

PROFESSIONAL CONSULTANT SERVICES AGREEMENT

LEIDOS ENGINEERING, LLC

Engineering Design Services – RFP 2360 – La Colina Substation Upgrade Project

THIS PROFESSIONAL CONSULTANT SERVICES AGREEMENT (“Agreement”) is made and entered into this _____ day of _____, 2024 (“Effective Date”), by and between the CITY OF RIVERSIDE, a California charter city and municipal corporation (“City”), and LEIDOS ENGINEERING, LLC, a Delaware limited liability company authorized to do business in California (“Consultant”).

1. **Scope of Services.** City agrees to retain and does hereby retain Consultant and Consultant agrees to provide the services more particularly described in Exhibit “A,” “Scope of Services” (“Services”), attached hereto and incorporated herein by reference, in conjunction with Engineering Design Services – RFP 2360 – La Colina Substation Upgrade Project (“Project”).

2. **Term.** This Agreement shall be effective on the date first written above and shall remain in effect for three and a half (3 ½) years, unless otherwise terminated pursuant to the provisions herein. Upon the mutual written agreement of the parties, the term of this Agreement may be extended for up to two (2) years.

3. **Compensation/Payment.** Consultant shall perform the Services under this Agreement for the total sum not to exceed One Million Two Hundred Ninety-Two Thousand Twenty-Eight Dollars (\$1,292,028.00) payable in accordance with the terms set forth in Exhibit “B.” Said payment shall be made in accordance with City’s usual accounting procedures upon receipt and approval of an itemized invoice setting forth the services performed. The invoices shall be delivered to City at the address set forth in Section 4 hereof.

4. **Notices.** Any notices required to be given, hereunder shall be in writing and shall be personally served or given by mail. Any notice given by mail shall be deemed given when deposited in the United States Mail, certified and postage prepaid, addressed to the party to be served as follows:

To City

Riverside Public Utilities
City of Riverside
Attn: Fausto Rodriguez
3900 Main Street
Riverside, CA 92522

To Consultant

Leidos Engineering, LLC
Attn: Matthew Hartig, P.E.
4161 Campus Point Ct
San Diego, CA 92121

5. **Prevailing Wage.** If applicable, Consultant and all subcontractors are required to pay the general prevailing wage rates of per diem wages and overtime and holiday wages determined by the Director of the Department of Industrial Relations under Section 1720 et seq. of the California Labor Code and implemented by Resolution No. 13346 of the City Council of the City of Riverside. The Director’s determination is available on-line at

www.dir.ca.gov/dlsr/DPreWageDetermination.htm and is referred to and made a part hereof; the wage rates therein ascertained, determined, and specified are referred to and made a part hereof as though fully set forth herein.

6. **Contract Administration.** A designee of the City will be appointed in writing by the City Manager or Department Director to administer this Agreement on behalf of City and shall be referred to herein as Contract Administrator.

7. **Standard of Performance.** While performing the Services, Consultant shall exercise the reasonable professional care and skill customarily exercised by reputable members of Consultant's profession practicing in the Metropolitan Southern California Area and shall use reasonable diligence and best judgment while exercising its professional skill and expertise.

8. **Personnel.** Consultant shall furnish all personnel necessary to perform the Services and shall be responsible for their performance and compensation. Consultant recognizes that the qualifications and experience of the personnel to be used are vital to professional and timely completion of the Services. The key personnel listed in Exhibit "C" attached hereto and incorporated herein by this reference and assigned to perform portions of the Services shall remain assigned through completion of the Services, unless otherwise mutually agreed by the parties in writing, or caused by hardship or resignation in which case substitutes shall be subject to City approval.

9. **Assignment and Subcontracting.** Neither party shall assign any right, interest, or obligation in or under this Agreement to any other entity without prior written consent of the other party. In any event, no assignment shall be made unless the assignee expressly assumes the obligations of assignor under this Agreement, in a writing satisfactory to the parties. Consultant acknowledges that any assignment may, at the City's sole discretion, require City Manager and/or City Council approval. Consultant shall not subcontract any portion of the work required by this Agreement without prior written approval by the responsible City Contract Administrator. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement, including without limitation, the insurance obligations set forth in Section 12. The Consultant acknowledges and agrees that the City is an intended beneficiary of any work performed by any subcontractor for purposes of establishing a duty of care between any subcontractor and the City.

10. **Independent Contractor.** In the performance of this Agreement, Consultant, and Consultant's employees, subcontractors and agents, shall act in an independent capacity as independent contractors, and not as officers or employees of the City of Riverside. Consultant acknowledges and agrees that the City has no obligation to pay or withhold state or federal taxes or to provide workers' compensation or unemployment insurance to Consultant, or to Consultant's employees, subcontractors and agents. Consultant, as an independent contractor, shall be responsible for any and all taxes that apply to Consultant as an employer.

11. **Indemnification.**

11.1 **Design Professional Defined.** For purposes of this Agreement, “Design Professional” includes the following:

- A. An individual licensed as an architect pursuant to Chapter 3 (commencing with Section 5500) of Division 3 of the Business and Professions Code, and a business entity offering architectural services in accordance with that chapter.
- B. An individual licensed as a landscape architect pursuant to Chapter 3.5 (commencing with Section 5615) of Division 3 of the Business and Professions Code, and a business entity offering landscape architectural services in accordance with that chapter.
- C. An individual registered as a professional engineer pursuant to Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code, and a business entity offering professional engineering services in accordance with that chapter.
- D. An individual licensed as a professional land surveyor pursuant to Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code, and a business entity offering professional land surveying services in accordance with that chapter.

11.2 **Defense Obligation For Design Professional Liability.** Consultant agrees, at its cost and expense, to promptly defend the City, and the City’s employees, officers, managers, agents and council members (collectively the “Parties to be Defended”) from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings to the extent the same arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. Consultant will reimburse City for reasonable defense costs for claims arising out of Consultant’s professional negligence based on the percentage of Consultant’s liability. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant’s Services under this Agreement.

11.3 **Indemnity For Design Professional Liability.** When the law establishes a professional standard of care for Consultant’s services, to the fullest extent permitted by law, Consultant shall indemnify, protect and hold harmless the City and the City’s employees, officers, managers, agents, and Council Members (“Indemnified Parties”) from and against any and all claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fines and penalties, liabilities or losses of any kind or nature whatsoever to the extent the same arise out of,

pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party.

11.4 Defense Obligation For Other Than Design Professional Liability.

Consultant agrees, at its cost and expense, to promptly defend the City, and the City's employees, officers, managers, agents and council members (collectively the "Parties to be Defended") from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings which arise out of, or relate to, or are in any way connected with: 1) the Services, work, activities, operations, or duties of the Consultant, or of anyone employed by or working under the Consultant, or 2) any breach of the Agreement by the Consultant. This duty to defend shall apply whether or not such claims, allegations, lawsuits or proceedings have merit or are meritless, or which involve claims or allegations that any or all of the Parties to be Defended were actively, passively, or concurrently negligent, or which otherwise assert that the Parties to be Defended are responsible, in whole or in part, for any loss, damage or injury. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant's Services under this Agreement.

11.5 Indemnity For Other Than Design Professional Liability. Except as to the sole negligence or willful misconduct of the City, Consultant agrees to indemnify, protect and hold harmless the Indemnified Parties from and against any claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fine and penalties, liabilities or losses of any kind or nature whatsoever whether actual, threatened or alleged, which arise out of, pertain to, or relate to, or are a consequence of, or are attributable to, or are in any manner connected with the performance of the Services, work, activities, operations or duties of the Consultant, or anyone employed by or working under the Consultant or for services rendered to Consultant in the performance of this Agreement, notwithstanding that the City may have benefited from its work or services. This indemnification provision shall apply to any acts, omissions, negligence, recklessness, or willful misconduct, whether active or passive, on the part of the Consultant or anyone employed or working under the Consultant.

12. Insurance.

12.1 General Provisions. Prior to the City's execution of this Agreement, Consultant shall provide satisfactory evidence of, and shall thereafter maintain during the term of this Agreement, such insurance policies and coverages in the types, limits, forms and ratings required herein. The rating and required insurance policies and coverages may be modified in writing by the City's Risk Manager or City Attorney, or a designee, unless such modification is prohibited by law.

12.1.1 **Limitations.** These minimum amounts of coverage shall not constitute any limitation or cap on Consultant's indemnification obligations under Section 11 hereof.

12.1.2 **Ratings.** Any insurance policy or coverage provided by Consultant or subcontractors as required by this Agreement shall be deemed inadequate and a material breach of this Agreement, unless such policy or coverage is issued by insurance companies authorized to transact insurance business in the State of California with a policy holder's rating of A or higher and a Financial Class of VII or higher.

12.1.3 **Cancellation.** The policies shall not be canceled unless thirty (30) days' prior written notification of intended cancellation has been given to City by certified or registered mail, postage prepaid.

12.1.4 **Adequacy.** The City, its officers, employees and agents make no representation that the types or limits of insurance specified to be carried by Consultant pursuant to this Agreement are adequate to protect Consultant. If Consultant believes that any required insurance coverage is inadequate, Consultant will obtain such additional insurance coverage as Consultant deems adequate, at Consultant's sole expense.

12.2 **Workers' Compensation Insurance.** By executing this Agreement, Consultant certifies that Consultant is aware of and will comply with Section 3700 of the Labor Code of the State of California requiring every employer to be insured against liability for workers' compensation, or to undertake self-insurance before commencing any of the work. Consultant shall carry the insurance or provide for self-insurance required by California law to protect said Consultant from claims under the Workers' Compensation Act. Prior to City's execution of this Agreement, Consultant shall file with City either 1) a certificate of insurance showing that such insurance is in effect, or that Consultant is self-insured for such coverage, or 2) a certified statement that Consultant has no employees, and acknowledging that if Consultant does not employ any person, the necessary certificate of insurance will immediately be filed with City. Any certificate filed with City shall provide that City will be given ten (10) days' prior written notice before modification or cancellation thereof.

12.3 **Commercial General Liability and Automobile Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, commercial general liability insurance and automobile liability insurance as required to insure Consultant against damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from or which may concern operations by anyone directly or indirectly employed by, connected with, or acting for or on behalf of Consultant. The City, and its officers, employees and agents, shall be named as additional insureds under the Consultant's insurance policies.

12.3.1 Consultant's commercial general liability insurance policy shall cover both bodily injury (including death) and property damage (including, but not limited to, premises operations liability, products-completed operations liability, independent contractor's liability, personal injury liability, and contractual liability) in an amount not less than \$1,000,000 per occurrence and a general aggregate limit in the amount of not less than \$2,000,000.

