

AGREEMENT FOR CONSULTANT SERVICES

THIS AGREEMENT is made and entered into this ____ day of _____, 2024, by and between the CITY OF RENO and the CITY OF SPARKS, hereinafter referred to as “CITY” and Carollo Engineers, Inc., hereinafter referred to as “CONSULTANT.”

WITNESSETH

WHEREAS, the CITY wishes to secure engineering design services for the Filtration Process Granular Media Filter Improvements at the Truckee Meadows Water Reclamation Facility (TMWRF), hereinafter referred to as “PROJECT.”

NOW THEREFORE, the CITY and CONSULTANT agree as follows:

1. Objectives.

1.1 The CONSULTANT shall serve as the CITY’s consultant of record and shall give advice to the CITY during performance of services to which this Agreement applies. All services shall be performed by the Consultant.

2. Basic Services.

2.1 The CONSULTANT will perform the services described in Exhibit A which is incorporated herein by this reference as part of this agreement.

2.2 The CONSULTANT will not change its Project Manager without written approval from the CITY.

3. CITY Responsibility.

3.1 The CITY shall designate a Project Manager to act as the CITY’s representative with respect to the work performed under this Agreement.

3.2 The CITY shall give prompt written notice to the CONSULTANT whenever the CITY observes or otherwise becomes aware of a problem with the project.

3.3 The CITY will furnish CONSULTANT available reports, studies and data pertinent to CONSULTANT’s services and CONSULTANT is entitled to use this information in performing the services under this Agreement.

4. Authorization, Progress and Completion.

4.1 By execution of this Agreement, the CITY grants to the CONSULTANT specific authorization to proceed, upon written notice, with the services described in Article 2.1 of this Agreement and shall continue until completed per Exhibits A and C which are incorporated herein by this reference as part of this agreement.

5. Compensation.

5.1 Compensation for services performed as described in Article 2.1 shall be payable on a time and expense basis in the not-to-exceed amount of \$1,049,517.00 as reflected in Exhibit D which is attached hereto and incorporated herein by this reference. The City of Reno's share is the sum of \$720,283.52 and the City of Sparks's share is the sum of \$329,233.48.

5.2 Invoices for services rendered shall be submitted monthly. Payment by the CITY will be made within thirty (30) calendar days of receipt.

6. Special Services.

6.1 No additional services shall be performed and no additional compensation shall be permitted without a CITY approved written "Supplemental Agreement". **The supplemental agreement must be executed prior to the commencement or performance of any additional work.**

7. Records to be Maintained by Consultant.

7.1 The CONSULTANT shall maintain records supporting requests for payment. Such records shall be available for inspection and audit by the CITY, and the CONSULTANT shall provide duplicate copies of all such records upon request by the CITY.

7.2 The information, conclusions and data generated during this Agreement by the CONSULTANT is for the exclusive use of the CITY. The CONSULTANT may not use this information, conclusions or data for any purpose other than to further the requirements of this Agreement. The CONSULTANT may not produce papers for professional journals or presentations for conferences without written permission and active participation by the CITY Project Manager.

8. Ownership of Documents.

8.1 Originals of all records, reports and other documents of service prepared by the CONSULTANT shall be property of the CITY. All said documents of service shall be made available to the CITY during the course of and for use in the performance of this Agreement.

9. Skill Level of Consultant.

9.1 Service performed by CONSULTANT will be conducted in a manner consistent with that level of care and skill ordinarily expected by members of the profession currently practicing in this area under similar conditions. CONSULTANT shall be responsible for the professional quality and technical accuracy of all services furnished by CONSULTANT.

10. Insurance.

10.1 General Requirements. The CITY requires that CONSULTANT purchase Industrial Insurance, General Liability, and CONSULTANT'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 CONSULTANT, its agents, representatives, employees or subconsultants. The cost of such insurance shall be borne by CONSULTANT unless otherwise agreed.

10.2 Industrial Insurance. (Worker's Compensation & Employer's Liability). It is understood and agreed that there shall be no Industrial Insurance coverage provided for CONSULTANT or any Subconsultant by the CITY and in view of NRS 616B.627 and 617.210 requiring that CONSULTANT comply with the provisions of Chapters 616A to 616D, inclusive and 617 of NRS, CONSULTANT shall, before commencing work under the provision of this Agreement, furnish to the CITY a certificate of insurance from the Worker's Compensation Insurer certifying that the CONSULTANT and each Subconsultant have complied with the provisions of the Nevada Industrial Insurance Act, by providing coverage for each and every employee, subconsultants, and independent contractors. Should the CONSULTANT be self-insured for Industrial Insurance, the CONSULTANT shall so notify the CITY and approve written approval of such self-insurance prior to the signing of a Contract. The CITY reserves the right to accept or reject a self-insured CONSULTANT and to approve the amount(s) of any self-insured retentions. The CONSULTANT agrees that the CITY is entitled to obtain additional documentation, financial or otherwise, for review prior to entering into a Contract with the CONSULTANT.

10.3 Minimum Scope of Insurance. The following requirements apply.
Coverage shall be at least as broad as:

(a) **Commercial General Liability** at least as broad as Insurance Services Office Commercial General Liability Coverage "occurrence" form CG OO 01 04 13 or an equivalent form. The Comprehensive General Liability Coverage shall include, but is not limited to, liability coverage arising from premises, operations, independent contractors, products and completed operations, personal and advertising, injury, blanket contractual liability and broad form property damage.

(b) **Automobile Coverage** at least as broad as Insurance Services Office Business Auto Coverage form CA OO 01 10 13 or an equivalent form covering Automobile Liability Symbol 1 "Any Auto". In lieu of a separate Business Auto Liability Policy, the City may agree to accept Auto Liability covered in the General Liability Policy, if non owned and hired auto liability are included. The CONSULTANT shall maintain limits of no less than \$1,000,000 or the amount customarily carried by the contractor, whichever is greater, combined single limit per accident for bodily injury and property damage. No aggregate limit may apply.

(c) The Additional Insured Endorsements for General Liability shall be at least as broad as the unmodified ISO CG 20 10 04 13 and ISO CG 20 37 04 13 endorsements, or equivalent. The certificate shall confirm Excess Liability is following form.

(d) Professional Errors and Omissions Liability applying to all activities performed under this Agreement in a form acceptable to CITY. CONSULTANT 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 unless waived by the CITY. In the event the CONSULTANT goes out of business during the term of this Agreement or the six (6) year period described above, CONSULTANT shall purchase Extended Reporting coverage for claims arising out of CONSULTANT's negligence acts, errors and omissions committed during the term of the Professional Liability Policy.

10.4 Minimum Limits of Insurance. CONSULTANT shall maintain limits no less than:

General Liability: \$2million minimum combined single limit per occurrence for bodily injury, personal injury and property damage, and \$4 million annual aggregate.

CONSULTANT's Errors and Omissions Liability: \$2 million per claim and \$4 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 that predates the date of this Agreement. The CONSULTANT may purchase project insurance or obtain a rider on her normal policy in an amount sufficient to bring CONSULTANT's coverage up to minimum requirements, said additional coverage to be obtained at no cost to the CITY.

10.5 Deductibles. Any deductibles or self-insured retentions must be declared to and approved by the CITY Risk Manager. The CITY reserves the right to request additional documentation, financial or otherwise prior to giving its approval of the deductibles or self-insured retention. Any changes to the deductible or self-insured retention made during the term of this Agreement or during the term of any policy, must be approved by the CITY Risk Manager.

