AGREEMENT

THIS AGREEMENT, made and entered into this _____day of _____, 2012, by and between the City of Reno and City of Sparks, hereinafter referred to as the "CLIENT", and CDM Smith, Inc., hereinafter referred to as "ENGINEER":

WITNESSETH:

WHEREAS, CLIENT desires to engineering support services for the Electrical System Upgrades 2013 for the Truckee Meadows Water Reclamation Facility , hereinafter referred to as "Project";

WHEREAS, public convenience and necessity require the services of a consulting engineer to provide the services required;

WHEREAS, the CLIENT has found ENGINEER qualified and experienced in the performance of said services;

WHEREAS, the CLIENT is desirous of engaging the services of ENGINEER to perform said services; and

NOW, THEREFORE, said CLIENT and said ENGINEER, for the considerations hereinafter set forth, mutually agree as follows:

ARTICLE I - SERVICES

CLIENT agrees to retain and does hereby retain ENGINEER to perform the professional engineering services hereinafter more particularly described, with such services to commence on the date of the execution of this Agreement and to continue until the completion of the work provided for herein.

ENGINEER hereby agrees to perform the professional services as set forth herein and to furnish or procure the use of incidental services, equipment, and facilities necessary for the completion of said engineering services.

ENGINEER has the status of an independent contractor as defined in NRS 333.700 and shall not be entitled to any of the rights, privileges, benefits, and emoluments of either an officer or employee of CLIENT. ENGINEER shall undertake performance of services as independent contractor and shall be wholly responsible for the methods of performance and for their performance.

ARTICLE II - SCOPE OF SERVICES

The Scope of Services is set forth in Exhibit A as attached hereto and incorporated herein by this reference which consists of 19 pages setting forth tasks.

ARTICLE III - COMPENSATION

Payment for the engineering services hereinabove set forth shall be made by the CLIENT to the ENGINEER and shall be considered as full compensation for all personnel, materials, supplies, and equipment used in carrying out the work.

A. Compensation to the ENGINEER shall be on the basis of time and expense as set forth in Exhibit A attached hereto and incorporated herein by this reference.

B. Payments shall be made by the CLIENT based on itemized invoices from the ENGINEER which lists costs and expenses. The CONSULTANT shall invoice the City of Reno for the total amount, and will be paid that amount by the City of Reno. The City of Reno will invoice the City of Sparks for reimbursement of the City of Sparks share.

C. CLIENT shall pay ENGINEER within 30 days of receipt by CLIENT of ENGINEER's invoice. If CLIENT disputes only portions of an invoice, CLIENT agrees to pay for undisputed items on that invoice within the time provided herein. Payment by CLIENT of invoices or request for payment shall not constitute acceptance by CLIENT of work performed under the Agreement by the ENGINEER.

D. The budget for total charges for services authorized by this Agreement is $455,480.00 and shall not be exceeded without authorization of the CLIENT. City of Reno's share being the sum of $312,595.92 and the City of Spark's share being the sum of $142,884.07. The budget may be increased by amendment hereto if necessitated by a change in the scope of services which increases the cost of providing the services. ENGINEER is not authorized to provide any additional services beyond the scope of work without having authorized funding pursuant to a written amendment hereto signed by the authorized representative of the governing body.

ARTICLE IV - SCHEDULE OF WORK

ENGINEER will commence the services as described immediately following the Notice to Proceed provided to the ENGINEER by the CLIENT and will proceed with such services in a diligent manner. ENGINEER will not be responsible for delays caused by factors beyond ENGINEER's control and will not be responsible for delays caused by factors which could not reasonably have been foreseen at the time the Agreement was approved.

ARTICLE V - ASSIGNMENT OF AGREEMENT

The ENGINEER SHALL not assign this Contract or any portion of the work without prior written approval of the CLIENT which may be withheld for any reason whatsoever.

ARTICLE VI- OWNER'S RESPONSIBILITY

CLIENT shall provide any information in its possession that is requested by ENGINEER and is necessary to complete the Project. CLIENT shall assist ENGINEER in obtaining access to public

and private lands to allow the ENGINEER to perform the work under this Agreement. CLIENT shall examine all studies, reports, sketches, estimates, specifications, drawings, proposals, and other documents presented by the ENGINEER and shall render decisions pertaining thereto within a reasonable time so as not to delay the work of the ENGINEER.

ARTICLE VII - NONDISCLOSURE OF PROPRIETARY INFORMATION

ENGINEER shall consider all information provided by CLIENT to be proprietary unless such information is available from public sources. ENGINEER shall not publish or disclose proprietary information for any purpose other than the performance of the Services without the prior written authorization of CLIENT or in response to legal process or as required by the regulations of public entities.

ARTICLE VIII - NOTICE

Any notice, demand, or request required by or made pursuant to this Agreement shall be deemed properly made if personally delivered in writing or deposited in the United States mail, postage prepaid, to the address specified below:

To CLIENT:
City of Reno
John Flansberg, Director of Public Works
1 East First Street, 7th Floor
Reno, NV 89501

City of Sparks
Neil Krutz, Deputy City Manager
for Community Services
431 Prater Way
Sparks, NV 89431

To ENGINEER:
CDM Smith, Inc.
Paul F. Meyerhofer, PE, Senior Vice President
3860 GS Richards Blvd., Suite 100
Carson City, NV 89703

Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of ENGINEER and CLIENT.

ARTICLE IX - UNCONTROLLED FORCES

Neither CLIENT nor ENGINEER shall be considered to be in default of this Agreement, if delays in or failure of performance shall be due to uncontrollable forces the effect of which, by the exercise of reasonable diligence, the non-performing party could not avoid and is not reasonably foreseeable at the time of entering into this Agreement. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of it's obligations under this Agreement and which is beyond the control of the non-performing party. It includes, but is not limited to, fire, flood, earthquakes, storms, lightning, epidemic, war,

riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or personal for any of the supplies, material, accesses, or services required to be provided by either CLIENT or ENGINEER under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint. ENGINEER shall be paid for services performed prior to the delay.

Neither party shall, however, be excused from performance if nonperformance is due to uncontrollable forces, which are removable. The provisions of this Article shall not be interpreted or construed to require ENGINEER or CLIENT to prevent, settle, or otherwise avoid a strike, work slowdown, or other labor action. The non-performing party shall upon being prevented or delayed from performance by an uncontrollable force immediately give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligation of this Agreement.

ARTICLE X- GOVERNING LAW

This Agreement shall be governed by and construed pursuant to the laws of the State of Nevada. In the event suit is commenced hereunder and in accordance with the Dispute Resolution Procedures of Article XXII, the suit shall be brought in the appropriate court in Washoe County, State of Nevada. In the event of an arbitration or mediation pursuant to Article XXII, such arbitration or mediation shall be held in Reno, Nevada.

ARTICLE XI - SUCCESSORS AND ASSIGNS

CLIENT and ENGINEER each binds itself and their successors, and assigns to the other party to this Agreement and to the successors, and assigns of such other party, in respect to all covenants, agreements and obligations or this Agreement.

ARTICLE XII - ASSIGNMENT

Neither CLIENT nor ENGINEER shall assign, sublet, or transfer any rights under interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of the other, except to the extent that the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Nothing contained in this paragraph shall prevent ENGINEER from employing such independent consultants, associates, and subconsultants as she may deem appropriate to assist her in the performance of the Services hereunder.

ARTICLE XIII - INDEMNIFICATION

To the fullest extent permitted by law, ENGINEER shall defend, indemnify and hold harmless CLIENT and its officers, employees and agents (collectively "Indemnitees") from any liabilities, damages, losses, claims, actions or proceedings, including, without limitation, reasonable attorneys' fees, that are caused by the negligence, errors, omissions, recklessness or intentional

misconduct of the ENGINEER or employees or agents of the ENGINEER in the performance of this Agreement.

ENGINEER assumes no liability for the negligence or willful misconduct of any indemnitee or other consultants of indemnitee.

ENGINEER'S indemnification obligations for claims involving Professional Liability (claims involving acts, error, or omissions in the rendering of professional services and Economic Loss Only (claims involving economic loss which are not connected with bodily injury or physical damage to property) shall be limited to the proportionate extent of ENGINEER'S negligence or other breach of duty.

If CLIENT's personnel (engineers or other professionals) are involved in defending such legal action, ENGINEER shall also reimburse CLIENT for the time spent by such personnel at the rate charged for such services by private professionals. These provisions shall survive termination of this agreement and shall be binding upon ENGINEER, her legal representatives, heirs, successors and permitted assigns.

If ENGINEER'S insurer does not so defend the CLIENT and the ENGINEER is adjudicated to be liable, reasonable attorney's fees shall be paid to CLIENT in an amount proportionate to the liability of ENGINEER.

