



STANDARD CONSULTANT AGREEMENT

(For Capital Consultant Contracts)
Terms and Conditions Template
Rev. B [5/11/2020-6/30/2021]

This agreement (Agreement) is effective once fully executed (Effective Date), by and between SANTA CLARA VALLEY WATER DISTRICT (Valley Water), and AECOM TECHNICAL SERVICES, INC., a California corporation (Consultant), individually the Party or collectively the Parties.

WHEREAS, Valley Water desires certain services hereinafter described and Consultant affirms it has the requisite experience and expertise, and desires to provide such services.

NOW, THEREFORE, Valley Water and Consultant, for the consideration and upon the Terms and Conditions specified, agree as follows:

SECTION ONE

SCOPE OF SERVICES

The Scope of Services (Services) to be performed pursuant to this Agreement is described in the Schedule(s), Scope of Services, attached hereto and incorporated herein by this reference (Schedule(s)). Services described in each Schedule are considered a Scope of Services that is separate and apart from the Scope of Services described in another Schedule.

SECTION TWO

DUTIES OF CONSULTANT

1. Performance

- A. Each Scope of Service described in an attached Schedule(s) must be performed by Consultant, or at its direction, to meet the purposes specified in this Agreement. References to "Consultant" herein include those performing any portion of the Services at its direction such as Subconsultants, vendors, suppliers, subcontractors, and other business entities and individuals. Consultant will collaborate with Valley Water staff in engineering, asset management, operations, and maintenance units to be made aware of Valley Water operational constraints, procedures, or preferences relevant to Consultant's performance of the Services described in the attached Schedule(s).
- B. Unless the requirements for the Services described in the attached Schedule(s) are specifically modified in writing, Consultant must perform Services and provide all deliverables as required.
- C. Consultant shall not undertake any Services not described in the attached Schedule(s) unless authorized in writing by Valley Water prior to the performance of such Services by issuance of a Task Order or pursuant to an amendment to this Agreement signed by both Parties.

2. Consultant Controlled Areas

Consultant is responsible for the security and safety of the area(s) it controls wherein it is required to perform field operations pursuant to the Scope of Services.

3. Licensing

Services performed by Consultant will be undertaken only by persons appropriately licensed, certified, or registered in California, as applicable to the Services described herein, when required by statutes or regulations, as well as pursuant to the relevant standard of care as described in subsection 11 Standard of Care. Examples of such Services include those performed by: California State Licensed Contractors, Professional Engineers and Architects, Inspectors, and Surveyors. Consultant shall make available upon Valley Water's request documentation of qualifications and licensing of personnel performing Services described herein. Consultant must be registered with the California Department of Labor Standards Enforcement if the Services or a portion thereof is determined to be "Public Works" pursuant to California Labor Code section 1720(a)(1).

4. Valley Water's Approval of Deliverables

Deliverables prepared by Consultant, notwithstanding acceptance and approval by Valley Water, which Valley Water determines must subsequently be modified due to errors or omissions, will be corrected at no additional cost to Valley Water.

5. Errors and Omissions

The Services may include preparation of deliverables by Consultant to be implemented in a public works construction project. Consultant is responsible for any direct or actual damages incurred by Valley Water which Valley Water determines result from Consultant's errors or omissions in Consultant's deliverables, including, but not limited to, any increase in Valley Water's payment(s) due to its construction contractor, which increase is directly attributable to required revisions to the construction contract documents to the extent caused by Consultant's negligent acts, errors, or omissions.

6. Valley Water Standardization Requirements

- A. Consultant shall perform the Services utilizing Valley Water nomenclature, standardized forms, software requirements, documented procedures, and best management practices. Consultant shall use Microsoft Office software and AutoCAD software that is compatible with Valley Water Microsoft Office software and AutoCAD software used at the time(s) Valley Water issues a Notice to Proceed pursuant to this Agreement.
- B. Engineering drawings prepared by Consultant must be in compliance with Valley Water's CADD and drafting standards including line types, line weights, text sizes, text orientation, dimensioning, labeling/numbering system for detailed plan views and detailed section views. Drawings prepared using different CADD software and versions must be converted to be compatible with Valley Water's CADD software at no additional cost to Valley Water. Prior to acceptance, Valley Water reserves the right to test the submitted CADD files to verify that the files are not corrupted or missing linkages (for blocks, etc., used in the drawing) and that the standards are retained during the conversion process used by the Consultant.