10.6 Other Insurance Provisions. General Liability Coverages

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

(b) The CONSULTANT's insurance coverage shall be primary insurance as respects the CITY, its officers, officials, and employees. Any insurance or self-insurance maintained by the CITY, its officers, officials, and employees shall be excess of the CONSULTANT's insurance and shall not contribute with it in any way.

(c) Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the CITY, its officers, officials, and employees.

(d) The CONSULTANT'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.

(e) The CONSULTANT'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 at least thirty (30) days prior written notice for reasons other than non-payment of premium and at least ten (10) days for non-payment of premium, by mail, has been given to the CITY.

10.7 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 CITY in its sole discretion. CITY reserves the right to require that CONSULTANT'S insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted lists.

10.8 Verification of Coverage. CONSULTANT shall furnish the CITY 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 agent in this state. All approved deductibles and self-insured retentions shall be shown on the certificate. The certificates are to be on forms approved by the CITY. All certificate and endorsements are to be received and approved by the CITY before work commences. The CITY reserves the right to obtain copies of all required insurance policies.

10.9 Subconsultants. CONSULTANTS 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 subject to all of the requirements stated herein unless modified by the Risk Manager or City Attorney.

10.10 Miscellaneous Conditions.

(a) If the CONSULTANT or any Subconsultant fails to maintain any of the insurance coverages required, the CITY may terminate this Agreement for cause.

(b) CONSULTANT shall be responsible for and remedy all damage or loss to any property, including property of CITY, caused in whole or in part by the CONSULTANT, any subconsultant, or any employee, directed or supervised by CONSULTANT, except damage of loss attributable to faulty drawings or specifications.

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

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

11. Indemnification.

11.1 To the fullest extent permitted by law, the CONSULTANT shall defend, indemnify and hold harmless the CITY and its officers, employees and agents (collectively "Indemnitee") 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 CONSULTANT or the employees or agents of the CONSULTANT in the performance of this Agreement.

11.2 The CONSULTANT assumes no liability for the negligence or willful misconduct of any indemnitee or other consultants of indemnitee.

11.3 The CONSULTANT'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 CONSULTANT's negligence or other breach of duty.

12. Intellectual Property Indemnity.

12.1 To the fullest extent permitted by law, CONSULTANT shall defend, protect, hold harmless, and indemnify CITY and the CITY 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 CITY in writing. If CONSULTANT has reason to believe the use of a required design, process or product is an infringement of a patent, CONSULTANT shall be responsible for such loss unless such information is promptly given to CITY. This Indemnity Covenant shall survive the termination of this Agreement.

13. Taxes.

13.1 CONSULTANT shall pay any and all Federal, State and local taxes, charges, fees, or contributions required by law to be paid with respect to CONSULTANT's performance of this Agreement (including, without limitation, unemployment insurance, social security, and income taxes).

14. Independent Contractor.

14.1 The parties agree that CONSULTANT is an independent contractor and this Agreement is entered into in conformance with the provisions of NRS 333.700. The parties agree that CONSULTANT is not a CITY employee and there shall be no:

- (a) Withholding of income taxes by the CITY;
- (b) Industrial insurance provided by the CITY;
- (c) Participation in group insurance plans which may be available to employees of the CITY;
- (d) Participation or contributions by either the independent contractor or CITY to any public employees' retirement system;
- (e) Accumulation of vacation leave or sick leave;
- (f) Unemployment compensation coverage provided by CITY if the requirements of NRS 612.085 for independent contractors are met.

15. Business License.

15.1 CONSULTANT shall maintain in full force and effect throughout the term of this Agreement a current business license from the City of Reno.

16. Compliance with Legal Obligations.

16.1 CONSULTANT is subject to NRS 338.010 – 338.090 (prevailing wage) for all covered work. CONSULTANT shall procure and maintain for the duration of this Agreement any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance law, or regulation to be held by CONSULTANT to provide the services required by this Agreement. CONSULTANT is solely responsible to pay assessments, premiums, permits and licenses required by law. Further, CONSULTANT agrees to comply with all applicable federal and state laws including, but not limited to, the Americans with Disabilities Act of 1990 and related standards, guidelines, and regulations (collectively “ADA”) in providing the services identified in this Agreement. It is the responsibility of CONSULTANT to address in the performance of the services any and all access or other issues to assure compliance with the ADA.

17. Employment Opportunity.

17.1 CONSULTANT shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, religion, sex, gender identity, gender expression, veteran status, sexual orientation or age, or any other protected class status applicable under federal, state or local law, rule, or regulation. Sexual orientation means having or being perceived as having an orientation for heterosexuality, homosexuality or bi-sexuality. Race includes traits

associated with race, including, without limitation, hair texture and protective hairstyles. Any violation of this provision by consultant shall constitute a material breach of contract.

18. Notices.

Any notices provided for herein shall be given in writing by certified mail, return receipt requested, or by personal service to:

CITY: City of Reno
Trina Magoon, P.E.
Director of Utility Services
1 East First Street
Reno, NV 89501
P.O. Box 1900
Reno, NV 89505

City of Sparks
John Martini, P.E.
Assistant City Manager
431 Prater Way
Sparks, NV 89431
PO Box 857
Sparks, NV 89432

CONSULTANT: Carollo Engineers, Inc.
Tim Loper, PE
Senior Project Manager/Vice President
100 West Liberty St. Suite 740
Reno, NV 89501

19. Assignment.

19.1 This Agreement is binding on the heirs, successors, and assigns of the parties hereto. This Agreement is not to be assigned by either party without prior written consent of the other.

20. Integration.

20.1 This agreement represents the entire understanding of CITY and CONSULTANT as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may not be modified or altered except by written amendment thereto signed by both parties.

21. Governing Law and Jurisdiction.

21.1 This Agreement shall be administered and interpreted under the laws of the State of Nevada. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of this Agreement shall be in full force and effect. 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.

22. Suspension of Work.

22.1 Either party may suspend, by written notice, all or a portion of the work under this Agreement, in the event unforeseeable circumstances, beyond the control of either party, make normal progress in the performance of the work impossible. The party desiring to suspend the work must request that the work be suspended by notifying the other party, in writing, of the circumstances which are interfering with normal progress of the work. The time for completion of the work shall be extended by the number of days the work is suspended. In the event that the period of suspension exceeds ninety (90) working days, the terms of this Agreement are subject to renegotiation and both parties are granted the option to terminate work on the suspended portion of the project in accordance to Article 23 of this Agreement.

23. Termination of Work.

23.1 The CITY may terminate, by written notice, the work under this Agreement. The CONSULTANT may terminate work in the event the CITY fails to perform in accordance with the provisions of this Agreement. Termination of this Agreement is accomplished by fifteen (15) working days prior written notice from the party initiating termination to the other. Notice of the termination shall be delivered by certified mail with receipt of delivery returned to the Sender. In the event of termination, the CONSULTANT shall perform such additional work, as is necessary for the ordinary filing of documents, and closing shall not exceed ten percent (10%) of the total time expended on the termination portion of the project prior to the effective date of termination. The CONSULTANT shall be compensated for the terminated portion of the work on the basis of work actually performed prior to the effective date of termination, plus the work required for filing and closing. Charges for the latter work are subject to the ten percent (10%) limitation described in this Article.

