, stated he has the pleasure of serving as the City Staff Liaison to the City of Hobbs Veterans Advisory Board ("Board"). He stated Commissioner Penick serves as the Commissioner Liaison to the Board. Chief Young recognized the members of the Board as follows: Mr. Michael Mings, Mr. Clarence Benford, Mr. Ramon Cruz, Mr. Mark Bowman and the newest member appointed tonight, Mr. Richard Duran. Chief Young recognized the persistence and hard work of Mr. Robert Lujan, a member of the Board who recently passed away, who was an advocate for all Veterans.

Chief Young stated the Board met on August 17, 2022 to determine eligibility, fees, brick locations, brick layout and the name of the path at the Hobbs Veterans Memorial Park. The Board voted unanimously to limit eligibility to all veterans, living or deceased, who live or have lived in Lea County, or who lived in Lea County at the time of entry into the service or at the time of separation, and who have received an honorable or medical discharge after having served at least 90 days of continuous active duty. He stated the Board voted unanimously to make the bricks free of charge for all eligible persons with a suggested donation of $50.00. He further explained the Board unanimously voted to require bricks to be laid twice per year, on memorial Day and Veterans Day, and the brick path will start at the U.S. flag on the east side of the

park and progress west. Chief Young stated the bricks are to have four lines placed to include: name, branch and rank, war and years, and Lea County hometown (or town lived when served). The board also voted unanimously to name the brick path the "Veterans Path of Freedom".

There being no discussion, Commissioner Penick moved that Resolution No. 7311 be adopted as presented. Commissioner Mills seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried. Copies of the resolution and supporting documentation are attached and made a part of these minutes.

PUBLICATION: Proposed Ordinance Amending Section 15.04.020 of the Hobbs Municipal Code to Incorporate the 2021 International Fire Code

Chief Young stated the City of Hobbs Building Code was adopted in Chapter 15.04 of the Hobbs Municipal Code. It authorizes the City Building Official to issue orders in conjunction with the Fire Marshal in accordance with the applicable provisions of the City's Fire Code. Currently, Section 15.04.020 incorporates the 2006 Edition of the International Fire Code, which was adopted by the Hobbs City Commission in January of 2017. On January 17, 2017, the City Commission adopted the "2015 Edition" of the International Fire Code. The City of Hobbs Fire Department, including the Fire Marshal's Office, believes a change to the 2021 International Fire Code would allow the Department to proactively address fire concerns that are not contemplated by the 2015 International Fire Code.

A brief discussion was held with comments by Mr. Efren Cortez, City Attorney, Mr. Shawn Williams, Fire Marshal, Mr. Adam Marinovich, Fire Captain, and Mr. Tony Alarcon, Fire Inspector. In response to Commissioner Gerth's question, Captain Marinovich stated changes to an existing business would not be required unless more than 50% of the location is renovated.

There being no further discussion, Commissioner Gerth moved the Commission publish notice of its intent to adopt the ordinance at a later date. Commissioner Penick seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. The motion carried. A copy of the proposed ordinance is attached and made a part of these minutes.

PUBLICATION: Proposed Ordinance Amending Chapter 8.32 of the Hobbs Municipal Code Amending the City's Fire Code Ordinance

Chief Young stated the City Commission adopted the "2015 Edition" of the International Fire Code in 2017 via Ordinance No. 1099. The City of Hobbs Fire Department, including the Fire Marshal's Office, believes a change to the 2021 International Fire Code would allow the Department to proactively address fire concerns that were not contemplated by the 2015 International Fire Code.

In response to Commissioner Smith's question, Fire Captain Marinovich stated there is no grandfather clause.

Mr. Cortez explained three changes to the proposed ordinance in Chapter 8.32.010, 8.32.040 and 8.32.070 of the ordinance. In Section 8.32.010, the words "along with" will be removed and replaced with the word "except". In Sections 8.32.040 and 8.32.070, minor changes were suggested related to numbering.

Commissioner Mills moved to accept the amendments to the proposed ordinance as recommended by the Legal Department. Commissioner Penick seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes.

Commissioner Penick moved the Commission publish notice of its intent to adopt the ordinance at a later date. Commissioner Smith seconded the motion and roll call vote was recorded as follows: Smith yes, Penick yes, Calderón yes, Cobb yes, Fields yes, Mills yes, Gerth yes. A copy of the proposed ordinance is attached and made a part of these minutes.

COMMENTS BY CITY COMMISSIONERS, CITY MANAGER

Mr. Manny Gomez, City Manager, stated Coffee with Cops will be held on Wednesday, February 8, 2023, from 7:30 to 9:00 a.m. at the Holiday Inn Express. He encouraged everyone to attend.

Mr. Gomez stated the Super Bogey Bowl 2023 will be held on Saturday, February 11, 2023, at the Rockwind Community Links with a shotgun start at 10:00 a.m.

Mr. Gomez stated the Monster Truck Show would be held at the Lea County Event Center on February 11, 2023, and is sponsored by the City of Hobbs Lodgers' Tax.

Mr. Gomez reminded citizens of the Father-Daughter Dance which will be held on Saturday, February 18, 2023, at 5:30 p.m. and 8:00 p.m. at the CORE.

Mr. Gomez recognized the staff of the Senior Center for providing excellent service to the seniors of the community. He stated a citizen contacted the City regarding the professionalism and service of the department.

Commissioner Gerth stated the City needs to address 18-wheel vehicles parking in residential neighborhoods.

Commissioner Mills agreed and stated the City should be able to draft a suitable ordinance which will address the parking issue.

Commissioner Fields thanked the Hobbs Police Department for the report and information provided during tonight's meeting.

Commissioner Fields stated he had a great trip to Santa Fe for the Evening with Lea County hosted by the Economic Development Corporation of Lea County.

Commissioner Calderón stated he attended a School Board Institute held in Santa Fe last week. He also recognized Senator Kernan for all the work she does at the State Legislature. He commented she is very highly respected among her peers.

Commissioner Penick thanked City Staff for all of their hard work. He thanked Chief Fons for the new leadership at the Police Department.

Commissioner Smith thanked Fire Chief Young and Police Chief Fons for their work on Tuesday during the double pedestrian fatality that occurred on Apache.

Mayor Cobb also commended City staff for their hard work.

Adjournment

There being no further business or comments, Commissioner Smith moved that the meeting adjourn. Commissioner Gerth seconded the motion and the vote was recorded as follows: Smith yes, Mills yes, Fields yes, Calderón yes, Penick yes, Gerth yes, Cobb yes. The motion carried. The meeting adjourned at 7:20 p.m.

SAM D. COBB, Mayor

ATTEST:

JAN FLETCHER, City Clerk

PROCLAMATIONS

AND

AWARDS OF MERIT

February Milestones 2023

5 years

Jason Ulrich	Water Distribution	02/13/2018
Elena Dominguez	CORE	02/12/2018
Lyndsey Henderson	CORE	02/26/2018

10 years

RP Hopper	HPD	02/04/2013

15 years

Carol Gober	Meters & Service	02/06/2008
Royce Finney	Streets/Highways	02/04/2008
Amanda Gonzales	Police Detention/Jail	02/11/2008

25 years

Wade Whitehead	POSD	02/23/1998

CONSENT AGENDA

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21, 2023

SUBJECT: Bid 1603-23; Furnish Polyelectrolyte Coagulant Aids
DEPT. OF ORIGIN: Utilities
DATE SUBMITTED: February 13, 2023
SUBMITTED BY: Tim Woomer, Utilities Director

Summary:

- Polyelectrolyte coagulant aids (polymer) are utilized at the waste water reclamation facility for dewatering of biosolids prior to stabilization and thermal drying.
- Bid 1603-23 to furnish Polyelectrolyte Coagulant Aids (polymer) advertised on January 15, 2023.
- Of the four (4) vendors sent bid packets, one (1) response was received, with the single bid from the firm of Polydyne, Inc. Trial testing of the respective Vendor's polymers has been conducted based on the bid criterion and the respective Vendors annual costs were calculated using 2022 biosolids volumes.

Centrifuge Injection Point (800 tons)

- Polydyne Inc. (50.0 lbs/ton x 800 tons @ $1.85/lb) = $74.000.00

Projected Total Annual Cost

- Polydyne Inc. **$74,000.00**

Fiscal Impact: $74,000.00 (NMGRT not applicable) *Reviewed By:* _____ *Finance Department*

Budgeted at $120,000,000 for FY 2022-23 under 634375-42337.

Attachments:

Bid 1603-23 and supporting documentation

Legal Review: *Approved As To Form:* Efren A. Cortez _____ *City Attorney*

Recommendation:

Award Bid 1603-23 to Furnish Polyelectrolyte Coagulant Aids to Polydyne Incorporated in the amount of $74,000.00 (NMGRT exempt).

Approved For Submittal By:

_____ *Department Director*

_____ *City Manager*

CITY CLERK'S USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____ Continued To: _____
Ordinance No. _____ Referred To: _____
Approved _____ Denied _____
Other _____ File No. _____

CITY OF Hobbs NEW MEXICO

PROFESSIONAL SERVICES AGREEMENT

THIS CONTRACT is made the ____ day of _____, 20___, by and between the City of Hobbs, New Mexico, a municipal corporation located in Lea County, New Mexico (hereinafter referred to as "City") and Polydyne Inc., an independent contractor with a business address of 1 Chemical Plant Road, Riceboro, GA 31323 (hereinafter referred to as "Contractor").

This Contract (hereinafter referred to as "Agreement") is a:

☐ **Category 1 Contract**: ($0 – not to exceed $20,000.00). Purchasing requires good faith efforts to acquire the materials or services at the best obtainable price.

☐ **Category 2 Contract**: ($20,000.00 - not to exceed $75,000.00). Purchasing requires three (3) written quotes turned in to the Central Purchasing Office.

☑ **Category 3 Contract**: ($75,000.00 and over). Purchasing requires formal sealed bids or competitive sealed proposals through the Central Purchasing Office.

☐ **Professional Services Contract under $75,000.00**. Purchasing requires the direction of the City Manager.

☐ **Professional Services Contract $75,000.00 and over**. Purchasing requires the direction of the City Manager with City Commission approval, subject to the competitive sealed proposal requirements.

☐ **Exempt Contract under $75,000.00**. Purchasing requires the direction of the City Manager.

☐ **Exempt Contract $75,000.00 and over.** Purchasing requires the direction of the City Manager with City Commission approval.

The parties to this Agreement, in consideration of their mutual promises, agree as follows:

1. SCOPE OF SERVICES

Provide Polyelectrolyte Coagulant Aids (polymer) at $1.85/pound delivered to the City of Hobbs WWRF per Bid 1603-23.

2. STATUS OF CONTRACTOR

Contractor acknowledges that its relationship with City is that of an "independent contractor." Therefore, Contractor shall not be considered an employee or agent of City, nor shall Contractor be eligible to accrue leave, retirement benefits, insurance benefits, use of City vehicles, or any other benefits provided to City employees. Contractor agrees not to purport to bind City of Hobbs unless the Contractor has express written authority to do so, and then only within the strict limits of that authority. Contractor further acknowledges that no benefits pursuant to the Worker's Compensation Laws of the State of New Mexico are available to them for the services contemplated herein. Contractor shall be responsible for securing all licenses and registrations related to their business prior to commencing any work under this Agreement. Contractor shall be solely responsible for all taxes and related reporting requirements. City shall have no liability for the payment of taxes other than gross receipts taxes to be calculated in Contractor's invoices.

3. CONTRACT TERM AND TERMINATION

This Agreement shall be effective from date of execution (as noted on page 1 of this Agreement) and shall end upon completion of all services contemplated herein and final payment for said services, or one year from the date of execution, whichever occurs first. This Agreement may be renewed for up to three additional one-year terms upon written approval from both City and Contractor prior to the expiration of any one-year term. This Agreement may be terminated by either party, at any time with or without cause, upon a minimum of thirty (30) days' advanced written notice to the other party. Except as otherwise allowed or provided under this Agreement, City's sole liability upon such termination shall be to pay for acceptable work performed prior to Contractor's receipt of the notice of termination, if City is the terminating party, or Contractor's sending of the notice of termination, if Contractor is the terminating party; provided, however, that a notice of termination shall not nullify or otherwise affect either party's liability for pre-termination defaults under, or breaches of, this Agreement. Contractor shall submit an invoice for such work within thirty (30) days of receiving or sending the notice of termination. Furthermore, City reserves the right to immediately cancel this Agreement if Contractor violates any provision specifically outlined in Paragraph 10 of this Agreement.

4. PRICE

City shall pay Contractor a total of $ Per contract pricing inclusive of New Mexico gross receipts taxes. Contractor shall be responsible for paying all costs associated with performance of duties, including but not limited to, mileage and "wear and tear" of vehicles, and costs of equipment necessary to perform services. Contractor shall submit a monthly invoice for services performed in any given month. Upon receipt of any invoice, City shall render payment for said invoice as soon as practical within fifteen (15) days. If payment is made by mail, the payment shall be deemed tendered on the date it is postmarked. However, City shall not incur late charges, interest, or penalties for failure to make payment within the time specified herein. Contractor and City shall both be required to keep detailed records regarding the services rendered. In the event City disputes an invoice, Contractor shall provide City with records regarding all services rendered. Contractor shall remit all invoices to ATTN: Accounts Payable, 200 E. Broadway Street, Hobbs, NM 88240.

Parties agree that the aggregate amount contemplated by this Agreement, including all contemplated gross receipts taxes, shall not exceed $ Per contract pricing. All amounts contemplated herein shall include all necessary labor, equipment, materials and all other costs necessary to complete the project as specified herein. Approval and acceptance of Contractor's satisfactory completion of the project shall be a prerequisite to final payment. Nothing contained in this Agreement shall be construed by Contractor as guaranteeing Contractor any minimum amount of work. Contractor, upon final payment of all amounts due under this Agreement, releases City and its officers and employees from all liabilities, claims and obligations whatsoever arising from or under this Agreement. No guarantee of future contracts will be granted to any Contractor.

The terms of this Agreement are contingent upon sufficient appropriations and authorization being given by the City of Hobbs' City Commissioners for the performance of this Agreement. If sufficient appropriations and authorization are not given by the City of Hobbs' City Commissioners, this Agreement shall terminate immediately upon written notice being given by City to Contractor. City's decision as to whether sufficient appropriations are available shall be accepted by Contractor and shall be final. If City proposes an amendment to this Agreement to unilaterally reduce funding, Contractor shall have the option to terminate this Agreement or in its alternative, to agree to the reduced funding within thirty (30) days of receipt of the proposed amendment.

5. INSURANCE REQUIREMENTS

Contractor shall maintain insurance coverage through the duration of this Agreement. Contractor shall provide City with a certificate of insurance coverage for General Liability (GL) in a minimum amount of $ 1,000,000.00 per occurrence, and naming City as an additional insured. The insurance required herein shall be primary and shall be attached hereto as "Exhibit A."

6. INDEMNITY AND HOLD HARMLESS

Contractor shall indemnify, defend and hold City, the City Commission of the City of Hobbs, its individual commissioners, its officers, employees and agents, past or present, harmless from any and all causes of action, suits, claims, judgments, losses, costs, expenses, and liens of every kind and nature, including, but not limited to court costs and attorney's fees, arising or alleged to have arisen due to negligence of Contractor, or any employees working under Contractor, while engaged in the performance of this Agreement, or for Contractor's failure to render services, or any breach of this Agreement. Indemnification shall survive the expiration of this Agreement.

City shall not be liable to Contractor, or Contractor's successors, heirs, agents, administrators, or assigns, for any loss, damage, or injury, whether to Contractor's person or property, occurring in connection with Contractor's performance of Contractor's duties according to this Agreement. Contractor shall hold City harmless from all loss, damage, and injury, including court costs and attorney fees, incurred by City in connection with the performance by Contractor of Contractor's duties according to this Agreement.

7. FACILITY AND EQUIPMENT—SAFETY

Contractor shall report any unsafe conditions prior to the commencement of any activity. Commencement of activity by the Contractor constitutes agreement as to the safety of the premises. Contractor is responsible for supervision of all participants so as to conduct the services in a safe and orderly manner. Contractor shall be solely responsible for the safety of any of their employees, affiliates, associates, or subcontractors. City is not required to provide storage for Contractor's equipment or materials.

8. BACKGROUND CHECK

Contractor is subject to a background check prior to providing services. By signing this Agreement, the Contractor is certifying that they have reviewed criminal background histories of each and every employee, assistant and/or agent working for Contractor. Contractor further certifies that no person with a history of sexual or violent offenses is in Contractor's employ in any fashion. Employees, assistants and/or agents who are minors (under 18 years old) shall be supervised by an adult in Contractor's employ at all times.

9. DRUG-FREE WORKPLACE

City seeks to provide a safe and productive work environment that is free from impaired performance caused by the use of alcohol, controlled substances, and/or medications. The Contractor agrees to maintain such an environment.

10. RULES, REGULATIONS, AND CARE

Contractor shall treat all individuals and City employees with respect and will not subject anyone to discrimination or harassment because of the person's race, color, sexual orientation, national origin, age, religion, gender, gender identity, or disability. Contractor shall use all reasonable care so as to not damage, or authorize any other person/entity, to damage the property of City. In the event that any City-owned property, whatsoever, is damaged or destroyed due to the negligence or acts of omissions of the Contractor, or any agent of Contractor, Contractor shall replace or repair the damage at no cost to City. City shall determine the existence of any damage and provide Contractor with an estimate of repair or replacement costs. Damage shall be repaired or replaced by Contractor to the reasonable satisfaction of City within thirty (30) days of receipt of written notification from City. If Contractor fails or refuses to make such repair or replacement, the Contractor shall be liable for the cost, which may be deducted from payments provided for in this Agreement. City reserves the right to immediately cancel the Agreement if the Contractor violates any provision herein.

11. NOTICE

All notices given pursuant to or in connection with this Agreement shall be made in writing and posted by regular mail, postage prepaid, to City, ATTN: Accounts Payable, City Hall, 200 E. Broadway Street, Hobbs, NM 88240 and to Contractor at 1 Chemical Plant Rd, Riceboro, GA 31323 or to such other address as requested in writing by either party. Notice shall be deemed to be received on the fifth day following posting.

12. CONFLICT OF INTEREST AND GOVERNMENTAL CONDUCT ACT

A. Contractor represents and warrants that it presently has no interest and, during the term of this Agreement, shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance or services required under the Agreement.

B. Contractor further represents and warrants that it has complied with, and, during the term of this Agreement, will continue to comply with, and that this Agreement complies with all applicable provisions of the Governmental Conduct Act, Chapter 10, Article 16 NMSA 1978. Without in anyway limiting the generality of the foregoing, the Contractor specifically represents and warrants that:

1) in accordance with NMSA 1978, Section 10-16-4.3, Contractor does not employ, has not employed, and will not employ during the term of this Agreement any City employee while such employee was or is employed by City and participating directly or indirectly in City's contracting process;

2) this Agreement complies with NMSA 1978, Section 10-16-7(B), because (i) Contractor is not a public officer or employee of City; (ii) Contractor is not a member of the family of a public officer or employee of City; (iii) Contractor is not a business in which a public officer or employee or the family of a public officer or employee has a substantial interest; or (iv) if Contractor is a public officer or employee of City, a member of the family of a public officer or employee of City, or a business in which a public officer or employee of City or the family of a public officer or employee of City has a substantial interest, public notice was given as required by NMSA 1978, Section 10-16-7(B), and this Agreement was awarded pursuant to a competitive process;

3) in accordance with NMSA 1978, Section 10-16-8(C), (i) Contractor is not, and has not been represented by, a person who has been a public officer or employee of City within the preceding year and whose official act directly resulted in this Agreement and (ii) Contractor is not, and has not been assisted in any way regarding this transaction by, a former public officer or employee of City whose official act, while in City employment, directly resulted in City making this Agreement;

4) in accordance with NMSA 1978, Section 10-16-13, Contractor has not directly participated in the preparation of specifications, qualifications or evaluation criteria for this Agreement or any procurement related to this Agreement; and

5) in accordance with NMSA 1978, Section 10-16-3 and Section 10-16-13.3, Contractor has not contributed, and during the term of this Agreement shall not contribute, anything of value to a public officer or employee of City.

C. Contractor's representations and warranties in Paragraphs A and B of this Section 12 are material representations of fact upon which City relied when this Agreement was entered into by the parties. Contractor shall provide immediate written notice to City if, at any time during the term of this Agreement, Contractor learns that Contractor's representations and warranties in Paragraphs A and B of this Section 12 were erroneous on the effective date of this Agreement or have become erroneous by reason of new or changed circumstances. If it is later determined that Contractor's representations and warranties in Paragraphs A and B of this Section 12 were erroneous on the effective date of this Agreement or have become erroneous by reason of new or changed circumstances, in addition to other remedies available to City and notwithstanding anything in the Agreement to the contrary, City may immediately terminate the Agreement.

D. All terms defined in the Governmental Conduct Act have the same meaning in Section 12(B).

13. MISCELLANEOUS PROVISIONS

Contractor shall not assign or transfer any interest in this Agreement or assign any claims for money due or to become due under this Agreement without the prior written approval of City.

Contractor shall not subcontract any portion of the services to be performed under this Agreement without the prior written approval of City. No such subcontract shall relieve the primary Contractor from its obligations and liabilities under this Agreement, nor shall any subcontract obligate direct payment from City. In all cases, Contractor is solely responsible for fulfillment of this Agreement. Duly authorized representatives for City shall have the right to direct and inspect the work under this Agreement.

If any part of this Agreement is found to be in violation of the laws or Constitution of New Mexico, only such part thereof shall be thereby invalidated, and all other parts of this Agreement shall remain valid and enforceable.

This Agreement is governed by the laws of the State of New Mexico and will bind and inure to the benefit of City and Contractor, their respective successors and assigns. In the event that Contractor defaults on any term of this Agreement, after reasonable attempts to cure said default, City retains the right to declare this Agreement void. In the event that this Agreement is declared void, neither party shall be obligated to perform further under this Agreement. Jurisdiction and venue relating to any litigation or dispute arising out of this Agreement shall be in the District Court of Lea County, New Mexico, only. Contractor agrees to pay City reasonable costs, including court fees and reasonable attorney's fees, incurred by City in the enforcement of this Agreement, even though City may employee in-house legal counsel.

A party shall be excused from performance under this agreement for any period that the party is directly prevented from performing as a result of an act of God, strike, war, civil disturbance, epidemic, or court order, provided that the party has prudently and promptly acted to take any and all steps that are within the party's control to ensure performance. Subject to this provision, such non-performance shall not be deemed a default or a ground for termination.

In the event that Contractor desires to cancel the scheduled services for any reason, Contractor is responsible for the following:

Contacting City via telephone at Accounts Payable ; **and**
Contacting City via e-mail at tspears@hobbsnm.org .

Any change orders shall be in writing and signed by the parties specifically enumerating the additional work to be performed, change in scope, and/or the cost therein. A party's failure to require strict performance of any provision of this Agreement shall not waive or diminish that party's right thereafter to demand strict compliance with that or any other provision. No waiver by a party of any of its rights under this Agreement shall be effective unless express and in writing, and no effective waiver by a party of any of its rights shall be effective to waive any other rights but the ones delineated in said effective waiver.

If Contractor is other than a natural person, the individual(s) signing this Agreement on behalf of Contractor represents and warrants that they have the legal power and authority to bind Contractor, and that no further action, resolution, or approval from Contractor is necessary to enter into a binding contract.

This Agreement incorporates all of the agreements, covenants and understandings between the parties hereto concerning the subject matter hereof, and all such covenants, agreements and understandings have been merged into this written Agreement. No prior agreement or understanding, oral or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this Agreement.

The foregoing constitutes the entire Agreement between the parties. This Agreement may only be modified through a written amendment signed by both parties.

[Required Signatures on Next Page]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written on the first page of this Agreement.

THE CITY OF HOBBS, NEW MEXICO

Department Head Approval:

_____

Contractor Approval:

_____
Contractor Signature

Account No.: 634375-42337

Finance Director:

_____
Finance Director

City Attorney "as to form" Approval:

_____
City Attorney

City Manager Approval:

_____
City Manager

City Clerk Approval:
City Clerk (Professional Service Contracts over $75,000)

_____
City Clerk

Mayor Approval:
(Professional Service Contracts over $75,000)

_____
Mayor

Bid 1603-23 Bidders List

1. Aqua Ben Corporation
   Attn: Carolyn Pecht
   1390 N. Manzanita Street
   Orange, CA 92867
   Ph: 877-771-6041
   Off: 949-689-4907
   Fax: 714-771-1465
   carpecht@sbcglobal.net

2. SNF Polydyne
   Attn: Bid Department
   1 Chemical Plant Rd.
   Riceboro, GA 31323
   Ph: 281-630-4591
   rjohnson@polydyneinc.com

3. Solenis LLC
   Attn: Christopher Kollman
   2475 Pinnacle Drive
   Wilmington, Delaware 19803
   Ph: 866-337-1533
   Off: 302-531-8443
   cskollman@solenis.com

4. Chemsearch FE
   PO Box 152170
   Irving, Tx 75015-2170
   Ph: 972-438-0563
   Fax: 972-438-0634
   FE.Bids@nch.com

INVITATION TO BID
BID NO. 1603-23

FURNISH POLYELECTROLYTE COAGULANT AIDS

City of Hobbs, New Mexico

Sealed bids will be received by the City of Hobbs, New Mexico, at the office of the Finance Director in City Hall, 200 E. Broadway St., Hobbs, New Mexico 88240 until 2:00 p.m, February 9, 2022 to FURNISH POLYELECTROLYTE COAGULANT AIDS as specified.

At the above time, bids will be publicly opened in the Public Meeting Room B131 in the basement of City Hall and read aloud. Any bid received after the stated time will be returned unopened.

Electronic copies of the specifications may be procured without charge from the office of the City Finance Director. If there are any questions regarding this bid contact Shelly Raulston, sraulston@hobbsnm.org or (575) 397-9244.

In case of ambiguity or lack of clarity in stating proposal prices, the City of Hobbs, New Mexico, reserves the right to adopt the most advantageous thereof, or to reject any or all bids and waive irregularities.

CITY OF HOBBS, NEW MEXICO

_____

Manny Gomez
City Manager

Publication Date: January 15, 2023

Deadline for Site Visit: Febuary 2, 2023

Deadline for Inquires: February 3, 2023

INSTRUCTIONS TO BIDDERS

I. SUBMITTING BIDS: pgs. 10-20 are to be completed in their entirety & to be submitted

A. Sealed bids will be received by the Finance Department, Hobbs, New Mexico, in accordance with the Bid Advertisement. Bidders shall use the bid form included with the specifications. Bid forms must bear the signature of the bidder to be considered. Pursuant to NMSA 1978, § 13-1-191.1 (2006), bidders shall complete the attached Campaign Contribution Disclosure form. Failure of bidders to complete bidding documents in accordance with all instructions provided is cause for the City of Hobbs to reject bids.

B. Bids must be submitted in a sealed envelope with the outside clearly marked: BID NO. 1603-23, FURNISH POLYELECTROLYTE COAGULANT AIDS.

C. All Bids shall be net. Do not include any taxes from which municipalities are exempt. Tax exemption certificates will be furnished, if needed.

D. Resident/Veterans preference – pursuant to sections 13-1-21 & 13-4-2 NMSA 1978, bidders claiming preference must be certified prior to bid opening. Bidder's preference will be taken into consideration, only if the preference number/certificate is stated on the bid form on page 11.

E. It is the bidder's responsibility to deliver his bid to the proper place and at the time designated. The fact that a bid was dispatched will not be considered. The time of bid opening is determined by the clock in Finance Department of the City of Hobbs.

F. Brand name and numbers are for reference only, equivalents will be considered. If bidding "Equivalent," Bidders must be prepared to furnish "Complete Data" upon request, preferably with bid to avoid delay in award.

G. Specifications

1. Specifications on the bid are not meant to exclude any bidder or manufacturer. Where a brand name or equal is indicated, it is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to restrict competition.

2. Exceptions and/or alternatives to specifications and conditions of this bid shall be listed on a separate sheet of paper and attached to the bid. This sheet shall be labeled "Exceptions and/or Alternatives to Specifications and Conditions", and illustrative brochures and specifications shall be included. After examination and comparison of the specifications, the City of Hobbs reserves the right to reject any or all bids.

3. If any bidder is of the opinion that the specifications as written preclude him from submitting a bid, it is requested that his opinion be made known to the City of Hobbs, in writing, AT LEAST FIVE (5) DAYS PRIOR to the bid opening date.

H. NON-Collusion: In signing this bid, the Vendor certifies he/she has not, either directly or indirectly, entered into action in restraint of free competitive bidding in connection with this proposal submitted to the City of Hobbs.

I. NON-DISCRIMINATION: Vendors doing business with the City of Hobbs must be in compliance with the Federal Civil Rights Act of 1964 and Title VII of the Act (Rev.1979), and the Americans with Disabilities Act of 1990, (Public Law 101-336)

J. DEFAULT: The city reserves the right to cancel all or any part of this bid without cost to the City, if the Vendor fails to meet the provisions of this bid and, except as otherwise provided herein, to hold the Vendor liable for any excess cost occasioned by the City due to the Vendor's default. The Vendor shall not be liable for any excess cost if failure to perform the order arises out of causes beyond the control and without the fault or negligence of the vendor, such causes include, but are not restricted to, acts of God , the public enemy, acts of the State or Federal Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather and defaults of subcontractors due to any of the above, unless the City shall determine that the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Vendor to meet the required scheduled delivery. The rights and remedies of the City provided in this paragraph shall not be exclusive and are in addition to any other rights not being provided by law or under this order.

II. SERVICES

A. WARRANTY: The vendor agrees that the supplies or services furnished under this bid shall be covered by the most favorable commercial warranties the vendor gives to any customer for such supplies or services, and that the rights and remedies provided herein shall extend to the City and are in addition to and do not limit any rights afforded to the City by any other clause of this bid. Vendor agrees to honor manufacturer's warranty.

B. The successful bidder shall provide in writing a Certificate of Analysis to include Bulk Viscosity, Non-Volatile Solids, UL Brookfield Viscosity, and Residual Acrylamide for each batch included in an order.

C. The successful bidder shall provide on-site jar testing of polyelectrolyte coagulant aids as required to ensure continued solids removal and flocculant efficiency.

III. AWARD OF CONTRACT

A. The City Commission of the City of Hobbs, New Mexico, reserves the right to waive irregularities in bids, and to reject any or all bids or portions thereof. They may award to the bidder whose bid is deemed to be in the best interest of the City of Hobbs.

B. All bids shall remain open for sixty (60) days after the day of the bid opening.

C. Alternate bids will be considered only if the bidder is successful on the base bid. Offers with two base bids will be disqualified. Base bid must be identified as prime bid.

D. To preclude possible errors and/or misinterpretations, bid prices must be affixed legibly in ink, or typewritten. Corrections or changes must be signed or initialed by bidder prior to scheduled bid opening. Failure to do so will be just cause for rejection of bid.

E. Bids may be withdrawn upon receipt of written request prior to scheduled bid opening for the purpose of making any corrections and/or changes. Such corrections must be properly identified and signed or initialed by bidder. Resubmitting must be prior to scheduled bid opening for consideration.

F. After bid opening, no modifications on bid prices or other provisions of bids shall be permitted. A low bidder alleging a material mistake of fact, after bids have been opened, may be permitted to withdraw the bid upon written request prior to award at the discretion of the Finance Director.

G. This bid will be awarded on a Total Bid basis or Per Line Item.

H. The City of Hobbs reserves the right to reduce or increase the number of units to be purchased upon notification to the successful bidder.

IV. DELIVERY

A. The products shall be delivered to the City of Hobbs Wastewater Reclamation Facility, 1300 S. 5th Street, Hobbs, NM 8820.

V. PAYMENT

A. The City of Hobbs requests one invoice following the delivery of each order. Payment will be made within fifteen (15) days of acceptance of the equipment by the UTILITIES/WWRF DEPARTMENT upon certification that all contract terms have been met.

VI. INSURANCE

A. The successful bidder shall provide City with a Certificate of Liability Insurance including products and completed operations.

General: Bidder shall furnish POLYELECTROLYTE COAGULANT AIDS or polymers for sludge conditioning at the City of Hobbs Wastewater Reclamation Facility.

I. General Information:

1. The City of Hobbs Wastewater Reclamation Facility utilizes liquid polyelectrolyte coagulant aids (polymer) in two-hundred fifty (250) gallon IBC tote-tanks for dewatering of aerobically digested biosolids. The purpose of these specifications is to describe the evaluation procedures and minimum performance criteria for purchase of polyelectrolyte coagulant aids (polymer) to be used in the dewatering of municipal wastewater sludge after undergoing aerobic digestion.

II. Polymer Injection Point:

1. Thickened sludge from the facilities aerobic digesters is drawn at an average concentration of 1.0% (10,000 mg/L) and pumped to two (2) Alfa Laval centrifuges that increase the solids concentration to a minimum solids concentration of 18% (180,000 mg/L) prior to thermal drying. Dilution of the neat liquid polymer at the injection point is via two (2) Velodyne VM-10P-1200E polymer units, which then pump the polymer solution into each respective centrifuges' sludge feed line. Bidder shall complete and submit both the BID DATA SHEET (pg 6), the INVITATION TO BID SHEET (pg 7&8), and provide the quantity of polymer necessary for thickening 0.110 MG (24 hrs @ 76 gallons/min) digested sludge at an average solids concentration of 1.0% (10,000 mg/L) for evaluation purposes.

III. Evaluation Procedure:

1. It shall be the Bidder's responsibility to propose polymer(s) that will meet the minimum performance criteria stated. Award of a purchase order for the twelve(12) month polymer supply will be on the basis of the achieved lowest price per pound of we polymer (bid product) per dry ton of sludge and contingent upon demonstrated performance, in compliance with the minimum criteria stated, when test by the City as follows:

2. At polymer injection point, one centrifuge shall be operated by City personnel and the effectiveness of Vendors polymer shall be evaluated over a period of one day. Centrifuge will be operated for one (1) day, total estimated run time is twenty-four (24) hours.

3. The solids concentration of the dewatered sludge, or polymer injection point, must average a minimum of 18% solids for the test period and average a minimum capture of 95%. Polymer usage for injection point will be based on pound(s) polymer per ton thickened solids, dry weight basis.

4. For evaluation of the lowest qualified bid, Vendor shall deliver enough of the proposed polymer for the respective evaluation period. The polymer shall be of the same content and percent solids concentration as identified on the bid data sheet. The City shall evaluate the polymer performance per the criteria stated above.

5. The polymer manufacturer may use the services of an experienced representative to observe the product evaluation. However, evaluation shall be performed as stated above under the supervision and operation of the City's personnel.

6. The City reserves the right to make minor adjustments to the bid evaluation procedure, when to do so is not prejudicial against any bidder and is likely to result in enhanced economy of operation.

IV. Bid Qualifications:

Each bidder shall meet the following requirements:

1. Bidder is required to provide two current references who can discuss Vendor's product(s) and service and to complete the VENDOR REFERENCES AND EXPERIENCE SHEET (pg 19). Include a brief description of the application, including the name and phone number of contact person who the City of Hobbs shall contact.

2. Provide the product information proposed in the attached BID DATA SHEET (pg 6 thru 8). Including SDS sheets for these products.

3. Bidder is required to make a visit to the City of Hobbs Wastewater Treatment facility to observe the field conditions for the application of the proposed polymer(s), and to complete the CERTIFICATE OF SITE INSPECTION (pg 18). To conduct a site visit, or make arrangement for on-site bench testing of products, Bidder should contact Bill Griffin, Wastewater Reclamation Facility Superintendent at (575) 397-9315.

V. Bid Award:

1. Contract will be awarded to the qualified bidder achieving the lowest price of pounds wet polymer per dry ton of sludge, and upon testing and verification of the bid product's full compliance with these specifications. Preference will be placed on those businesses with current New Mexico Resident Business Certificate or New Mexico Resident Veterans Certificate (13-1-21 and 13-1-22 NMSA 1978).

2. Continued use of the polymer selected per this bid is contingent upon continued performance in compliance with the minimum specification requirements outlined. If for any reason the performance criteria is not met, the City reserves the right to cancel this contract. However, the polymer Supplier shall receive notification at least sixty (60) days prior to contract cancellation during this period, the polymer supplier shall also be given the opportunity to troubleshoot and make suggestions regarding the achievement of satisfactory performance.

BID DATA SHEET-POLYMER INJECTION POINT

(This data sheet must be completed by all Bidders making an offer in response to this Request for Bid and be included with Bidders proposal.)

Polymer Manufacture Polydyne Inc.

Polymer Type Emulsion

Polymer Name/Number CLARIFLOC CE-2119

Minimum Active Solids, % 41%

Maximum Inert Solids % 11.5%

Molecular Weight Range High

Density Range 8.5 - 8.6

Viscosity Range Bulk Viscosity Range - 300 -2000 cps / UL Viscosity - 2.4 - 3.1

Polymer Usage= ~~300~~ 50 lbs/dry ton 300ppm

2000 lbs/ton x polymer gals/min x 8.34 lbs/gal x 60 min/hr x (polymer conc%/100)
lbs/hr dry solids

Capture Rate 98.5 % %

cake% x (feed% - filtrate%) x 100
feed% x (cake% - filtrate%)

CAKE = 17%

AVG. FILTRATE = 220 mg/L x .0220 %

FEED = 12000 mg/L OR 1.2 %

INVITATION TO BID
BID NO. 1603-23
FURNISH POLYELECTROLYTE COAGULANT AIDS

Date: February 3 , 2023

TO: The City of Hobbs, New Mexico

Bid of Polydyne Inc. :

A) A Corporation under the laws of the State of Delaware ; or

B) A partnership consisting of N/A ; or

C) An individual trading as N/A .

The undersigned bidder, pursuant to the foregoing "Notice to Bidders", has carefully examined the instructions to Bidders, this bid form and the Detailed Specifications.

N/A
Veterans Preference Number

N/A
Resident Preference Number

Polydyne Inc.
Company Name

BY: _____
Boyd Stanley, Sr. Vice-President
Type or Print Name

1 Chemical Plant Road
Address

(800) 848-7659 Opt. 2
Telephone Number

Riceboro, GA 31323
City State Zip

ASSISTANT SECRETARY _____
Mark Schlag

NOTE: To be valid, bid must be signed. The signature of a corporation is its president, or an authorized vice president, attested by the secretary. A signature of a partnership must be a valid partner.

Do Not Return Invitation to Bid Form in Case of a "NO BID"

If applicable - bidder acknowledges receipt of the following AMENDMENT(S): None Received
Amendment No:_____ Dated:_____ Amendment No.:_____ Date:_____
Amendment No:_____ Dated:_____ Amendment No.:_____ Date:_____

BID NO 1603-23

FURNISH POLYELECTROLYTE COAGULANT AIDS

EACH OFFEROR MUST COMPLETE THE FOLLOWING STATEMENT:

BID of Polydyne Inc. proposes to furnish the following:
Company Name

ITEM NO.	DESCRIPTION	TOTAL PRICE
1	Pounds wet polymer per dry ton at centrifuge injection point. 50.0 Price/lb wet polymer (as delivered)	$ 1.85/Lb.

TOTAL PRICE $ 1.85/Lb.

***** 1 TOTAL ITEM*****

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 2/3/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

EPIC Insurance Brokers & Consultants
1140 Avenue of the Americas – 8th Floor
New York, NY 10036

CONTACT NAME: Andrea Kim
PHONE (A/C, No, Ext): 212.293-6203 FAX (A/C, No): 212.488.0220
E-MAIL ADDRESS: andrea.kim@epicbrokers.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: IRONSHORE SPECIALTY INSURANCE COMPANY	25445
INSURER B: HARTFORD FIRE INSURANCE COMPANY	19682
INSURER C: HARTFORD ACCIDENT AND INDEMNITY COMPANY	22357
INSURER D:	
INSURER E:	
INSURER F:	

INSURED

Polydyne Inc.
One Chemical Plant Road
PO Box 250
Riceboro GA 31323

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:	Y		IEPICB5ZFB003	12/31/2022	12/31/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$1,000,000 $500,000 $25,000 $1,000,000 $2,000,000 $2,000,000 $
B	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS X HIRED AUTOS SCHEDULED AUTOS X NON-OWNED AUTOS	Y		10ABR30602	12/31/2022	12/31/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$1,000,000 $ $ $ $
A	UMBRELLA LIAB X OCCUR X EXCESS LIAB CLAIMS-MADE DED RETENTION$			IEELCASB5ZFD003	12/31/2022	12/31/2023	EACH OCCURRENCE AGGREGATE $	$5,000,000 $5,000,000 $
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			10WNR30600	12/31/2022	12/31/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
City of Hobbs is included as an Additional Insured where required by written contract with respects to liability arising out of the Named Inured operations as per terms and conditions of the policies.

30 DAY CANCELLATION CLAUSE INCLUDED

CERTIFICATE HOLDER

City of Hobbs
200 E. Broadway - Room 131B
Hobbs, NM 88240

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Andrea Kim

DISCUSSION

ACTION ITEMS

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21, 2023

SUBJECT: **RESOLUTION TO APPROVE THE FINAL PLAN FOR THE TRINITY ESTATES SUBDIVISION, UNIT ONE AS RECOMMENDED BY THE PLANNING BOARD.**

DEPT. OF ORIGIN: Planning Division
DATE SUBMITTED: February 13, 2023
SUBMITTED BY: Kevin Robinson – Planning Department

Summary: The Final Plan for The Trinity Estates Subdivision, Unit One is submitted by Stuard Development, LLC. The subdivision is located northeast of the intersection of El Centro and Calle Grande within the municipal boundaries. The subdivision encompasses +/- 15.53- acres and will contain 56 single family residential lots. The Planning Board consider this item at the February 8, 2023 Special Meeting and voted 4-0 to recommend approval. The Municipality is in receipt of an Engineer of Record Certification concerning the installation of infrastructure as to the approved construction plan set.

Fiscal Impact: *Reviewed By:* _____
Finance Department

The positive impact of the new development and new housing from GRT collections and monthly utility bills of the residents should offset any expenses that the City will incur from the maintenance responsibility of streets, water and sewer lines.

Attachments: Resolution, Final Plan, DRAFT Planning Board Minutes.

Legal Review:

Approved As To Form: Efren A. Cortez
Digitally signed by Efren A. Cortez DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US Date: 2023.02.09 16:51:29 -07'00'
City Attorney

Recommendation:

Approval of the Resolution to approve The Trinity Estates Subdivision, Unit One as recommended by the Planning Board.

Approved For Submittal By:

_____
Department Director

_____
City Manager

CITY CLERK'S USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____ Continued To: _____
Ordinance No. _____ Referred To: _____
Approved _____ Denied _____
Other _____ File No. _____

CITY OF HOBBS

RESOLUTION NO. 7312

A RESOLUTION TO APPROVE THE FINAL PLAN FOR TRINITY ESTATES SUBDIVISION, UNIT ONE AS RECOMMENDED BY THE PLANNING BOARD.

WHEREAS, Stuard Development, LLC has submitted a Final Plan for Trinity Estates Subdivision, Unit One for review by the City Planning Board; and

WHEREAS, the subdivision Final Plan was reviewed and approved by the Hobbs Planning Board at the February 8, 2023 special meeting; and

WHEREAS, the Final Plan for Trinity Estates Subdivision, Unit One was reviewed and found compliant with MC Title 16 by the City of Hobbs Planning Board and the Municipality is in receipt of the Engineer of Record Certification as to the installation of all public infrastructures.

NOW, THEREFORE BE IT RESOLVED BY THE GOVERNING BOARD OF THE CITY OF HOBBS, NEW MEXICO, that

1. The City of Hobbs hereby grants Final Plan Approval to Trinity Estates Subdivision, Unit One as recommended by the Planning Board; and

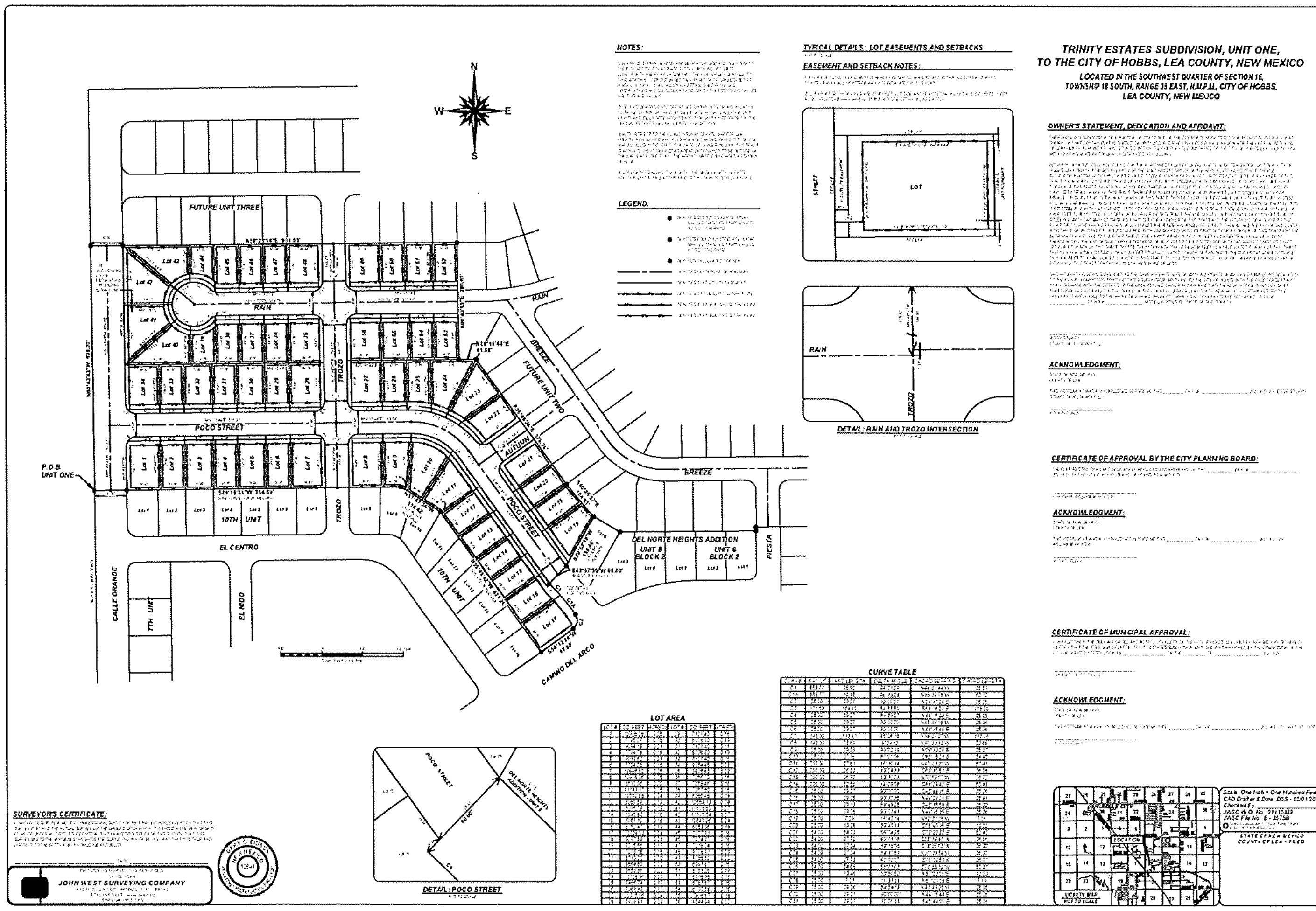
2. The City officials and staff are directed to do any and all acts necessary to carry out the intent of this Resolution.

PASSED, ADOPTED AND APPROVED this 21st day of February, 2023.

SAM D. COBB, Mayor

ATTEST:

JAN FLETCHER, CITY CLERK


TRINITY ESTATES SUBDIVISION, UNIT ONE,
TO THE CITY OF HOBBS, LEA COUNTY, NEW MEXICO
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 16,
TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M., CITY OF HOBBS,
LEA COUNTY, NEW MEXICO
OWNER'S STATEMENT, DEDICATION AND AFFIDAVIT:
ACKNOWLEDGMENT:
CERTIFICATE OF APPROVAL BY THE CITY PLANNING BOARD:
ACKNOWLEDGMENT:
CERTIFICATE OF MUNICIPAL APPROVAL:
ACKNOWLEDGMENT:
NOTES:
LEGEND:
TYPICAL DETAILS: LOT EASEMENTS AND SETBACKS
EASEMENT AND SETBACK NOTES:
DETAIL: RAIN AND TROZO INTERSECTION
DETAIL: POCO STREET
CURVE TABLE
LOT AREA
SURVEYOR'S CERTIFICATE:
JOHN WEST SURVEYING COMPANY
FUTURE UNIT THREE
FUTURE UNIT TWO
RAIN
POCO STREET
TROZO
BREEZE
EL CENTRO
CALLE GRANDE
EL NIDO
FIESTA
CAMINO DEL ARCO
10TH UNIT
7TH UNIT
DEL NORTE HEIGHTS ADDITION
UNIT 8 BLOCK 2
UNIT 6 BLOCK 2
P.O.B. UNIT ONE
VICINITY MAP
NOT TO SCALE
STATE OF NEW MEXICO
COUNTY OF LEA - FILED

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21, 2023

SUBJECT: **RESOLUTION TO APPROVE THE FINAL PLAN FOR THE BENDER TRAILS SUMMARY SUBDIVISION AS RECOMMENDED BY THE PLANNING BOARD.**

DEPT. OF ORIGIN: Planning Division
DATE SUBMITTED: February 13, 2023
SUBMITTED BY: Kevin Robinson – Planning Department

Summary: The Final Plan for The Bender Trails Summary Subdivision is submitted by Property Management Plus, LLC. The subdivision is located northeast of the intersection of East Bender and Thomas within the municipal boundaries. The subdivision encompasses +/- 15.84- acres and will contain 2 Commercial "Tracts" of less than an Acre adjacent to Bender, Tract(s) "A" & "B", and a remainder containing 13.93 Acres, Tract "C". **A Cash Bond is being presented to the City of Hobbs to ensure completion of public infrastructures.** The dollar amount of uninstalled public infrastructure is estimated to be $158,905.00 excluding GRT. The City Engineer has approved the Engineer of Records completion estimate. The Bond has been approved by the Finance Director, City Attorney and the Development Director. The Planning Board consider this item at the February 8, 2023 Special Meeting and voted 4-0 to recommend approval contingent upon submittal of a cash bond in the amount of $158,905.00 to assure completion of all public infrastructures.

Fiscal Impact:

Reviewed By: _____
Finance Department

The positive impact of the new development and new businesses should offset any expenses that the City will incur from the maintenance responsibility of streets, water and sewer lines.

Attachments: Resolution, Final Plan, DRAFT Planning Board Minutes.

Legal Review:

Approved As To Form: Efren A. Cortez
Digitally signed by Efren A. Cortez DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US Date: 2023.02.09 16:53:50 -07'00'
City Attorney

Recommendation:

Approval of the Resolution to approve The Bender Trails Summary Subdivision as recommended by the Planning Board.

Approved For Submittal By:

Kevin Robinson
Department Director

City Manager

CITY CLERK'S USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____ Continued To: _____
Ordinance No. _____ Referred To: _____
Approved _____ Denied _____
Other _____ File No. _____

CITY OF HOBBS

RESOLUTION NO. 7313

A RESOLUTION TO APPROVE THE FINAL PLAN FOR BENDER TRAILS SUMMARY SUBDIVISION AS RECOMMENDED BY THE PLANNING BOARD.

WHEREAS, Property Management Plus, LLC has submitted a Final Plan for Bender Trails Summary Subdivision for review by the City Planning Board; and

WHEREAS, the subdivision Final Plan was reviewed and approved by the Hobbs Planning Board at the February 8, 2023 special meeting; and

WHEREAS, a Cash Bond has been submitted in an amount to secure the placement of all public infrastructures not in place as of this date.

NOW, THEREFORE BE IT RESOLVED BY THE GOVERNING BOARD OF THE CITY OF HOBBS, NEW MEXICO, that

1. The City of Hobbs hereby grants Final Plan Approval to Bender Trails Summary Subdivision as recommended by the Planning Board; and

2. The City officials and staff are directed to do any and all acts necessary to carry out the intent of this Resolution.

PASSED, ADOPTED AND APPROVED this 21st day of February, 2023.