7. Consultant's Key Staff and Subconsultants

- A. Consultant's Key Staff and firms subcontracted by the Consultant (Subconsultants) assigned to perform the Services are identified in in the Schedule Scope of Services, Attachment Three, Consultant's Key Staff and Subconsultants.
- B. The Project team organization chart and delegated responsibilities of each team member will be submitted to Valley Water for concurrence.
- C. Consultant may utilize Subconsultants, subcontractors, suppliers, or vendors it deems appropriate to the complexity and nature of the required Services.
 - 1) Consultant must obtain Valley Water's approval of all Subconsultants. Upon Valley Water's request, Consultant must provide copies of all Subconsultant agreements.
 - 2) Consultant must require its delegates or Subconsultants to agree, in writing, to adhere to Terms and Conditions of this Agreement.
- D. Any delegation or use of Subconsultants by Consultant will not operate to relieve Consultant of its responsibilities as described in this Agreement.
- E. If any of Consultant's designated key staff persons or Subconsultants fail to perform to the satisfaction of Valley Water, on written notice from Valley Water, Consultant will have 15 calendar days to remove that person from the Project and provide a replacement acceptable to Valley Water.
- F. Consultant will not charge Valley Water for the time it takes Consultant's replacement personnel to obtain Valley Water-specific Project knowledge in the possession of the person(s) being replaced.
- G. Consultant's Key Staff: Valley Water Project Manager may approve any revisions to Consultant's list of key staff assigned to the Project as an administrative modification to this Agreement, and such approval will be confirmed in writing.
- H. Consultant's Subconsultants
 - 1) Valley Water Project Manager may approve any revisions to Consultant's list of authorized Subconsultants when the Subconsultant is deleted from the list and the Scope of Services is deleted from the Agreement or such services are assumed by the Consultant; such approval will be confirmed in writing.
 - 2) Valley Water's authorized representative may approve any revisions to Consultant's list of authorized Subconsultants when a listed Subconsultant is replaced (to perform the same Scope) or a new Subconsultant is added (to perform new Scope), provided the firm complies with all insurance requirements established by Valley Water for such work; such approval will be confirmed in writing.

8. Compliance with All Laws

- A. Consultant's performance must be in compliance with the most current versions of any and all laws relevant to the Services it performs pursuant to this Agreement, including, but not limited to adherence to: all applicable governmental laws, statutes, ordinances, rules, codes, regulations, orders, and other requirements; governmental requirements applicable to state and federal compliance with the Professional Land Surveyors Act; state and federal Endangered Species Act; state and federal water quality laws; and all other state and federal laws or regulations regarding environmental protection and compliance, health, safety, wages, hours, equal employment opportunity, nondiscrimination, working conditions, and transportation. In the event that Valley Water's assistance is necessary to achieve such compliance, Consultant shall promptly notify Valley Water.
- B. Consultant shall provide, at Valley Water's request, documentation demonstrating Consultant's compliance with all laws as described herein. After reasonable notice and according to reasonable conditions, Valley Water has the right to inspect and copy any records of Consultant regarding such compliance.
- C. Consultant represents and warrants that neither Consultant nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal government department or agency.

9. Occupational Safety and Health

- A. Consultant will perform the Services in compliance with the most current versions of all laws, standards, rules, and regulations of the Occupational Safety and Health Act, and all state and federal laws and regulations relating to safety and health standards. Consultant shall perform the Services in compliance with, will furnish only supplies, articles, and equipment that comply with such laws, standards, and regulations.
- B. Consultant shall immediately notify Valley Water in the event of any personal injury accident or occurrence occurring during the performance of the Services. Upon Valley Water's request, Consultant shall provide Valley Water with documentation fully describing the accident and injury and the actions implemented to prevent similar occurrences.

10. Consultant as Independent Contractor

Consultant will perform all Services as an independent contractor and not an agent or employee of Valley Water. Consultant represents and warrants that it and its contractors who are performing any of the Services as Subconsultants will perform such Services as an independent contractor, and neither Consultant nor Subconsultants nor their employees are the servants, agents or employees of Valley Water. Except as expressly provided in this Agreement, Valley Water exercises no direction, supervision or control over Consultant, its employees, agents, or Subconsultants.