23.2 CONSULTANT 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.

24. Dispute Resolution.

24.1. All claims, counterclaims, disputes and other matters in question between the CITY and the CONSULTANT arising out of, or relating to, this contract or breach of it, unless otherwise settled, may be mediated before initiation of a judicial action.

24.2 Unless the parties mutually agree otherwise, mediation will be in accordance with the Commercial Mediation Procedures of the American Arbitration Association currently in effect. The American Arbitration Association will not be used to administer or facilitate the process or the selection of the mediators. Instead, the parties will attempt to mutually agree to the appointment of one mediator. If the parties cannot agree to one mediator, each party shall select one mediator and the two mediators will appoint a third mediator. The parties agree to split the mediator(s) fees and expenses. Each party shall bear their own attorney's fees and other costs incurred for the mediation.

25. Attorneys' fees.

25.1 Unless otherwise provided herein, each party shall bear its own attorney's fees and court costs regardless of the outcome of any proceeding brought to enforce or interpret this Agreement.

26. Severability.

26.1 If any provision contained in this Agreement is held to be unenforceable by a court of law or equity, this Agreement shall be construed as if such provision did not exist and the nonenforceability of such provision shall not be held to render any other provision or provisions of this Agreement unenforceable.

27. Due Authorization.

27.1 Each party represents that all required authorizations have been obtained to execute this Agreement 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 or electronic signature on this Agreement shall be treated for all purposes as an original signature. 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.

-Signature page follows-

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and seals the year and date first above written.

CAROLLO ENGINEERS, INC.



Mark Gross, PE
Client Services Director/Senior Vice President



Richard Gutierrez, PE
Project Manager/Vice President

CITY OF RENO

CITY OF SPARKS

Hillary L. Schieve, Mayor

Ed Lawson, Mayor

ATTEST:

ATTEST:

Mikki Huntsman, Reno City Clerk

Lisa Hunderman, Sparks City Clerk

APPROVED AS TO FORM:

APPROVED AS TO FORM:

Susan Ball Rothe, Deputy City Attorney

Wes Duncan, City Attorney

EXHIBIT A
SCOPE OF SERVICES
CAROLLO ENGINEERS, INC.
FOR
FILTRATION PROCESS GRANULAR MEDIA FILTER IMPROVEMENTS DESIGN SERVICES
AT
TRUCKEE MEADOWS WATER RECLAMATION FACILITY (TMWRF)

PURPOSE

The purpose of this document is to define ENGINEER's scope of services and time of completion. The services provided by ENGINEER shall be generally defined as design services to develop contract documents for construction of improvements to the capacity and performance of the granular media filters (GMF) without expansion of the existing facility or the addition of new facilities.

PROJECT UNDERSTANDING

The recently completed TMWRF Facility Plan identified hydraulic and process deficiencies associated with the existing tertiary filters. The Disinfection and Filtration Process Expansion Evaluation and Pre-Design (PDR), planned for finalization in March 2024, established the costs associated with filter expansion to meet 2050 projected demands. In lieu of moving forward with the full-scale retrofit in the PDR, TMWRF seeks to improve the operating capacity of the current GMF facilities.

The primary goal of this project is to provide design contract documents for construction of GMF improvements for TMWRF to advertise for contractor bids for construction. The first task in reaching this goal is completing a component level capacity analysis, a media pilot evaluation, and summary of recommended improvements to be included in a Basis of Design Report (BODR) for TMWRF's review and concurrence. Any filtration improvements must be capable of consistently producing effluent that meets the current effluent limits, as well as Nevada Category A or B reuse standards.

Specific water quality issues that this project will need to address include:

- Particulate and dissolved organic nitrogen:
 - With TMWRF's stringent nitrogen discharge limits, the filters' ability to address not only suspended solids, but particulate and dissolved organic nitrogen, must be considered.
- Dissolved phosphorus:
 - The ability of the filtration process to address dissolved phosphorus must be considered.
- Total suspended solids post-filtration:
 - The original design targets a 5 mg/L, 30-day average and 8 mg/L daily max.
 - The current permit limits are 20 mg/L for 30-day average and 30 mg/L daily maximum.
 - The media pilot evaluation results will be compared against these limits.

The project has various potential approaches and components that will require preliminary evaluation. The following is a list of components identified for the project:

Spent Backwash System

- Spent backwash pumps replacement:
 - Mudwell capacity frequently prevents backwashing of the current GMF which directly limits the capacity of the facility. Increasing the size of the spent backwash pumps will potentially resolve this issue.
 - In addition to new pumps, the scope would include the addition of a new MCC section to receive new starters and/or pump VFDs.
- Spent backwash tank improvements:
 - The following modifications have been included in the design effort:
 - Influent trough hydraulics analysis.
 - Evaluate alternate locations for spent backwash discharge (e.g., directly or indirectly to the chlorine contact tank (CCT)) and implement solution in final design.
 - Carollo will perform an initial evaluation of other components and improvement alternatives in the BODR for TMWRF review and selection. Selection of one or more of these alternatives may require a contractual amendment for inclusion in the final design depending on impact to scope and budget:
 - Spent backwash effluent water quality summary,
 - Additional settling or filtration of spent backwash flows,
 - Conduct structural analysis of old CCT dechlorination structure to determine its suitability for repurposing. Structural analysis will not include a detailed condition assessment, only a visual assessment and structural analysis based on existing information.
- Spent backwash piping modifications included in the design effort include:
 - Installation of parallel redundant piping to the spent backwash tank.
 - A condition assessment of the existing pipe is not included.
 - Modifications to piping in the filter gallery will be included as necessary to improve spent backwash pumping hydraulics.

Filter Operations and Control

- Filter operation control narratives:
 - Based on plant operational data and investigations during supplemental preliminary design, filter operation control changes are likely to be appropriate.
 - This effort includes a review of the current filter permissives, operational set points, and operation strategies. Based on this review, recommendations for improvements will be provided to TMWRF for consideration.
 - Field programming and optimization will be performed by TMWRF and/or will occur under the construction contract.
- Electrical, instrumentation, control and communication improvements:
 - The PDR identified equipment at or nearing the end of useful life. It is assumed that equipment associated with GMF operation that can be replaced without complex shutdowns or bypass would be included in this Project.
 - TMWRF will confirm a final list of equipment to be included during the BODR review.

GMF upgrades

- Media selection:
 - Optimization of the media has been identified as the most probable component to find additional capacity in the existing GMF based on plant operational data.
 - This project includes a pilot of three media options to evaluate run times, backwash efficiency, and other water quality parameters.
- Structural and mechanical repairs in the GMF cells:
 - During the isolation of each cell for media change, it is recommended that the repairs identified in the preliminary design are completed.
 - In addition, any structural modifications to the filters based on the selected media would be included in this project component.
- Filter nozzle replacement:
 - During the isolation of each cell for media change, it is recommended that the filter nozzles are replaced.
 - A preliminary estimate of probable cost for nozzle replacement in each filter cell will be provided in the Basis of Design Report (BODR).
- Replacement of valves and actuators in the GMF:
 - ENGINEER will include valves and actuators identified by TMWRF for replacement.
- Backwash pumps:
 - The pumps will be replaced. Final pump selection will depend on media selection and existing system conditions.
 - Modifications to backwash programming would be included in the filter operation control narratives component if required.
- Spent backwash pump replacement with higher capacity pumps as noted above.