12.3.2 Consultant's automobile liability policy shall cover both bodily injury and property damage in an amount not less than \$1,000,000 per occurrence and an aggregate limit of not less than \$1,000,000. All of Consultant's automobile and/or commercial general liability insurance policies shall cover all vehicles used in connection with Consultant's performance of this Agreement, which vehicles shall include, but are not limited to, Consultant owned vehicles, Consultant leased vehicles, Consultants' employe vehicles, non-Consultant owned vehicles and hired vehicles.

12.3.3 Prior to City's execution of this Agreement, copies of insurance policies or original certificates along with additional insured endorsements acceptable to the City evidencing the coverage required by this Agreement, for both commercial general and automobile liability insurance, shall be filed with City and shall include the City and its officers, employees and agents, as additional insureds. Said policies shall be in the usual form of commercial general and automobile liability insurance policies, but shall include the following provisions:

It is agreed that the City of Riverside, and its officers, employees and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured for the City of Riverside.

12.3.4 The insurance policy or policies shall also comply with the following provisions:

- a. The policy shall be endorsed to waive any right of subrogation against the City and its sub-consultants, employees, officers and agents for services performed under this Agreement.
- b. If the policy is written on a claims-made basis, the certificate should so specify and the policy must continue in force for one year after completion of the services. The retroactive date of coverage must also be listed.
- c. The policy shall specify that the insurance provided by Consultant will be considered primary and not contributory to any other insurance available to the City and Endorsement No. CG 20010413 shall be provided to the City.

12.4 **Errors and Omissions Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, errors and omissions professional liability insurance in the minimum amount of \$1,000,000 to protect the City from claims resulting from the Consultant's activities.

12.5 **Subcontractors' Insurance.** Consultant shall require all of its subcontractors to carry insurance, in an amount sufficient to cover the risk of injury, damage or loss that may be caused by the subcontractors' scope of work and activities provided in furtherance of this Agreement, including, but without limitation, the following coverages: Workers Compensation, Commercial General Liability, Errors and Omissions, and Automobile liability.

Upon City's request, Consultant shall provide City with satisfactory evidence that Subcontractors have obtained insurance policies and coverages required by this section.

13. **Business Tax.** Consultant understands that the Services performed under this Agreement constitutes doing business in the City of Riverside, and Consultant agrees that Consultant will register for and pay a business tax pursuant to Chapter 5.04 of the Riverside Municipal Code and keep such tax certificate current during the term of this Agreement.

14. **Time of Essence.** Time is of the essence for each and every provision of this Agreement.

15. **City's Right to Employ Other Consultants.** City reserves the right to employ other Consultants in connection with the Project. If the City is required to employ another consultant to complete Consultant's work, due to the failure of the Consultant to perform, or due to the breach of any of the provisions of this Agreement, the City reserves the right to seek reimbursement from Consultant.

16. **Accounting Records.** Consultant shall maintain complete and accurate records with respect to costs incurred under this Agreement. All such records shall be clearly identifiable. Consultant shall allow a representative of City during normal business hours to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement. Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to the Agreement for a period of three (3) years from the date of final payment under this Agreement.

17. **Confidentiality.** All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other materials either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant, except as otherwise directed by City's Contract Administrator. Nothing furnished to Consultant which is otherwise known to the Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use City's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television or radio production, website, or other similar medium without the prior written consent of the City.

18. **Ownership of Documents.** All reports, maps, drawings and other contract deliverables prepared under this Agreement by Consultant shall be and remain the property of City. Consultant shall not release to others information furnished by City without prior express written approval of City.

19. **Copyrights.** Consultant agrees that any work prepared for City which is eligible for copyright protection in the United States or elsewhere shall be a work made for hire. If any such work is deemed for any reason not to be a work made for hire, Consultant assigns all right, title and interest in the copyright in such work, and all extensions and renewals thereof, to City, and agrees to provide all assistance reasonably requested by City in the establishment, preservation and enforcement of its copyright in such work, such assistance to be provided at City's expense

but without any additional compensation to Consultant. Consultant agrees to waive all moral rights relating to the work developed or produced, including without limitation any and all rights of identification of authorship and any and all rights of approval, restriction or limitation on use or subsequent modifications.

20. **Conflict of Interest.** Consultant, for itself and on behalf of the individuals listed in Exhibit “C,” represents and warrants that by the execution of this Agreement, they have no interest, present or contemplated, in the Project affected by the above-described Services. Consultant further warrants that neither Consultant, nor the individuals listed in Exhibit “C” have any real property, business interests or income interests that will be affected by this project or, alternatively, that Consultant will file with the City an affidavit disclosing any such interest.

21. **Solicitation.** Consultant warrants that Consultant has not employed or retained any person or agency to solicit or secure this Agreement, nor has it entered into any agreement or understanding for a commission, percentage, brokerage, or contingent fee to be paid to secure this Agreement. For breach of this warranty, City shall have the right to terminate this Agreement without liability and pay Consultant only for the value of work Consultant has actually performed, or, in its sole discretion, to deduct from the Agreement price or otherwise recover from Consultant the full amount of such commission, percentage, brokerage or commission fee. The remedies specified in this section shall be in addition to and not in lieu of those remedies otherwise specified in this Agreement.

22. **General Compliance With Laws.** Consultant shall keep fully informed of federal, state and local laws and ordinances and regulations which in any manner affect those employed by Consultant, or in any way affect the performance of services by Consultant pursuant to this Agreement. Consultant shall at all times observe and comply with all such laws, ordinances and regulations, and shall be solely responsible for any failure to comply with all applicable laws, ordinances and regulations. Consultant represents and warrants that Consultant has obtained all necessary licenses to perform the Scope of Services and that such licenses are in good standing. Consultant further represents and warrants that the services provided herein shall conform to all ordinances, policies and practices of the City of Riverside.

23. **Waiver.** No action or failure to act by the City shall constitute a waiver of any right or duty afforded City under this Agreement, nor shall any such action or failure to act constitute approval of or acquiescence in any breach thereunder, except as may be specifically, provided in this Agreement or as may be otherwise agreed in writing.

24. **Amendments.** This Agreement may be modified or amended only by a written agreement and/or change order executed by the Consultant and City.

25. **Termination.** City, by notifying Consultant in writing, shall have the right to terminate any or all of Consultant’s services and work covered by this Agreement at any time. In the event of such termination, Consultant may submit Consultant’s final written statement of the amount of Consultant’s services as of the date of such termination based upon the ratio that the work completed bears to the total work required to make the report complete, subject to the City’s rights under Sections 15 and 26 hereof. In ascertaining the work actually rendered through the

termination date, City shall consider completed work, work in progress and complete and incomplete reports and other documents only after delivered to City.

25.1 Other than as stated below, City shall give Consultant thirty (30) days' prior written notice prior to termination.

25.2 City may terminate this Agreement upon fifteen (15) days' written notice to Consultant, in the event:

25.2.1 Consultant substantially fails to perform or materially breaches the Agreement; or

25.2.2 City decides to abandon or postpone the Project.

26. **Offsets.** Consultant acknowledges and agrees that with respect to any business tax or penalties thereon, utility charges, invoiced fee or other debt which Consultant owes or may owe to the City, City reserves the right to withhold and offset said amounts from payments or refunds or reimbursements owed by City to Consultant. Notice of such withholding and offset, shall promptly be given to Consultant by City in writing. In the event of a dispute as to the amount owed or whether such amount is owed to the City, City will hold such disputed amount until either the appropriate appeal process has been completed or until the dispute has been resolved.

27. **Successors and Assigns.** This Agreement shall be binding upon City and its successors and assigns, and upon Consultant and its permitted successors and assigns, and shall not be assigned by Consultant, either in whole or in part, except as otherwise provided in paragraph 9 of this Agreement.

28. **Venue.** Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in the Superior Court, County of Riverside, State of California, and the parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county. In the event either party hereto shall bring suit to enforce any term of this Agreement or to recover any damages for and on account of the breach of any term or condition of this Agreement, it is mutually agreed that each party will bear their own attorney's fees and costs.

29. **Nondiscrimination.** During Consultant's performance of this Agreement, Consultant shall not discriminate on the grounds of race, religious creed, color, national origin, ancestry, age, physical disability, mental disability, medical condition, including the medical condition of Acquired Immune Deficiency Syndrome (AIDS) or any condition related thereto, marital status, sex, genetic information, gender, gender identity, gender expression, or sexual orientation, military and veteran status, in the selection and retention of employees and subcontractors and the procurement of materials and equipment, except as provided in Section 12940 of the California Government Code. Further, Consultant agrees to conform to the requirements of the Americans with Disabilities Act in the performance of this Agreement.

30. **Severability.** Each provision, term, condition, covenant and/or restriction, in whole and in part, of this Agreement shall be considered severable. In the event any provision, term, condition, covenant and/or restriction, in whole and/or in part, of this Agreement is declared

invalid, unconstitutional, or void for any reason, such provision or part thereof shall be severed from this Agreement and shall not affect any other provision, term, condition, covenant and/or restriction of this Agreement, and the remainder of the Agreement shall continue in full force and effect.

31. **Authority.** The individuals executing this Agreement and the instruments referenced herein on behalf of Consultant each represent and warrant that they have the legal power, right and actual authority to bind Consultant to the terms and conditions hereof and thereof.

32. **Entire Agreement.** This Agreement constitutes the final, complete, and exclusive statement of the terms of the agreement between the parties pertaining to the subject matter of this Agreement and supersedes all prior and contemporaneous understandings or agreements of the parties. Neither party has been induced to enter into this Agreement by and neither party is relying on, any representation or warranty outside those expressly set forth in this Agreement.

33. **Digital and Counterpart Signatures.** Each party to this Agreement intends and agrees to the use of digital signatures that meet the requirements of the California Uniform Electronic Transactions Act (Civil Code §§ 1633.1, et seq.), California Government Code § 16.5, and California Code of Regulations Title 2 Division 7 Chapter 10, to execute this Agreement. The parties further agree that the digital signatures of the parties included in this Agreement are intended to authenticate this writing and to have the same force and effect as manual signatures for purposes of validity, enforceability, and admissibility. For purposes of this section, a “digital signature” is defined in subdivision (d) of Section 16.5 of the Government Code and is a type of “electronic signature” as defined in subdivision (h) of Section 1633.2 of the Civil Code. This Agreement may be executed in any number of counterparts, each of which will be an original, but all of which together will constitute one instrument. Each certified or authenticated electronic copy of an encrypted digital signature shall be deemed a duplicate original, constituting one and the same instrument and shall be binding on the parties hereto.

34. **Interpretation.** City and Consultant acknowledge and agree that this Agreement is the product of mutual arms-length negotiations and accordingly, the rule of construction, which provides that the ambiguities in a document shall be construed against the drafter of that document, shall have no application to the interpretation and enforcement of this Agreement.