11. Standard of Care

- A. Consultant must possess and maintain during the term of this Agreement all certifications, licenses, permits, and qualifications to perform the Services and prepare all deliverables. Consultant must perform all Services and prepare all deliverables in accordance with those standards and practices of care, skill, and diligence that are generally recognized and customarily observed by competent persons in Consultant's area of specialty in the State of California at the time such Services are rendered.
- B. Consultant shall perform the Services and prepare all deliverables without any errors or omissions, and in accordance with Section Two Duties of Consultant, subsection 8. Compliance with All Laws.
- C. Consultant and its Subconsultants must perform the Services in compliance with all applicable written federal, state and local codes, statutes, laws, regulations, and ordinances, including, but not limited to, environmental, energy conservation, and disabled access requirements as per the provisions of Section Two Duties of Consultant, subsection 8. Compliance with All Laws.

SECTION THREE

DUTIES OF VALLEY WATER

1. Available Data

Valley Water will make available to Consultant all data and information in its possession and control and which it deems necessary to the preparation of the deliverables specified in the Schedule(s). Valley Water will actively aid and assist Consultant in obtaining such information from other agencies and individuals as it deems necessary. Valley Water is not responsible for providing data and information that it does not possess.

2. Review of Deliverables

- A. Valley Water will designate a Project Manager (Valley Water Project Manager) for purposes of administering and managing this Agreement.
- B. Consultant's progress in completing the Services will be reviewed by Valley Water Project Manager at each milestone identified in the Schedule(s) and at such other time(s) at the discretion of Valley Water.
- C. Consultant must notify Valley Water in writing when it completes each deliverable described in the Schedule(s) and provide Valley Water with said deliverable. Deliverables deemed satisfactory and in compliance with this Agreement are subject to approval by Valley Water. Within 30 calendar days of receipt of each deliverable, Valley Water will either (1) notify Consultant that Valley Water accepts the deliverable, or (2) notify the Consultant that the deliverable is not acceptable and must be revised.
- D. If Valley Water advises Consultant that a deliverable must be revised due to errors or omissions by the Consultant, Consultant must correct, at no cost to Valley Water, those deficiencies as soon as possible and shall notify Valley Water upon completion of the revised deliverable and submit to Valley Water.

- E. Valley Water will then review the revised deliverable and within 30 calendar days of receipt, advise the Consultant if the revised deliverable is acceptable. All deficient deliverables will be revised at no cost to Valley Water and this process will continue until Consultant has corrected all deficiencies identified by Valley Water.
- F. None of the proposed changes or revisions or anything else in this Agreement will be construed to relieve the Consultant of professional or legal responsibility for the performance of the Services as otherwise required by the Terms and Conditions of this Agreement. Corrections to any deliverable as a result of Consultant's errors or omissions, as determined by Valley Water, will not result in additional costs or expenses to Valley Water.

3. Access to Valley Water Facilities

Valley Water will facilitate access to Valley Water facilities as required for the Consultant to perform the Services.

SECTION FOUR

FEES AND PAYMENTS

1. Total Fixed Not-to-Exceed Fees

- A. Payment for all Services performed by Consultant to the satisfaction of Valley Water, as described in the Schedule(s) will be based on the Total Fixed Not-to-Exceed (NTE) Fees stated in the Schedule, Attachment One, Fees and Payments, for completion of the associated tasks. Valley Water will make payments to the Consultant according to the terms provided for herein and in the Schedule, Attachment One, Fees and Payments. Payments made by Valley Water to the Consultant for Services rendered will be considered full compensation for all personnel, materials, supplies, Subconsultant(s), equipment, reimbursable travel and per diem expenses incurred by the Consultant to perform the Services.
- B. Upon the written approval of Valley Water Deputy Operating Officer referenced herein, unused fees from a completed or cancelled task may be re-allocated to a task that has not yet been completed, provided the Agreement Total Not-to-Exceed Fees is not exceeded. Transferring fees from a task not yet completed to a different task is not permitted.
- C. Upon the written approval of Valley Water Deputy Operating Officer referenced herein, the Scope of Services described in a task may be reduced or eliminated. If the Scope of Services of a task is reduced or eliminated, the portion of the fees attributable to that reduced or eliminated task may be allocated to revised existing tasks, or transferred to a Supplemental Services task, if provided for herein.
- D. Any reduction or elimination of tasks and any inter-task transfers will be clearly noted and described in the subsequent monthly progress report to Valley Water.
- E. Services to be performed pursuant to the Supplemental Services task, if provided for herein, will commence only after issuance of a fully executed Task Order.