Other Improvements

- Filter bypass valving and piping:
 - Bypass alternatives will be evaluated in the BODR and included in the final design. Alternatives proposed for evaluation include:
 - A proposed bypass as conceptualized in the PDR,
 - An alternative route for the PDR bypass coming directly from the northwest side of denitrification to avoid the utility tunnel and other conflicts.
 - The existing 42" pipe on the south side of the filters, and
 - A method to use the spent backwash tank to direct normal dry weather flows to the CCT.
 - An assumed effort for detailed design has been included, but if additional effort is required based on the decisions made in the BODR, Carollo and TMWRF will review the scope and budget.
 - A condition assessment of existing underground piping is not included. If TMWRF can provide a report of pipe condition, Carollo will include these in the evaluation.
- Post Aeration Basin:
 - The following improvements of the post aeration basin will be evaluated in the BODR but not included in the final design at this time:
 - Solids recovery.
 - Surface skimming including a downflow baffle.
 - Maintaining variable water surface elevation.

Improvements Not Included

- Mudwell or clearwell modifications:
 - Based on the locations of the mudwells and clearwells, modifications would be too costly to be considered at this time.
- Air scour:
 - Modifications or replacement of air scour components are not anticipated at this time.
 - Modifications to air scour programming would be included in the filter operation control narratives component if required.
- Other modifications outside of GMF:
 - It is reasonable to expect other improvements may be identified during the design effort, but unless listed above, these have not been included in the design effort estimate.

Our team's approach, as described below, is focused on addressing each of these considerations for this project.

APPROACH TO PROJECT DELIVERY

The level of effort and sequencing of tasks for this scope of services were developed to provide a progression of engineering level of detail and refinement of implementation concepts over a 12-month design duration. Key elements of the approach to project delivery include:

- Acceleration of granular media pilot testing to assist in selection of appropriate filter media for this project.
- Open communication with OWNER and stakeholders through various workshops, design CAMP®, and meetings to avoid surprises, rework, and schedule impacts.

ENGINEER's key team members are carried through from the preliminary design. Key team members may only be replaced by the ENGINEER with prior approval of the replacement by OWNER. Key team members shall include the following team members:

- Principal-in-Charge – Richard Gutierrez
- Design Manager – Bryan Burnitt
- Project Engineer – Tom Stroud
- Filter Design Lead – Danny Murphy
- Filtration Pilot Technical Advisor – Luke Snell

TASK 1 – Project Management

The purpose of this task is to provide management and oversight of the ENGINEER's team in its execution of the work, and ongoing communication and coordination with OWNER.

Task 1.1 – Project Execution Plan

ENGINEER will prepare the Project Execution Plan (PEP). The plan will identify general procedures to be followed in the administration and management of the Project. The PEP will include the following elements:

1. Project team organization and responsibility.
2. ENGINEER contract administration procedures.
3. Cost and schedule control procedures.
4. Quality management procedures.

5. Change control procedures.
6. Schedule of tasks, milestones and deliverable due dates.
7. File management and coordination guidelines to allow integration with project team members and OWNER.
8. Decision and action items log tracking procedures.

Assumptions

- The PEP is a “living” document and will be updated as needed.

Task 1.2 – Project Kick-off Meeting

ENGINEER shall conduct a project kick-off meeting. This meeting will address the overall approach to managing the project tasks for design, schedule, and budget, as well as communication and project team roles and responsibilities. The group will discuss the overall vision TMWRF has for the project. The meeting will include key project participants including the project manager, project engineer, process area leads, discipline leads and TMWRF staff.

Assumptions

- Assume a two-hour meeting duration at TMWRF. Principal and design manager will attend in person. Other staff will attend virtually.

Deliverables

- Meeting agenda, presentation materials, and minutes will be provided.

Task 1.3 –Project Coordination Meetings

Prepare for, attend, and generate notes for biweekly project coordination meetings. The meetings will be held virtually using Microsoft Teams or other conferencing software. The meeting date will be maintained for a specific day of the week (e.g., every other Monday at 10:00 a.m.). ENGINEER will present a summary of the ongoing work, issues pending, action items, etc. Participants will discuss outstanding or upcoming Project action items and issues.

Additional coordination meetings are included for coordination with the FBR improvements project. Four meetings have been assumed.

Assumptions

- ENGINEER staff will administer and attend up to 28 coordination meetings.
- Assume one hour per meeting and up to two ENGINEER team members in attendance.

Deliverables

- Meeting summary for each progress meeting, including an updated action item and decision log, and update on near-term milestones.

Task 1.4 – Project Controls

Subtask 1.4.1 – Schedule Management

ENGINEER will prepare, manage, and update monthly the ENGINEER’s Project schedule to be presented and discussed monthly at a progress meeting. In the monthly discussion, ENGINEER will provide analysis of schedule variances and proposed approaches for getting back on schedule.

Subtask 1.4.2 – Budget Management

ENGINEER will manage and update the project budget, including reporting of expenditures versus scope of work completed.

Subtask 1.4.3 – Change Management

ENGINEER will develop and maintain a decision log for the Project. The log will document key decisions made by Project team that affect technical elements or implementation of the Project. ENGINEER will also manage changes to scope, schedule, or budget when necessary.

Subtask 1.4.4 – Monthly Reporting

ENGINEER will prepare monthly project progress reports to summarize the project work progress, issues, and scope and budget status. Monthly progress reports will include:

- Scope report:
 - A narrative progress report of specific accomplishments during the reporting period, problems encountered or anticipated, and work scheduled for the next reporting period. Narrative will be approximately three pages in length.
- Cost report:
 - A report that shows the current period and accumulated expenditures to date, the approved not to exceed fee, the estimated cost of completion, and a comparison of the latter two to show any variation. The cost information will not be more than one month old and include allowance for unbilled costs. The cost report will include work scope percent complete versus budget percent complete on a task level (i.e. Task 1 level). The cost report will include a separate accounting and detail of expenditures for approved additional services.
- Schedule report:
 - A report that compares actual progress to planned performance. The report will include a description of known or possible impacts on the schedule, and a presentation of deliverable submittal dates.

Assumptions

- The duration of services will be 14 months which covers through bidding services.
- Monthly reports will be submitted approximately two weeks following the month, to allow time to process invoicing for the services performed.

Deliverables

- Information as needed to facilitate communication support.
- Monthly schedule updates.
- Updated decision log and management of changes to scope, schedule or budget.
- Workshop presentations and meeting minutes for all workshops and meetings.
- Monthly reports.

TASK 2 – Basis of Design Report

The purpose of this task is to define the project basis of design. There are several project elements as noted above that could have multiple alternatives. Additionally, TMWRF would like to keep project construction costs within the allocated budget of \$10 million. Therefore, the design team will first evaluate project alternatives and costs and present the findings to TMWRF staff through a 2-day Design CAMP® process to

confirm the basis of design approach and project elements. Following CAMP®, ENGINEER will prepare a Basis of Design Report (BODR) for GMF improvements for TMWRF for review and approval. A preliminary opinion of probable cost will be provided for improvement components recommended in the BODR.