34.1 Titles and captions are for convenience of reference only and do not define, describe or limit the scope or the intent of the Agreement or any of its terms. Reference to section numbers, are to sections in the Agreement unless expressly stated otherwise.

34.2 This Agreement shall be governed by and construed in accordance with the laws of the State of California in effect at the time of the execution of this Agreement.

34.3 In the event of a conflict between the body of this Agreement and Exhibit “A” - Scope of Services hereto, the terms contained in Exhibit “A” shall be controlling.

35. **Exhibits.** The following exhibits attached hereto are incorporated herein to this Agreement by this reference:

Exhibit "A" - Scope of Services

Exhibit "B" - Compensation

Exhibit "C" - Key Personnel

[signatures on the following page]

IN WITNESS WHEREOF, City and Consultant have caused this Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a California
charter city and municipal corporation

LEIDOS ENGINEERING, LLC,
a Delaware limited liability company authorized to
do business in California

By: _____
Mike Futrell
City Manager

By: Alex Kim
Alex Kim (Oct 31, 2024 16:29 PDT)
Print Name: Alex Kim
Title: Contracts Manager

Attest: _____
Donesia Gause
City Clerk

and

By: Zachary Cheek
Zachary Cheek (Nov 1, 2024 11:10 EDT)
Print Name: Zachary Cheek
Title: Senior Contract Manager

Certified as to Availability of Funds:

By: Viothlu
Chief Financial Officer

APPROVED AS TO FORM:

By: RS
Ruthann M. Salera
Sr. Deputy City Attorney

EXHIBIT "A"

SCOPE OF SERVICES

EXHIBIT A

Scope of Services

The scope of work consists of performing engineering design services as described below, in support of the following Riverside Public Utilities' (RPU) La Colina Substation Upgrade Project.

1. Background

La Colina Substation currently features a 69kV ring bus configuration with four power transformers and switchgears that supply power to ten (10) distribution circuits, as indicated in the attached single line (Exhibit F). From 2011 through 2023, significant improvements were made to the substation's infrastructures to ensure compliance with contemporary seismic requirements. This included upgrading substation disconnects and breakers, as well as fortifying its structural components. Additionally, a new transformer, T4, was installed in 2010 as a replacement for a failed unit.

However, this substation was first commissioned in 1965. Most of the original equipment remains in the substation and has aged accordingly. This includes switchgear 1, 2, 3, and 4, as well as transformer banks, 1, 2, and 3, all of which have exceeded their intended design life. In addition, the switchgears house electromechanical relays, a few legacy SEL relays, and several distribution circuit breakers that have been identified as due for replacement. RPU plans to replace the four switchgears and four transformers in the station to upgrade and modernize equipment and increase system reliability.



Figure 1: La Colina Substation Plan View

2. Project Scope

The scope of this project is to remove Transformers T1, T2, T3, T4, and Switchgears 1-2, 3-4,

and install Switchgears 1, 2, and Transformers T1, T2. This project will incorporate two 45 MVA transformers and two switchgears, each feeding five (5) distribution circuits for a total of ten (10) 12kV circuits. This substation upgrade project will be separated into multiple phases due to the need to keep equipment in service and thus, minimizing disruptions to residents, which make up the majority of RPU customers in this area. Construction is anticipated to be performed by City crews.

3. Consultant Design Services Scope

The City of Riverside is issuing this RFP to select a firm to provide engineering professional services that includes the following elements: Project management, engineering, design, shop drawing reviews, construction support, standards, and as-built for the La Colina Upgrade Project. The Consultant shall be responsible for providing a complete design including all necessary upgrades to the existing system to install the new banks per requirements of this RFP. Refer to Section 6 of this Exhibit for Shop Drawings, Section 7 for Engineering Design and Studies, and Section 8 for Deliverables.

4. Project Scope of Work Summary

Phase 0:

- Preliminary work to facilitate removal of 12kV Switchgear 1-2 and Transformers 1 and 2

Phase 1:

- Remove 12kV Switchgear 1-2
- Remove 69/12kV 17.9 MVA Transformer T1
- Remove 69/12kV 17.9 MVA Transformer T2
- Remove 69kV Circuit Breaker 52-3
- Install new 12kV Switchgear 1
- Install new 69/12kV 45 MVA Transformer T1
- Install new 69kV-240/120V Power Potential Transformer (PPT1)

Phase 2:

- Remove 12kV Switchgear 3-4
- Remove 69/12kV Transformer T3
- Remove 69/12kV Transformer T4
- Remove 69kV Circuit Breaker 52-6
- Install new 69kV Switchgear 2
- Install new 69/12kV Transformer T2
- Install new 69kV-240/120V Power Potential Transformer (PPT2)

5. Project Implementation Phases

The project will be implemented in three (3) phases to minimize outage time and lessen the impact on system operations with each phase requiring a dedicated design package. Unless otherwise noted, the consultant is responsible for all the design under the Project Implementation Phases section.

Phase 0: Preliminary work to facilitate removal of Switchgear 1-2 and Transformers 1 and 2

- Remove the 120/240Vac feed for the Communication Building 100A AC Distribution Panel, which is being fed from the Switchgear 1-2 CPT, and relocate it to AC Distribution Panel in the control building.
- Remove 125Vdc circuits for all Switchgear 3-4, Transformer T3, and T4 that are being fed from the Switchgear 1-2 Vdc distribution panel and relocate temporarily to the control building. These temporary connections will be removed in Phase 2.
- Remove DAQ RTU connections for SCADA from SWGR 1-2 to Transformer T3, T4, and Switchgear 3-4. Currently, the DAQ RTU is located in Switchgear 1-2. Relocate the SCADA points to a new temporary SEL RTAC system. The temporary SEL RTAC system will be per RPU standards and placed inside the Switchgear 3-4 enclosure. **(This is an Optional Item: City may choose to perform this task)**
- Relocate UFLS functionality from Switchgear 1-2 to Switchgear 3-4 by installing a temporary UFLS SEL-351 and auxiliary relays. There is an existing SEL-351 responsible for UFLS in this station in Switchgear 1-2 and it will be removed as part of Phase 1. **(This is an Optional Item: City may choose to perform this task)**
- Relocate substation security and lighting conduits that are within the vicinity of the proposed Switchgear 1 and Transformer 1 foundation location.
- Develop a site preparation, grading, and drainage plan. RPU will provide existing grading conditions.

This work needs to be completed first to facilitate subsequent tasks.

See Exhibit D for Project Reference Drawings related to Phase 0.

Phase 1: Remove Switchgear 1-2 and Transformers T1, T2 and Install Switchgear 1 and Transformer 1

- Remove two transformer banks (T1 and T2) and all the associated equipment, circuitry, conduits, foundations, and underground utilities. This includes, but is not limited to medium voltage, interconnecting low voltage power (AC & DC), control, data, communication, and I/O circuits. This phase includes removal of field cables from transformer 1 and 2 to yard equipment, such as Switchgear 1 and 2, control house or switchyard (69kV relay and control panels, outdoor receptacles, lights, security panel, etc.).
- Install one transformer bank (T1). Transformer T1 will include new circuitry, conduits, and foundation. The foundation design should include an oil containment solution for T1. The new installation will also include support structures for connections of the low-side and

high-side of the transformer to the switchgear and 69kV bus respectively. This includes adding bus supports or modifications to the 69kV bus.

- Integrate the new transformer in the substation by wiring all outboard circuits per RPU standards, and updating all the substation drawings impacted by adding the new Transformer 1. See Exhibit H for a sample of RPU Transformer drawings (University Substation).
- Remove Switchgear 1-2 and all the associated equipment, circuitry, structures, conduits, foundations, and underground utilities. This includes, but is not limited to medium voltage, interconnecting low voltage power (AC & DC), control, data, communication, and I/O circuits. The CPT transfer scheme between Switchgear 1-2 and Switchgear 3-4 shall also be removed. Recall that because of Phase 0, most of the removals in this phase are contained within the switchgear. However, this phase includes removal of field cables from switchgear 1 and 2 to yard equipment, such as Transformer 1 and 2, control house or switchyard (69kV relay and control panels, outdoor receptacles, lights, security panel, etc.).
- Install a replacement switchgear (Switchgear 1) near the same location as the existing ones. The new Switchgear will have eleven units, whereas the predecessor consisted of one enclosure with two switchgears for a total of eight units. Replacing control, metering and protective relaying equipment includes the upgrade of all protective relays, control and auxiliary relays, pilot lights, meters, transducers, and auxiliary switches with RPU's standard equipment. Install new conduits, foundations, and underground utilities. The new switchgear will have a power pit whereas the existing enclosure had none.
- Presently, the Switchgear 1-2 duct banks involving the distribution circuits terminate at two different manholes. The installation of the new Switchgear 1 will involve a physical and civil design of two new 12kV underground duct banks from the existing manholes to the new power pit. However, as part of this task, the existing duct banks shall be reviewed to study the possibility to re-use them to the extent possible as to interface with the new duct banks since the plan is to still terminate the duct banks at the existing manholes.
- In addition, the existing Switchgear has four 12kV distribution feeders, and the new Switchgear will have five. The existing four distribution circuits will be assigned to the new Switchgear. Distribution circuit 1214 will be relocated from Switchgear 3-4 to the new Switchgear 1. RPU will model underground cables, perform ampacity calculations, and confirm circuit routing along the new duct bank. That is, the 12kV cables will be physically routed in designated conduits.
- Integrate the new switchgear in the substation by wiring all outboard circuits per RPU standards, and updating all the substation drawings impacted by adding the new Switchgear 1. The Vendor responsible for the design of the switchgear is yet to be determined. See Exhibit G for a sample of RPU Switchgear drawings (Orangecrest Substation).
- Add a temporary connection between the inter-tie 12kV disconnect switch located inside the new Switchgear 1 and the existing Switchgear 3-4. This will include adding a new duct

bank and power cable, installing a 2000A breaker inside a spare cubicle in Switchgear 3, and using Switchgear 3 Unit 4 ABB CO-11 for overcurrent protection. These temporary connections will be removed in Phase 2.