ARTICLE XIV - INTELLECTUAL PROPERTY INDEMNITY

To the fullest extent permitted by law, ENGINEER shall defend, protect, hold harmless, and indemnify CLIENT and the CLIENT'S related Parties from and against any and all liability, loss, claims, demands, suits, costs, fees and expenses (including actual fees and expenses of attorneys, expert witnesses, and other consultants), by whomsoever brought or alleged, for infringement of patent rights, copyrights, or other intellectual property rights, except with respect to designs, processes or products of a particular manufacturer expressly required by CLIENT in writing. If ENGINEER has reason to believe the use of a required design, process or product is an infringement of a patent, ENGINEER shall be responsible for such loss unless such information is promptly given to CLIENT. This Indemnity Covenant shall survive the termination of this Agreement.

ARTICLE XV – PAYMENT OF TAXES

Any and all Federal, State and local taxes, charges, fees, or contributions required by law to be paid with respect to ENGINEER'S performance of this Agreement (including, without limitation, unemployment insurance, social security, and income taxes).

ARTICLE XVI - INSURANCE

GENERAL REQUIREMENTS

The CLIENT requires that ENGINEER purchase Industrial Insurance, General Liability, and Engineer's Errors and Omissions Liability Insurance as described below against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the ENGINEER, its agents, representatives, employees or subconsultants. The cost of such insurance shall be borne by ENGINEER unless otherwise agreed.

INDUSTRIAL INSURANCE

It is understood and agreed that there shall be no Industrial Insurance coverage provided for ENGINEER or any Subconsultant by the CLIENT and in view of NRS 616.280 and 617.210 requiring that ENGINEER complies with the provisions of Chapters 616 and 617 of NRS, ENGINEER shall, before commencing work under the provision of this Agreement, furnish to the CLIENT a certificate of insurance from the Worker's Compensation Insurer certifying that the ENGINEER and each Subconsultant have compiled with the provisions of the Nevada Industrial Insurance Act, by providing coverage for each and every employee, subconsultants, and independent contractors.

Upon completion of the project, the contractor shall provide the CLIENT with a Final Certificate for itself and each Subconsultant which is prepared by the State of Nevada Industrial Insurance System. If the ENGINEER or Subconsultants are unlicensed and are a sole proprietor, coverage for the sole proprietor must be purchased and evidence of coverage must appear on the Certificate of Insurance and Final Certificate.

It is further understood and agreed by and between the CLIENT and ENGINEER that ENGINEER shall procure, pay for, and maintain the above mentioned industrial insurance coverage at the ENGINEER's sole cost and expense.

MINIMUM SCOPE OF LIABILITY INSURANCE

Coverage shall be at least as broad as: *
Insurance Services office Commercial General Liability Coverage Occurrence form CG0001 11/85 or Insurance Services Office Comprehensive General Liability form CG0002 Ed 01/73 with the Board Form Comprehensive General Liability Endorsement GL0404.
Insurance Services Office Business Auto Coverage form number CA00 01 12/90 covering Automobile Liability code 1 any auto with changes in Business Auto and Trucker's Coverage forms - Insured Contract Endorsement form number CA00 29 12/88.

*Coverages may be excluded only with prior approval of the CLIENTS' Risk Managers.

Professional Errors and Omissions Liability applying to all activities performed under this Agreement in a form acceptable to CLIENT. ENGINEER will maintain professional liability insurance during the term of this Agreement and for a period of six (6) years from the date of substantial completion of the project. In the event the ENGINEER goes out of business during the term of this Agreement or the six (6) year period described above, ENGINEER shall purchase Extended Reporting coverage for claims arising out of ENGINEER's negligent acts, errors and omissions committed during the term of the Professional Liability Policy.

MINIMUM LIMITS OF INSURANCE

ENGINEER shall maintain limits no less than:

1. General Liability: $2 million combined single limit per occurrence for bodily injury, personal injury and property damage and $2 million annual aggregate.

2. ENGINEER's Errors and Omissions Liability: $2 million per claim and $2 million as an annual aggregate during the term of this Agreement and for six years after the completion of the project, with each subsequent renewal having a retroactive date which predates the date of this Agreement. The ENGINEER may purchase project insurance or obtain a rider on her normal policy in an amount sufficient to bring ENGINEER's coverage up to minimum requirements, said additional coverage to be obtained at no cost to the CLIENT. Should the CLIENTS' Risk Managers require project insurance, project insurance shall be purchased and premium costs shall be borne by the CLIENT. CLIENT retains option to purchase project insurance through the ENGINEER's insurer or through its own source.

DEDUCTIBLES

Any deductibles must be declared to and approved by the CLIENT Risk Management Divisions. The CLIENT reserves the right to request additional documentation, financial or otherwise prior to giving its approval of the deductibles. Any changes to the deductible made during the term of this Agreement or during the term of any policy, must be approved by the CLIENTS' Risk Managers.

OTHER INSURANCE PROVISIONS

General Liability Coverages

The CLIENT, its officers, officials, employees and volunteers are to be covered as insured as respects: liability arising out of activities performed by or on behalf of the ENGINEER including the insured's general supervision of the ENGINEER; products and completed operations of the ENGINEER; or premises owned, occupied or used by the ENGINEER. The coverage shall contain no special limitations on the scope of protection afforded to the CLIENT, its officers, officials, employees or volunteers.

The ENGINEER's insurance coverage shall be primary insurance as respects the CLIENT, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the

CLIENT, its officers, officials, employees or volunteers shall be excess of the ENGINEER's insurance and shall not contribute with it in any way.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the CLIENT, its officers, officials, employees or volunteers.

The ENGINEER's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

The ENGINEER's insurance coverage shall be endorsed to state that coverage shall not be suspended, voided, canceled or non-renewed by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the CLIENT.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with an A.M. Best and Company rating level of A - Class VII or better, or otherwise approved by the CLIENT in its sole discretion. CLIENT reserves the right to require that ENGINEER'S insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted lists.

VERIFICATION OF COVERAGE

ENGINEER shall furnish the CLIENT with certificates of insurance, including but not limited to the Certificate of Compliance in NRS 616B.627 and with original endorsements affecting coverage required by this article. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf and must be countersigned by a duly appointed and licensed resident agent in this state. The certificates are to be on forms approved by the CLIENT. All certificate and endorsements are to be received and approved by the CLIENT before work commences. The CLIENT reserves the right to require complete, certified copies of all required insurance policies, at any time.

SUBCONSULTANTS

ENGINEERS shall require all subconsultants to be insured on their own or under its policies and shall furnish separate certificates and endorsement for each subconsultant. Coverages for subconsultants shall be subjected to all of the requirements stated herein.

Miscellaneous Conditions

If the ENGINEER or any Subconsultant fails to maintain any of the insurance coverages required, the CLIENT may terminate this Agreement for cause.

ENGINEER shall be responsible for and remedy all damage or loss to any property, including property of CLIENT, caused in whole or in part by the ENGINEER, any subconsultant, or any

employee, directed or supervised by ENGINEER, except damage of loss attributable to faulty drawings or specifications.

Nothing herein contained shall be construed as limiting in any way to the extent to which the ENGINEER may be held responsible for payment for damages to persons or property resulting from her operations or the operations of any subconsultant under her.

If ENGINEER's failure to maintain the required insurance coverage results in a breach of this Agreement, CLIENT may purchase the required coverage, and without further notice to ENGINEER, deduct from sums due to ENGINEER any premium cost advanced by CLIENT for such insurance.

ARTICLE XVII - LITIGATION

This Agreement does not require the ENGINEER to prepare for or appear in litigation on behalf of The CLIENT, or as agent of the CLIENT, other than specified herein, except in consideration of additional reasonable compensation.

ARTICLE XVIII - TERMINATION OF WORK

Either party to this Agreement may terminate the Agreement for cause upon giving the other party thirty (30) days prior written notice. Cause may include, failure to perform through no fault of the party initiating the termination. In addition, CLIENT may terminate the Agreement for any one of the following causes: performance by ENGINEER which CLIENT deems unsatisfactory in CLIENT's sole judgment; and CLIENT's lack of funds to complete the work. Cause for ENGINEER may include, failure of CLIENT to make timely payment to ENGINEER without good cause, following a demand for payment.

In addition, CLIENT may terminate any or all of the work covered by this Agreement by notifying ENGINEER in writing. In the event such termination occurs at the conclusion of services pursuant to an executed task order, then ENGINEER shall be entitled to receive compensation for all work satisfactorily completed and performed through the conclusion of that task order. No other changes or costs incurred for services or materials other than pursuant to an executed task order shall be reimbursed by CLIENT pursuant to this Agreement. In the event such termination occurs during the performance of services pursuant to an authorized task order, then ENGINEER and CLIENT shall need to determine what, if any additional services should be performed by ENGINEER in order to close out the work in progress and provide any such unfinished materials to CLIENT. ENGINEER and CLIENT shall agree upon the additional amount of work to be performed following the termination notice and the amount payable by CLIENT for such work. In the event that the parties cannot otherwise agree on the amount to be paid pursuant to this provision, then the matter may be referred to the Dispute Resolution Procedure in ARTICLE XXII .