Task 2.1 – GMF Improvements Basis of Design Report

ENGINEER will prepare a Basis of Design Report (BODR) to include the alternatives and recommendations for the identified project components outlined in the Project Understanding section above. The data, findings, and conclusions from the granular media filter pilot effort will be added to the BODR after the pilot concludes. ENGINEER will include a capacity evaluation and replacement of the components list below (described in the Project Understanding section). ENGINEER will finalize the report based on input and direction received from the OWNER. The intent of the BODR is to provide a roadmap for implementation of the proposed improvements including all major project elements (process, mechanical, structural, electrical, and instrumentation), construction sequencing and constraints considerations, and an estimate of probable construction costs.

GMF Components for Evaluation

- Granular media selection.
- Backwash pumps.
- Structural and mechanical repairs in the GMF cells.
- Filter nozzles.
- Filter operation controls.
- Existing GMF valves and actuators.
- Spent backwash tank.
- Spent backwash pumps and piping.
- Filter bypass.
- Electrical improvements.
- Instrumentation and control improvements.
- Post Aeration Tank Improvements.

Deliverables

- Draft and Final Basis of Design Technical Report (Electronic PDF format only).
- Estimates of probable construction costs (AACE Class 3) for each component effort for which improvement is recommended shall be provided.

Task 2.2 – Design CAMP®, Review, and Final Report

ENGINEER and OWNER will conduct a Design CAMP® to discuss the project components and alternatives to select those that will proceed to detailed design.

ENGINEER will finalize the BODR based on input and direction received from the OWNER through the CAMP® process. After review of the BODR by TMWRF and receipt of comments, ENGINEER will conduct a 2-hr review workshop to receive comments prior to finalizing the BODR.

Assumptions

- 2-day Design CAMP® to include key staff and discipline leads as well as TMWRF staff. CAMP® will be held at the TMWRF Training Room.
- 2-hr BODR Review Workshop.
- One person travel from Boise, ID.

Deliverables

- CAMP® minutes
- BODR Review Workshop minutes
- Final Basis of Design Report (Electronic PDF format only).

TASK 3 – Granular Media Pilot

The purpose of this task is to evaluate alternative media configurations through the use of a filter pilot with four (4) granular media filter columns deployed to TMWRF. Results and recommendations from the filter pilot will be incorporated into the final BODR.

Task 3.1 – Health and Safety Plan

Following receipt of notice to proceed (NTP), ENGINEER will prepare a health and safety plan for deployment and operation of the filter pilot.

Task 3.2 – Pilot System Design, Setup, & Mobilization

ENGINEER will coordinate selection of pilot media based on experience with TMWRF tertiary stream, plant operations, and past experience. ENGINEER will coordinate shipment and will complete setup of the pilot system. OWNER will prepare a suitable outdoor location for the pilot to operate for the 3-month duration. Additional coordination will be required between the ENGINEER and the OWNER, but the ENGINEER will aim to minimize OWNER staff involvement during the setup and operation of the pilot.

Assumptions

- Equipment rental from Intuitech.
- One person travel from Boise, ID.
- OWNER support for pilot site location and tertiary stream supply to pilot.
- Influent to the filter pilot will be pumped and effluent and backwash water will drain by gravity to the nearest plant drain.
- OWNER shall provide electrical power. Pilot filter power requirements are 480 volt, 3 phase, 60 Hz, and 50 amps. TMWRF shall provide plant electrician to assist with setting up the power connection. Filter pilot shall include a 100 ft long power cable and external breaker for this power connection.

Task 3.3 – Pilot Operation

ENGINEER will operate and maintain pilot unit and associated instruments. It is assumed that the pilot duration will be a total of ten weeks and include testing of three different media configurations along side a control media of what is currently in operation at TMWRF. ENGINEER will have primary responsibility for the pilot including scheduling and coordinating, checking and cleaning instruments, gathering data, collecting water samples, and performing stress testing of the filters. Water quality analysis will be by TMWRF's lab.

Assumptions

- The filter pilot will commence at the earliest possible date based on plant operations and equipment availability. Based on Intuitech rentals, July 2024 is the current earliest date and the minimum rental duration is 12 weeks.
- No specific testing related to a potential future activated granular sludge (AGS) or mobile organic biofilm (MOB) process trains will be included as part of this effort. It is assumed that AGS effluent quality will be equal to or better than the current tertiary stream quality and therefore will not adversely impact the capacity of the new filter facility.

- Local Reno ENGINEER staff to operate with one visit from Boise, ID staff as needed.
- Water quality testing will begin with TSS analysis of all four media columns plus filter influent, 1 sample from each per day (5 total samples per day to be analyzed for TSS). Once a preferred media is determined (assumed to be after 6-8 weeks of pilot operation), nutrient testing shall be conducted for one filter column and filter influent. Carollo will develop a formal sampling plan for TMWRF's approval.

Deliverables

- Sampling Plan.
- Results and recommendations from pilot to be incorporated into final BODR.

Task 3.4 – Pilot Demobilization and Cleanup

ENGINEER will demobilize pilot unit to prepare for shipping and coordinate removal from TMWRF site. Cleanup will return pilot site to previous condition.

Assumptions

- One person travel from Boise, ID.
- OWNER support for power and plumbing disconnections as needed.

TASK 4 – 60% Design Documents

After components are selected in Task 2.6, the final scope of the detailed design will be set. For the detailed design the description of components in the Project Understanding section summarizes the scope *assumed* for budgeting purposes. Those assumptions in the Project Understanding section apply to each subsequent design task hereafter.

Development of a 60% design document submittal package will be completed under this task. This task includes further development of an estimate of probable construction costs (AACE Class 3). The following will be included:

- Plans and key sections for mechanical, electrical, structural, civil and instrumentation design.
- Temporary facilities design plans and key sections.
- ENGINEER's technical specifications.
- OWNER's front end documents will be utilized.
- OWNER will coordinate with ENGINEER on relevant project conditions including agreement language, project constraints, and supplementary condition language.
- Prepare an opinion of probable construction cost.
- Prepare an update to the project schedule.

Task 4.1 – 60% Design Documents

Deliverables

- 60% Design Documents (electronic PDF format only).

Task 4.2 – 60% Workshop and Review

Assumptions

- Assume one 4-hour workshop.

- Principal, design manager, and project engineer will attend in person. Other staff will attend virtually.

Deliverables

- Meeting agenda, presentation materials, and minutes will be provided.

Task 4.3 – Cost Estimate and Schedule

Assumptions

- Estimate of probable construction costs (AACE Class 3) using ENGINEER's estimating tools/software.
- Schedule using Microsoft Project.

Deliverables

- Estimate of probable construction cost.
- Construction schedule.

TASK 5 – 90% Design Documents

Development of a 90% design document submittal package will be completed under this task. This task includes the development of an estimate of probable construction costs (AACE Class 2). The following will be included:

- Plans and key sections and details for mechanical, electrical, structural, civil and instrumentation design.
- ENGINEER's technical specifications.
- OWNER's front end documents will be utilized.
- OWNER will coordinate with ENGINEER on relevant project conditions including agreement language, project constraints, and supplementary condition language.
- Updated opinion of probable construction cost.
- Updated project schedule.

Task 5.1 – 90% Design Documents

Deliverables

- 90% Design Documents (electronic PDF format only).
- Comment tracking spreadsheet from previous deliverables.