- Install PT and CPT transfer schemes between the new Switchgear 1 and the existing Switchgear 3-4. See Exhibit I-1 for Standard Switchgear CPT Transfer Schemes and Switchgear PT Transfer Schemes.
- The replacement of switchgear 1-2 will impact the 69kV system. 69kV switchyard breaker 52-3 and associated 69kV disconnect switches will be removed, eliminating a position in the ring bus system. Bus modifications due to these removals are part of this scope of work. All protection schemes affected by this removal and installation shall be updated.
- The new transformer differential relay in Switchgear 1 will trip the high side breakers directly and through a new lock-out relay. All protection schemes and drawings impacted by this installation shall be updated.
- Connect new transformer T1 alarms and analog points to the substation automation system (SAS) in the new Switchgear 1 per RPU standards. The new transformer T1 is equipped with SEL-2414 to facilitate connectivity to the SAS. See Exhibit H for a sample of RPU Transformer drawings (University Substation).
- Install one power potential transformer (PPT1) and primary fused disconnect switch on the 69kV ring bus. PPT1 will feed an existing AC Panel in the control building via a new Automatic transfer switch (ATS) that will be installed as part of this project. Installation will include new cable, conduits, grounding, and support structure. See Exhibit I-2 for Standard 69kV PPT Station Service drawings.
- PPT1 will be physically installed at the position of the existing breaker 52-3. Evaluate the existing 52-3 foundation and modify it as appropriate for PPT1 upon structural evaluation. If changing the 52-3 foundation is not deemed suitable, provide a civil package for installing PPT1.
- Control power to the substation control building is currently provided by Switchgear 3-4. The existing Switchgear 3-4 pad-mounted CPT and connections to the control building AC panels will remain in service until phase 2 of the project.

See Exhibit E-1 for Project Conceptual Drawings for Phase 1.

Phase 2: Remove Switchgear 3-4 and Transformers T3, T4 and Install Switchgear 2 and T2

- Remove two transformer banks (T3 and T4) and all the associated equipment, circuitry, conduits, foundations, and underground utilities. This includes, but is not limited to medium voltage, interconnecting low voltage power (AC & DC), control, data, communication, and I/O circuits. This phase includes removal of field cables from

transformer 3 and 4 to yard equipment, such as Switchgear 3 and 4, control house or switchyard (69kV relay and control panels, outdoor receptacles, lights, security panel, etc.).

- Install one transformer bank (T2). Transformer T2 will include new circuitry, conduits, and foundation. The foundation design should consist of an oil containment solution for T2. The new installation will also include support structures for connections of the low-side and high-side of the transformer to the switchgear and 69kV bus respectively. This includes adding bus supports or modifications to the 69kV bus.
- Integrate the new transformer in the substation by wiring all outboard circuits per RPU standards and updating all the substation drawings impacted by adding the new Transformer 2.
- Remove Switchgear 3-4 and all the associated equipment, circuitry, structures, conduits, foundations, and underground utilities. This includes, but is not limited to medium voltage, interconnecting low voltage power (AC & DC), control, data, communication, and I/O circuits. The power control service to the control building shall also be removed. In addition, include removal of field cables from switchgear 3-4 to yard equipment, such as Transformer 3 and 4, control house or switchyard (69kV relay and control panels, outdoor receptacles, lights, security panel, etc.).
- Install a replacement switchgear (Switchgear 2) near the same location as the existing ones. The new Switchgear will have ten units, whereas the predecessor consisted of one enclosure with two switchgears for a total of fifteen units. Replacing control, metering and protective relaying equipment includes the upgrade of all protective relays, control and auxiliary relays, pilot lights, meters, transducers, and auxiliary switches with RPU's standard equipment. Install new conduits, foundations, and underground utilities. The new switchgear will have a new power pit while the existing ones will be demolished.
- Presently, the Switchgear 3-4 duct banks involving the distribution circuits branch up to several locations. The installation of Switchgear 2 will involve a physical and civil design for the 12kV underground duct banks from the new power pit. Riverside will provide the location of the terminations for the five distribution circuits at a later time and the Consultant shall add new manholes as needed based on that information. However, as part of this task, the existing duct bank shall be reviewed to study the possibility to re-use it to the extent possible as to interface with the new duct banks.
- Switchgear 2 will accommodate five 12kV distribution feeders. RPU will model underground cables, perform ampacity calculations, and confirm circuit routing along the new duct bank. That is, the 12kV cables will be physically routed in designated conduits.
- Integrate the new switchgear in the substation by wiring all outboard circuits per RPU standards, and updating all the substation drawings impacted by adding the new Switchgear 2. The Vendor responsible for the design of the switchgear is yet to be determined. See Exhibit G for a sample of RPU Switchgear drawings (Orangecrest Substation).

- The replacement of switchgear 3-4 will impact the 69kV system. 69kV switchyard breaker 52-6 and associated 69kV disconnect switches will be removed, eliminating a position in the ring bus system. Bus modifications due to these removals are part of this scope of work. All protection schemes affected by this removal shall be updated.
- The existing 69kV bus differential relays located in the switchgear will be removed. The new SEL-387 transformer protection will pick up the resulting 69kV zone of protection. This new relay will trip the high side breakers directly and through a new lock-out relay.
- Connect new transformer T2 alarms and analog points to the substation automation system (SAS) in the new Switchgear 2 per RPU standards. The new transformer T2 is equipped with SEL-2414 to facilitate connectivity to the SAS. See Exhibit H for a sample of RPU Transformer drawings (University Substation).
- Remove the two (2) existing pad-mounted oil transformers (CPT). The new switchgear will house an indoor CPT.
- The CPT and PT transfer schemes between Switchgear 1 and 2 shall be designed per RPU standards. See Exhibit I-1 for Standard Switchgear CPT Transfer Schemes and Switchgear PT Transfer Schemes.
- A 12kV intertie permanent connection between Switchgear 1 and Switchgear 2 will be made using a power cable and a new duck bank. The power cable will be protected per RPU relay standards. Sample drawings shall be provided at a later time.
- 12kV Capacitor bank 4 will remain in place. However, it will be renamed Capacitor bank 2. As part of this task, the existing duct bank shall be reviewed to study the possibility to re-use it to the extent possible as to terminate at the existing capacitor unit from the new power pit.
- Install one power potential transformer (PPT2) and primary fused disconnect switch on the 69kV main bus. PPT2 will feed an existing AC Panel in the control building via the Automatic transfer switch (ATS) installation during Phase 1. Installation will include new cable, conduits, grounding, and support structure. See Exhibit I-2 for Standard 69kV PPT Station Service drawings.
- PPT2 will be physically installed at the position of the existing breaker 52-6. Evaluate the existing 52-6 foundation and modify it as appropriate for PPT2 upon structural evaluation. If changing the 52-6 foundation is not deemed suitable, provide a civil package for installing PPT2.
- Remove the temporary connections to the new 12kV Switchgear 1, such as 12kV intertie and CPT & PT Transfer schemes.

- The outdated equipment will be dismantled upon successful installation of the new equipment for this project. Transformer T4 will be repurposed as a spare unit and stored in this substation. The consultant shall design a foundation for the spare transformer in such a way that it won't obstruct the station.

See Exhibit E-2 for Project Conceptual Drawings for Phase 2.

6. Shop Drawings

The new equipment for this project is as follows:

- 12kV Switchgear 1
- 69/12kV 45 MVA Transformer T1
- 69kV-240/120V power potential transformer (PPT1)
- 69kV Switchgear 2
- 69/12kV Transformer T2
- 69kV-240/120V power potential transformer (PPT2)
- Automatic Transfer Switch (ATS)

The consultant will be responsible for reviewing the manufacturer shop drawings in the following manner:

- Review of transformer manufacturer drawings and compliance to RPU specifications in regards to P&C design. Consultant to familiarize with RPU transformer specifications – technical section and University Substation T4 Project to conduct this task.
- Review of switchgear manufacturer drawings and compliance to RPU specifications in regards to P&C design. Consultant to familiarize with RPU switchgear specifications – technical section and Orangecrest Substation Switchgear 2 Relay Upgrade Project to conduct this task.
- Review of switchgear manufacturer drawings and compliance to ANSI C37 and RPU specified equipment and bus rating in regard to manufacturing process. The consultant should be familiar with ANSI C37. The main objective of this review is to make sure that the specified equipment is not de-rated because of switchgear Vendor design.
- Power Potential Transformers – confirm that Vendor complies with RPU Specifications.
- In addition, the consultant will convert transformer and switchgear manufacturer drawings to RPU standard drawings or, when available, merge improvements to existing RPU drawings. The conversion process is this: (a) Transfer the content of each manufacturer drawing into an RPU title block drawing; (b) assign an RPU drawing number; and (c) replace the reference drawing numbers inside the drawings with the new RPU drawing number.

See Exhibit G and Exhibit H for sample Switchgear and Transformer installation drawings.

7. Engineering Design and Studies

Consultant shall review reference drawings in details to adequately provide resources and man-hours to deliver a complete and comprehensive design and technical support.

See Exhibit F-1, F-2, and F-3 for existing schematics, wiring, physical, and equipment manufacturer drawings for this station.

Consultant shall be responsible to update all drawings that are impacted by the installations. Consultant shall create new drawings as needed. This includes, but is not limited to all schematic, wiring and physical drawings for automation, 69kV breaker controls, AC/DC auxiliary power.

A. Schematic Drawings

Conceptual drawings for Single Line diagrams for each of the Phases have been provided. Consultant shall finalize those drawings once switchgear and transformer manufacturer drawings have been received.

Schematic drawings are required. The Proposer shall utilize existing schemes to modify 69kV and 12kV three-line, relay, control, SCADA and AC/DC station service drawings. The Orangecrest Substation and University Substation are provided as go-by drawings to illustrate RPU standards and practices.

Schematics from new equipment shall be developed by vendor drawings and modified to meet the RPU standard drawing format as described previously. Schematic drawings must be completed by integrating existing schematic drawings, all new equipment and vendor drawing packages. Location of terminal blocks on schematic diagrams must be reviewed and changed to reflect the wiring diagram information. Stand-alone schematics with references to other schematics are not acceptable.

Refer to Section 12 for the list of drawings to be incorporated in the design. RPU will provide the template in AutoCAD format to the successful proposer.

B. Wiring Drawings

Wiring drawings are required. The Proposer shall utilize existing wiring diagrams to modify 69kV and 12kV relay, control, SCADA and AC/DC station service drawings.

Wiring drawings must be completed by integrating existing wiring drawings with all new equipment and vendor drawing packages. Existing drawings shall be modified appropriately while meeting RPU's drafting standard. Additional wiring diagrams shall be developed from vendor drawings and modified to meet the RPU standard drawing format as previously discussed.

Separate wiring diagrams must be developed for all interconnected equipment. Wiring diagrams shall be all-inclusive wiring diagrams showing internal equipment wiring and field

wiring. Interconnection wiring diagrams that do not show internal equipment wiring are not acceptable. As a result of this design, all non-utilized wires shall be traced and removed from all drawings.

Refer to Section 12 for the list of drawings to be incorporated in the design. RPU will provide the template in AutoCAD format to the successful proposer.