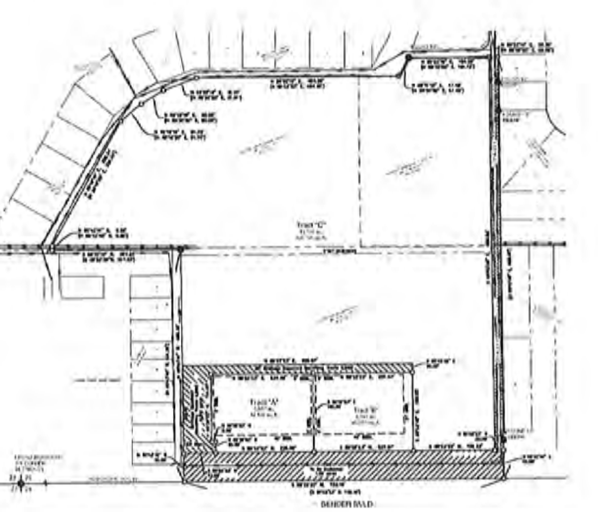
SAM D. COBB, Mayor

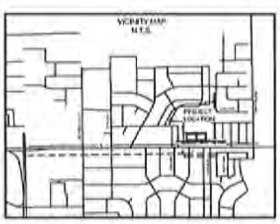
ATTEST:

JAN FLETCHER, CITY CLERK

BENDER TRAILS SUMMARY SUBDIVISION

SE/4 of Section 23, Township 18 South, Range 38 East, N.M.P.M., City of Hobbs, Lea County, New Mexico





LEGEND

BASIS OF BEARING

LEGAL DESCRIPTION TRACT "A"

LEGAL DESCRIPTION TRACT "B"

LEGAL DESCRIPTION TRACT "C"

OWNERS STATEMENT AND AFFIDAVIT

DEDICATION DESCRIPTION BENDER BOULEVARD

ALLEY DESCRIPTION

CERTIFICATE OF APPROVAL BY THE CITY PLANNING BOARD

CERTIFICATE OF MUNICIPAL APPROVAL

SquareRoot services
Engineering | Surveying

SUMMARY SUBDIVISION

OF

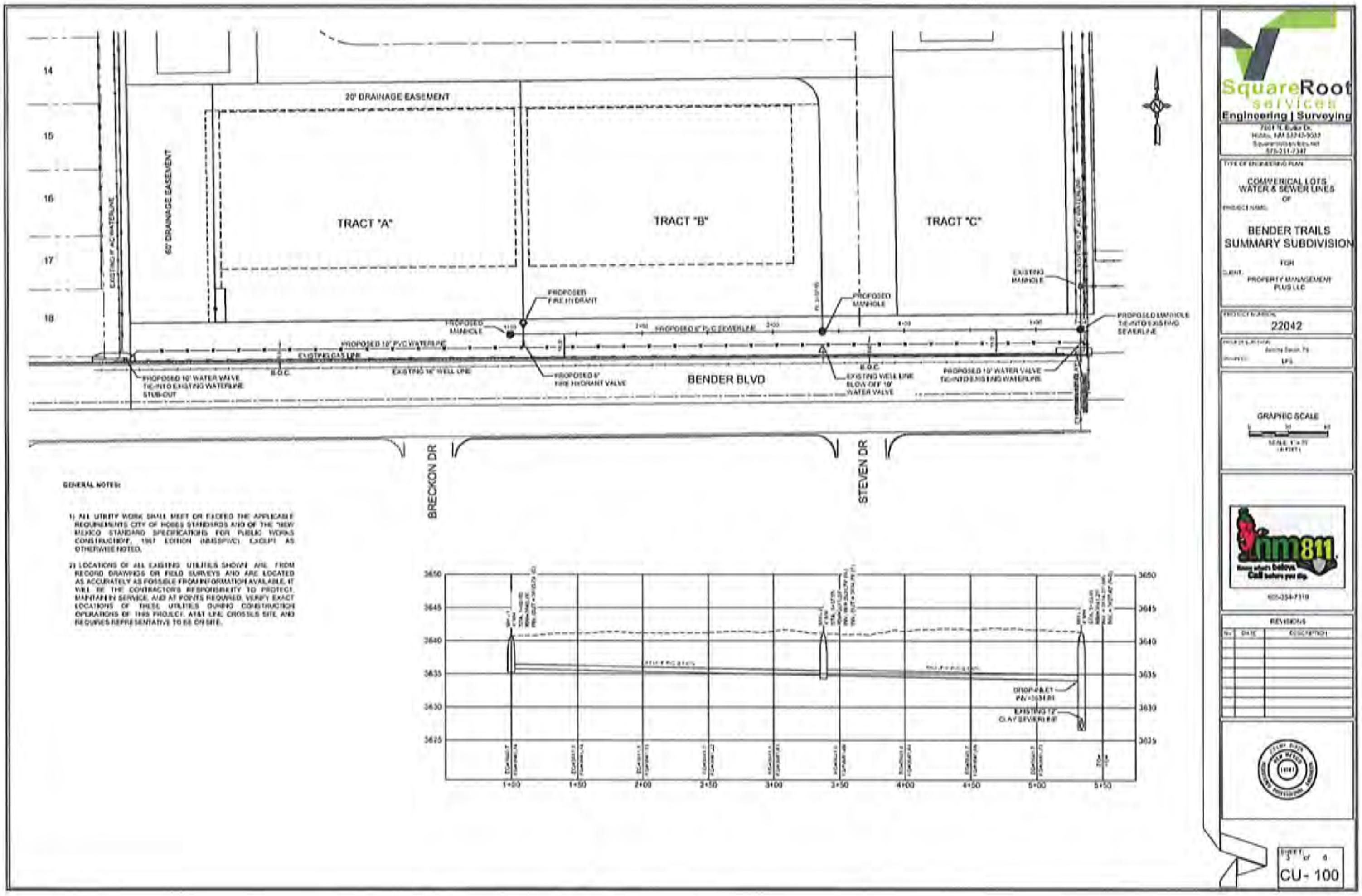
BENDER TRAILS SUMMARY SUBDIVISION

FOR

22042

GRAPHIC SCALE

SU-101



20' DRAINAGE EASEMENT
60' DRAINAGE EASEMENT
TRACT "A"
TRACT "B"
TRACT "C"
14
15
16
17
18
PROPOSED FIRE HYDRANT
PROPOSED MANHOLE
EXISTING MANHOLE
PROPOSED MANHOLE TIE-INTO EXISTING SEWERLINE
PROPOSED 8" PVC SEWERLINE
PROPOSED 10" PVC WATERLINE
EXISTING GAS LINE
EXISTING 16" WELL LINE
E.O.C.
PROPOSED 10" WATER VALVE TIE-INTO EXISTING WATERLINE STUB-OUT
PROPOSED 6" FIRE HYDRANT VALVE
BENDER BLVD
EXISTING WELL LINE BLOW OFF 10" WATER VALVE
PROPOSED 10" WATER VALVE TIE-INTO EXISTING WATERLINE
BRECKON DR
STEVEN DR
GENERAL NOTES:
1) ALL UTILITY WORK SHALL MEET OR EXCEED THE APPLICABLE REQUIREMENTS CITY OF HOBBS STANDARDS AND OF THE "NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", 1997 EDITION (NMSSPWC) EXCEPT AS OTHERWISE NOTED.
2) LOCATIONS OF ALL EXISTING UTILITIES SHOWN ARE FROM RECORD DRAWINGS OR FIELD SURVEYS AND ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT, MAINTAIN IN SERVICE, AND AT POINTS REQUIRED, VERIFY EXACT LOCATIONS OF THESE UTILITIES DURING CONSTRUCTION OPERATIONS OF THIS PROJECT. AT&T LINE CROSSES SITE AND REQUIRES REPRESENTATIVE TO BE ON SITE.
3650
3645
3640
3635
3630
3625
DROP-INLET
EXISTING 12" CLAY SEWERLINE
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
5+00
5+50
SquareRoot services
Engineering | Surveying
COMMERICAL LOTS WATER & SEWER LINES
BENDER TRAILS SUMMARY SUBDIVISION
FOR
PROPERTY MANAGEMENT PLUS LLC
22042
GRAPHIC SCALE
REVISIONS
DATE
DESCRIPTION
CU- 100

squarerootservices.net
7921 N World Dr
Hobbs, NM 88242

SquareRoot services
Engineering | Surveying

February 1, 2023

Via e-mail: krobinson@hobbsnm.org

Kevin Robinson
City of Hobbs
Planning Department.

Re: Bender Trails Summary Subdivision Utilities

Dear Kevin:

I have been asked to prepare an engineer's estimate for the water and sewer lines to be installed for the Bender Trails Summary Subdivision per design by Square Root Services. The Developer, Property Management Plus, has obtained an estimate from a local contractor for said utility work in the amount of $158,905.00.

Having reviewed said estimate, I would agree that this is adequate for the 434 lf of 8" sewer line, 3 manholes, and the 750 lf of 10" waterline with new fire hydrant.

Respectfully submitted,

Jeremy Baker, PE/PS
President/CEO
Square Root Services, LLC

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21st, 2023

SUBJECT: **W. BERRY RECONSTRUCTION – W. BERRY APARTMENTS PROJECT**
DEPT. OF ORIGIN: Engineering Department
DATE SUBMITTED: 2-13-2023
SUBMITTED BY: Todd Randall, City Engineer

Summary:

The City of Hobbs has partnered with YES Housing for the development of low-income multifamily apartments on W. Berry Dr. Between Grimes St. and Cochran St. A minor drainage issue was identified by the City of Hobbs Engineering Dept. and YES Housing during preliminary construction on-site. The issue is that a portion of W. Berry St. has historically drained into the W. Berry Apartments Project site.

In order to partly address the drainage issue Engineering Dept. proposes to reconstruct W. Berry from Cochran St. to the Railroad Right-of-Way and direct drainage flows north, down an adjacent alleyway. YES Housing will address the issue by constructing the alleyway improvements consisting of installing curb & gutter along the west side of the alley and placing asphalt paving along the alleyway. The new drainage path should allow the water to reach Mesa Dr. and Cochran St. rather that crossing the YES Housing W. Berry Apartments Development.

Fiscal Impact:

Reviewed By: Digitally signed by Toby Spears, CFE, CPA DN: cn=Toby Spears, CFE, CPA, o=City of Hobbs, ou=Finance Director, email=tspears@hobbsnm.org, c=US Date: 2023.02.13 13:24:05 -07'00'
Finance

Budget Line:	48-4048-4901 (Misc. Streets / Drainage)	
Budgeted Available:	$373,344	
Cost Subtotal:	$141,133.39	
Cont. / CES Fee:	$25,000.00	
NMGRT:	$11,444.55	(6.6875%)
Total:	**$177,577.94**	

Attachments:

Ramirez & Sons, Inc. Quote & Project Area Map.

Legal Review:

Approved As To Form: Efren A. Cortez Digitally signed by Efren A. Cortez DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US Date: 2023.02.13 13:57:00 -07'00'
City Attorney

Recommendation:

Review and Consider the Award of W. Berry Reconstruction to Ramirez & Sons, Inc. utilizing CES (2023-08-G1113-56)

Approved For Submittal By:

TODD RANDALL Digitally signed by TODD RANDALL DN: C=US, E=trandall@hobbsnm.org, O=CITY OF HOBBS, OU=Engineering Dept, CN=TODD RANDALL Reason: I am approving this document

Department Director

City Manager

CITY CLERKS USE ONLY
COMMISSION ACTION TAKEN

Resolution No. ______	Continued To: ______
Ordinance No. ______	Referred To: ______
Approved ______	Denied ______
Other ______	File No. ______

W. Berry Reconstruction & Alleyway Improvements

Legend

- Alleyway Improvements YES Housing
- W. Berry Reconstruction City of Hobbs
- W. Berry Apartments Site YES Housing

NOTE:
CITY OF HOBBS GIS DATA IS FOR INFOMATIONAL PURPOSES ONLY. PLEASE REFER TO THE CITY OF HOBBS GIS DIVISION DISCLAIMER FOR DATA LIMITATIONS.

THIS MAP IS NOT A SUBSTITUTE FOR A NM 811 ONE-CALL.

150 75 0 150 Feet

PRINTED: 1/12/2023 - 3:40 PM MST

3404 N. Enterprise Dr.
Hobbs, NM 88240
Phone (575) 492-0480

PROPOSAL

RAMIREZ & SONS INC
GENERAL & PAVING CONTRACTORS

PAVILION CONSTRUCTION
2511 BROADBENT PARKWAY NE STE. A
ALBUQUERQUE, NM 87210
PHONE: (503) 290 - 5005
FAX:
E-MAIL:

PAGE: 1
DATE: January 12, 2023
PROJECT: West Berry Apts.
Change Order #5
ESTIMATOR: RUSTY PAYTON/PAT MAGILL
PHONE: 575-605-6946
CONTRACTOR #: NM 83020
E-MAIL: rusty@ramirezandsonsinc.com

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
	QUOTED PRICE(S) ARE ONLY VALID FOR 30 DAYS				
1	Unclassified Excavation	24	CY	$9.54	$228.96
2	Subgrade Preparation	1,661	SY	$2.50	$4,152.50
3	State Base Course, Delivered to Site and Installed	277	CY	$22.10	$6,121.70
4	Asphalt Material for Tack Coat, Complete in Place	0	TON	$1,050.00	$13.65
5	Prime Coat Material, Complete in Place	1,394	SY	$1.69	$2,355.86
6	2" Hot-Mix Asphalt SP IV, Complete in Place	1,394	SY	$17.45	$24,325.30
7	Removal of Asphalt Surfacing	1761	SY	$8.61	$15,162.21
8	Removal of Concrete Curb & Gutter and Valley Gutter	738	LF	$9.79	$7,225.02
9	Removal of 4" Concrete Sidewalk/Ramp	287	SY	$4.89	$1,403.43
10	Removal of 6" Concrete Drive Pad, Sidewalk, Fillet	57	SY	$7.34	$418.38
11	Furnish and Install Cast Iron Detectable Warning Surface	20	SF	$260.00	$5,200.00
12	8" Concrete Slab (Fillet), Complete in Place	32	SY	$10.55	$337.60
13	Concrete Sidewalk 4", Complete in Place	518	SY	$57.33	$29,696.94
14	Concrete Drivepad 6", Complete in Place	154	SY	$82.44	$12,695.76
15	Concrete Mountable Curb & Gutter 6" x 24", Complete in Place	135	LF	$29.76	$4,017.60
16	Concrete Barrier Curb & Gutter, Type A, 6" x 24", Complete in Place	564	LF	$29.76	$16,784.64
17	Concrete Valley Gutter 8" x 60", Complete in Place	66	LF	$48.24	$3,183.84
18	Adjust Manhole to Grade, Complete in Place	3	EA	$720.00	$2,160.00
19	Adjust Owner Funished Valve Box to Grade, Complete in Place	2	EA	$200.00	$400.00
20	Traffic Control Plan & Implementation by Contractor	1	LS	$3,500.00	$3,500.00
21	Construction Staking by Contractor	1	LS	$1,750.00	$1,750.00
	IF P&P REQUIRED AN ADDITIONAL 1.5% FEE				
	DOES NOT INCLUDE EXTRA INSURANCE IE; POLLUTION OR BUILDERS RISK				
	(NO BID BOND INCLUDED) (BY OTHERS: PERMITS, TESTING, LAYOUT, SURVEYING, SEEDING, LANDSCAPING, TEMPORARY FENCE, SWPPP & NO DIGGING OR BACKFILLING OF FOOTINGS)				
	(NO OTHER WORK QUOTED, ANY ITEMS NOT LISTED WILL BE QUOTED SEPERATELY)	*Does Not Include Sales Tax**			**$141,133.39**

NOTES:

1. Add Applicable taxes to price total.
2. This proposal does NOT include: final grading of sidewalk, landscaping, landscape grading, asbestos removal, testing or applicable taxes.
3. We cannot be held responsible for any pavement settlement over utility ditches, trenches, foundations or any other work that has been constructed by others. We will not guarantee hot mix or drainage due to subgrade failure that has been constructed by others.
4. All material is guaranteed to be specified. All work to be completed in a professional manner according to standard practices.
5. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become a change order over and above the estimate.
6. All agreements contingent upon strikes, accident or delay beyond our control. Owner is to carry fire, tornado and all other necessary insurance.
7. Our workers are fully covered by Workers Compensation Insurance.
8. No additional insurance i.e. owners and contractor protective liability, installation and equipment floater, builder's risk, etc. and no retainage per NM State Law, contingency fees and no allowances per work scope.

PAYMENT TERMS

Payment to be made as follows: net amount due upon completion. Interest starts the 30th day from invoice date at the rate of 1.5% per month.

ACCEPTANCE

By signing ,the customer agrees that the above prices, notes, and terms are acceptable and authorizes commencement of work and procurement of materials.

Ramirez and Sons, Inc.

By: _____

Print Name: Rusty Payton

Title: Estimator

Accepted by: _____

By: _____
Print Name:
Title:
Date:

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21st, 2023

SUBJECT: RFP 537-23 2022 Water System & Wastewater Collection System Master Plan
DEPT. OF ORIGIN: Utilities Department
DATE SUBMITTED: 2-10-2023
SUBMITTED BY: Anthony Henry, Deputy City Engineer

Summary:

The City of Hobbs issued Request for Proposal (RFP) 537-23 on September 11, 2022 by advertisement in the Hobbs News-Sun. RFP 537-23 seeks professional engineering services to conduct comprehensive and strategic planning activities in the development of the 2022 Water System and Wastewater Collection System Masterplan for the Hobbs urban area.

The City of Hobbs Finance Department received three (3) separate proposal responses by the proposal deadline of 5:00 p.m. October 11, 2022. The RFP 537-23 evaluation committee ranked each respondent individually and determined that Freese & Nichols, Inc. is the most qualified offeror.

Evaluation Committee Scores:

Freese & Nichols, Inc.	-	**88**
Souder, Miller & Associates	-	**85**
Halff & Associates, Inc.	-	**82**

Fiscal Impact:

Reviewed By: _____ *Finance*

Digitally signed by Toby Spears, CFE, CFA
DN: cn=Toby Spears, CFE, CFA, o=City of Hobbs, ou=Finance Director, email=tspears@hobbsnm.org, c=US
Date: 2023.02.10 10:57:14 -07'00'

Budget Line:	61-4061-44901-00335	
Budgeted:	$300,000	
Fund Reclassification:	$250,000	A fund reclassification from the Waterline Replacement Project account 61-4061-44901-00094 is necessary to fully fund the project.
Revised Budget:	$550,000	
Design Fees:	$426,638	($455,170 including applicable tax)

Attachments:

RFP 537-23 Score Sheet issued by the City of Hobbs Finance Department
Project scoping document, schedule, and cost estimate provided by Freese & Nichols, Inc.

Legal Review:

Approved As To Form: Efren A. Cortez _____ *City Attorney*

Digitally signed by Efren A. Cortez
DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US
Date: 2023.02.10 10:48:32 -07'00'

Recommendation:

Consideration and Approval of RFP 537-23 Contract Award to Freese & Nichols, Inc.

Approved For Submittal By:

Department Director

City Manager

CITY CLERKS USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____ Continued To: _____
Ordinance No. _____ Referred To: _____
Approved _____ Denied
Other _____ File No. _____

RFP No. 537-23 TOTAL SCORE SHEET

Water System & Wastwater Collection System Master Plan	MAX POINTS	FREESE & NICHOLS	HALFF & ASSOCIATES	SOUDER, MILLER & ASSOCIATES
Specialized Design and Technical Competence of the business, including a joint venture or association, regarding the type of services required	25	24	23	23
Capacity and Capability of the business to perform the work, including any specialized services, within the time limitations.	25	23	23	22
Past Recored of Performance on contracts with government agencies and private industry with respect to such factors as control of costs, quality of work, and ability to meet schedules.	20	18	18	17
Proximity to or familiarity with the area in which the project is located	15	13	13	13
The amount of design work that will be produced by New Mexico business within the State OR New Mexico Business with Veterans' Preferenc	10	5	0	5
The volume of work previously done by the entity requesting proposals that is not 75% complete with respect to basic professional design services	5	5	5	5
Totals	100	88	82	85

Scope of Services
Water and Wastewater Master Plan

PROJECT UNDERSTANDING:

The City of Hobbs (City) is engaging Freese and Nichols, Inc. (FNI) to prepare a Water System and Wastewater Collection System Master Plan. The intent of the study is to identify growth within the City's service area and develop system improvements to accommodate the growth. Water and wastewater system hydraulic models will be developed to evaluate existing and future capacity. FNI will develop a comprehensive Capital Improvements Plan for the water and wastewater systems that consists of prioritization of system-wide improvements, recommended phasing, and planning-level cost estimates.

Task A: Project Management and Data Collection

A1. Project Kick-off Meeting: FNI will meet with the City to review project scope, schedule, communication strategy, and data requirements. FNI will develop and submit a data request memorandum to be discussed at the kickoff meeting.

A2. Data Collection: FNI will collect and compile information from the City including previous reports, available GIS and/or AutoCAD files, water production data, wastewater flow data, utility billing data, and SCADA records.

A3. Conduct Facility Evaluation and Staff Interviews: FNI will coordinate with City staff to verify information related to the operation and connectivity of water and wastewater facilities. Interviews with operators or other City staff will be performed as needed to document all available information.

A4. Project Management Activities: FNI will conduct routine project management activities including monthly progress reports, project accounting, invoicing, and project coordination.

Task B: Water Demand and Wastewater Flow Projections

B1. Growth Projections Workshop: FNI will meet with the City to discuss assumptions on future service area boundaries and future land use plan for use in developing future water demand and wastewater flow projections. FNI will solicit input from the City on known developments, redevelopment areas, anticipated densities, and CCN boundary modifications.

B2. Develop Land Use Assumptions: FNI will incorporate assumptions made in the Growth Projections Workshop to develop growth and land use assumptions for existing, 5-year, 10-year and 20-year conditions for the anticipated water and wastewater service area.

B3. Develop Design Criteria for Projections: FNI will evaluate the historical water usage and wastewater flow data to develop existing and future per-capita water demands and wastewater flows, as well as water system peaking factors (maximum day, peak hour) and wastewater system peak wet weather peaking factors. The selected design criteria will be used for future water demands and wastewater flow projections.

B4. Water Demand and Wastewater Flow Projections: Based on the selected design criteria and land use assumptions, FNI will calculate and spatially distribute projected water demands and wastewater flows for existing, 5-year, 10-year and 20-year conditions. Water demands will be determined for average day, maximum day, and peak hour conditions. Wastewater flows will be projected for average daily and peak wet weather conditions.

B5. Progress Meeting #1: FNI will meet with the City to discuss the results of the growth projections, future water distribution system demands, and future wastewater system loading.

Task C: Water System Hydraulic Model Development

C1. Water System Model Build: FNI will utilize the City's existing GIS data to construct a water model. FNI will review as-built drawings and operational data provided by the City to input modeling parameters and network connectivity to accurately represent distribution system assets. FNI will assign attribute data (pipe diameter, pump capacity, tank geometry, elevations, etc.) based on the available information provided by the City. Where data does not exist or cannot be collected, FNI will infer data based on best engineering judgement.

C2. Water Demand Allocation: FNI will utilize data from the City's billing system database to spatially allocate existing demands throughout the service area based on metered water usage. The data will consist of meter location and water consumption for active customer accounts. The meters will be spatially located in GIS so that the associated water usage can be assigned to the appropriate model node.

C3. Conduct Temporary Pressure Testing: FNI will identify locations for field testing based on water model calibration needs and areas of concern from the City. FNI will prepare up to 12 temporary pressure recorders to be installed by City staff. FNI will provide procedures for field testing showing proposed location of testing, duration of testing, and required assistance from City staff. Testing will consist of recording pressure readings for a two-week time period. The City will provide SCADA data and/or manually collected instrument data, including measured pump station flows and tank levels for the duration of the testing period.

C4. Calibrate Hydraulic Model: FNI will conduct an extended period simulation model calibration for the water system model. Available SCADA records, pressure testing data, and pump station flow data will be used to verify the model represents real-world conditions.

C5. Progress Meeting #2: FNI will meet with the City to discuss the results the temporary pressure testing, model development, and model calibration. FNI will address comments provided by the City and incorporate into the hydraulic models.

Task D: Temporary Wastewater Flow Monitoring

D1. Flow Meter and Rain Gauge Site Selection: FNI will identify six (6) locations in the existing system to conduct flow monitoring and two (2) locations for rainfall monitoring for use in calibration of the hydraulic model.

D2. Temporary Flow Monitoring and Analysis: FNI will perform temporary flow and rainfall monitoring for sixty (60) days and analyze gathered data. The flow and rainfall data will be collected at 15-minute intervals for both dry and wet weather flow periods. FNI will develop average daily dry weather flow diurnal curves and hydrographs for wet weather flow conditions by sub-basin based on data from its corresponding flow monitor.

Task E: Wastewater System Hydraulic Model Development

E1. Wastewater System Model Build: FNI will utilize the City's existing GIS data to construct a wastewater model. The model network will consist of pipelines 8-inches and larger and any additional key smaller lines. FNI will review as-built drawings and operational data provided by the City to input modeling parameters and network connectivity to accurately represent collection system assets. FNI will assign

attribute data (pipe diameter, pump capacity, wet well geometry, elevations, etc.) based on the available information provided by the City. Where data does not exist or cannot be collected, FNI will infer data based on best engineering judgement.

E2. Wastewater Flow Allocation: FNI will utilize the geocoded water meter billing data to spatially distribute existing wastewater flows to the nearest model manhole. For wastewater customers that do not receive water service from the City, other available billing data will be used to estimate wastewater flows.

E3. Calibrate Hydraulic Model: FNI will conduct an EPS model calibration for the wastewater system model under average and peak flow conditions. Available SCADA records, field testing, lift station flow data, and treatment reports will be used to verify the model represents real-world conditions.

E4. Progress Meeting #3: FNI will meet with the City to discuss the results of model development and validation. FNI will address comments provided by the City and incorporate into the hydraulic models.

Task F: Water and Wastewater System Evaluation

F1. Evaluate Pumping, Storage, and Production Capacity: FNI will evaluate existing and future distribution pumping capacity with regards to NMED requirements and general industry best practices based on water demand projections. Ground and elevated storage requirements will also be evaluated.

F2. Evaluate Pressure Plane Boundaries: FNI will delineate pressure plane boundaries based on service elevations and operating pressures. Projected water demands will be summarized by pressure plane.

F3. Evaluate Lift Station and Treatment Capacity: FNI will evaluate existing and future pumping capacity at each lift station based on wastewater flow projections. Annual average treatment capacity will also be evaluated to identify regulatory triggers for expansion.

F4. Wastewater Basin Delineation: FNI will determine wastewater basin delineation using GIS data and ground contour mapping. FNI will develop wastewater subbasin delineation representing lift station basins and geographical areas within each sewer basin. Projected wastewater flows will be summarized by sub-basin.

F5. Conduct Existing System Modeling: FNI will conduct extended period simulation hydraulic modeling for existing conditions under average day, maximum day, and peak hour demand conditions for the existing water system. FNI will conduct steady-state hydraulic modeling for existing conditions under average day and peak wet weather flow conditions for the wastewater system.

F6. Fire Flow Assessment: A fire flow simulation will also be conducted to estimate available fire flow with existing maximum day demands.

F7. Progress Meeting #4: FNI will meet with the City to discuss the results of the existing water and wastewater systems analysis. Proposed capacity requirements for pumping, storage, production, and treatment will also be discussed. FNI will solicit feedback from the City and incorporate into the future system modeling.

F8. Conduct Future System Modeling: FNI will conduct extended period simulation hydraulic modeling for 5-year, 10-year, and 20-year conditions under average day, maximum day, and peak hour demand conditions for the water system. FNI will conduct steady-state hydraulic modeling for 5-year, 10-year, and 20-year conditions under average day and peak wet weather flow conditions for the wastewater system.

F9. Identify System Improvements: FNI will utilize the water and wastewater models to develop and analyze sizing and location of transmission/conveyance, system storage, pumping facilities, and treatment plants needed to serve 5-year, 10-year and 20-year conditions. Additional improvements addressing fire flow deficiencies will also be developed. Various alternatives will be evaluated to determine the recommended improvements.

F10. Progress Meeting #5: FNI will meet with the City to discuss the results of the future water and wastewater systems analysis. Proposed improvement alternatives will also be discussed. FNI will incorporate comments provided by the City into the phasing plan for the proposed projects.

Task G: Water and Wastewater CIP and Master Plan Report

G1. Phased Capital Improvement Plan: FNI will prepare a prioritized Capital Improvement Plan for all recommended water and wastewater conveyance projects and associated facilities. FNI will develop project prioritization criteria and rank each project by priority. Projects will be grouped in 5-year, 10-year and 20-year periods. FNI will prepare system-wide mapping that identifies the location and phase of water and wastewater capital projects.

G2. Pressure Reducing/Sustaining Valve Specifications and Implementation: FNI will develop City of Hobbs standard detail(s) for Pressure Reducing/Sustaining Valve and Vault, including a variety of sizes if necessary. Detail(s) will include City of Hobbs' design standards and SCADA equipment requirements.

G3. Planning-Level Cost Estimates: FNI will develop high-level costs for proposed projects through the 20-year planning period. FNI will collect and compile local construction cost data including recent bids, in-house construction costs, and other local sources, as available. Costs will be in current year dollars and include engineering, survey, and contingencies.

G4. Progress Meeting #6: FNI will meet with the City to discuss and solicit comments on the CIP. Comments and/or adjustments on phasing or costs will be incorporated into the Draft Master Plan Report.

G5. Prepare Draft Water and Wastewater Master Plan Report: FNI will prepare a Draft Water and Wastewater Master Plan Report documenting assumptions, methodologies, and findings for demand and flow projections, model development, existing and future system hydraulic analyses, and recommended capital improvement plans including schedule and costs of improvements. FNI will submit one (1) electronic PDF copy of the draft report for City review.

G6. Revise and Finalize Report: FNI will revise the report based on City comments and submit ten (10) hard copies and one (1) electronic copy in PDF format of the Final Water and Wastewater Master Plan Report.

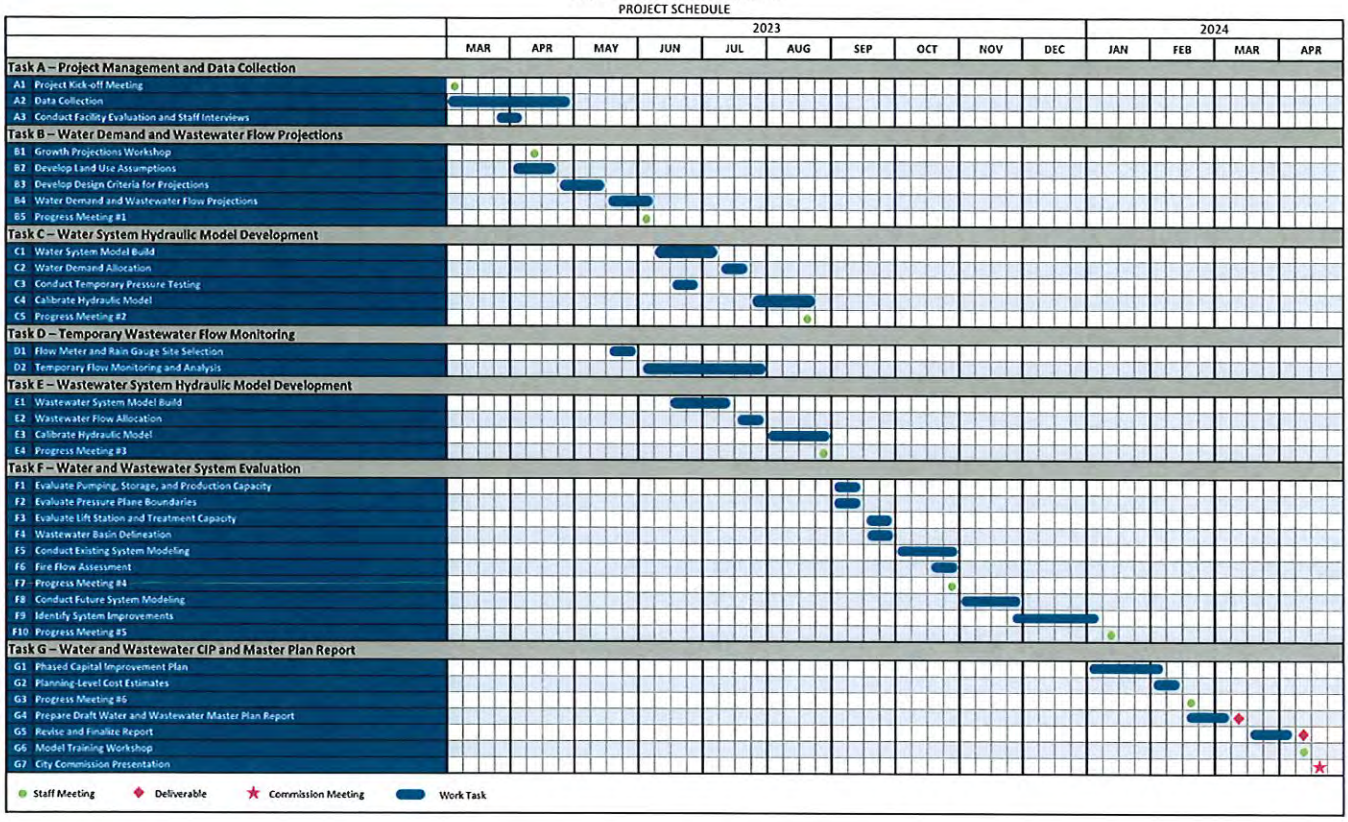
G7. Model Training Workshop: FNI will prepare hydraulic model training presentation material and conduct hands-on training exercises for City staff. The training will include instructions on setting up, running, and modifying the model as well as viewing results.

G8. City Commission Presentation: FNI will attend one (1) City Commission meeting to discuss and/or present the findings of Water and Wastewater Master Plan. FNI will be available to answer questions and discuss content on all aspects of the project.

CITY OF HOBBS

Water and Wastewater Master Plan

PROJECT SCHEDULE



02/10/23

COMPENSATION

Compensation to FNI for Basic Services in Attachment SC shall be the lump sum of Four Hundred Fifty Five Thousand One Hundred Seventy Dollars ($455,170).

If FNI sees the Scope of Services changing so that Additional Services are needed, including but not limited to those services described as Additional Services in Attachment SC, FNI will notify OWNER for OWNER's approval before proceeding. Additional Services shall be computed based on the following Schedule of Charges.

	Hourly Rate	
Position	**Min**	**Max**
Professional 1	86	151
Professional 2	112	176
Professional 3	108	246
Professional 4	170	256
Professional 5	201	360
Professional 6	218	426
Construction Manager 1	107	138
Construction Manager 2	93	177
Construction Manager 3	136	168
Construction Manager 4	160	218
Construction Manager 5	197	275
Construction Manager 6	243	309
Construction Representative 1	87	89
Construction Representative 2	89	97
Construction Representative 3	102	163
Construction Representative 4	118	187
CAD Technician/Designer 1	71	148
CAD Technician/Designer 2	115	172
CAD Technician/Designer 3	151	219
Corporate Project Support 1	59	120
Corporate Project Support 2	77	191
Corporate Project Support 3	121	286
Intern / Coop	51	87

Rates for In-House Services and Equipment

Mileage

Standard IRS Rates

Technology Charge

$8.50 per hour

Bulk Printing and Reproduction

	B&W	Color
Small Format (per copy)	$0.10	$0.25
Large Format (per sq. ft.)		
Bond	$0.25	$0.75
Glossy / Mylar	$0.75	$1.25
Vinyl / Adhesive	$1.50	$2.00
Mounting (per sq. ft.)	$2.00	
Binding (per binding)	$0.25	

Equipment

Valve Crew Vehicle (hour)	$75
Pressure Data Logger (each)	$200
Water Quality Meter (per day)	$100
Microscope (each)	$150
Pressure Recorder (per day)	$100
Ultrasonic Thickness Guage (per day)	$275
Coating Inspection Kit (per day)	$275
Flushing / Cfactor (each)	$500
Backpack Electrofisher (each)	$1,000

	Survey Grade	Standard
Drone (per day)	$200	$100
GPS (per day)	$150	$50

OTHER DIRECT EXPENSES:

Other direct expenses are reimbursed at actual cost times a multiplier of 1.10. They include outside printing and reproduction expense, communication expense, travel, transportation and subsistence away from the FNI office. For other miscellaneous expenses directly related to the work, including costs of laboratory analysis, test, and other work required to be done by independent persons other than staff members, these services will be billed at a cost times a multipler of 1.10. For Resident Representative services performed by non-FNI employees and CAD services performed In-house by non-FNI employees where FNI provides workspace and equipment to perform such services, these services will be billed at cost times a multiplier of 2.0. This markup approximates the cost to FNI if an FNI employee was performing the same or similar services.

These ranges and/or rates will be adjusted annually in February.

City of Hobbs Water and Wastewater Master Plan 2/10/2023 Detailed Cost Breakdown	Project Fee Summary		
	Basic Services	$	426,638
	Special Services	$	-
	Total Project	$	426,638

Tasks				Labor									Total
Phase	Task	Basic or Special	Task Description	Stephanie Neises Project Manager	Tyler May AP/MPE	Celine Cuellar EIT	Cooper Basset GIS	Allan Nava Design Engineer	Fabian Amalla CAD Tech	Total Hours	Total Labor Effort	Total Sub Effort	Total Effort
			Task A: Project Mangement and Data Collection								$ -	$ -	$ -
A	1	Basic	Project Kickoff Meeting (In-person)	16	16	16		4		52	$ 9,777	$ -	$ 12,144
A	2	Basic	Data Collection	2	12	16	8			38	$ 5,187	$ -	$ 5,510
A	3	Basic	Conduct Facility Evaluation and Staff Interviews	4	16	12	4			36	$ 5,498	$ -	$ 5,804
A	4	Basic	Project Management Activities	12	40					52	$ 9,704	$ -	$ 10,146
			Task B: Water Demand and Wastewater Flow Projections								$ -	$ -	$ -
B	1	Basic	Growth Projections Workshop (Virtual)	4	4	4	4			16	$ 2,691	$ -	$ 2,827
B	2	Basic	Develop Land Use Assumptions and Population Projections	8	16	32	12			68	$ 9,902	$ 4,620	$ 15,100
B	3	Basic	Develop Design Criteria for Projections	4	12	24				40	$ 5,900	$ -	$ 6,240
B	4	Basic	Water Demand and Wastewater Flow Projections	4	12	24				40	$ 5,900	$ -	$ 6,240
B	5	Basic	*Progress Meeting #1: Population, Water Demands, and Wastewater Flow Projections (In-person)*	16	20	20				56	$ 10,192	$ -	$ 12,593
			Task C: Water System Hydraulic Model Development								$ -	$ -	$ -
C	1	Basic	Water System Model Build	2	12	24	12			50	$ 6,560	$ -	$ 6,985
C	2	Basic	Water Demand Allocation		8	16	16			40	$ 4,813	$ -	$ 5,153
C	3	Basic	Conduct Temprary Pressure Testing		4	8	4			16	$ 1,990	$ -	$ 8,726
C	4	Basic	Calibrate Hydraulic Model	4	24	60				88	$ 12,056	$ -	$ 12,804
C	5	Basic	*Progress Meeting #2: Review Pressure Testing Results, Water Model Development, and Water Model Calibration Results (Virtual)*	2	4	4				10	$ 1,685	$ -	$ 1,770
			Task D: Temporary Wastewater Flow Monitoring								$ -	$ -	$ -
D	1	Basic	Flow Meter and Rain Gauge Site Selection	2	8	8	8			26	$ 3,613	$ -	$ 3,834
D	2	Basic	Temporary Flow Monitoring and Analysis	2	4	12				18	$ 2,642	$ 85,250	$ 88,045
			Task E: Wastewater System Hydraulic Model Development								$ -	$ -	$ -
E	1	Basic	Wastewater System Model Build	2	24	40	12			78	$ 10,324	$ -	$ 10,987
E	2	Basic	Wastewater Flow Allocation		8	16	16			40	$ 4,813	$ -	$ 5,153
E	3	Basic	Calibrate Hydraulic Model	4	24	60				88	$ 12,056	$ -	$ 12,604
E	4	Basic	*Progress Meeting #3: Review Flow Monitoring Results, Wastewater Model Development, and Wastewater Model Calibration Results (Virtual)*	2	4	4				10	$ 1,685	$ -	$ 1,770
			Task F: Water and Wastewater System Evaluation								$ -	$ -	$ -
F	1	Basic	Evaluate Pumping, Storage, and Production Capacity	8	12	20				40	$ 6,600	$ -	$ 6,940
F	2	Basic	Evaluate Pressure Plane Boundaries	4	12	16	4			36	$ 5,359	$ -	$ 5,665
F	3	Basic	Evaluate Lift Station and Treatment Capacity	8	12	20				40	$ 6,600	$ -	$ 6,940
F	4	Basic	Wastewater Basin Delineation	4	12	16	4			36	$ 5,359	$ -	$ 5,665
F	5	Basic	Conduct Existing System Modeling	12	24	60				96	$ 14,414	$ -	$ 15,230
F	6	Basic	Fire Flow Assessment	8	12	24				44	$ 7,079	$ -	$ 7,453
F	7	Basic	*Progress Meeting #4: Existing Water and Wastewater System Analysis Results and Proposed Criteria for Improvements to Facilities (In-person)*	16	20	20				56	$ 10,192	$ -	$ 12,593
F	8	Basic	Identify System Improvements	12	40	60		8		120	$ 18,242	$ -	$ 19,262
F	9	Basic	*Progress Meeting #5: Future Water and Wastewater System Analysis Results and Proposed Alternatives (In-person)*	16	20	20				56	$ 10,192	$ -	$ 12,593
G			**Task G: Water and Wastewater CIP and Master Plan Report**								$ -	$ -	$ -
G	1	Basic	Phased Capital Improvement Plan	12	40	80	12			144	$ 20,523	$ -	$ 21,747
G	2	Basic	Pressure Reducing/Sustaining Valve Specifications and Implementation					24	16	40	$ 4,081	$ -	$ 4,421
G	3	Basic	Planning-Level Cost Estimates	4	12	24		32		72	$ 11,342	$ 4,620	$ 16,574
G	4	Basic	*Progress Meeting #6: Draft CIP (Virtual)*	2	4	4				10	$ 1,685	$ -	$ 1,770
G	5	Basic	Prepare Draft Water and Wastewater Master Plan Report	12	24	60	16			112	$ 16,080	$ -	$ 17,032
G	6	Basic	Revise and Finalize Report	4	12	24	8			48	$ 6,733	$ -	$ 7,516
G	7	Basic	Model Training Workshop (In-person)	22	30	38				90	$ 15,655	$ -	$ 18,345
G	8	Basic	City Commission Presentation (In-person)	24	16		4			44	$ 9,957	$ -	$ 12,256
			Total Hours / Quantity	**258**	**574**	**886**	**144**	**68**	**16**	**1,946**	**$ 297,080**	**$ 94,490**	**$ 426,638**
												Tax (6.6875%)	**$ 28,531**
												TOTAL	**$ 455,170**

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21, 2023

SUBJECT:	RFP 536-23; Provide Materials, Labor, Programming, and Associated Engineering Services for the City of HOBBS Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project.
DEPT. OF ORIGIN:	Utilities
DATE SUBMITTED:	February 6, 2023
SUBMITTED BY:	Tim Woomer, Utilities Director

Summary:

- RFP 536-23 requests proposals to provide materials, labor, programming, and associated engineering services for the City of Hobbs Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project.
- RFP 536-23 was advertised on October 9, 2022 with four (4) proposals received by the closing date of December 20, 2022. Two (2) proposals were deemed nonresponsive and therefore not evaluated. An evaluation committee consisting of City staff and a member of the Utilities Board reviewed and ranked the two (2) responsive proposals based on the published RFP criteria.
- The submitting firms and order of ranking are:

  1) Ingram Professional Services (IPS), Inc. of Hobbs, NM;

  2) Convergence Controls & Engineering of Littleton, CO
- A formal interview was held with the highest-ranking Proposer, Ingram Professional Services (IPS), Inc. of Hobbs, NM, on January 4, 2023. The top proposer was provided 120 minutes to present and discuss their respective qualifications and capabilities to provide the services required of the Project. The evaluation team concluded that IPS, Inc. was the best qualified Firm to complete this project.
- An agreement has been negotiated with Ingram Professional Services (IPS), Inc., with a Scope of Work developed, including a not-to-exceed cost proposal, to provide materials, labor, programming, and associated engineering services for the City of Hobbs Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project. The Scope of Work consists of thirty-six (36) core tasks, or deliverables, with individual schedules of completion.

Fiscal Impact: **$ 6,921,054.97 (Including NMGRT)** *Reviewed By:* _____ *Finance Department*

The not-to-exceed amount for all materials, labor, programming, and associated engineering services for the City of Hobbs Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project is $6,921,054.97. Funds are budgeted for FY 2022-2023 within Fund 62-4062-44901-00321.

Attachments:

City of Hobbs RFP 536-23, IPS Inc. RFP 536-23 Project Proposal dated December 20, 2022, Professional Service Agreement between the City of Hobbs and IPS, Inc.

Legal Review:

Approved as To Form: Efren A. Cortez

Digitally signed by Efren A. Cortez
DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US
Date: 2023.02.13 13:54:55 -07'00'

City Attorney

Recommendation:

Staff recommends that RFP 536-23 be awarded to Ingram Professional Services (IPS), Inc., and authorize the Mayor to execute a Professional Service Agreement between the City of Hobbs and IPS, Inc. to provide materials, labor, programming, and associated engineering services for the City of Hobbs Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project in the amount of $6,921,054.97, including NMGRT.

Approved for Submittal By:

Department Director

City Manager

CITY CLERK'S USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____ Continued To: _____
Ordinance No. _____ Referred To: _____
Approved _____ Denied _____
Other _____ File No. _____

PROFESSIONAL SERVICES AGREEMENT

THIS CONTRACT is made the ____ day of _____, 20___, by and between the City of Hobbs, New Mexico, a municipal corporation located in Lea County, New Mexico (hereinafter referred to as "City") and IPS , INC, an independent contractor with a business address of 1612 W. Sanger Hobbs, NM 88240 (hereinafter referred to as "Contractor").

This Contract (hereinafter referred to as "Agreement") is a:

☐ **Category 1 Contract**: ($0 – not to exceed $20,000.00). Purchasing requires good faith efforts to acquire the materials or services at the best obtainable price.

☐ **Category 2 Contract**: ($20,000.00 - not to exceed $75,000.00). Purchasing requires three (3) written quotes turned in to the Central Purchasing Office.

☐ **Category 3 Contract**: ($75,000.00 and over). Purchasing requires formal sealed bids or competitive sealed proposals through the Central Purchasing Office.

☐ **Professional Services Contract under $75,000.00**. Purchasing requires the direction of the City Manager.

☑ **Professional Services Contract $75,000.00 and over**. Purchasing requires the direction of the City Manager with City Commission approval, subject to the competitive sealed proposal requirements.

☐ **Exempt Contract under $75,000.00**. Purchasing requires the direction of the City Manager.

☐ **Exempt Contract $75,000.00 and over.** Purchasing requires the direction of the City Manager with City Commission approval.

The parties to this Agreement, in consideration of their mutual promises, agree as follows:

1. SCOPE OF SERVICES

Provide materials, labor, programming, and associated engineering services for the City of Hobbs Waste Water Reclamation Facility (WWRF) Scada System Design And Replacement Project.
The scope of services is outlined in the following attached documents and made part of this agreement.
Exhibit B: RFP 536-23
Exhibit C: Contractors Proposal from December 20, 2022, with 36 tasks identified.

2. STATUS OF CONTRACTOR

Contractor acknowledges that its relationship with City is that of an "independent contractor." Therefore, Contractor shall not be considered an employee or agent of City, nor shall Contractor be eligible to accrue leave, retirement benefits, insurance benefits, use of City vehicles, or any other benefits provided to City employees. Contractor agrees not to purport to bind City of Hobbs unless the Contractor has express written authority to do so, and then only within the strict limits of that authority. Contractor further acknowledges that no benefits pursuant to the Worker's Compensation Laws of the State of New Mexico are available to them for the services contemplated herein. Contractor shall be responsible for securing all licenses and registrations related to their business prior to commencing any work under this Agreement. Contractor shall be solely responsible for all taxes and related reporting requirements. City shall have no liability for the payment of taxes other than gross receipts taxes to be calculated in Contractor's invoices.

3. CONTRACT TERM AND TERMINATION

This Agreement shall be effective from date of execution (as noted on page 1 of this Agreement) and shall end upon completion of all services contemplated herein and final payment for said services, or one year from the date of execution, whichever occurs first. This Agreement may be renewed for up to three additional one-year terms upon written approval from both City and Contractor prior to the expiration of any one-year term. This Agreement may be terminated by either party, at any time with or without cause, upon a minimum of thirty (30) days' advanced written notice to the other party. Except as otherwise allowed or provided under this Agreement, City's sole liability upon such termination shall be to pay for acceptable work performed prior to Contractor's receipt of the notice of termination, if City is the terminating party, or Contractor's sending of the notice of termination, if Contractor is the terminating party; provided, however, that a notice of termination shall not nullify or otherwise affect either party's liability for pre-termination defaults under, or breaches of, this Agreement. Contractor shall submit an invoice for such work within thirty (30) days of receiving or sending the notice of termination. Furthermore, City reserves the right to immediately cancel this Agreement if Contractor violates any provision specifically outlined in Paragraph 10 of this Agreement.

4. PRICE

City shall pay Contractor a total of $ 6,921,054.97 inclusive of New Mexico gross receipts taxes. Contractor shall be responsible for paying all costs associated with performance of duties, including but not limited to, mileage and "wear and tear" of vehicles, and costs of equipment necessary to perform services. Contractor shall submit a monthly invoice for services performed in any given month. Upon receipt of any invoice, City shall render payment for said invoice as soon as practical within fifteen (15) days. If payment is made by mail, the payment shall be deemed tendered on the date it is postmarked. However, City shall not incur late charges, interest, or penalties for failure to make payment within the time specified herein. Contractor and City shall both be required to keep detailed records regarding the services rendered. In the event City disputes an invoice, Contractor shall provide City with records regarding all services rendered. Contractor shall remit all invoices to ATTN: City of Hobbs Accounts Payable, 200 E. Broadway Street, Hobbs, NM 88240.

Parties agree that the aggregate amount contemplated by this Agreement, including all contemplated gross receipts taxes, shall not exceed $ 6,921,054.97. All amounts contemplated herein shall include all necessary labor, equipment, materials and all other costs necessary to complete the project as specified herein. Approval and acceptance of Contractor's satisfactory completion of the project shall be a prerequisite to final payment. Nothing contained in this Agreement shall be construed by Contractor as guaranteeing Contractor any minimum amount of work. Contractor, upon final payment of all amounts due under this Agreement, releases City and its officers and employees from all liabilities, claims and obligations whatsoever arising from or under this Agreement. No guarantee of future contracts will be granted to any Contractor.

The terms of this Agreement are contingent upon sufficient appropriations and authorization being given by the City of Hobbs' City Commissioners for the performance of this Agreement. If sufficient appropriations and authorization are not given by the City of Hobbs' City Commissioners, this Agreement shall terminate immediately upon written notice being given by City to Contractor. City's decision as to whether sufficient appropriations are available shall be accepted by Contractor and shall be final. If City proposes an amendment to this Agreement to unilaterally reduce funding, Contractor shall have the option to terminate this Agreement or in its alternative, to agree to the reduced funding within thirty (30) days of receipt of the proposed amendment.

5. INSURANCE REQUIREMENTS

Contractor shall maintain insurance coverage through the duration of this Agreement. Contractor shall provide City with a certificate of insurance coverage for General Liability (GL) in a minimum amount of $ $1,000,000.00 per occurrence, and naming City as an additional insured. The insurance required herein shall be primary and shall be attached hereto as "Exhibit A."

6. INDEMNITY AND HOLD HARMLESS

Contractor shall indemnify, defend and hold City, the City Commission of the City of Hobbs, its individual commissioners, its officers, employees and agents, past or present, harmless from any and all causes of action, suits, claims, judgments, losses, costs, expenses, and liens of every kind and nature, including, but not limited to court costs and attorney's fees, arising or alleged to have arisen due to negligence of Contractor, or any employees working under Contractor, while engaged in the performance of this Agreement, or for Contractor's failure to render services, or any breach of this Agreement. Indemnification shall survive the expiration of this Agreement.

City shall not be liable to Contractor, or Contractor's successors, heirs, agents, administrators, or assigns, for any loss, damage, or injury, whether to Contractor's person or property, occurring in connection with Contractor's performance of Contractor's duties according to this Agreement. Contractor shall hold City harmless from all loss, damage, and injury, including court costs and attorney fees, incurred by City in connection with the performance by Contractor of Contractor's duties according to this Agreement.

7. FACILITY AND EQUIPMENT—SAFETY

Contractor shall report any unsafe conditions prior to the commencement of any activity. Commencement of activity by the Contractor constitutes agreement as to the safety of the premises. Contractor is responsible for supervision of all participants so as to conduct the services in a safe and orderly manner. Contractor shall be solely responsible for the safety of any of their employees, affiliates, associates, or subcontractors. City is not required to provide storage for Contractor's equipment or materials.

8. BACKGROUND CHECK

Contractor is subject to a background check prior to providing services. By signing this Agreement, the Contractor is certifying that they have reviewed criminal background histories of each and every employee, assistant and/or agent working for Contractor. Contractor further certifies that no person with a history of sexual or violent offenses is in Contractor's employ in any fashion. Employees, assistants and/or agents who are minors (under 18 years old) shall be supervised by an adult in Contractor's employ at all times.

9. DRUG-FREE WORKPLACE

City seeks to provide a safe and productive work environment that is free from impaired performance caused by the use of alcohol, controlled substances, and/or medications. The Contractor agrees to maintain such an environment.

10. RULES, REGULATIONS, AND CARE

Contractor shall treat all individuals and City employees with respect and will not subject anyone to discrimination or harassment because of the person's race, color, sexual orientation, national origin, age, religion, gender, gender identity, or disability. Contractor shall use all reasonable care so as to not damage, or authorize any other person/entity, to damage the property of City. In the event that any City-owned property, whatsoever, is damaged or destroyed due to the negligence or acts of omissions of the Contractor, or any agent of Contractor, Contractor shall replace or repair the damage at no cost to City. City shall determine the existence of any damage and provide Contractor with an estimate of repair or replacement costs. Damage shall be repaired or replaced by Contractor to the reasonable satisfaction of City within thirty (30) days of receipt of written notification from City. If Contractor fails or refuses to make such repair or replacement, the Contractor shall be liable for the cost, which may be deducted from payments provided for in this Agreement. City reserves the right to immediately cancel the Agreement if the Contractor violates any provision herein.

11. NOTICE

All notices given pursuant to or in connection with this Agreement shall be made in writing and posted by regular mail, postage prepaid, to City, ATTN: Shelly Raulston, City Hall, 200 E. Broadway Street, Hobbs, NM 88240 and to Contractor at 1612 W. Sanger, Hobbs, NM 88240 or to such other address as requested in writing by either party. Notice shall be deemed to be received on the fifth day following posting.

12. CONFLICT OF INTEREST AND GOVERNMENTAL CONDUCT ACT

A. Contractor represents and warrants that it presently has no interest and, during the term of this Agreement, shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance or services required under the Agreement.

B. Contractor further represents and warrants that it has complied with, and, during the term of this Agreement, will continue to comply with, and that this Agreement complies with all applicable provisions of the Governmental Conduct Act, Chapter 10, Article 16 NMSA 1978. Without in anyway limiting the generality of the foregoing, the Contractor specifically represents and warrants that:

1) in accordance with NMSA 1978, Section 10-16-4.3, Contractor does not employ, has not employed, and will not employ during the term of this Agreement any City employee while such employee was or is employed by City and participating directly or indirectly in City's contracting process;

2) this Agreement complies with NMSA 1978, Section 10-16-7(B), because (i) Contractor is not a public officer or employee of City; (ii) Contractor is not a member of the family of a public officer or employee of City; (iii) Contractor is not a business in which a public officer or employee or the family of a public officer or employee has a substantial interest; or (iv) if Contractor is a public officer or employee of City, a member of the family of a public officer or employee of City, or a business in which a public officer or employee of City or the family of a public officer or employee of City has a substantial interest, public notice was given as required by NMSA 1978, Section 10-16-7(B), and this Agreement was awarded pursuant to a competitive process;

3) in accordance with NMSA 1978, Section 10-16-8(C), (i) Contractor is not, and has not been represented by, a person who has been a public officer or employee of City within the preceding year and whose official act directly resulted in this Agreement and (ii) Contractor is not, and has not been assisted in any way regarding this transaction by, a former public officer or employee of City whose official act, while in City employment, directly resulted in City making this Agreement;

4) in accordance with NMSA 1978, Section 10-16-13, Contractor has not directly participated in the preparation of specifications, qualifications or evaluation criteria for this Agreement or any procurement related to this Agreement; and

5) in accordance with NMSA 1978, Section 10-16-3 and Section 10-16-13.3, Contractor has not contributed, and during the term of this Agreement shall not contribute, anything of value to a public officer or employee of City.

C. Contractor's representations and warranties in Paragraphs A and B of this Section 12 are material representations of fact upon which City relied when this Agreement was entered into by the parties. Contractor shall provide immediate written notice to City if, at any time during the term of this Agreement, Contractor learns that Contractor's representations and warranties in Paragraphs A and B of this Section 12 were erroneous on the effective date of this Agreement or have become erroneous by reason of new or changed circumstances. If it is later determined that Contractor's representations and warranties in Paragraphs A and B of this Section 12 were erroneous on the effective date of this Agreement or have become erroneous by reason of new or changed circumstances, in addition to other remedies available to City and notwithstanding anything in the Agreement to the contrary, City may immediately terminate the Agreement.