Task 5.2 – 90% Workshop and Review

Assumptions

- Assume one 4-hour workshop.
- Principal, design manager, and project engineer will attend in person. Other staff will attend virtually.

Deliverables

- Meeting agenda, presentation materials, and minutes will be provided.

Task 5.3 – Cost Estimate and Schedule

Assumptions

- Estimate of probable construction costs (AACE Class 2) using ENGINEER's estimating tools/software.
- Schedule using Microsoft Project.

Deliverables

- Estimate of probable construction cost.
- Construction schedule.

TASK 6 – Bid Documents

This task will deliver a complete, signed and sealed, set of Bid Documents.

Task 6.1 – Bid Documents

Assumptions

- Assume 1 (one) 2-hour virtual workshop to review final updates prior to signing. Workshop will only focus on changes made from the 90% deliverable. Any changes identified at this workshop that were not identified previously will likely affect schedule and budget and will require coordination with the OWNER.

Deliverables

- Bid Documents (electronic PDF format only).
- Comment tracking spreadsheet from previous deliverables.

Task 6.2 – Final Cost Estimate and Schedule

Assumptions

- Estimate of probable construction costs (AACE Class 2) using ENGINEER's estimating tools/software.
- Schedule using Microsoft Project.

Deliverables

- Final estimate of probable construction cost.
- Final construction schedule.

TASK 7 – Bidding Services

Task 7.1 – Attend Pre-bid Conference

Assumptions

- Project Manager will attend the pre-bid conference in person.

Task 7.2 – Prepare Addenda

Assumptions

- ENGINEER will respond to technical questions and requests during bidding period.

- OWNER will respond to contracting questions and requests during bidding period.
- ENGINEER will prepare up to three (3) addenda.

Deliverables

- Technical clarifications.
- Up to three (3) addenda clarifications.

Scope Assumptions

- Components described in the Project Understanding section and identified for inclusion in the detailed design are the only components budgeted in the ENGINEER's scope for Tasks 3 through 5.
- Deliverables will be digital (pdf or native files) unless otherwise noted.
- Specification Divisions 00 and 01 will utilize the City of Reno standard specifications with supplemental specifications provided by the ENGINEER as recommended.
- OWNER will provide contract, insurance and financial requirements.
- Technical Specifications will be MasterFormat 50-Division.
- CAD files will use ENGINEER's standard software. Files will be delivered in native file format. Drawings will be produced using AutoCAD Civil3D and Revit. Individual drawing sheets shall be saved down or compatible with AutoCAD 2016.
- Drawings will be delivered in Full Size (34"x22"). Half Size (17"x11") .pdf format is available upon request.
- Additional geotechnical investigation is not included as part of the design scope.
- Corrosion control for buried piping is included as part of the design scope.
- OWNER will provide comments in a compiled single document (pdf or Excel spreadsheet) for each deliverable within 2 weeks following the deliverable's associated workshop.
- Distribution, advertising, and sale of bid documents and addenda is not included in the scope and is assumed to be handled by the OWNER.

Preliminary Drawing List

A preliminary list of drawings is attached as Exhibit B.

Project Schedule

A preliminary project schedule is attached as Exhibit C.

Project Fee

A budget fee organized by task is attached with supporting information as Exhibit D.

EXHIBIT B - PRELIMINARY DRAWING LIST

(G) - GENERAL

1	00G01	COVER SHEET
2	00G02	DRAWING INDEX
3	00G03	GENERAL NOTES, LEGENDS AND SYMBOLS
4	00G04	ABBREVIATIONS
5	00G05	DESIGN CRITERIA
6	00G06	PROCESS FLOW DIAGRAM
7	00G07	HYDRAULIC PROFILE

(D) - DEMOLITION

8	00GD01	DEMOLITION GENERAL NOTES
9	00D01	SITE PLAN
10	00D02	FILTER LOWER PLANS
11	00D03	FILTER INTERMEDIATE PLANS
12	00D04	VALVE ACTUATOR DECK PLANS
13	00D05	FILTER SECTIONS
14	00D06	FILTER GALLERY SECTIONS
15	00D07	FILTER DEMOLITION DETAILS
16	00D08	SPENT BACKWASH RECOVERY TANK

(C) - CIVIL

17	00GC01	GENERAL LEGEND AND SYMBOLS
18	00C01	SURVEY CONTROL SHEET
19	00C02	SITE COORDINATION DATA SHEET
20	00C03	GRADING AND PAVING
21	00C04	OVERALL SITE PLAN AND YARD PIPING
22	00C05	DETAILS
23	00C06	DETAILS
24	00C07	DETAILS

(S) - STRUCTURAL

25	00GS01	GENERAL NOTES, LEGEND AND SYMBOLS
26	00S01	FILTER OVERALL PLAN
27	00S02	NORTH FILTERS PLAN
28	00S03	SOUTH FILTERS PLAN
29	00S04	FILTER DETAILED PLANS AND SECTIONS 1
30	00S05	FILTER DETAILED PLANS AND SECTIONS 2
31	00S06	FILTER DETAILS 1
32	00S07	FILTER DETAILS 2
33	00S08	SPENT BACKWASH RECOVERY TANK PLAN AND SECTIONS
34	00S09	SPENT BACKWASH RECOVERY DETAILS

(M) - MECHANICAL

35	00GM01	GENERAL NOTES, LEGENDS AND SYMBOLS
36	XXM01	FILTER BUILDING OVERALL PLAN
37	XXM02	NORTH FILTERS PLAN
38	XXM03	SOUTH FILTERS PLAN
39	XXM04	FILTER SECTIONS
40	XXM05	LOWER FILTER GALLERY PLAN
41	XXM06	INTERMEDIATE FILTER GALLERY PLAN
42	XXM07	VALVE ACTUATOR DECK PLAN
43	XXM08	FILTER GALLERY SECTIONS 1
44	XXM09	FILTER GALLERY SECTIONS 2
45	XXM10	SPENT BACKWASH RETURN PUMPS DETAILED PLAN AND SECTIONS
46	XXM11	FILTER DETAILS 1
47	XXM12	FILTER DETAILS 2
48	XXM13	SPENT BACKWASH TANK PLAN
49	XXM14	SPENT BACKWASH SECTIONS AND DETAILS

(E) - ELECTRICAL

50	00GE01	GENERAL LEGEND AND SYMBOLS
51	00GE02	ELECTRICAL ABBREVIATIONS
52	03E01	ONE-LINE DIAGRAMS 1
53	03E02	ONE-LINE DIAGRAMS 2
54	03E03	ONE-LINE DIAGRAMS 3
55	04E01	MAIN SWITCHGEAR ELEVATION
56	04E02	MCC ELEVATION
57	04E03	MCC SECTION
58	04E04	PANELBOARD AND DISCONNECT SCHEDULES
59	05E01	ELECTRICAL SITE PLAN
60	05E02	DUCT BANK SECTIONS
61	05E03	LOWER FILTER GALLERY PLAN
62	05E04	INTERMEDIATE FILTER GALLERY PLAN
63	05E05	VALVE ACTUATOR DECK PLAN
64	05E06	ELECTRICAL ROOM