In the event the Agreement is terminated by CLIENT for cause, including performance deemed unsatisfactory by CLIENT, or ENGINEER failure to perform, or other cause created by

ENGINEER, CLIENT may withhold and offset against any payments otherwise due and/or seek recovery from ENGINEER for amounts already paid, including without limitation: amounts paid for unsatisfactory work or work not done in accordance with this Agreement; value of CLIENT's time spent in correcting the work or problem; any increase in cost resulting from the problem or work; and any other costs which result from such termination.

ENGINEER expressly agrees that this Agreement shall be terminated immediately if for any reason local, federal and/or State Legislature funding ability to satisfy this Agreement is withdrawn, limited, or impaired.

ARTICLE XIX - PROFESSIONAL SERVICES

ENGINEER shall be responsible for the professional quality and technical accuracy of all services furnished by ENGINEER and their subconsultants under this Agreement. Without limiting the effect of any other provision of this Agreement and in addition to any other provision contained herein, ENGINEER shall, without additional compensation, correct or revise any errors or omissions in their services.

ENGINEER and their subconsultants retained pursuant to this Agreement are considered by CLIENT to be skilled in their profession to a degree necessary to perform the services and duties contained in this Agreement, and CLIENT hereby relies upon those skills and the knowledge of ENGINEER and their subconsultants. ENGINEER and their subconsultants shall perform such professional services and duties as contained in this Agreement in conformance to and consistent with the standards generally recognized as being employed by professionals of their caliber in the State of Nevada. ENGINEER makes no warranty, either expressed or implied, as to their findings, recommendations, specifications or professional advice other than as provided herein.

Neither CLIENTS' review, approval, or acceptance of nor payment for any of the professional services or work required under this Agreement shall be construed to operate as a waiver of any of CLIENTS' rights under of this Agreement. The rights and remedies of CLIENT provided for under this Agreement are in addition to any other rights and remedies provided by law.

Project information including but not limited to reports, written correspondence, and verbal reports will be prepared for the use of the CLIENT. The observations, findings, conclusions and recommendation made represent the opinions of the ENGINEER. Reports, records, and information prepared by others will be used in the preparation of the report. The ENGINEER has relied on the same to be accurate and does not make any assurances, representations, or warranties pertaining to the records or work of others, except for its subconsultants, nor does the ENGINEER make any certifications or assurances except as explicitly provided in writing. No responsibility is assumed by the ENGINEER for use of reports for purposes of facility design by others.

ARTICLE XX - RIGHTS OF ENGINEERS AND EMPLOYEES

No personnel employed by ENGINEER shall acquire any rights or status in the CLIENT services and ENGINEER shall be responsible in full for payment of its employees, including insurance, deductions, and all the like.

ARTICLE XXI - SERVICES BY CLIENT

It is understood and agreed that the CLIENT shall, to the extent reasonable and practicable, assist and cooperate with the ENGINEER in the performance of ENGINEER's services hereunder. Such assistance and cooperation shall include, but not necessarily be limited to, environmental approval, right of access to work sites; providing material available from the CLIENT's files such as maps, As-Built drawings, records, and operation and maintenance information; serving all notices, holding all hearings, and fulfilling legal requirements in connection therewith; and rendering assistance in determining the location of existing facilities and improvements which may be affected by the project.

ARTICLE XXII - DISPUTE RESOLUTION PROCEDURE

1. If disputes arise under this Agreement, the parties agree to attempt to resolve such disputes through direct negotiations or if such negotiations are not successful, by non-binding mediation conducted in accordance with the rules and procedures to be agreed upon by the parties.

2. The prevailing party in an action to enforce the Agreement shall be entitled to recover its reasonable attorney's fees and costs. It is specifically agreed that a reasonable attorney's fee shall be $125 per hour.

ARTICLE XXIII - NO UNFAIR EMPLOYMENT PRACTICES

1. In connection with the performance of work under this Agreement, Engineer agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation or age. Such Agreement shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

2. ENGINEER further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

3. Any violation of these provisions by ENGINEER shall constitute a material breach of contract.

4. As used in this Article, sexual orientation means having or being perceived as having an orientation for heterosexuality, homosexuality or bi-sexuality.

ARTICLE XXIV - AMERICANS WITH DISABILITIES ACT

1. ENGINEER and its subconsultants shall comply with the terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations.

ARTICLE XXV - GENERAL PROVISIONS

1. Integration. This Agreement, including the Exhibits and the Recitals, all of which are true and correct and are incorporated by reference as a part of this Agreement, constitutes the complete and integrated Agreement between the parties with respect to the matters recited herein, and supersedes any prior or contemporaneous written or oral agreements or understandings with respect thereto.

2. Severability. The legality of any provision or portion of this Agreement shall not affect the validity of the remainder.

3. Amendment. This Agreement shall not be modified, amended, rescinded, canceled, or waived, in whole or in part, except by written amendment signed by duly authorized representatives of the parties.

4. No Third Party Benefit. This Agreement is a contract between CLIENT and ENGINEER and nothing herein is intended to create any third party benefit.

5. Governing Law and Jurisdiction. This Agreement shall be administered and interpreted under the laws of the State of Nevada. Any action at law, suit in equity or judicial proceeding for the enforcement of this Agreement or any provision thereof shall be instituted only in the district courts of the State of Nevada, County of Washoe.

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ARTICLE XXVI - DUE AUTHORIZATION

Each party represents that all required authorizations have been obtained to execute this grant and for the compliance with each and every term hereof. Each person signing this Agreement warrants and represents to the other party that he or she has actual authority to execute this Agreement on behalf of the party for whom he or she is signing. A facsimile signature on this Agreement shall be treated for all purposes as an original signature.

Duplicate originals. This Agreement is executed in one duplicate original for each party hereto, and is binding on a party only when all parties have signed and received a duplicate original.

IN WITNESS WHEREOF, CLIENT has caused this Agreement to be executed by the City of Reno and the City of Sparks and ENGINEER have caused this Agreement to be executed, all as of the day and year first above written.

CITY OF RENO

By: _____
Robert A. Cashell, Sr., Mayor

ATTEST:

By: _____
Lynnette Jones, City Clerk

CITY OF SPARKS

By: _____
Geno Martini, Mayor

ATTEST:

By: _____
Sparks City Clerk

APPROVED AS TO FORM

By: _____
Susan Ball Rothe
Deputy City Attorney

APPROVED AS TO FORM

By: _____
Chet Adams
City Attorney

ENGINEER

By: _____
Paul F. Meyerhofer, P.E., Senior Vice President

Exhibit A

Electrical System Upgrades 2013
Scope of Services

The following scope of services provides preliminary design detailed design, bid services, and construction services for the Truckee Meadows Water Reclamation Facility (TMWRF) Electrical Power Distribution Equipment Replacement project.

In order to accomplish these goals, the CONSULTANT will perform the following tasks:

1.0 Project Management and Quality Control

1.1 Project Management

The objective of this task is to manage the project to produce a quality set of design documents, on time, and within budget. Major activities include project administration, meetings and workshops, and quality assurance/quality control.

1.1.1 Project Administration:

1. Prepare a Project Management Plan (PMP). The PMP will provide team members information on the project-specific procedures to be employed on the project. The PMP will be an internal CONSULTANT working document but will be made available to TMWRF.
2. Oversee and coordinate the activities of CONSULTANT project team members assigned to this project.
3. Communicate regularly with TMWRF's project manager.
4. CONSULTANT will prepare a Gantt chart at the subtask level that will be used to show the Schedule.
5. CONSULTANT will submit monthly invoices to TMWRF's project manager.
6. CONSULTANT will provide an electronic document room (e-room) for document management and sharing throughout the duration of the project.

1.1.2 Project Meetings:

Regular team meetings and specific project meetings will maintain effective communication between CONSULTANT and the Cities of Reno and Sparks staff. The following meetings will be conducted during the project:

1. Organize and conduct a series of project team meetings. Project team meetings will occur regularly during the core period of the design. Budget for discipline lead team members is allocated under their specific tasks. CONSULTANT staff will be joining via teleconference.
2. Attend a kick-off meeting. Meeting will be held at TMWRF and include design team and all appropriate TMWRF staff to discuss the overall goals of the project and learn key issues that need to be addressed in the pre-design phase.

3. Conduct a workshop to clarify and document the selection of the electrical systems upgrades to be included in the project.
4. Pre-design Memoranda/30 Percent Design Document Review Meeting. Meeting to review pre-design memoranda and 30 percent design documents.
5. 60 Percent Design Document Review Meeting. Meeting to review 60 percent design documents.
6. 90 Percent Design Document Review Meeting. Meeting to review the 90 percent design documents.
7. Final Design Document Review Meeting. Meeting to review the Final Design documents.
8. Installation Contract Pre-Bid Meeting. Meeting for pre-bid presentation and discussion to interested bidders for the installation contract.

1.2 Quality Assurance (QA)/Quality Control (QC):

1. CONSULTANT will conduct reviews of major design criteria and calculations on an ongoing basis. Design calculations performed by the various disciplines will be reviewed.