C. Physical Drawings

Conceptual drawings for this project have been provided. The proposed layout has been identified as the preferred one by RPU. Consultant shall not deviate from the main concept while still responsible to verify clearances and make minor adjustments to facilitate construction.

Physical Drawings are required. General arrangement drawings shall be prepared or modified for initial and ultimate development. The site layout shall be developed from the one-line drawings and shall accommodate future expansion.

Panel elevations shall be created or modified to indicate the installation of removal of equipment. The drawings shall include dimensions and material call-outs in substantial detail so the construction team can remove or install the equipment accordingly.

Bill of material drawings be created or modified to indicate the installation of removal of all equipment and material. Items shall be indicated by callouts on layout and detail drawings. These drawings shall include quantity, vendor name, material description, manufacturer name, part number and serial number to support material procurement.

Electrical Plan and section drawings shall be created or modified to indicate the physical electrical work required. These drawings shall include dimensions and material callouts in substantial detail so the construction crew can install the equipment and structures correctly.

Conduit plan, cable trench plan, and detail drawings shall be created or modified to locate and route the cables within the station. These drawings shall include material callouts to support procurement of these items. These drawings shall also include a cable and conduit schedule that will be used during construction to install the cables.

Grounding plan and detail drawings shall be developed or modified based on the grounding calculations performed. This drawing shall indicate conductor size, locations, connections, and stinger locations. Material callouts shall also be indicated to support material procurement.

Some of RPU existing physical drawings are in JPG format. Refer to Section 12 for the list of drawings to be incorporated in the design.

D. Civil and Structural Drawings

Civil and Structural drawings are required. The consultant shall create detailed design calculations for support structures and their supporting foundation/anchorage.

The consultant shall create detailed fabrication level piece/mark drawings for the support structures including bill of material for issuance to a fabricator.

Foundation plan and detail drawings for the new equipment shall be prepared. Drawings shall indicate removals, foundation sizes, elevation, and amount of concrete and/or compacted backfill, reinforcing details, and foundation orientation.

Foundations for the new equipment shall be designed and constructed by the Consultant. Construction notes for removing existing slabs and foundations shall be in the Consultant's Scope. All concrete foundations shall include anchor bolts, rebar cages, beams, and other associated parts. Foundation designs shall consider soil conditions, thermal expansion and contraction, equipment loads, and attachment points, as applicable. Foundation layout shall meet required electrical clearances, as applicable. Consultant to verify Top of Concrete (TOC) for all foundation align with the above grade design.

A licensed Professional Engineer of the State of California shall stamp all foundation and structure designs, calculations, and drawings. Base design calculations on results of geotechnical investigation of site.

Transformer foundations shall have integral steel leveling beams, coordinated with transformer support requirements. Leveling beams shall provide mounting surface for transformer and shall inhibit corrosion-inducing accumulations of water in the interstice between foundation and transformer tank bottom.

E. Calculation Requirements

The Consultant shall perform all calculations necessary to complete the design and construction of the substation additions. The Consultant shall perform and submit the following calculations and other applicable calculations. Calculations shall be performed in accordance with the design parameters established by RPU.

- Electrical clearances
- Cable voltage drop and ampacity calculations
- Cable pulling calculations
- Foundation calculations
- Steel support structure calculations

F. Studies

Electrical studies and calculations shall be performed to complete the design and construction of the of the substation. Studies shall be performed in accordance with the design parameters established by RPU. All required electrical system impact, protective device coordination, short circuit and ground study deliverables are included within the Consultant scope of

responsibility, and all such studies shall be submitted for the City's review and approval. Each study shall be provided as a single file/report.

The Consultant shall be responsible to perform and submit the following studies and calculations and other applicable calculations:

a. Short-Circuit Study

The short circuit study shall cover all the electrical system inside of the substation. For the short circuit equipment evaluation study use the available utility fault current from the utility. Tabulate of the worst-case calculated short circuit duties as a percentage of the applied device rating; the short circuit duties shall be upward adjusted for X/R ratios that are above the device design ratings. Verify that all electrical equipment and bus short circuit withstand rating is higher than the available worst case short circuit. The modeling of the short circuit shall be done in Aspen Oneliner. RPU will provide data as needed to perform this task.

b. Grounding Study

Conduct Soil Resistivity Measurement Test: Soil resistivity data will be used for conducting substations grounding study.

- Soil resistivity measurements shall be made per ASTM G57-06 and IEEE 81-2012.
- The tests will be performed using the Wenner 4-pin test methods over no less than ten probes spacing and a maximum probe-probe spacing approximately equal to the substation maximum dimension (diagonal), except where impractical. At least two perpendicular traverses must be tested, and a third test performed if there is not consistency in results of the two traverses. No test probes should be placed closer to a grounded metallic object than the probe spacing being tested.
- The equipment used shall be accurate to the maximum required pin spacings, for the soil conditions encountered at the site.
- A quality control program is required in the field to demonstrate that readings are valid. This includes, as a minimum, reporting of the measured signal voltage, injected current, and standard deviation between pulses of alternating polarity for each pin spacing.
- Provide a test plan including the measurement location for each substation and list of the testing equipment. Calibration certificates are required for all test and measurement equipment. Test plan shall be approved by RPU engineering prior to commencing testing.
- Perform calculations and build a soil resistivity profile in tabular and graphical format.
- The measured soil resistivity data shall account for electrode pin depth, and any irregular pin spacings to obtain equivalent multi-layer soils to be used in the subsequent grounding study. Any approximations to the soil model shall be justified.

c. Develop an Integrated Model of the Grounding System:

- Create a soil resistivity and grounding model using CDEGS software from SES Technologies based on RPU's ground grid layout drawings and soil resistivity test. See Exhibit A, Appendix 1 – Existing drawings for grounding layout.
- Determine the step and touch potentials at the soil surface and compare this data against the tolerable levels as defined by the IEEE standard 80 "Safety in AC Substation Grounding". The system shall be adequate for detection and clearing faults.
- Calculate and analyze the ground potential rise (GPR). Determine the zone of influence of the calculated GPR as per IEEE 367. Prepare three-dimensional potential plots, color-coded contour plots, and graphical display of over-limit voltages.
- The analysis shall not consider fault current split calculation identifying the percentage of current returning to the source through the substation grounding system based on the existing overhead wires and underground cables.
- This analysis will also be used in comparing measured grounding system impedance to calculated impedance.
- Provide comprehensive calculation details and list all assumptions used in the study.
- Phase to fault current values, fault clearing time, line voltages and sub-transient x/r ratio will be provided by RPU Engineer.

d. Validate Model with Tests: Provide the following Tests

- Ground System Impedance Measurement- The objective of this measurement is to determine the actual impedance of the ground connections and also a check to the GPR calculation. The fall-of-potential (FOP) test shall be performed based on IEEE Std. 81-2012, with the remote current probe placed at a distance from the substation no less than 6 times the maximum dimension of the grounding system, except where conditions prohibit. If shield wires or neutrals are connected to the substation, no split factor shall be used to account for shield wires or neutral to calculate standalone grounding system.
- Point to Point Ground Impedance Measurements – The objective of this measurement is to test the integrity of the ground grid. Point to Point Ground Impedance test shall be performed according to IEEE Std. 81-2012.
- Touch and Step Voltage Measurements – The objective of this measurement is to determine hazardous step and touch voltages and validate the estimated step and touch potential voltages from the soil resistivity test. This test will be done in conjunction with the FOP test. The test shall be performed based on IEEE Std. 81-2012.
- The final report shall include the measurement methodology and the reasons for that methodology for all the tests listed above. All test data and assumptions shall be documented in the final report.

- e. Grounding Study Deliverables: The final report shall have a tab for each section that includes the following:
- Summary of the data collected from testing and modeling, assumptions, model analysis, computation results, conclusions, recommendations for the limitations of the ground grid for each substation. The final report shall include the following computation results:
 - Summary of tolerable touch and step voltage limit calculation results.
 - Plan-view plots of substation grounding grid potential rise for all scenarios studied.
 - Plan-view plots of touch and step voltages throughout the substation.
 - Graphs comparing measured apparent soil resistivity data with values computed from soil model obtained from field data inversion.
 - Include a copy of the electronic model “CDEGS” for each substation.

G. Protection Relay Responsibilities

The Consultant shall be responsible to provide all protection work for La Colina Substation Phase 0, 1 and 2. This work includes, but not limited to, the following:

- a. Protective Device Coordination:
- The protective device coordination shall include coordination of the new installed equipment at the substation as well as coordination with existing distribution equipment. The study shall include time current curves (TCCs) for all protective devices in the distribution system and the TCCs shall include cable and transformer damage curves. The study shall also include tabular format of settings selected for current protective devices (CPD’s) and it shall include the following:
 - i. Device Tag
 - ii. Relay-current transformer ratios; and tap, time-dial, and instantaneous-pickup values.
 - iii. Circuit-breaker sensor rating; and long-time, short-time, instantaneous settings, and ground fault where applicable
 - iv. Fuse-current rating and type.
 - v. Ground-fault relay-pickup and time-delay settings.
- b. Relay Calculations
- Develop relay calculations for every new protective device and existing devices to provide a complete protection package.
 - Develop all setting calculations in PTC Mathcad Prime 6 software covering all key RPU protection standard philosophy and calculation criteria for transformer, feeder, capacitor, arc-flash, and bus differential protection. Parameters for the calculations shall be included the file for export to the RDB files.

- Include within the PTC Mathcad Prime 6 calculation sheets the functionality to produce relay text data files suitable for import to ASPENTM ORL file.
- Update existing ASPENTM model to reflect the new relay settings and substation configuration.

c. Relay Settings

- Develop relay settings in Redis Database (RDB) format for every new protective device and update settings for existing devices to provide a complete protection package.
- Relay settings shall be calculated in such a way that all necessary variables are defined/calculated and can be utilized directly into a relay setting file with no ambiguity on which settings should be left at default.
- Implement an RDB converter tool that populates the RDB file directly from the PTC Mathcad Prime file for each different relay type and application for the project.

d. Logic Diagrams

- Develop logic diagrams in AutoCAD for every new protective device and create or update logic diagrams for existing devices to provide a complete protection package.
- Develop logic diagrams for all protection schemes such as PT and CPT automatic transfer switch schemes.
- Logic diagrams shall show user programmable logic and not setpoints or relay internal logic.
- Logic diagrams must include the following: ER equations, SER equations, an input/output (I/O) table or show all the I/Os on the drawing, and application notes. Alarms to be sent to the SCADA system should be referenced on a separate page.

e. ASPEN File Updates

- Update the ASPENTM model to include the latest impedance parameters and relay information and settings. The update will also include updating the substation configuration to include the new transformers and breakers.
- RPU's Protective Relay: The part number and firmware number of each protective relay is as follows:

Part Number	Manufacturer	Model	Purpose
0387613X532X4XX	SEL	SEL-387	Transformer differential
0351S7X3D4E5421	SEL	SEL-351S	Main, feeder, capacitor & transfer bus tie
751401ACA0X7785A600	SEL	SEL-751	Main and main bus tie arc flash detection
751001ACA0X7785B311	SEL	SEL-751	capacitor arc flash detection

751001ACACACD85A311	SEL	SEL-751	capacitor controller
---------------------	-----	---------	----------------------

f. The protection report shall include the following sections:

- Executive Summary: Include an overview of the study/report, highlighting pertinent data, findings, and issues.
- Input Data Report: Include all data input forming the basis of the study report along with any assumptions.
- Short Circuit Study: Report indicating the results of the short circuit study throughout the distribution system.
- Equipment Evaluation: Pass fail analysis results comparing the available fault current to protective devices and bus ratings. All new equipment shall pass the equipment evaluation.
- Time Current Curves: Graphical representation of coordination between overcurrent protective devices.
- Settings Report: Recommended relay and circuit breaker settings to include all overcurrent and ground fault settings.