D. All terms defined in the Governmental Conduct Act have the same meaning in Section 12(B).

13. MISCELLANEOUS PROVISIONS

Contractor shall not assign or transfer any interest in this Agreement or assign any claims for money due or to become due under this Agreement without the prior written approval of City.

Contractor shall not subcontract any portion of the services to be performed under this Agreement without the prior written approval of City. No such subcontract shall relieve the primary Contractor from its obligations and liabilities under this Agreement, nor shall any subcontract obligate direct payment from City. In all cases, Contractor is solely responsible for fulfillment of this Agreement. Duly authorized representatives for City shall have the right to direct and inspect the work under this Agreement.

If any part of this Agreement is found to be in violation of the laws or Constitution of New Mexico, only such part thereof shall be thereby invalidated, and all other parts of this Agreement shall remain valid and enforceable.

This Agreement is governed by the laws of the State of New Mexico and will bind and inure to the benefit of City and Contractor, their respective successors and assigns. In the event that Contractor defaults on any term of this Agreement, after reasonable attempts to cure said default, City retains the right to declare this Agreement void. In the event that this Agreement is declared void, neither party shall be obligated to perform further under this Agreement. Jurisdiction and venue relating to any litigation or dispute arising out of this Agreement shall be in the District Court of Lea County, New Mexico, only. Contractor agrees to pay City reasonable costs, including court fees and reasonable attorney's fees, incurred by City in the enforcement of this Agreement, even though City may employee in-house legal counsel.

A party shall be excused from performance under this agreement for any period that the party is directly prevented from performing as a result of an act of God, strike, war, civil disturbance, epidemic, or court order, provided that the party has prudently and promptly acted to take any and all steps that are within the party's control to ensure performance. Subject to this provision, such non-performance shall not be deemed a default or a ground for termination.

In the event that Contractor desires to cancel the scheduled services for any reason, Contractor is responsible for the following:

Contacting City via telephone at (575) 397 9315 ext:4218 ; **and**
Contacting City via e-mail at twoomer @ hobbsnm.org .

Any change orders shall be in writing and signed by the parties specifically enumerating the additional work to be performed, change in scope, and/or the cost therein. A party's failure to require strict performance of any provision of this Agreement shall not waive or diminish that party's right thereafter to demand strict compliance with that or any other provision. No waiver by a party of any of its rights under this Agreement shall be effective unless express and in writing, and no effective waiver by a party of any of its rights shall be effective to waive any other rights but the ones delineated in said effective waiver.

If Contractor is other than a natural person, the individual(s) signing this Agreement on behalf of Contractor represents and warrants that they have the legal power and authority to bind Contractor, and that no further action, resolution, or approval from Contractor is necessary to enter into a binding contract.

This Agreement incorporates all of the agreements, covenants and understandings between the parties hereto concerning the subject matter hereof, and all such covenants, agreements and understandings have been merged into this written Agreement. No prior agreement or understanding, oral or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this Agreement.

The foregoing constitutes the entire Agreement between the parties. This Agreement may only be modified through a written amendment signed by both parties.

[Required Signatures on Next Page]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written on the first page of this Agreement.

THE CITY OF HOBBS, NEW MEXICO

Department Head Approval:

_____

Contractor Approval:

Ryan Gray Digitally signed by Ryan Gray Date: 2023.01.16 15:42:12 -07'00'

Contractor Signature

Account No.: 62-4062-44901-00321.

Finance Director:

_____

Finance Director

City Attorney "as to form" Approval:

_____

City Attorney

City Manager Approval:

_____

City Manager

City Clerk Approval:
City Clerk (Professional Service Contracts over $75,000)

_____

City Clerk

Mayor Approval:
(Professional Service Contracts over $75,000)

_____

Mayor

EXHIBIT: C

CITY OF Hobbs NEW MEXICO®

PROJECT PROPOSAL:

WASTEWATER RECLAMATION FACILITY (WWRF) SCADA SYSTEM DESIGN AND REPLACEMENT PROJECT

RFP 536-23

PREPARED BY

IPS INC.

+

TESCO® CONTROLS

CITY OF HOBBS NEW MEXICO

IPS
Corporate Office
1612 W. Sanger
Hobbs, NM 88240
IPSAECorp.com

TESCO
Corporate Office
8440 Florin Road
Sacramento, CA, 95828
TescoControls.com

Submitted As Authorized Automation Engineering Firm

SUBMITTED VIA HAND-DELIVERY; DIGITAL COPY INCLUDED

December 20, 2022

CITY OF HOBBS – CITY HALL
Attention: Toby Spears, Finance Director
Finance Dept. – Room 224
200 E. Broadway
Hobbs, NM 88240

Dear Mr. Spears,

Ingram Professional Services, Inc. (IPS) and **Tesco Controls, LLC (TESCO)** are excited to propose upon a high-value solution to the *City of Hobbs, NM's, Request for Proposal (RFP) for Materials, Labor, Programming, and Associated Engineering Services (RFP No. 536-23) for the Wastewater Reclamation Facility (WWRF) SCADA System Design and Replacement Project.*

Successful projects result from teams collaborating efficiently and effectively. IPS and TESCO invest substantial time envisioning and planning the details of your project's success. Mornings, evenings, and weekends dedicated to detailing each known nuance to encounter between now and then, anticipating even more *unknown* nuances to discover during the proposed facility assessment we see as the critical initial step toward success.

Collectively, we bring an unmatched ability and offer to design, implement, and support a control system overhaul at the City WWRF while simultaneously **resolving the three key problems you identify within the RFP.** We have the approach to manage, design, and build the custom replacement solution for your aging, high-risk distributed control system and fiber ring network that fails intermittently while in use by well-trained staff. We demonstrate these claims and more within the proposal; more about any demonstration is provided upon your request.

Resident, Known, & Experienced Electrical Contractor as Prime

As a Hobb-resident business, IPS brings local electrical, controls, and construction contracting experience, as well as specialty fiber optics expertise to manage the overall contract directly from within the City of Hobbs. IPS also leads the electrical trade intallation components of this project, including replacement of the intermittently failing fiber optics ring network. **We provide project support directly from within Hobbs (10-15 minutes from IPS to WWRF).**

Hobb-Experienced Systems Integrator, Near Exclusive Focus on Water/Wastewater Control

After collaboratively designing the system with your team's input as the foundation, TESCO engineers a transition and cut-over plan using findings from the facility assessment. The plan contains a comprehensive, methodical approach to replace each PLC in accordance with design. Subsequently, TESCO manufactures and assembles replacement component kits, pre-wired backpans, and/or new enclosures to replace each PLC. All manufacturing occurs in their **world-class UL-508A manufacturing facility**. Our vision to date is summarized within the proposal in the form of an **Equipment Replacement Matrix** in *Section 2. Equipment Specifications*.

Your solution is designed and built by an expert engineering and development team, most of which is already known by your staff through their **recent experience working well with you to successfully design and deliver similar solutions that comply with your preferences, requirements, and standards**. Within the proposal, TESCO demonstrates deploying SIEMENS technology for the City's water system; they simultaneously and successfully managed large-scale ($8M-$20M+), plant-environment implementations of **PROFIBUS** and **PROFINET** control networks.

This proposal demonstrates qualification, experience, and planning that yields quality, value, and success, regardless of technology you select. Your contract mechanism and our methodologies work harmoniously toward your evaluation and pending decision on a SCADA platform. We offer technical guidance and historical knowledge while ensuring **you make all final decisions about the system design.**

We look forward to answering your questions and collaborating during the interview process. Meanwhile, please contact the undersigned as primary point of contact when questions or comments arise.

Best regards,

Ryan Gray
Automation/Fiber Director
IPS, Inc.
575-390-3064
R.gray@ipsaecorp.com

Delven Diaz
Sales Manager
Tesco Controls, LLC
916-395-8800
ddiaz@tescocontrols.com

Required Bid Forms

We comply with our interpretation of RFP page limitations, fold-out page numbering requirements, and instructions to attach most, but not all, bid forms to this letter rather than the proposal. They are, therefore, not numbered.

We have complied with your specific wording. Some forms are countable pages, while others are not; some forms were included in the set of instructions, others were not mentioned at all.

Please contact the undersigned if there is a misccommunication to reconcile for compliance with instructions.

ATTACHMENT A: PROPOSAL FORM SIGNATURE SHEET

PROPOSAL 536-23

CITY OF HOBBS
WASTEWATER RECLAMATION FACILITY
SCADA SYSTEM DESIGN AND REPLACEMENT

TO: The City of Hobbs, New Mexico December 6, 2022

Proposal of Ingram Professional Services :
(Company Name)

(A) A Corporation under the laws of the State of; or

B) A partnership consisting of _____; or

C) An individual trading as _____.

The undersigned offeror, pursuant to the foregoing "Request for Proposals", has carefully examined the instructions to Offerors, this proposal form, and the Specifications.

Ingram Professional Services
Company Name:

Ryan Gray
By:

Ryan M Gray
Type or Print Name:

1612 West Sanger St
Address:

Hobbs | New Mexico | 88240
City | **State** | **Zip**

r.gray@ipsaecorp.com
E-Mail Address

NM CRS TAX 03-261131-005
NM Business Registration

NOTE: To be valid, bid must be signed. The signature of a corporation is its president, or an authorized representative. A signature of a partnership must be a valid partner or authorized representative.

THE FOLLOWING ADDENDA ARE HEREBY ACKNOWLEDGED AS FOLLOWS:

ADDENDUM NUMBER: 1 DATED: 10/19/22 ADDENDUM NUMBER: _____ DATED: _____

ADDENDUM NUMBER: _____ DATED: _____ ADDENDUM NUMBER: _____ DATED: _____

ATTACHMENT B: CAMPAIGN CONTRIBUTION DISCLOSURE FORM

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to NMSA 1978, § 13-1-191.1 (2006), any person seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars ($250) over the two year period.

Furthermore, the state agency or local public body shall void an executed contract or cancel a solicitation or proposed award for a proposed contract if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

"**Applicable public official**" means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

"**Campaign Contribution**" means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to either statewide or local office. "Campaign Contribution" includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

"**Family member**" means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son- in-law.

"**Pendency of the procurement process**" means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

"**Person**" means any corporation, partnership, individual, joint venture, association or any other private legal entity.

"**Prospective contractor**" means a person who is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person qualifies for a sole source or a small purchase contract.

"**Representative of a prospective contractor**" means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

DISCLOSURE OF CONTRIBUTIONS:

Contribution Made By: N/A

Relation to Prospective Contractor: N/A

Name of Applicable Public Official: N/A

Date Contribution(s) Made: N/A

Amount(s) of Contribution(s) N/A

Nature of Contribution(s) N/A

Purpose of Contribution(s) N/A

(Attach extra pages if necessary)

Signature

12/06/2022
Date

Automation Director
Title (position)

--OR—

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS ($250) WERE MADE to an applicable public official by me, a family member or representative.

Signature

12/06/2022
Date

Automation Director
Title (position)

ATTACHMENT D: NON-COLLUSION AFFIDAVIT FORM

NON-COLLUSION AFFIDAVIT

STATE OF New Mexico)
City OF Hobbs)
Ryan M. Gray (name) being first duly sworn, deposes and says that he/she is (title) Automation Director
of (organization) Ingram Professional Services
who submits herewith to the City of Hobbs, a bid/proposal:
That all statements of fact in such bid/proposal are true:
That said proposal/bid was not made in the interest of or on behalf of any undislosed person, partnership, company, association, organization or corporation;
That said proposer/bidder has not, directly or indirectly by agreement, communication or conference with anyone attempted to induce action prejudicial to the interest of the City of Hobbs, or of any proposer/bidder of anyone else interested in the proposed contract; and further,
That prior to the public opening and reading of bid/proposal, said bidder/proposer;

1. Did not directly or indirectly, induce or solicit anyone else to submit a false or sham proposal
2. Did not directly or indirectly collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham proposal, or that anyone should refrain from bidding or withdraw his/her proposals;
3. Did not in any manner, directly or indirectly, seek by agreement, communication or conference with anyone to raise or fix the proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of their proposal price, or of that of anyone else;
4. Did not directly or indirectly, submit his proposed price or any breakdown thereof, or the contest thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association organization, bid depository or to any member or agent thereof, or to any individual group of individuals, except that City of Hobbs, or to any person or persons who have a partnership or other financial interests with said proposer/bidder in his/her business.

By: [signature]
Title: Automation Director

SUBSCRIBED and sworn to before me this 6th day of December, 20 22
Notary Public: Judith L. Williams

Official Seal
JUDITH L. WILLIAMS
Notary Public
State of New Mexico
My Commission Expires 4-8-2023

ATTACHMENT E: RELATED PARTY DISCLOSE FORM

RELATED PARTY DISCLOSURE FORM

(Bidders and Proposers only)

1. Are you indebted to or have a receivable from any member of the City of Hobbs Commissioners, administration officials, department heads, and key management supervisors with the City of Hobbs?

   YES___ NO_X_

2. Are you, or any officer of your company related to any member of the City of Hobbs Commissioners, administration officials, department heads, key management supervisors of the City of Hobbs and have you had any of the following transactions since January 1, 2017 to which City of Hobbs was, is to be, a party?

   Sales, Purchase or leasing of property? YES___ NO_X_
   Receiving, furnishing of goods, services or facilities? YES___ NO_X_
   Commissions or royalty payments? YES___ NO_X_

3. Does any member of the City Commission; administration officials, department heads, key management supervisors with the City of Hobbs, have any financial interest in your company whether a sole proprietorship, partnership, or corporation of any kind that currently conducts business with the City of Hobbs?

   YES___ NO_X_

4. At any time from January 1, 2017 through the present, did you, your company, or any officer of your company have an interest in or signature authority over a bank account for the benefit of a member of the City Commission administration officials, department heads, key management supervisors with the City of Hobbs?

   YES___ NO_X_

5. Are you negotiating to employ or do you currently employ any employee, officer, or family member of an employee or officer for the City of Hobbs?

6. Are you an employee of the City of Hobbs or a member of your family an employee of the City of Hobbs?

   YES___ NO_X_

The answers to the foregoing questions are correctly stated to the best of my knowledge and belief.

Signature of Owner or Company President_____ **Date** 12-06-2022

(Print Name and Title): Philip Ingram

ATTACHMENT F: CERTIFICATION REGARDING DEBARMENT FORM

City of Hobbs
Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

The Bidder/Proposer certifies, by submission of this bid/proposal, neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this submission of bid/proposal by any Federal, State or Local government. It further agrees by submitting this bid/proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts and subcontracts. Where the bidder/proposer or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this bid/proposal submission

Failure to acknowledge the above conditions would render the Bid/Proposal non-responsive.

I acknowledge:

Company Name: Ingram Professional Services

Signature _____

Print Name Ryan M. Gray

Attachment I: Estimated Time Line per Process Area

WWRF Process Areas	Estimated Timeframe on site				
Influent Pump Station, Bio Filtration Odor Control, Primary Clarifier	2-3 days	2 weeks	1 week	1 week	PLC-1
Grit and Sum Removal System, Grit and Sum Pumping	1-2 days	1 week	1 week	1 week	PLC-3/3A
Headworks, Grit Dewatering System, Fine Screen Systems, Scum Concentrator	1 day	3-5 days	3-5 days	1 week	PLC-11
MLE Process Basins, Master Aeration Process, Bio Solid Thickeners, Final Clarifiers, RAS< WAS, and Scum pumping	2-3 days	5-7 days	1 week	1 week	PLC-10
UV Disinfection, Effluent Palmer Bolus Flume	1 day	3-5 days	3-5 days	1 week	PLC-9
Aerobic Digester North and South System	2 day	3-5 days	3-5 days	1 week	PLC-4A/B
Sludge Dewatering, Centrifuges	1 day	3-5 days	3-5 days	1 week	PLC-4
Bio Solids Drying	1 day	1 day	2-3 days	1 week	PLC-DRY
Effluent Pump Station, 3 PRV Sites, Surge Tank, Prairie Heaven Cemetery Irrigation	1-2 days	1 week	1 week	1 week	PLC-7
Oxy Petroleum Pump Station, Dome Storage	0.5 days	2-5 days	2-5 days	1 week	PLC-8
2 Remote Pressure Sustaining Valve Sites (Communication over 5,8 GHz PtP Radio Links)	1-2 days	2-5 days	2-5 days	1 week	Rockwind, S&H Farms
Electrical Monitoring					
PLC # 2, Remote Base Station (RBS) # 2	1 day	2-5 days	1 day	1 week	PLC-2
PLC # 5, RBS # 5	0.5 day	1-2 days	1-2 days	1 week	PLC-5
PLC # 6, RBS # 6	1 day	2-3 days	2 days	1 week	PLC-6
Bio Tower	0.5 day	2-5 days	2-5 days	1 week	Bio Tower
	Preparations (IPS)	Field Demo & Installation (IPS)	SU, Testing & Commissioning (TESCO)	Ops Resting Period (Hobbs)	
		MANUAL OPERATIONS REQUIRED			

CONTENTS

PROPOSAL CONTENTS

SECTION 1

BUSINESS PROFILE

IPS, Inc.

Prime Contractor

IPS' mission is to maintain industry leadership in facility maintenance/construction services and solutions for the oil and gas industry throughout Southeast New Mexico and West Texas.

Founded in 2012, IPS built its foundation and reputation through a full suite of electrical and automation services to midstream plants and upstream production companies. Our team consists of **315+ employees** dedicated to quality services and solutions that maintain client production goals while reducing cost and risk.

PERTINENT SERVICES

- We offer a full line of electrical construction and maintenance services for all types of field and plant equipment. Our services include but are not limited to:
- Facility Electrical Construction, Maintenance, & Troubleshooting
- Industrial & Commercial Building Electrical Construction
- Electrical Distribution Systems Construction, Maintenance, & Demolition
- High & Low Voltage Wiring, Installation, & Testing
- Conduit, Duct Bank, & Cable Tray Installation
- Motor & Controls Installation & Troubleshooting
- Grounding System Installation & Maintenance
- Control Panel Design, Construction, Installation, & Troubleshooting
- Electrical Equipment Installation & Troubleshooting

We partnered with Tesco Controls to deliver the City specialized expertise in water/wastewater control system design, development, and support coupled with our prompt, experienced, and resident on-site electrical installation and troubleshooting services.

IPS proposes to complete this project as Prime Contractor. TESCO holds the lion's share of project scope, which warrants highlighting their capabilities, team, and experience as the project lead.

IPS OFFICE LOCATIONS

Hobbs
1612 W. Sanger
Hobbs, NM 88240
573.393.1417

Midland
5801 S. Fm 1788
Midland, TX 79706
432.245.1164

Lubbock
1708 98th St.
Lubbock, TX 79423

TESCO OFFICE LOCATIONS

Corporate HQ & Manufacturing Center
8440 Florin Road
Sacramento, CA 95828
916.395.8800

Dallas-Area Office & Manufacturing Center
8000 Jetstar Road, Ste. 150
Irving TX, 75063
817.343.7163

Southern California
42015 Remington Ave.,
Suite 102
Temecula, CA 92590
951.308.6450

TESCO Brea
565 Explorer Street
Brea, CA 92821
714.255.8590

Central California
1315-B Dayton Street
Salinas, CA 93901
800.948.3726

Bay Area California
600 California Street
11th Floor
San Francisco, CA 94108
800.948.3726

Nevada
213 Sage Street, Unit 3
Carson City, NV 89706
800.948.3726

Oregon
5250 High Banks Road
Suite 440
Springfield, OR 97477
800.948.3726

Louisiana
4467 Bluebonnet Boulevard
Suite B
Baton Rouge, LA 70809
800.948.3726

Georgia
800 Battery Avenue SE
Suite 100
Atlanta, GA 30339
800.948.3726

BUSINESS PROFILE

Tesco Controls

Design-Build Systems Integrator

— A full-service, Level One CSIA-Certified Systems Integrator, OEM, and SIEMENS Solutions Partner with 50+ years of industry-focused integration experience.

IPS partnered with TESCO to offer the City industry-focused, specialty design and implementation services with the benefit of local, responsive on-site services directly out of Hobbs.

Products manufactured in ***TESCO's UL-508A manufacturing facilities are in accordance with UL, IEEE, NEMA, IEC, NEC and CSIA requirements.*** The primary facility (above) is complemented by the Dallas area manufacturing facility in Irving, TX, **(390 mi. from Hobbs)**

OEM Status & SIEMENS Solution Partner: TESCO is a SIEMENS Solution Partner and an original equipment manufacturer (OEM) for most major equipment suppliers, including Schneider Electric, Eaton, Rockwell Automation, and others.

UL-508A Manufacturing: TESCO's fully-equipped manufacturing center is capable of engineering, fabricating, assembling, wiring, and testing all electrical and control systems equipment for project implementation and support. TESCO's primary facility in Sacramento, CA, as well as this project, is supported by TESCO's newer 11,000 square ft. manufacturing facility.

Breadth & Depth in Expertise: Our partnership with TESCO brings an experienced, matrix-style organization with **400+ employees** focused exclusively in the water/wastewater industry. As outlined in ***Section 3. Personnel Responsible to Perform the Work***, most of TESCO's proposed team is experienced with, and known by, the City of Hobbs. Resources available to the City as a direct result of this partnership are outlined in the below table.

TESCO Technical Team	Team Director/ Manager	Team Count
Project Engineering	Vikram Paravastu, P.E.	70+
Project Management	Kevin Ford, PMP	20+
Networking & Telemetry	Brendon Horn	10+
PLC Applications Programming	Raju Nair	30+
SCADA-HMI Engineering	Josh Choe	35+
Systems Engineering	Jon Shores	5+
National Field Services & Extended Maintenance	Charles Foerster, PMP	25+
Manufacturing & Assembly	Rohan Kumar	50+
Support Staff	—	150+
TOTAL TESCO STAFF:		400+

Hobbs Experience, Lessons Learned, & Gaps Filled: Lessons learned from the potable water system upgrade and overhaul delivered by TESCO in December 2020 brought our two firms together with IPS as Prime. The 2020 Potable Water System SCADA & Communications System Upgrade is detailed in ***Section 5. References***.

Lessons Learned**: The proposed teaming arrangement **fills the biggest gaps from the 2020 water system upgrade.** Our proposed configuration is highly-advantageous due to the **combined experience, expertise, and proximity to the WWRF.

SECTION 2

EQUIPMENT SPECIFICATIONS

Following is a summary understanding and approach to the Wastewater Reclamation Facility (WWRF) SCADA Design & Replacement Project. **We have included an equipment replacement overview, a realistically envisioned, but accommodating schedule, and a detailed scope of services to be performed.**

Project Understanding

This is a revitalization of aging, legacy process control system hardware and software used to automate the WWRF. This project upgrades the Programmable Logic Controller (PLC) and Supervisory Control and Data Acquisition (SCADA-HMI) system hardware and software. Final SCADA software platform selection and long lead-time components are determined early in the project through integrated workshops as to best mitigate the global supply chain impact on this project.

We anticipate replacing legacy PLCs with the SIEMENS SIMATIC S7-Series platform. These components have the longest lead-times from all manufacturers globally, which is best minimized by immediately discussing potential alternatives for, or concerns with, the S7-Series followed by immediately initiating procurement.

There are three noteworthy problems identified within your Request for Proposal (RFP). We have a plan to resolve these problems during upgrade.
The proposed approach affords thorough understanding of existing automation assets, interdependencies, and clearly defines needs and criteria for system testing, construction/installation, and field deployment of the new system in parallel with the existing. This ensures integrity of Plant operations throughout field testing, validation, cut-over, and final acceptance.

PROJECT OBJECTIVES

Replacement of the existing, legacy SCADA system and PLC hardware with modern, robust, and reliable process control system equipment that can be efficiently maintained by City staff.

THE CITY'S GOAL

Maintain continuous Plant operations during upgrade with emphasis on mitigating downtime to the fullest extent possible.

ON-SITE SUPPORT

IPS | TESCO will provide technical support throughout the design, implementation, and operation of the upgraded SCADA system with our comprehensive 24/7/365 support team directly out of Hobbs, NM.

CITY-IDENTIFIED PROBLEMS & PROPOSED APPROACH TO RESOLUTION

Problem #1: A centralized PLC distributes I/O to several Siemens ET-200 I/O Racks throughout the Plant.

The distributed I/O configuration in-place is vulnerable as the centralized processor controlling dispersed I/O racks throughout the Plant is a single point-of-failure that affects multiple process areas. Our approach accomodates reconfiguration of the Plant into the City-favored, and more reliable "PLC-Centric" modal.

Problem #2: Your system is 20 year old. After at least three major upgrades, documentation is inaccurate, incomplete, or otherwise missing.

The proposed approach begins with TESCO's Systems Engineering Group (SEG) performing a detailed facility assessment and conducting a series of collaborative workshops with your staff. This is a means to establish the foundation for engineering design, system development, and on-site cut-over logistics, including preparation for any anticipated manual Plant operations. A substantial time commitment is needed from City Operations & Maintenance (O&M) Staff for manual Plant operations, which we have plotted-out by process area in the proposed schedule.

Problem #3: An out of service System Engineering Station requires troubleshooting and repair.

The Station is to be investigated, assessed, and documented as part of the facility assessment. These efforts result in necessary information that must be collected for diagnosing, troubleshooting, and repairing the Station at any rate.

OVERVIEW OF WORK TO BE PERFORMED

Major scope elements include designing, developing, and installing a new SCADA system using a SCADA-HMI platform determined by the City during design, a new fiber optics ring through which SCADA-related data and commands can traverse, and PLC upgrades throughout the Plant as indicated in the below equipment replacement matrix.

The criticality of communications traversing the fiber optics ring is well-understood. The City experiencing intermittent, temporary failure of the existing ring warrants installing its replacement as soon as possible, and in parallel with system design activities to maximize time efficiency through project completion and reduce risk of the existing ring's failure.

Equipment Replacement Matrix

				SIEMENS PLC CP			Other Panel Modifications			
Fiber Drop/ RF	PLC Designation	Panel Designation	Location	Components Replacement[1]	Backpan Replacement[2]	Enclosure Replacement[3]	HMI (Thin Client)	Power Supply & UPS	Fiber Patch Panel	Notes/Comments
1	PLC-1	RBS-1 / SCP PLC #1	Influent Bldg.							Utilize existing I/O wiring harnesses that terminate onto the existing PLC I/O modules.
2	PLC-2	RBS-2 / Ethernet Cabinet	Primary Electric Bldg.							Delete from system. Demo work by IPS. Requires Fiber Optic rework.
3	PLC-3	RBS-3	Primary Pump Bldg.							Delete from system. Demo work by IPS. Move PLC-3 IO loops to PLC-3A. PLC-3 enclosure remains as Fiber Optic/Ethernet enclosure.
3	PLC-3A	RBS-3A	Primary Pump Bldg.	X			X	X	X	Utilize existing I/O wiring harnesses that terminate onto the PLC I/O modules.
4	PLC-4	RBS-4 / Ethernet Cabinet	Centrifuge Bldg.		X			X	X	To interface with existing Centrifuge #2 ABB 800-Series PLC (Alfa-Laval) and future Centrifuge #1 Siemens PLC system. Dryer PLC located in Dryer Bldg will be upgraded from AB to Siemens by Pkg Vendor, interconnected to RBS-4 Ethernet network. Serves as intial pilot for "lessons learned" approach.
4	PLC-CENT1	Centrifuge No. 1 CP	Centrifuge Bldg.							No work under this contract. Maintain Ethernet network connections at RBS-4.
4	PLC-CENT2	Centrifuge No. 2 CP	Centrifuge Bldg.							No work under this contract. Maintain Ethernet network connections at RBS-4.
4	PLC-DRY	Fenton Biosolids Dryer	Biosolids Dryer Bldg.							Proprietary packaged process vendor PLC; integrate existing AB PLC into new SCADA system as-is. Connects to Ethernet network at RBS-4.
5	PLC-4A	Sludge Pump CP (SPCP)	N. Digester Bldg, Sludge Pump Control Rm				X	X	X	Misc. improvements as noted.
6	PLC-4B	Filter Pump CP (FPCP)	S. Digester Bldg, Filter Pump Control Rm				X	X	X	Misc. improvements as noted.
7	PLC-6	RBS-6 / Ethernet Cabinet	Chlorine / Lime Bldg.			X		X	X	New PLC enclosure in place of existing Ethernet Network enclosure. To be mounted on wall in same location as existing Ethernet enclosure. Move IO from RBS-6 to PLC-6 Ethernet Cabinet. Coordinate with IPS if panel should be replaced due to space constraints.
8	PLC-5	RBS-5 / Ethernet Cabinet	Secondary Bldg.					X	X	Now obsolete; abandon in-place. Ethernet Cabinet remains as Network Termination Cabinet.
9	RBS-7	RBS-7	Phase 1 Bldg.							Eliminate, demolish. May become fiber patching panel.
9	RBS-7 Eth.	RBS-7 Ethernet Cabinet	Phase 1 Bldg.					X	X	Converts to fiber optics termination cabinet or fiber pull box. RBS-7 becomes the accessible fiber termination cabinet. Coordinate with IPS on fiber ring and panel modifications.
9	PLC-7	SCP PLC #7	Phase 1 Bldg.		X		X	X	X	Backpan replacement for PLC-7.
10	PLC-8	RBS-8 / Ethernet Cabinet	Filter Pump Room			X		X	X	Enclosure: 48"H x 36"W x 12" to 14"D with 19.75" high legs/feet.
11	PLC-9	PLC-9 CP	UV Disinfection Bldg.	X			X	X	X	Use existing I/O wiring harnesses that terminate onto PLC I/O modules.
11	PLC-UV	Ozonia UV CP	UV Disinfection Bldg.							Existing Siemens S300 Series with Ethernet comm. capabilities and Siemens Comfort Panel OIT. To be "polled" via PLC-9, remains as-is.
12	PLC-10	MLE & Blowers Master CP	Aeration Bldg.			X	X	X	X	Install next to existing PLC-10 cabinet; old cabinet converts to marshalling cabinet. Needs new analog signal surge protection modules.
13	PLC-11	PLC-11 Panel	Headworks Bldg.	X			X	X	X	Needs new analog signal surge protection modules. Utilize existing I/O wiring harnesses that terminate onto PLC I/O modules.
RF	Bio Tower PLC	Bio Tower PLC	Bio Tower			X		X		Consider aluminum enclosure, corrosive environment. Upgrade RF 900 MHz link and radios. Add H2S Analyzer w/ Alarm Beacon.
RF	Rockwind PLC	Rockwind PLC	Rockwind Golf Course			X		X		5.8 GHz Radio. Antenna on hinging mast. Need to upgrade PLC.
RF	S&H Farms PLC	S&H Farms PLC	S&H Farms			X		X		5.8 GHz Radio. Solar powered ICP. Need to upgrade PLC.
—	Nadine	Nadine	Nadine Pond / Flood Field							No work, manual control only. No work at site, 900 MHz radio for to integrate into new SCADA for monitoring.

1 *Removal and replacement of individual components within the existing enclosure, and on the existing backpan using component kits pre-assembled at TESCO's manufacturing facility and shipped to IPS for installation in the field.*
2 *Removal and replacement of existing backpan with a newly-equipped backpan pre-assembled at TESCO's manufacturing facility and shipped to IPS for installation in the field.*
3 *Demolition (except as noted above) and replacement of the existing control panel with a new control panel manufactured at TESCO's manufacturing facility and shipped to the project site for installation in the field by IPS.*

Equipment Specifications

COMPONENTS	SELECTION LISTING
Central SCADA System	
SCADA Equipment Racks	APC Netshelter, Chatsworth, or equivalent*
SCADA Hardware, Host Server	Dell, R450 Server Class
DMZ Server	Dell, R450 Server Class
Computer Hardware, Client	Dell, Wyse, Thin Clients
SCADA Software/Platform	Inductive Automation Ignition or Trihedral VTScada*
Hypervisor	VMware ESXi
Operating Systems, Server	Microsoft Server Core Licensing
Operating Systems, Client	Microsoft OS
Remote Alarm Notification Modem	GrandStream, Multitech, or Sierra Wireless*
Backup & Recovery Software	VEEAM
Network Attached Storage (NAS)	QNAP 4-Bay**
Network Time Protocol (NTP) Server	CSS Time Machine, TM2000B**
Peripherals	Assortment
Uninterruptable Power Supply (UPS)	Marathon, APC, or equivalent

COMPONENTS	SELECTION LISTING
Networking/Communications/RF Infrastructure	
Router	Cisco, 4331
Firewall / Security Appliance	Palo Alto, PA220
Ethernet Switch, Core/ SCADA	Cisco, 9002
Ethernet Switch, Edge/ PLC (SM-FO Ring)	Siemens, Scalance XC206-2SFP
Ethernet Wireless/RF Bridge	Tsunami, Proxim
Industrial Control Panels (ICP) (Major Components)	
PLC Systems	Siemens S7-1500
Power Supplies (DC)	Siemens SITOP
UPS (DC)	Siemens
Industrial Panel-Mount Computer (IPC)	Advantech or equivalent*
Analog Signal Surge Protection Modules	Phoenix Contact, PT-2XEX(I)-24DC-ST

* *To be determined during design phase, sometimes dependent upon City-selected SCADA platform.*

** *Rack-mounted component.*

Spare Parts

Due to current market conditions, suppliers will not guarantee 6-month pricing for spare parts. Our team has included $20,000 allowance for spare parts. Actual spare parts listing will be determined as part of one of the proposed workshops during the design phase.

Basis of Proposed Offering

We trust the supplied equipment specifications above satisfies the intent of your request for a Bill of Materials. This project is not designed yet; to be prescriptive on your behalf, without your input, goes against the harmonious nature of our methodologies, and our interpretation of the spirit of your request.

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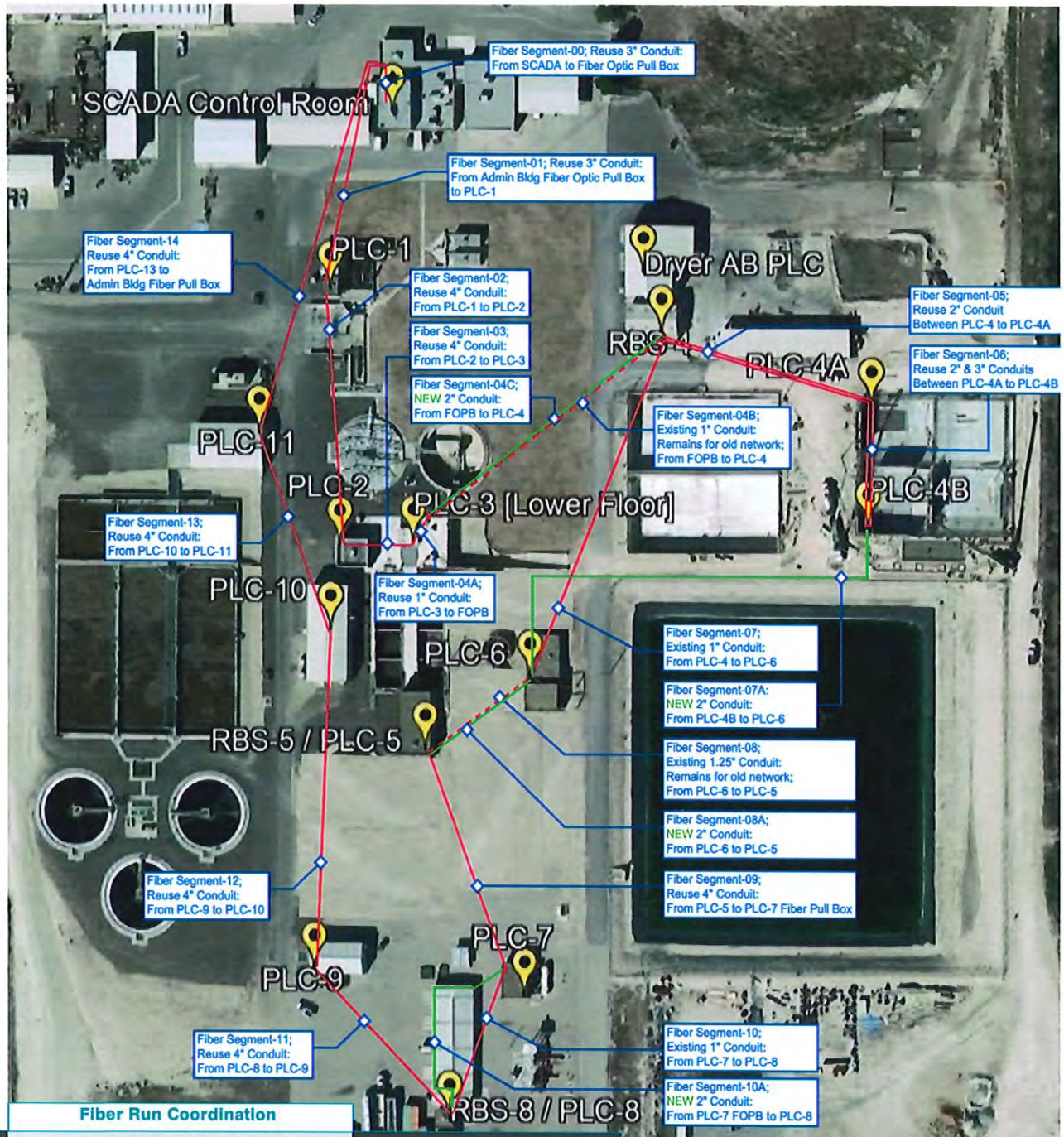

Fiber Run Coordination

Fiber Seg.	Segment Between Point A	Point B	Conduit Size (in.)	Existing/ New	New Conduit
00	SCADA Control Room	Admin Building Pull Box	3"	EXISTING	
01	Admin Building Pull Box	PLC-1	3"	EXISTING	
02	PLC-1	PLC-2	4"	EXISTING	
03	PLC-2	PLC-3	4"	EXISTING	
04A	PLC-3	PLC-3 FO Box	1"	EXISTING	X
04B	PLC-3 FO Box	PLC-4	1"	EXISTING	
04C	PLC-3FO Box	PLC-4	2"	NEW	X
05	PLC-4	PLC-4A	2"	EXISTING	
06	PLC-4A	PLC-4B	2" & 3"	EXISTING	
07	PLC-4	PLC-6	1"	EXISTING	
07A	PLC-4B	PLC-6	2"	NEW	X
08	PLC-6	PLC-5	1.25"	EXISTING	
08A	PLC-6	PLC-5	4"	NEW	X
09	PLC-5	PLC-7 Fiber Box	4"	EXISTING	
10	PLC-7 Fiber Box	PLC-8	1"	EXISTING	
10A	PLC-7 Fiber Box	PLC-8	2"	NEW	
11	PLC-8	PLC-9	4"	EXISTING	
12	PLC-9	PLC-10	4"	EXISTING	
13	PLC-10	PLC-11	4"	EXISTING	
14	PLC-11	Admin Bldg	4"	EXISTING	

Note: The above Fiber Optic segments are for illustration purposes to denote links between PLC systems only; this illustrated is not intended to identify locations of underground conduits or locations of proposed/new conduits.

Project Approach

Design considerations and approach methodologies are summarized below, followed by preliminary work-product generated during proposal development and planning, and accompanied by our anticipated scope of services and proposed schedule.

Our proposed approach provides for flexibility in the specific selection of a SCADA-HMI system software platform. The budgetary allowance we have developed offers the City the freedom to evaluate and determine the best-suited platform to fit your functional requirements and operational needs.

TESCO will assess the WWRF process control system and together, we collaboratively define your specific needs to ensure we design and deliver a system that exceeds your expectations and promotes consistency, availability, and increased reliability.

System Architecture Conceptual Drawings

TESCO developed the adjacent conceptual system overview diagrams that **demonstrate key concepts to discuss in detail during the design phase workshops.** These guided workshops and discussions are the forum to transition conceptual architecture into a constructible design. This allows your staff to provide input on your preferences, existing standards, long-term management considerations, desirable features, and cut-over logistics through final acceptance of the system.

Figure B.1 & B.2 *(top right (Pg. 1/3), middle right (Pg. 2/3)) Conceptual System Overview Diagram.* Initial system overview depicting redundant host SCADA servers with the anticipated DMZ SCADA Server for distributed thin clients. Shown with preliminary zone and conduit model used to develop the starting system architecture.

Figure B.3 *(bottom right) Radio-Frequency (RF) Alarm Annunciator Diagram.* The SCADA system uses Voice Over IP (VOIP) to execute alarm call outs. The Aspen device will be designated with a dedicated phone drop and phone number, answer the call and start broadcasting over the radio system. Operators can punch in DTMF codes on handheld radios to acknowledge alarms.

Due to page limitations, full-size versions of these figures are provided upon request.

INSTALLATION METHODOLOGIES

Control relationships between process areas that require peer-to-peer communication are identified through workshops and our facility assessment. Interlocks and/or permissives are clearly identified, understood, and accounted for during the assessment and design to streamline installation and start-up efforts.

The proposed approach balances minimizing operational disruption, risk of unanticipated outcomes, and City staff work/life balance.

Manual Plant operations during upgrade is unavoidable and will require a substantial commitment from your O&M Staff.

The facility assessment provides our team with a comprehensive understanding of control and communication interdependencies in the existing control system. Armed with that information, we collaboratively discuss, deliberate, and design a transition and testing plan that includes a proof-of-concept and piloting process area. This creates a known, methodical procedure for each PLC cut-over to the new SCADA system and plots-out a cut-over plan made available to all stakeholders that clearly identifies anticipated manual operations ahead of time.

This project is best categorized into three distinct phases:

Phase 1: Planning / Pre-Design / Design
Phase 2: System Development & Implementation
Phase 3: Field Activities

Both firms are involved in all phases to some extent. TESCO is responsible for system design, development, and start-up/commissioning (Phases 1, 2, & 3). The fiber optics ring and all field electrical installation is by IPS (Phase 3).

Deployment of new PLC systems is proposed in accordance with the previously shown **Equipment Replacement Matrix**. Installation is streamlined using the described methods, which TESCO successfully used for the City's recent water system upgrade.

WARRANTY PERIOD

Proactively Protect Critical Systems with Factory-Trained Technicians: The upgraded SCADA system is warranted to be free of defects in materials and workmanship for a period of one year from the date of substantial completion. Substantial completion is defined as the SCADA System performing the monitoring and control functions as described in the City's "Proposal Specifications and Requirements" with all project equipment delivered and installed satisfactorily. A record of Warranty start and end dates are included within our O&M Manuals provided at close-out.

EMASS® – TESCO'S EXTENDED MAINTENANCE & SYSTEMS SUPPORT SERVICES

Proactively Protect Critical Systems with Factory-Trained Technicians: EMASS protects critical systems with support services that detect underlying problems proactively by assessing ongoing operational upkeep needs. Providing cost-efficient support services that extend system life, EMASS reduces out-of-service time, protects you from escalating costs, and simplifies meeting regulatory requirements.

TESCO's EMASS® Team provides all types of preventative maintenance and support services, including instrument calibrations, motor control equipment servicing and troubleshooting, and other critical services.

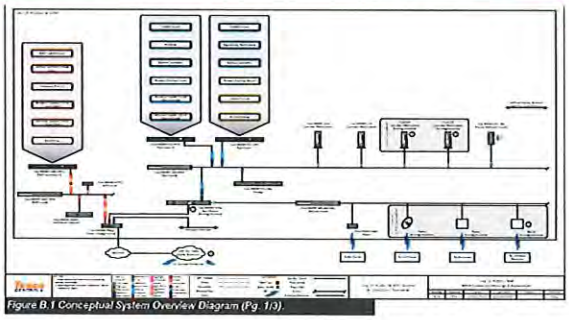

Figure B.1 Conceptual System Overview Diagram (Pg. 1/3).

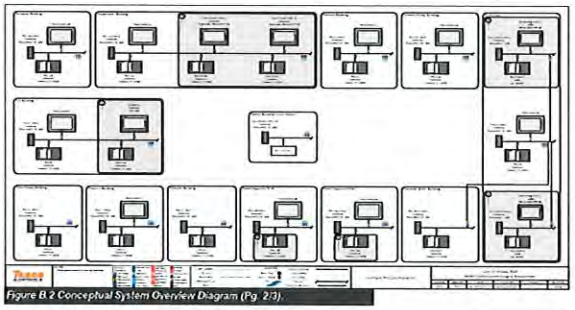

Figure B.2 Conceptual System Overview Diagram (Pg. 2/3).

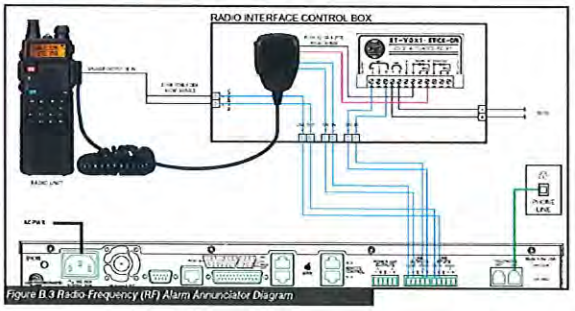

Figure B.3 Radio-Frequency (RF) Alarm Annunciator Diagram

Scope of Services

I. PROJECT INITIATION / PROJECT MANAGEMENT / GENERAL REQUIREMENTS

A. Project Initiation

- Insurance / Permits / Etc.

B. Project Management Activities

- Project Management & Contract Administration
- Project Management Plan Submittal
- Schedule of Values
- Decision Log
- Submittal Log
- Resource Management & Maintenance of Project Schedule
- Site Safety Plan
- Contractor Daily Field Reports
- Monthly Payment Applications
- General Coordination Activities

II. PHASE 1 PLANNING / PRE-DESIGN / DESIGN ACTIVITIES

A. System Planning

- General Project Plan
- Project Kickoff & Owner Considerations Meeting
- Preparations & Agenda Development
- Meetings, On-site
- Meetings, Remote Attendees
- Meeting Minutes Documentation
- Project Plan Refinement

B. Pre-Design / System & Facility Assessments

- Preliminary Review of Existing Documentation
- Field Facility / System Assessment Effort
- Final Review & Analysis of Existing Documentation
- Review & Analysis of Existing PLC Logic & SCADA Application Software
- Conduct Detailed Field Investigations, Data Collection, & Staff Interviews
- Engineering Analysis & Compilation of Findings
- Final Technical Review
- Presentation of Findings & Collaborative Discussion with City
- Technical Memorandum Alignment of Project Objectives & User Requirements

EFFECTIVE PROJECT MANAGEMENT

The additional challenges of design-build projects require skilled project management to lead the project team and achieve stakeholders' goals for the project. **IPS Contract Project Manager, Ryan Gray,** and **TESCO Technology Project Manager, Alex McCulloch**, have both demonstrated effective and efficient leadership in guiding integrated teams to deliver successful projects of similar size and complexity.

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C. Process Control System Design Workshops

i. **Workshop #1:** System Architecture & Network Infrastructure **(3-Day Allowance)**

- Network Infrastructure / Fiber Optic Ring Planning
- General SCADA System Software Application Requirements
- System Management, Diagnostics, & User Experience/Interface
- SCADA System Cybersecurity & Cyber-Hardening
- Disaster Recovery Planning Redundancy, Reliability, & Resiliency
- Finalize SCADA Software Platform Selection (Ignition vs VTScada)

ii. **Workshop #2:** Process Control Narratives (PCNs) & Control Strategy Development **(5-Day Allowance)**

- Process Control Narrative (PCN) & Detailed Control Strategies Development
- Process Control System Logic Requirements:
  - Influent PS, Bio-Filtration, Odor Control, EQ Basin
  - Grit & Scum Pumping & Removal Systems
  - Headworks, Grit Dewatering, Fine Screens, Scum Concentrator
  - MLE Process Basins, Master Aeration/ Process Blowers, Bio-Solid Thickeners, Final Clarifiers, RAS/WAS, Scum Pumping
  - UV Disinfection, Effluent Flow Monitoring (Flume)
  - Aerobic Digesters (North & South Systems)
  - Sludge Dewatering / Centrifuges
  - Bio-Solids Drying System
  - Effluent PS
  - Bio Tower
  - OXY Petroleum PS, Dome Storage
  - Recycled Water Distribution System
  - PRV Sites, Surge Tank, PH Cemetery Irrigation System

iii. **Workshop #3:** SCADA System Application Development **(5-Day Allowance)**

- Installation & Configuration of Base System Application Software VMs
- Base Application Templates & SCADA System Standards
- SCADA Application Security
- SCADA System Graphics & User Preferences
- Navigation Methodologies
- Operational Dashboards, Summary Displays, & Process Equipment Faceplates
- Primary Process Displays
- Analytical Process Trend Displays
- Alarm & Event Management System
- Integrated Diagnostics
- PLC-to-PLC Peer-to-Peer & SCADA-to-PLC Communications / Data Exchanges
- Database Management System & Historization Methodologies *(Database Logging Methodologies Organization, Frequency, & Resolution)*
- Data Analytics
- Reports & Reporting Interfaces
- System Backup & Recovery Methodology
- Client Interfaces & SCADA Client Workstations
- Configuration & Integration of Peripheral Devices
- Alarm Notification System & Radio Alarm Annunciation Interface

iv. **Workshop #4:** Project Execution & Logistics **(5-Day Allowance)**

- ICP/PLC Panel Layout & Transition/Migration Planning
- Implementation Logistics, Parallel Operation, Transition & Cut-over (Migration & Cut-over Requirements Planning)
- System Testing Requirements (IST, FAT, CEET, CSFT, SAT, ODT)
- System Training Requirements
- Operations Preparation – Manual Process Control Requirements

D. Front-End Engineering Design (FEED) Services

- Fiber Optic Ring Network Infrastructure Submittal, Incl., Supporting Fiber Optic Converter Components/Devices Submittal
- SCADA & Network Infrastructure System Drawings
- SCADA System Hardware, Software, & Equipment BOM Submittal
- SCADA System Standards (PLC, SCADA-HMI, Historical Data Logging, etc.)
- Cybersecurity & Disaster Recovery Plan Submittal
- Engineered Industrial Control Panel (ICP) Shop Drawing Packages
- Engineered ICP Bill of Materials (BOM) Packages
- Detailed Process Control Strategy Development Submittal
- System Testing Plan Submittal
- Cut-over & Commissioning Plan Submittal
- Submittal Review & Approval Coordination
- Vendor Coordination & Negotiations

III. PHASE 2 – SYSTEM DEVELOPMENT & IMPLEMENTATION

A. Materials Procurement

- Engineering Release to Procurement & Production Departments
- Early Release of Strategic Equipment/Components
- Hardware, Software, & Misc. Materials Procurement:
  - Hardware, Software, & PLC ICP Materials (BoM):
    - SCADA Equipment Racks
    - Core Network Infrastructure Components (Core Ethernet Switch, Firewall, Routers)
    - Misc. Network Appliances (NAS, NTP, Modems, Etc.)
    - UPS Units w/ MBS & Ethernet Comm Interface
    - SCADA Servers (Redundant SCADA Hosts & DMZ)
    - SCADA Client Hardware
    - SCADA System Application SW & PLC Programming SW
    - PLC ICPs New Enclosures & Rear Subpanels (Backpans)
    - PLC ICPs PLC HW (Siemens S7-1500 Configurations)
    - PLC ICPs Power Subsystem Components (24VDC Power, UPS, Etc.)
    - PLC ICPs SCADA Client Devices (Panel-Mounted)
    - PLC ICPs Ethernet Edge Switches (Scalance w/ SM-FO SFPs in Ring Topology)
    - PLC ICPs Misc. PLC ICP Components
    - PLC ICPs Phoenix Contact Analog Signal Protectors
    - Spare Parts

B. Manufacturing / Fabrication of PLC ICP Systems & SCADA System Equipment Racks

- Qty. (4) PLC Component Kits and Loose Equipment Assemblies
- Qty. (2) PLC/ICP Pre-Assembled Backpans
- Qty. (6) PLC/ICP New Control Panel Enclosures
- Qty. (2) 19" SCADA Computer System Equipment Rack Cabinets
  - Assembly and Cabling of SCADA Equipment Rack(s)
  - Rack, Stack, Cable Management, & Final Interconnects

C. Network Communication System Infrastructure Equipment Configuration

- Configuration of Firewall
- Configuration of Network Routers
- Configuration of Core Ethernet Switching
- Configuration of Edge Ethernet Switching (Ring Topology)
- Configuration of Other Miscellaneous Components

D. PLC Applications Programming (Process Control Logic Development)

- Planning & Preparation Activities
- Finalize PLC I/O Database
- Process Control Strategy Refinement
- Process Control Strategy Programming / PLC Logic Development for Process Control
  - Influent PS, Bio-Filtration, Odor Control, EQ Basin
  - Grit & Scum Pumping & Removal Systems
  - Headworks, Grit Dewatering, Fine Screens, Scum Concentrator
  - MLE Process Basins, Master Aeration/ Process Blowers, Bio-Solids Thickeners, Final Clarifiers, RAS/WAS, Scum Pumping
  - UV Disinfection, Effluent Flow Monitoring (Flume)
  - Aerobic Digesters (North & South Systems)
  - Sludge Dewatering / Centrifuges
  - Bio-Solids Drying System
  - Effluent PS
  - Bio Tower
  - OXY Petroleum PS, Dome Storage
  - Recycled Water Distribution System
  - PRV Sites, Surge Tank, PH Cemetery Irrigation System
- PLC Software Documentation

E. SCADA-HMI System Application Programming & Configuration

- Base System Platform and Setup
- Installation & Configuration of Base System Application Software VMs
- Base Application Templates & SCADA System Standards
- SCADA Application Security
- SCADA System Graphics & User Preferences
- Navigation Methodologies
- Operational Dashboards, Summary Displays, & Process Equipment Faceplates
- Primary Process Displays
- Analytical Trend Displays
- Alarm & Event Management System
- Integrated Diagnostics
- PLC-to-PLC Peer-to-Peer & SCADA-to-PLC Communications / Data Exchanges
- Database Management System & Historization Methodologies
- Database Logging Methodologies - Organization, Frequency, & Resolution
- Data Analytics
- System Reports & Reporting Interfaces
- System Backup & Recovery Methodology
- SCADA Client Workstations & Client Interfaces
- Configuration & Integration of Peripheral Devices
- Alarm Notification System & Radio Alarm Annunciation Interfaces
- Remote Access
- Other Integration Services

F. System Testing @ TESCO Factory

- Equipment Staging for System Testing
  - Qty. (4) PLC Component Kits and Loose Equipment Assemblies
  - Qty. (2) PLC/ICP Pre-Wired Backpanel Assemblies
  - Qty. (6) PLC/ICP Control Panels
  - Qty. (2) 19" Equipment Racks / SCADA System Equipment Cabinets
- Internal Systems Testing (IST)
- Witnessed Factory Acceptance Test (FAT)
- Pack & Ship SCADA-HMI & ICP/PLC System Equipment

PHASE 3 - FIELD ACTIVITIES

(INSTALLATION, CUT-OVERS, STARTUP & COMMISSIONING, & FIELD-TESTING ACTIVITIES)