2. CONSULTANT will provide reviews of the 30 percent, 60 percent, 90 percent, and Final Design documents. Drawings and specifications will be reviewed.

Assumptions: The following assumptions were made in preparing the budget for the above described task items.

- Prior to all specific project meetings, an agenda will be prepared and provided to the TMWRF project manager.
- Subsequent to all meetings minutes of the meetings will be prepared and sent to the TMWRF project manager.
- TMWRF staff will review and make comments prior to review meetings for specific project milestones.
- TMWRF staff will consolidate comments into a single document to be provided to the CONSULTANT at the review meetings for specific project milestones.

Work Products:

1. One copy of the original and one copy of all significant updates of the Project Management Plan.
2. Initial project schedule and updates.
3. Monthly invoices.
4. Agenda for each of the above described meetings.
5. Minutes from each of the above describe meetings.

2.0 Pre-Design Services

CONSULTANT understands that the Cities of Reno and Sparks want to continue improving the reliability and safety of the existing electrical system. This effort started in 2010 with the Electrical Systems Improvement 2011 Project which addressed critical upgrades and improvements to the existing plant electrical system. The scope items are required in order to address the critical priorities identified during the October 2011 CIP Risk Assessment and Prioritization workshop. This effort will require the definition of the electrical design criteria, develop the necessary design standards, and define the proper equipment specified for the upgrades.

CONSULTANT participated in the CIP FY 2012 Risk Analysis and discussed the potential improvements to the existing electrical system. This included the following:

- Review and design of the improvements for the protection relaying scheme of the Plant's Power Building Transformers A & B. The Square-D Arc Flash Study has identified the transformers protection settings as "dangerous" due to the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant.

- Provide data collection and field work to support the design development for the project. TMWRF maintenance staff time is limited; CDM Smith will provide engineering support to collect data, field measurements and documentation necessary to produce the drawings and specifications for the 30, 60, and 90% design submittals. This includes three plant site visits and working in the existing plant drawing archives located in the maintenance building of the facility.Design of the Nitrification transformers A and B replacements. In the latest SD Myers transformer testing report, the oil test indicated steady degradation of the transformer insulation.

- Design of the of the Nitrification Building LVDC 5 switchboard replacement. The Square-D Arc Flash Study has identified the Low Voltage Distribution Center protection settings as "dangerous" due to the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant. The switchboard is 25 years old and is approaching the end of its service life.

- Design of the Filter Building transformers A and B replacements. In the latest SD Myers transformer testing report, the oil test indicated steady degradation of the transformer insulation.

- Design of the Filters Building LVDC 4 switchboard replacement. The Square-D Arc Flash Study has identified the Low Voltage Distribution Center protection settings as "dangerous" due to the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant. The switchboard is 25 years old and is approaching the end of its service life.

- Design of the Filters Building LVDC 4A switchboard replacement. The Square-D Arc Flash Study has identified the Low Voltage Distribution Center protection settings as "dangerous" due to the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant. The switchboard is 25years old and is approaching the end of its service life.

- Design of the Utility C feeder LVDC 6 switchboard replacement. The Square-D Arc Flash Study has identified the Low Voltage Distribution Center protection settings as "dangerous" due to the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant. The switchboard is over 25 years old and is approaching the end of its service life.

- Design of the remaining priority Arc Flash Study items. The Square-D Arc Flash Study has identified the MCC 29 and MCC 3 as with the potential to harm the plant staff and the resulting downtime that an arc flash failure can cause the plant. The switchboard is over 25 years old and is approaching the end of its service life.

- Prioritize, coordinate, and assist with the relay and breaker setting modifications included in the Square-D Arc Flash Hazard Analysis Table classified equipment under Dangerous, Category 4, Category 3, and Category 2.

- CONSULTANT will prepare the Arc Flash Equipment Labels (total of 24) for the equipment included in the scope described above.

After determining the preferred sequencing plan and configuration of the new electrical improvements, CONSULTANT will prepare a single line diagram for the project showing connections to the existing system. CONSULTANT will evaluate the necessary modifications and identify issues associated with long delivery and extended outage requirements. In addition, CONSULTANT will evaluate up to three equipment replacement options and determine the most economically feasible option to reduce the outage duration and O&M costs for the plant. CONSULTANT will provide technical memoranda to be included in the pre-design report with the recommended options and the equipment selected.

CONSULTANT will review the existing electrical single line drawings and control diagrams and prepare revised single line drawings including the necessary preliminary demolition and modification drawings.

2.1 Project Workshops

During the project workshop, the TMWRF/CONSULTANT team will prioritize a list of project objectives, create a list of the potential electrical upgrades, and evaluate the list using the identified objectives to validate and confirm the electrical system upgrade solutions. This workshop will provide a documented decision path to arrive at the most appropriate electrical system upgrades for TMWRF. The documentation and buy-in that results from this process will establish a firm foundation for confidently moving ahead with the design.

In preparation for the workshop CONSULTANT will review cost and replacement information on your current electrical system and prepare list of alternatives. CONSULTANT will facilitate the comparison of alternatives in terms of ability to meet prioritized objectives. By evaluating the cost, risk, and the practical aspects of the outage time requirements, CONSULTANT working with the Cities will present the best economic alternatives for replacement.

The workshop will focus on the strategy for implementing the electrical plant improvements. By combining the plant's maintenance staff knowledge and CONSULTANT experience with replacements and retrofits the team will develop the replacement plan to be used during the design phase. This way the efforts will be focused on equipment replacement that will maximize the plant's electrical system reliability and minimize any unnecessary outages to the plant operation. This is critical to consider and confirm prior to commencing on the final design.

2.2 Predesign Memoranda

Predesign Memoranda and a 30 percent document set will be completed which will describe the approach recommended by the design team for development of the facility electrical improvements and equipment replacement. Predesign Memoranda are described in Subtask 2.2.1, 2.2.2 and content of the 30 percent Design Documents is described in Subtask 2.2.3.

The following predesign memorandum will be prepared by the CONSULTANT. The memorandum will address the items identified by TMWRF as key to the electrical improvements to the facility. The

memorandum will serve as the basis of design and will provide direction to determine appropriate equipment selected for and priorities for replacement.

2.2.1 Electrical Power Equipment Replacement Memorandum
Switchboard, Motor Control Center, and transformer replacement considerations will cover equipment manufacturers, layout, and construction sequencing. Interconnection requirements to the existing system will be described. The existing electrical system will be evaluated to determine if it is suitable for reuse. Any problems that are discovered during preliminary review of the electrical system will be addressed. Significant impacts that could affect the plant operability and any equipment installation constraints such as size, access, and clearance from two selected manufacturers will be identified. Recommendations for design directions will be made to resolve any deficiencies identified.

2.2.2 Construction Cost and Sequencing Memorandum.
A construction cost and schedule will be developed based on the anticipated design direction determined through the pre-design memoranda and 30 percent design documents.

2.2.3 30 Percent Design Documents
The 30 percent design documents will cover the following areas to allow TMWRF to approve a design approach for the project. The 30 percent design documents will include the following items:

- Preliminary equipment layout drawings
- Preliminary single line demolition diagrams
- Preliminary single line diagrams
- Preliminary layout drawings
- Equipment list

Layout drawings will include major equipment and will be generic in nature until final equipment selection for the switchboard, motor control center, and transformers are completed.

- Electrical Rooms.
- Electrical field equipment replacements such as switchboards, motor control centers, and transformers.

Assumptions: The following assumptions were made in developing the scope and budget for this task.

- The Predesign Report will consist of a pre-design memoranda developed as a brief, independent document that is associated with the 30 percent design documents to provide additional background and descriptions to support the information provided in the drawings.
- Switchboard, motor control center, and transformer considerations will be limited to the main providers that the CONSULTANT has successful experience with.
- This scope assumes that modifications to the existing building will be limited. Any unforeseen modifications will be considered outside the scope of this document. No new buildings will be required.
- The 30 percent design documents will include the above mentioned drawings and a list of specifications. Drawings will be provided both in half size hard copy format in the quantities described below and in AutoCAD 2008 format. AutoCAD drawings will conform to CDM Smith CAD standards.

Work Products:

1. One original and five copies of the 30 percent Design Documents to TMWRF for review and comment.
2. Copy of the Electronic Files located in the current CDM Smith/TMWRF E-Room.
3. One original and five copies of the Pre-Design Report.
4. Preliminary Construction Cost Estimate.