H. SCADA/Automation Point Lists

The SCADA/Automation point lists shall also be prepared by the Consultant. RPU substation automation system is based on the SEL RTAC Automation Platform. The Proposer shall develop the corresponding SEL RTAC files to provide a complete construction package.

Refer to Automation Architectural diagram in Exhibit F-1 – Existing drawings for automation architecture. The part numbers for the automation equipment are as follows:

Part Number	Manufacturer	Model	Purpose
2488PRAA181AX23X	SEL	SEL-2488	GPS Clock
2730M0ARAA1122AAAAX0	SEL	SEL-2730M	Managed Switch
3555#G4H2	SEL	RTAC 3555	Control Bldg. RTAC
3555#6H2F	SEL	RTAC 3555	Switchgear RTAC
2242R1X0	SEL	SEL-2242	Axion Chassis
224311X0	SEL	SEL-2243	Axion Module-Power Coupler
22442424X0	SEL	SEL-2244-2	Axion Module-Digital Input

22443131X0	SEL	SEL-2244-3	Axion Module-Digital Output
22443132X0	SEL	SEL-2244-3	Axion Module-Digital Output (Special Output Configuration)
22452121XX0	SEL	SEL-2245-2	Axion Module-Analog Input:
2245420XXX0	SEL	SEL-2245-42	Axion Module-AC Protection
91610050	SEL		19 Touchscreen Monitor
9161050	SEL		Keyboard and Mouse
9150186	SEL		32 Conductor Wiring Harness
2812MRX0	SEL	SEL – 2812MRX0	Fiber-optic Transceivers
C478A-"X"	SEL	SEL – C478A	EIA-232 Serial Adapter
C605A-"XXX"	SEL	SEL – C605A	EIA-232 Serial Cable

RPU will provide reference drawings including typical automation logic diagram and point list, and RTAC setting files. The Consultant shall be responsible for developing the project automation logic diagrams and point list, and automation settings per the project requirements.

8. Engineering Deliverables

The Consultant is required to provide the following deliverables and engineering services as part of the scope of work for this Request For Proposal.

A. Phase 0: Preliminary work to facilitate removal of Switchgear 1-2 and Transformers 1 and 2

- Provide 30%, 90% and Issued for Construction (IFC) Package
- Provide As-built package

B. Phase 1: Remove Switchgear 1-2 and Transformers T1, T2 and Install Switchgear 1 and T1

Note: Consultant must complete Phase 0 as-built package before starting Phase 1 design package, unless RPU approves otherwise

- Provide 30%, 90% and Issued for Construction (IFC) Package
- Provide As-built package
- Review switchgear and transformer shop drawings (Two (2) review cycles)
- Provide civil/structural design package
- Provide relay settings for Switchgear 1 and any impacted relays associated with this project
- Provide settings for the RTAC and automation equipment in Switchgear 1
- Provide settings and points list for the Transformer 1 LTC and SEL-2414
- Provide grounding study
- Provide short-circuit study

C. Phase 2: Remove Switchgear 3-4 and Transformers T3, T4 and Install Switchgear 2 and T2

Note: Consultant must complete Phase 1 As-built package before starting Phase 2 design package, unless RPU approves otherwise

- Provide 30%, 90% and Issued for Construction (IFC) Package
- Provide As-built package
- Review switchgear and transformer shop drawings (Two (2) review cycles)
- Provide civil/structural design package
- Provide relay settings for Switchgear 2 and any impacted relays associated with this project
- Provide settings for the SEL RTAC and automation equipment in Switchgear 2
- Provide settings and points list for the transformer LTC and SEL-2414

Provide construction support, project management, and document control throughout the entire duration of the project.

D. Additional Deliverables

- After completion of the project, the consultant shall allocate 200 hours for developing standards for the switchgear and transformer, based on the design.
- Provide a preliminary physical design for the La Colina site plan (drawing LC-6100) that supports an additional 69kV Transformer T3 and Switchgear 3. This deliverable includes updating (1) drawing and one (1) review cycle.
- Provide a foundation design, calculations, and drawings (station layout, foundation detail, etc.) for stationing existing transformer 4 in this facility.

E. Optional Deliverables – Phase 0

- Provide 30%, 90% and Issued for Construction (IFC) Package for relocation of T3, T4, and Switchgear 3-4 SCADA points to a temporary SEL RTAC System.
- Provide settings for the temporary SEL RTAC and automation equipment
- Provide 30%, 90% and Issued for Construction (IFC) Package for relocation of existing UFLS functionality to Switchgear 3-4 by installing a temporary UFLS SEL-351 and auxiliary relays

9. Responsibility of others

The vendors will provide new equipment drawings. The consultant will be responsible for importing all drawings into an RPU border with the RPU drawing number and modifying it to meet the RPU standard drawing format.

A Geotechnical Report will be provided by RPU and is not included in the consultant's scope of work.

The City will conduct an environmental study to identify PCB or other hazardous material that may exist in the 1965 and similar aged equipment. Consultant should assume no additional action needed from them when performing the tasks listed in this RFP.

10. Project Management

The project scope of work includes project management to complete the engineering, design, procurement and field installation within the desired schedule. Project management shall include monthly status reports, project control, document control, cost control, change order control, kick-off meeting, and periodic project meeting.

Proposer shall prepare and submit an estimated project schedule for all major phases of each assigned project to RPU within fifteen (15) days following the issuance of a Notice to Proceed (NTP) for said project. The project schedule shall be updated and submitted to RPU as needed.

Project cost control shall include allocated consulting services budget detailing work scope, labor hours associated with each task, accumulated billable chargers, total depleted budget, remaining budget, office resource expenses and invoices.

Project shall begin with a kick-off meeting and periodic project progress review meeting till the project close out. The project manager and appropriate staff shall participate in the periodic in periodic meetings to review project progress.

11. Document Management and Control

Document management and control is required to complete the electrical, civil, structural, and physical design, procurement, and construction support on schedule. The Proposer shall become

familiar with RPU's document management system (DMS) and drafting standards to develop document tracking lists along with check in/out documents under RPU control and update the DMS with all the required documents and related information.

Project document management shall include minutes of meeting, drawings check in/check out procedure for revision, invoices, work scope variances, associated change order proposals and vendor/manufacture's submittal reviews. See Exhibit J for Drafting Standards.

12. Drawing Requirements

2014 AutoCAD format or the latest version shall be used to generate and modify all RPU drawings and vendor drawings as appropriate. Drawing layout and layers shall meet RPU's standard. Full D-size 22"x34" inch format is required. Multiple copies of review and construction packages shall be required.

All drawing deliverables shall follow RPU's drawing presentation format and standards. See Exhibit J for Substation Engineering Drafting Standards.

The design drawings shall be submitted to RPU for a 30%, 90% and a construction issue.

30-90 percent review drawings shall mean drawings not fully completed or approved by RPU. However, drawings shall be reasonably complete and suitable for establishing basic project arrangement and design requirements. 30-90 percent review drawings shall be clearly stamped "For Review". RPU will review and will advise the consultant of any discrepancies or conflicts which may be discovered in the drawings.

Drawings developed by the consultant shall be stamped by an appropriately registered professional engineer in the State of California. Manufacturer drawings shall not be stamped by the engineer unless major changes have been made to the drawings. See Exhibit J for Drafting Standards.

13. Project Time Frame

This duration shall start one (1) week after the issuing of the PO in September 2024 and will be completed within 3.5 years. A one-year extension is possible, subject to the delivery of major equipment.

Estimated Project Milestones:

- Starting date of this project: September 2024

The RPU review duration for each deliverable is two (2) weeks but can be expedited to one (1) week depending on scheduling needs.

Phase 0: Preliminary work before removal of Switchgear 1-2 and Transformers 1 and 2

- Design completed by January 2025
- Construction completed by April 2025
- As-built shall be completed four (4) weeks after receiving redlines from RPU

Phase 1: Remove Switchgear 1-2 and Transformers T1, T2 and Install Switchgear 1 and T1

- Design completed by August
- Construction completed by end of March 2026
- As-built shall be completed four (4) weeks after receiving redlines from RPU

Phase 2: Remove Switchgear 3-4 and Transformers T3, T4 and Install Switchgear 2 and T2

- Design completed by August
- Construction completed by March 2028
- As-built shall be completed two (4) weeks after receiving redlines from RPU

Note: Dates for review of switchgear and transformer shop drawings for Phases 1 and 2 are yet to be determined.