A. Installation Preparations & New Single-Mode Fiber Optics Ring Infrastructure

- Installation & Preparations: New Fiber Optic Ring Network
  - Installation of New Conduit Runs for Fiber Optic Cable Segments
  - Installation and Staging Setup for Fiber Optic Termination Panels
  - Testing/Validation of New Fiber Optic Cable Segments
- Staging Setup of New Fiber Optic Network for Parallel Operations/Cut-over
  - Fiber Optic Ring Conversion: RBS System Communication Network Upgrades
  - Preparation for Converting RBS sites to New Fiber Optic Network
  - Install New Fiber Optic Patch Panels where appropriate
  - Upgrade Fiber Optic/Ethernet Switches for Compatibility with New Fiber Optic Network
  - Verification Testing of New Ethernet Switches on New Fiber Optic Network
  - Convert Existing RBS Systems onto New Fiber Optic Network
  - Operational Testing of RBS System on New Fiber Optic Network
- Preparations: ICP/PLC Panel Area Preparations/ Setups
  - Wire Label Validation and New Wire Label Preparations
  - PLC-10: Relocate Thermostat & Demolish/ Disable Power Receptacle
  - PLC-10: Demolish/Remove UPS System and Maintenance Switch
  - Other Preparations as Required
- Installation & Preparations: SCADA System Server/ Network Room Improvements
  - Relocation of Lighting Fixtures
  - Installation of New Power Receptacles for SCADA Equipment
  - Installation of New 19" Rack Cabinet(s)
  - Final Assembly of Computer & Networking Equipment in Rack(s)
  - Installation Work for Finalizing SCADA Equipment Connectivity
  - Staging setup for SCADA System & Parallel Network Operations
- Central SCADA-HMI System Startup
  - Verification of Site Improvements, Installation, Cables, and Connections
  - Perform System Checks
  - Perform Network & Communication Checks
  - Coordination & Interfacing with Radio Alarm Annunciation System
  - Verify Alarm Annunciations, Notifications, & Acknowledgments
  - Final Preparations for Field CEET, SAT, and ODT with New PLC Systems

B. PROCESS AREA PLC ICP UPGRADES/ REPLACEMENTS

i. **RBS/PLC-1:** PLC Component Implementation, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Modify Existing Panel with New Power Supply/UPS Components
- Replace Existing PLC Components with New PLC Components
- Re-terminate Existing Panel I/O Wiring to PLC, with Wire Ferrules where able
- Install New HMI Screen onto Panel Door
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

ii. **RBS/PLC-7:** PLC Backpan Implementation, Cut-over, Testing, & Commissioning
   - Wire Label Prep Verification
   - Panel Power Shutdown
   - Remove Existing PLC Backpanel Assembly
   - Install New PLC Backpanel Assembly
   - Re-terminate Field Wiring, adding Wire Ferrules
   - Modify Existing Panel with New Power Supply/UPS Power Sources
   - Install New HMI Screen onto Panel Door
   - Finalize Electrical & Fiber Optic Installation Services
   - Installation Verification Checks
   - Re-Initiate PLC Panel Power and Startup New PLC System
   - Perform Complete End-to-End Testing (CEET)
   - Perform Control Strategy Functional Testing (CSFT)
   - Perform Site Acceptance Testing (SAT)
   - Perform Operational Demonstration Testing (ODT)
   - Final Commissioning & Tuning

iii. **RBS/PLC-2:** Demolish PLC Panel and Modify Ethernet Cabinet
   - Panel Power Shutdown
   - Modify Existing Panel(s) to support the New Fiber Optic Network changes
   - Finalize Electrical & Fiber Optic Installation Services
   - Installation Verification Checks
   - Validate Fiber Optic Connections
   - Perform Site Acceptance Testing (SAT)

iv. **RBS-3:** Relocate PLC-3 I/O, Demolish PLC Panel and Modify Ethernet Cabinet
   - Panel Power Shutdown
   - Modify Existing Panel to move I/O signals to RBS/PLC-3A
   - Modify Existing Panel(s) to support the New Fiber Optic Network changes
   - Demolish (E) PLC-3 Control Panel
   - Finalize Electrical & Fiber Optic Installation Services
   - Installation Verification Checks
   - Validate Fiber Optic Connections
   - Perform Site Acceptance Testing (SAT)

v. **RBS/PLC-3A:** PLC Component Implementation, Cut-over, Testing, & Commissioning
   - Wire Label Prep Verification
   - Panel Power Shutdown
   - Modify Existing Panel with New Power Supply/UPS Components
   - Replace Existing PLC Components with New PLC Components
   - Re-terminate Existing Panel I/O Wiring to PLC, with Wire Ferrules where able
   - Replace Analog Signal Surge Protection Modules
   - Install New HMI Screen onto Panel Door
   - Finalize Electrical & Fiber Optic Installation Services
   - Installation Verification Checks
   - Startup New PLC System
   - Perform Complete End-to-End Testing (CEET)
   - Perform Control Strategy Functional Testing (CSFT)
   - Perform Site Acceptance Testing (SAT)
   - Perform Operational Demonstration Testing (ODT)
   - Final Commissioning & Tuning

vi. **RBS/PLC-4:** PLC Backpan Implementation, Cut-over, Testing, & Commissioning
   - Wire Label Prep Verification
   - Panel Power Shutdown
   - Remove Existing PLC Backpanel Assembly
   - Install New PLC Backpanel Assembly
   - Re-terminate Field Wiring, adding Wire Ferrules
   - Modify Existing Panel with New Power Supply/UPS Power Sources
   - Install New HMI Screen onto Panel Door
   - Finalize Electrical & Fiber Optic Installation Services
   - Installation Verification Checks
   - Re-Initiate PLC Panel Power and Startup New PLC System
   - Perform Complete End-to-End Testing (CEET)
   - Perform Control Strategy Functional Testing (CSFT)
   - Perform Site Acceptance Testing (SAT)

vii. **PLC-4A:** PLC Panel Modifications, Comms. Integration, Testing, & Commissioning
- Panel Power Shutdown
- Modify Existing Panel with New Power Supply/UPS Components
- Install New HMI Screen onto Panel Door
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Power-up & Startup Existing PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)

viii. **PLC-4B:** PLC Panel Modifications, Comms. Integration, Testing, & Commissioning
- Panel Power Shutdown
- Modify Existing Panel with New Power Supply/UPS Components
- Install New HMI Screen onto Panel Door
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Power-up & Startup Existing PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)

ix. **RBS/PLC-6:** PLC Panel Replacement, Cut-over, Testing, & Commissioning
- Wire Label Prep Verification
- Panel Power Shutdown
- Remove Existing RBS-6 Ethernet Panel
- Install New PLC-6 Control Panel
- Consolidate Field I/O Wiring from (E) RBS/PLC-6 Panel, adding Wire Ferrules
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

x. **RBS/PLC-5:** Modifications to Support New Fiber Optic Network Ring
- Power Shutdown
- Modify Existing Panel(s) to support the New Fiber Optic Network changes
- Finalize Electrical / Fiber Optic Installation Services
- Installation Verification Checks
- Validate Fiber Optic Connections
- Perform Site Acceptance Testing (SAT)RBS/PLC-5 Panel and Ethernet Panel Systems are abandoned in place

xi. **RBS/PLC-8:** PLC Panel Replacement, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Remove Existing PLC Panel
- Install New PLC Panel
- Re-terminate Field Wiring, adding Wire Ferrules
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning`

xii. **PLC-9:** PLC Component Implementation, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Modify Existing Panel with New Power Supply/UPS Components
- Replace Existing PLC Components with New PLC Components
- Re-terminate Existing Panel I/O Wiring to PLC, with Wire Ferrules where able
- Install New HMI Screen onto Panel Door
- Finalize Electrical, Comms. Networking, & Fiber Optic Installation Services
- Installation Verification Checks
- Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

xiii. **PLC-10:** PLC Panel Implementation, Cut-over, Testing, & Commissioning

- Install New PLC Panel
- Wire Label Validation & New Wire Label Prep in Marshalling Panel
- Shutdown & Remove Existing PLC Equipment & Appurtenances
- Modify Existing PLC Panel, Convert to Marshalling Panel
- Extend PLC I/O Signal Wiring from Marshalling Panel to New PLC Panel
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)`
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

xiv. **PLC-11:** PLC Component Implementation, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Modify Existing Panel with New Power Supply/ UPS Components
- Replace Existing PLC Components with New PLC Components
- Re-terminate Existing Panel I/O Wiring to PLC, with Wire Ferrules where able
- Replace Analog Signal Surge Protection Modules
- Install New HMI Screen onto Panel Door
- Finalize Electrical & Fiber Optic Installation Services
- Installation Verification Checks
- Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

xv. **Bio Tower PLC:**PLC Panel Replacement, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Remove Existing PLC Panel
- Install New PLC Panel
- Re-terminate Field Wiring, adding Wire Ferrules
- Finalize Electrical Installation Services
- Installation Verification Checks
- Integrate RF Communications Link
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration
- Final Commissioning & Tuning

xvi. **Rockwind PLC:**PLC Panel Replacement, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Remove Existing PLC Panel
- Install New PLC Panel
- Re-terminate Field Wiring, adding Wire Ferrules
- Finalize Electrical Installation Services
- Installation Verification Checks
- Integrate RF Communications Link
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

xvii. **S&H Farms PLC:** Panel Replacement, Cut-over, Testing, & Commissioning

- Wire Label Prep Verification
- Panel Power Shutdown
- Remove Existing PLC Panel
- Install New PLC Panel
- Re-terminate Field Wiring, adding Wire Ferrules
- Finalize Electrical Installation Services
- Installation Verification Checks
- Integrate RF Communications Link
- Re-Initiate PLC Panel Power and Startup New PLC System
- Perform Complete End-to-End Testing (CEET)
- Perform Control Strategy Functional Testing (CSFT)
- Perform Site Acceptance Testing (SAT)
- Perform Operational Demonstration Testing (ODT)
- Final Commissioning & Tuning

xviii. **PLC-DRY:** PLC Panel Replacement, Cut-over, Testing, & Commissioning

- Integrate Existing PLC into New SCADA System "As-Is"
- Consider other options during project execution.
- Final Field Clean-Up
- Transition RBS System off RBS Fiber Ring and onto New Fiber Ring
- Demolish RBS Panels no longer used, where applicable
- Demolish Transition/Main PLC System
- Finalize Other Work as Required by Contract

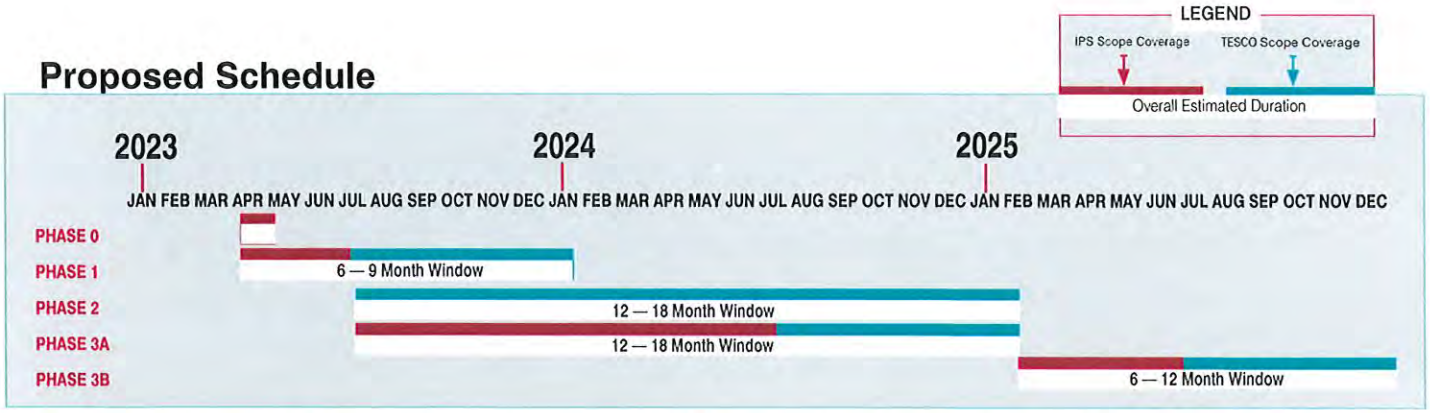
C. FINAL VERIFICATIONS & SYSTEM OPTIMIZATION

- Final System-Wide Operational Acceptance Demonstration (OAD) Test
- Final Commissioning & System Tuning / Optimization
- 30-Day Operational Run
- Final Acceptance

D. PROJECT CLOSE-OUT & FINAL PROJECT DOCUMENTATION

- O&M Manuals & Final Record Drawings
- PLC Systems Operational & Maintenance Training
- SCADA System Operational & Maintenance Training
- Network Infrastructure Training
- Spare Parts Turn-Over
- Punchlist Items
- Warranty Commencement
- Final Closeout

Proposed Schedule



PHASE 0 - CONTRACT ADMINISTRATION & MANAGEMENT

0 Project Initiation
1 Award of Contract / NTP (Based on April 1st Start Date - Approximated)
2 Kick-off Meeting
3 Project Initiation

PHASE 1 - PLANNING, PRE-DESIGN, & DESIGN PHASE

4 System & Facility Assessments (Joint Effort TESCO + IPS + COH)
5 Meetings & Workshops
6 System Design Activities & Submittals
7 ENGR BoM (Early Release of Siemens PLC HW & Scalance Edge Switches)

PHASE 2 - SYSTEM DEVELOPMENT & IMPLEMENTATION

8 Release to Procurement, Production, & System Development Teams
9 Procurement of Materials (Hardware & Software)
10 Assemble Component Kits (CAT-1 PLCs)
11 Shop Fabrication Activities (CAT-2 & CAT-3 PLCs)
12 PLC Programming
13 SCADA System Application Development
14 TESCO IST
15 TESCO FAT (Joint Participation w/ TESCO, IPS, & COH)
16 Shipment to Jobsite

PHASE 3A - FIELD ACTIVITIES (PREP FOR PLC ICP UPGRADES)

17 Fiber Optic Ring Installation (IPS)
18 Initial Network Infrastructure Verification
19 Transition of Existing PLCs and SCADA System onto New SM-FO Network
20 Operations Room & Server Room Improvements
21 Rack-n-Stack in Server Room
22 Initial System & Network Infrastructure Checks
23 Spin-Up New System(In Parallel w/ Existing)
24 Site Preparations

PHASE 3B - PLC ICP UPGRADES/ REPLACEMENTS 25 BEGIN PLC

25 Demo & Install Activities by IPS
26 PLC #1 - TESCO & IPS Joint Start-Up & Commissioning (SU&C), Testing, & Final Validation (CEET, SAT, OAD)
27 Operations Break; Repeat Process for Each PLC Upgrade

SCHEDULE NOTES

1) De-energize PLC ICP.

2) Week #1: Initial demolition and installation of new hardware for each PLC ICP.

3) Week #2: Start-up & commissioning, field testing, and final PLC ICP validation, including process logic and SCADA system interfaces.

4) Week #3: Quality assurance break period to ensure previous two weeks were successful for the corresponding PLC upgrade, and to ensure we do not bite off more than we can all chew collectivity (COH + IPS + TESCO).

5) Weeks #1 and #2, require the largest commitment from City Operations staff, as those weeks require operating the process equipment manually during each 3-week transition period.

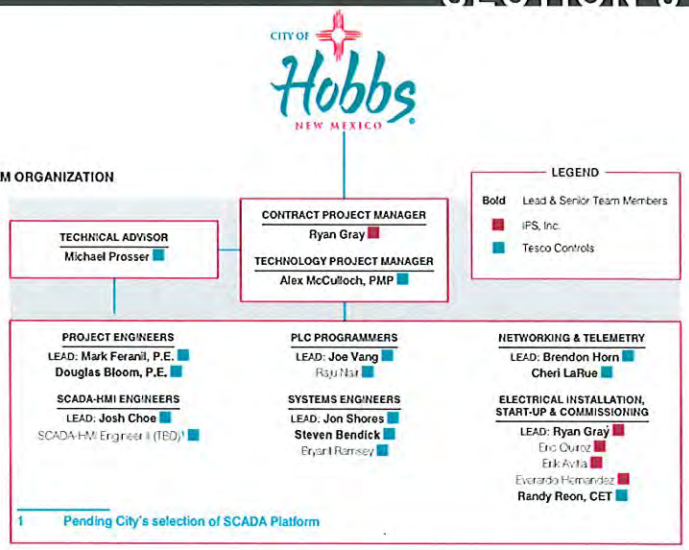
PERSONNEL RESPONSIBLE TO PERFORM WORK

Firm Staffing & Key Personnel

IPS & TESCO have assembled the team shown in the adjacent Organization Chart based on their relevant qualifications, experience, and proximity to serve as key personnel for the **City of Hobbs' SCADA Design & Replacement Project**. This team understands the necessity to minimize plant and process area downtime. Our key team members are listed below, **we have already worked closely throughout proposal preparation to envision success in detail, step-by-step.** We bring this vision to the City as not only the basis to propose upon, but also as the best-value plan that balances risk, schedule, and budget with your understood requirements and preferences. **To solidify the plan any further, City input and commitment is necessary.**

		YEARS OF EXPERIENCE		
NAME	PROJECT ROLE	PRIOR CITY EXPERIENCE	TOTAL	IPS / TESCO
Ryan Gray	Contract Project Manager	■	24	4
Eric Quiroz	Electrical Installation	■	18	8
Erik Avitia	Fiber-Optics Specialist	■	7	1
Michael Prosser	Technical Advisor	■	36	21
Alex McCulloch, PMP	Technology Project Manager		12	6
Mark Feranil, P.E.	Project Engineer	■	7	7
Douglas Bloom, P.E.	QA/QC Engineer	■	28	12
Jon Shores	Lead Systems Engineer	■	25	25
Steven Bendick	Systems Engineer		4	4
Joe Vang	Lead PLC Applications Programmer	■	7	6
Raju Nair	PLC Applications Programmer	■	10	10
Josh Choe	Lead SCADA-HMI Engineer	■	22	22
TBD Pending SCADA Platform	SCADA-HMI Engineer	*TBD*	*TBD*	*TBD*
Brendon Horn	Lead Networking & Telemetry Engineer	■	25	18
Cheri LaRue	Networking & Telemetry Engineer	■	22	5
Randy Reon, CET	Field Services		14	7

TEAM ORGANIZATION



Commitment to Your Success

The City, this project, and the project team is fully-supported by IPS directly from Hobbs, NM, in concert with TESCO's expert resources for engineering, manufacturing, production, factory testing, and commissioning. The proposed team understands this project necessitates minimal operational downtime, but likely requires support over multiple evenings, nights, and weekends. Regardless, this team commits to your success through conviction that we have devised the most realistic, comprehensive plan for this project, or at least the best starting point for collaboration with the City. Though we stand by the highly thought-through project approach, schedule, and sequencing described in ***Section 2. Equipment Specifications,*** we believe City input is invaluable during the design phase, as it is the City's project, system, and staff affected.

The City has our commitment. Success requires not only a commitment from IPS | TESCO, but just as substantial commitment from operations staff to manually run the plant during unavoidable downtime periods, which we work together to mitigate and plan for ahead of time.

Due to page limitations, focused resumes for lead team members are included in the following pages.

RYAN GRAY

CONTRACT PROJECT MANAGER

Mr. Gray is a licensed Automation Director with 15+ years of automation/ communication experience in the Oil and Gas Industry. His experience includes managing the installation/implementation of automated control, integrated systems, Fiber Optic/Ethernet Networks, and physical security systems for major oil companies in southeastern New Mexico and Texas, and municipal entities for surrounding cities. He also provides daily routine maintenance and troubleshooting for system optimization and repair.

24 Years of Experience
4 Year at IPS Inc.

EDUCATION

- ES-3J, Low Voltage Journeyman (New Mexico, 2006)
- EE-98J, Electrical Journeyman (New Mexico, 200)

CERTIFICATIONS

- Honeywell DCS Certification
- Rockwell Automation Certified – Control Logix, Compact Logix, Rs-500
- Avo Institute, Certified Fiber Optic Technician/ Designer
- Texas Electrical Journeyman

SKILLS

- Proficient in understanding and writing PLC logic
- Proficient in Fiber Optic/ Copper Communications systems
- Understands Electrical Control Systems and Schematics
- Successful in team building and skillset deployment

RELEVANT EXPERIENCE

Ingram Professional Services, Hobbs, New Mexico:
Automation/Fiber Director (August 2019 - Current)

Mr. Gray is the Division Manager building infrastructure at IPS. He developed a team to carry out the service needs of IPS clients and execute with operations excellence. He also provides sales support in New Mexico/West Texas for the company to increase revenue for the department, builds proposals for projects and relationships through customer support and service. Mr Gray participates in project completion walk throughs, drives research and development to maintain a competitive edge in technology, diversity, and services for:

- OXY
- ConocoPhillips
- Mewbourne Oil Company
- Devon
- DCP
- Coterra
- Delta Constructors
- Saulsbury
- Apache
- City of Hobbs
- City of Jal
- City of Lovington
- Hobbs Schools
- NMJC

ConocoPhillips:
System Automation Specialist (August 2011 - January 2019)

Mr. Gray maintained controls systems in the field for SENM. He managed and implement capital project installations and supervised contract support in carrying out daily activities for projects or maintenance. He also programmed PLCs and control schemes for local and remote control and alarming throughout the SENM field.

Klein Automation & Electric :
Technician Manager (August 2004 - February 2011)

Mr. Gray installed low-voltage systems for commercial/industrial applications and directed technicians for their daily activities and provided support.

Klein Automation & Electric :
Project Manager (May 1995 - August 2004)

Mr. Gray managed the installation of Fiber/Copper systems for the City of Austin, the United States Army (Ft. Hood), Round Rock, Austin, Pflugerville, and Georgetown ISDs.

12 Years of Experience
6 Years at TESCO

Alex McCulloch

PROJECT MANAGER

Alex McCulloch is an experienced project manager specializing in managing complex control system integration projects involving water/wastewater treatment facilities and associated infrastructure. He brings an in-depth understanding of the steps required for successful water/wastewater control system designs and system deployments that incorporate considerations for telemetry, advanced communications, regulatory compliance, site security and cybersecurity – in addition to the critical role control systems play in promoting public health and safety.

Known for managing teams that successfully integrate feedback obtained from operations staff and key project stakeholders into the design, integration, testing, start-up, and commissioning phases, Alex delivers projects that get completed on-time and within budget, often exceeding our clients' expectations.

SPECIALIZATION

Project Management and Administration, Construction Management

EDUCATION

B.S., Construction Management, Colorado State University

FIELDS OF SPECIAL COMPETENCE

Maintaining Contractual Obligations and Coordinating Project Requirements

Construction Planning and Scheduling

Estimating and Surveying

Labor Relations and Safety Management

Organization and Time Management

Adaptability and Problem Solving

CERTIFICATIONS

OSHA 10-Hour and 30-Hour Certifications

CPR and First Aid

RELEVANT EXPERIENCE

North Water Plant Improvements and Remote Monitoring System, Phase II, Lafayette Parish Waterworks District North, LA: Project Manager

Alex managed a project that included installation of a VTScada system at the existing water treatment plant. The project added new VTScada development, new cellular network, cybersecurity, remote notification, and modifications to existing control panel. TESCO's team installed a new remote monitoring system connecting the District's North Lafayette Water Work Operations Building to the Water Treatment Plant (WTP). For the Central Operations Building, TESCO furnished, installed, and configured the remote monitoring and control system software including custom graphics, trends, historical database, alarm notification, web service access, and smart mobile device connectivity. For the WTP main control panel, TESCO provided and installed a new local operator interface unit (OIT) with local viewing capabilities of the system. The OIT was configured to display the information within the existing PLC. TESCO provided and installed a cellular modem and antenna in the existing main control panel to facilitate the communications back to the central remote monitoring and control system. TESCO's field services technician installed the new OIT in the local PLC control panel, and performed system checks for the local and remote plant controls to confirm proper communications were established between the cellular network at the WTP Main Control Panel and the Operations Building. TESCO also provided staff training and O&M manuals. As part of the contract, TESCO is providing subsequent 24/7/365 telephonic and on-site system support.

SCADA Master Plan Project, City of Baton Rouge, LA: Project Manager

This project deployed the City's first SCADA and cellular communications system across 450 sewage-collection pump stations. All pump stations communicate to a SCADA system that presents key information and alarms in an intuitive view.

As Prime Contractor for this $16 million project, TESCO was responsible for building dedicated SCADA control rooms, data centers, and extensive electrical and controls modifications at remote pump stations, among other responsibilities. This virtualized system includes complete redundancy at both SCADA control room locations, monitors 40,000 I/O points, and is capable of controlling all 450 pump stations.

The field modifications at the remote pump stations required major overhauls to the control systems and the addition of PLCs, with minimal impacts to each site's operation. In addition to self-performing a significant amount of the work, subcontractors of various trades were utilized to maintain a high level of quality and ensure the project was completed on time. Once the system was fully operational, TESCO was able to bring all remote sites being on-line five months ahead of schedule. The new system has significantly reduced overflows and has optimized operations efficiency by enabling staff to focus on from maintenance to preventative maintenance.

Buckman Water Reclamation Facility (WRF) Blower Systems Improvements, Jacksonville Electric Authority (JEA), Jacobs, and Wharton-Smith, Inc., Jacksonville, FL: Project Manager

As part of a $16 million treatment facility improvements project , TESCO was contracted by Wharton-Smith to provide instrumentation and controls (I&C) and systems integration services to configure revisions to the existing plant-wide Siemens WinCC SCADA system. TESCO reprogrammed the existing blower system programmable logic controller (PLC), relocated the Sidestream Treatment control logic to a temporary building and to the new process facility site, and supplied additional electrical switchgear, fiber optics, control panels, and instrumentation. TESCO provided factory, acceptance, operational readiness, and site acceptance testing in addition to start-up services, and field calibration services. Alex managed TESCO's multi-disciplinary team of programmers who modified and configured updates to all existing HMI screens and the existing PLC for the relocated Sidestream Treatment process facility, and coordinated the new instrumentation with the electrical system and drawings, as well as input/output (I/O) checks and overall project coordination. Work products included loop drawings in the JEA standard format, and detailed O&M manuals with final as-built drawings and equipment setpoints/ modifications. TESCO also provided staff training on the upgraded system.

Glen Avenue Lift Station Improvements, City of Shreveport, LA: Project Manager

This $425,000 project replaces an existing sewer lift station, including pumps, automated controls, and instrumentation, and also modifies the existing electrical building. The new facilities include two solids-handling, electric dry-pit pumps and associated motor control centers with power supply variable frequency drives, as well as a programmable logic controller (PLC), a flow meter, and all instrumentation including transducers and float switches.

TESCO was subcontracted by Fluid Process & Pumps to provide programming modifications to the existing Citect SCADA system, as required by the contract documents, and to furnish and program new Siemens PLCs, furnish the new pump control panels, confirm communication from the remote site back to the Lucas Wastewater Treatment Plant, and provide on-site installation verification, instrument calibrations, field testing, and start-up services. TESCO also provided staff training and detailed O&M manuals.

Production Control System Upgrade Project, San Antonio Water System (SAWS), San Antonio, TX: Project Manager

This $4 million project replaces the existing Production Control System (PCS) and Aquifer Storage and Recovery (ASR) DYNAC systems by migrating to two separate PlantPAx SCADA systems on one common City-wide Rockwell Automation PlantPAx platform. TESCO was responsible for transitioning the existing PCS ClearSCADA application into the PCS PlantPAx system, resulting in two new FactoryTalk View/ PlantPAx SCADA systems. Alex led the TESCO team in developing the project plan, design, and approach that included completing the project on a fast-track, one-year schedule in order to avoid excessive fines. Additional project challenges included keeping the plant in continuous operation during the cut-over to the live SCADA system update.

As an additional part of this project, Tesco was asked to produce PlantPAx HMI and PLC software standards for SAWS to serve as guiding documents for integrators and consultants on current and future projects.

C.C. Williams Wastewater Treatment Plant Headworks and Primary Clarifier, Mobile Area Water and Sewer System (MAWSS), Mobile, AL: Project Manager

This project included the construction of a new headworks, four new primary clarifiers, a new primary clarifier pump station, and a new septage receiving station at an existing wastewater treatment plant. The existing Wonderware SCADA system required new development and upgrades to integrate the new systems.

TESCO was the contracted controls system integrator for the project, and Alex coordinated with multiple process system integrators to allow for seamless integration between vendors, manufacturers, and systems. TESCO developed the control logic and programming for a new RTU that controlled or monitored all systems and devices under this project. Alex lead multiple coordination meetings with the project design team and project owner to confirm success from the owner's perspective.

36 Years of Experience
21 Years at TESCO

Michael Prosser, CNE

DIRECTOR OF SPECIAL PROJECTS

Michael Prosser is a Senior Engineer and the Director for TESCO's internal Special Projects Unit. He brings 36 years of experience focused on projects that optimize water and wastewater processes through the intelligent application of automation and data integration. Michael has provided the design, specification, coordination, and implementation of over 150 major control and communications systems for municipal and industrial agencies.

Michael is an effective leader who is known for developing practical strategies and effective delivery approaches that yield measurable results.

Michael's engineering and technical acumen includes industrial process control, power supply, hardware, software, telemetry, and security. His career spans both consulting and systems integration specific to the water/wastewater industry. Over his career, Michael has helped reduce project implementation times, maximize return on investment, reduce costs of incorporating new technologies, improve system/process performance, and optimize project productivity through proactive management.

SPECIALIZATION

SCADA Solutions, Controls Systems for Water and Wastewater Treatment Systems and Associated Instrumentation

FIELDS OF SPECIAL COMPETENCE

Engineering and Project Management for Control System Integration Design and Implementation for the Water/Wastewater Industry

EDUCATION

B.S., Electrical and Electronic Engineering, California State University, Sacramento

CERTIFICATIONS

Netware Engineer (CNE)

Allen-Bradley

Schneider Electric:

- EcoStruxure Plant: EcoStruxure Control Expert
- Modicon

Siemens

Eaton/Cutler Hammer

Cisco

FiberTron

Proxim

Wester Multiplex

Hewlett-Packard

RELEVANT EXPERIENCE

SCADA System Replacement, City of Roseville, CA: Technical Advisor

TESCO provided design and implementation services for replacement of the City's aging DYNAC system with GE Intelligent Platform's (GEIP) iFIX and Proficy Historian software. Through a collaborative partnership with the City, TESCO developed the pre-design into a 100% architecture and defined SCADA standards, and also automated the conversion of the DYNAC database to the new iFIX database with no manual conversion required. Over 20,000 database points used for status, function logic, and alarm definitions were migrated from the DCS to the new SCADA system and the City was able to retain operational control throughout system construction, migration, and field testing. Michael was instrumental in coordinating the DHS Audit for System Design and Implementation.

Beyond the local monitoring and control of their respective facilities, the new SCADA systems provide remote monitoring and control of water distribution, recycled water, wastewater collection, and stormwater facilities via various communications methods. The new SCADA systems interface with a variety of PLC types, including Modicon, Allen-Bradley, and Symax at plants and remote sites.

Potable Water SCADA System Replacement, City of Hobbs, NM: Project Manager

This project overhauled and modernized the City's potable water process control system. The entire IP-based network infrastructure deployed under this project was implemented in a managed configuration that optimizes operations and provides City staff with advanced system diagnostic capabilities. Improvements included standardization, simplicity, modernization, enhanced functionality, increased reliability, integrated diagnostics, critical points of redundancy, and a vast improvement to the City's user experience. TESCO provided the design, programming, and integration of the new Siemens WinCC OA central SCADA solution for the potable water system.

IPS INC. | TESCO CONTROLS

System enhancements included virtualization of the core central SCADA system infrastructure, mobility for operations and technical staff, seamless expansion capabilities for the future, and easily accessible comprehensive system documentation.

Major components included redundant SCADA server host machines, a process historian, multiple connected client nodes, peripheral devices, and a centrally managed network and wireless communication infrastructure to support wide-area network (WAN) connectivity to 43 new, remotely-located, TESCO-provided Siemens PLCs via radio telemetry. Additional remote site upgrades included the addition of 34 new VFDs provided, configured, and implemented by TESCO. A new wireless RF network operating in the 4.9 GHz licensed frequency band was also designed, tested, and implemented by TESCO. TESCO's design for this new communications network infrastructure provides enhanced performance, reliability, security, and longevity.

Potable Water SCADA and Telemetry System Upgrade, City of Lincoln, CA: Project Manager

This project replaced the City's aging potable water SCADA system by overhauling and modernizing the existing process control system, and separating the new water SCADA system from the existing wastewater SCADA system. Major enhancements TESCO recommended and implemented included: virtualization of the core central SCADA system infrastructure; enhanced system visibility and operational mobility for operations and technical staff; seamless expansion capabilities for the future; increased system reliability and enhanced communications; optimized radio system for real-time data; PLC programming continuity; and easily-accessible, comprehensive system documentation.

Michael facilitated significant cost savings through operations optimization with City Staff, coordinating water use and irrigation needs and bridging operational functions with technology.

SCADA Master Plan, South Placer Municipal Utility District (SPMUD), Rocklin, CA: Project Manager

The District's goal was to replace their inefficient SCADA system with a flexible, reliable, comprehensive, and secure system that improves business and operational efficiency. Previously, SPMUD had begun a phasing plan to develop a SCADA system for its remote lift station and flow recorder facilities. The existing SCADA software and process control hardware was proprietary in nature, with only one representative on the West Coast able to provide support services. SPMUD sought to completely abandon the existing system and implement a new, open source replacement system that would allow for multiple service providers to support the system.

Aligning the Master Plan with the technical and operational goals of the District and maximizing the use of SCADA as a business and operational tool was a primary focus for this project. TESCO's unique, hybrid approach provided cost-savings by simplifying the bid process with a turnkey solution. TESCO conducted a comprehensive assessment of the District's holistic PCS, including investigating and documenting the SCADA, PLC, and telemetry systems, and conducted multiple collaborative workshops to develop a SCADA Master Plan that details the current PCS configuration, the District's future goals, and engineered recommendations with budgetary estimates to bring those future goals to fruition.

SCADA Control System, Olivenhain Municipal Water District, Encinitas, CA: Principal Engineer

Designed and implemented a networked district-wide SCADA-based control system, including multiple data historians, redundant SCADA servers, and thin-client access via Microsoft terminal services. Provided all automation equipment and services for a complete SCADA system for a micro-filtration membrane water treatment plant. Developed district-wide standards for all remote RTUs utilizing Allen-Bradley PLCs and a TCP/IP Ethernet communications backbone. Designed and implemented a 100-Mbps wireless network backbone including a 6-mile fiber-optic communications link and 40-Mbps communication subnets to individual RTUs in the field. Designed an advanced SCADA security system including AES encryption, RADIUS authentication servers, and district-wide video surveillance capabilities.

SCADA System Design, Elsinore Valley Municipal Water District, Lake Elsinore, CA: Principal Engineer

Provided a comprehensive SCADA system design for the Elsinore Valley Municipal Water District, California, including the central operations center, over 150 remote telemetry facilities utilizing PLCs, and an advanced, high-bandwidth wireless communications architecture. The SCADA system provides for redundancy, network management, and complete integration with the District's other IT/IS applications and systems. The wireless communications architecture is designed in a mesh configuration with redundancy, security, and operational diagnostics at all levels of the network.

7 Years of Experience
7 Years at TESCO

Mark Feranil, PE

PROJECT ENGINEER

Mark Feranil is a registered electrical engineer with experience focused on planning, design, and integration of electrical and power for automated controls for municipal, industrial, and commercial applications.

SPECIALIZED AREAS OF EXPERTISE

Control System Engineering in Water/Wastewater Industry, Instrumentation & Controls

EDUCATION

B.S., Electrical & Electronic Engineering, California State University, Sacramento

A.S., Electrical Engineering, Cosumnes River College, Elk Grove, California

REGISTRATION

Professional Electrical Engineer, California No. 22444

TRAININGS

International Society of Automation (ISA)

- AESTIV Automation Engineer Survival Training
- ES10E Applying Instrumentation in Hazardous Locations

RELEVANT EXPERIENCE

Potable Water SCADA & Communication System Replacement Project, City of Hobbs, NM: Project Engineer

This Design-Build project replaced the City's existing potable water SCADA system to modernize operations, enhance functionality, increase reliability, and separate from the existing wastewater SCADA system. TESCO collaborated with local prime contractor, Alpha Southwest, and City staff to develop and construct a project that implemented a new central potable water SCADA system with redundant SCADA server host machines, process historian, multiple connected client nodes and peripheral devices, and a centrally-managed network with wireless communication infrastructure to support wide-are-network (WAN) communications to 43 remote PLCs. TESCO provided and configured a new wireless RF communication network and furnished 43 PLC-based industrial control panels housing. Mark created drawing templates for the entire project, including VFD control diagrams and PLC input/output (I/O) drawings for the booster pump station and reservoir site Improvements.

North Drainage Canal Lift Pump Station, Natomas Mutual Water Company (NMWC), Rio Linda, CA: Project Engineer

This Design-Build project constructed a new submerged tailwater recovery lift pump station to allow reuse of agricultural tailwater accumulated in the Reclamation District 1000 drainage canal system. TESCO estimators collaborated with NMWC staff and the civil design consultant to develop an effective project to design and implement a new ClearSCADA system with L3000 PLCs, radio telemetry, fiber optics, Ethernet, and instrumentation. TESCO provided a switchboard, motor control center (MCC), programmable logic controller (PLC) control panel, field instruments, and performed PLC and OIT programming, SCADA configuration, telemetry hardware configurations, and field modifications.

Storm Drain Station Improvements, City of Elk Grove, CA: Project Engineer

This project constructed improvements to existing pump stations at six sites within the City's storm drainage system. TESCO designed, fabricated, and tested low profile motor control lineups, PLC panels, and field instrumentation before installing and integrating controls for all six sites. TESCO was responsible for integrating the new Automation Direct PLCs, and performed on-site start-up services in collaboration with the City's electrical contractor. TESCO also provided City staff training and detailed O&M manuals.

Water Resource Recovery Facility Instrumentation & Control, City of San Luis Obispo, CA: Project Engineer

This project is part of the multi-phase "SLO Water Plus" upgrades being implemented at the existing WRRF to improve operational efficiency and reduce the City's dependency on reservoir and groundwater supplies. The project constructs new process facilities including digesters, membrane bioreactor (MBR) system, ultraviolet (UV) disinfection system, and odor control system, with associated new electrical system plus instrumentation and controls. TESCO was selected to manufacture and

25 Years of Experience
25 Years at TESCO

Jon Shores

SYSTEMS ENGINEERING MANAGER

Jon Shores applies more than two decades of experience as a SCADA developer and systems analyst to design and implement practical, user-friendly systems for large municipal and industrial water and wastewater agencies. Jon designs process control interfaces, system communication topologies, and databases, and develops database mining techniques. Many of his projects include a combination of plant-floor, geo-SCADA communication, and distributed control systems.

Jon has integrated and implemented systems for a variety of water/wastewater agencies in California, Colorado, Louisiana and Florida. He is known for delevering successful projects and providing continued client support after project completion.

SPECIALIZATION

Process Control Interface and SCADA Architecture Design, Programming, and Integration

FIELDS OF SPECIAL COMPETENCE

Computer Systems Software Applications Related to Monitoring and Control of Water and Wastewater SCADA/Control Systems

EDUCATION

B.S., Economics/Statistics, University of California, Davis

CERTIFICATIONS

ISA/IEC 62443: Cybersecurity Fundamentals Specialist (CFS)

ISA IC33M: Assessing the Cybersecurity of New or Existing IACS Systems

Certified Wonderware Developer (InTouch Suite & System Platform/ArchestrA)

Inductive Automation

Microsoft Certified Professional

Certified Intellution Developer

Certified Rockwell Software Developer

RELEVANT EXPERIENCE

Potable Water SCADA and Telemetry System Upgrade, City of Lincoln, CA: SCADA Engineer

This project replaced the City's aging potable water SCADA system by overhauling and modernizing the existing process control system, and separating the new water SCADA system from the existing wastewater SCADA system. Major enhancements TESCO recommended and implemented included: virtualization of the core central SCADA system infrastructure; enhanced system visibility and operational mobility for operations and technical staff; seamless expansion capabilities for the future; increased system reliability and enhanced communications; optimized radio system providing accurate real-time data; PLC programming continuity; and easily-accessible, comprehensive system documentation.

Upgrade SCADA System to Wonderware, Okaloosa County, FL: SCADA Engineer

Jon was responsible for the configuration and installation of the 75 remotes sites and Hot-Standby Wonderware ArchestrA/System Platform SCADA System with historical data warehousing. This enterprise-wide SCADA system provides monitoring and control over both the water and wastewater systems, now monitoring over 200 remote sites.

Water Treatment Plant Filter Backwash and Solids Handling Improvements, San Juan Water District, Sacramento, CA: SCADA Engineer

Jon developed a Hot-Standby Wonderware SCADA application with historical data warehousing using MS SQL Server for a system that monitors the District's 35 remote sites and a 125 mgd water treatment plant.

Well N6A Palm Pump Station & Treatment Plant, Sacramento Suburban Water District, CA: SCADA Engineer

Jon configured a hot-standby system built on Wonderware InTouch 9.5 for terminal services with an Industrial SQL Server Data warehouse. Two microwave data radio systems perform critical system communication with 59 remote wells, interties, PRVs, water storage tanks, and booster pump stations.

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22 Years of Experience
22 Years at TESCO

Josh Choe

SCADA ENGINEERING MANAGER

Josh Choe is a software design engineer and manager of TESCO's internal SCADA department. Josh has more than two decades of experience providing design and application development for control systems for water and wastewater treatment and associated infrastructure.

A veteran TESCO software engineer and former supervisor for our internal Networking & Telemetry Department, Josh is known for developing and implementing effective and secure system networks.

His experience includes providing SCADA design, programming, and maintenance services for Local Area Network (LAN) and Wide Area Network (WAN) utilizing Windows Operating Systems, Unix-based systems, and server/network architectures. Josh develops functional network system improvements that enhance system operations and provide resiliency and cybersecurity.

SPECIALIZATION

SCADA, HMI, and Networking for Water-Wastewater Systems

FIELDS OF SPECIAL COMPETENCE

Computer Systems / Software Applications Related to Monitoring and Control of Water and Wastewater SCADA Systems

EDUCATION

B.S., Computer Science, University of California, Davis

CERTIFICATIONS

Standards to Secure Your Control Systems (ISA-IC32)

Assessing the Cybersecurity of New or Existing IACS Systems (ISA-IC33)

Cyber Security Design Specialist (ISA-IC34)

IACS Cybersecurity Operations & Maintenance (ISA-SC37)

Cybersecurity Fundamentalist Specialist (ISA/IEC-62443)

Wonderware InTouch Development Suite | Industrial Application Server/System Platform

GE / Intellution / Proficy Fix32/iFix & Historian

RELEVANT EXPERIENCE

Water Distribution SCADA Upgrade, City of Redlands, CA: Systems/ Networking Engineer

This Design-Build project involved engineering design, construction, implementation, swap-over, and commissioning of a new SCADA system, a radio system backbone, and remote telemetry system. Multiple radio towers with heights in excess of 60 feet were installed throughout the system to facilitate an operable and efficient radio telemetry system backbone. Multiple remote telemetry units complete with state-of-the-art PLCs and other pertinent control components were provided and programmed. TESCO was responsible for the site assessments, radio survey, communications study, engineering design, preliminary design report, final design report, construction, tower erection, radio configuration and programming, field cut-over of PLC panels, startup, and testing with the new SCADA system.

Design Engineering Services for SCADA System, City of Redlands, CA: Systems/Networking Engineer

TESCO provided professional services for the design, system integration, and construction management of a turn-key SCADA system. The construction management phase included a Radio-Frequency (RF) Communication System network with Remote Telemetry Units (RTU) at each of the City's remote water sites, and the additional equipment needed to establish a secure and reliable network. Overall, this project included design for the central SCADA system as well as (12) reservoirs, (21) wells, (5) pumping plants, (12) boosters, (2) Water Treatment Plants, and (1) Highland Avenue Water Complex. TESCO was responsible for developing the Design Criteria Report and establishing SCADA system requirements, including SCADA hardware and software, RTU/PLC, and the RF communication system.

SCADA Master Plan Implementation, City of Baton Rouge, LA: Systems/ Networking Engineer

This $16 million project deployed the City's first SCADA and cellular communications system across 450 sewage-collection pump stations. All pump stations communicate to a SCADA system that presents key information and alarms in an intuitive view. As Prime Contractor, TESCO supervised subcontractors work, including the building of dedicated SCADA control rooms, data centers, and extensive electrical and controls

Schneider ClearSCADA, Telemetry, & Remote SCADA Solutions

Rockwell Automation FactoryTalk/RSView Suite

Inductive Automation Ignition Core Course

Trihedral VTS System Integrator ICS-Cert VLP: 210W-01 Cybersecurity for Industrial Control Systems

Dale Carnegie Leadership Course

TECHNICAL EXPERIENCE

Allen-Bradley: Stratix Switches

HMI Software: Wonderware InTouch, Wonderware Historian

Intellution: iFIX 3.1

Network Software: Wireshark, Cacti, OpenNMS, Zabbix

Platform Software: Cisco iOS, MikroTik Router OS Windows

Radio Software: GE MDS (iNET, SDx, x710), Proxim (Tsunami, GX/QB) Ubiquity (Bullet, Nano, Rocket), Bridgewave

Network Hardware: Cisco (Switches, Routers, Firewalls), Adtran (Routers, DSU), Hirschman (Switches), N-Tron (Switches)

Process Hardware: Allen-Bradley (Control, Compact, MicroLogix, SLC) Modicon (Unity, Quantum, Momentum)

Protocol: Ethernet, EthernetIP, Serial, ModbusTCP, Modbus, Data Express Plus

RF Software: Pathloss

modifications at remote pump stations. This virtualized system includes complete redundancy at both SCADA control room locations, monitors 40,000 I/O points, and is capable of controlling all 450 pump stations.

The field modifications at the remote pump stations required major overhauls to the control systems and the addition of PLCs, with minimal impacts to each site's operation. In addition to self-performing a significant amount of the work, subcontractors of various trades were utilized to maintain a high level of quality and ensure the project was completed on time. Once the system was fully operational, TESCO was able to bring all remote sites being on-line five months ahead of schedule. The new system has significantly reduced overflows and has optimized operations efficiency by enabling staff to focus on from maintenance to preventative maintenance.

Wastewater Treatment Plant and Remote Lift Station Control Systems, Carmel Area Water District, CA: Systems/Networking Engineer

TESCO provided control system design and implementation of the wastewater treatment plant and remote lift station control systems. TESCO provided control system programming for the five remote RTU's and four in-plant PLC's consisting of approximately 1000 I/O points. Josh was responsible for programming and configuration of a fully-redundant FactoryLink SCADA system that communicates with Allen-Bradley PLCs via Data Highway Plus.

7 Years of Experience
5 Years at TESCO

Joe Vang

PLC APPLICATIONS ENGINEER II

Joe is a PLC Applications Engineer focused on providing design, programming, and implementation of programmable logic controllers (PLCs), process controllers, operator interface terminals (OITs), remote telemetry units (RTUs) and associated instrumentation related to municipal and industrial water and wastewater applications.

Joe conducts control system evaluations to identify requirements and develop specifications required to implement each project. He establishes and specifies control system requirements, develops RTU and PLC control programs, develops OIT and HMI screens, sets up communication interfaces, configures programmable instruments and single-loop controllers, and provides in-person staff training for operations staff in using PLC functions.

SPECIALIZATION

PLC Design, Programming, and Implementation

FIELDS OF SPECIAL COMPETENCE

Programming of PLC, RTU, OIT, HMI, and Instrumentation Applications Related for Water and Wastewater Monitoring and Control SCADA Systems

EDUCATION

B.S., Electrical Engineering, California State University, Sacramento

HARDWARE/ SOFTWARE PROFICIENCY

Allen-Bradley/Rockwell: RS Logix 500, RS-Logix 5000

Automation Direct

Maple Systems: Full Suite Magelis OIT/HMIs

Modicon: FasTrak, Modsoft, ProWorx32, ProWorx NXT, Concept, and Unity

PanelMate and PanelView OIT/HMIs

SIEMENS TIA Portal, SIMATIC Step 7, WinCC Flex, WinCC Professional, WinCC Unified, Startdrive, SIMOCODE ES

RELEVANT EXPERIENCE

Potable Water SCADA System Replacement, City of Hobbs, NM: PLC Programmer

This Design-Build project replaced the City's existing potable water SCADA system to modernize operations, enhance functionality, increase reliability, and separate from the existing wastewater SCADA system. TESCO collaborated with local prime contractor, Alpha Southwest, and City staff to develop and construct a project that implemented a new central potable water SCADA system with redundant SCADA server host machines, process historian, multiple connected client nodes and peripheral devices, and a centrally-managed network with wireless communication infrastructure to support wide-are-network (WAN) communications to 43 remote PLCs. TESCO provided and configured a new wireless RF communication network and furnished 43 PLC-based industrial control panels housing. Mark created drawing templates for the entire project, including VFD control diagrams and PLC input/output (I/O) drawings for the booster pump station and reservoir site Improvements.

City of San Luis Obispo, Water Resource Recovery Facility, CA : PLC Programmer

This project is part of the multi-phase "SLO Water Plus" upgrades program implemented at the existing WRRF to improve operational efficiency and reduce the City's dependency on reservoir and groundwater supplies. The project constructs new process facilities at the WRRF including digesters, membrane bioreactor (MBR) system, ultraviolet (UV) disinfection system, and odor control system, with associated new electrical, instrumentation, and controls. TESCO was selected to manufacture and supply MCCs, PLC control panels, network/communications panels, and field instrumentation for each of the six new facilities. Jon was responsible for provising the programming for the various new process areas, Utilizing Rockwell PlantPAx standards along with integration of EU Custom standards.

W1 SCADA Improvements Project, City of Rialto, CA: PLC Programmer

This project involved supplying new Hot-Standby server hardware utilizing a Wonderware System Platform SCADA application. The system is configured to allow concurrent connections via a Virtual Private Network (VPN). This Hot-Standby system was configured by TESCO in a fully-functional virtual environment complete with thin clients for additional security. The system consisted of several booster, well, and reservoir sites all interconnected via a TESCO-provided radio telemetry system. Joe was responsible for assisting with PLC system programming, in-house testing, on-site testing, validation, and commissioning. Configured Magelus LOI for three sites. Each site consisted of four line valves (two per pipeline) and one crossover valve. The programming was done in Unity. Joe also configured Xnexium Modules to communicate with VSAT and Radio systems.

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11 Years of Experience
11 Years at TESCO

Raju Nair

PLC APPLICATIONS ENGINEERING MANAGER

Raju Nair specializes in development and application programming of programmable logic control (PLC) and operator interface terminal (OIT) control systems for water and wastewater treatment facilities and infrastructure. His specialized expertise is in providing design, programming, and implementation of PLCs, process controllers, OITs, remote telemetry units (RTUs), and associated instrumentation required to automate water and wastewater processes. He understands the needs of water and wastewater operators, and is able to incorporate critical operations staff input into efficient solutions for each project.

Raju is known for successfully coordinating highly-complex projects, maintaining consistently high-quality understanding of PLC programming best practices, and for serving as TESCO's lead for standardization and templating of PLC coding.

Raju accurately diagnoses issues and develops solutions that are both economical and effective. He leads and mentors TESCO's internal PLC team, working with a variety of programmable controllers, human machine interface (HMI) packages, and instrumentation.

RELEVANT EXPERIENCE

San Luis Rey WRF Recycled Water Treatment Plant Design-Build, City of Oceanside, CA: PLC Programming Manager

This design-build project involved TESCO's participation in several PLC and SCADA programming workshops with all project stakeholders. TESCO was responsible for providing PLC and SCADA programming as well as configuration of new Ethernet switches, factory testing, product startup services, on-site training, and heavy coordination with a filtration for integration of a new cloth filter control system into the water treatment plant system.

Raju provided technical oversight for the integration, programming, and configuration of a Modicon M580 PLC and SCADA. The PLC system was integrated with vendor packages and networked via Ethernet communications. The system includes filter feed pumps, a disk filter system, chemical feed systems, booster pumps, and lead detection. TESCO also conducted factory testing, operational readiness testing, functional acceptance testing (FAT), and training of Oceanside personnel.

WWTP Immediate Action Projects Phase 1, City of San Mateo, CA: PLC Programmer

This project involved providing new Motor Control Centers (MCCs), VFD panels, PLC control panels, and local control panels. This project required that TESCO innovate a custom solution for integrating Allen-Bradley PLC systems programmed with PlantPAx methodologies into an existing Wonderware SCADA application. Raju was responsible for participating in and guiding multiple collaborative workshops, PLC configuration, PLC programming, factory testing, start-up, commissioning, and operator training.

SCADA System Replacement, City of Roseville, CA: Technical Advisor

TESCO provided design and implementation services for replacement of the City's aging DYNAC system with GE Intelligent Platform's (GEIP) iFIX and Proficy Historian

SPECIALIZATION

PLC/RTU Programming for Water-Wastewater Systems

FIELDS OF SPECIAL COMPETENCE

Programming of PLC/RTU, OIT, and Instrumentation Applications Related to Monitoring and Control of Water and Wastewater SCADA Systems

EDUCATION

B.S., Electrical/Electronic Engineering, California State University, Sacramento

CERTIFICATIONS

Allen-Bradley/RS-Logix: Programming Platforms

Modicon: IEC Levels 1 & 2

Siemens:

- TIA Systems Engineering
- TIA Portal Software
- Networking, Safety, & SCADA

Concept Programming

Unity Programming

Unity Pro IEC Programming Level 2

SPECIALIZED TRAINING

- Allen-Bradley / Rockwell: RS-Logix 500 and RS-

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Logix 5000 / Studio 5000 / PanelView OITs

- Automation Direct: OIT/ HMIs
- GE: Fanuc and Proficy (Machine Edition)
- Maple Systems: OIT/ HMIs
- PlantPAx: System Design & Configuration (PRS019)
- Pump System Fundamentals: Hydraulic Institute & Pump Systems Matter
- Pump System Assessment: Professional Prep Course
- SCADAPack: Telepace, RemoteConnect
- Schneider: Unity Pro, Concept, FasTrak, Modsoft, ProWorx32, and ProWorx NXT / Magelis OITs
- Siemens: Hardware & Software

PUBLICATIONS

R. Nair, "Migrating Legacy PLC Programs to Modern PLC Hardware," Control Engineering Magazine, December 2020

software. Through a collaborative partnership with the City, TESCO developed the pre-design into a 100% architecture and defined SCADA standards, and also automated the conversion of the DYNAC database to the new iFIX database with no manual conversion required. Over 20,000 database points used for status, function logic, and alarm definitions were migrated from the DCS to the new SCADA system and the City was able to retain operational control throughout system construction, migration, and field testing.

Beyond the local monitoring and control of their respective facilities, the new SCADA systems provide remote monitoring and control of water distribution, recycled water, wastewater collection, and stormwater facilities via various communications methods. The new SCADA systems interface with a variety of PLC types, including Modicon, Allen-Bradley, and Symax at plants and remote sites.

Primary Treatment Facility Phase 2, City of Sunnyvale, CA: PLC Programmer

This project involved providing new Switchboard, Motor Control Centers, VFDs, PLC Control Panels, Remote I/O Panels, and Communication Cabinets. TESCO was also responsible for providing operator work stations, large screen displays, and a new virtualized PlantPAx/FactoryTalk View SE SCADA system, including multiple server racks which provided physical segregation of the IDC, Sandbox, and Business servers. TESCO also provided all PLC and SCADA Programming in addition to performing witnessed factory testing, collaborative workshops, and operator training.