- F. Automobile travel mileage expenses will be paid at the current IRS rate. Valley Water will not reimburse Consultant nor its Subconsultants for mileage nor travel time to and from Valley Water Headquarters and surrounding campus located at 5700 Almaden Expressway, San Jose, California. However, Valley Water will reimburse Consultant and its Subconsultants for mileage incurred from Valley Water Headquarters or Consultant's and Subconsultants' firm address, whichever is closer to the destination, to Project site(s) and, if directed or authorized by Valley Water, to meeting locations such as with regulatory agencies, for community outreach activities and meetings, for partnering meetings, and Dispute Review Board meetings.

2. Consultant Monthly Invoices

- A. Consultant's monthly invoices will be prepared in accordance with the terms of this Agreement, Section Four Fees and Payments, and represent Services performed and reimbursable costs incurred during the identified billing period. Invoices must be consistent with Scope of Services described in the Schedule(s) attached hereto; and include the following:
- 1) Employee classification and name itemized with all labor charges by Service task;
 - 2) Summary of the amount Consultant has been billed by their Subconsultants and further detailed by Service task;
 - 3) Other direct charges and expenses by Service task;
 - 4) Other direct charges and expenses must reflect actual fees versus the Agreement Not-to-Exceed Fees as stated in the Schedule, Attachment One, Fees and Payments; and
 - 5) To the extent that the Consultant is adding an administrative, processing, overhead or mark-up fee, Valley Water will not pay for such duplication of costs for both the Consultant and its Subconsultants.
- B. Before submitting monthly invoices, a progress report and draft invoice (in Adobe PDF format) will be provided by the Consultant for preliminary review by Valley Water Project Manager. Upon preliminary approval by Valley Water, the Consultant will mail the complete signed and dated hardcopy invoice, including all supporting documentation. Valley Water's preliminary review of the draft invoice does not represent final approval of the hardcopy invoice, but is intended to reduce potential for re-submittals of hardcopy invoice by Consultant.
- C. Each monthly invoice must include a monthly progress report that documents whether or not the Services are on schedule to be completed in accordance with the Schedule in Attachment Two, Schedule of Completion, which applies to the specific Scope of Services, and within the Agreement NTE Fees in accordance with the Schedule, Attachment One, Fees and Payments. The progress report shall document Services completed, the execution of the tasks described in this Services, and enable Valley Water to evaluate the Consultant's progress and performance towards completion of the Services.

1) The monthly progress report shall include:

- a. An assessment of actual versus planned progress in completing the Services, including a description of the tasks and deliverables completed to date;
 - b. A look-ahead schedule listing deliverables and activities planned for the next two months;
 - c. A statement that progress towards completion of the Services is on schedule and will be completed within the timeline set forth in the Schedule of Completion; or, if completion of the Services is not on schedule, then a statement of the anticipated length of the delay, the cause of the delay, measures proposed or taken to prevent or minimize the delay, and the schedule for implementation of such measures;
 - d. A summary of performed tasks to date, an updated Project work plan including estimate of work required to complete this Agreement, explanation of any major variances in percentage of services to be completed compared to percentage of this Agreement NTE fees remaining, and any anticipated changes to this Agreement that may be necessary to complete the Services;
 - e. For any proposed change to the Scope of Services, provide a summary of the proposed changes, including supporting rationale for such change;
 - f. For each task, the percentage of the fees incurred for the task compared to dollar amount allocated to the task, the percentage of services performed versus the percentage of Agreement NTE fees incurred for such task, and explanation of any significant variances in percentage of services performed compared to percentage of fees incurred;
 - g. A statement that all tasks, as specified in this Agreement, shall be completed within the NTE amount of the Agreement;
 - h. Level of Small Business Enterprise (SBE) participation, if applicable, documenting the level of SBE participation throughout the Project; and
 - i. Any changes in Consultant's key staff or Subconsultants.
- D. Invoices will include a summary of labor expenditures, direct costs, and billed Subconsultant charges. Invoices, transmitted separately from the monthly progress reports, will be organized such that the billing categories correspond with the Services tasks.
- E. Consultant shall send all invoices as follows:
1. Electronic copies to be sent via email: APinvoice5750@valleywater.org;
 2. Hard Copies to be sent to:

Santa Clara Valley Water District
Attention: Accounts Payable
P.O. Box 20670
San Jose, CA 95160-0670

- F. In addition to ensuring that each invoice is accompanied with a monthly progress report, Consultant must also ensure that each invoice contains the following information:
- 1) Agreement Number;
 - 2) Full Legal Name of Consultant/Firm;
 - 3) Payment Remit-to Address;
 - 4) Invoice Number;
 - 5) Invoice Date (the date invoice is mailed);
 - 6) Detailed description of services provided, including the “distribution account(s)” for those services; and
 - 7) Beginning and end date for billing period that services were provided.
- G. Consultant shall invoice for its performance of the Services on a monthly basis consistent with the task fee breakdown stated in the Schedule, Attachment One, Fees and Payments, to the Schedule(s), which applies to the specific Scope of Services.
- H. Valley Water Project Manager will review Consultant’s written invoice within five Valley Water business days of receipt, address any questions with Consultant’s Contact/Principal Officer and approve the undisputed amount of the invoice within ten working days of receipt of the invoice. Valley Water will pay undisputed invoice amounts within 30 calendar days from date invoice is received by Valley Water Project Manager.
- I. Consultant’s services will be performed by its staff members and Subconsultants’ staff members at the lowest hourly and unit rates commensurate with the complexity of the required Services.

3. Prevailing Wages

- A. A portion of the Services to be performed pursuant to this Agreement may be considered “Public Works” subject to California Labor Code §1771, et. seq. and the applicable implementing regulations. If Consultant’s Services includes such work, Consultant and its Subconsultants must comply with all Labor Codes applicable to prevailing wages.
- B. Labor Code §1720 provides as follows:
- “(a) As used in this chapter, “public works” means all of the following:
- (1) Construction, alteration, demolition, installation, or repair work done under contract and paid for in whole or in part out of public funds, except work done directly by a public utility company pursuant to order of the Public Utilities Commission or other public authority. For purposes of this paragraph, “construction” includes work performed during the design, site assessment, feasibility study, and other preconstruction phases of construction, including, but not limited to, inspection and land surveying work, regardless of whether any further construction work is conducted, and work performed during the postconstruction phases of construction, including, but not limited to, all cleanup work at the jobsite. For purposes of this paragraph, “installation” includes, but is not limited to, the assembly and disassembly of freestanding and affixed modular office systems.”

- C. Consultant and its Subconsultants shall not engage in the performance of public work, as defined in California Labor Code §1771.1, unless currently registered and qualified to perform public work pursuant to California Labor Code §1725.5.
- D. The General Prevailing Wage Rates issued by the California Department of Industrial Relations may be adjusted by the State throughout the term of this Agreement. Notwithstanding any other provision of this Agreement, Consultant will not be entitled to any adjustment in compensation rates in the event there are adjustments to the General Prevailing Wage Rates.
- E. This Agreement is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations. Upon request, Consultant and Subconsultants must furnish the records specified in Labor Code §1776 directly to the Labor Commissioner, in a format prescribed by the Labor Commissioner.
- F. All records or documents required to be kept verifying statutory compliance with the prevailing wage requirement, such as certified payroll records, must be made available for audit at no cost to Valley Water, in electronic or hard copy format, at Valley Water's discretion, and hard copies made available at any time during regular business hours, upon written request by Valley Water.
- G. **California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirements**

Prior to Valley Water executing a Task Order for Services involving public works, as defined herein, Consultant, and its Subconsultant(s) performing public works, must provide evidence, in the form required by Valley Water, that Consultant and its Subconsultant(s) are in compliance with the California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirements.