14. Drawing Submittal

The design drawings package contains the following but not limited to:

No.	Description	Work
1	Cover Sheet	New
2	Project Drawing List	New
3	One Line Diagrams	Modify/New
4	Three Line Schematics	Modify/New
5	69kV Relay and Control Schematics	Modify
6	69kV Breaker Control Schematics	Modify
7	69kV Transformer Control Schematics	New
8	SAS Architecture	Modify
9	SCADA Schematics	Modify
10	SCADA I/O Schematics	Modify
11	AC/DC Station Service Schematics	Modify/New
12	Relay Logic Diagrams	New
13	AC/DC Station Service Wiring	Modify/New
14	Outdoor Cabinet Wiring	Modify

15	69kV Circuit Breaker Control Wiring	Modify
16	69kV Transformer Control Wiring	New
17	69kV Power Potential Transformer Wiring	New
18	Station General Layout	Modify
19	Plan View	Modify
20	Grading Plan and Details	Modify
21	Elevations	Modify
22	Conduit Plan Details	Modify
23	Grounding Plan and Details	Modify/New
24	Foundation Plan and Details	Modify/New
25	Control House Layout	Modify
26	Panel Layout	Modify
27	Oil Containment System Plan and Details	New
28	Conduit Fill Plan	Modify
29	Circuit Schedule	Modify
30	Underground Circuit Plan and Details (12kV)	Modify/New
31	Support Structure Steel Details	New
32	Switchgear Arrangement Drawings	Modify/New
33	Switchgear Control Schematics (In Unit # Order)	New
34	Switchgear Panel Layout and Contact Developments	New
35	Switchgear AC and DC Station Service	New
36	Switchgear Wiring Diagrams	New

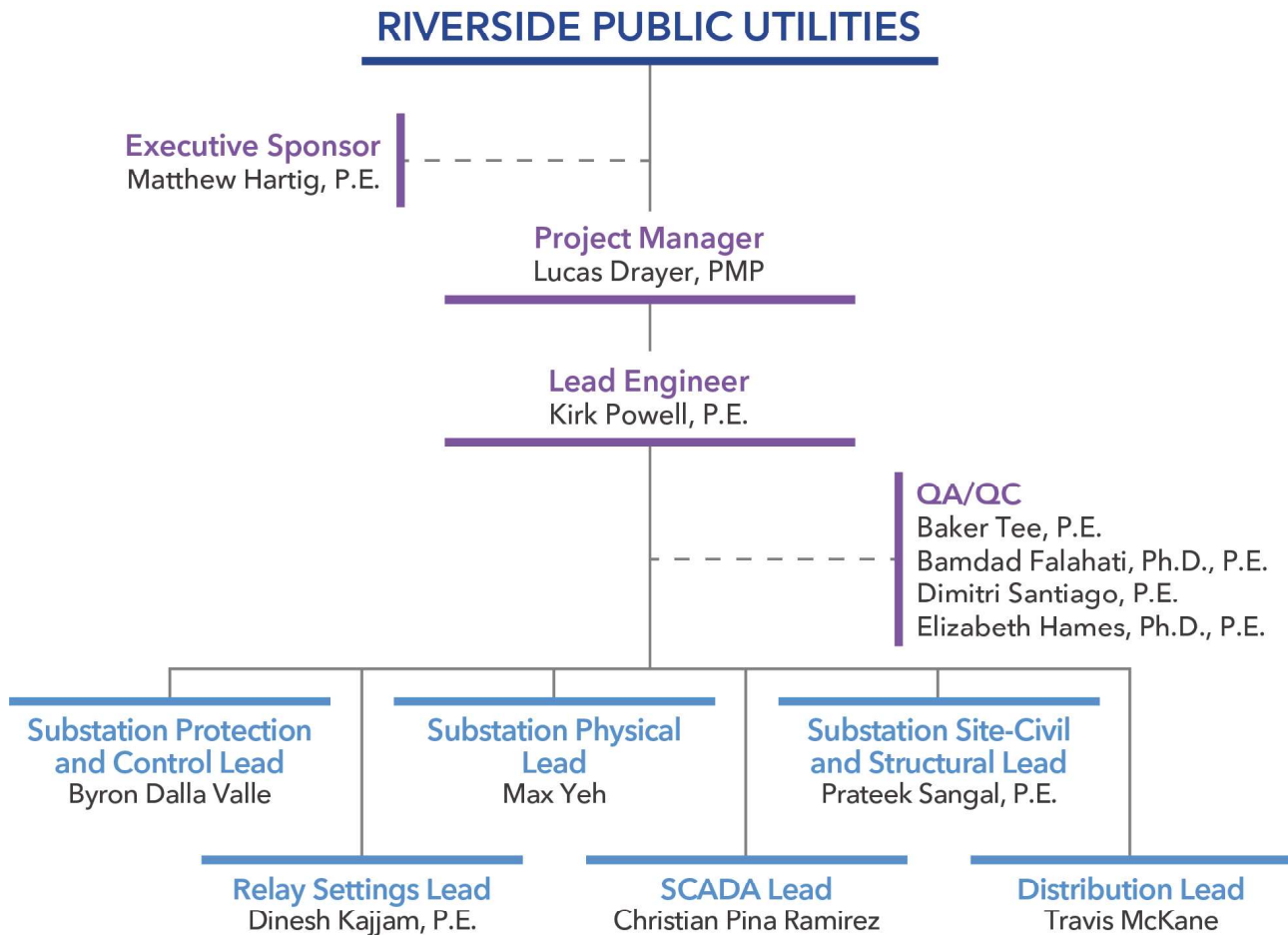
EXHIBIT "B"
COMPENSATION

TASK DESCRIPTION	EXHIBIT K- PRICE LA COLINA		COMMENTS
	Man Hours	Costs	
Phase 1- Remove Switchgear 1-2 and Tranformers T1, T2 and Install Switchgear 1 and T1			
Calculation Requirements per Exhibit A, Section 7E	120	\$ 19,460.87	5% reduction
30% Design Package	651	\$ 97,390.40	5% reduction
90% Design Package	826	\$ 117,421.28	5% reduction
Issued for Construction (IFC) Package	194	\$ 31,250.25	5% reduction
As-built Package	295	\$ 38,912.00	5% reduction
Review Switchgear Shop Drawings	57	\$ 9,120.00	5% reduction
Civil and Structural Design Package (Site Grading and Foundations for T1 and SWGR 1)	338	\$ 45,519.25	5% reduction
Protection Relay Configurations	344	\$ 46,974.41	5% reduction
SEL RTAC settings	143	\$ 20,676.75	5% reduction
Settings and Points list for Transformer LTC and SEL-2414	39	\$ 5,652.50	5% reduction
12kV duct bank assessment and re-design for (5) Feeders	72	\$ 10,385.88	5% reduction
Power Potential Transformer #1 foundation assessment and design for a new pad	110	\$ 14,459.00	5% reduction
Grounding study	83	\$ 13,912.75	5% reduction
Phase 2- Remove Switchgear 3-4 and Tranformers T3, T4 and Install Switchgear 2 and T2			
Calculation Requirements per Exhibit A, Section 7E	85	\$ 13,850.05	5% reduction
30% Design Package	631	\$ 95,857.38	5% reduction
90% Design Package	854	\$ 121,089.39	5% reduction
Issued for Construction (IFC) Package	201	\$ 31,858.25	5% reduction
As-built Package	295	\$ 38,912.00	5% reduction
Review Switchgear Shop Drawings	57	\$ 9,120.00	5% reduction
Review Transformer Shop Drawings	29	\$ 4,560.00	5% reduction
Civil and Structural Design Package (Foundations for T2 and SWGR 2)	124	\$ 16,420.75	5% reduction
Protection Relay Configurations	333	\$ 44,866.84	5% reduction
SEL RTAC settings	143	\$ 20,676.75	5% reduction
Settings and Points list for Transformer LTC and SEL-2414	39	\$ 5,652.50	5% reduction
12kV duct bank assessment and re-design for (5) Feeders	509	\$ 58,204.60	5% reduction
Power Potential Transformer #2 foundation assessment and design for a new pad	25	\$ 3,201.50	5% reduction
Project Management			
Project Supervision and Control	922	\$ 130,872.00	5% reduction
Document Management and Control			
Engineering and Administrative Support	190	\$ 26,600.00	5% reduction
Construction Support			
Technical Support during construction	620	\$ 91,338.70	5% reduction
Additional Deliverables			
Developing Standards	190	\$ 23,180.00	5% reduction
Preliminary Physical and One Line Design - T3 and Switchgear 3 Addition	31	\$ 4,194.25	5% reduction
Spare Transformer T4 Civil Design	59	\$ 7,471.75	5% reduction
Optional Deliverables- Power Transformer "T2" Design Review and FAT			
Kick off Meeting and Briefing	2	\$ 370.50	5% reduction
Transformer "T2" Design Review	33	\$ 6,483.75	5% reduction
Transformer "T2" Core and Coil Inspection (Remote)	4	\$ 741.00	5% reduction
Transformer "T2" Witness Factory Electrical Testing (Remote)	4	\$ 741.00	5% reduction
Transformer "T2" Witness Factory Electrical Testing (In-person)	8	\$ 3,857.00	5% reduction
Scheduling	2	\$ 370.50	5% reduction
Reporting	4	\$ 741.00	5% reduction
Release Notes	4	\$ 741.00	5% reduction
Other Expenses			
Supplies	16	\$ 9,710.00	Print shop materials and labor
Miscellaneous	176	\$ 49,210.00	Labor and expenses for site visits
TOTAL COST		\$1,292,028	5% reduction
Optional Deliverables-QEW Manhole Inspection/Survey (Leidos Proposed)			
QEW for Manhole Inspection/Survey and Engineering Data Capture	10	\$ 6,550.00	If necessary at RPU's discretion
ADJUSTED TOTAL COST		\$1,298,578	

EXHIBIT "C"

KEY PERSONNEL

Figure D-1. Project Team Organization



Roles and Qualifications of the Proposed Team

Table D-1 below summarizes the roles and qualifications of the key leadership and engineering leads that form the Leidos team.

Table D-1. Project Team Qualifications

Team Member/Role/ Education/Certifications	Description of Experience
Key Personnel	
Matthew Hartig, P.E. Project Role: Executive Sponsor Education/Certifications <ul style="list-style-type: none"> • B.S. in Electrical Engineering, University of Wisconsin – Madison • Professional Electrical Engineer: ID, OR, UT, WA, WY 	<ul style="list-style-type: none"> • Electrical design engineer with 13 years of experience in telecommunications, protection and controls (P&C) design, substation physical electrical design, substation ground grid design, distribution line design, scope development, and cost estimating • Provides electrical substation and telecom design services for both small and large substation projects for utilities • Leads Leidos' substation groups for the south and west regions of the U.S., which includes over 160 engineers, designers, and drafters spread across six regional design centers