PLC Replacement Project, San Jose Water Company, CA: PLC Programmer

TESCO was responsible for migrating Schneider Quantum 984 CPUs to Quantum Unity CPUs district wide. Worked on implementing a baseline program with San Jose Water Company staff. Visited site to site and powered down site, swapped CPU, tested with SCADA, and brought site online.

RP-1 Headworks, Primary, and Secondary Upgrades, Inland Empire Utilities Authority (IEUA), Chino, CA: PLC Programmer

This design-assist project involved the supply and integration of new Industrial Control Panels (ICP) equipped with new Allen-Bradley ControlLogix PLCs. TESCO was further responsible for providing new stainless-steel Remote I/O (RIO) ICPs, Allen-Bradley PLC equipped Bar Screen ICPs, other miscellaneous control panels, and reconfiguration of existing conveyor building ICPs. Additionally, TESCO provided and integration new DeviceNet hardware. Raju was responsible for participating in and guiding collaborative workshops, PLC configuration, PLC programming, and system training.

RP-1 Mixed Liquor Return Pumps, , Inland Empire Utilities Authority (IEUA), Chino, CA: PLC Programmer

This design-assist project involved the supply and integration of new Industrial Control Panels (ICP) equipped with new Allen-Bradley ControlLogix PLCs, Ethernet Ring Adapter Modules, and Ethernet/IP Communication Modules. Raju was responsible PLC configuration, PLC programming, and system training.

Lake Merced Pump Station, San Francisco Public Utilities Commission (SFPUC), CA: PLC Programmer

TESCO was responsible for programming Modicon PLC systems, Magelis OITs, and portions of the controls. TESCO assisted with on-site testing and startup. Programming was done in Unity.

25 Years of Experience
18 Years at TESCO

Brendon Horn

NETWORKING & TELEMETRY MANAGER

As Senior Systems Engineer and manager of TESCO's Networking & Telemetry Department, Brendon Horn brings extensive, practical experience designing and building telemetry systems that connect distributed assets for water operations and processes. He brings a wide range of experience in process control technologies including SCADA, PLCs, Radio, Fiber, and related systems, which provides Brendon with the context and practical skills required to maximize system efficiency and reduce costs for projects of all sizes.

Brendon leads our N&T team in collaborating on a wide variety of projects ranging from minor upgrades to existing systems, to complex designs for control systems for new water and wastewater treatment facilities and infrastructure.

Brendon has strong analytical, organizational, and problem-solving skills and is known for his ability to accurately identify deficiencies and develop effective design improvement recommendations. Prior to managing TESCO's Networking & Telemetry department, Brendon spent eight years in our Systems Engineering department. A proven team leader with excellent communication skills, he motivates and trains both internal and client staff. Brendon's experience includes projects in the water and wastewater, pharmaceutical, food processing, and aggregate mining industries.

SPECIALIZATION

SCADA-HMI, Networking, and Cybersecurity for Water and Wastewater Systems

FIELDS OF SPECIAL COMPETENCE

Design, Specification, Coordination, Management and Implementation of Computer based Systems in the Water and Wastewater Industry

EDUCATION

B.S., Industrial Technology, California State University, Chico:

- Minor: Manufacturing System Management (Robotics, Plastics & CAD/CAM)
- Emphasis: Plastic Manufacturing

CERTIFICATIONS

ICS-Cert:

- Operational Security (OPSEC) for Control Systems (100W)
- Cybersecurity for Industrial Control Systems (210W-01)

Siemens:

- TIA Systems Engineering
- TIA Portal Software, Networking, Safety, & SCADA

Schneider Electric:

- EcoStruxure Plant: Ethernet Networking
- Introduction to EcoStruxure lant: Foundational
- PSXCE Strategic Partner

RELEVANT EXPERIENCE

Water Operation SCADA System Project, City of Waterford, CA:
Network Engineer

This City took over ownership and operations of the local water distribution and wastewater stations from a previous operator. This Design-Build project replaced existing PLC and radio equipment with Allen-Bradley PLCs and iNET-II radios for eight pump stations and three lift stations, upgraded the City Hall SCADA, and provided field modifications for PLC panels at the water treatment plant and wastewater treatment plant. Brendon performed radio frequency (RF) surveys for remote and backbone connections, designed RF networks and selected hardware based on radio survey findings. He designed an RF network to provide control and operational staff with the ability to monitor all remote sites from multiple locations. Brendon programmed all networking hardware, including routers, switches and radios. He supervised N&T staff in implementation of remote device configurations. He also prepared documentation for all upgraded sites.

TESCO worked collaboratively with the City to discuss, ratify, and memorialize written standards utilizing TESCO's baseline standards as a starting point. Overall, TESCO was responsible for the system's design, networking, manufacture, installation, startup, staff training, and O&M manuals.

SCADA System Upgrade, Mammoth Community Water District, Mammoth Lakes, CA: Network Engineer

This Community Water District was looking to upgrade both communications equipment and technologies as well as programmable logic controllers (PLCs) to increase reliability throughout the system. Performed preliminary RF Analysis using Path Modeling software. Performed Field RF surveys for remote and backbone connections, designed RF networks and selected hardware based on radio survey

Bridgewave: Installation and Maintenance of Bridge Wave Communications – Gigabit Wireless Products

OSHA: Elevated Work Surface Training and Confined Space Training

MSHA Site-Specific Training

Cognex Vision Systems

Adept Technologies System Design and Integration Training

SOFTWARE

HMI: Wonderware InTouch, Wonderware Historian, Intellution iFIX 3.1

RF: Pathloss

Network: Wireshark, Cacti, OpenNMS, Zabbix

Platform: Cisco iOS, MikroTik Router OS Windows

Radio: GE MDS (iNET, SDx, x710), Proxim (Tsunami, GX/QB), Ubiquity (Bullet, Nano, Rocket), Bridgewave

HARDWARE

Network: Cisco (Switches, Routers, Firewalls), Adtran (Routers, DSU), Hirschman (Switches), N-Tron (Switches), Allen-Bradley (Stratix Switches)

Process: Allen-Bradley (Control, Compact, MicroLogix, SLC), Modicon (Unity, Quantum, Momentum)

Protocol: Ethernet, EthernetIP, Serial, ModbusTCP, Modbus, Data Express Plus

findings. Configured and tested radio, PLC gateways and networking hardware including protocol gateways to implement the proposed design. Coordinated all FCC licensing applications. Performed and coordinated startup of all RF and network components, verifying functionality with SCADA and process controls.

W1 SCADA Improvements Project, City of Rialto, CA: Network Engineer

This Design-Build project for the City's Water District upgraded the existing SCADA, Allen-Bradley PLC, and communications systems to increase reliability. Brendon performed in a lead role for planning, coordination, and implementation of the cellular communications network. He conducted a field cellular survey to gather data related to communications expectations of the cellular network in the area, and developed reports detailing the survey findings. Also served as the communications lead within the project team for the design and implementation of the cellular communications system for all remote sites, allowing communications between sites for PLC control as well as SCADA monitoring. Coordinated cellular managed private network (MPN) turn-up.

Microwave Radio Replacement, San Jose Water Company (SJWC), CA: Network Engineer

This project evaluated potential options and feasibility of replacing the outdated, existing telemetry link from the County Communications Center to the Bascom Avenue Campus that included Cambium Networks PTP 800 radios with a firewall and network switch on each end of the link, which is used exclusively for SCADA traffic. Brendon lead the assessment, conducted a radio survey, and developed recommended alternatives with cost estimates for materials, services, and contracted electrical trade labor to implement a reliable solution to replace the existing system. Project challenges included installation of replacement antennas located in elevated terrain, and Brendon coordinated with SJWC and TESCO's Field Service Engineer for simultaneous post-installation antenna alignment for each link during testing and start-up.

Motorola Moscad Replacement, Sun Valley General Improvement District (SVGID), Sun Valley, CA: Network Engineer:

This project upgraded all sites in the District's remote telemetry unit (RTU) system, including eight (8) pressure reducing vaults (PRVs), eight (8) water storage tanks, four (4) pump stations, two (2) sewer flowmeter vault locations, and the main pump/Central SCADA, to a more robust control and telemetry system. TESCO provided, programmed, and installed L3000 PLCs at the pump stations for local site process control. At the other sites, TESCO installed Moxa I/O Boards and a radio to transmit I/O signals back to the Main Pump Station/Central SCADA. Where possible, the District's existing antennas were re-used. To create system redundancy, TESCO provided, programmed, and integrated additional radios and programmed additional Tank Hatch Intrusion Detectors to send alarms through SCADA and WIN-911.

Network Reconfiguration, Fontana Water Company, CA: Network Engineer

This project upgraded aging wide area network (WAN), radio, and networking equipment to provide reliable, redundant communication between the Tokay Corporate Yard and the Sandhill Water Treatment Plant. TESCO procured, configured, and commissioned new networking and radio equipment in accordance with the recommendations suggested in the Department of Homeland Security's 2016 SCADA system review. TESCO used the existing Internet service provider (ISP) connections to configure a redundant communication link.

MATERIAL & LABOR COSTS

This section includes the scope and fee estimate associated with the proposed scope of services included in ***Section 2. Equipment Specifications.*** The estimate is broken down by major task groupings, per team member.

TASK DESCRIPTIONS	LABOR HOURS ESTIMATES									FEE ESTIMATES	
	PM	SP	SEG	ENGR	PLC	SCADA	N&T	FS	SHOP	TESCO	IPS
GENERAL REQUIREMENTS / PROJECT INITIATION	180									$31,500	$149,910
PHASE 1 - PLANNING / PRE-DESIGN / DESIGN ACTIVITIES											
Planning & Pre-Design Activities	90	100	170	250				100		$126,600	$63,140
System & Facility Assessments	90	100	170	250	298	263		125		$229,150	$81,180
Collaborative Process Control System Design Workshops (IPS / TESCO / COH)	90	225	313	250	825	288	300	50		$420,615	$45,099
Front-End Engineering Design (FEED) Services	90	200	420	850	775	300	100			$485,725	$81,180
PHASE 2 - FACTORY BUILD (at Tesco Controls, Sacramento CA) PROCUREMENT, PRODUCTION, PROGRAMMING, & SYSTEM IMPLEMENTATION											
Hardware, Software, & Misc. Materials Procurement	90			150						$1,656,156	
Fabrication/Manufacturing of ICP/PLC Systems	36								1500	$193,800	
Assembly and Cabling of SCADA Equipment Rack(s)						88				$15,400	
PCS PLC Applications Programming (Process Control Logic Development)	90				1275					$238,875	
Network Communication System Infrastructure Equipment Configuration	36						400			$84,300	
SCADA-HMI System Application Programming & Configuration	90					1125				$212,625	
Equipment Staging for System Testing	36			125						$28,175	
Internal Systems Testing (IST)	36	205	85	125	418	393	280			$278,950	
Witnessed Factory Acceptance Test (FAT)	90	50	43	125	85	113	25			$94,390	
Pack & Ship SCADA-HMI & ICP/PLC System Equipment	36			125		113				$47,950	
PHASE 3 - FIELD ACTIVITIES INSTALLATION, CUTOVERS, STARTUP & COMMISSIONING, & FIELD TESTING ACTIVITIES											
Installation & Preparations: Fiber Optic Ring Network	90									$15,750	$291,000
Fiber Optic Ring Conversion: RBS System Communication Network Upgrades	36									$6,300	$124,715
Installation & Preparations: SCADA System Server/Network Room Improvements	90									$15,750	$42,193
Preparations: ICP/PLC Panel Area Preparations/Setups	90									$15,750	$74,778
Central SCADA-HMI System Startup	90					188		125		$70,525	
PROCESS AREA PLC ICP UPGRADES/REPLACEMENTS											
RBS/PLC-1: PLC Component Implementation, Cutover, Testing, & Commissioning	18				85	75				$31,150	$49,726
RBS/PLC-7: PLC Backpan Implementation, Cutover, Testing, & Commissioning	18				85	75				$31,150	$40,392
RBS/PLC-2: Demolish PLC Panel and Modify Ethernet Cabinet	9				85	75				$29,575	$24,121
RBS-3: Relocate PLC-3 I/O, Demolish PLC Panel and Modify Ethernet Cabinet	9				85	75				$29,575	$15,500
RBS/PLC-3A: PLC Component Implementation, Cutover, Testing, & Commissioning	9				85	75				$29,575	$36,165
RBS/PLC-4: PLC Backpan Implementation, Cutover, Testing, & Commissioning	18				85	75				$31,150	$23,114
PLC-4A: PLC Panel Modifications, Comms. Integration, Testing, & Commissioning	9				85	75				$29,575	$21,006
PLC-4B: PLC Panel Modifications, Comms. Integration, Testing, & Commissioning	9				85	75				$29,575	$21,006
RBS/PLC-6: PLC Panel Replacement, Cutover, Testing, & Commissioning	18				85	75				$31,150	$21,454
RBS/PLC-5: Modifications to Support new Fiber Optic Network Ring	9				85	75				$29,575	$14,481
RBS/PLC-8: PLC Panel Replacement, Cutover, Testing, & Commissioning	18				85	75				$31,150	$14,552
PLC-9: PLC Component Implementation, Cutover, Testing, & Commissioning	18				85	75				$31,150	$20,716
PLC-10: PLC Panel Implementation, Cutover, Testing, & Commissioning	36				85	75				$34,300	$63,877
PLC-11: PLC Component Implementation, Cutover, Testing, & Commissioning	18				85	75				$31,150	$13,265
Bio Tower PLC: PLC Panel Replacement, Cutover, Testing, & Commissioning	9				85	75				$29,575	$17,634
Rockwind PLC: PLC Panel Replacement, Cutover, Testing, & Commissioning	9				85	75				$29,575	$13,365
S&H Farms PLC: PLC Panel Replacement, Cutover, Testing, & Commissioning	9				85	75				$29,575	$13,365
PLC-DRY: PLC Panel Replacement, Cutover, Testing, & Commissioning	[Did not receive packaged vendor pricing in time for proposal inclusion.]									$0	$0
Final Field Clean-Up:	9							100		$19,075	$59,532
FINAL SYSTEM-WIDE VERIFICATIONS & PROJECT CLOSEOUT											
Final System-Wide Operational Acceptance Demonstration (OAD) Test	36	25			85	113				$45,700	$27,060
Project Close-Out & Final Project Documentation	36			250						$50,050	$27,060
Miscellaneous Project Expenses (Shipping, Travel, Etc.)										$95,000	
SUBTOTALS										$4,996,636	$1,490,586
PROJECT TOTAL										$6,487,222	

SECTION 5

REFERENCES

Industry Recognized Firms Team Together for Hobbs: TESCO's Dedication to Water/Wastewater Systems

As one of the largest systems integrators in North America focused on this market, TESCO is well-qualified to design and build advanced control systems for the industry. An apt comparison to IPS in the oil and gas industry, over 95% of TESCO projects are water/wastewater systems or renewable energy projects in the water/wastewater sector. Both firms operate with similar principles and offer expertise in their craft; both firms have seen substantial success operating within these principles.

The most successful projects are delivered by teams that work well together. Collaboration amongst IPS | TESCO during proposal development demonstrates a high margin of success in coming together for the City of Hobbs as a common bond.

EXPERIENCED TEAMS WORK TOGETHER TO ACHIEVE YOUR OBJECTIVES

TESCO's primary focus is on water/wastewater treatment plants and associated infrastructure. Their experience proves that the most valuable solutions incorporate input from the operators. The familiarity maintenance and operations staff have with existing systems, and their "wish lists" of improvements to optimize operational efficiency provide TESCO with direction to apply expertise in planning, design, implementation, and integration of automated controls systems and SCADA upgrades.

With TESCO holding the majority of project scope, we see value in highlighting their year-over-year success, demonstrated not only by the long-term staff and company growth, but in industry recognition as follows:

- **Ranked #9 for all control system disciplines** internationally in the 2022 System Integrators Giants List by Control Engineering.
- Listed as one of the **top 10 companies leading the global water/wastewater management and operational control market** according to Transparency Market Research (TMR) in December 2017.
- Named **"System Integrator Market for Industrial Automation by Service Outlook...Global Outlook to 2022"**, published by MarketsandMarkets in April 2017, with TESCO listed as a key player.

Summaries of the following recent, relevant projects demonstrate TESCO's ability to successfully collaborate with client staff to develop and implement custom solutions that meet specific needs.

CONSIDERATIONS FOR CONTINUOUS & MANUAL OPERATIONS

Because mitigating system downtime is a key priority, we collaborated during proposal development to devise a preliminary approach and migration sequence as proposed herein. We intend to use a refined, highly-collaborative process that solicits input from your staff to hash out details, align expectations, and account for planned manual operations.

PROJECT NAME / OWNER AGENCY	TESCO'S ROLE	DATES
Potable Water SCADA & Communications System Replacement City of Hobbs, NM	Design-Build Systems Integrator	May 2018 — December 2020
Potable Water System SCADA & Controls Upgrade City of Orange, CA	Design-Build Prime Contractor	May 2019 — April 2021
SCADA Master Plan City of Baton Rouge, LA	Design-Build Prime / General Contractor	June 2013 – December 2019

OWNER AGENCY: CITY OF HOBBS

REFERENCE
Peter Zacharias
Utilities Systems Specialist
575-397-9370 pzacharias@hobbsnm.org

CONTRACT
$2,999,482 (Total Contract)
$2,000,000 (TESCO Portion)

DATES
May 2018 – December 2020

PROJECT COMPONENTS

- Similar teaming arrangement to IPS & TESCO; gaps filled through lessons learned.
- PLC application design, programming, and implementation
- SCADA-HMI application design, programming, and implementation
- Upgrades to operational facilities during continuous operations and/or minimized downtime
- Electrical installation
- Factory & on-site testing
- Start-Up
- Staff Training
- O&M Manuals

POTABLE WATER SCADA & COMMUNICATIONS SYSTEM REPLACEMENT

City of Hobbs, New Mexico

The goal of this Design-Build project was to completely replace an aging potable water SCADA system to enhance operational performance and increase data reliability. The project replaced the existing SCADA-HMI system, PLC control panels, motor control hardware, and RF network infrastructure.

This project replaces and upgrades an existing potable water SCADA system by overhauling and modernizing the potable water process control system, including separating the new water SCADA system from the existing wastewater SCADA system. Major improvements included standardization, simplicity, modernization, enhanced functionality, increased reliability, integrated diagnostics, critical points of redundancy, and a vast improvement to the City's user experience.

TESCO provided design, programming, and integration of the new Siemens WinCC OA central SCADA system for the City's potable water system. Major enhancements included virtualization of the core central SCADA system infrastructure, mobility for operations and technical staff, seamless expansion capabilities for future upgrades, and comprehensive system documentation that is easily accessible to Operations staff.

Connecting Remote Sites for Effective Communication: Major components included: redundant SCADA server host machines; a process historian; multiple connected client nodes; peripheral devices; and a centrally managed network and wireless communication infrastructure to support wide-area network (WAN) communications to 43 new remotely-located, TESCO-provided Siemens PLCs via radio telemetry. Additional remote well site upgrades included the addition of 29 new Variable Frequency Drives (VFDs) provided, configured, and implemented by TESCO.

TESCO also designed, tested, and implemented a new wireless Radio-Frequency (RF) network operating in the 4.9 GHz licensed frequency band. The new communications network infrastructure design focused on improving performance, reliability, security, and longevity.

Current Project Considers Future Expansion: The new RF network was configured and provided such that the system can easily accommodate other applications and devices, such as other centralized business management software sets, if desired by the District in the future. Additionally, the entire IP-based network infrastructure was implemented in a managed configuration, providing the City with considerable insight into the network for maintenance and advanced diagnostic capabilities.

Modernized System with Enhanced Operations: This project overhauled and modernized the City's potable water process control system and the entire IP-based network infrastructure was implemented in a managed configuration that optimizes operations, security, and provides City staff with advanced system diagnostic capabilities.

SEWAGE COLLECTION SCADA SYSTEM

City of Baton Rouge, Louisiana

TESCO served as prime contractor for the development and implementation of the first City-wide sewage collection SCADA system. The solution included extensive electrical and control modifications at 450 pump stations, construction of two control rooms, and a private cellular network.

Due to a history of accidentally discharging untreated wastewater into rivers, streams and neighborhoods, the City/Parish signed a 2002 Federal consent decree committing to a $1.6 billion program to add capacity and rehabilitate sewer lines. The program included an enterprise SCADA system to monitor operations throughout their 85-square mile service area.

In 2013, following a multi-decade relationship, the City/Parish selected TESCO as their prime contractor to deliver the SCADA solution – a mainstay of the SSO program and a catalyst for overall success. Today, City operators have system-wide insight into real-time operations and receive alerts of pending trouble. If a pump stops unexpectedly or a wet well reaches a pre-set level, maintenance teams have time to correct problems before a spill occurs. **TESCO delivered a new system that provides intuitive, actionable views that let them detect problems remotely and respond in a timely manner – a key strategy required to eliminate Sanitary Sewer Overflow (SSO) events.** Highlights of this project include:

Extensive Modifications: Existing pump sites were built over several decades using different equipment and designs. The upgrade required a thorough site-by-site investigation, detailed design, extensive electrical modifications and PLC replacements. The resulting solution established a common control system and interface across all pump stations.

Services and Equipment: As prime contractor, TESCO developed detailed design then procured, programmed, configured, tested, delivered, and commissioned all equipment and software. TESCO supervised electrical and general contractors throughout field and control room installation. TESCO integrated 20,000 physical I/O points in a GE iFIX SCADA system and historian to monitor 450 pump stations from two new control rooms and data centers.

Intuitive Interface: TESCO developed a GIS-style interface that helps operators quickly identify sites with any of 10 critical alarms – all on one master screen. Predefined alarms warn operators about high wet well levels, power failure, generators with low fuel, etc. Operators can then drill down to reveal additional site-specific details.

Resilient Operations: TESCO designed a virtualized, fully-redundant, fault-tolerant system providing automatic recovery from any system failure. In addition, a separate disaster-recovery control room supports operational continuity in case the primary control center is lost in a catastrophe.

OWNER AGENCY:
CITY OF BATON ROUGE

REFERENCE
John P. Ward
Collection System Manager
225.367.4179
jpward@brgov.com

CONTRACT
$14,591,553*
*$16,107,031 for initial contract in program, $40M program total

DATES
June 2013 – December 2019

PROJECT COMPONENTS

- Upgrade for aging collection system and treatment facilities
- Upgrades to operational facilities during continuous operations and/or minimized downtime
- PLC application design, programming, and implementation
- SCADA-HMI application design, programming, and implementation
- Electrical installation
- Arc Flash Risk Assessment
- Factory & on-site testing
- Start-Up
- Staff Training
- O&M Manuals

POTABLE WATER SYSTEM SCADA & CONTROLS UPGRADES

City of Orange, California

In fulfilling their responsibility to supply clean, safe, and potable water to the City of Orange, the Public Works Water Division recognized an immediate need to modernize their antiquated control system. End-of-life hardware, unsupported software, and inefficient control capabilities rendered the City's SCADA system obsolete. Asynchronous and unreliable data communications were commonplace due to the publicly used 900MHz signal saturation and high noise floor. This compounded the City's challenges with inaccurate data and a demand for manual operations, resulting in increased staff stress levels.

To improve system reliability, serviceability, and operability, the City planned to replace remote site programmable logic controllers (PLC) with current hardware and redeveloped software applications. Remote PLCs were expected to communicate and convey data to the existing iFix system via a new radio telemetry system with modern bandwidth considerations to support the upgraded PLCs. TESCO assessed the City's automation infrastructure, revealing an unsupported iFix SCADA application was hosted on legacy hardware approaching end-of-life with no means for disaster recovery. Following the assessment findings, the City contracted with TESCO to replace legacy technology with modern platforms that are well-supported by the manufacturer.

TESCO performed a comprehensive radio study incorporating an on-site field verification of in-house software modeling. TESCO offered an alternate RF solution for the City with the ensuing solution vastly improving the City's infrastructure with a high-speed, radio-based communications system consisting of subnets that accommodate a complex array of existing interdependencies while simultaneously eliminating the need for a front-end processor and multiple radio towers, improving the communications bandwidth, throughput, and availability.

TESCO collaboratively designed and implemented a virtualized system architecture to host the new Ignition-based SCADA system. The City's time investment and close cooperation with TESCO during system design produced a valuable and consistent user experience. The SCADA graphic screens/templates, tag/historian databases, and PLC control logic conventions have since become the City's standard. A total of thirty-nine Modicon M340 PLCs were deployed throughout the distribution system, each integrated into the Ignition system upon its upgrade. To minimize downtime and operational impact, the iFix system ran in parallel until system cut-over to Ignition was complete.

As a value-engineered proposal for the City of Orange, a comprehensive system assessment was the critical factor in delivering several key benefits. Following an alternate delivery method and working closely with the City reduced their overall project costs, increased system performance, functionality, and capability, and delivered a system more robust than that which was originally expected. The upgraded system delivers cost-efficient and reliable visualization, control, and communications of the City of Orange's water distribution system while simultaneously accommodating their requirements, goals, and existing interdependencies.

OWNER AGENCY:
CITY OF ORANGE

REFERENCE
Sonny Tran
Assistant Water Manager
714.288.2475
stran@cityoforange.org

CONTRACT
$1,974,999

DATES
May 2019 – Ongoing

PROJECT COMPONENTS

- Upgrade for aging collection system and treatment facilities
- Upgrades to operational facilities during continuous operations and/or minimized downtime
- PLC application design, programming, and implementation
- SCADA-HMI application design, programming, and implementation
- Electrical installation
- Factory & on-site testing
- Start-Up
- Staff Training
- O&M Manuals

SECTION 6

NEW MEXICO RESIDENCE BUSINESS

Resident Proposer, Non-Veteran Status; IPS Evidence of Insurance

IPS, Inc. is a New Mexico-Incorporated and resident business in the City of Hobbs. The understood intention of the RFP is to award a 5-point preference to resident proposers.

ATTACHMENT C: VETERANS' PREFERENCE FORM

Resident Veterans Preference Certification

Ingram Professional Services (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement:

Please check one box only

☐ I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is less than $3M allowing me the 10% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.

"I agree to submit a report, or reports, to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

"In conjunction with this procurement and the requirements of this business' application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Sections 13-1-21 or 13-1-22 NMSA 1978, when awarded a contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a public works contract from a public body as the case may be.

"I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime."

(Signature of Business Representative)* 12/06/2022 (Date)

*Must be an authorized signatory for the Business.

The representations made in checking the boxes constitutes a material representation by the business that is subject to protest and may result in denial of an award or unaward of the procurement involved if the statements are proven to be incorrect.

IPS INC. | TESCO CONTROLS

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/5/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER McAnally Wilkins Inc. PO Box 60810 Midland TX 79711 License#: 15714884	CONTACT NAME: Kayla Rogers PHONE (A/C, No, Ext): 432-685-9300 FAX (A/C, No): E-MAIL ADDRESS: kayla@mcanallywilkins.com
INSURED Ingram Professional Services Inc PO Box 2978 Hobbs NM 88241 INGRPRO-02	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Arch Insurance Company — 11150 INSURER B : Travelers Prop Cas Co of Amer — 25674 INSURER C : Crum & Forster Spec Ins Co — 44520 INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 1871218406 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [ ] PRO-JECT [ ] LOC OTHER:			81REG5003102	2/18/2022	2/18/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG S&A POLLUTION	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			81CAB5003002	2/18/2022	2/18/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 10,000			82ULP5003302	2/18/2022	2/18/2023	EACH OCCURRENCE AGGREGATE Total Limit	$ 10,000,000 $ 10,000,000 $ 10,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N [ ] If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		81WCI5003202	2/18/2022	2/18/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C B	Professional Liability Leased & Rented Equipment Contractor's Equipment			PKC-112709 QT-660-5N312207-TIL-22	2/18/2022 2/18/2022	2/18/2023 2/18/2023	Aggregate/Each Occurr Limit Limit	$2MM/$1MM 1,000,000 $10,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
All policies except Workers' Compensation include a blanket automatic additional insured endorsement that provides additional insured status to the certificate holder only when there is a written contract between the named insured and the certificate holder that requires such status. All policies include a blanket automatic waiver of subrogation endorsement that provides this feature only when there is a written contract between the named insured and the certificate holder that requires it. Policies certified contain 30-day notice of cancellation. The General Liability policy includes a special endorsement that contains "primary & non-contributory" wording.

CERTIFICATE HOLDER

Evidence of Coverage

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

IPS, Inc.'s Evidence of Insurance Coverage

TESCO Permitted to Conduct Business in New Mexico; Evidence of Insurance`

STATE OF NEW MEXICO
MAGGIE TOULOUSE OLIVER
SECRETARY OF STATE

Certificate of Registration

OF

Tesco Controls, LLC

7021615

Delaware

The Office of the Secretary of State certifies that the Application for Certificate of Registration, duly signed and verified pursuant to the provisions of the

Limited Liability Company Act **53-19-1 to 53-19-74 NMSA 1978**

have been received and are found to conform to law. Accordingly, by virtue of the authority vested in it by law the Office of the Secretary of State issues this Certificate of Registration and attaches hereto a duplicate of the Application for Certificate of Registration.

Dated: **November 4, 2022**

In testimony whereof, the Office of the Secretary of State has caused this certificate to be signed on this day in the City of Santa Fe, and the seal of said office to be affixed hereto.

Maggie Toulouse Oliver

Maggie Toulouse Oliver
Secretary of State

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY): 09/29/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Aon Risk Services, Inc of Florida 1001 Brickell Bay Drive Suite 1100 Miami FL 33131 USA	PHONE (A/C, No, Ext): (866) 283-7122	FAX (A/C, No.): (800) 363-0105
	E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	Federal Insurance Company	20281
INSURER B:	Hartford Fire Insurance Co.	19682
INSURER C:	Hartford Casualty Insurance Co	29424
INSURER D:	Pacific Insurance Company	37338
INSURER E:		
INSURER F:		

INSURED
Tesco Controls, LLC
P.O. Box 299007
Sacramento CA 95829 USA

COVERAGES **CERTIFICATE NUMBER:** 570092187433 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X COMMERCIAL GENERAL LIABILITY	Y	Y	84CESOF9030	03/01/2022	03/01/2023	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$300,000
							MED EXP (Any one person)	$10,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$1,000,000
	POLICY X PRO-JECT LOC						GENERAL AGGREGATE	$2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$2,000,000
A	AUTOMOBILE LIABILITY	Y	Y	7362-65-82	03/01/2022	03/01/2023	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	
C	UMBRELLA LIAB X OCCUR			84XSON2127	03/01/2022	03/01/2023	EACH OCCURRENCE	$5,000,000
	X EXCESS LIAB CLAIMS-MADE						AGGREGATE	$5,000,000
	DED RETENTION							
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N		Y	71751236	03/01/2022	03/01/2023	X PER STATUTE OTH-ER	
	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? N	N/A					E.L. EACH ACCIDENT	$1,000,000
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000
D	E&O - PL - Primary			01 OH 0464707-22 Professional - Claims Made	09/30/2022	09/30/2023	Limit Deductible	$5,000,000 $100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of Insurance.

Certificate Holder is included as Additional Insured in accordance with the policy provisions of the General Liability and Automobile Liability policies. General Liability and Automobile Liability evidenced herein is Primary Non-Contributory to other insurance available to an Additional Insured, but only in accordance with the policy's provisions. A Waiver of Subrogation is granted in favor of Certificate Holder in accordance with the policy provisions of the General Liability, Automobile Liability, and Workers Compensation policies. Should the General Liability and Workers Compensation policies be cancelled before the expiration date thereof, the policy provisions will govern how notice of cancellation may be delivered to certificate holders in accordance with the policy provisions of each policy.

CERTIFICATE HOLDER

Evidence of Coverage

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Inc. of Florida

Holder Identifier :

Certificate No : 570092187433

TESCO's Evidence of Insurance Coverage

SECTION 7

CERTIFICATE OF SITE INSPECTION

Executed Certificate — IPS & TESCO

The remainder of required proposal forms are included with the submittal letter, as instructed by the RFP.

ATTACHMENT H: CERTIFICATE OF SITE INSPECTION

This certificate of site inspection must be completed and included by all Proposers in their response to this Request for Proposals.

STATEMENT BY PROPOSER

I hereby certify that a Site Inspection of the WWRF SCADA system Design and Replacement at the City of Hobbs Waste Water Facility has been conducted to determine the mechanical, electrical, control, and safety requirements of the RFP.

PROPOSER

IPS | TESCO CONTROLS

Ryan Gray | Delven Diaz

Typed/Printed Name

Signature

11/16/2022 | 11/16/22

Date of Site Inspection

CITY OF HOBBS REPRESENTATIVE

Steven L'Ecuyer

Typed/Printed Name

Signature

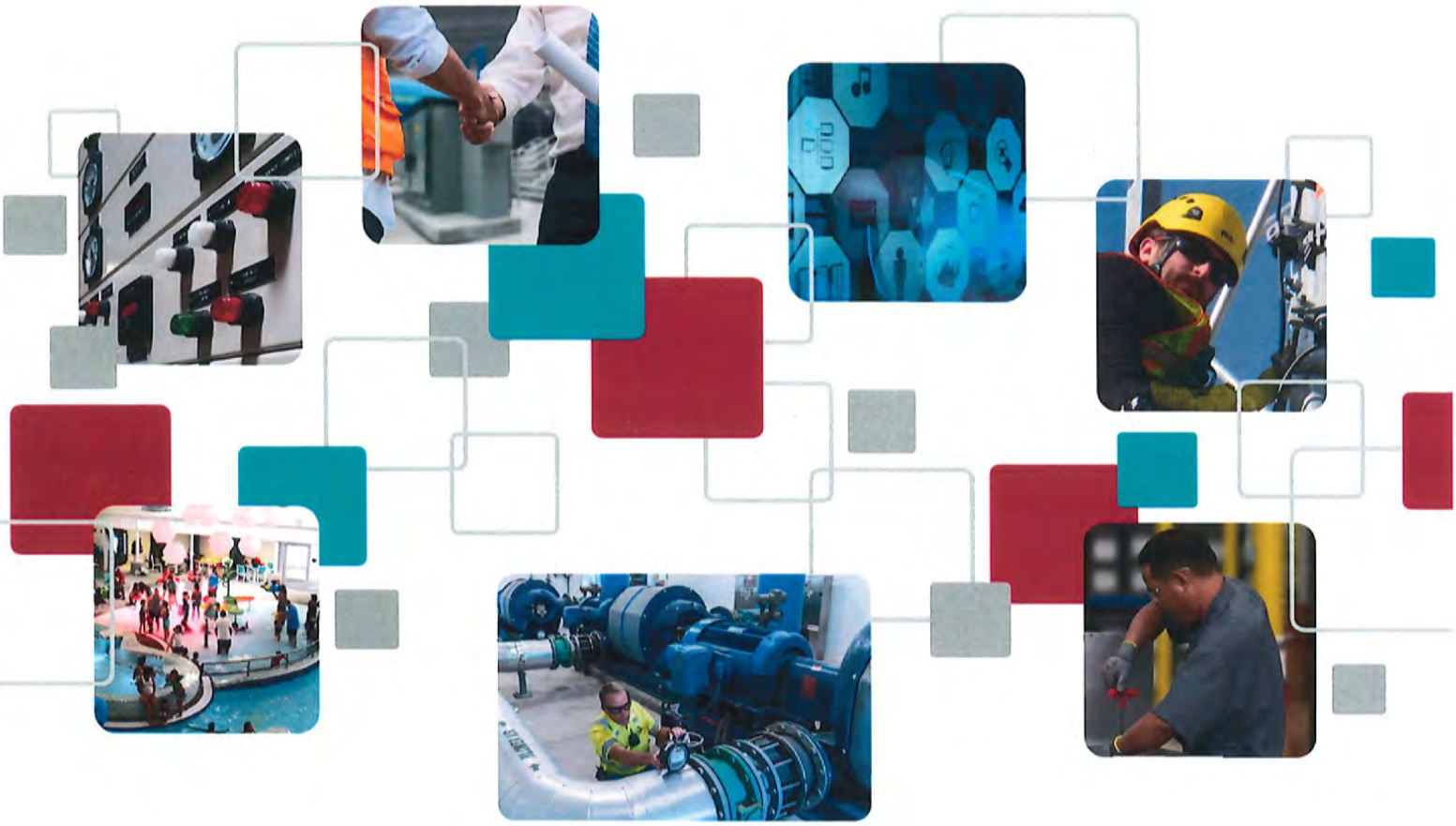
11/16/22

Date of Verification

ARRANGEMENT FOR SITE INSPECTION: To arrange for a site inspection, call: Peter Zacharias, Senior Utilities System Specialist's at O: (575) 397-9315 or C: **575-318-3748**

Certification signed by both IPS & TESCO

IPS INC. | TESCO CONTROLS



We're Here for You

24 • 7 • 365

IPS INC.

575.393.1417

info@ipsaecorp.com

IPSaecorp.com

TESCO® CONTROLS

916.395.8800

sales@tescocontrols.com

TescoControls.com

CITY OF Hobbs NEW MEXICO

IT ALL HAPPENS HERE℠

EXHIBIT: B

REQUEST FOR PROPOSALS

FOR

MATERIALS, LABOR, PROGRAMMING, AND ASSOCIATED ENGINEERING SERVICES:

CITY OF HOBBS
WASTEWATER RECLAMATION FACILITY
SCADA SYSTEM DESIGN AND REPLACEMENT

RFP No: 536-23

DUE DATE/TIME: December, 20 2022 / 02:00 PM

TABLE OF CONTENTS

This Request for Proposals is separated into two parts: Part I - General Requirements, and Part II - Attachments. Part I and Part II are part of the Request for Proposals and the terms, conditions, and criteria therein must be met by any proposer.

PART I – GENERAL REQUIREMENTS

DIVISION I - ADVERTISEMENT

PROPOSAL NO. 536-23

CITY OF HOBBS

WASTEWATER RECLAMATION FACILITY

SCADA SYSTEM DESIGN AND REPLACEMENT

City of Hobbs, New Mexico

Sealed Proposals must be received by the City of Hobbs Finance Department, Room 224, Hobbs City Hall, 2nd Floor, 200 E. Broadway St., Hobbs, New Mexico 88240 by **02:00 PM December, 20 2022** to provide Materials, Labor, Programming, and associated engineering services for the Waste Water Reclamation Facility (WWRF) Scada System Design And Replacement Project at the City of Hobbs. Proposals received after the RFP's due date/time will be considered non-responsive and will be returned unopened.

This project consists of designing and replacing the existing WWRF SCADA System with new automation and communication equipment.

The proposer will submit a detailed scope of work and cost estimate to replace the existing SCADA System with new automation and communication equipment including overall system programming and control strategy, process controllers, enclosures deemed necessary, network switches, servers, workstations, remote view nodes, automation, and HMI software. The communication network shall be realized with new network switches capable of using the existing Fiber Optic (FO) Infrastructure in the Facility. The existing FO is an OM1, 12-strand Multi-Mode 62.5 micro meter cable.

DEADLINE – 02:00 PM on December 20, 2022

Submitted proposals shall not be publicly opened. Any proposal received after the stated time will be returned unopened.

Request for Proposal packages may be obtained from the City of Hobbs Finance Department, 200 E. Broadway, Hobbs, NM. Contact Shelly Raulston @ sraulston@hobbsnm.org or 575-397-9244.

In case of ambiguity or lack of clarity, the City of Hobbs, New Mexico reserves the right to adopt the most advantageous thereof or to reject any or all proposals and waive irregularities.

CITY OF HOBBS, NEW MEXICO

Manny Gomez, City Manager

Publication Date: October 10, 2022

DIVISION II – PROJECT DESCRIPTION AND SCOPE OF SERVICES

CITY OF HOBBS REQUEST FOR PROPOSAL(S)

The City of Hobbs ("COH" or "Owner") extends an invitation to interested and qualified firms or individuals to submit a Proposal for Materials, Labor, Programming, and Associated Engineering Services, for a new SCADA and communications system, and construction-related services for the **WWRF SCADA System Design and Replacement Project** (SCADA Replacement) at the COH.

1. Any individual(s) or firm(s) proposing to perform the services and provide the materials required for this RFP should familiarize themselves with the requirements by conducting a site inspection before the RFP closing date. A Certificate of Site Inspection is included within the RFP and must be included within the Proposers' formal response whether a site inspection was performed or not. After the proposal has been submitted, the Proposer shall not assert that there was a misunderstanding concerning the quantities or the nature of the work to be done. The RFP contains the requirements to be met in the project's design and construction and the Proposer's required to use accepted design and SCADA Systems construction practices in the execution of the project. Information received from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Proposer or relieve him from fulfilling any of the conditions of the contract, including but not limited to the responsibilities of completing control and monitoring functions within the parameters required by the manufacturers of the equipment to be monitored and controlled.

PROJECT DESCRIPTION AND SCOPE OF SERVICES

The SCADA Replacement shall be implemented with the old System operating in parallel to the new System to allow for continuous service of the wastewater system without interruption.

Problem #1: Transition PLC (S7-315) is connected to multiple Siemens ET-200 I/O Racks (Distributed I/O) that create a single point of failure. The new System shall have one PLC per Process Area (PLC Centric Control Strategy).

Problem #2: The system is in Service for over 20 years and has undergone at least 3 Major Upgrades for which most of the Documentation is missing or incomplete.

Problem #3: System Engineering Station is out of Service.

The WWRF Control Room and the Server Room will serve as the WWRF Division's operations headquarters.

A new series of rack-mounted redundant servers, networking equipment, and UPS systems shall be installed in a pre-determined location within the facility. Workstations shall be installed in the Control Room and connected to the networking equipment to provide operator monitoring and control of the entire system. Required control and network wiring shall be routed to a predetermined location within the office area of the facility. Development software for the HMI program(s), communication software, and PLC software shall be installed on these systems. The software shall be used to develop the PLC and HMI programs for the WWRF and all other affected sites within each phase of the overall project. The Software shall become property of the City of Hobbs after completion of the Project.
System critical alarms need to be interfaced to the COH 800 MHz radio system and include an additional voice call or SMS option.

PROJECT ASSUMPTIONS

The scope of services for this proposal has been prepared using the following assumptions as a basis for its preparation:

1. The project area is described as the City of Hobbs WWRF SCADA and communication system Replacement. Proposer shall understand that this is a SCADA Design Project based on an operational Waste Water Reclamation Facility and that therefore many challenges will arise. Within reason, the owner will provide its technical assistance and knowledge of the system, however, Proposer is responsible for verifying all information provided as a requirement of the project.

2. Proposer is an authorized representative of the manufacturer with an authorized service center for warranty repairs and service within 500 miles of Hobbs, New Mexico. The proposer will be able to provide spare parts and perform repairs on the equipment and materials provided.

3. Proposer understands that the phases not under construction will remain in service during the project and is capable of providing personnel 24 hours/7 days a week for all aspects of the RFP who are knowledgeable and competent to perform the services required. The proposer will provide any safety equipment required for its personnel and be responsible for ensuring that work is conducted in accordance with Local, State, and Federal electrical, and mechanical code and safety regulations.

4. Owner will provide access to facility as-builds if available, including other pertinent information, as necessary to assist Proposer with the selection of replacement equipment.

Minimum Proposer's Requirements and Qualifications

The Proposer shall be regularly engaged in the design and installation of SCADA systems, computer systems, data communications systems, and their associated subsystems as they apply to the public water and wastewater utility industry and meet the following minimum qualifications and criteria.

1. The Proposer shall provide and employ on its payroll full-time personnel experienced in the design, installation, and deployment of process control systems and SCADA systems.
2. The Proposer shall provide and employ on its payroll full-time personnel experienced in the project management, procurement, assembly, installation, development, calibration, programming, testing, servicing of process instrumentation, control systems, SCADA systems, Networking, radio telemetry systems, and related subsystems.
3. The Proposer shall provide and employ on its payroll full-time personnel who have successfully installed a minimum of three (3) projects similar in size and scope to that required in this document and that used a similar architecture specified in this project.
4. The Proposer shall perform the work required in this project. Any sub-contractors must be listed by the Proposer and the percentage of work to be completed by each sub-contractor

must be approved by the COH. The use of employees from a temporary or a staffing company for meeting requirements of this section, or to circumvent federal or state employment law related to the payment of benefits or overtime shall not be allowed.

5. The Proposer shall provide a list of at least three references for which it has performed SCADA work in the water/wastewater industry within the last 6 years each of which shall be within a 600-mile radius of the owner's site.
6. To insure quality control and compatibility with the existing system listed experience must be acceptable in the following areas:
    a. Provide successful references for SCADA integration experience in the wastewater utility industry serving similar types of organizations with at least three (3) projects for radio telemetry and Fiber Optic Infrastructure within the last six years.
    b. Provide successful references for SCADA integration experience in the Waste Water utility industry with PLCs using MODBUS, Modbus/IP, Ethernet/IP, **PROFIBUS, and PROFINET Protocols as a native format to Siemens**, and Alan-Bradley as well as ABB PLC's, Spread Spectrum Radios and Ignition, VTScada or FactoryTalk HMI Software.
7. **The project shall be designed and supervised by a Project Manager with a minimum of five years' experience in the design and construction of integrated SCADA systems in the wastewater industries.**
8. The Proposer's panel shop must hold an Underwriters Laboratory 508A Listing.

The Proposer will specify equipment and quantities which are proposed to be used for the project. The COH is well aware of the current Supply Chain issues and requires monthly updates.

The Proposer shall provide a schedule of the warranty for work completed under this specification and a non-warranty service schedule with pricing and terms beyond the warranty period with the final documentation. The SCADA system as specified shall be warranted to be free of defects in materials and workmanship for a period of one year from the date of substantial completion. Substantial Completion is defined as a SCADA System Panel performing the monitoring and control functions as described in "**Proposal Specifications and Requirements**" with all the equipment delivered and installed satisfactorily. Proposer shall keep a record of Warranty start and end dates and include this in the O&M Manual.

PROJECT CONTACTS:

Questions regarding the selection process:

Contact:	Toby Spears, Finance Director
Address:	200 E. Broadway
City / State / Zip:	Hobbs, NM 88240
Phone Number:	575-397-9235

Technical Questions regarding the scope of work:

Peter Zacharias
Sr. Utilities System Specialist
1300 S. 5th St.
Hobbs, NM 88240
575-397-9315

pzacharias@hobbsnm.org

WWRF Process Areas	PLC's
Influent Pump Station, Bio Filtration Odor Control, Equalization Basin Flow and Level	Transition PLC (Located in the Control Room, Interfaced with both Servers) and PLC 1 with IM 360 and IM 361 Modules
Grit and Sum Removal System, Grit and Scum Pumping (*)	Transition PLC, PLC 3, PLC 11, and PLC 3A (with SIMATIC ET 200 Interface Module IM 153-4 I/O System) I/O shall be moved from PLC 3 to PLC 3A (with deletion of PLC 3)
Headworks, Grit Dewatering System, Fine Screen Systems, Scum Concentrator (*)	Transition PLC, PLC 11 (with SIMATIC ET 200 Interface Module IM 153-4 I/O System)
MLE Process Basins, Master Aeration Process, Bio Solid Thickeners, Final Clarifiers, RAS/WAS, and Scum pumping	Transition PLC, PLC 10 (with SIMATIC ET 200 Interface Module IM 153-4 I/O System)
UV Disinfection, Effluent Palmer Bolus Flume	Transition PLC, PLC 9 interconnected with UV PLC Packaged Unit OZONIA over PROFINET
Aerobic Digester North and South System (*)	PLC 4A and PLC 4B are both CPU 1511-1
Sludge Dewatering, Centrifuges	ABB AC 800M PLC, Connection to SCADA through ABB OPC Software
Bio Solids Drying	Allen Bradley SLC 5/05 PLC, Connection to SCADA through Kepware OPC Software (Modbus)
Effluent Pump Station, 3 PRV Sites, Surge Tank, Prairie Heaven Cemetery Irrigation	Transition PLC, PLC 7 with IM 360 and IM 361 Module
Oxy Petroleum Pump Station, Dome Storage	RBS 8 with IE/PB Link and ET 200M (IM 153-1)
2 Remote Pressure Sustaining Valve Sites (Communication over 5,8 GHz PtP Radio Links)	Transition PLC, interfaces with SCADA through Kepware OPC Software (Modbus)
Electrical Monitoring	Generator (12,470 VAC) and Transfer Switch PLC 11,
PLC # 2, Remote Base Station (RBS) # 2	S7-200 PLC no I/O used, shall be removed, Fiber Optic Equipment needs to stay.
PLC # 5, RBS # 5	No I/O used, shall be removed IE/PB Link and ET200 M, Fiber Optic Equipment needs to stay.
PLC # 6, RBS # 6	One DI and one AI were used, to propose a wireless I/O radio Link to PLC 7
BIO Tower	PLC 215 Series, Comms over 2.4 GHZ Radio

(*) Located in different Buildings, but part of the same "process"

The below-mentioned timeframe does not include the Front-end installation of SCADA Equipment like Server Rack, Power distribution, set up of the Operator Workstations, and build out of a secondary redundant Fiber optic ring for the communication between the newly installed PLCs.

This part of the Project is the least impactful stage and shall not interfere with the daily operation of the WWRF.

During all other times the affected Process Area has to be operated in manual control which requires Plant Personal to be on Site 24/7, therefore any work done by the PCSI has to be fast, efficient, and safe. Within reason, COH SCADA and Operations Personnel will be available to assist.

Enter the best estimate on Timeframe for each Process Area in the Table below (Attachment I) and return with your proposal.

WWRF Process Areas	**Estimated Timeframe on Site**
Influent Pump Station, Bio Filtration Odor Control, Primary Clarifier	
Grit and Sum Removal System, Grit and Sum Pumping	
Headworks, Grit Dewatering System, Fine Screen Systems, Scum Concentrator	
MLE Process Basins, Master Aeration Process, Bio Solid Thickeners, Final Clarifiers, RAS< WAS, and Scum pumping	
UV Disinfection, Effluent Palmer Bolus Flume	
Aerobic Digester North and South System	
Sludge Dewatering, Centrifuges	
Bio Solids Drying	
Effluent Pump Station, 3 PRV Sites, Surge Tank, Prairie Heaven Cemetery Irrigation	
Oxy Petroleum Pump Station, Dome Storage	
2 Remote Pressure Sustaining Valve Sites (Communication over 5,8 GHz PtP Radio Links)	
Electrical Monitoring	
PLC # 2, Remote Base Station (RBS) # 2	
PLC # 5, RBS # 5	
PLC # 6, RBS # 6	
Bio Tower	

SITE DESCRIPTION

The City of Hobbs (COH) WWRF SCADA System is located at 1300 South 5th Street in Hobbs, NM, 88240.

The COH WWRF Supervisory Control And Data Acquisition (SCADA) System controls the aforementioned Process Areas.

The automation equipment currently in use is the Siemens S7-200, S7-300, and S7-1500 series PLCs, one ABB AC 800M, one Allen Bradley SLC 5/05 Programmable Logic Controller (PLC), and ET 200 M Remote I/O Controllers as well as IE-PB Links (PROFIBUS to PROFINET conversion).

The control of the system is dedicated solely to the Transition PLC also called PLC 1 (Remote I/O controller) which might lead to confusion because the Influent PLC is also called PLC 1. Therefore, the I/O Controller PLC 1 is from here on called **Transition PLC**.

Operation and control of the system is done via computer interface screens. These screens reside at the WWRF integrated with the plant's Human Machine Interface (HMI) system. The HMI system is accessible locally at the WWRF control room or remotely via static IP and VPN tunneling.

See Attachment **"J"** for a complete System description.

The control strategies are written descriptions of the basic configuration and/or programming required to implement regulatory and sequential control of the processes as shown in the Panel Drawings. They do not in all cases describe the process characteristics fully. Finalizing and tuning of strategies, as required, by process characteristics shall be accomplished during meetings with WWRF Staff and at start-up. Control strategies shall fully reside in the memory of the designated control unit. The process inputs/outputs referred to in Attachment **"J"** are shown on the Drawings. Any additional I/O (Minimum 25 percent) required shall be added during the Shop Drawing review. It shall be provided at no additional cost to the OWNER.

DIVISION III – PRE-SUBMITTAL SITE INSPECTION

A pre-submittal Site Inspection should be performed at the City of Hobbs WWRF before the proposal closing date to fully familiarize themselves with the requirements of the project and to score the associated points outlined in the Evaluation Criteria (Division V).

DIVISION IV – RESPONSE FORMAT AND ORGANIZATION

Delivered or hand-carried submittals must be delivered to the City of Hobbs Finance Department at the location listed below. On the submittal package, please display the firm name, project title, and project number.

All submittals should be sent or delivered to:

CITY OF HOBBS – CITY HALL
Finance Dept. – Room 224
200 E. Broadway
Hobbs, NM 88240

Attention: Toby Spears, Finance Director

NUMBER OF RESPONSES: Only one proposal may be submitted by each entity for the one project, which is the subject of this RFP.

NUMBER OF COPIES: Proposers shall provide five **(5) identical** copies, and one copy in electronic form, of their proposal to the location specified in the Advertisement and before the closing date and time for receipt of proposals.

PROPOSAL FORMAT

The proposal must be limited in format and length. The format will be 8-1/2" x 11" with foldout sheets, allowed up to 11" x 17" in size. The length of the proposal shall be limited to a maximum of fifty (50) pages (printed sheet faces) of text and/or graphic material for project proposals. If there is any question as to format requirements they shall be directed to the City of Hobbs, Finance Director for clarification, before submittal of documents.

Material excluded from the fifty (50) pages maximum count shall include and shall be limited to:

- Front cover (blank on the back side)
- Submittal letter (one-page maximum)
- Tables of Contents page (one-page maximum)
- Divider pages (See Sections below)
- Certificate(s) of Insurance
- Proposal Signature Form (Attachment A)
- Campaign Contribution Declaration Form (Attachment B)
- Veterans' Preference Form (Attachment C)
- Resident Business Certification (Optional)
- Non-Collusion (Attachment D)
- Related Party (Attachment E)
- Certification Regarding Debarment (Attachment F)
- Certificate of Site Inspection (Attachment H)
- Back cover (blank on one side)

ANY SHEETS OR PAGES INCLUDED IN THE PROPOSAL, BUT NOT SPECIFICALLY EXCLUDED, AS NOTED ABOVE - SHALL BE COUNTED TOWARDS THE 50-PAGE MAXIMUM.

Divider Pages are noted herein. The Selection Committee will score proposals based on these Sections. Detailed descriptions and points assigned to each Section are provided under V. EVALUATION.

- Section 1- Business Profile
- Section 2- Equipment Specifications
- Section 3- Personnel Responsible to Perform Work
- Section 4- Material and Labor Costs
- Section 5- References
- Section 6- New Mexico Residence Business
- Section 7- Certificate of Site Inspection

Any proposal deemed non-conforming by the Selection Committee regarding format will be considered non-responsive. Proposers shall contact the City of Hobbs Representative to clarify any questions concerning format before submission.

Proposal Organization - All pages should be numbered except for those specifically excluded as noted above. All foldout pages shall be counted as two (2) pages and should be numbered as such. Proposals should be organized in the same order as the evaluation criteria. Tabs for each evaluation criterion, Sections 1 through 5, are helpful.