4. Retention

- A. Unless otherwise specified in the Schedule, Attachment One, Fees and Payments, when the total compensation payable pursuant to this Agreement exceeds \$20,000, ten percent of each invoice will be withheld by Valley Water and not paid to Consultant until 30 calendar days after the assigned Valley Water representative signs the final approval for all Services/deliverables as stated in the applicable Schedule, Attachment Two Schedule of Completion, and Section Three, Duties of Valley Water, subsection 2. Review of Deliverables.
- B. Provided that at any time after 50% of the work has been completed, Valley Water may, at its sole discretion, determine that satisfactory progress is being made in the completion of the Agreement, and prospectively make the remaining progress payments in full. The retention previously withheld on the first 50% of the work will continue to be withheld until final contract close out.

SECTION FIVE

SCHEDULE OF COMPLETION

1. Performance of Tasks

Consultant will commence performing the tasks described in the Scope of Services of the attached Schedule(s) to this Agreement upon receipt of the Notice to Proceed (NTP) issued by Valley Water.

2. Project Schedule Table

Consultant will perform and complete the services described in the Scope of Services in accordance with the Project Schedule table (Project Schedule) as stated in the Schedule, Attachment Two, Schedule of Completion. Consultant will coordinate services with Valley Water to provide the timeline of all tasks and subtasks, including the site visits, document review, meetings, and deliverables.

3. Monitoring of Project Schedule

The approved Project Schedule will be monitored monthly. Changes to the schedule for performance of tasks and deliverables are subject to advance written approval by Valley Water.

4. Project Delays

Consultant will make all reasonable efforts to comply with the Project Schedule as stated in the Schedule, Attachment Two, Schedule of Completion. In the event the Project Schedule will be delayed, Consultant will notify Valley Water Project Manager as soon as possible, providing the reason why, the length of the delay, and a description of the actions being taken to address the delay. In the event Consultant is delayed in performance of its services by circumstances beyond its control, Valley Water may, at its discretion, grant a reasonable adjustment in the Project Schedule.

5. Changes to the Project Schedule

Valley Water Project Manager and Consultant may agree to modify the Project Schedule specified for Consultant's performance as an administrative modification to the Agreement and will confirm such modifications in writing.

SECTION SIX

AGREEMENT MODIFICATIONS

The Parties may agree to modify the Terms and Conditions of this Agreement by executing a written amendment hereto.

SECTION SEVEN

TERM AND TERMINATION

1. Term & Automatic Termination

This Agreement encompasses all Services that Consultant is responsible to perform within the time limits and Not-to-Exceed Fees set forth herein. Consultant will not undertake to provide Services where it reasonably appears that the Services cannot be provided and expenses cannot be incurred within said total compensation limit and the applicable Not-to-Exceed Fees of any Task Order.

2. Valley Water Rights

- A. Suspension: Valley Water may, by written notice to Consultant, suspend any or all Services pursuant to this Agreement or to any individual Task Order. Valley Water may subsequently terminate this Agreement or any Task Order for convenience, or determine to proceed. If a decision to proceed is not made within 90 days from the date of the notice of suspension, any decision to proceed must be conditioned upon execution of a new Notice to Proceed or Task Order.
- B. Termination for Convenience: Valley Water may, by written notice to Consultant, terminate all or part of this Agreement or any Task Order at any time for Valley Water's convenience. Upon receipt of such notice, Consultant will immediately cease all work as specified in the notice. If this Agreement or any Task Order is so terminated, Consultant will be compensated as set forth in subsection 3. Consultant's Compensation upon Termination or Suspension.
- C. Termination for Breach: If Consultant violates any of the covenants, agreements or stipulations of this Agreement or a Task Order, or if Consultant fails to fulfill in a timely and proper manner its obligations pursuant to this Agreement or any Task Order, and does not cure such failure or violation within 30 days (or a reasonable extension thereof, if requested, which extension will not be unreasonably withheld) after receipt of written notice from Valley Water specifying such failure or violation, Valley Water will thereupon have the right to terminate this Agreement and any or all uncompleted Task Orders by giving written notice to Consultant of such termination. Such notice will specify the effective date thereof, and Consultant will not be entitled to compensation for services or expenses beyond the specified termination date.
- D. If, after notice of termination for breach of this Agreement or any Task Order, it is determined that Consultant did not breach the Agreement or Task Order, the termination will be deemed to have been effected for Valley Water's convenience, and Consultant will receive payment that is allowed by this Agreement for a termination for convenience.
- E. The rights and remedies provided herein to Valley Water are in addition to any other rights and remedies provided by law, this Agreement, or a Task Order.