3.0 Consultant provided Maintenance and Coordination Services

At TMWRF request, CONSULTANT is providing efforts required to assist the OWNER's maintenance staff in coordination of information gathering and field services. This will be used to properly schedule the time and availability for the assigned staff to work with the OWNER's project team. CONSULTANT level of effort estimate is the following:

- Kick off facility tour and CONSULTANT staff familiarization with new work areas - 16 hours
- Workshop - 16 hours
- Field Investigation - 40 hours
- Weekly conference calls - 40 hours
- Technical reviews/ assessment / pre-purchase equipment specs - 40 hours
- Visit schedules/logistics/vendor meetings - 40 hours
- Total estimated effort for support staff- 192 hours

4.0 Design Services

Once the key decisions are made in the pre-design phase and the equipment replacement priority is determined, detailed design will begin. The drawings and specifications will be suitable for obtaining competitive construction contractor bids. Design submittal packages, including revised engineer opinion of probable cost estimates, will be submitted for review at the 60 percent, 90 percent, and final stages. Final approved design drawings will be submitted on full sized sheets and generated in AutoCAD. Each design submittal package is to include an updated cost estimate and updated construction schedule.

4.1 Electrical Equipment Selection

CONSULTANT will design the electrical system improvements listed above and determine the design criteria and specifications required to meet the design requirements. CONSULTANT will meet and work with several electrical equipment vendors to identify the proper equipment replacement. CONSULTANT will work with the plant electrical staff to identify the necessary equipments and modifications to the existing electrical system.

CONSULTANT will provide the following:

- CONSULTANT will prepare preliminary specifications to obtain budgetary quotes and preliminary drawings to prepare the design documents.

- CONSULTANT will review the vendors documentation and quotes to make sure the required equipment will fit in the existing space and the budgetary cost will be within the TMWRF allocated Capital Investment Plan.
- CONSULTANT will modify the specifications and make the necessary changes to the equipment design to meet the intent of the equipment replacement cost.
- CONSULTANT will use the information obtained in this task in the preparation on Task 5.0 – Engineer's Opinion of Probable Cost.

4.2 Electrical and Structural Design

CONSULTANT understands that the TMWRF wants to continue improving the reliability and safety of the existing electrical system. The scope items are required in order to address the critical priorities identified during the October 2011 CIP Risk Assessment and Prioritization workshop. CONSULTANT will work with the plant electrical staff to identify the necessary modifications to the existing electrical system.

CONSULTANT will provide the following:

- CONSULTANT will prepare a single line diagram for the project showing connections to the existing feeders, motors, and transformers/low voltage power panels.
- CONSULTANT will prepare the demolition plans to indicate the modifications required for the equipment replacement. This will include the equipment prioritized during the workshop phase of the project.
- CONSULTANT will modify the existing drawings that will be affected by the new equipment replacements and provide record documents to indicate the modifications required in the scope of services.
- "Maintenance of Plant Operations Plan" (MOPO). It is envisioned that the work under this scope must be coordinated with the Plant Operating Personnel and accomplished in a logical order to maintain the process flow through the plant and to allow construction to be completed within the time allowed by the project schedule. Working together with the maintenance staff, CONSULTANT will develop a plan to address the construction phase and to coordinate the activities with the other contractors, if any, to allow orderly and timely completion of all the work and minimize the disruption of plant operations.

The design effort will include the following:

- CONSULTANT will complete the detailed electrical design including a drawing list, electric single line diagrams, electric power distribution drawings and schematics, motor list and schematics, motor control schematics, power and control drawings, lighting panel schedules, junction box layout drawings, control schematics that are not shown on the motor control schematics, relay panel wiring diagrams, conduit schedule, and conduit layout, and power panel changes.
- CONSULTANT will provide any needed demolition drawings for electrical equipment being removed due to the project work.

Assumptions

- The City will provide electrical field assistance to trace and determine the best suitable power sources for the design.

- The City will provide updated record drawings of the existing facility including electrical system. CONSULTANT work will depend on these drawings as being accurate and comprehensive.

4.3 Power System Study

IEEE Standard 141-1993 – Electric Power Distribution for Industrial Plants recommends that a short circuit analysis and protective device coordination be performed at least every five to ten years if no major system changes have occurred in a facility that dictate a new study. IEEE further recommends that a power system study should always be performed if changes are made to the primary system, additional service are provided from alternate sources, the addition of larger loads or the installation of generator(s) on the primary electrical distribution system. It is understood that the plant just performed an Arc Flash Study for the entire facility. CONSULTANT will use as much of the information used in the Arc Flash Study to prevent the duplication of efforts. All additional modifications to the system not included in the Square-D Arc Flash Study will be provided by CONSULTANT.

A power flow study will be modified to determine the power system power and reactive flow, bus voltages, and transformer taps for varies operating modes.

The short circuit analysis performed in the Electrical Systems Improvements 2011 project will be modified to determine the magnitudes of the currents flowing in the modified power system at various times after the occurrence of a short circuit fault. The study will include three-phase and single phase to ground faults at different locations throughout the system. The information will be used to verify if the existing electrical protective devices have sufficient short circuit capabilities to interrupt a short circuit and provide guidance in the determination of the proper sizes of circuit breakers, fuses, and switchgear.

The ultimate goal of this study will be to achieve an appropriate balance between equipment protection and fault isolation.

4.3.1 Power Flow Study

A power flow analysis of the plant's electrical system will be performed to determine the steady state voltage and power flow characteristics. These characteristics shall be used to form a picture of the system performance for a particular operating state. Several single-line configurations coupled with various operating conditions will be used to determine an accurate understanding of the system. Calculations are to be done with a personal computer using a SKM Power Tools. The areas that will be covered in the study are:

- Steady state voltages.
- System reactive power flows.
- Utility intertie flows and power factor
- System performance under emergency or startup conditions.
- Transformer taps optimization.

- Capacitor placement and sizing optimization.

As part of the study CONSULTANT will provide the following:

- Single-line diagram showing system studied and computer bus numbers, if used.
- Report presentation showing MW and MVAR flows and bus voltages.
- Commentary for each case shall be based on these one-lines.
- Tables, as necessary, to highlight different conditions such as overloaded lines, voltage problems, etc.
- A discussion will be provided of the procedure used and the assumptions made.
- Impedance data and a sample solved solution computer output will be included the report.

The analysis will focus on the following cases:

- Normal conditions (select and coordinate case with TMWRF)
- Emergency conditions (select and coordinate case with TMWRF)
- Alternate conditions (select and coordinate case with TMWRF)

The system to be studied includes the existing system as shown in the City of Sparks Wastewater Treatment Facility single line diagram. The calculations for equipment verification shall conform to ANSI Standards C37.010-1999, C37.13-1981, NEMA-AB1 and UL-489.

4.3.2 Short Circuit Study

The specific requirements for the short circuit study are:

- Single-line diagram showing system studied and computer bus numbers, if used.
- Maximum three first-cycle asymmetrical and symmetrical interrupting short circuit currents for each 4.16 kV bus in the system.
- Maximum line-to-ground short-circuit current on the solidly-grounded portion of the system.
- Fault point X/R ratios at each bus (tabulated or in computer printout).
- Symmetrical current contributions for each branch connected to the fault.
- Detailed equipment duty tables for breakers, fuses, and switches shall be provided for first-cycle and interrupting currents. Tables shall include equipment ratings and calculated duties. Any overdutied equipment shall be identified and recommendations provided.
- A discussion shall be provided of the procedure used and the assumptions made.
- Impedance data and a sample short circuit computer output shall be in the reports.
- The Coordination and Device Settings Study will be provided from 480V buses up to the 24.9 kV Sierra Pacific Power Electric Utility service. The existing protective device setting at the wastewater facility will be considered changeable. The recommended settings will quickly isolate the fault and minimize system damage and downtime.

4.3.3 Protective Device Coordination (new work only)

The Protective Device Coordination Study scope requirements are:

- Settings for overcurrent relays, voltage relays, current relays, and generator relays. The system protection is comprised of low voltage breakers with undervoltage and overcurrent protection

and cut-out pole mounted fuses for the pad mounted transformers. Overload settings will follow NEC and ANSI requirements.

- Detailed analysis and discussion of the equipment settings and characteristics with respect to their coordination and protective capability will be provided for transformers, and generator protection. Equipment determined to be inadequate will be highlighted, and recommendations will be provided.
- Phase and ground time current and instantaneous overcurrent relays should be shown on time-current coordination curves
- Time current curves will be drawn for limiting conditions. For each bus a time-current curve will include the largest downstream protective device, the feeder, and incoming breakers.
- Any time-current curves furnished will be neatly drawn or computer generated.
- For transformer feeders, the time-current will show inrush currents, continuous ratings, and transformer damage curves as described in ANSI C57.109-1984.
- Cable protection will consider overload and short circuit damage points as outlined in the NEC, ANSI, and applicable technical manuals.
- Protective device settings will be tabulated and cross-referenced to the appropriate time-current curve.
- Calculation sheets will be provided for relays that cannot be shown in the time current curves.
- If additional relays are recommended, where appropriate, provide either the model number with the suggested settings or settings in primary amperes and time.
- The protective device settings will be for the present system. In this protection study or other studies associated with this scope, if recommended system or relay changes would affect the protective device settings, these areas are to be identified.
- The following specific information will be shown on the time current curves.
- One-line diagram of the system under study
- Protective device identification and settings
- Current ratio for the curves
- Transformer damage curves and NEC reference loading benchmarks
- Transformer inrush points
- Motor starting and protection curves
- Melting, and clearing curves for fuses
- Protective device time current curves
- Protective device settings
- Arc Flash Study to determine proper safety warning labels, clothing, equipment, and boundaries to meet code requirements, including a summary of arc flash values for each bus.