Submittal Letter - Each proposal must be accompanied by a submittal letter. The submittal letter (the following information will be required to contract for the project) should:

- identify the submitting business as an authorized Automation Engineering Firm;
- identify and provide the physical address of the equipment manufactures authorized repair facility;
- identify the name and title of the person(s) authorized by the company to contractually obligate the business for this RFP;
- identify the names, titles, and telephone numbers of persons to be contacted for clarification questions regarding this RFP;
- be signed by a person authorized to contractually obligate the Proposer;

Proposal Signature Form (Attachment A) – Include with the submittal letter the completed Signature Sheet and acknowledge any addendums

Campaign Contribution Declaration Form (Attachment B) – Include with the submittal letter the completed Contribution Declaration Form.

Resident/Veterans Preference Form (Attachment C) - Include with the submittal letter.

Non-Collusion Form (Attachment D) - Include with the submittal letter.

Related Party Form (Attachment E) - Include with the submittal letter.

Certification Regarding Debarment (Attachment F) - Include with the submittal letter.

DIVISION V – EVALUATION CRITERIA

A Selection Committee will evaluate the Proposals submitted in response to this RFP. The evaluation criteria will relate to the qualifications and ability of the Proposer to provide the materials and perform the services under this RFP. Proposals submitted should be fully self-contained and include the information requested below in the listed order and index tabbed the same.

A maximum total of 160 points are possible in scoring. The Selection Committee will evaluate the proposals and may conduct interviews with Proposers applying for selection. The evaluation criteria to be used by the Selection Committee and the corresponding point values for each criterion are as follows:

1. **Business Profile:** Business description, years in service, years of experience in the Automation and communications industry, including network design, capabilities of the business, Work already performed for the COH including services offered..... **30 points**

2. **Equipment Specifications:** Specifications of equipment being proposed including available options..... **20 points**

3. **Personnel Responsible for Performing Work:** Qualifications and experience of Personnel who will perform the work required of the project, and willingness to work longer hours or on weekends should finishing the Process Area under construction requires it to be fully operational and Commissioned within the allotted timeframe. .....**30 points**

4. **Material and Labor Costs:** Total cost of equipment, materials, and labor .....**20 points**

5. **References:** A business's record of performance in providing automation, communication, networking, and associated services .....**30 points**

6. **Resident Proposer/Veterans Preference:** .....**10 points**

7. **Certificate of Site Inspection:** ..... **20 points**

Grand Total of .....160 points

1. **Business Profile** - Provide specific information about the business that demonstrates its ability to provide the equipment and services being requested. Provide years in business, years as an authorized automation equipment manufacturer representative, number of employees, and services offered, including any professional affiliations or certifications. If the services of a third party, or subcontractor, are to be utilized, provide a brief company description, contact information, and identify those services to be provided by the subcontractor.

2. **Equipment Specifications** – List equipment manufacturers utilized for communication, PLCs, programming, etc... Provide manufacturers certifications where applicable. Provide a minimum of one (**1**) year warranty upon successful completion of startup and performance testing. List any available options including a recommended spare parts list with pricing valid for 6 months after project completion. Provide a thorough description, including drawings and a complete material list for replacing the WWRF SCADA and Communication system.

3. **Personnel Responsible for Performing Work** – Provide a list of the personnel who will be responsible for performing the requirements of the project. List their respective areas of responsibility, years of experience, licensing/certification if applicable, including any other pertinent information to demonstrate their ability to perform the services required competently and safely. Personnel performing the work shall be aware that longer work days might be required to commission a Process Area under construction.

4. **Material and Labor Costs** – Provide a detailed breakdown of equipment and labor costs for replacing the WWRF SCADA and communication system and associated components required for the project. Labor costs include the individual startup and performance testing of each new phase of the project and the removal/deletion of TAGs from the existing system (if possible) before any work begins on the succeeding phase. **Note** that part of the WWRF system will remain in service during the duration of the project. The proposers are responsible for complying with all Local, State, and Federal electrical/mechanical codes and safety regulations while performing work.

5. **References** – Provide three (3) references who can discuss the business's ability to provide and perform the services being proposed and the quality of work. Provide a brief description of the services provided, including the names of contact personnel and a current phone number.

6. **New Mexico Business** – 5 points will be given to businesses within the State of New Mexico. 5 Points will also be given to New Mexico businesses with Veterans preference. A certificate must be included within the submitted proposal.

7. **Certificate of Site Inspection** – Return Certificate of Site Inspection whether it was performed or not.

DIVISION VI – THE SELECTION PROCESS AND PROJECT SCHEDULE

SELECTION PROCESS. A Selection Committee will evaluate and score each submitted Proposal based on the criterion. The City reserves the right to determine the interview process as an optional component and proceed, at its discretion, to verify references. If an interview is held, the Selection Committee may secure additional information and/or request clarifications.

DIVISION VII – GENERAL INFORMATION

INFORMAL QUESTIONS. If you have informal questions regarding this Request for Proposals or if you have informal questions about the purchasing process, please contact:

Shelly Raulston, Tel: 575-397-9244, E-mail Address: sraulston@hobbsnm.org

Note: The City of Hobbs will answer informal questions orally and makes no warranty of any kind as to the correctness of any oral answers and uses this process solely to provide minor clarifications rapidly. Oral statements or instructions shall not constitute an amendment to this RFP. Proposers shall not rely on any verbal responses. If you have formal questions about any part of this Request for Proposals, which could result in a material issue or a formal amendment to this RFP, see INTERPRETATIONS AND ADDENDA below.

INTERPRETATIONS AND ADDENDA. Should a Proposer find any ambiguity, inconsistency or error in the Request for Proposals, or should the Proposer be in doubt as to their meaning, he shall at once notify the City Finance Director, in writing, who will send a written addendum either by facsimile or US mail to all Proposers who are on record with the Finance Department as having requested a copy of the RFP. Neither the City of Hobbs nor its representatives will be responsible for oral instructions or information. Interpretation or correction of the RFP will be made only by written addendum, which will be mailed or delivered to each Proposer of record. The City of Hobbs is not responsible for any other explanations or interpretations of the RFP.

The Owner is not responsible for assuring delivery of addenda to any Proposer. Failure to receive addenda or failure to acknowledge receipt shall not constitute a basis for a claim, protest, or reissue of the Request for Proposals.

This RFP, the Proposal of the successful Proposer, and any addenda issued by the Owner during the RFP period are to be included in and will become a part of the agreement when awarded. The Proposers shall acknowledge receipt of addenda on the Proposal form in the space provided, on the RFP Submittal Certification Form, see Attachment A.

All formal inquiries or requests for significant or material clarification or interpretation, or notification to the City of Hobbs of errors or omissions relating to this Request for Proposals must be directed, in writing, email, or by facsimile, to:

THE CITY OF HOBBS
Toby Spears, Finance Director
200 E. Broadway, Hobbs, NM
Phone: (575) 397-9235
Fax: (575) 397-9450
Email address: tspears@hobbsnm.org

All formal inquiries must be submitted before the time and date set for closing this RFP. Failure to submit inquiries by this deadline may result in the inquiry not being answered.

PROPRIETARY INFORMATION. If you are submitting any information you consider proprietary, you must place it in a separate envelope and mark it "Proprietary Information". If the Legal and Finance Department concurs, this information will not be considered public information. The City of Hobbs Legal Department is the final authority as to the extent to which material is considered proprietary or confidential. The Owner assumes no liability for disclosure or use of unmarked data. Unless identified, information submitted in response to this RFP may be disclosed pursuant to the applicable New Mexico Public Records Law and applicable New Mexico Statutes.

OBLIGATIONS. This RFP does not obligate the City of Hobbs to pay any costs incurred in the preparation and submission of Proposals nor to enter into an agreement with any of the applicants.

SITE INSPECTION. The proposer should perform a Site inspection at the City of Hobbs WWRF before Proposal closing date to fully familiarize themselves with the requirements of the project and to score the associated points outlined in the Evaluation Criteria. As-built drawings and schematics are on location and will be made available for review and copying.

WITHDRAWAL OF PROPOSAL. Proposals may be withdrawn either personally or by written request at any time before the scheduled date and time set for receipt.

AWARD OR REJECTION OF PROPOSALS. The Owner has the right to cancel this Request for Proposals, reject any or all Proposals, waive or decline any irregularities in any submitted Proposals, or withhold the award for any reason it may determine in the best interest of the Owner and also reserves the right to hold open any or all Proposals for a period of NINETY (90) DAYS after the date of the opening thereof and the right to accept a Proposal not withdrawn before the scheduled opening date.

NEGOTIATION OF THE AGREEMENT. The City of Hobbs may proceed to negotiate a contract for materials and services at compensation that it determines to be fair and reasonable. In making this decision, the City of Hobbs may take into account the estimated value of the scope of services, the complexity, and the services to be rendered. If unable to negotiate a satisfactory contract with the business considered to be the most qualified, at a price determined to be fair and reasonable, negotiations with that business will be formally terminated. The City of Hobbs may then undertake negotiations with the next most qualified business in sequence until an agreement is reached or a determination is made to reject all proposals.

RETURN OF PROPOSALS. The City of Hobbs will not return any Proposals that are submitted.

PART II: ATTACHMENTS

Attachment A: Proposal Signature Form

Attachment B: Campaign Contribution Disclosure Form

Attachment C: Veterans' Preference Form

Attachment D: Non-Collusion

Attachment E: Related Party

Attachment F: Certification Regarding Debarment

Attachment G: Submittal Inquiry Form

Attachment H: Certificate of Site Inspection

Attachment I : Estimated Timeline per Process Area

Attachment J: Proposal Specifications and Requirement

ATTACHMENT A: PROPOSAL FORM SIGNATURE SHEET

PROPOSAL 536-23

CITY OF HOBBS
WASTEWATER RECLAMATION FACILITY
SCADA SYSTEM DESIGN AND REPLACEMENT

TO: The City of Hobbs, New Mexico_____, 20___

Proposal of_____:
(Company Name)

A) A Corporation under the laws of the State of; or

B) A partnership consisting of_____; or

C) An individual trading as_____.

The undersigned offeror, pursuant to the foregoing "Request for Proposals", has carefully examined the instructions to Offerors, this proposal form, and the Specifications.

_____
Company Name:

_____
By:

_____
Type or Print Name:

_____
Address:

_____
City **State** **Zip**

_____
E-Mail Address

_____
NM Business Registration

NOTE: To be valid, bid must be signed. The signature of a corporation is its president, or an authorized representative. A signature of a partnership must be a valid partner or authorized representative.

THE FOLLOWING ADDENDA ARE HEREBY ACKNOWLEDGED AS FOLLOWS:

ADDENDUM NUMBER:_____DATED:_____ADDENDUM NUMBER:_____DATED:_____

ADDENDUM NUMBER:_____DATED:_____ADDENDUM NUMBER:_____DATED:_____

ATTACHMENT B: CAMPAIGN CONTRIBUTION DISCLOSURE FORM

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to NMSA 1978, § 13-1-191.1 (2006), any person seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars ($250) over the two year period.

Furthermore, the state agency or local public body shall void an executed contract or cancel a solicitation or proposed award for a proposed contract if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

"**Applicable public official**" means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

"**Campaign Contribution**" means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to either statewide or local office. "Campaign Contribution" includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

"**Family member**" means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son- in-law.

"**Pendency of the procurement process**" means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

"**Person**" means any corporation, partnership, individual, joint venture, association or any other private legal entity.

"**Prospective contractor**" means a person who is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person qualifies for a sole source or a small purchase contract.

"**Representative of a prospective contractor**" means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

DISCLOSURE OF CONTRIBUTIONS:

Contribution Made By: _____

Relation to Prospective Contractor: _____

Name of Applicable Public Official: _____

Date Contribution(s) Made: _____

_____

Amount(s) of Contribution(s) _____

_____

Nature of Contribution(s) _____

_____

Purpose of Contribution(s) _____

_____

(Attach extra pages if necessary)

_____ _____

Signature Date

_____

Title (position)

--OR—

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS ($250) WERE MADE to an applicable public official by me, a family member or representative.

_____ _____

Signature Date

_____

Title (Position)

ATTACHMENT C: VETERANS' PREFERENCE FORM

Resident Veterans Preference Certification

_____ (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement:

Please check one box only

□ I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is less than $3M allowing me the 10% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.

"I agree to submit a report, or reports, to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

"In conjunction with this procurement and the requirements of this business' application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Sections 13-1-21 or 13-1-22 NMSA 1978, when awarded a contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a public works contract from a public body as the case may be.

"I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime."

_____ _____

(Signature of Business Representative)* (Date)

*Must be an authorized signatory for the Business.

The representations made in checking the boxes constitutes a material representation by the business that is subject to protest and may result in denial of an award or unaward of the procurement involved if the statements are proven to be incorrect.

ATTACHMENT D: NON-COLLUSION AFFIDAVIT FORM

NON-COLLUSION AFFIDAVIT

STATE OF _____)
City OF_____)

_____(name) being first duly sworn, deposes and says that he/she is (title)_____
of (organization)_____
who submits herewith to the City of Hobbs, a bid/proposal:
That all statements of fact in such bid/proposal are true:
That said proposal/bid was not made in the interest of or on behalf of any undislosed person, partnership, company, association, organization or corporation;
That said proposer/bidder has not, directly or indirectly by agreement, communication or conference with anyone attempted to induce action prejudicial to the interest of the City of Hobbs, or of any proposer/bidder of anyone else interested in the proposed contract; and further,
That prior to the public opening and reading of bid/proposal, said bidder/proposer;

1. Did not directly or indirectly, induce or solicit anyone else to submit a false or sham proposal
2. Did not directly or indirectly collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham proposal, or that anyone should refrain from bidding or withdraw his/her proposals;
3. Did not in any manner, directly or indirectly, seek by agreement, communication or conference with anyone to raise or fix the proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of their proposal price, or of that of anyone else;
4. Did not directly or indirectly, submit his proposed price or any breakdown thereof, or the contest thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association organization, bid depository or to any member or agent thereof, or to any individual group of individuals, except that City of Hobbs, or to any person or persons who have a partnership or other financial interests with said proposer/bidder in his/her business.

By:_____
Title:_____

SUBSCRIBED and sworn to before me this _____day of _____, 20_____
Notary Public:_____

ATTACHMENT E: RELATED PARTY DISCLOSE FORM

RELATED PARTY DISCLOSURE FORM

(Bidders and Proposers only)

1. Are you indebted to or have a receivable from any member of the City of Hobbs Commissioners, administration officials, department heads, and key management supervisors with the City of Hobbs?

   YES____NO_____

2. Are you, or any officer of your company related to any member of the City of Hobbs Commissioners, administration officials, department heads, key management supervisors of the City of Hobbs and have you had any of the following transactions since January 1, 2017 to which City of Hobbs was, is to be, a party?

   Sales, Purchase or leasing of property? YES____NO_____
   Receiving, furnishing of goods, services or facilities? YES____NO_____
   Commissions or royalty payments? YES____NO_____

3. Does any member of the City Commission; administration officials, department heads, key management supervisors with the City of Hobbs, have any financial interest in your company whether a sole proprietorship, partnership, or corporation of any kind that currently conducts business with the City of Hobbs?

   YES____NO_____

4. At any time from January 1, 2017 through the present, did you, your company, or any officer of your company have an interest in or signature authority over a bank account for the benefit of a member of the City Commission administration officials, department heads, key management supervisors with the City of Hobbs?

   YES____NO____

5. Are you negotiating to employ or do you currently employ any employee, officer, or family member of an employee or officer for the City of Hobbs?

6. Are you an employee of the City of Hobbs or a member of your family an employee of the City of Hobbs?

   YES___NO____

The answers to the foregoing questions are correctly stated to the best of my knowledge and belief.

Signature of Owner or Company President_____Date_____

(Print Name and Title):_____

ATTACHMENT F: CERTIFICATION REGARDING DEBARMENT FORM

City of Hobbs
Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

The Bidder/Proposer certifies, by submission of this bid/proposal, neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this submission of bid/proposal by any Federal, State or Local government. It further agrees by submitting this bid/proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts and subcontracts. Where the bidder/proposer or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this bid/proposal submission

Failure to acknowledge the above conditions would render the Bid/Proposal non-responsive.

I acknowledge:

Company Name:_____

Signature_____

Print Name_____

ATTACHMENT G: SUBMITTAL INQUIRY FORM

(Pre-submittal Questions, General Clarifications, etc.)

PROJECT NAME: CITY OF HOBBS WASTEWATER RECLAMATION FACILITY SCADA SYSTEM DESIGN AND REPLACEMENT

RFP NUMBER: 536-23

INQUIRY DEADLINE: October 31, 2022

QUESTIONS ON: ORIGINAL RFP PACKET or ADDENDUM NO. _____

SECTION NUMBER: _____

WRITER: _____

FAX NO. _____ PHONE NO. _____

COMPANY: _____

COMPANY E-MAIL ADDRESS: _____

DATE: _____

QUESTIONS:

ATTACHMENT H: CERTIFICATE OF SITE INSPECTION

This certificate of site inspection must be completed and included by all Proposers in their response to this Request for Proposals.

STATEMENT BY PROPOSER

I hereby certify that a Site Inspection of the WWRF SCADA system Design and Replacement at the City of Hobbs Waste Water Facility has been conducted to determine the mechanical, electrical, control, and safety requirements of the RFP.

PROPOSER	**CITY OF HOBBS REPRESENTATIVE**
_____	_____
Typed/Printed Name	Typed/Printed Name
_____	_____
Signature	Signature
_____	_____
Date of Site Inspection	Date of Verification

ARRANGEMENT FOR SITE INSPECTION: To arrange for a site inspection, call: Peter Zacharias, Senior Utilities System Specialist's at O: (575) 397-9315 or C: **575-318-3748**

Attachment I: Estimated Time Line per Process Area

WWRF Process Areas	Estimated Timeframe on Site
Influent Pump Station, Bio Filtration Odor Control, Primary Clarifier	
Grit and Sum Removal System, Grit and Sum Pumping	
Headworks, Grit Dewatering System, Fine Screen Systems, Scum Concentrator	
MLE Process Basins, Master Aeration Process, Bio Solid Thickeners, Final Clarifiers, RAS< WAS, and Scum pumping	
UV Disinfection, Effluent Palmer Bolus Flume	
Aerobic Digester North and South System	
Sludge Dewatering, Centrifuges	
Bio Solids Drying	
Effluent Pump Station, 3 PRV Sites, Surge Tank, Prairie Heaven Cemetery Irrigation	
Oxy Petroleum Pump Station, Dome Storage	
2 Remote Pressure Sustaining Valve Sites (Communication over 5,8 GHz PtP Radio Links)	
Electrical Monitoring	
PLC # 2, Remote Base Station (RBS) # 2	
PLC # 5, RBS # 5	
PLC # 6, RBS # 6	
Bio Tower	

Attachment J: System description and Proposal Specification / Requirements

System Description

Influent Pumping and Preliminary Treatment

Overview

The purpose of the influent pump station and headworks is to lift the influent wastewater flow up to an elevation that allow the wastewater to pass through the treatment plant by gravity, to provide preliminary treatment (reduction or removal of non-biodegradable solids in the influent), and to provide a measurement of the plant influent flow. The headworks is also the location for the collection of representative test samples of the wastewater to provide information necessary to adjust plant operations to accommodate changing influent characteristics.

The major equipment in the preliminary treatment process includes:

- One in-channel grinder screen with Auger Monster
- Three submersible influent pumps
- One magnetic flow meter
- Two equalization basins (emergency use only)
- One combination aerated grit basin/grease flotation/pre-aeration/odor stripping tank (Grit Chamber)
- Two grit slurry pumps
- Two primary scum pumps
- Two grit dewatering/classification units
- Two stair-type fine screens [3 millimeters (mm)] with dedicated washer/compactors
- One scum concentrator for dewatering and concentrating primary and secondary scum
- One belt conveyor for transferring dewatered grit and screenings to a dumpster
- One backup grit settling basin ((non-aerated) Grit Chamber)

All of the headworks processes are provided with odor control covers and directly ventilated to two redundant biofilter odor treatment vessels except the equalization basins, belt conveyor, and backup grit chamber.

Wastewater flows through the City of Hobbs collection system and enters the WWTP via a 30" diameter line. This line discharges into the below-grade wet well divided into four compartments. The first compartment contains a grinder screen that has a washer/auger screw extending to the surface (Auger Monster). The other three compartments are equipped with submersible raw wastewater pumps. Two other lines enter the Influent Pump Station:

- A 6" diameter line that conveys the flow from the plant drain system, including flows from the septage truck discharge station.
- A 12" diameter line that conveys the return flow (dewatered sludge centrate, Supernatant out of the Digester Basins, and VACTOR Truck discharge) from the equalization basins. This flow is measured by an inline Ultrasonic Flowmeter.

Flow is calculated by a 12" magnetic flow meter located on the 24" diameter common discharge line from the influent pumps. This flow reading is sent to the SCADA System for display at the Operator Workstation (OWS) and the Operator Interface Terminal (OIT/HMI) located on the PLC-1 panel. The SCADA system calculates the totalized flow and displays it to the operator.

After measurement, the flow can be directed to any of three locations:

- Aerated Grit Chamber
- Backup Grit Chamber
- Equalization Basins

The normal flow is to the aerated grit basin. This basin serves four purposes; (a) remove heavy inorganic material (grit) by sedimentation; (b) remove grease and other floatable by air entrainment; (c) remove volatile toxic compounds from the wastewater that may inhibit downstream biological processes by aeration stripping; and (d) remove the odor-causing compounds by aeration stripping. The grit slurry is pumped to the grit dewatering/classification units. The de-gritted wastewater is conveyed to the stair-type fine Screens via a 24-inch diameter line. The screens remove objects larger than 3 mm in size and lift the screenings into the screenings washer/compactors to wash organic material out of the screenings and return that organic material to the wastewater for downstream treatment in the activated sludge process.

Influent Pumping dedicated to PLC # 1

Once the flow of the Hobbs facility reaches the Influent Pump Station, it needs to be pumped to a higher elevation so that it can continue by gravity flow through the process.

The Influent Pump Station wet well receives raw wastewater as well as recycle flows, such as centrifuge centrate, return flow from the Equalization Basins including Digester Supernatant, trucked-in wastewater from septage and VACTOR trucks, as well as flow from the plant drain system.

The Influent Pump Station is equipped with one in-channel grinder/auger and three variable speeds, submersible pumps located in individual wet wells that are inter-connected. The pumps discharge through dedicated 12-inch diameter discharge lines joining into a common 24-inch diameter header that transfers flow to the Aerated Grit Chamber, the Backup Grit Chamber, or the Equalization Basins.

Process Control

Normal Operation

The wet well is a 31-feet long, 6-feet wide, and 6-feet deep concrete structure. Wastewater passes thru the grinder/auger channel where inorganic materials larger than 3/8-inch are screened, washed, and conveyed to the top for disposal. The grinder operates continuously, while the auger is operated by an adjustable timer within the grinder/auger controller (packaged unit). The normal operation of the auger spiral rotation is based on the time of day and the flow conditions. The forward and reverse rotation of the auger and time interval is set by the Operator at the Controller; 2 min. forward,10 sec. reverse, and 2 min. forward as frequently as needed (as low as 15 min.). A float is also wired to the controller which starts the auger when the water level reaches a determined point.

After passing thru the grinder, wastewater flows into the adjacent submersible pump wet wells. A submersible level transmitter sends a signal 4-20mA signal to PLC-1 which controls submersible pump start/speed/stop signals. Control is based on the level within the wet wells.

There are three submersible, raw sewage pumps in the Influent Pump Station available for service. During normal operation, all three pumps are in "Auto" and will alternate according to the time interval set by the operator at the OWS (daily).

Operation of the influent pumps from their respective variable frequency drive provides two options to the operator:

1. Hand– This mode allows the operator to manually start (or stop) the respective pumps. Pump speed can be raised and/or lowered by using the potentiometer control knob which adjusts the output hertz from the drive to the pump motor.

2. Automatic – This mode allows the SCADA application to start and adjust the speed of the "Lead" pump when the wet well level reaches the "Lead Pump On" set point, based on the signal from the wet well level transmitter. When the level reaches the Lag Pump #1

set point, the next pump in sequence, and auto, will commence the start pump sequence. If the wet well level continues to rise and reaches Lag Pump #2 setpoint, the remaining pump will start up if in Auto. As the wet well level decreases, the controller automatically shuts the pumps off in the same sequence that the pumps started. The SCADA system automatically advances the Lead Pump, Lag Pump #1, and Lag Pump #2 sequence so that all three pumps are operated on regularly.

a Additional functions that are covered by the Influent PLC-1 are:

LEL Gas monitoring and alarming

PH and Temperature measurement

Total suspended Solids measurement

Side stream Flow measurement at the 12" pipe from the Equalization Basin

Control of an actuated Valve within that 12" pipe

Equalization basin level measurement

Start and Stop of the Equalization Basin Mixers

Bio Filter monitoring

Operator Check momentary switch

SCALANCE Ring Switch 204-2 (PLC-1)
Ethernet Fault

HARDWIRED INPUT/OUTPUT (I/O) LIST FOR PLC 1

Digital Inputs

Tag	Process/Command	Notes
Combustible Gas		
YA-1701	Warning	
YAH-1701	Alarm	
YA-1702	Fault	
EQ Valve		
ZSC-1801	Valve Closed	
ZSO-1801	Valve Open	
Generalized Input Alerts		
ZS-****	Op Check	
JA-1001	Power Fail	
JS-1001	Gen Running	
EQ Mixer #1		
YS-1411	Running	
YA-1411	Overload	
EQ Mixer #3		
YS-1431	Running	
YA-1431	Overload	
EQ Mixer #5		
YS-1451	Running	
YA-1451	Overload	
EQ Mixer #6		
YS-1461	Running	
YA-1461	Overload	

Digital Inputs (Cont.)

Tag	Process/Command	Notes
Pump #1		
TAH-1101	Overtemperature	
YA-1101	Seal Fail	
Pump #2		
TAH-1201	Overtemperature	
YA-1201	Seal Fail	
Pump #3		
TAH-1301	Overtemperature	
YA-1301	Seal Fail	

Grinder/Auger		
YS-1501	Grinder Running	
YS-1502	Auger Running	
YA-1501	Fault	
LAH-1501	Grinder Hi Level	
Bio Filter #1		
YS-1611	Fan Running	
YS-1612	Irrigation Running	
PSL-1611	Low Pressure	
Bio Filter #2		
YS-1621	Fan Running	
YS-1622	Irrigation Running	
PSL-1621	Lo Press.	

Digital Inputs (Cont.)

Tag	Process/Command	Notes
VFD #1		
ZHS-1101	In Auto	
YS-1101	Ready	
YS-1102	Running	
YS-1103	Fault	
VFD #2		
ZHS-1201	In Auto	
YS-1201	Ready	
YS-1202	Running	
YS-1203	Fault	
VFD #3		
ZHS-1301	In Auto	
YS-1301	Ready	
YS-1302	Running	
YS-1303	Fault	
EQ Mixer #2		
YS-1421	Running	
YA-1421	Overload	
EQ Mixer #4		
YS-1441	Running	
YA-1441	Overload	

Digital Output Module

Tag	Process	Notes
YC-1101	VFD #1 Start/Stop	
YC-1201	VFD #2 Start/Stop	
YC-1301	VFD #3 Start/Stop	
YC-1411	South Mixer Start/Stop	
YC-1441	North Mixer Start/Stop	
YO-1801	EQ Valve Open Command	
YC-1801	EQ Valve Close Command	
YC-1411	Mixer #1 Start/Stop	
YC-1431	Mixer #3 Start/Stop	
YC1451	Mixer #5 Start/Stop	
YC-1461	Mixer #6 Start/Stop	

Analog Inputs

Tag	Process	Notes
LIT-1001	Wet Well Level	
LIT-1002	EQ Level	
FIT-1001	Pump Flow Rate	
FIT-1002	EQ Flow Rate	
TT-1001	Influent Pump Temp.	
AIT-1001	Process PH Meter	
AIT-1002	Combustion Gas	
AIT-1003	Suspended Solids	
SIT-1101	VFD#1 Speed Indication	
SIT-1102	VFD#2 Speed Indication	
SIT-1103	VFD#3 Speed Indication	

Analog Outputs

Tag	Process	Notes
SC-1101	VFD#1 Speed	
SC-1201	VFD#2 Speed	
SC-1301	VFD#3 Speed	

GRIT/GREASE REMOVAL AND PRE-AERATION PROCESS DEDICATED TO TRANSITION PLC, PLC 3A, AND PLC 11

The Hobbs Grit/Grease Removal and Pre-aeration (Primary Grit Chamber) process is a unique process designed specifically for the needs of this facility.

The detention time at peak flow of 40 minutes is about three times longer than typical detention times of aerated grit removal processes. This would normally result in excessive organic material in the grit; however, two mechanisms are used to prevent excessive organic material in the final grit product conveyed to the dumpster in the headworks building:

1. Vigorous aeration is provided at the point where the raw sewage enters the Primary Grit Chamber, breaking up the organic material, making it more soluble, and stripping it from the grit.

2. The Slurry Cups are commonly used in sludge degritting applications, so any organic material remaining with the grit slurry will be washed out in the Slurry Cups and discharged back into the wastewater flow to the MLE Basins.

The process consists of one of the Grit Chambers converted to provide multiple functions:

1. Aerated grit removal

2. Scum and grease flotation

3. Aeration stripping of volatile compounds that may be toxic to downstream biological processes

4. Aeration stripping of odorous compounds to decrease the odors in the downstream headworks processes and anoxic zones of the MLE process basins

The process consists of:

1. One (1) covered primary clarifier tank.

2. Sixteen (16) non-clog coarse bubble aeration diffusers mounted on the inside of the center well.

3. Aeration provided by one (1) positive displacement blower.

4. Scum removal using the existing skimmer and scum beach with scum manually pumped using scum pumps (one duty, one standby).

5. Grit pumping using two recessed impeller grit pumps (one duty, one standby).

6. Grit separation, classification, and dewatering – This process consists of two (2) Eutek Slurry Cup/Snail systems. Each system is designed to handle the flow from one grit slurry pump, so this is a fully redundant process (one duty, one standby). This operation consists of the slurry cup; a vessel that the flow is pumped into and this creates a free vortex within that vessel that throws the grit to the outside of the tank using centrifugal force and this grit settles along the walls of the tank into a "hydraulic valve" because it uses a pressurized water stream to pressurize the "spin chamber" within the hydraulic valve and create a "water curtain" that keeps the grit in the spin chamber while preventing organics from entering the chamber. The concentrated washed grit is continuously discharged from the bottom of the slurry cup into a clarifier that further dewaters the grit. Concentrated grit from the clarifier slurry is discharged to a grit dewatering/transport device known as a Snail where all remaining free water drains from the grit.

7. Final dewatered grit is discharged from the Snail to the belt conveyor where it is conveyed to a dumpster.

8. Backup grit removal provided by the second uncovered secondary Grit Chamber.

GRIT AND SCUM PUMPING PLC-3A

A. General

1. The grit pumps transfer grit from the grit chambers (primary or secondary) to the grit dewatering system.

2. Each grit pump has a dedicated solenoid valve used to provide seal water to the pump. The seal water solenoid valve opens automatically whenever the pump needs to run. This control occurs in the MCC regardless of whether the local or remote mode is selected.

B. Control – Local

1. A Local/Remote selector switch is located at the MCC. The switch is a maintained position switch. This switch is used as follows:

   a. Local: When the switch is in the local position, the pump is started and stopped via the start and stop pushbuttons on the MCC.
   b. Remote: When the switch is in the remote position, the pump is controlled via the SCADA system.

C. Control – SCADA System

1. General

   a. Each pump control pop-up display has manual and auto pushbuttons to select the mode of control.

2. Manual Control

   a. Each pump control pop-up display has start and stop pushbuttons to control the pump.

3. Automatic Control

   a. A single Pump1/Pump2 selector is provided at the HMI to select which pump is the duty pump. The pump that is not selected shall automatically be set as the standby pump.

   b. A Primary/Backup Grit Chamber selector provided at the HMI, allows the operator to select which grit chamber is being used.

   c. The following permissives must be met for the automatic grit pump control to take place:

      1) The duty pump must be ready for automatic control (in remote, automatic mode, and not failed).
      2) All valves associated with the duty pump must be ready for automatic control (in remote mode and auto mode): The grit slurry suction valve for the grit chamber being used (as selected at the HMI), the flush water supply valve, the associated flush water return valve, and the associated discharge valve.

   d. Off-time and on-time setpoints are provided at the HMI (common for both pumps). The pumps will remain off for the period defined by the off-time setpoint. The duty pump will then be requested to start. When requested to start, a flush sequence is required. The following sequence will take place:

      1) The grit pump flush water supply valve will open.

      2) The duty grit pump flush water return valve will open.

      3) When the flush water supply and return valves are both open, the grit slurry suction valve from the grit chamber being used (as selected at the HMI) will close.

      4) The duty grit pump discharge valve will close.

      5) The duty grit pump will start.

      6) This flushing will occur for the period defined by the HMI adjustable flush duration setpoint (in minutes). After the timer expires, the following steps take place:

      7) The grit slurry suction valve from the grit chamber being used (as selected

at the HMI) will open.

8) The duty grit pump discharge valve will open.

9) When the grit slurry suction valve and pump discharge valve are confirmed open, the grit pump flush water supply valve will close.

10) The duty grit pump flush water return valve will close.

e. The duty grit pump remains running for the period defined by the on-time setpoint, and then shuts down.

f. After the pump is off, the associated discharge valve will close, and the grit slurry suction valve will close.

g. If the sequence fails for any reason, an alarm is indicated at the HMI, and the standby pump shall take over (if all permissives are met for the standby pump). For the standby pump to take over, the same steps listed above must take place for the standby pump (i.e. flushing sequence, etc.).

4. Upon loss of power, the grit pump(s) must be automatically re-started as follows: If the pump is running from the SCADA system, and run status is lost followed by the generator run status indicating "Generator ON" and the transfer switch indicating "Generator Power", then the pump shall be re-started automatically.

GRIT PUMPS FLUSH WATER SUPPLY VALVE

A. General

1. The grit pumps have one suction flush water valve, which brings flush water from the grit chamber effluent box to the grit pumps.

B. Control - Local

1. A Local/Remote selector switch is located at the valve. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the valve is opened and closed via the open/stop/close controls located at the valve.
b. Remote: When the switch is in the remote position, the valve is controlled via the SCADA system.

C. Control – SCADA System

1. General

a. The valve control pop-up display has manual and auto pushbuttons to select the mode of control.

2. Manual Control

    a. The valve control pop-up display has open and close pushbuttons to control the valve.

3. Automatic Control

    a. Each valve shall automatically open and close from the grit pumps sequence described above and the grit pump flushing sequence described below.

GRIT PUMPS FLUSH WATER RETURN VALVE

A. General

1. Each Grit Pump Return Flush Valve returns flush water from the discharge line of the associated grit pump to the suction line.

B. Control – Local

1. A Local/Remote selector switch is located at the valve. The switch is a maintained position switch. This switch is used as follows:

    a. Local: When the switch is in the local position, the valve is opened and closed via the open/stop/close controls located at the valve.
    b. Remote: When the switch is in the remote position, the valve is controlled via the SCADA system.

C. Control – SCADA System

1. General

    a. Each valve control pop-up display has manual and auto push buttons to select the mode of control.

2. Manual Control

    a. Each valve control pop-up display has open and close push buttons to control the valve.

3. Automatic Control

    a. Each valve shall automatically open and close from the grit pumps sequence described above) and the grit pump flushing sequence described below.

GRIT PUMPS DISCHARGE VALVES

A. General

1. Each Grit Pump Discharge Valve allows flow from the discharge line of the associated grit pump to the grit dewatering system.

B. Control – Local

1. A Local/Remote selector switch is located at each valve. The switch is a maintained position switch. This switch is used as follows:
    a. Local: When the switch is in the local position, the valve is opened and closed via the open/stop/close controls located at the valve.
    b. Remote: When the switch is in the remote position, the valve is controlled via the SCADA system.

C. Control – SCADA System

1. General
    a. Each valve control pop-up display has manual and auto pushbuttons to select the mode of control.
2. Manual Control
    a. Each valve control pop-up display has open and close pushbuttons to control the valve.
3. Automatic Control
    a. Each valve shall automatically open and close from the grit pumps sequence described above) and the grit pump flushing sequence described below.

GRIT PUMPS AUTOMATIC FLUSHING SEQUENCE

A. General

1. This description is used in conjunction with Loops above.

2. In addition to the flushing sequence that happens during the grit pump startup, the operator can manually or automatically initiate a flushing sequence at desired intervals.

B. Control – SCADA System

1. For the flushing sequence to be active, all of the following permissives must be true:
   a. The duty grit pump (as selected at the HMI) must be ready for automatic control (remote mode, auto mode, and not failed).
   b. The grit slurry suction valve from the grit chamber being used (as selected at the HMI) must be ready for automatic control (remote mode and auto mode).
   c. The grit pumps flush water supply valve must be ready for automatic control (in remote mode and auto mode).
   d. The duty grit pump flush water return valve must be ready for automatic control (in remote mode and auto mode).
   e. The duty grit pump discharge valve must be ready for automatic control (in remote mode and auto mode).
2. The flushing sequence can be initiated either manually or automatically. A Manual/Time selector, a start flush, and a stop flush button shall be provided at the HMI for each pump. When manual is selected, the sequence is started and stopped from the start flush and stop flush buttons. When time is selected, the sequence runs as follows:
   a. A flush frequency timer setpoint shall be provided at the HMI in hours. The sequence will go through a flushing sequence every time the frequency setpoint expires.
3. When the flush sequence is initiated, provided that the above permissives are satisfied, the following shall occur simultaneously:
   a. The grit pump flush water supply valve will open.
   b. The duty grit pump flush water return valve will open.
   c. When the flush water supply and return valves are both open, the grit slurry suction valve from the grit chamber being used (as selected at the HMI) will close.
   d. The duty grit pump discharge valve will close.
   e. The duty grit pump will start if not already running.

f. This flushing will occur for the period defined by the HMI adjustable flush duration setpoint (in minutes). After the timer expires, the following steps take place:

g. The grit slurry suction valve from the grit chamber being used (as selected at the HMI) will open.

h. The duty grit pump discharge valve will open.

i. When the grit slurry suction valve and pump discharge valve are confirmed open, the grit pump flush water supply valve will close.

j. The duty grit pump flush water return valve will close.

4. If this flush sequence fails for any reason, an alarm is displayed at the HMI, and the valves shall be re-positioned automatically for normal grit pump operation (flush valves closed and slurry suction valve and discharge valve opened).

IMPORTANT: The automated flushing cycle is critical to the successful operation of this system and must operate before and after grit pumping to ensure that the suction line does not plug. Plugging of the suction line will make it necessary to take the Grit Chamber out of service and put the standby Grit Chamber in service and this chamber does not have odor control or aeration capabilities.

HARDWIRED I/O LIST FOR PLC 3A

Digital Inputs

Tag	Process	NOTES
YS-20000	PD Blower ON/OFF	
GRIT CHAMBER COMBUSTION GAS		
AIT-21000A	WARNING	
AIT-21000B	ALARM	
AIT-21000C	DETECTION FAULT	
PRIMARY GRIT CHAMBER SLURRY VALVE		
YS-21501	LOC/REM	
ZSO-21501	OPENED	
ZSC-21501	CLOSED	
SECONDARY GRIT CHAMBER SLURRY VALVE		
YS-21502	LOC/REM	
ZSO-21502	OPENED	
ZSC-21502	CLOSED	
GRIT PUMPS		
YS-22001A	NO. 1 LOC/REM	
YS-22001B	NO. 1 RUNNING	
YS-22001C	NO. 1 FAIL	
PSL-22001	NO. 1 LO PRESSURE SD	
PSH-22001	NO. 1 HI PRESSURE SD	
YS-22002A	NO. 2 LOC/REM	
YS-22002B	NO. 2 RUNNING	
YS-22002C	NO. 2 FAIL	
PSL-22002	NO. 2 LO PRESSURE SD	
PSH-22002	NO. 2 HI PRESSURE SD	

Digital Inputs *cont.*

Tag	Process	Notes
GRIT PUMP FLUSH WATER VALVES		
YS-22500	SUPPLY LOC/REM	
ZSO-22500	SUPPLY OPENED	
ZSC-22500	SUPPLY CLOSED	
YS-23001	NO. 1 RTN LOC/REM	
ZSO-23001	NO. 1 RTN OPENED	
ZSC-23001	NO. 1 RTN CLOSED	
YS-23002	NO. 2 RTN LOC/REM	
ZSO-23002	NO. 2 RTN OPENED	
ZSC-23002	NO. 2 RTN CLOSED	
GRIT PUMP DSCH VALVES		
YS-23501	NO. 1 LOC/REM	
ZSO-23501	NO. 1 OPENED	
ZSC-23501	NO. 1 CLOSED	
YS-23502	NO. 2 LOC/REM	
ZSO-23502	NO. 2 OPENED	
ZSC-23502	NO. 2 CLOSED	
GRIT PUMP FLUSH WATER VALVES		
SW-102	ETHERNET FAULT	

Analog Inputs

Tag	Process	Notes
ST-20000	PD BLOWER SPEED	
FIT-20500	PD BLOWER AIR FLOW RATE	
AIT-21000	GRIT CHAMB. COMB. GAS	
LIT-21200	GRIT CHAMB. SCUM LVL	
ST-62001	DIG. SOLIDS NO. 1 SPD FDBK	Old Tag moved to new Digester
ST-62002	DIG. SOLIDS NO. 2 SPD FDBK---	Old Tag moved to new Digester

Digital Outputs

Tag	Process	Notes
GRIT CHAMBER SLURRY VALVE		
XS-21501A	(BU) OPEN	
XS-201501B	(BU) CLOSE	
XS-201502A	OPEN	
XS-201502B	CLOSE	
GRIT PUMPS		
XS-22001A	NO. 1 START	
XS-22001B	NO. 1 STOP	
XS-22002A	NO. 2 START	
XS-22002B	NO. 2 STOP	
GRIT PUMP FLUSH WATER VALVES		
XS-22500A	SUPPLY OPEN	
XS-22500B	SUPPLY CLOSE	
XS-23001A	NO. 1 RTN OPEN	
XS-23001B	NO. 1 RTN CLOSE	
XS-23002A	NO. 2 RTN OPEN	
XS-23002B	NO. 2 RTN CLOSE	
GRIT PUMP DSCH VALVES		
XS-23501A	NO. 1 DSCH OPEN	
XS-23501B	NO. 1 DSCH CLOSE	
XS-23502A	NO. 2 DSCH OPEN	
XS-23502B	NO. 2 DSCH CLOSE	

GRIT SLURRY CUP AND GRIT SNAIL SYSTEM NO. 1 AND NO. 2 (PLC 11)

A. General

1. The purpose of each of these systems is to dewater the grit received from the grit chambers and send the grit-free effluent onto the screen influent channels. The dewatered grit is then transported to a dumpster via a conveyor.

B. Control - Local

1. Local control for this system occurs via the associated control panel. Refer to the Grit Slurry Cup and Grit Snail System O & M manual for detailed control descriptions.
2. When the Local/Remote switch for the slurry cup is remote, the slurry cup drive is started and stopped from the SCADA system. The SCADA system issues a start command when one of the grit pumps is running. The SCADA system issues a stop command when both grit pumps are off.
3. When the Local/Remote switch for the Dry/Wet weather selection is remote, the system goes into wet weather mode when the SCADA system issues a wet weather command.

C. Control – SCADA System

1. The SCADA system has control of only two components of the Grit Slurry Cup and Grit Snail System: the slurry cup drive and the wet weather command. Refer to the local mode description above for a description of this control.

FINE SCREEN SYSTEMS

A. General

1. The purpose of the fine screen systems is to remove screenings from the sewage received from the grit chambers and send the screened sewage to the MLE process basins. The screenings are then transported to a dumpster via the conveyor.
2. There is no SCADA control for the fine screen systems system. All control occurs at the local control panel.

B. Control - Local

1. Local control for this system occurs via the associated control panel. Refer to the Fine Screen System O & M manual for detailed control descriptions.

GRIT AND SCREENINGS CONVEYOR

A. General

1. The Grit and Screenings Conveyor transports screenings and dewatered grit to the dumpster.

B. Control – Local

1. A Local/Remote selector switch is located at the conveyor control panel. The switch is a maintained position switch. This switch is used as follows:
   a. Local: When the switch is in the local position, the conveyor is started and stopped via the start and stop buttons located on the control panel.
   b. Remote: When the switch is in the remote position, the conveyor is controlled via the SCADA system.

C. Control – SCADA System

1. General
   a. The conveyor control pop-up display has manual and auto push buttons to select the mode of control.
2. Manual Control
   a. The conveyor control pop-up display has start and stop pushbuttons to control the conveyor.
3. Automatic Control
   a. HMI adjustable On Time and Off Time setpoints are provided. The conveyor remains off for the duration defined by the off-time setpoint. It then automatically starts and remains on for the time defined by the on-time setpoint. When the on-time duration expires, the conveyor is shut down.

FINE SCREEN AREA COMBUSTIBLE GAS DETECTION

A. General

1. Combustible gas is measured at the fine screen area.

SCUM CONCENTRATION SYSTEM

A. General

1. There is no SCADA control for this system. All control occurs at the local control panel.

B. Control - Local

1. Local control for this system occurs via the associated control panel. Refer to the Scum Concentration System O & M manual for detailed control descriptions.

Additional Devices to this process are as follows:

Roots positive displacement Blower (PLC 3A)

Provides aeration for the Primary Grit Chamber. The Primary Grit Chamber is covered while the Secondary is not. Due to this aeration, the Combustible Gas monitor has been removed and the associated three Alarm (DI) have been disconnected.

No SCADA Control

PD Blower Run Status ON/OFF

Grit Chamber PD Blower Speed Feed Back

Grit Chamber PD Blower Air Flow Rate

SCALANCE Ring Switch 204-2 (PLC 3A)

Ethernet Fault

HARDWIRED I/O LIST FOR PLC 11

Digital Inputs

Tag	Process	Notes
YS-25001C	Grit Snail No. 1 Fail	
YS-25001D	Grit Snail No. 1 In Auto	
YS-25002C	Grit Snail No. 2 Fail	
YS-25002D	Grit Snail No. 2 In Auto	
YS-25001A1	Snail No. 1 Dry/Wet LOC/REM	
YS-25001A2	Slurry Cup No. 1 LOC/REM	
YS-25002A1	Snail No. 2 Dry/Wet LOC/REM	
YS-25002A2	Slurry Cup No. 2 LOC/REM	
YS-27500A	Screening Conveyor LOC/REM	
YS-27500B	Screening Conveyor Running	
YS-27500E	Screening Conveyor E-Stop	
YS-27500C	Screening Conveyor 0 Speed Alarm	
YS-27500D	Screening Conveyor Overload	
AIT-27700A	Fine Screen Combustible Warn	
AIT-27700B	Fine Screen Combustible ALM	
AIT-27700C	Fine Screen Combustible Fault	
Scum Conc.		
LSLL-28000	Sys Day Tank LO-LO	
LSHH-28000	Sys Day Tank HI-HI	
YS-28000B1	Sys Scum Pump Running	
YS-28000C1	Sys Scum Pump TRBL ALM	
YS-28000B2	Skimmer Running	
YS-28000C2	Skimmer TRBL ALM	
YS-28000B3	Sys Mixer Running	
YS-28000C3	Sys Mixer TRBL ALM	
Generator		
YS-90000B	Emergency Gen Running	
YS-90000C	Emergency Gen Alarm	
YS-90000D	Emergency Gen Shutdown	
YS-90000	UTY/GEN PWR	
JA-92003	UTY PWR Fail Alarm	
SW-102	Ethernet Fault	

Digital Outputs

Tag	Process	Notes
XS-25001B	Slurry Cup/Grit Snail 1 Wet CMD	
XS-25001A	Slurry Cup 1 Start/Stop	
XS-25002B	Slurry Cup/Grit Snail 2 Wet CMD	
XS-25002A	Slurry Cup 2 Start/Stop	
XS-27500A	Grit & Screen Conv. Start/Stop	
XS-28000A2	Skimmer Start/Stop	

Analog Input

Tag	Process	Notes
AIT-27700	Fine Screen Comb. Gas ALM	
XS-25001A	Scum Conc. Sys Day Tank LVL	

MLE Process PLC 10

After this treatment, the wastewater is conveyed to the MLE Basins distribution channel. MLE is the acronym used for the Modified Ludzack-Ettinger treatment process that utilizes both anoxic (no free oxygen and recirculated nitrates) zones and aerobic zones to produce a high-quality effluent that is low in ammonia and nitrate.

In this channel, the Internal Recycle (IR) flow and the Return Activated Sludge (RAS) are also discharged to mix with the influent wastewater. The resulting mixture, Mixed Liquor, is distributed to the three MLE Basins.

Three 14-inch weir slide gates are used to distribute the flow evenly across the three MLE Basins. There is no automatic mode of operation for the weir slide gates either locally at the gate or the OWS. Height adjustment of the gates can be set by positioning the jack screw collars once the flow is evenly balanced to all of the "online" treatment trains.

Each MLE Basin consists of four-square Anoxic Zones (also called Selectors), which can only be operated in series, and four Aerobic (or Oxic) Zones. Each Anoxic Zone is equipped with a submersible mixer to keep the Mixed Liquor Suspended Solids (MLSS) in suspension and contact with the organic material in the influent wastewater. These mixers are capable of keeping the solids suspended without introducing oxygen into the zones. The Anoxic Zones are identified as Zones A, B, C, and D in order.

The Anoxic Zones serve two purposes. They provide:

- Denitrification (conversion of nitrates (NO_3) to nitrogen gas (N_2)
- Improve settleability of MLSS in the Final Clarifiers by inhibiting the growth of filamentous organisms.

Flow travels from zone to zone passing over weir walls that separate the zones. The flow travels sequentially through the zones, that is from Zone A to Zone B to Zone C and finally to Zone D. Flow from the fourth Anoxic Zone enters the first Aerobic (Oxic) Zone (A) over a weir wall. Each of the MLE Basins has four Aerobic Zones, which are identified as Zone A, B, C, and D. Zone C is sub-divided with a small portion of Zone C designated as Zone D. Zone D is to be used to assist the operator in maintaining low DO level in Zone C to avoid recirculating excessive DO to the anoxic zones with the Internal Recycle Pumps.

Both the IR flow and the RAS flow from the Final Clarifiers are discharged into the IR/RAS Return Channel located in between MLE Basin #1 and #2.

The Mixed Liquor flows out of Zone C of the MLE Basins and drops into an effluent channel common to all three basins. The scum that overflows all the dividing walls of the MLE basin is captured in the effluent channel, where the flow drives the scum to the west end of the channel. An adjustable weir is located at the west end of the effluent channel to allow passage of the scum to a collection box that drains to the secondary scum pump station.

The MLSS is conveyed via a 36-inch diameter line to the Final Clarifier Distribution Box. The distribution box is equipped with three fixed straight weirs (10 ft 6-inch in length). These fixed weirs provide equal distribution of the MLSS to each of the three clarifiers through 24-inch diameter lines. Slide gates are used to isolate each of the clarifiers.

The main functions of the Final Clarifiers are to provide a quiescent condition for the MLSS to separate from the treated wastewater and collect the settled activated sludge so that it may be returned to the MLE Basins before all the DO is depleted. Since the MLSS has a specific gravity greater than water, the sludge settles out in the bottom of the tank. Spiral-type collection arms with squeegee blades collect the settled sludge and direct it to a sump cast into the base of the clarifier. Greases and other floatables are collected with the upper skimmer arms which have neoprene squeegees attached to the bottom. These squeegees guide the floatable material over the scum beach and into the scum trough. Each passing of the skimmer arm over the scum beach also opens a float valve which allows clarified water to flow into the trough and carry these floatables into the scum wet well. The scum wet well has two dedicated pumps which pump the contents of the wet well to the scum concentrator. Both pumps operation is done at the local control panel. In the auto mode, pump start/stop is done via one Siemens LUT 440 Ultrasonic level and pump controller.

The settled sludge flows from each Final Clarifier's sump that is directly connected with 12-inch pipes to the RAS/WAS Pump Station. Each clarifier has a dedicated RAS wet well with a submersible pump. The wet well operates at the same water level as the clarifier. As the RAS pumps pump the RAS back to the MLE Basins, the settled sludge is pumped from the clarifier sump. Each clarifier has a dedicated pump.

Each RAS wet well has a submerged gated opening to the WAS pump wet well containing two WAS pumps. Each WAS pump is designed to pump the full design WAS flow (duty/standby). The WAS pumps are used to waste sludge from the process The WAS pump pulls sludge from the RAS wet wells through the submerged openings and pumps it to the drum thickeners.

Internal Recycle and Return Activated Sludge

Denitrification depends on two principal factors:

1. An adequate aeration tank volume based on minimum temperatures.
2. An adequate internal recycle volume to move the nitrates produced in the aerobic (oxic) zones back to the anoxic zones for the denitrification process and subsequent dilution of the nitrate concentration in the MLE Basin effluent.

The Internal Recycle (IR) Pumps have a recycle rate of 6.48 MGD per MLE Train, or 4 times the average daily flow when all three MLE Basins are in service. The IR Pumps are single, centrifugal submersible, pumps equipped with variable frequency drives for speed control.

The large IR/RAS Return Channel located between MLE Trains #1 and #2 is designed to deplete DO in the return flows before entering the anoxic zones.

Process Controls

Introduction

This section discusses the interrelation of the following unit processes and associated equipment, to achieve biological treatment process goals:

- Anoxic Selectors (Anoxic Zones)
- MLE Basins
- Internal Recycle flow
- Return Activated Sludge (RAS) flow
- Waste Activated Sludge (WAS) flow

Operational Modes

The system operates in plug flow mode. In this mode of operation, the contents of the tank are, ideally, completely homogenous. The oxygen demand decreases as the wastewater travels along the length of the MLE Basins. Both the influent flow, RAS, and Internal Recycle are uniformly mixed and fed to the anoxic and oxic zones. The plug flow process is very stable and is resistant to the "pass-thru" of the organic material during higher flow periods.

Dissolved Oxygen Control

The activated sludge process depends on having sufficient oxygen for the biological degradation (oxidation of organic material to CO_2 and H_2O) of the organic material for nitrification (conversion of ammonia to nitrates) in the wastewater and the maintenance (cell synthesis and endogenous respiration) of the biological population. The aeration system has been designed to provide oxygen for peak oxygen demand periods. However, the system oxygen demand is typically much less than peak during typical diurnal flow periods. Also important is DO control of the IR/RAS and the operation of the Anoxic Selectors. The IR/RAS Channel is designed to deplete 1 mg/L of DO.

To provide flexibility in meeting the varying oxygen demand in MLE Basins, the operator has several options available to control the airflow into the MLE Basins. The operator may choose between manual or automatic control. The aeration blower output is controlled by the position of the inlet valve to the blower.

Normally, the operator will use automatic control. In the automatic mode the operator can choose from two options:

1. **DO Control** is based on the nine (9) DO probes located in the three Aerobic Zones of each MLE Basin. The values from the nine probes are averaged and the average number is used to control the output of the aeration blowers.