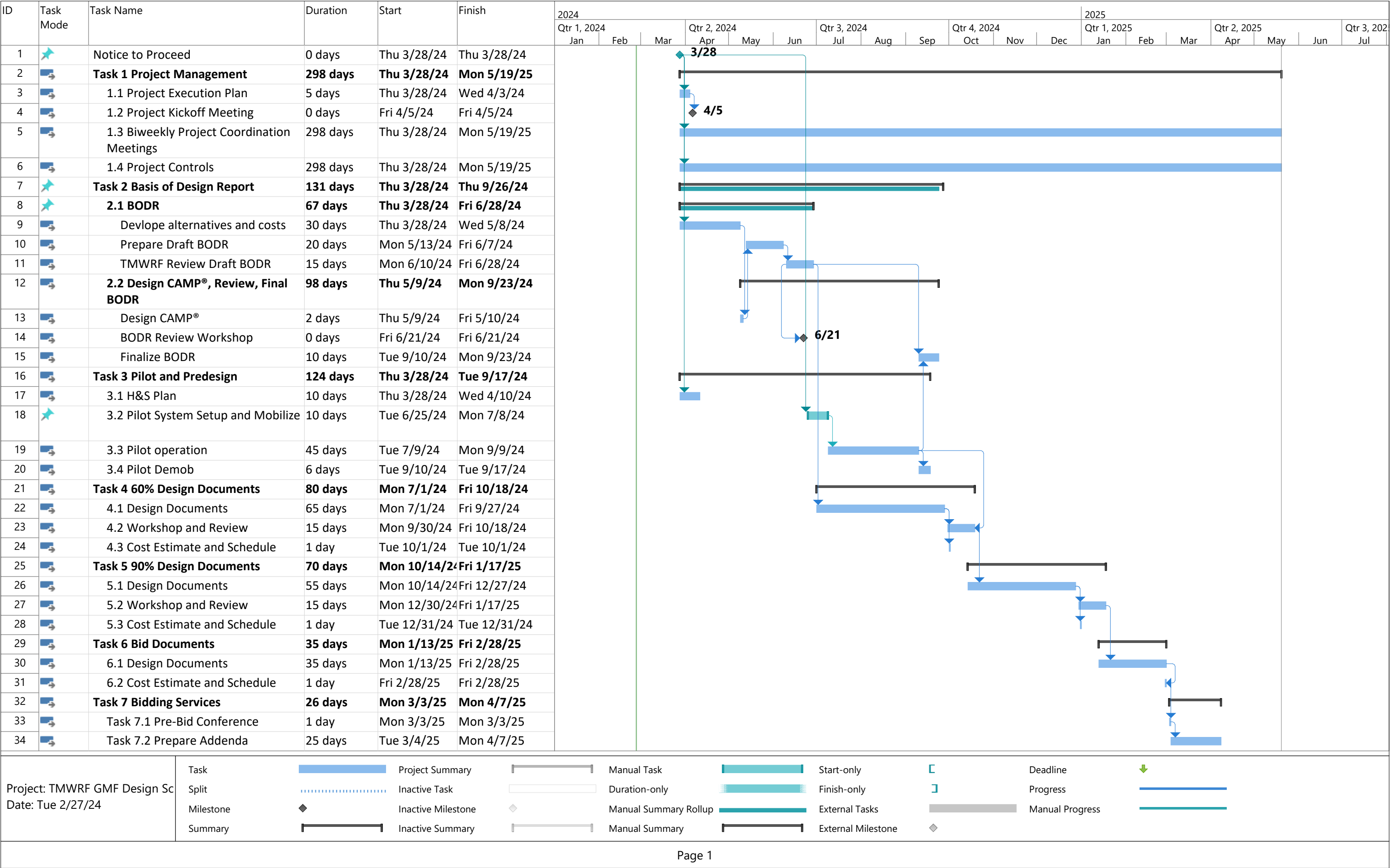
(N) - INSTRUMENTATION

65	00GN01	SYMBOLS AND ABBREVIATIONS 1
66	00GN02	SYMBOLS AND ABBREVIATIONS 2
67	00GN03	SYMBOLS AND ABBREVIATIONS 3
68	00GN04	SYMBOLS AND ABBREVIATIONS 4
69	00GN05	SCHEMATIC SYMBOLS
70	00GN06	SAMPLE LOOP DRAWING
71	00GN07	EQUIPMENT TAGGING SYSTEM 1
72	01N01	PCM PANEL (PC-12) MODS
73	02N01	PCM PANEL (PC-13) MODS
74	03N01	SYSTEM ARCHITECTURE DIAGRAM
75	04N01	OVERALL NETWORK TOPOLOGY DIAGRAM
76	05N01	FIBER PINOUT DIAGRAMS
77	06N01	CONTROL SCHEMATICS 1
78	06N02	CONTROL SCHEMATICS 2
79	06N03	CONTROL SCHEMATICS 3
80	07N01	P&ID 1
81	07N02	P&ID 2
82	07N03	P&ID 3
83	07N04	P&ID 4
84	07N05	P&ID 5
85	07N06	P&ID 6
86	07N07	P&ID 7
87	07N08	P&ID 8
88	07N09	P&ID 9
89	07N10	P&ID 10
90	07N11	P&ID 11
91	07N12	P&ID 12
92	07N13	P&ID 13
93	07N14	P&ID 14

(T) - TYPICAL DETAILS

94	00TC01	CIVIL 1
95	00TE01	ELECTRICAL 1
96	00TE02	ELECTRICAL 2
97	00TE03	ELECTRICAL 3
98	00TE04	ELECTRICAL 4
99	00TM01	MECHANICAL 1
100	00TM02	MECHANICAL 2
101	00TN01	INSTRUMENTATION 1
102	00TN02	INSTRUMENTATION 2
103	00TN03	INSTRUMENTATION 3
104	00TS01	STRUCTURAL 1
105	00TS02	STRUCTURAL 2
106	00TS03	STRUCTURAL 3

EXHIBIT C - DESIGN SCHEDULE



ESTIMATED ENGINEERING HOURS AND COSTS

Truckee Meadows Water Reclamation Facility
Engineering Services for Filtration Improvements Project
Exhibit D - Fee Schedule