Team Member/Role/ Education/Certifications	Description of Experience
<p>Lucas Drayer, P.E Project Role: Project Manager Education/Certifications</p> <ul style="list-style-type: none"> • B.A. in Earth and Environmental Studies, Arizona State University • Project Management Professional (PMP), Project Management Institute 	<ul style="list-style-type: none"> • Provides project management for substation, transmission, and distribution projects with over 10 years of power industry experience • Manages engineering design projects for power delivery clients and manages full engineering and construction lifecycles for private electric utility owners and the U.S. Department of Defense • Has a background founded in the leadership of cross-functional and multidisciplinary teams to execute projects • For the last three years, has led more than 10 design projects simultaneously under a Bonneville Power Administration’s engineer-procure-construct Substation Equipment Replacement Program (SERP) to deliver multidisciplinary substation and transmission line designs
<p>Kirk Powell, P.E. Project Role: Lead Engineer Education/Certifications</p> <ul style="list-style-type: none"> • M.S. in Electrical Engineering, Prairie View A&M University • B.S. in Electrical Engineering, Prairie View A&M University • Professional Electrical Engineer: AZ, OK, TX 	<ul style="list-style-type: none"> • Has 25 years of industry experience as a utility engineering consultant and accumulated substantial experience and technical expertise to perform as an engineering manager, project manager, and engineering lead • Holds vast and diverse experience in the design, management, and execution of utility and industrial substation engineering projects • Manages a team of engineers, designers, and drafters in the Houston, Texas office—responsible for team growth, QA/QC, staff technical development, technical leadership, proposal development, and business development initiatives • Serves as the engineering lead for multiple substation projects for clients including CenterPoint Energy, Ameren Missouri, National Grid, and Brownsville Public Utilities Board
<p>Baker Tee, P.E. Project Role: QA/QC Education/Certifications</p> <ul style="list-style-type: none"> • M.S. in Civil Engineering – Structural Discipline, University of Illinois – Chicago • B.S. in Civil Engineering – Structural Discipline, University of Illinois – Urbana Champaign • Professional Civil Engineer: AL, CA, CT, FL, GA, IL, MI, MT, NH, NY, OK, PA, TX • Professional Engineer – Structural 1 Designation: VT 	<ul style="list-style-type: none"> • Civil engineering manager for substation projects with over 17 years of experience • Leads a team of 21 civil engineers/nine civil designers and reviews calculations and drawings relevant to the structural aspects of substation design, such as equipment support structure design, foundation design, rigid bus design, transformer oil containment, and construction specifications • Has extensive experience in existing structure evaluation and retrofit design • Performs the role of Engineer of Record on projects that fall within his state licensure coverage for the projects he oversees • Responsibilities include confirming that designs meet the project/client design criteria; working with physical designers to coordinate with structural substation work; making sure structural tasks adhere to the project schedule; reviewing vendor calculations and structural drawings; performing field investigations of existing rigid bus, structures, and foundations; designing retrofits and upgrades to existing rigid bus, structures, and foundations; and writing technical specifications
<p>Bamdad Falahati, Ph.D., P.E. Project Role: QA/QC Education/Certifications</p> <ul style="list-style-type: none"> • Ph.D. in Electrical Engineering, Mississippi State University • M.S.; B.S. in Electrical Engineering, Sharif University of Technology • Professional Electrical Engineer: CA 	<ul style="list-style-type: none"> • Has 23 years of experience focused primarily on power system control and stability, distribution grid management and automation, power system protection, and software development for optimum design in different areas of power systems • Joined Leidos in September 2021 as a senior relay settings engineer • Holds a National Council of Examiners for Engineering and Surveying (NCEES) Record

Team Member/Role/ Education/Certifications	Description of Experience
<p>Dimitri Santiago, P.E. Project Role: QA/QC Education/Certifications</p> <ul style="list-style-type: none"> • B.S. in Electrical Engineering, Florida International University • Professional Electrical Engineer: CA, FL, NC 	<ul style="list-style-type: none"> • Engineering manager with nine years of experience in engineering, design, construction, and asset management of transmission and distribution substations • Experience includes analyzing substation assets, designing projects, leading multidiscipline engineering teams, and delivery on complex turnkey projects • Provides cost-effective design and engineering for high-voltage substations ranging from 13 kV to 500 kV • Prior to Leidos worked at Pacific Gas and Electric (PG&E) on substation, automation, and protection projects
<p>Elizabeth Hames, Ph.D., P.E. Project Role: QA/QC Education/Certifications</p> <ul style="list-style-type: none"> • Ph.D. in Electrical Engineering, Texas Tech University • M.S and B.S. in Electrical Engineering, Texas A&M University • Professional Electrical Engineer: AZ, CA, OK, NM, TX 	<ul style="list-style-type: none"> • Has 10 years of professional experience in electrical engineering • Focuses on distribution and transmission system analysis including short and long-term planning studies, renewable energy impact studies, protection and coordination studies, arc flash studies, and distribution line design • Clients include cooperatives, municipals, oil and gas, private facilities, and generation plants • Technical proficiency in Milsoft WindMil[®], ASPEN OneLiner[™], SKM Power*Tools[®], ETAP[®], Synergi Electric, Kinectrics ArcPro[™], Siemens PSS[®]E, PLS-CADD[™], WinIGS, CYME, Python[™], and ArcGIS[®]
Project Leads	
<p>Byron Dalla Valle Project Role: Substation Protection and Control Lead Education/Certifications</p> <ul style="list-style-type: none"> • B.S. in Nuclear Engineering, University of Tennessee Knoxville 	<ul style="list-style-type: none"> • Electrical engineer with over 14 years of experience leading and designing P&C projects • Involved in projects ranging from 12 kV to 500 kV substation designs • Project experience includes breaker replacements, transformer replacements, full yard rebuilds, greenfield projects, phasor measurement unit installations, transfer trip upgrades, protective relaying replacements with various communication-assisted protection schemes interfacing with ICON/JMUX, and control and metering equipment replacements • Experience also includes telecommunications equipment replacements including design and installation of switches and routers and supervisory control and data acquisition (SCADA) replacements
<p>Max Yeh Project Role: Substation Physical Lead Education/Certifications</p> <ul style="list-style-type: none"> • M.S. in Electrical Engineering, University of Houston • B.S. in Information Engineering and Computer Science, Feng Chia University 	<ul style="list-style-type: none"> • Has five years of experience in the design, management, and execution of utility and industrial substation engineering projects • Background includes both physical and P&C design for voltages 12 kV through 345 kV • Experience includes the design of station bus reconfiguration, transmission relaying upgrades, distribution station expansion and upgrades, SCADA remote terminal unit installation and upgrades, station security improvement, station communication system design, digital fault recorder upgrades, and breaker replacement
<p>Prateek Sangal, P.E. Project Role: Substation Site-Civil and Structural Lead Education/Certifications</p>	<ul style="list-style-type: none"> • Civil/structural engineer with six years of experience supporting substation projects ranging from 13 kV up to 365 kV, with a focus on precise calculations and standard-based design • Offers experience in the design and drawing review of steel structures and concrete foundations, both shallow and deep foundation types

Team Member/Role/ Education/Certifications	Description of Experience
<ul style="list-style-type: none"> • M.S. in Civil Engineering, University of Illinois, Urbana-Campaign • B.E. in Civil Engineering, Visveswaraya Technological University • Professional Civil Engineer: IA, LA, MN, MS, NE, NV, TX, UT • NCEES Record 	<ul style="list-style-type: none"> • Understands the unique design parameters for air-insulated substations responsible for multiple projects and tasks, such as preparing design calculations, preparing engineering drawings, reading geotechnical reports, and coordinating equipment between vendor and client • Technical proficiency in foundation design programs, such as Foundation Analysis and Design (FAD)-Tools and Ensoft's LPILE as well as with calculation programs, such as Mathcad® • Familiar with the American Concrete Institute 318-19 manual and the American Institute of Steel Construction 2016 manual
<p>Dinesh Kajjam, P.E. Project Role: Relay Settings Lead</p> <p>Education/Certifications</p> <ul style="list-style-type: none"> • M.S. in Electrical Engineering, University at Buffalo, The State University of New York • B.T. in Electrical and Electronics Engineering, SRM University, Chennai, India • Professional Electrical Engineer: MA • NCEES Record 	<ul style="list-style-type: none"> • Professional electrical engineer with more than eight years of experience in relay settings and design • Supports P&C and relay setting utility projects across the U.S. • Experienced in power system control and protection and has performed relay coordination and short-circuit studies using computer-aided protection engineering (CAPE), ASPEN OneLiner, CYME, SKM, and ETAP • Developed relay settings and logic for Schweitzer Engineering Laboratories (SEL) 311C, 421, 311L, 411L, 451, 651R, and 487E and General Electric (GE) D60, L90, and B30 relays for 12 kV to 500 kV distribution and transmission voltage levels • Designs and develops relay one-line, alternating current/direct current schematics, and wiring diagrams for substations
<p>Christian Pina Ramirez Project Role: SCADA Lead</p> <p>Education/Certifications:</p> <ul style="list-style-type: none"> • B.S. in Electrical Engineering, Universidad Michoacana de San Nicolas de Hidalgo 	<ul style="list-style-type: none"> • Electrical engineer with five years of experience • Joined Leidos in 2019 as an automation and integration engineer and previously performed testing of protective relays in SEL Research and Development (R&D) • Contributed significantly to achieve KEMA laboratories certification for SEL relays and development of the new SEL-400G relay • Focuses skills and expertise on integration and SCADA protocols including International Electrotechnical Commission (IEC)-61850, DNP3, Modbus, and synchrophasors • Fluent in English and Spanish
<p>Travis McKane Project Role: Distribution Lead</p> <p>Education/Certifications</p> <ul style="list-style-type: none"> • B.S. in Electrical Engineering, University of California Santa Cruz 	<ul style="list-style-type: none"> • More than seven years of experience in the power industry as a distribution engineer • Designs overhead and underground distribution systems with voltages ranging from 4.8 kV to 14.4 kV as well as coordinates joint design with high voltage distribution up to 46 kV • Experience in performing structural analyses on distribution poles and supporting structures, conductor clearance analyses, and executing project work to satisfy the National Electrical Safety Code® (NESC), General Order (GO)-95 and GO-128, and client standards • Expertise includes PoleForeman structural modeling, pole-loading and guying calculations, voltage drop calculations, pulling tension calculations, coordination between groups, and drawings/diagrams • Extensive field knowledge for storm restoration and design engineering

Key Project Team Contacts and Locality

Table D-2 includes the key project team members along with their Leidos title, office location, and phone.

Table D-2. Key Project Team Contacts

Name	Title	Office Location	Phone
Matthew Hartig, P.E.	Vice President of Substation West	Seattle, WA (Remote)	206.695.4607
Lucas Drayer, PMP	Senior Project Manager	Ocean Springs, MS (Remote)	571.521.3576
Kirk Powell, P.E.	Engineering Manager	Houston, TX	713.730.7835
Baker Tee, P.E.	Civil Engineering Manager	Chicago, IL	312.605.4366
Bamdad Falahati, Ph.D., P.E.	Principal Relay Settings Engineer	Irvine, CA (Remote)	571.521.8164
Dimitri Santiago, P.E.	Substation Engineering Manager	Orlando, FL	407.648.3525
Elizabeth Hames, Ph.D., P.E.	Senior Distribution Planning and Analysis Engineer	Lubbock, TX (Remote)	571.521.8780

Subcontractors

Leidos is not proposing to utilize subcontractors to execute the project at this time. However, Leidos remains open and willing to work with the City to meet expectations of using subcontractors and anticipate subcontracting to execute the manhole inspections should the City elect to exercise that scope of work.