2. **Time-of-Day Control** is based on the 24-hour day divided into six four-hour periods:

   00:00-04:00

   04:00-08:00

   08:00-12:00

   12:00-16:00

   16:00-20:00

   20:00-24:00

For each of the periods, the operator must select the number of blowers to run and the inlet valve position.

The Aerobic Zones are equipped with fine bubble membrane disc diffuser systems with air supplied by three multi-stage centrifugal blowers. The speed of the blowers is fixed and the output varies based on the position of the inlet valves. In DO Control mode, as the DO probes call for a greater volume of airflow to the Aerobic Zones, blower inlet valves will open causing an increase in the airflow into the diffuser system. Using the DO control mode ensures sufficient DO for the process while reducing energy consumption.

The DO set points in each zone may be set by the operator. The DO probes are located in the Aerobic Zones approximately halfway along the length of each zone. It is also important to periodically measure DO at various points throughout the zones with a portable DO meter to ensure that the fixed DO probes are accurately reporting the actual conditions of the zones.

Oxic Zone A is equipped with an MLSS probe. Using an MLSS probe for operational control is much more reliable than relying upon sampling and lab testing due to variations in sampling and testing procedures. The MLSS probe should regularly be checked with carefully sampled and analyzed lab samples.

ANOXIC ZONE MIXERS, OXIC ZONE MIXERS

General

There is no SCADA control for the mixers. All control occurs at the respective local control panel and the MCC. Under Control – Local mode, the mixer is started and stopped from the controls located on each local control panel and at the MCC. Hardwired Communication Signals consist of:

1. Mixer On/Off Status
2. Mixer Fail Alarm

BLOWER INLET VALVE POSITIONING

General

A Pressure transducer is used by SCADA solely to regulate the MLE aeration blower inlet valve(s) based on pressure on the main air header line and to protect equipment.

DO Probes 325-01A&B&C thru 325-03 A&B&C are used for SCADA control of the blower inlet valve(s) based on an average of the MLE dissolved oxygen meters in service. The number of dissolved oxygen meters in or out of service is determined by the operator and controlled at the OWS.

MLE PROCESS BASINS RECYCLE PUMPS

General

A Local/Remote selector switch is located at each pump's local control panel. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped and its speed is controlled via the start and stop buttons and potentiometer located at the control panel.

b. Remote: When the switch is in the remote position, the pump is controlled from the Motor Control Center (MCC).

A Local/Remote selector switch is located at each pump MCC. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped at the MCC and its speed is controlled via the VFD controller.

b. Remote: When the switch is in the remote position, the pump is controlled via the SCADA system in either "Manual" or "Auto" mode. When operating under "Auto" mode, SCADA adjusts the pump speed based on the flow rate within the internal recycle channel matching a determined percentage of the influent flow. This percent value is determined by the operator and entered at the OWS. Via a PID loop, SCADA flow paces the recycle pumps to consistently recycle nitrates formed during the aerobic process to the anoxic zones for conversion to nitrogen gas and nitrites.

Each pump control pop-up display has start and stop push buttons to control the pump at the SCADA system.

MLE PROCESS BASINS SUSPENDED SOLIDS ANALYZER

General

Suspended solids (also called MLSS before) are measured in each of the three aeration basins oxic zone influent. Hardwired Communication Signals include Suspended Solids.

INTERNAL RECYCLE FLOW

General

Flow thru the internal recycle channel is measured with a velocity meter and displayed locally and also on SCADA. At the OWS, the internal recycle pump speed is set to operate at a percentage of influent flow.

MLE AERATION BLOWERS

General

Via SCADA, the aeration blowers will rotate and operate in either "Time of Day" or "DO Control" mode when the respective blower control panel is placed in "Remote". In event of high air header pressure, blowers are also stopped and not allowed to restart until the pressure returns to normal. Refer to the Blower System O & M manual for detailed control descriptions.

When a cold or storm front passes through the Air becomes denser and a PLC logic has to be implemented to prevent the Blower motor from tripping due to an over amp condition.

Normal Operation

The normal mode of operation of the MLE process consists of having the Mixed Liquor, a combination of influent wastewater and Return Activated Sludge, distributed equally to all three of the MLE Basins. The influent wastewater will enter the influent channel to the basins where it will mix with the combined IR/RAS flow from the IR/RAS channel. The Mixed Liquor will then enter the first of four zones of the Anoxic Selector. Each Anoxic Zone is equipped with a submersible mixer, which will keep the MLSS in suspension without adding Dissolved Oxygen to the MLSS. These mixers will normally be operated manually from the local control panel or the respective MCC. There is no automatic mode for these mixers.

The aerated cells of the MLE Basins will be normally operated in the DO Control mode. This control strategy uses the nine DO meters/probes, one in each aerobic zone, to control the airflow to the basins. The operator will set the DO setpoint in the SCADA System at the OWS. The SCADA takes the readings from each of the DO meters and averages them for comparison to the setpoint. If the actual DO differs from the setpoint, either higher or lower, the control will automatically adjust the inlet valve to the aeration blower, either to close or open, in response and bring the actual DO back to the setpoint value.

The Internal Recycle Pumps will be operated in the automatic mode, recycling MLSS from Cell C of each MLE Basin to the IR/RAS channel which returns the microorganisms and nitrates to the influent channel to the Anoxic Selectors. The IR pump flow rate is based on the total flow from the influent multiplied by an operator-input setpoint at the OWS. Each pump's VFD will adjust the speed of the pump to maintain the ratio as the flows change.

The RAS pumps are controlled similarly. An operator-input setpoint is used to flow pace the RAS pumps using the influent flow meter signal and the setpoint multiplier. The resulting flow requirement is split among the three RAS pumps. For example, if the setpoint was set at 100 percent, each pump would pump at a rate of approximately 33 percent of the influent flow. Effluent flow from the Aeration Tanks travels via a 36-inch line to the clarifier distribution box. From this point, the flow is split with approximately one-third of the flow going to each of the Final Clarifiers.

FINAL CLARIFIERS

The main purpose of the Final Clarifiers is to allow for the separation of the liquid and solid portions of the mixed liquor suspended solids (MLSS). Since the MLSS have a higher specific gravity than the wastewater, the quiescent conditions in the Final Clarifiers allow the activated sludge to settle to the bottom of the clarifiers and the supernatant passes over the v-notch weirs and into the clarifier launder to the UV Disinfection.

A portion of the settled solids, called Return Activated Sludge (RAS), is returned to the IR/RAS channel in the MLE Basins. This is done to provide sufficient numbers of microorganisms for continuous treatment of the pollutants in the wastewater. The clarifier scraper arms slowly rotate and push the settled sludge (sludge blanket) toward the circular sludge sump cast into the clarifier base. A 12-inch diameter RAS line is used to draw the settled sludge out of the sump through the use of hydraulic siphoning and discharge into the RAS/WAS Pump Station. The three RAS pumps are located in separate wet wells and the level of the wet well is maintained at the same height as the clarifier due to the siphoning action.

Scum is removed from the clarifier surface and directed over a full-radius beaching plate where the scum then flows by gravity down a trough through a 6-inch diameter pipe to the RAS/WAS Pump Station and into the scum wet well. Scum from the well is routinely pumped by the scum pumps into the Scum Concentrator located in the Headworks Building.

General

There is no SCADA control for the clarifiers. All control occurs at each of the three local control panels. The clarifier is started and stopped from the controls located on the respective local control panel.

Normal Operations

Normal operation of the Final Clarifiers consists of all three clarifiers online and operating. The clarifiers are operated in manual mode; there is no automatic mode, from the OWS. Sludge is continuously withdrawn from the clarifiers via the siphoning system and the Return Activated Sludge (RAS) pumps located in the RAS/WAS Pump Station. These pumps are equipped with

VFDs and are flow paced based on a signal from the influent flow meter. The ratio of return to influent flow is an operator input at the OWS. The flow is measured via three Magnetic Flowmeters.

Settled activated sludge above the amount needed for the MLE Basins (WAS) is collected as RAS in a sump cast into the bottom of each clarifier. The WAS passes from the RAS wet wells to the WAS wet wells through 10-inch ports, controlled by manual slide gates, to the Waste Activated Sludge (WAS) pumps.

Scum is collected with every revolution of the clarifier skimmer arm and deposited into a scum trough. Each clarifier has a single full-radius scum trough which discharges to the scum wet well located in the RAS/WAS Pump Station. The RAS/WAS Pump Station is equipped with two scum pumps, one duty, and one standby.

Return Activated Sludge and Waste Activated Sludge pumping

Overview

The purpose of the Activated Sludge pumping systems, Return Activated Sludge (RAS) and Waste Activated Sludge (WAS), is to convey settled sludge (sludge blanket) from the three Second Stage Clarifiers to either the influent end of the MLE basins or to the Rotary Drum Thickeners (RDTs).

RETURN ACTIVATED SLUDGE (RAS) PUMPS

General

Each RAS pump is shut down when the low-level float switch is tripped in its respective wet well. This shutdown will occur whether the pump is started from the local control panel, from the MCC, or the SCADA system. Each RAS pump has a dedicated discharge flow transmitter. This transmitter is used for indication as well as for automatic flow control.

A Local/Remote selector switch is located at each pump's local control panel. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped and its speed is controlled via the start and stop buttons and potentiometer located at the control panel.

b. Remote: When the switch is in the remote position, the pump is controlled from the Motor Control Center (MCC).

A Local/Remote selector switch is located at each pump MCC. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped and its speed is controlled via the start and stop buttons on the MCC and the VFD potentiometer.

b. Remote: When the switch is in the remote position, the pump is controlled via the SCADA system.

Each pump control pop-up display has manual and auto push buttons to select the mode of control at the SCADA system. Each pump control pop-up display has start and stop pushbuttons to control the pump in manual mode at the SCADA system.

In Automatic control mode, an HMI adjustable percent of Influent Flow Setpoint is provided (common for all 3 pumps). This setpoint is multiplied by the measured influent flow rate (sum of the three flow meters at the Influent Pump Station) to determine the return flow setpoint. The return flow setpoint is divided by the number of RAS pumps that are running to determine the flow setpoint of each RAS pump. Each RAS pump shall automatically vary its speed to maintain the RAS flow setpoint calculated above.

WASTE-ACTIVATED SLUDGE (WAS) PUMPS

General

Each WAS pump shall be shut down when the low-level float switch is tripped. This shutdown will occur whether the pump is started from the local control panel, from the MCC, or the SCADA system.

A Local/Remote selector switch is located at each pump's local control panel. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped and its speed is controlled via the start and stop buttons and potentiometer located at the control panel.

b. Remote: When the switch is in the remote position, the pump is controlled from the Motor Control Center (MCC).

A Local/Remote selector switch is located at each pump MCC. The switch is a maintained position switch. This switch is used as follows:

a. Local: When the switch is in the local position, the pump is started and stopped and its speed is controlled via the start and stop buttons on the MCC and the VFD potentiometer.

b. Remote: When the switch is in the remote position, the pump is controlled via the SCADA system.

Each pump control pop-up display has manual and auto push buttons to select the mode of control at the SCADA system. Each pump control pop-up display has start and stop pushbuttons to control the pump in manual mode at the SCADA system.

In Automatic Control mode:

a. One pump is lead and the other is lag. When the lead pump is shut down, the pumps shall automatically alternate. If one of the pumps is local, manual, or failed, then the other pump shall automatically be set as the lead pump.

b. The lead pump will automatically start when one of the screw thickeners is running. If two screw thickeners are running, then the lag WAS pump shall be started.

c. An HMI adjustable WAS flow setpoint is provided. The WAS pump(s) speed shall be automatically adjusted to maintain the flow setpoint to the screw thickeners (sum of flow meters FIT-700-01, 02).

The lag pump shall shut down when one thickener is off. The lead pump shall shut down when both thickeners are off.

Scum Pumping

There is no SCADA control for this process

The scum wet well has two dedicated pumps which pump the contents of the wet well to the scum concentrator in the Headworks Building. Both pumps operation is done at the local control panel. In the auto mode, pump start/stop is done via one Siemens LUT 440 Ultrasonic level and pump controller.

Hardwired I/O for PLC 10

Digital Inputs

Tag	Device Tag	Process	Notes
Anoxic Zone Mixer 1			
YS-31001AB	4E-101	1A - ON	
YS-31001AC	4E-101	1A - FAULT	
YS-31001BB	4E-102	1B - ON	
YS-31001BC	4E-102	1B - FAULT	
YS-31001CB	4E-103	1C - ON	
YS-31001CC	4E-103	1C - FAULT	
YS-31001DB	4E-104	1D - ON	
YS-31001DC	4E-104	1D - FAULT	
Anoxic Zone Mixer 2			
YS-31002AB	4E-105	2A - ON	
YS-31002AC	4E-105	2A - FAULT	
YS-31002BB	4E-106	2B - ON	
YS-31002BC	4E-106	2B - FAULT	
YS-31002CB	4E-107	2C - ON	
YS-31002CC	4E-107	2C - FAULT	
YS-31002DB	4E-108	2D - ON	
YS-31002DC	4E-108	2D - FAULT	
Anoxic Zone Mixer 3			
YS-31003AB	4E-109	3A - ON	
YS-31003AC	4E-109	3A - FAULT	
YS-31003BB	4E-110	3B - ON	
YS-31003BC	4E-110	3B - FAULT	
YS-31003CB	4E-111	3C - ON	
YS-31003CC	4E-111	3C - FAULT	
YS-31003DB	4E-112	3D - ON	
YS-31003DC	4E-112	3D - FAULT	
Oxic Zone Mixers			
YS-31501B	4E-113	MIXER 1 ON	
YS-31501C	4E-113	MIXER 1 FAULT	
YS-31502B	4E-114	MIXER 2 ON	
YS-31502C	4E-114	MIXER 2 FAULT	
YS-31503B	4E-115	MIXER 3 ON	
YS-31503C	4E-115	MIXER 3 FAULT	

Digital Inputs (*cont.*)

Tag	Device Tag	Process	Notes
MLE Process Basins IRP			
YS-33501A	4P-101	NO. 1 LOC/REM	
YS-33501B	4P-101	NO.1 ON	
YS-33501C	4P-101	NO.1 MF ALM	
YS-33502A	4P-102	NO. 2 LOC/REM	
YS-33502B	4P-102	NO.2 ON	
YS-33502C	4P-102	NO.2 MF ALM	
YS-33502A	4P-103	NO. 3 LOC/REM	
YS-33502B	4P-103	NO.3 ON	
YS-33502C	4P-103	NO.3 MF ALM	
Aeration Blower No. 1			
PDSH-36001	PDSH-360-01	FILTER HI DP	
ZSO-36001	7V-109	INLET VLV OPEN	
ZSC-36001	7V-109	INLET VLV CLOSED	
VSH-36001	7E-101	VIB HI-LEVEL ALARM	
VS-36001	7E-101	VIB SHUTDOWN	
YS-36001E	7E-101	SURGE SHUTDOWN	
YS-36001D	7E-101	BLOWER READY	
YS-36001A	7E-101	BLOWER LOC/REM	
Aeration Blower No. 2			
PDSH-36002	PDSH-360-02	FILTER HI DP	
ZSO-36002	7V-107	INLET VLV OPEN	
ZSC-36002	7V-107	INLET VLV CLOSED	
VSH-36002	7E-102	VIB HI-LEVEL ALARM	
VS-36002	7E-102	VIB SHUTDOWN	
YS-36002E	7E-102	SURGE SHUTDOWN	
YS-36002D	7E-102	BLOWER READY	
YS-36002A	7E-102	BLOWER LOC/REM	
Aeration Blower No. 3			
PDSH-36003	PDSH-360-02	FILTER HI DP	
ZSO-36003	7V-108	INLET VLV OPEN	
ZSC-36003	7V-108	INLET VLV CLOSED	
VSH-36003	7E-103	VIB HI-LEVEL ALARM	
VS-36003	7E-103	VIB SHUTDOWN	
YS-36003E	7E-103	SURGE SHUTDOWN	
YS-36003D	7E-103	BLOWER READY	
YS-36003A	7E-103	BLOWER LOC/REM	

Digital Inputs (*cont.*)

Tag	Device Tag	Process	Notes
Final Clarifier No. 1			
YS-40001B	5E-101	ON	
YS-40001C	5E-101	FAULT	
YS-40001D	5E-101	95% TORQUE	
YS-40001E	5E-101	115% TORQUE	
Final Clarifier No. 2			
YS-40002B	5E-102	ON	
YS-40002C	5E-102	FAULT	
YS-40002D	5E-102	95% TORQUE	
YS-40002E	5E-102	115% TORQUE	
Final Clarifier No. 3			
YS-40003B	5E-103	ON	
YS-40003C	5E-103	FAULT	
YS-40003D	5E-103	95% TORQUE	
YS-40003E	5E-103	115% TORQUE	
RAS Pump No. 1			
LSLL-45001	LSLL-450-01	LO-LO LVL ALM	
YS-45001A	5P-101	LOC/REM	
YS-45001B	5P-101	ON	
YS-45001C	5P-101	MF ALM	
RAS Pump No. 2			
LSLL-45002	LSLL-450-02	LO-LO LVL ALM	
YS-45002A	5P-102	LOC/REM	
YS-45002B	5P-102	ON	
YS-45002C	5P-102	MF ALM	
RAS Pump No. 3			
LSLL-45003	LSLL-450-03	LO-LO LVL ALM	
YS-45003A	5P-103	LOC/REM	
YS-45003B	5P-103	ON	
YS-45003C	5P-103	MF ALM	

Digital Inputs (*cont.*)

Tag	Device Tag	Process	Notes
WAS Pump No. 1			
LSLL-46001	LSLL-460-01	LO-LO LVL ALM	
YS-46001A	5P-106	LOC/REM	
YS-46001A	5P-106	ON	
YS-46001A	5P-106	MF ALM	
PSH-46001	PSH-460-01	HI PRESSURE SD	
WAS Pump No. 2			
LSLL-46001	LSLL-460-01	LO-LO LVL ALM	
YS-46001A	5P-107	LOC/REM	
YS-46001A	5P-107	ON	
YS-46001A	5P-107	MF ALM	
PSH-46002	PSH-460-02	HI PRESSURE SD	
Scum Pumps			
YS-47001B	5P-104	SCUM PUMP NO.1 ON	
YS-47001C	5P-104	SCUM PUMP NO.1 FAULT	
YS-47002B	5P-105	SCUM PUMP NO.2 ON	
YS-47002C	5P-105	SCUM PUMP NO.2 FAULT	
LSH-47000	LSH-470	SCUM PUMPS HI LVL ALM	
RDT NO. 1			
YS-70001B1	7P-101	THICKENED SLUDGE PMP ON	
YS-70001C	7P-101	THICKENED SLUDGE PMP FAULT	
YS-70001B2	7E-104	SPRAY BAR ON/OFF	
YS-70001B3	7E-104	DRUM ON/OFF	
YS-70001B4	700-01	FLOCCULATOR ON/OFF	
YS-70001E	700-01	E-STOP	
ZSO-70501	7V-110	INLET VLV OPEN	
ZSC-70501	7V-110	INLET VLV CLOSED	
RDT NO. 2			
YS-70002B1	7P-102	THICKENED SLUDGE PMP ON	
YS-70002C	7P-102	THICKENED SLUDGE PMP FAULT	
YS-70002B2	7E-105	SPRAY BAR ON/OFF	
YS-70002B3	7E-105	DRUM ON/OFF	
YS-70002B4	700-02	FLOCCULATOR ON/OFF	
YS-70002E	700-02	E-STOP	
ZSO-70502	7V-111	INLET VLV OPEN	
ZSC-70502	7V-111	INLET VLV CLOSED	

Digital Inputs (*cont.*)

RDT Polymer System			
Tags	**Device tags**	**Process**	**Notes**
YS-71001B	7E-106	NO. 1 ON/OFF	
YS-71001A	7E-106	NO. 1 LOC/REM	
YS-71001C	7E-106	NO. 1 FAIL ALM	
YS-71002B	7E-107	NO. 1 ON/OFF	
YS-71002A	7E-107	NO. 1 LOC/REM	
YS-71002C	7E-107	NO. 1 FAIL ALM	
JA-92002	***	UTY PWR FAIL ALM	
SW-102	***	ETHERNET FAULT	
Plant PRV			
DI-7591_Open	7E-106	PLANT PRV OPEN LIMIT	
DI-7591_Closed	7E-106	PLANT PRV CLOSED LIMIT	

Digital Outputs

Tag	Device Tag	Process	Notes
MLE Process Basin IRPs			
XS-33501A	4P-101	NO. 1 START	
XS-33501B	4P-101	NO. 1 STOP	
XS-33502A	4P-102	NO. 2 START	
XS-33502B	4P-102	NO. 2 STOP	
XS-33503A	4P-103	NO. 3 START	
XS-33503B	4P-103	NO. 3 STOP	
Aeration Blowers			
XS-36001A	7E-101	NO. 1 START	
XS-36001B	7E-101	NO. 1 STOP	
XS-36002A	7E-102	NO. 2 START	
XS-36002B	7E-102	NO. 2 STOP	
XS-36003A	7E-103	NO. 3 START	
XS-36003B	7E-103	NO. 3 STOP	
RAS Pumps			
XS-45001A	5P-101	NO. 1 START	
XS-45001B	5P-101	NO. 1 STOP	
XS-45002A	5P-102	NO. 2 START	
XS-45002B	5P-102	NO. 2 STOP	
XS-45003A	5P-103	NO. 3 START	
XS-45003B	5P-103	NO. 3 STOP	
WAS Pumps			
XS-46001A	5P-106	NO. 1 START	
XS-46001B	5P-106	NO. 1 STOP	
XS-46002A	5P-107	NO. 2 START	
XS-46002B	5P-107	NO. 2 STOP	
RDT Polymer System			
XS-71001A	7E-106	NO. 1 START/STOP	
XS-71002A	7E-107	NO. 2 START/STOP	

Analog Inputs

Tag	Device Tag	Process	Notes
MLE Oxic Zones			
FIT-32000	FIT-320	BLOWER AIRFLOW	
FIT-32501A	FIT-325-01A	1A DROP LEG AIR FLOW	
AIT-32501A	AIT-325-01A	1A DISSOLVED OXYGEN	
FIT-32501B	FIT-325-01B	1B DROP LEG AIR FLOW	
AIT-32501B	AIT-325-01B	1B DISSOLVED OXYGEN	
FIT-32502A	FIT-325-02A	2A DROP LEG AIR FLOW	
AIT-32502A	AIT-325-02A	2A DISSOLVED OXYGEN	
FIT-32502B	FIT-325-02B	2B DROP LEG AIR FLOW	
AIT-32502B	AIT-325-02B	2B DISSOLVED OXYGEN	
FIT-32503A	FIT-325-03A	3A DROP LEG AIR FLOW	
AIT-32503A	AIT-325-03A	3A DISSOLVED OXYGEN	
FIT-32503B	FIT-325-03B	3B DROP LEG AIR FLOW	
AIT-32503B	AIT-325-03B	3B DISSOLVED OXYGEN	
FIT-33001A	FIT-330-01A	1C PRIM. DROP LEG AIR FLOW	
FIT-33001B	FIT-330-01B	1C SEC. DROP LEG AIR FLOW	
FIT-33002A	FIT-330-02A	2C PRIM. DROP LEG AIR FLOW	
FIT-33002B	FIT-330-02B	2C SEC. DROP LEG AIR FLOW	
FIT-33003A	FIT-330-03A	3C PRIM. DROP LEG AIR FLOW	
FIT-33003B	FIT-330-03B	3C SEC. DROP LEG AIR FLOW	
AIT-33001	AIT-330-01	1C DISSOLVED OXYGEN	
AIT-33002	AIT-330-02	2C DISSOLVED OXYGEN	
AIT-33003	AIT-330-03	3C DISSOLVED OXYGEN	
Misc.			
AIT-72000	AIT-720	THICKENED SLDG SUS. SOL.	
PIT-32000	PIT-320	BLOWER DISCH HEADER PSI	
FIT_7591	FIT-7591	PLANT PRV FLOW READING	
PIT_7591	PIT-7591	PLANT PRV PSI READING	

Analog Inputs *(cont.)*

Tag	Device Tag	Process	Notes
MLE Process Basins			
ST-33501	4P-101	IRP NO.1 SPEED FDBK	
ST-33502	4P-102	IRP NO. 2 SPEED FDBK	
ST-33503	4P-103	IRP NO.3 SPEED FDBK	
AIT-34001	AIT-340-01	SUSPENDED SOLIDS	
AIT-34002	AIT-340-02	SUSPENDED SOLIDS	
AIT-34003	AIT-340-03	SUSPENDED SOLIDS	
FIT-34500	FIT-345	INTERNAL RECYCLE FLOW	
Aeration Blowers			
7V-109	ZT-36001	NO. 1 INLET VLV POS. FDBK	
7V-107	ZT-36002	NO. 2 INLET VLV POS. FDBK	
7V-108	ZT-36003	NO. 3 INLET VLV POS. FDBK	
7E-101	VT-36001A	NO. 1 INLET BRG VIB.	
7E-101	VT-36001B	NO. 1 OUTLET BRG VIB.	
7E-101	IT-36001	NO. 1 AMPS	
7E-102	VT-36002A	NO. 2 INLET BRG VIB.	
7E-102	VT-36002B	NO. 2 OUTLET BRG VIB.	
7E-102	IT-36002	NO. 2 AMPS	
7E-103	VT-36003A	NO. 3 INLET BRG VIB.	
7E-103	VT-36003B	NO. 3 OUTLET BRG VIB.	
7E-103	IT-36003	NO. 3 AMPS	
RAS Pumps			
FIT-45001	FIT-450-01	NO. 1 DISCH. FLOW	
FIT-45002	FIT-450-02	NO. 2 DISCH. FLOW	
FIT-45003	FIT-450-03	NO. 3 DISCH. FLOW	
ST-45001	5P-101	NO. 1 SPEED FDBK	
ST-45002	5P-102	NO. 2 SPEED FDBK	
ST-45003	5P-103	NO. 3 SPEED FDBK	
WAS Pumps			
ST-46001	5P-106	NO. 1 DISCH. FLOW	
ST-46002	5P-107	NO. 2 DISCH. FLOW	
FIT-70001	FIT-700-01	RDT NO. 1 WAS FLOW	
FIT-70002	FIT-700-02	RDT NO. 2 WAS FLOW	

Analog Outputs

Tag	Device Tag	Process	Notes
MLE			
SC-33501	4P-101	IRP NO. 1 SPEED SP	
SC-33502	4P-102	IRP NO. 2 SPEED SP	
SC-33503	4P-103	IRP NO. 3 SPEED SP	
Aeration			
ZC-36001	7V-109	BLOWER NO. 1 VLV POS. SP	
ZC-36002	7V-107	BLOWER NO. 2 VLV POS. SP	
ZC-36003	7V-108	BLOWER NO. 3 VLV POS. SP	
RAS Pumps			
SC-45001	5P-101	NO. 1 SPEED SETPOINT	
SC-45002	5P-102	NO. 2 SPEED SETPOINT	
SC-45003	5P-103	NO. 3 SPEED SETPOINT	
WAS Pumps			
SC-46001	5P-106	NO. 1 SPEED SETPOINT	
SC-46001	5P-107	NO. 2 SPEED SETPOINT	
FC-70001	700-01	FLOW TO MCC-4A1 (RDT NO. 1)	
FC-70002	700-02	FLOW TO MCC-4A1 (RDT NO. 2)	
FC-71001	710-01	FLOW TO POLY SYS NO. 1	
FC-71002	710-02	FLOW TO POLY SYS NO. 2	
PC_7591	***	PLANT PRV SP CONTROL	

EFFLUENT FLOW

Ultraviolet (UV) Disinfection PLC 9 and AQR 40 PLC

Overview

After the final clarification process, the effluent from the Final Clarifiers flows through separate 20-inch diameter lines into a common 30-inch diameter line. The 30-inch diameter line passes through the Effluent Flow Metering Vault into the UV Disinfection facility. The flow enters a small distribution box which is used to control the flow to one, or both, of the UV channels. The distribution box is equipped with two manually-operated 18-inch x 18-inch slide gates.

The ultraviolet disinfection system uses ultraviolet light to disinfect the filtered effluent before discharge to the effluent reuse sites (Farm and City facilities Irrigation) via the Effluent pump Station or to be used as the oil field production water (OXY pump station).

UV disinfection is achieved as the wastewater passes through the rows of lamps installed vertically in a module. Each of the channels contains two modules, mounted in the channel in series. Each module contains 5 rows of 8 bulbs. Quartz jackets protect the UV bulbs from damage. The exact spacing of the bulbs ensures that the wastewater passes within the effective distance of the UV bulbs.

The flow through the facility can be directed through one or both flow channels. Each of these channels contains two modules; with each module consisting of 40 lamps. Each of the modules is controlled by a single Power and Data Distribution Center (PDDC, OZONIA) and Local Operator Interface (LOI) panel, which controls and monitors the UV modules. The PDDC receives its electrical power from a power distribution center, into which the main electrical power is introduced.

When the system is placed in the "Auto" mode, at least one row of bulbs will be online based on the flow through the UV disinfection system. As the flow increases more rows are called to operate. When the flow decreases rows of bulbs will drop out of operation. One row of bulbs will always remain in service, regardless of the total effluent flow.

Equipment Controls

There is no SCADA control for the UV system. All control is at the Local Operator Interface (LOI).

Local:

The communications board (PDDC) of the UV disinfection system consists of a programmable controller which continually monitors and controls the UV disinfection system's functions.

Through the application of a touch screen, referred to as the LOI, facility personnel can access and monitor any aspect of the UV system's operation.

The LOI consists of a touch screen that communicates to the programmable logic controller. The operator can monitor and control the entire system from the various screen displays. The information available to facility personnel from the LOI, included in the Table below, is presented on ten separate screens:

Main Screen	The main screen displays an overview of the UV system status. The following elements are accessible from this screen: ▪ CONFIG SCREEN – accesses the CONFIGURATION screen. ▪ SETUP SCREEN accesses the display setup screen. ▪ ALARMS access to the ALARM screen. ▪ FLOW PACE COEFFICIENT displays the current flow pace setpoint as inputted by the operator. The range for this setpoint is 50 percent to 150 percent. When the value is less than 100 percent more lamps will come on in response to an increase in flow. When the value is greater than 100 percent fewer lamps will come on in response to an increase in flow. On the Main Screen, information for each channel is represented by an information box. This information includes: 1. Channel operation mode, which is either "ON" or "OFF". 2. UV Intensity 3. Number of lamp rows on. 4. Mode – either "Auto" or "Manual" 5. "View Channel" button accesses the Channel screen.

Channel Screen	This screen displays an overview of the channel status. Several options are available from this screen, including: 1. MAIN returns to the MAIN screen. 2. Alarms switch to the ALARMS screen. 3. MODULE # accesses the MODULE screen for the module selected. The operator can select global manual or automatic operation for a specific channel from this screen through the use of the following buttons: ▪ ALL AUTO PACE results in all modules being automatically flow paced. *Note: This is the Normal mode of operation.* ▪ MANUAL ALL OFF turns off all modules. ▪ MANUAL ON allows manual control of all modules. The number of rows in operation is controlled by the "# MANUAL ROWS" selection.
Module Screen	This screen displays an overview of a specific module's status. Several available from this screen, including: 1. MAIN returns to the MAIN screen. 2. CHANNEL returns to the CHANNEL screen. 3. ALARMS accesses the ALARMS screen. 4. CLEANING accesses the CLEANING screen. 5. Assign UVINT sensor activates monitoring of the UV sensor. 6. DCA INFORMATION box shows the status of monitored values, including communications status, current intensity reading, temperature of the module, battery backup status and adjacent lamp failure. 7. ROW information is displayed, including lamp status, row status and VIEW ROW, which accesses the ROW screen. 8. HOA – Hand/Off/Auto control is available from this screen.
LCA Row Screen	This screen shows an overview of individual lamp status. Lamp status is indicated by the color of the lamp status box; black is Off, green is On and red is alarm. The actual operating hours and the number of On/Off cycles is displayed.
LCA ROW SET ROW DATA Screen	This screen allows the operator to either set or reset lamp hours and cycles. This screen should be accessed whenever a lamp is replaced.

LCA ROW SET LAMP DATA Screen	This screen allows the operator to set lamp hours and cycles. This screen should be accessed whenever a lamp is replaced. This Screen is normally accessed is data is lost due to controller failure.
CLEANING SYSTEM CONTROL Screen	The operator can monitor and control the cleaning system from this screen.
ALARM Screen	This screen displays the historical record of all system alarms, both active and acknowledged.
CONFIGURATION Screen	This screen allows the operator to change the operating parameters of the system.
UVT and DOSE CONTROL Screen	This screen displays the current UVT measurement from the online UVT analyzer, the calculated UV dose and the target dose.

Operation

Normal Operation

The UV Disinfection system should be in operation whenever wastewater is flowing through either of the UV channels. Failure to properly operate the system will likely result in a loss of disinfection and the potential discharge of pathogenic organisms. Normally the system is operated in the Automatic mode, which will automatically add or subtract lamps based on the flow rate and the lamp intensity reading. In the auto mode, there should be only minimal tasks required of the facility staff to ensure proper disinfection.

Automatic Flow Pacing

The automatic flow pacing system ensures that the proper UV dosage is used, based on the flow through the channel. The number of lamps will be controlled by the system. Lamps are added in rows rather than by individual lamps.

Since the UV disinfection process requires exposure of only seconds, when the flow rate is low adequate disinfection can be delivered by only a small number of rows of lamps and only one or two rows may be on in an individual module. As the flow increases and the velocity of the wastewater through the channel are increased, more rows of lamps are turned on to meet the exposure time for the proper dosage.

Alternate Operations

The UV disinfection system is installed within two parallel flow channels containing two UV modules each. Each module has 40 lamps. The system has a high level of redundancy built into it since only one channel is normally required to provide adequate disinfection of the wastewater. Alternate operations would normally entail the operation of the system in manual mode. This mode of operation would be used if there was a failure of a system component such as the flow meter which would result in the loss of the flow pacing signal. In this case the operator should set the dosage at a level high enough to ensure that normal flow peaks are adequately disinfected.

Digital Inputs

Tag	Process	Notes
JA-92001	UTY PWR FAILURE ALARM	
SW-102	ETHERNET FAULT	Scalance_PLC 9 (SCADA TAG Management)

Analog Inputs

Tag	Process	Notes
FIT-52000	PLANT EFFLUENT FLUME FLOW	From FIT-520

All other setpoints, alarms, and information related to the OZONIA UV System is conveyed via Ethernet Data Highway directly to the HMI Software.

Effluent Pumping Station

PLC 7 and RBS 8

Overview

After the UV Treatment the effluent is conveyed to a Palmer Bolus Flume to measure the plant effluent flow. The flow signal form here is duplicated and send to the UV system for the flow pacing, and to a Chlorine Gas (CL2) injection valve to inject CL2 as a second form of disinfection for the effluent.

The flow then enters a splitter Box where it is diverted either to a storage Pond or a wet well located at the effluent pump station.

A junction box will allow flow in both directions, i.e., the wet well level of the effluent pump station corresponds directly to the level in the storage pond and junction box.

Should the pond level drop below the effluent piping, the wet well can be filled via an additional storage pond (Dome) adjacent to the wet well. This is strictly done by the Operator using a manually operated valve.

During times of surplus effluent water, this Dome can be filled via a Motor Operated Valve (MOV) from the wet well, all other times the Dome will be filled by two remediation water wells (North and South Well).

The Dome also provides effluent water to a pump station operated by Oxy Petroleum.

After entering the wet well the effluent flows through a Fine Screen (MultiRake) and then into the actual wet well.

The wet well has provisions to accommodate 7 vertical turbine line shaft pumps. At the current state the COH has two 300 HP (Phase1) and three 100 HP (Phase2) pumps installed.

The Phase 1 pumps serve the irrigation needs south of the facilities which is one Farm, a cemetery and a contingency/Emergency disposal Facility. The flow is measured through a 20" magnetic flowmeter.

At the point of delivery to the Farm (S&H Farms), a Pressure Sustaining/Flow Control Valve (PS/FCV) Station has been installed. The purpose of this PSV is to keep the pressure of the upstream side of the valve constant at different flow demands. This is necessary to keep the fire Hydrants along this Pipeline charged at the right pressure.

The Phase 2 pumps serve all the side streams within the WWRF as well as irrigation needs at the following locations, the Prairie Heaven Cemetery, the MLK Soccer Plex, and the Rockwind Community Links Golf Course. The flow is measured through a 16" magnetic flowmeter.

At the point of delivery to the Rockwind Community Links Golf Course, a Pressure Sustaining/Flow Control Valve (PS/FCV) Station has been installed. The purpose of this

PS/FCV is to keep the pressure of the upstream side of the valve constant at different flow demands. This is necessary to keep the fire Hydrants along this Pipeline charged at the right pressure.

Both PS/FCV's are remote sites and communicate with the WWRF SCADA System via PtP 5.8 GHz Radios. (MODBUS Ethernet/IP Protocol)

Due to the lengths of the Pipeline, (the pressure on this line is 78-80 psi), 4 Pressure Reducing Valves (PRV) are required to lower the pressure according to the needs of the different users, These Valves are installed at various locations within the WWRF.

- Prairie Haven cemetery PRV
- East Plant PRV
- West Plant PRV
- MLK Soccer Plex PRV (Remote site comms over 900 MHz i/o Radio)

To compensate for pressure surges in the Phase 2 pipeline a Hydro-pneumatic Tank has been installed as well as a surge anticipation valve at each Header pipe for Phase 1 and 2 which will divert a possible surge back into the wet well.

Operation

After the effluent enters the wet well it flows first into a smaller splitter box were the flow can be diverted, via the manual opening of slide gates, through a channel with a Fine Screen ((Stair screen) were the final scum removal takes place) or a bypass channel with a fixed orifice screen. The bypass channel is only in use when major Maintenance for the Fine (Stair) screen is scheduled. At the outflow of those channels is a small sump to catch settled solids that can then be pump out.

The screened effluent water then enters the wet well which is common to all pumps.

Two Radar Level instruments installed in stilling wells send the level to the PLC 7 located in the Effluent Building which also houses the MCC and VFD's for Pumps # 11P-101,11P-102 (Phase 1 pump set), 11P-105, 11P-106, and 11P-107 (Phase 2 pump set).

The level transmitters operate as "fail-safe" with the primary level indication for control and the secondary as its backup. In the event the primary level transmitter fails, the station control parameters associated with the level transmitters are diverted to the secondary level transmitter.

At least one pump of Phase 1 and Phase 2 are always pumping into their pipelines to meet the demand of downstream users.

Should the demand increase beyond the capability of one pump a second one will start, and in case of Phase 2 even a third one if necessary.

These pumps discharge into separate headers. The first set of pumps (Phase I) discharge into the S&H Farms distribution Pipeline. The second set of pumps (Phase II) discharge into the MLK Distribution, Plant Distribution, Dome Storage, and the Rockwind Golf Course Pipeline.

Both sets of pumps share a common wet well and water source.

All five Line Shaft Pump Motors have a vibration Sensor installed that constantly monitor the vibration and will trigger an alarm should the Motor reach a certain vibration threshold this alarm will not trigger a shutdown of the affected motor.

Another pump station operated by Occidental Petroleum Corporation (Oxy) draws directly from the dome reservoir, which can be filled via the Phase II stations MOV as well as two remediation Wells. This station is independent of the reuse station and is operated by Oxy. Monitored via RBS 8, the two remediation wells are controlled via a level instrument through RBS 8.

S&H Farms Distribution (Phase I).

This pump set provides the S&H Farms, a cemetery and, a contingency/Emergency disposal Facility with reuse water. The pump set is to maintain either flow or pressure as selected by the operator via the HMI. A 20" magnetic Flowmeter or a pressure transducer on the discharge header is used as the process variable. The pump speed (controlled by VFD) is varied to control the discharge pressure or flow as required.

MLK Distribution, Plant Distribution, Dome Storage and Rockwind Golf Course Pump Set (Phase II).

This pump set has multiple operational requirements. They are as follows:

- These pumps operate to maintain water distribution pressure with the help 4 four before mentioned PRV's. The exception here is the pipeline to the Rockwind Community Links Golf Course which is a direct extension of the discharge Header. A pressure transducer on the discharge header is used as the process variable. The pumps' speed (controlled by VFD) are varied to control the discharge pressure.

- Each PRV (CLA-VAL) is equipped with upstream and downstream Pressure Transducers, an internal vortex shedding Flowmeter and a motorized Pilot Control valve. The only exemptions are the Prairie Heaven Cemetery and the MLK Soccer Plex which are using magnetic flowmeters.

- The discharge header is equipped with a motor operated valve (MOV). This MOV diverts discharge flow to the dome. The dome is equipped with a level transmitter. The MOV is modulated according to a setpoint determined by Plant Personnel to maintain the dome water level.

Both pump sets (Phase I and Phase II) are slowed to a settable value (speed), less than that of their current operating speed, at a preset intermediate level. Once the level of the wet well has risen above the intermediate level, for a settable duration (time), the pump set(s) operate at their current normal speed.

All pumps shut down automatically on a preset low level.

All pumps limit the number of starts per hour to 4.

Both pump sets are programmed to alternate and shall be automatically removed from the alternating sequence when not in Auto.

The dome level is maintained at a setpoint level at all times in order to supply sufficient water to the independent pump station operated by Oxy and to supplement the wet well if needed. Controlled via RBS 8.

A small lift station is monitored by the reuse pump station control panel. These lift station pumps are used in alternation to empty the lift stations well.

Hydro-Pneumatic Tank

The operators are able to operate the system by level control only. There is a Hydro-Pneumatic Tank Control and Monitoring Screen for the operators to monitor this system.

When the operator selects level control there will be an area for the operator to input a high-water level and a low water level. This level will be from a range from a Radar Level instrument installed in a stilling well with an additional sight glass. The stilling well is located within the Effluent station control Building. In general, the water level in the Hydro-Pneumatic tank will be rising as the air is absorbed into the water. When the high-water level is reached for an operator adjustable time period, PLC 7 will energize a Solenoid Valve allowing air into the tank. The water level will begin to drop and when the water level reaches the low water level the PLC will de-energize the Solenoid Valve. If the water level is below the low water level for an operator adjustable time period, the PLC will energize another solenoid valve which will allow air to vent from the tank.

The Hydro-Pneumatic Tank Control and Monitoring Screen display the tank pressure and level respectively. The screen has a diagrammatic view of the system.

Compressed air is delivered by two air compressors one primary and one secondary.

The pressure within this tank will determine the system pressure.

Control:

Fine Screen

Hand:

When the Screen Selector switch is in the HAND position, the Screen will operate in the FORWARD-OFF-REVERSE (For-Off-Rev) according to the selector switch. The switch will spring return to off.

Auto:

When the screen selector switch is in the AUTO position the Screen will start to run once the water level reaches the start level setpoint of the level controller or the remote start call is received. Should the level instrument fail an emergency Float switch will start the Screen.

Press

Hand:

When the Screen Selector switch is in the HAND position, the Press will operate in the FORWARD-OFF-REVERSE (For-Off-Rev) according to the selector switch. The switch will spring return to off.

Auto:

There is no SCADA Control for the Press and associated Spay wash modes.

S&H Distribution Pumps 11P- 101 through 11P- 103 (Phase I)

Hand:

When the HAND-OFF-AUTO switch (HOA) is in Hand at the VFD enclosure the pump/motor will be started via a Start pushbutton, and the speed is controlled via a potentiometer at each enclosure. To stop a pump/motor the Stop pushbutton has to be activated.

Auto:

When the HOA switch is in Auto the SCADA System and/or the Operator have control over the pumps/motors.

The pump set's for Phase I are controlled either by Flow or Pressure setpoints.

A pressure transducer and a magnetic Flowmeter are installed in the common Header pipe for that purpose.

The SCADA system will add or subtract a pump to stay within those parameters, set by the Operator.

Two Radar level instruments (primary and backup) measure the level in the wet well and will slow the pumps down to a settable speed/pressure set point should the level reach a settable level determined by the operator to be safe for the pumps to run at for a period of time, and will return to normal once the level is higher than the setpoint for a period of time determined by the

operator. The operator can override this function at any time.

The SCADA system will auto alternate the pumps according to the Operators input in either Days or Runtimes.

MLK Distribution, Plant Distribution, Dome Storage and Rockwind Golf Course Pumps 11P-104 to 11P-107 (Phase II).

Hand:

When the HAND-OFF-AUTO switch (HOA) is in Hand at the VFD enclosure the pump/motor will be started via a Start pushbutton, and the speed is controlled via a potentiometer at each enclosure. To stop a pump/motor the Stop pushbutton has to be activated.

Auto:

When the HOA switch is in Auto the SCADA System and/or the Operator have control over the pumps/motors.

The pump set's for Phase II are controlled by a Pressure setpoint.

A pressure transducer is installed in the common Header pipe for that purpose.

The SCADA system will add or subtract a pump to stay within those parameters, set by the Operator.

Two Radar level instruments (primary and backup) measure the level in the wet well and will slow the pumps down to a settable speed/pressure set point should the level reach a settable level determined by the operator to be safe for the pumps to run at for a period of time, and will return to normal once the level is higher than the setpoint for a period of time determined by the operator. The operator can override this function at any time.

The SCADA system will auto alternate the pumps according to the Operators input in either Days or Runtimes.

A small Sewer Lift station is also monitored by PLC 7. There are no controls associated except for 5 DI see I/O list.

PRESURE REDUCING AND PRESSURE SUSTAINING / FLOW CONTROL VALVES

There is no Manual Control for the PRV's.

In Automatic Control the SCADA system receives the downstream pressure and sends a 4-20 mA signal according to a settable pressure setpoint by the Operator to a Pilot control Motor (CLA-VAL CRD 33) which adjusts the valve accordingly.

3 of the 4 PRV's are controlled from PLC 7, two are hardwired and one signal is send via a 900 MHz Phoenix Contact I/O Radio. The fourth PRV is controlled from PLC 10.

The two remote PS/FCV's can be controlled in manual by either isolation valves, or the CLA-VAL D22 Electronic Valve Controller. The City of Hobbs would prefer to replace those Controllers with a PLC at each site. The Ethernet Radio infrastructure is already in place and can be utilized.

To control those Sites, up to 4 AI, 1 AO, and 2 DO would be necessary.

At the current configuration the pressure sustaining part of the valve is set manually by a pressure regulator. The flow through this valve is measured by a magnetic Flowmeter and according to the setpoint determined by Plant Personal, a 4-20 mA signal will be transmitted to the valve controller which in turn opens or closes the valve via two Solenoid valves till it reaches the flow required. A Valve position indicator sends the position back to SCADA.

The communication between both sites and SCADA (Modbus/EthernetIP) is done through an OPC Software pack (Kepware).

OXY Petroleum Pump Station

The pump station is independently operated by the Control Panel within the Pump Station. SCADA monitors the following Data:

- Flow
- Large Pump running
- Small Pump Running
- Pressure

Storage Dome

Manual filling operation from the Phase II pump station occurs via the SCADA system through operator input for the MOV.

Automatic filling is done through a level instrument and operator settable levels, at which 2 remediation Wells will be started or stopped.

A manual Float switch will send an alarm and stop both Wells if the level reaches unsafe conditions (2 feet before Overflow).

Hardwired I/O for PLC 7 and RBS 8

Digital Inputs PLC 7

Tag	Process	Notes
VFDs		
11P-104		
ZHS-7110	In Auto	
YS-7110	Ready	
YS-7111	Running	
YS-7112	Fault	
11P-105		
ZHS-7120	In Auto	
YS-7120	Ready	
YS-7121	Running	
YS-7122	Fault	
11P-106		
ZHS-7130	In Auto	
YS-7130	Ready	
YS-7131	Running	
YS-7132	Fault	
11P-101		
ZHS-7210	In Auto	
YS-7210	Ready	
YS-7211	Running	
YS-7212	Fault	
11P-102		
ZHS-7220	In Auto	
YS-7220	Ready	
YS-7221	Running	
YS-7222	Fault	
ZHS-7230	In Auto	
YS-7230	Ready	
YS-7231	Running	
YS-7232	Fault	
11P-107		

ZHS-7140	In Auto	
YS-7140	Ready	
YA-7141	Running	
YA-7142	Fault	
Dome MOV		
ZSO-7531	Closed	
ZSC-7531	Opened	
YA-7531	Over torque	
Lift Station		
YS-7011	Lift Pump 1 ON	
YA-7012	Lift Pump 1 MF	
YA-7021	Lift Pump 2 On	
YA-7022	Lift Pump 2 MF	
LA-7010	Lift Station High Level	
Moving Screen		
ZHS-7041	in Auto	
YS-7041	On	
YA-7041	Fault	
LA-7041	High Level	
ZS-7000	Operator Key	
PSH-7301	Phase II Mainline PSI	
PSH-7401	Phase I Mainline PSI	

Digital Outputs PLC 7

Tag	Process	Notes
YC-7110	11P-104 CF	
YC-7120	11P-105 CF	
YC-7130	11P-106 CF	
YC-7210	11P-101 CF	
YC-7220	11P-102 CF	
YC-7230	11P-103 CF	
YC-7140	11P-107 CF	
YC-7041	Moving Screen Start CF	
YSO-7531	Dome MOV Open CF	
YSC-7531	Dome MOV Close CF	
YC-7521	Hydro Sol IN	
YC-7522	Hydro Sol OUT	

Analog Inputs PLC 7

Tag	Process	Notes
FIT-7501	Phase II Header Flow	To MLK Distribution
FIT-7601	Phase I Header Flow	To S&H Distribution
LIT-7001	Wet well Level 1	
LIT-7002	Wet well Level 2	
PIT-7301	Phase II Header PSI	To MLK Distribution
PIT-7401	Phase I Header PSI	To S&H Distribution
ZT-7531	Dome MOV Position	
PIT-7531	Dome Level via PSI	
VFD Speed		
SIT-7110	VFD 11P-104 Speed	
SIT-7120	VFD 11P-105 Speed	
SIT-7130	VFD 11P-106 Speed	
SIT-7140	VFD 11P-107 Speed	
SIT-7210	VFD 11P-101 Speed	
SIT-7220	VFD 11P-102 Speed	
SIT-7230	VFD 11P-103 Speed	
VFD Vibration		
VT-7110	VFD 11P-104 Vibration	
VT-7120	VFD 11P-105 Vibration	
VT-7130	VFD 11P-106 Vibration	
VT-7140	VFD 11P-107 Vibration	
VT-7210	VFD 11P-101 Vibration	
VT-7220	VFD 11P-102 Vibration	
VT-7230	VFD 11P-103 Vibration	
PRVs		
FIT-7511	Plant PRV Flow	
PIT-7511	Plant PRV PSI	
FIT-7551	Cemetery PRV Flow	
PIT-7551	Cemetery PRV PSI	
FIT-7571	MLK PRV Flow	Remote IO via Radio
PIT-7571	MLK PRV PSI	Remote IO via Radio
LT-7521	Hydro Tank Level	
PT-7521	Hydro Tank PSI	

Analog outputs PLC 7

Tag	Process	Notes
SIC-7110	11P-104 SP	
SIC-7120	11P-105 SP	
SIC-7130	11P-106 SP	
ZC-7531	Dome MOV SP	
SIC-7210	11P-101 SP	
SIC-7220	11P-102 SP	
SIC-7230	11P-103 SP	
SIC-7140	11P-107 SP	
PC-7511	W. Plant PRV PSI SP	
PC-7551	Cemetery PRV PSI SP	Prairie Heaven
PC-7571	MLK PRV PSI SP	Remote IO via Radio

Digital Inputs (5) RBS 8

Tag	Process	Notes
LMF1A3	Filter Hi-Level Alarm	!!!OBSOLETE!!!
OCS42S1	Filter Pump Operator Check	
PMF1A5	Filter Pump 1 MF	!!!OBSOLETE!!!
PMF1S1	Filter Pump 1 ON	!!!OBSOLETE!!!
PMF2A5	Filter Pump 2 MF	!!!OBSOLETE!!!
PMF2S1	Filter Pump 2 ON	!!!OBSOLETE!!!
PCB10A5	Cemetery Booster Pump MF	!!!OBSOLETE!!!
PCB10S1	Cemetery Booster Pump ON	!!!OBSOLETE!!!
EMF1A5	Industrial Filter MF	!!!OBSOLETE!!!
EMF1S1	Industrial Filter ON	!!!OBSOLETE!!!
LMF2A3	Dome Hi-Level	
PF8A5	Power Fail	
SWELL1	South Well Running	
???	South Well OFF	!!!OBSOLETE!!!
NWELL1	North Well running	
???	North Well OFF	!!!OBSOLETE!!!

???	OXY Large ON	
???	OXY Small ON	

Digital Outputs (2) RBS 8

Tag	Process	Notes
PMF1S2	Filter Pump 1 CF	!!!OBSOLETE!!!
PMF2S2	Filter Pump 2 CF	!!!OBSOLETE!!!
SouthWell CF	South Well	
NorthWell CF	North Well	

Analog Inputs (2) RBS 8

Tag	Process	Notes
???	North Well ON	!!!OBSOLETE!!!
???	North Well OFF	!!!OBSOLETE!!!
PMF1S2	Filter Pump 1 CF	!!!OBSOLETE!!!
PMF2S2	Filter Pump 2 CF	!!!OBSOLETE!!!
	OXY Flow	TAG IS UNKNOWN
LMF2M1 Raw	Dome Level Metritape	

WASTE-ACTIVATED SLUDGE (WAS) FLOW

General

As already discussed before, two WAS pumps (primary and secondary) convey the flow to two Rotary Drum Thickeners (RDT). There is only one WAS pump and one RDT is serviced at any given time.

The WAS flow is measured by two magnetic flowmeters depending on which WAS pump is in service.

Polymer units injecting into the line of the selected RDT. Which is solely operated manually by the Operator.

The RDT discharges into a Hopper with a positive displacement pump attached in the bottom. A high-pressure switch shall shut the RDT and associated WAS Pump down should the pressure in the discharge line reaches the shutdown setpoint (High Pressure).

An Ultrasonic level instrument determines the pumping cycle and ensures that the Hopper does not overflow.

A suspended Solids instrument is installed in the common header pipe of both RDTs.

After that treatment, the WAS is called Thickened Waste Activated Sludge (TWAS) and is pumped to the Aerobic Digesters.

At the current stage, both RDTs are bypassed and the WAS is pumped directly to the Aerobic Digester.

The programming for the RDTs shall be done with an enable "bit" to enable/ disable the process for each RDT while in bypass mode.

Refer to Tag list PLC 10 for number of I/O.

AEROBIC DIGESTERS

The Aerobic Digesters are the latest upgrade to the WWRF. The SCADA control Panels are built with Siemens 1500 Series PLCs, I/O cards, and HMIs. The programming was done, using TIA Portal 15.1.

FUNCTIONAL DESCRIPTION

Process Overview

This facility is a multi-cell aerated digester segregated into a first-stage and second-stage flow in a two-stream, with an ultimate three-stream configuration.

The first-stage digester basins are controlled by a First Stage Plant Control Panel (FPCP) and the second-stage digester basins are controlled by a Second-Stage Process Control Panel (SPCP).