- The short circuit analysis and Protective Device Coordination will include three standard cases:
  - Normal Conditions (Sierra Pacific Electric Utility Feed)
  - Both Engine Generators Operating
  - Single Engine Generator Operating.

CONSULTANT will perform data collection for the study. Data collection shall consist of a review of available as-built drawings and documentation, single-line diagrams, and field inspection. The TMWRF will provide an electrician to help locate the equipment for data collection. Historic data will

be provided by the TMWRF and will include as-built drawings and documentation, data collected from previous studies (if any), field metering, outage reports, relay test, and setting sheets.

The data provided to CONSULTANT by the TMWRF will include:

- A complete and accurate one-line diagrams of the facility.
- Manufacturer and model of interrupting equipments.
- Listing of high-voltage relay settings, types, model numbers, CT ratios, and VT ratios.
- Listing of low and medium voltage breaker settings, type of breaker, type of trip, current rating.
- Maximum demands for substation loads.
- Cable sizes, lengths, number, and conductor material.
- Busway current rating, lengths, conductor material, and manufacturer.

The study will include a system one-line diagram of the power system modeled. The Short Circuit and Protective Device Coordination report shall identify potential problem areas and recommendations to correct them. Five copies of a bound report will be included. The final report shall include the following:

- Introduction
- Summary of results
- Recommendation
- Data and any assumptions used
- Discussion of studies and results
- Single-line diagrams
- Tables
- Time Current Coordination Curves
- The recommended protective device or settings will be in tabular forms in the report. Protective settings will be grouped by area.
- A meeting will be held to review the scope of the study, define data requirements, and establish a familiarity with the City's special requirements and engineering personnel. It is recommended that the City of Sparks designate a responsible individual to be the principal contact on all technical matters involved in the study. CONSULTANT and City of Sparks contact person will work together during this initial meeting to define case conditions for the study. Interim engineering meeting(s) will be scheduled at major milestones to review initial findings and to reaffirm the study direction or cases to be examined.
- A total of two virtual meetings are included in this task. The final meeting will be scheduled to present the study report and to discuss in detail the findings and recommendations of the study. This meeting will be scheduled after delivery of the report to give the City's staff time to review the contents of the study.

4.4 Instrumentation & Control (I&C)

CONSULTANT's instrumentation staff will work with the City's project team to determine the requirements for power metering equipment that would be tied to the plant's DCS system. A preliminary instrument list will then be prepared and used throughout the design.

After determining the I/O requirements for the project, CONSULTANT will make a recommendation on the need to install analog and/or discrete marshalling panels. This would allow individual conduit runs from switchgear or switchboard to the remote terminal panels and take advantage of the existing connection to the Foxboro DCS.

The design effort will include the following:

- CONSULTANT will specify, and review all metering and controls required for the DCS I/O hardware and related hardware.
- CONSULTANT will provide layout drawings showing locations of all terminal boxes and instruments and the associated local device interfaces, panel drawings, wiring diagrams for power, communication, and grounding necessary to install all new I/O hardware interface. CONSULTANT will provide any needed demolition drawings for instrumentation being removed due to the project work.

Assumptions

- CONSULTANT has not included the preparation of instrument data sheets or loop sheets in its scope of work.
- The existing DCS control system equipment has sufficient capacity to allow the addition of power metering equipment, second engine generator and auxiliary electrical, and process equipment controls.
- The City will provide electrical/instrumentation field assistance to trace and determine the best suitable power and controls sources for the design.
- The City will provide updated and accurate record drawings of the existing electrical power distribution system and the existing DCS system.

4.5 Final Design Documents

The scope of work for the detailed design is based on producing a set of contract documents for installation of the replacement electrical power equipment. Detailed design will be based on results from Section 2.0, Pre-Design Services.

4.5.1 60 Percent Design Submittal

CONSULTANT internal review comments and TMWRF comments on the 30 percent submittal will be incorporated into the 60 percent submittal. The 60 percent design submittal will include demolition single line diagrams, new work single line diagrams equipment layout plans, and 60 percent level of completion for other documents. Written comments received from TMWRF will be addressed and incorporated into the 90 percent submittal.

4.5.2 90 Percent Design Submittal

CONSULTANT internal review comments and TMWRF comments on the 60 percent submittal will be incorporated into the 90 percent submittal. Written comments received from TMWRF will be addressed and incorporated into the final submittal.

4.5.3 Final Design Submittal

CONSULTANT internal review comments and TMWRF comments on the 90 percent submittal will be incorporated into the final submittal. The Final Design submittal will be submitted to the City ready for bidding and permitting.

Assumptions:

- Assumptions made under Section 2.0 regarding design criteria will carry through the design phase.
- The number of construction drawings for the project is estimated as follows by discipline:
  - General - 2
  - Electrical - 55
  - Structural - 4

The preliminary list of the final estimates drawings for the project is included below:

No.	Drawing Name
G-1	COVER SHEET
G-2	INDEX SHEET
E-1	ELECTRICAL LEGENDS AND ABBREVIATIONS I
E-2	ELECTRICAL LEGENDS AND ABBREVIATIONS II
E-3	ELECTRICAL OVERALL SITE PLAN
E-4	EXISTING DISTRIBUTION SINGLE LINE DIAGRAM
E-5	NEW DISTRIBUTION SINGLE LINE DIAGRAM
E-6	MAIN SERVICE SINGLE LINE DIAGRAM
E-7	MAIN 2400V SWITCHGEAR (MVSWGR-1) RELAY SINGLE LINE DIAGRAM
E-8	EXISTING LVDC 5 SINGLE LINE DIAGRAM
E-9	NEW LVDC 5 SINGLE LINE DIAGRAM
E-10	EXISTING LVDC 4 SINGLE LINE DIAGRAM
E-11	NEW LVDC 4 SINGLE LINE DIAGRAM
E-12	EXISTING LVDC 4A SINGLE LINE DIAGRAM
E-12	NEW LVDC 4A SINGLE LINE DIAGRAM
E-14	EXISTING LVDC 6 SINGLE LINE DIAGRAM
E-15	NEW LVDC 6 SINGLE LINE DIAGRAM
E-16	EXISTING MCC 13 SINGLE LINE DIAGRAM
E-17	NEW MCC 13 SINGLE LINE DIAGRAM
E-18	EXISTING MCC 14 SINGLE LINE DIAGRAM
E-19	NEW MCC 14 SINGLE LINE DIAGRAM
E-20	EXISTING MCC 14 SINGLE LINE DIAGRAM
E-21	NEW MCC 14 SINGLE LINE DIAGRAM
E-22	EXISTING MCC 29 SINGLE LINE DIAGRAM
E-23	NEW MCC 29 SINGLE LINE DIAGRAM
E-24	EXISTING MCC 3 SINGLE LINE DIAGRAM
E-25	NEW MCC 3 SINGLE LINE DIAGRAM
E-26	DEMOLITION POWER PLAN I (POWER BUILDING TRANSFOMRERS A & B)
E-27	DEMOLITION POWER PLAN II (LVDC 5)

E-28	DEMOLITION POWER PLAN III (NITRIFICATION BUILDING TRANSFOMRERS A & B)
E-29	DEMOLITION POWER PLAN IV (LVDC 4)
E-30	DEMOLITION POWER PLAN V (FILTER BUILDING TRANSFOMRERS A & B)
E-31	DEMOLITION POWER PLAN VI (LVDC 6)
E-32	DEMOLITION POWER PLAN VII (MCC 13 & 14)
E-33	DEMOLITION POWER PLAN VIII (MCC 29)
E-34	DEMOLITION POWER PLAN VIIII (MCC 3)
E-35	NEW POWER PLAN I (POWER BUILDING TRANSFORMERS A & B)
E-36	NEW POWER PLAN II (LVDC 5)
E-37	NEW POWER PLAN III (NITRIFICATION TRANSFORMERS A & B)
E-38	NEW POWER PLAN IV (LVDC 4)
E-39	NEW POWER PLAN V (FILTER BUILDING TRANSFORMERS A & B)
E-40	NEW POWER PLAN VI (LVDC 6)
E-41	NEW POWER PLAN VII (MCC 13 & 14)
E-42	NEW POWER PLAN VIII (MCC 29)
E-43	NEW POWER PLAN VIIII (MCC 3)
E-44	ELECTRICAL SCHEMATICS I (MCC 3 - 16 SCHEMATICS)
E-45	ELELCTRICAL SCHEMATICS II (MCC 3)
E-46	ELECTRICAL SCHEMATICS III (MCC 3)
E-47	ELECTRICAL SCHEMATICS IV (MCC 14 - 10 SCHEMATICS)
E-48	ELECTRICAL SCHEMATICS V (MCC 14/13)
E-49	ELECTRICAL SCHEMATICS V1 (MCC 13 - 9 SCHEMATICS)
E-50	ELECTRICAL SCHEMATICS VII (MCC 29 - 8 SCHEMATICS)
E-51	ELECTRICAL SCHEMATICS VIII (MCC 29)
E-52	ELECTRICAL DETAILS I
E-53	ELECTRICAL DETAILS II
E-54	ELECTRICAL DETAILS III
E-55	ELECTRICAL DETAILS IV
S-1	STRUCTURAL GENERAL NOTES
S-2	STRUCTURAL PLANS AND SECTIONS I
S-3	STRUCTURAL PLANS AND SECTION II
S-3	STRUCTURAL DETAILS I
S-4	STRUCTURAL DETAILS II

- Contract Documents will be developed based on a single Base Bid format.
- As built drawings will be provided to the CONSULTANT. CONSULTANT may rely on these documents as accurate and comprehensive.
- Design budget does not include application engineering for facility DCS and HMI configuration and programming.
- 60 Percent Design Submittal: TMWRF will provide one consolidated set of TMWRF comments on the 60 percent submittal.