TASK														OTHER DIRECT COSTS				COST SUMMARY			
	M. Britten P. Carlson	R. Gutierrez	B. Burnitt	J. Riley D. Murphy T. Stroud	N. Brower	J. Nalagotla	C. Loving B. Lee	C. Henderson	J. Razgony												
	Senior Professional QA/QC	Lead Project Professional Principal in-Charge	Project Professional Design Mgmt/Lead	Project Professional Process Leads	Assistant Professional Staff Engineer	Lead Project Professional Structural Lead	Project Professional EI&C Leads	Lead Project Professional Corrosion Control	Lead Project Professional Estimating	Senior CAD	Graphics/ CAD	Clerical Support	Subtotals		Intuitech Direct Costs for Pilot	Subtotals	Misc. Costs and Printing	(see Note 1)	Total ODCs	Total Cost	
	2024 Fee Schedule PECE Included Column	\$351	\$325	\$268	\$268	\$209	\$325	\$268	\$325	\$325	\$209	\$162	\$139	Hours							Budget
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	
TASK 1 - PROJECT MANGAGEMENT 1.1 Project Execution Plan 1.2 Project Kickoff Meeting 1.3 Biweekly Project Coordination Meetings 1.4 Project Controls & Monthly Reports	0	1	8	0	0	0	0	0	0	0	0	2	11	\$2,749	\$0	\$0	\$0	\$0	\$0	\$2,749	
	0	4	8	16	6	2	4	0	0	0	0	2	42	\$10,989	\$0	\$0	\$0	\$270	\$270	\$11,259	
	0	28	42	14	0	0	0	0	0	0	0	8	92	\$25,238	\$0	\$0	\$0	\$0	\$0	\$25,238	
	0	14	28	0	0	0	0	0	0	4	0	6	52	\$13,732	\$0	\$0	\$0	\$0	\$0	\$13,732	
	Task 1 Hours	0	47	86	30	6	2	4	0	0	4	0	18	197							
Task 1 Budget	\$0	\$15,293	\$23,054	\$8,042	\$1,252	\$651	\$1,072	\$0	\$0	\$834	\$0	\$2,509		\$52,708	\$0	\$0	\$0	\$270	\$270	\$52,978	
TASK 2 - BASIS OF DESIGN REPORT 2.1 GMF Improvements BODR 2.2 Design CAMP, Review, & Final Report	8	12	16	40	80	30	32	0	24	2	40	16	300	\$73,694	\$0	\$0	\$0	\$0	\$0	\$73,694	
	12	20	20	40	20	8	12	0	8	2	12	4	158	\$42,323	\$0	\$0	\$0	\$1,120	\$1,120	\$43,443	
	20	32	36	80	100	38	44	0	32	4	52	20	458								
	Task 2 Hours	20	32	36	80	100	38	44	0	32	4	52	20	458							
	Task 2 Budget	\$7,027	\$10,412	\$9,651	\$21,446	\$20,859	\$12,365	\$11,795	\$0	\$10,412	\$834	\$8,428	\$2,787		\$116,017	\$0	\$0	\$0	\$1,120	\$1,120	\$117,137
TASK 3 - GRANULAR MEDIA PILOT 3.1 Health and Safety Plan 3.2 Pilot System Design, Setup, & Mobilization 3.3 Pilot Operation (3-month Deployment and Materials) 3.4 Pilot Demobilization and Cleanup	0	1	2	2	8	0	0	0	0	0	0	0	13	\$3,066	\$0	\$0	\$0	\$0	\$0	\$3,066	
	0	1	4	16	16	0	0	0	0	0	0	0	37	\$9,024	\$10,766	\$10,766	\$0	\$850	\$11,616	\$20,640	
	0	4	8	40	100	0	0	0	0	0	0	0	152	\$35,028	\$30,272	\$30,272	\$0	\$850	\$31,122	\$66,150	
	0	0	2	0	8	0	0	0	0	0	0	0	10	\$2,205	\$4,601	\$4,601	\$0	\$850	\$5,451	\$7,656	
	Task 3 Hours	0	6	16	58	132	0	0	0	0	0	0	0	212							
Task 3 Budget	\$0	\$1,952	\$4,289	\$15,548	\$27,534	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$49,323	\$45,640	\$45,640	\$0	\$2,550	\$48,190	\$97,512	
TASK 4 - 60% DESIGN DOCUMENTS 4.1 60% Design Documents 4.2 60% Workshop and Review 4.3 Cost Estimate and Schedule	12	12	28	116	500	32	160	12	0	96	336	16	1320	\$284,941	\$0	\$0	\$0	\$0	\$0	\$284,941	
	0	2	6	6	6	2	4	0	0	0	0	2	28	\$7,121	\$0	\$0	\$0	\$270	\$270	\$7,391	
	2	2	8	0	16	0	0	0	24	0	0	0	52	\$14,645	\$0	\$0	\$0	\$0	\$0	\$14,645	
	Task 4 Hours	14	16	42	122	522	34	164	12	24	96	336	18	1400							
	Task 4 Budget	\$4,919	\$5,206	\$11,259	\$32,705	\$108,883	\$11,063	\$43,964	\$3,905	\$7,809	\$20,024	\$54,460	\$2,509		\$306,707	\$0	\$0	\$0	\$270	\$270	\$306,977
TASK 5 - 90% DESIGN DOCUMENTS 5.1 90% Design Documents 5.2 90% Workshop and Review 5.3 Cost Estimate and Schedule	16	16	48	112	368	52	200	12	0	64	320	24	1232	\$273,480	\$0	\$0	\$0	\$0	\$0	\$273,480	
	0	2	6	6	6	2	4	0	0	0	0	2	28	\$7,121	\$0	\$0	\$0	\$270	\$270	\$7,391	
	4	2	8	0	12	0	0	0	16	0	0	0	42	\$11,910	\$0	\$0	\$0	\$0	\$0	\$11,910	
	Task 5 Hours	20	20	62	118	386	54	204	12	16	64	320	26	1302							
	Task 5 Budget	\$7,027	\$6,508	\$16,620	\$31,632	\$80,515	\$17,571	\$54,686	\$3,905	\$5,206	\$13,350	\$51,867	\$3,624		\$292,511	\$0	\$0	\$0	\$270	\$270	\$292,781
TASK 6 - BID DOCUMENTS 6.1 Bid Documents 6.2 Cost Estimate and Schedule	6	6	8	16	72	12	40	4	0	36	120	24	344	\$71,746	\$0	\$0	\$0	\$0	\$0	\$71,746	
	0	2	4	0	4	0	0	0	8	0	0	0	18	\$5,161	\$0	\$0	\$0	\$0	\$0	\$5,161	
	6	8	12	16	76	12	40	4	8	36	120	24	362								
	Task 6 Hours	6	8	12	16	76	12	40	4	8	36	120	24	362							
	Task 6 Budget	\$2,108	\$2,603	\$3,217	\$4,289	\$15,853	\$3,905	\$10,723	\$1,302	\$2,603	\$7,509	\$19,450	\$3,345		\$76,907	\$0	\$0	\$0	\$0	\$0	\$76,907
TASK 7 - BIDDING SERVICES 7.1 Attend Pre-Bid Conference 7.2 Prepare Addenda	0	4	0	0	0	0	0	0	0	0	0	0	4	\$1,302	\$0	\$0	\$0	\$270	\$270	\$1,572	
	0	2	2	2	12	2	2	0	0	2	8	8	40	\$8,242	\$0	\$0	\$0	\$0	\$0	\$8,242	
	0	6	2	2	12	2	2	0	0	2	8	8	44								
	Task 7 Hours	0	6	2	2	12	2	2	0	0	2	8	8	44							
	Task 7 Budget	\$0	\$1,952	\$536	\$536	\$2,503	\$651	\$536	\$0	\$0	\$417	\$1,297	\$1,115		\$9,544	\$0	\$0	\$0	\$270	\$270	\$9,814
Tasks 1-7 Total Hours	60	135	256	426	1234	142	458	28	80	206	836	114	3975								
Tasks 1-7 Total Budget	\$21,081	\$43,926	\$68,626	\$114,198	\$257,399	\$46,206	\$122,776	\$9,112	\$26,030	\$42,968	\$135,502	\$15,889		\$903,717	\$45,640	\$45,640	\$0	\$4,750	\$50,390	\$954,106	
Contingency for Owner Directed Services (10%)																				\$95,411	
Total Budget including Contingency																				\$1,049,517	

Notes: 1) Travel lodging, meals, and mileage shall be reimbursed in accordance with U.S. General Services Administration rates obtained for Reno, Nevada