Each panel gathers status, and alarm signals from the following:
MCC1, MCC2, and the Aerzen Blowers at each Stage via Ethernet Data Highway as well as hardwired I/O points.

Each panel allows full operator interface and control of both first-stage and second-stage equipment.

Each panel outputs collected information to an Operator Interface Terminal (OIT), mounted to the front of its enclosure, for a graphic display of process status and alarms.

The SI working on integrating the new Siemens system with the existing (Siemens Step 7 Ver.5.5 SP1) was not successful with one critical Signal, the Digested Solids (DS) Pumps need a permissive from the Centrifuge to start (Centrifuge Ready).
The problem seemed to be the ABB OPC software, the solution to this problem is a hard-wired connection to the SPCP which is not shown in the Tag List or on the Drawings.

Since the Programming has been done (according to our preference) we just include the I/O List in this Document.

The only changes that have to occur are the transition from Win CC to either Ignition or VT Scada HMI software and a new I/P Addressing scheme.

Digester Tag List PLC 4A and 4B

System	Stage	Description				1st Stage - FPCP			2nd Stage - SPCP		
			Tag	DB	Add.	DB	Add.	Type	DB	Add.	Type
Aeration Blowers	1st Stage	In Remote	YL-102A	170	3.0						
Aeration Blowers	1st Stage	Motor Winding Temperature Fault	XA-102B	170	3.3						
Digester Basin	1st Stage	pH Level	PH-402	170	46						
Digester Basin	1st Stage	Basin Level	LI-402A	170	38						
Aeration Blowers	1st Stage	In Remote	YL-102A	170	3.0	88	3.0	Bool			
Aeration Blowers	1st Stage	Blower Ready	YL-102B	170	3.1	88	3.1	Bool			
Aeration Blowers	1st Stage	High Inlet Pressure Fault	XA-102A	170	3.2	88	3.2	Bool			
Aeration Blowers	1st Stage	Motor Winding Temperature Fault	XA-102B	170	3.3	88	3.3	Bool			
Aeration Blowers	1st Stage	Oil Pressure Fault	XA-102C	170	3.4	88	3.4	Bool			
Aeration Blowers	1st Stage	Oil Temperature Fault	XA-102D	170	3.5	88	3.5	Bool			
Aeration Blowers	1st Stage	Discharge Air Temperature Fault	XA-102E	170	3.6	88	3.6	Bool			
Aeration Blowers	1st Stage	Discharge Air Pressure Fault	XA-102F	170	3.7	88	3.7	Bool			
Aeration Blowers	1st Stage	Blower in Auto	YL-102E	170	2.0	88	2.0	Bool			
Aeration Blowers	1st Stage	VFD Ready	YL-102D	170	2.1	88	2.1	Bool			
Aeration Blowers	1st Stage	VFD Running	YL-102C	170	2.2	88	2.2	Bool			
Aeration Blowers	1st Stage	VFD Fault	XA-102G	170	2.3	88	2.3	Bool			
Aeration Blowers	1st Stage	In Remote	YL-103A	170	2.4	88	2.4	Bool			
Aeration Blowers	1st Stage	Blower Ready	YL-103B	170	2.5	88	2.5	Bool			
Aeration Blowers	1st Stage	High Inlet Pressure Fault	XA-103A	170	2.6	88	2.6	Bool			
Aeration Blowers	1st Stage	Motor Winding Temperature Fault	XA-103B	170	2.7	88	2.7	Bool			
Aeration Blowers	1st Stage	Oil Pressure Fault	XA-103C	170	1.0	88	1.0	Bool			
Aeration Blowers	1st Stage	Oil Temperature Fault	XA-103D	170	1.1	88	1.1	Bool			
Aeration Blowers	1st Stage	Discharge Air Temperature Fault	XA-103E	170	1.2	88	1.2	Bool			
Aeration Blowers	1st Stage	Discharge Air Pressure Fault	XA-103F	170	1.3	88	1.3	Bool			
Aeration Blowers	1st Stage	Blower in Auto	YL-103E	170	1.4	88	1.4	Bool			
Aeration Blowers	1st Stage	VFD Ready	YL-103D	170	1.5	88	1.5	Bool			
Aeration Blowers	1st Stage	VFD Running	YL-103C	170	1.6	88	1.6	Bool			
Aeration Blowers	1st Stage	VFD Fault	XA-103G	170	1.7	88	1.7	Bool			

Aeration Blowers	2nd Stage	In Remote	YL-100A	171	3.0				88	3.0	Bool
Aeration Blowers	2nd Stage	Blower Ready	YL-100B	171	3.1				88	3.1	Bool
Aeration Blowers	2nd Stage	High Inlet Pressure Fault	XA-100A	171	3.2				88	3.2	Bool
Aeration Blowers	2nd Stage	Motor Winding Temperature Fault	XA-100B	171	3.3				88	3.3	Bool
Aeration Blowers	2nd Stage	Oil Pressure Fault	XA-100C	171	3.4				88	3.4	Bool
Aeration Blowers	2nd Stage	Oil Temperature Fault	XA-100D	171	3.5				88	3.5	Bool
Aeration Blowers	2nd Stage	Discharge Air Temperature Fault	XA-100E	171	3.6				88	3.6	Bool
Aeration Blowers	2nd Stage	Discharge Air Pressure Fault	XA-100F	171	3.7				88	3.7	Bool
Aeration Blowers	2nd Stage	Blower in Auto	YL-100E	171	2.0				88	2.0	Bool
Aeration Blowers	2nd Stage	VFD Ready	YL-100D	171	2.1				88	2.1	Bool
Aeration Blowers	2nd Stage	VFD Running	YL-100C	171	2.2				88	2.2	Bool
Aeration Blowers	2nd Stage	VFD Fault	XA-100G	171	2.3				88	2.3	Bool
Aeration Blowers	2nd Stage	In Remote	YL-101A	171	2.4				88	2.4	Bool
Aeration Blowers	2nd Stage	Blower Ready	YL-101B	171	2.5				88	2.5	Bool
Aeration Blowers	2nd Stage	High Inlet Pressure Fault	XA-101A	171	2.6				88	2.6	Bool
Aeration Blowers	2nd Stage	Motor Winding Temperature Fault	XA-101B	171	2.7				88	2.7	Bool
Aeration Blowers	2nd Stage	Oil Pressure Fault	XA-101C	171	1.0				88	1.0	Bool
Aeration Blowers	2nd Stage	Oil Temperature Fault	XA-101D	171	1.1				88	1.1	Bool
Aeration Blowers	2nd Stage	Discharge Air Temperature Fault	XA-101E	171	1.2				88	1.2	Bool
Aeration Blowers	2nd Stage	Discharge Air Pressure Fault	XA-101F	171	1.3				88	1.3	Bool
Aeration Blowers	2nd Stage	Blower in Auto	YL-101E	171	1.4				88	1.4	Bool
Aeration Blowers	2nd Stage	VFD Ready	YL-101D	171	1.5				88	1.5	Bool
Aeration Blowers	2nd Stage	VFD Running	YL-101C	171	1.6				88	1.6	Bool
Aeration Blowers	2nd Stage	VFD Fault	XA-101G	171	1.7				88	1.7	Bool
Motive Pump	1st Stage	High Discharge Pressure Fault	XA-202A	170	0.0	88	0.0	Bool			
Motive Pump	1st Stage	Motor Winding Temperature Fault	XA-202B	170	0.1	88	0.1	Bool			
Motive Pump	1st Stage	Low Suction Pressure Fault	XA-202C	170	0.2	88	0.2	Bool			
Motive Pump	1st Stage	Pump in Auto	YL-202A	170	0.3	88	0.3	Bool			
Motive Pump	1st Stage	VFD Ready	YL-202B	170	0.4	88	0.4	Bool			
Motive Pump	1st Stage	VFD Running	YL-202C	170	0.5	88	0.5	Bool			
Motive Pump	1st Stage	VFD Fault	XA-202D	170	0.6	88	0.6	Bool			
Motive Pump	1st Stage	High Discharge Pressure Fault	XA-203A	170	0.7	88	0.7	Bool			
Motive Pump	1st Stage	Motor Winding Temperature Fault	XA-203B	170	7.0	88	7.0	Bool			
Motive Pump	1st Stage	Low Suction Pressure Fault	XA-203C	170	7.1	88	7.1	Bool			
Motive Pump	1st Stage	Pump in Auto	YL-203AA	170	7.2	88	7.2	Bool			
Motive Pump	1st Stage	VFD Ready	YL-203B	170	7.3	88	7.3	Bool			
Motive Pump	1st Stage	VFD Running	YL-203C	170	7.4	88	7.4	Bool			
Motive Pump	1st Stage	VFD Fault	XA-203D	170	7.5	88	7.5	Bool			
Motive Pump	2nd Stage	High Discharge Pressure Fault	XA-200A	171	0.0				88	0.0	Bool
Motive Pump	2nd Stage	Motor Winding Temperature Fault	XA-200B	171	0.1				88	0.1	Bool
Motive Pump	2nd Stage	Low Suction Pressure Fault	XA-200C	171	0.2				88	0.2	Bool

Motive Pump	2nd Stage	Pump in Auto	YL-200A	171	0.3				88	0.3	Bool
Motive Pump	2nd Stage	VFD Ready	YL-200B	171	0.4				88	0.4	Bool
Motive Pump	2nd Stage	VFD Running	YL-200C	171	0.5				88	0.5	Bool
Motive Pump	2nd Stage	VFD Fault	XA-200D	171	0.6				88	0.6	Bool
Motive Pump	2nd Stage	High Discharge Pressure Fault	XA-201A	171	0.7				88	0.7	Bool
Motive Pump	2nd Stage	Motor Winding Temperature Fault	XA-201B	171	7.0				88	7.0	Bool
Motive Pump	2nd Stage	Low Suction Pressure Fault	XA-201C	171	7.1				88	7.1	Bool
Motive Pump	2nd Stage	Pump in Auto	YL-201A	171	7.2				88	7.2	Bool
Motive Pump	2nd Stage	VFD Ready	YL-201B	171	7.3				88	7.3	Bool
Motive Pump	2nd Stage	VFD Running	YL-201C	171	7.4				88	7.4	Bool
Motive Pump	2nd Stage	VFD Fault	XA-201D	171	7.5				88	7.5	Bool
Digester Basin	1st Stage	Flood Probe	XA-442	170	7.6	88	7.6	Bool			
Digester Basin	1st Stage	High Level Switch	XA-402	170	7.7	88	7.7	Bool			
Digester Basin	1st Stage	Flood Probe	XA-443	170			N/A	Bool			
Digester Basin	1st Stage	High Level Switch	XA-403	170	6.0	88	6.0	Bool			
Digester Basin	2nd Stage	Flood Probe	XA-440	171	7.6				88	7.6	Bool
Digester Basin	2nd Stage	High Level Switch	XA-400	171	7.7				88	7.7	Bool
Digester Basin	2nd Stage	Flood Probe	XA-441	171						N/A	Bool
Digester Basin	2nd Stage	High Level Switch	XA-401	171	6.0				88	6.0	Bool
Sludge Pump	2nd Stage	High Discharge Pressure Fault	XA-300A	171	6.1				88	6.1	Bool
Sludge Pump	2nd Stage	Motor Winding Temperature Fault	XA-300B	171	6.2				88	6.2	Bool
Sludge Pump	2nd Stage	Low Suction Pressure Fault	XA-300C	171	6.3				88	6.3	Bool
Sludge Pump	2nd Stage	Pump in Auto	YL-300A	171	6.4				88	6.4	Bool
Sludge Pump	2nd Stage	VFD Ready	YL-300B	171	6.5				88	6.5	Bool
Sludge Pump	2nd Stage	VFD Running	YL-300C	171	6.6				88	6.6	Bool
Sludge Pump	2nd Stage	VFD Fault	XA-300D	171	6.7				88	6.7	Bool
Sludge Pump	2nd Stage	High Discharge Pressure Fault	XA-302A	171	5.0				88	5.0	Bool
Sludge Pump	2nd Stage	Motor Winding Temperature Fault	XA-302B	171	5.1				88	5.1	Bool
Sludge Pump	2nd Stage	Low Suction Pressure Fault	XA-302C	171	5.2				88	5.2	Bool
Sludge Pump	2nd Stage	Pump in Auto	YL-302A	171	5.3				88	5.3	Bool
Sludge Pump	2nd Stage	VFD Ready	YL-302B	171	5.4				88	5.4	Bool
Sludge Pump	2nd Stage	VFD Running	YL-302C	171	5.5				88	5.5	Bool
Sludge Pump	2nd Stage	VFD Fault	XA-302D	171	5.6				88	5.6	Bool
Aeration Blowers	1st Stage	Blower Speed Indication	SI-102	170	14	88	44.0	Real			
Aeration Blowers	1st Stage	Blower Speed Indication	SI-103	170	18	88	48.0	Real			
Motive Pump	1st Stage	Pump Speed Indication	SI-202	170	22	88	52.0	Real			
Motive Pump	1st Stage	Pump Speed Indication	SI-203	170	26	88	56.0	Real			

Digester Basin	1st Stage	Flow Meter	FIT-400	170	30	88	60	Real			
Digester Basin	1st Stage	Flow Meter	FIT-410	170	34	88	64	Real			
Digester Basin	1st Stage	Flow Meter	FIT-420				N/A	Real			
Digester Basin	1st Stage	Basin Level	LI-402A	170	38	88	68	Real			
Digester Basin	1st Stage	Basin Level	LI-402B	170	42	88	72	Real			
Digester Basin	1st Stage	pH Level	PH-402	170	46	88	76	Real			
Digester Basin	1st Stage	Dissolved Oxygen Level	DO-402	170	50	88	80	Real			
Digester Basin	1st Stage	Basin Level	LI-403A	170	54	88	84	Real			
Digester Basin	1st Stage	Basin Level	LI-403B	170	58	88	88	Real			
Digester Basin	1st Stage	pH Level	PH-403	170	62	88	92	Real			
Digester Basin	1st Stage	Dissolved Oxygen Level	DO-403	170	66	88	96	Real			
Aeration Blowers	2nd Stage	Blower Speed Indication	SI-100	171	14				88	44.0	Real
Aeration Blowers	2nd Stage	Blower Speed Indication	SI-101	171	18				88	48.0	Real
Motive Pump	2nd Stage	Pump Speed Indication	SI-200	171	22				88	52.0	Real
Motive Pump	2nd Stage	Pump Speed Indication	SI-201	171	26				88	56.0	Real
Sludge Pump	2nd Stage	Pump Speed Indication	SI-300	171	30				88	60.0	Real
Sludge Pump	2nd Stage	Pump Speed Indication	SI-302	171	34				88	64.0	Real
Digester Basin	2nd Stage	Basin Level	LI-400A	171	38				88	68.0	Real
Digester Basin	2nd Stage	Basin Level	LI-400B	171	42				88	72.0	Real
Digester Basin	2nd Stage	pH Level	PH-400	171	46				88	76.0	Real
Digester Basin	2nd Stage	Dissolved Oxygen Level	DO-400	171	50				88	80.0	Real
Digester Basin	2nd Stage	Basin Level	LI-401A	171	54				88	84.0	Real
Digester Basin	2nd Stage	Basin Level	LI-401B	171	58				88	88.0	Real
Digester Basin	2nd Stage	pH Level	PH-401	171	62				88	92.0	Real
Digester Basin	2nd Stage	Dissolved Oxygen Level	DO-401	171	66				88	96.0	Real
Digester Basin	2nd Stage	Basin 1 TSS	PST-400	171	70				88	100.0	Real
Digester Basin	2nd Stage	Basin 2 TSS	PST-401	171	74				88	104.0	Real

G2-60 DECANTER CENTRIFUGE

The Digested solids pumps located at the Digester will send the Digested Sludge to the Centrifuge.

The centrifuge manufacturer was responsible for providing a complete control system.

GENERAL DESCRIPTION

A. Drive System

1. The bowl drive system consists of an electric motor and a belt drive system. The belt drive system consists of multiple belts as required to provide full capacity and also to withstand the full starting torque of the system.
2. The drive system uses one motor for the bowl drive and a separate back drive motor for differential adjustment.

B. Back drive System

1. The centrifuge is equipped with a complete back drive system to control differential speed between the conveyor and the bowl. The back drive provides an infinitely adjustable differential speed variation over its range of operation.
2. Both motors are connected to VFDs within the supplied Control Panel.

C. Centrifuge Control Panel

The centrifuge operator control panel contains an ABB AC 800 M PLC, an external graphic color interface unit with touch screen (Operator Panel), indicating lights for running, off, and fault indication of all major components, an elapsed time meter, emergency stop push-button, alarm horn, and alarm acknowledge/lamp rest push-button. A duplex 120 VAC receptacle for customer use up to 3 amps, non-inductive loads shall be mounted internal to the enclosure.

1. The back drive is controlled by the PLC/Operator Panel and applicable set point values are entered via the touch screen.
2. Control logic is done by the PLC and its associated operator Panel. The operator Panel consists of a color display with a touch screen. All operator functions described below will be provided through menus and function keys on the operator interface unit. The PLC shall be supplied with a battery backup so all programs and

settings are retained if a power supply failure occurs. Digital and analog I/O units shall be supplied. The PLC and associated operator interface unit operate off of an internal 24 VDC power supply. All 24 VDC power supplies must provide short circuit fold-back protection.

3. The operator Panel unit is capable of automatic or manual start/stop operations, as well as provides display readings of the following: Centrifuge drive motor amps, sludge and polymer actual flow rates, sludge and polymer desired flow rates, fault monitoring, pre-set and actual timing operations, local/remote control status, auto/manual control status, back drive torque, back drive speed, differential speed, and bowl speed.

4. The operator Panel has selector keys to allow the operator to toggle between feed pump 1 or feed pump 2 and polymer pump 1 or polymer pump 2 which are supplied by others.

5. The Control system has the capability to be hardwired to any control system for remote operation and monitoring through analog I/O and digital I/O of the centrifuge and ancillary equipment supplied by others such as conveyors, feed pumps, diverter gates, etc.

6. The ABB PLC interfaces with the plant SCADA system via an Ethernet communication cable over our FO ring. An ABB OPC software is required to realize this interface.

7. The centrifuge is equipped with an accelerometer-type vibration monitor to protect against excessive vibration. The monitor is interlocked with the controls to shut down the centrifuge if excessive vibration is sensed. The monitor provides an analog output signal proportional to the vibration magnitude for display and monitoring at the operator interface

8. The centrifuge is equipped with a cover switch so the centrifuge cannot be started when the cover is open.

D. Control System Operation

1. The centrifuge is able to be started automatically or manually. To automatically start the centrifuge, press the "Auto Start" key on the operator interface unit.

2. The PLC will issue a "run" command to the centrifuge main drive motor and the bowl will begin to accelerate. The polymer and feed systems are interlocked with the centrifuge controls to prevent their operation at this time. During acceleration of the centrifuge, the PLC shall issue a "run" and speed command to the back drive. This will make the back drive run at a pre-programmed start-up speed to provide the maximum scrolling of residual solids from the bowl. After a pre-set, timed interval, when the bowl has reached full operating speed, the feed and polymer pumps will start automatically. As process requirements vary, the back-drive speed shall be

infinitely adjustable via the PLC, maintaining the set speed, utilizing a closed loop feedback. In this mode, the back-drive speed shall be maintained while the torque is allowed to vary as process parameters change.

3. Automatic torque mode can also be selected at any time. In this mode, the back-drive torque shall be maintained while the speed is allowed to vary, within pre-set limits, in order to maximize residence time. If torque begins to rise above the set point, the differential speed shall be increased to scroll solids out of the bowl at a faster rate, thereby lowering the torque back to the set point. The PLC is equipped with a built-in PID Autotune feature that will allow for automatic adjustment of the PID Proportional, Integral, and Derivative values from the operator interface. Separate software, computers, and communication cables are not required to activate this feature.
4. The centrifuge is able to be started manually as well, by pressing the appropriate keys as prompted by the manual operation screen of the operator interface unit.
5. Upon stopping the centrifuge by pressing the "Auto Stop" key on the operator interface unit, or via a fault condition, the feed and polymer system interlock contact shall open, thereby insuring feed to the centrifuge is stopped. An auto flush valve will also be opened for a pre-determined time during shutdown.

E. Control System Fault Detection

1. In the event that a fault condition occurs, the sounding of an alarm horn will take place, and an alarm text fault message will be displayed on the operator Panel to facilitate troubleshooting. An Alarm Acknowledge push-button, mounted on the front panel, will flash when a fault condition occurs. When pressed, the horn will be silenced and the flashing will turn solid. When the alarm fault is corrected and reset, the solid light will be turned off.
2. The following faults are provided as alert conditions and shut off the feed pump, and polymer system as required:
    a. Feed pump fault
    b. Polymer system fault
    c. Cake conveyor fault
    d. Torque alert
    e. Low differential
3. The following faults are provided as alarms and will cause a shutdown of the main drive and back drive motors:
    a. Main motor overheats
    b. Main drive malfunction
    c. Excessive vibration
    d. Back drive motor overheated

e. Back drive malfunction

f. Centrifuge cover open

g. Torque alarm

h. Centrifuge bowl over speed

F. Help Menu

1. A screen is provided within the Operator Panel to provide the operator with online help pages for each controlled device. The help pages include relevant flow charts and written descriptions as provided in the O&M manual.

CONTROL – AUXILIARY EQUIPMENT INTERFACES

A. The following auxiliary control is provided within the centrifuge control panel for use with the currently installed equipment and future installed options. These features can be enabled or disabled as required by the Operator Panel.

1. Positive Displacement Sludge Feed Pumps Interface. The sludge feed pumps are provided with a VFD for speed control and a hand-off-auto switch (Digester SPCP). in hand, the pump speed can be controlled locally from the VFD, but still interlocked with the centrifuge feed permissive signal. In the auto position, the pump will accept a run command and a 4-20mA speed control signal from the centrifuge Decanter PLC. In the off position, the pump will be locked out of operation. The pumps have multiple Status and Fault contacts. Both digested biosolids pumps shall be controlled from the centrifuge control panel via Ethernet signals sent to the main plant Transition PLC. Pump start, stop, and speed control shall be available from the operator interface terminal (OIT) as well as status and alarm signals (Currently not available).

3. Flow meters

One flow meter shall be placed in the centrifuge feed line prior to all polymer addition points. A second flow meter shall be provided in the polymer feed line to indicate the process flow rate of diluting polymer to the centrifuge system. Each flow meter shall provide a 4-20 mA output signal to the centrifuge PLC/Operator Panel for indication and closed loop PID control of flow rate. The signals shall be scaled in accordance with the actual GPM range of the meter (Polymer Unit = GPH).

4. Packaged Polymer System Control Interface

The existing packaged polymer system is equipped with a self-contained local control panel with a hand-off-auto switch, a dilution water flow control valve, a

dilution water flow meter, and a logic system to maintain constant dilute polymer concentration.

In the off position, the polymer system is locked out of operation. In hand, the polymer system is controlled locally from the polymer system local control panel. The system will accept a run command from the centrifuge. In the auto position, the dilution water control valve accepts a 4-20 mA control signal from the centrifuge PLC/Operator Panel. The flow meter sends a 4-20 mA output signal to the Operator Panel for indication and display of the actual polymer flow rate.

All I/O points are to be taken from the Centrifuge Schematics and the SCADA Tags shall be taken from the ABB OPC Tag List. Both will be included in the electronic forms that will be given out at the time of the Site Inspection.

After the Solids have been dewatered they are sent to the Dying Unit via a conveyor belt.

BIOSOLIDS DRYER

Control Panel and Electrical

1. One Allen Bradley SLC 5/05 programmable controller is provided, complete with internal timers to control the time/temperature regimes and all machine functions. The panel will be supplied with Panel View Plus 1000. Network communication is done through Ethernet Port. Necessary I/O devices are furnished to operate the equipment safely and efficiently and to certify that the dried sludge meets the requirements for Class A sludge classification. One (1) main disconnect is provided in the enclosed cabinet.
2. Motor Sizes

a.	Dehydrator Disk Drive Motor	50 hp
b.	Hopper Drive Motor (1)	5 hp
c.	Hopper Drive Motor (2)	5 hp
d.	Hopper Leveling Auger Drive	0.5 hp
e.	Hopper Cross Feed Conveyor	7.5 hp
f.	Combustion Fan Motor	10 hp
g.	Thermal Fluid Circulation Pump Motor	30 hp
h.	Condenser Fan Motor	20 hp
i.	Dried Sludge Exit Conveyor Motor	5 hp
	Full Load	133 hp

4. Control Voltage
   a. One 2 KVA step down transformer (120V/1ph/60HZ) will be furnished and installed in the control panel.

General Operation: PLC Controlled Automatic Batch Process

1. The dryer, under PLC control, is started in preheat mode to heat the thermal fluid to a system operating temperature.

2. The feed hopper receives waste material from the Centrifuge with a storage capacity as stated above.

3. The PLC calls for biosolids to be fed to the dryer chamber.

   a. The feed airlock door opens.
   b. The feed auger feeds biosolids to the dryer chamber per level control.
   c. The internal thermal fluid heated rotor moves and breaks up the biosolids to create maximum exposure to the heated surface of the rotor and the thermal fluid heated dryer chamber.
   d. The PLC senses the satisfaction of the time/temperature requirement of the dehydration process.
   e. The discharge door opens, the discharge conveyor is activated, and the rotor is changed to a one-direction rotation to move the dried material to the discharge conveyor.
   f. When the discharge time is satisfied, the discharge door is closed and the PLC resets to automatically feed a new batch and starts the process over.
   g. This automatic batch process continues to cycle until the operator stops the sequence and places the system into cool-down mode.
   h. All I/O points are to be taken from the Dryer Schematics and the SCADA Tags shall be taken from the Kepware OPC Tag List. Both will be included in the electronic forms that will be given out at the time of the Site Inspection.

   i. To minimize wear and tear on the Bearings and Chain Drive System for the wipers located within the Hopper, plant personnel installed two VFDs inside the Control Panel.

SCOPE OF WORK

The Process Control System Integrator (PCSI) shall develop the control System applications for the whole WWRF to change from a Distributed I/O System to a PLC-centric control strategy, i.e. every process area within the WWRF shall have its own PLC and can run autonomously should the SCADA Server fail.

Communication between each PLC and the HMI in the Control room shall occur on the Ethernet Communication Highway (Profinet Protocol on redundant Fiber Optic Media).

All PLC controller programming and Human Machine Interface (HMI) or Operator Work Station (OWS) graphics and programming shall be done by the PCSI.

The PCSI is cautioned to understand that all of the Field Devices will stay in place and must organize the PLC and HMI program in a fashion that will conform to the individual process already in place to allow continuous Operation of the WWRF. **This does not necessarily rule out any improvements to the programming for the PLC/HMI or process by the PCSI after discussion with COH Staff.**

Due to missing Documentation, especially Process descriptions, the PCSI has to work with the available Ladder logic, Panel Drawings, and multiple meetings with Plant personnel to develop the program for each process area. Available documentation can be picked up during the Site Inspection. The PCSI shall understand that the Documentation can be easily misinterpreted because PLC 1 is mentioned twice throughout, one PLC 1 is actually the "Transition PLC" or I/O Controller with no physical I/O Cards while the other PLC 1 is the S-7 300 Series PLC within the Influent Pump Station PLC Cabinet (Upgrade in 2013)

All panels shall be field documented wire by wire, including all field wiring to the instruments.

Where applicable the PCSI shall provide Factory Tested PLC racks or complete PLC enclosures with pigtails connected to the I/O Modules and connect those to the existing Field wiring or vice versa in the case of a complete Enclosure. All pigtails shall have wire Ferrules and wire labels installed. The majority of PLC Cabinets shall be reused by this measure.

The Factory Testing shall be witnessed by COH SCADA Personnel.

The PCSI shall commission each PLC immediately after installation, and bring it online with the new HMI running on the new OWS.

Due to recent changes to the SCADA System in the potable water production division, the PCSI shall provide Siemens Hardware to keep the Utility Division on the same programming Platform (TIA Portal) which is already in use at the new Digester within the WWRF, and in the Potable Water Production Division. In addition, this will keep spare parts inventory stocked by the COH to a minimum of interchangeable parts between both Divisions.

Each PLC Cabinet shall have an HMI and a panel mounted, dedicated RJ-45 jack to interface with a Maintenance or Operator laptop.

One very important aspect is the implementation of the COH 800 MHz Radio system used for alarming and alarm acknowledgment utilizing Voice over IP Technology.

COH is currently exploring options with TAPI lines and devices that can "key up" a Radio and send voice messages over the airwaves.

Information we can share about this is strictly experimental and shall not be taken as a fact in implementing the Radio System.

The implementation is directly related to the capabilities of the chosen HMI Software and their Voice over IP capability.

Each PLC Rack or PLC enclosure shall include one spare DI, DO, AI, and AO Module for future expansion.

Each PLC Enclosure shall have a momentary switch to indicate "Operator Check" via One (DI).

PSCI shall evaluate and certify existing fiber optic cable prior to installing new fiber optic devices (preferable Siemens Scalance Series).

Should existing fiber optic infrastructure not comply with the latest standards, PCSI shall install new fiber optic cable within existing conduit throughout the WWRF.

Each PLC shall be furnished with a removable storage media that shall hold the PLC program.

The PSCI shall only use Development Software for a Dual Server Redundant Application with the possibility of a remote disaster recovery Site. All Software used in Developing the SCADA System shall become the Owner's property after completion of the Project.

The PSCI shall provide, at no cost to the COH, the following Training for the SCADA Staff:

1. SCADA-HMI Training
2. PLC application programming training
3. Complete system maintenance and support training

The PCSI shall follow the following general Criteria:

A. All alarm interlocks shall be wired failsafe to the discrete input cards and thus shall be programmed as a fail-safe. A fail-safe alarm is an input that opens when it is in alarm. Terminology associated with interlocks is as follows:

   1. When a contact or status is true, the SCADA computer will receive power to its input channel. The SCADA computer registers this as a binary bit of one.

   2. When a contact or status is false, the SCADA computer will receive no power (open circuit) to its input channel. The SCADA computer registers this as a binary bit of zero.

B. When an analog signal goes outside the 4-20 mA range due to a failure at the instrument or PLC card, the following SCADA programming shall take place:

   1. If the analog signal is associated with a control loop or ratio control loop that loop shall go into manual and send an Alarm.

   2. If the analog signal is used in a calculation, that calculation shall use the last good analog signal. The computer shall place the control loop in manual if using the calculation and send an Alarm.

C. All alarms derived from analog signals and shutdown conditions shall be configured with adjustable time delays (initially set at 5 seconds) in the HMI. All operator-controlled devices shall include verification logic within the HMI that shall require a second positive selection of the control action by the operator before the command is executed.

D. Sequence malfunctions shall incorporate operational timer logic to alarm upon an incomplete sequence or a sequence malfunction if the required sequence of actions is not completed within a predetermined time period.

E. All software adjustable alarm setpoints accessible from the HMI shall have adjustable dead bands, unless specifically noted otherwise.

F. All process analog inputs are displayed, historically collected, and trended. Low-low, low, high, and high-high alarms shall be provided at the HMI. Nuisance alarms, such as low turbidity, shall be inhibited. When a valve is closed or a pump is not running, the analog flow signal associated with that valve or pump shall not generate a low flow alarm. Provide high and low alarm trip points at 90% and 10% of the span for all analog points. All alarm dead bands shall default to 3% deviation from setpoint unless plant personnel enter a different value. Every alarm dead band shall be capable of being set independently of all other alarm dead bands.

G. Plant personnel must acknowledge all alarms before they can be cleared. No alarm shall clear automatically until it has been acknowledged.

H. For all controlled devices (such as pumps and mixers) if a device is commanded to start or stop by the programmable logic controller (PLC) and the device feedback state does not match the commanded state within a preset time, an equipment command fail alarm is generated by the PLC for display and alarming at the HMI, and the device is commanded to stop. After a command fail alarm occurs, the device cannot be started again until a Reset is issued at the HMI.

I. For all discrete controlled valves, if the valve is commanded to open or close by the PLC and the valve feedback state does not match the commanded state within a preset time, a valve command fail alarm is generated by the PLC for display and alarming at the HMI and the commanded state remains unchanged.

J. For all variable speed pumps, if the pump is commanded to run at a specific speed and the speed feedback signal deviates from the commanded speed by a preset dead band for a preset time period, a speed deviation alarm is generated by the PLC for display and alarming at the HMI.

K. For all analog modulating valves, if the valve is commanded to open or close to a specific position and the position feedback signal deviates from the commanded position by a preset dead band for a preset time period, a valve deviation alarm is generated by the PLC for display and alarming at the HMI.

L. All tuning parameters for each PLC software PID controller are entered at the HMI. Tuning trends are provided to tune and monitor the PID operations. Tuning parameters settings shall be password protected.

M. Runtimes for all motorized equipment are totalized in the PLC and indicated at the HMI. Current day and accumulated runtime are indicated. The accumulated runtime is reset from the HMI. The runtime reset is password protected.

N. All process flows shall be totalized in the PLC. Previous day and current day totals shall be displayed and historically collected. When a valve is closed or a pump is not running, the flow totalizer shall not accumulate values caused by noise or errors in calibration.

O. Graphic Displays
   1. All displays shall incorporate references to both instrumentation tag numbers and plant equipment numbers. All displays shall be logically arranged so that an operator can drill down into the system with overview displays leading to process displays, then specific equipment displays, then to setpoint display for the specific equipment. Additionally, the PCSI shall provide a method to allow an operator to navigate from any display in the system to any other display in the OIT with no more than two selections.
   2. Unless specifically noted, all timers, setpoints, alarm actuation levels, etc., shall be adjustable from the operator interface. No changes shall be made to the system through the operator interface without the entry of a password.

The PCSI will enable and configure passwords on all systems as directed by the OWNER.

3. Index Displays - These displays shall provide an alpha-numeric listing of every display on the system, thus allowing an operator access to any system-wide display with a single action.
4. Plant Process Control Overview Display - This display shall provide a graphical overview of the entire process system. The operator shall have the ability to highlight on the graphical elements of the overview and navigate directly to that specific process element or location. All major graphic displays shall be accessible from the Plant Overview Display.
5. Individual Device Control Detail Displays - This display type shall provide specific information and allow control on a single process device or group. The display shall depict basic process diagrams with representative symbols for equipment, levels, flows, etc., combined with real time process variables or conditions. The displays shall be dynamic (i.e., symbols for a motor shall change color indicating run or stop or alarm, the volume of tanks shall be indicated by varying the height of the interior color of the tank symbol, etc.). All of the current data in the database shall be available for graphic displays. All process variables shall be displayed on their associated display(s) with correct engineering units. Process variables shall display their associated data quality flags.
6. Alarm Summary Display - The display shall consist of all points currently in alarm and shall include the tag number, description, time of occurrence, and present status (high, low, normal, etc.). The alarm summary shall identify alarm points by severity by utilizing distinct colors for each severity category.
7. System Diagnostic Displays - The displays shall summarize the error status of all system devices capable of reporting errors (i.e., PLCs, etc.). The display shall indicate if an error is detected or a failure occurs. Status of primary and backup devices shall be indicated on display.

P. Alarm/Equipment Status Reporting

1. The alarm log shall display all alarms as they occur. The alarm message shall include the time of occurrence, tag name, tag number, and whether it is a low, high, or failure alarm. When the point in alarm returns to normal, the time, point identification number, and return to normal data shall be displayed. All reports shall include the plant equipment number of the associated device.
2. The equipment status shall be logged whenever a change in status occurs (i.e., start, stop). The equipment status log shall include the time, equipment name, tag number, and the particular change in status.
3. The alarm log shall be retrievable by simple commands such that an alarm shall be reviewable for a certain period of time. The intent of this requirement is to assist with troubleshooting efforts after an alarm condition has been cleared.

3. The PCSI shall provide a time adjustable (Hours, Days, and Month) enable/disable bit to disable alarms when parts of the WWRF are being bypassed, or taken out of

Service for Maintenance reasons. Under no circumstance shall an Operator/Maintainer action create an alarm. This bit shall require a second confirmation.

The Final Documentation shall include:

1. Final system testing and validation Documents
2. System diagrams and related documentation
3. Final record drawings for all industrial control panels, including installation details
4. Complete operations and maintenance manuals (O&Ms)

The PCSI shall provide all required warranty support during the official warranty period.

The PCSI shall provide pricing for long-term technical support after the official warranty expires and for critical and major system upgrades.

CITY OF HOBBS

COMMISSION STAFF SUMMARY FORM

MEETING DATE: February 21, 2023

SUBJECT: Bid 1601-23; Furnish One (1), 2022 or Newer, Emergency/Standby Diesel Generator Unit and One (1) Automatic Transfer Switch. Including Complete Installation, Testing, Training, and Commissioning of all equipment to be located at the City of Hobbs' HIAP Booster Pump Station and Reservoir

DEPT. OF ORIGIN: Utilities Department

DATE SUBMITTED: February 10, 2023

SUBMITTED BY: Tim Woomer, Utilities Director

Summary:

- The City of Hobbs Utilities Department seeks the purchase of a 400kW Emergency Generator to replace a 23-year-old existing diesel generator located at the HIAP Booster Pump Station and Reservoir. The existing unit is obsolete and unrepairable.
- Work consists of disconnecting and removing all existing wiring from the existing ATS, breaker box, and generator and then removing all existing equipment. The installation of a new 2022 or newer, emergency/standby diesel generator unit and one (1) automatic transfer switch, including complete installation, testing, training, and commissioning of all equipment to be located at the HIAP Booster Pump Station and Reservoir.
- This generator serves as one the primary means of delivering water to the north side water system of Hobbs during emergency power outages.
- Bid 1601-23 was advertised on December 18, 2022 and two (2) qualified bids were received by the closing date of January 17, 2023. The bids are as follows
    - Power Standard, LLC, Hobbs NM: Bid price $404,226.79
    - IPS Inc., Hobbs NM: Bid price $265,041.70

Fiscal Impact: *No Fiscal Impact*

Reviewed By: _____ *Finance Department*

Digitally signed by Toby Spears, CFE, CPA
DN: cn=Toby Spears, CFE, CPA, o=City of Hobbs, ou=Finance Director, email=tspears@hobbsnm.org, c=US
Date: 2023.02.10 11:16:33 -07'00'

Funds for this Project are approved in the FY2022/2023 Enterprise Fund Budget. This purchase utilizes Account Number 60-4620-43015, Utility Equipment, and is budgeted in the amount of $250,000.00.

Attachments:

- Power Standard, LLC bid & specs sheet. Bid price $404,226.79
- IPS Inc. bid & specs sheet. Bid price $265,041.70

Legal Review:

Approved as To Form: Efren A. Cortez

Digitally signed by Efren A. Cortez
DN: cn=Efren A. Cortez, o=City of Hobbs, ou=City Attorney's Office, email=ecortez@hobbsnm.org, c=US
Date: 2021.02.10 12:02:52 -07'00'

City Attorney

Recommendation:

Staff recommends to reject all bids due to ambiguous and conflicting conditions contained within certain areas of the specifications, tasks, and planning functions within the bid documents and scope of work.

Approved For Submittal By:

Department Director

City Manager

CITY CLERKS USE ONLY
COMMISSION ACTION TAKEN

Resolution No. _____
Ordinance No. _____
Approved _____
Other _____

Continued To: _____
Referred To: _____
Denied : _____
File No. _____

INVITATION TO BID

BID NO. 1601-23

FURNISH ONE (1), 2022 OR NEWER, EMERGENCY/STANDBY DIESEL GENERATOR UNIT AND ONE (1) AUTOMATIC TRANSFER SWITCH. INCLUDING COMPLETE INSTALLATION, TESTING, TRAINING, AND COMMISSIONING OF ALL EQUIPMENT TO BE LOCATED AT THE HIAP BOOSTER PUMP STATION AND RESERVOIR

City of Hobbs, New Mexico

Sealed bids will be received by the City of Hobbs, New Mexico, at the office of the Finance Director in City Hall, 200 E Broadway St, Hobbs, New Mexico 88240 until 2:00pm, January 17, 2023

At the above time, bids will be publicly opened in Public Meeting Room B131in the basement of City Hall and read aloud. Any bid received after the stated time will be returned unopened.

Vendors may inspect the existing Emergency Generator and Automatic Transfer Switch (ATS) located at the HIAP Booster Pump Station and Reservoir, 6410 N. A St., Hobbs, NM 88240 by contacting Mr. Chris Maynard, Water Production Supervisor, at (575) 397-9330 or by email at cmaynard@hobbsnm.org to set up an inspection appointment.

Copies of the specifications may be procured without charge from the office of the City Finance Director. If there are any questions regarding this bid contact Shelly Raulston, sraulston@hobbsnm.org or (575) 397-9244.

In case of ambiguity or lack of clearness in stating proposal prices the City of Hobbs, New Mexico, reserves the right to adopt the most advantageous thereof, or to reject any or all bids and waive irregularities.

CITY OF HOBBS, NEW MEXICO

_____

Manny Gomez
City Manager

Publication Date: December 18, 2022

2. Exceptions and/or alternatives to specifications and conditions of this bid shall be listed on a separate sheet of paper and attached to the bid. This sheet shall be labeled "Exceptions and/or Alternatives to Specifications and Conditions", and illustrative brochures and specifications shall be included. After examination and comparison of the specifications, the City of Hobbs reserves the right to reject any or all bids.

3. If any bidder is of the opinion that the specifications as written preclude them from submitting a bid, it is requested that their opinion be made known to the City of Hobbs, in writing, AT LEAST FIVE (5) DAYS PRIOR to the bid opening date.

H. The Emergency Diesel Generator and Automatic Transfer Switch (ATS) to be a 2022 model or newer as stated in the Detailed Specifications.

NON-COLLUSION: In signing this bid, the Vendor certifies he/she has not, either directly or indirectly, entered into action in restraint of free competitive bidding in connection with this proposal submitted to the City of Hobbs.

J. NON-DISCRIMINATION: Vendors doing business with the City of Hobbs must be in compliance with the Federal Civil Rights Act of 1964 and Title VII of the Act (Rev.1979), and the Americans with Disabilities Act of 1990, (Public Law 101-336)

K. DEFAULT: The city reserves the right to cancel all or any part of this bid without cost to the City, if the Vendor fails to meet the provisions of this bid and, except as otherwise provided herein, to hold the Vendor liable for any excess cost occasioned by the City due to the Vendor's default. The Vendor shall not be liable for any excess cost if failure to perform the order arises out of causes beyond the control and without the fault or negligence of the vendor, such causes include, but are not restricted to, acts of God , the public enemy, acts of the State or Federal Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather and defaults of subcontractors due to any of the above, unless the City shall determine that the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Vendor to meet the required scheduled delivery. The rights and remedies of the City provided in this paragraph shall not be exclusive and are in addition to any other rights not being provided by law or under this order.

II. SERVICES

A. WARRANTY: The vendor agrees that the supplies or services furnished under this bid shall be covered by the most favorable commercial warranties the vendor gives to any customer for such supplies or services, and that the rights and remedies provided herein

F. After bid opening, no modifications on bid prices or other provisions of bids shall be permitted. A low bidder alleging a material mistake of fact, after bids have been opened, may be permitted to withdraw the bid upon written request prior to award at the discretion of the Finance Director.

G. This bid will be awarded on a Total Bid basis or Per Line Item.

H. City of Hobbs reserves the right to reduce or increase the number of units to be purchased upon notification to the successful bidder.

IV. DELIVERY

A. Diesel Generator and Automatic Transfer Switch (ATS) shall be delivered to the City of Hobbs HIAP Booster Pump Station and Reservoir, 6410 North A St., Hobbs, NM 88240.

B. Bidder will fill in the delivery time on the attached bid form.

V. PAYMENT

A. The City of Hobbs requests one invoice following delivery. Payment will be made within fifteen (15) days of acceptance of the equipment by the UTILITIES DEPARTMENT upon certification that all contract terms have been met.

VI. INSURANCE

A. Successful bidder shall provide City with a Certificate of Liability Insurance including products and completed operations.

- UL489 main circuit breaker 600 AF 3–pole LSi electronic 100% rated
- Low coolant level and/or high coolant temperature shutdown and alarm
- Low oil pressure and/or high oil temperature shutdown and alarm
- Lead acid engine start battery set, cables, secure mounting tray
- Charging alternator
- Multi rate 10A battery charger/maintainer with NFPA alarms
- Engine jacket water heater
- Digital voltage regulator & excitation module
- Fluid fill - engine oil, engine coolant, battery electrolyte (fuel not included)
- Two (2) Year Warranty
- Two (2) copies of Operation and Maintenance Manuals
- One round trip vendor startup & owner training by vendor's certified generator technician
- Turnkey installation/testing/commissioning of both Emergency/Standby Generator and Automatic Transfer Switch (ATS) at the HIAP Booster Pump Station and Reservoir, as well as potable water production wells 1 and 2. 6410 N. A St., Hobbs, NM 88240.
- City of Hobbs to retain old Generator and ATS

2) Automatic Transfer Switch (ATS)

- 480 Volt, 3 Phase, 60 Hertz, WYE Configuration
- 600 Amp, 3 Phase, 60 Hertz
- Contactor Switching, Open Transition Transfer
- Manual Bypass Isolation Switch
- Digital Microprocessor Control
- Pilot Lights, Test Switch, Plant Exerciser
- Standard Time Delays
- Phase Monitor
- NEMA 3R Outdoor Enclosure
- Service Entrance Rated
- Surge Protection
- Two (2) Copies of Operation and Maintenance Manuals
- Two (2) Year Warranty
- City of Hobbs to retain old Generator and ATS

Please Note on page 8 of 14 Item #2 is included in total of item #1.

Feel free to contact Victor Corrales at 575-408-2552 with any questions you may have.

Thank You,

Brenda Lucio
Electrical Support Coordinator
575-441-7355
b.lucio@ipsaecorp.com

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to NMSA 1978, § 13-1-191.1 (2006), any person seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars ($250) over the two year period.

Furthermore, the state agency or local public body shall void an executed contract or cancel a solicitation or proposed award for a proposed contract if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

"**Applicable public official**" means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

"**Campaign Contribution**" means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to either statewide or local office. "Campaign Contribution" includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

"**Family member**" means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law.

"**Pendency of the procurement process**" means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

"**Person**" means any corporation, partnership, individual, joint venture, association or any other private legal entity.
"**Prospective contractor**" means a person who is subject to the competitive sealed

Resident Veterans Preference Certification

Ingram Professional Services (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement:

Please check one box only

☐ I declare under penalty of perjury that my business prior year revenue starting January 1ending December 31 is less than $3M allowing me the 10% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.

"I agree to submit a report, or reports, to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

"In conjunction with this procurement and the requirements of this business' application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Sections 13-1-21 or 13-1-22 NMSA 1978, when awarded a contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a public works contract from a public body as the case may be.

"I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime."

(Signature of Business Representative)*

01. 17. 2023
(Date)

*Must be an authorized signatory for the Business.

The representations made in checking the boxes constitutes a material representation by the business that is subject to protest and may result in denial of an award or unaward of the procurement involved if the statements are proven to be incorrect.

RELATED PARTY DISCLOSURE FORM

(Bidders and Proposers only)

1. Are you indebted to or have a receivable from any member of the City of Hobbs Commissioners, administration officials, department heads, and key management supervisors with the City of Hobbs?
   YES___ NO_✓_

2. Are you, or any officer of your company related to any member of the City of Hobbs Commissioners, administration officials, department heads, key management supervisors of the City of Hobbs and have you had any of the following transactions since January 1, 2017 to which City of Hobbs was, is to be, a party?
   Sales, Purchase or leasing of property? YES___ NO_✓_
   Receiving, furnishing of goods, services or facilities? YES___ NO_✓_
   Commissions or royalty payments? YES___ NO_✓_

3. Does any member of the City Commission; administration officials, department heads, key management supervisors with the City of Hobbs, have any financial interest in your company whether a sole proprietorship, partnership, or corporation of any kind that currently conducts business with the City of Hobbs?
   YES___ NO_✓_

4. At any time from January 1, 2017 through the present, did you, your company, or any officer of your company have an interest in or signature authority over a bank account for the benefit of a member of the City Commission administration officials, department heads, key management supervisors with the City of Hobbs?
   YES___ NO_✓_

5. Are you negotiating to employ or do you currently employ any employee, officer, or family member of an employee or officer for the City of Hobbs?

6. Are you an employee of the City of Hobbs or a member of your family an employee of the City of Hobbs?
   YES___ NO_✓_

The answers to the foregoing questions are correctly stated to the best of my knowledge and belief.

Signature of Owner or Company President _____ **Date** 1-17-23

(Print Name and Title): Philip Ingram. President

INVITATION TO BID 1601-23

FURNISH ONE (1), 2022 OR NEWER, EMERGENCY/STANDBY DIESEL GENERATOR UNIT AND ONE (1) AUTOMATIC TRANSFER SWITCH. INCLUDING COMPLETE INSTALLATION, TESTING, TRAINING, AND COMMISSIONING OF ALL EQUIPMENT TO BE LOCATED AT THE HIAP BOOSTER PUMP STATION AND RESERVOIR

Date: January 17, 2023

To: The City of Hobbs, New Mexico

Bid of Power Standard LLC.;

A) A Corporation under the laws of the State of New Mexico; or

B) A partnership consisting of _____; or

C) An individual trading as _____.

The undersigned bidder, pursuant to the foregoing "Notice to Bidders", has carefully examined the instructions to Bidders, this bid form and the Detailed Specifications.

_____
Resident Preference Certification Number

Power Standard LLC.
Company Name

BY:

Jesse Henson
Type or Print Name

3010 N Bensing St
Address

432-266-9579
Telephone Number

Hobbs NM 88240
City State Zip

NOTE: To be valid, bid must be signed. The signature of a corporation is its president, or an authorized vice president, attested by the secretary. A signature of a partnership must be a valid partner.

Do Not Return Invitation to Bid Form in Case of a "NO BID"
If applicable - bidder acknowledges receipt of the following AMENDMENT(S):

Amendment No:_____ Dated:_____ Amendment No.:_____ Date:

Amendment No:_____ Dated:_____ Amendment No.:_____ Date:

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to NMSA 1978, § 13-1-191.1 (2006), any person seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars ($250) over the two year period.

Furthermore, the state agency or local public body shall void an executed contract or cancel a solicitation or proposed award for a proposed contract if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

"**Applicable public official**" means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

"**Campaign Contribution**" means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to either statewide or local office. "Campaign Contribution" includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

"**Family member**" means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law.

"**Pendency of the procurement process**" means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

"**Person**" means any corporation, partnership, individual, joint venture, association or any other private legal entity.
"**Prospective contractor**" means a person who is subject to the competitive sealed

NON-COLLUSION AFFIDAVIT

STATE OF New Mexico)

City OF Hobbs)

Jesse Hinson (name) being first duly sworn, deposes and

says that he/she is (title) Electrical Superintendent

of (organization) Power Standard LLC.

who submits herewith to the City of Hobbs, a bid/proposal:

That all statements of fact in such bid/proposal are true:

That said proposal/bid was not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation;

That said proposer/bidder has not, directly or indirectly by agreement, communication or conference with anyone attempted to induce action prejudicial to the interest of the City of Hobbs, or of any proposer/bidder of anyone else interested in the proposed contract; and further,

That prior to the public opening and reading of bid/proposal, said bidder/proposer;

1. Did not directly or indirectly, induce or solicit anyone else to submit a false or sham proposal
2. Did not directly or indirectly collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham proposal, or that anyone should refrain from bidding or withdraw his/her proposals;
3. Did not in any manner, directly or indirectly, seek by agreement, communication or conference with anyone to raise or fix the proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of their proposal price, or of that of anyone else;
4. Did not directly or indirectly, submit his proposed price or any breakdown thereof, or the contest thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association organization, bid depository or to any member or agent thereof, or to any individual group of individuals, except that City of Hobbs, or to any person or persons who have a partnership or other financial interests with said proposer/bidder in his/her business.

By: _____

Title: Electrical Superintendent

SUBSCRIBED and sworn to before me this 12 day of JANUARY, 2023

Notary Public: Caroline Taylor

My Commission Expires: JULY 20 2026

CAROLINE TAYLOR
Notary Public - State of New Mexico
Commission # 1122528
My Comm. Expires Jul 20, 2026

City of Hobbs
Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

The Bidder/Proposer certifies, by submission of this bid/proposal, neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this submission of bid/proposal by any Federal, State or Local government. It further agrees by submitting this bid/proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts and subcontracts. Where the bidder/proposer or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this bid/proposal submission.

Failure to acknowledge the above conditions would render the Bid/Proposal non-responsive.

I acknowledge the above conditions:

Company Name Power Standard LLC

Signature _____

Print Name Jesse Henson

POWER STANDARD
kVP Energy Services Company

PO Box 1607
Andrews, TX 79714

432-523-2046

PowerStandard.com

low

- Install conduit and conductors for the above alarm conditions from the generator and the ATS to the SCADA control panel within the HIAP Booster Pump Station. City of Hobbs SCADA personnel can assist with the connection to the PLC hardware
- Change all stepdown transformers from 480 V Delta to 480 V WYE input wiring.
- Check phase rotation for all motors connected
- EPA emissions certified for US stationary emergency/standby only
- UL2200 listed package, NFPA 99/110 compliant
- Integral grade exhaust system
- Level II sound attenuated and weather protective enclosure, Beige Color
- Engine Cooling Radiator, High Ambient Air Temperature
- UL142 closed top double wall fuel tank base, 24 hour run time fuel capacity
- Lockable fuel cap, fuel level gauge & alarm sender, vents, reliefs
- Electronic modular control panel
- Remote – programmable annunciation panel (supplied loose)
- UL489 main circuit breaker 600 AF 3-pole LSi electronic 100% rated
- Low coolant level and/or high coolant temperature shutdown and alarm
- Low oil pressure and/or high oil temperature shutdown and alarm
- Lead acid engine start battery set, cables, secure mounting tray
- Charging alternator
- Multi rate 10A battery charger/maintainer with NFPA alarms
- Engine jacket water heater
- Digital voltage regulator & excitation module
- Fluid fill - engine oil, engine coolant, battery electrolyte (fuel not included)
- Two (2) Year Warranty
- Two (2) copies of Operation and Maintenance Manuals
- One round trip vendor startup & owner training by vendor's certified generator technician
- Turnkey installation/testing/commissioning of both Emergency/Standby Generator and Automatic Transfer Switch (ATS) at the HIAP Booster Pump Station and Reservoir, as well as potable water production wells 1 and 2. 6410 N. A St., Hobbs, NM 88240.
- City of Hobbs to retain old Generator and ATS

2) Automatic Transfer Switch (ATS)

- 480 Volt, 3 Phase, 60 Hertz, WYE Configuration
- 600 Amp, 3 Phase, 60 Hertz
- Contactor Switching, Open Transition Transfer
- Manual Bypass Isolation Switch

POWER STANDARD
kVP Energy Services Company

PO Box 1607
Andrews, TX 79714

432-523-2046

PowerStandard.com

Power Standard LLC. is submitting this bid for the following price per the scope of work listed above.

Total: **$404,226.79**

Thank you for this opportunity and we hope you find this proposal favorable and select us to perform this work.

Sincerely
Jesse Henson
Electrical Superintendent
432-266-9579
Jesse.Henson@kv-p.com