- 90 Percent Design Submittal: TMWRF will provide one consolidated set of TMWRF comments on the 90 percent submittal. It is anticipated that no changes, other than corrections or clarifications, will be incorporated into the Final Submittal documents.

- Final Submittal: The final submittal will be stamped and sealed, biddable document originals. Full-size drawings will be plotted on velum and specifications will be camera ready. Half-size drawings will also be plotted in a form and of a quality suitable for photocopy reproduction at half-size.

Work Products:

1. 60 Percent Design Submittal: One original, ten copies of half-size drawings and specifications. Updated construction cost estimate, project schedule, and list of specific elements requiring special TMWRF staff attention during review.
2. 90 Percent Design Submittal: One original and ten copies of half-size drawings and specifications. Updated construction cost estimate, project schedule, list of specific elements requiring special TMWRF staff attention during review, and all design calculations.
3. Bid-ready 100 Percent Submittal: One original, ten full size and five half-size copies of drawings and specifications. Updated construction cost estimate; one CD-ROM containing PDF scanned copy of the drawings and specifications and a single DVD-ROM copy of the final project drawings and specifications in ACAD format.

5.0 Engineer's Opinion of Probable Cost

CONSULTANT will prepare an intermediate cost estimate at 60 percent complete and a final cost estimate at the 100% bid document level.

6.0 Bidding and Procurement Services

6.1 Bidding Assistance for Installation Contract

CONSULTANT will provide technical input and review of construction bids during the invitation for bids.

CONSULTANT will assist TMWRF in responding to technical questions during the bidding phase. Technical addenda will be prepared as required. The budget assumes that there will be one pre-bid meeting.

Assumptions:

- TMWRF will print and distribute the bid documents to the potential bidders, maintain the bidders list, copy and distribute addenda, and assist with the bid opening.
- A maximum of two addenda will be written by CONSULTANT during the bidding period.
- A permit set will be prepared for the City of Spark's Building Department.

Work Products

1. Record of bid phase questions and responses.
2. Technical Addenda.

7.0 Services During Construction

During construction, CONSULTANT will provide (15) RFI responses, (12) submittal reviews, (6) change order reviews, (10) site visits, (8) construction meetings, and preparation of reference drawings.

7.1 Shop Drawing and Submittal Review

CONSULTANT will review shop drawings and other technical submittals provided by the Contractor or equipment suppliers, respectively, to TMWRF.

TMWRF will transmit shop drawings and other technical submittals to CONSULTANT. TMWRF Construction Manager will use his submittal tracking and numbering system. CONSULTANT will maintain a separate submittal spreadsheet log for its use in tracking and documenting submittal reviews, which will list both TMWRF's and Contractor's respective submittal number.

Assumptions:

- CONSULTANT will write a summary memorandum of comments rather than annotate all copies of the submittal.
- Budget assumes a total of 15 submittal responses, including all disciplines and any re-submittals.

7.2 Interpret Plans and Specifications

During the construction period, the Contractor will ask questions on details of the contract, substitutions, and alternative approaches that are best answered by the designer. The purpose of this subtask is to provide written clarifications for TMWRF review and use.

CONSULTANT will interpret the contract documents, review conditions claimed by the contractor to be unforeseen, and review alternative approaches presented in Requests for Information (RFIs) as requested from TMWRF.

Assumptions:

- TMRWF's general approach to construction management is to document most changes to the construction documents with RFIs.
- Budget assumes a total of 12 RFI responses, including all disciplines and any RFIs which require multiple responses.

7.3 Change Order Assistance

CONSULTANT will prepare change order descriptions, sketches, etc. as requested by TMWRF. Prepare construction cost estimates for proposed change orders as requested by TMRWF.

Assumptions:

- Construction change orders will support the project scope of work as bid.
- Change order documentation will not be developed in AutoCAD format unless hand drawn sketches of markups of the drawings will not adequately describe the nature of the change to the contractor.

- Budget assumes up to 2 change orders will be prepared.

7.4 Specialty Inspection Services

CONSULTANT will provide specialty electrical inspection services as requested by TMWRF up to the limit of the budget assumed below. The inspection consists of factory witness testing and field witness testing for conformance of the switchgear, switchboard, and transformers to the design documents.

Assumptions:

- The electrical engineer will make eight one-day site visits during the construction phase.

7.5 Construction Meetings

A representative from CONSULTANT will attend weekly construction meetings, starting with the preconstruction meeting. The budget has assumed a total of 10 meetings will occur during this time.

7.6 Record Drawings

CONSULTANT will prepare record drawings of the final facility layout. It is assumed that the Contractor has made accurate markups of the Contract Document drawings during the course of the work. No additional hours have been included for field verification of Contractor modifications, adaptation of RFIs, and other such as change orders documents by cross-reference into the record drawings.

Work Products

1. RFI documents.
2. Submittal review comments.
3. Change order review comments.
4. Record drawings in electronic (AutoCAD) 2008 format.

8.0 Project Commissioning Services

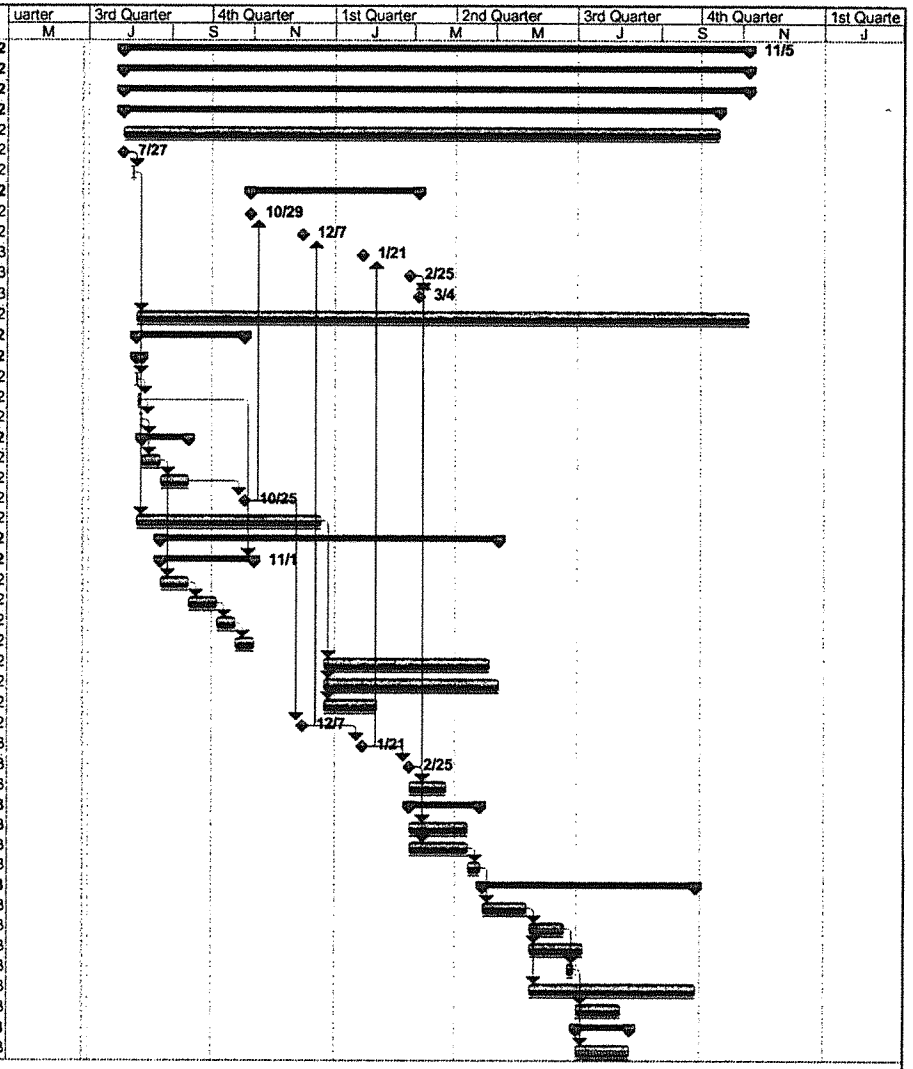
8.1 Startup Assistance/Training and O&M Manual

CONSULTANT will provide startup support to assist Owner in understanding the design and operational intent of the new facilities. CONSULTANT will support TMWRF staff in preparation of an O&M Manual upon completion of the construction phase, but prior to the conclusion of start up.

Work Products

1. Comments on contractor's startup plan
2. Training handouts.
3. Materials for inclusion in the existing plant O&M Manual (paper version).

ID	Task Name	Duration	Start
1	**Project Schedule**	**333 days**	**Fri 7/27/12**
2	**Electrical Upgrades**	**333 days**	**Fri 7/27/12**
3	**1 Project Management and QA/QC**	**333 days**	**Fri 7/27/12**
4	**1.1 Project Management**	**317 days**	**Fri 7/27/12**
5	Project Administration	317 days	Fri 7/27/12
6	Notice to proceed	0 days	Fri 7/27/12
7	Kickoff Meeting	1 day	Fri 8/3/12
8	**1.1.2 Project Meetings**	**90 days**	**Mon 10/29/12**
9	30% Design Review Meeting	0 days	Mon 10/29/12
10	60% Design Review Meeting	0 days	Fri 12/7/12
11	90% Design Review Meeting	0 days	Mon 1/21/13
12	Final Design Review Meeting	0 days	Mon 2/25/13
13	Installation Pre-bid Meeting	0 days	Mon 3/4/13
14	1.2 Quality Assurance / Quality Control	327 days	Mon 8/6/12
15	**2 Pre-design Services**	**59 days**	**Mon 8/6/12**
16	**2.1 Project Workshops**	**4 days**	**Mon 8/6/12**
17	Prioritize Objectives	1 day	Mon 8/6/12
18	Screen Alternatives & Selection	2 days	Tue 8/7/12
19	Key Pre-design Decisions Made	1 day	Thu 8/9/12
20	**2.2 Pre-design Technical Memorandums**	**25 days**	**Fri 8/10/12**
21	Electrical Power Equipment replacement Memorandum	10 days	Fri 8/10/12
22	Construction Sequencing Memorandum	15 days	Fri 8/24/12
23	2.2.3 30% Design Documents	30 days	Fri 9/14/12
24	3 Owner Provided Services	100 days	Mon 8/6/12
25	**4 Design Services**	**181 days**	**Fri 8/24/12**
26	**4.1 Electrical Equipment Selection**	**50 days**	**Fri 8/24/12**
27	Equipment specifications	15 days	Fri 8/24/12
28	Send specs and drawings to vendor for quotes	15 days	Fri 9/14/12
29	Vendor Quotes, Responses, and Review	10 days	Fri 10/5/12
30	Equipment selection	10 days	Fri 10/19/12
31	4.2 Electrical	90 days	Mon 12/24/12
32	4.3 Power System Study	95 days	Mon 12/24/12
33	4.4 Instrumentation & Control (I&C)	30 days	Mon 12/24/12
34	4.5.1 60% Design Documents	1 day	Fri 12/7/12
35	4.5.2 90% Design Documents	1 day	Mon 1/21/13
36	4.5.3 Final Design Submittal	1 day	Mon 2/25/13
37	5 Engineer's Estimate of Probable Cost	20 days	Tue 2/26/13
38	**6 Bid Assistance**	**39 days**	**Tue 2/26/13**
39	6.1 Bid Contract Support	32 days	Tue 2/26/13
40	6.2 For Installation Contract	32 days	Tue 2/26/13
41	6.3 City of Sparks Permit Set	7 days	Thu 4/11/13
42	**7 Services During Construction**	**115 days**	**Mon 4/22/13**
43	7.1 Shop Drawing and Submittal Review	25 days	Mon 4/22/13
44	7.2 Interpret Plans and Specifications	20 days	Mon 5/27/13
45	7.3 Change Order Assistance	30 days	Mon 5/27/13
46	7.4 Specialty Inspection Services	5 days	Mon 6/24/13
47	7.5 Construction Meetings	90 days	Mon 5/27/13
48	7.6 Record Drawings	25 days	Mon 7/1/13
49	**8 Project Commissioning Services**	**30 days**	**Mon 7/1/13**
50	8.1 Startup Assistance / Training & O&M Manual	30 days	Mon 7/1/13



Project: TMWRF - Electrical Systems U
Date: Tue 6/26/12

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Project: **Estimate of Expenditures - TMWRF Electrical System Upgrades Project 2013**
Parts: B
Agreement No:
Consultant: **CDM Smith**

Prepared by: REA
Date: 6/26/2012
Version: verFINAL

TASKS	Officer	Rate	Vice President	Rate	Principal/ Associate	Rate	Senior Professional	Rate	Professional	Rate	Engineer/CAD	Rate	Admin.	Rate	Contract Administrator	Rate	Total
Part A - Electrical System Upgrades	Meyerhofer	$ 250	Aviles	$ 230	Blomberg Young	$ 200	Fransen	$ 165	Garrs Ferreira	$ 150	Yarborough	$ 110		$ 100		$ 130	
1.0 Project management and Quality Control																	
1.1 Project management			80				80						30		40		
1.2 Quality Assurance (QA) / Quality Control (QC)	12		40				16				20		8				
Subtotal	12	$ 3,000	120	$ 27,600	0	$ -	12	$ 1,980	0	$ -	20	$ 2,200	38	$ 3,800	40	$ 5,200	$ 43,780
2.0 Pre-design services																	
2.1 Project Workshops	4		16		10		24						4				
2.2 Pre-design Memoranda			8		16		40		40		12		8				
Subtotal	4	$ 1,000	24	$ 5,520	26	$ 5,200	64	$ 10,560	40	$ 6,000	12	$ 1,320	12	$ 1,200	0	$ -	$ 30,800
3.0 Owner provided Maintenance and Coordination Services																	
3.1 Owner provided Maintenance and Coordination Services (supported by CDM)			8				60		120				8				
Subtotal	0	$ -	8	$ 1,840	0	$ -	60	$ 9,900	120	$ 18,000	0	$ -	8	$ 800	0	$ -	$ 30,540
4.0 Design Services																	
4.1 Electrical Equipment Selection			16		40		80		40		24		8				
4.2 Electrical and Structural Design			20		40		120		90		80		8				
4.3 Power System Study			4		32		80		150		8		8				
4.4 Instrumentation & Control (I&C)					8		24		80		40		2				
4.5 Final Design Documents			16		40		80		80		110		16				
Subtotal	0	$ -	56	$ 12,880	160	$ 32,000	384	$ 63,360	440	$ 66,000	262	$ 28,820	42	$ 4,200	0	$ -	$ 207,260
5.0 Engineer's Opinion of Probable Cost																	
5.1 Electrical, Structural and Instrumentation			4		4		16		60								
Subtotal	0	$ -	4	$ 920	4	$ 800	16	$ 2,640	60	$ 9,000	0	$ -	0	$ -	0	$ -	$ 13,360
6.0 Bid Assistance																	
6.1 Bidding Assistance for Installation Contract			56		24		96				4		28				
6.2 Permit set for City of Sparks Building Services			3		2				8		24		8				
Subtotal	0	$ -	59	$ 13,570	26	$ 5,200	96	$ 15,840	0	$ -	28	$ 3,080	36	$ 3,600	0	$ -	$ 41,290
7.0 Services during Construction																	
7.1 Shop Drawing and Submittal Review			8		2		8		36								
7.2 Interpret Plans and Specifications					4		8		16								
7.3 Change Order Assistance			8		8		4				8		4				
7.4 Specialty Inspection Services			24		16		8				48		8				
7.5 Construction Meetings			16				8						4				
7.6 Record Drawings			4		8						40		4				
Subtotal	0	$ -	60	$ 13,800	38	$ 7,600	36	$ 5,940	52	$ 7,800	96	$ 10,560	20	$ 2,000	0	$ -	$ 47,700
8.0 Project Commissioning Services																	
8.1 Startup Assistance / Training and O&M Manual			16		16		56		40		4		2				
Subtotal	0	$ -	16	$ 3,680	16	$ 3,200	42	$ 6,930	40	$ 6,000	4	$ 440	2	$ 200	0	$ -	$ 20,450
Reimbursable Expenses																	
Materials																	$ -
Travel																	$ 1,500
Reproduction																	$ 15,000
																	$ 3,800
Subtotal		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	$ 20,300
Total	**16**	**$ 4,000**	**347**	**$ 79,810**	**270**	**$ 54,000**	**710**	**$ 117,150**	**752**	**$ 112,800**	**422**	**$ 46,420**	**158**	**$ 15,800**	**40**	**$ 5,200**	$ 455,480