3. Consultant's Compensation upon Termination or Suspension

In the event of termination of this Agreement or any Task Order, or suspension of Services by Valley Water, Consultant shall receive compensation based on satisfactory performance, accepted by Valley Water, as follows:

- A. Direct Labor: Consultant shall be entitled to receive compensation for all authorized direct labor performed prior to termination pursuant to the provisions of this Agreement or Task Order and all authorized labor expenses incurred to demobilize from the Project after the date of termination;
- B. Other Direct Costs and Expenses: Consultant shall be entitled to receive compensation for all authorized other direct costs and expenses incurred prior to termination and all authorized expenses incurred to demobilize from the Project after the date of termination; and

- C. In no event shall the total compensation paid for any item of Service exceed the payment specified in the Agreement or applicable Task Order for that item of Service.

4. Survival

The Terms and Conditions of this Agreement, that by their context and a standard of reasonableness, are intended to survive termination, suspension, completion, and expiration of this Agreement, shall survive, including but not limited to, the following Sections and subsections: Independent Contractor Status, Confidentiality, Indemnification, Insurance Requirements, and Dispute Resolution, as well as any Consultant representations and warranties.

SECTION EIGHT

INDEMNIFICATION

Notwithstanding any other provision of this Agreement, Consultant agrees to indemnify, defend and hold harmless Valley Water, its agents, officers, directors, and employees from and against any and all demands, claims, damages, losses and reasonable expenses, including but not limited to liabilities, obligations, claims, costs, reasonable expenses (including, without limitation, interest, penalties and reasonable attorney's fees), fines, taxes, levies, imposts, assessment, demands, damages or judgments of any kind or nature, whether in law or equity (including, without limitation, death or injury to any person, property damage, administrative and judicial orders and consents, or any other loss) to the extent they arise out of, pertain to, or relate to the Consultant's negligence, recklessness, or willful misconduct. The foregoing does not limit any strict liability imposed onto the Consultant by law. The rights, duties, and obligations of the Parties as set forth above in this Section Eight, Indemnification, survive termination, expiration, completion, and suspension of this Agreement.

SECTION NINE

INSURANCE REQUIREMENTS

Insurance requirements applicable to this Agreement are set forth in the Standard Consultant Agreement, Appendix Four Insurance Requirements. Consultant must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, all insurance coverages as detailed in the Standard Consultant Agreement, Appendix Four Insurance Requirements, and comply with all provisions stated therein.

SECTION TEN

OWNERSHIP AND REUSE OF DELIVERABLES

1. Valley Water Ownership

All deliverables and other materials prepared by Consultant, including computer programs and media developed by the Consultant, to perform the Services, during the term of this Agreement, will be and remain the property of Valley Water following payment in full to Consultant for each task or portion of a completed task, or in accordance with Section Seven Term and Termination. In the event the work is not completed, the completed portions thereof will become the property of Valley Water. Consultant will provide Valley Water with such deliverables and material at appropriate times during this Agreement.

Consultant may retain a copy for its records. Consultant does not convey, assign, or transfer the intellectual property rights it has so as to limit its ability or right to develop, design, or provide services on other projects of or for its other clients.

2. Reuse of Instruments of Service

If Valley Water desires to reuse the completed plans, specifications, or other deliverables, in total or in part, on project sites associated with this Agreement, or any other site, or to complete any incomplete portion of construction documentation which Valley Water has already paid Consultant, Valley Water will release Consultant from any liability incurred by Valley Water from reusing said deliverables.

3. Copies of Data

Copies of data exchanged by, through, and between Valley Water and Consultant that may be relied upon are limited to printed copies. Computer-generated files, disks, or tapes of text, data or graphics that are furnished are only for the mutual convenience of the Parties.

4. Computer-Generated Material

Any risk of translation or reliance on information obtained or derived from computer-generated material is at the user's sole risk, and no representations are made, either express or implied, as to the long-term performance of data thus transferred.

5. Work for Hire

Any and all original correspondence, memoranda, reports, designs, plans, specifications, data compilations, computer programs, or drawings delivered to Valley Water by Consultant according to the Terms of this Agreement, in or by any medium is deemed to be "work for hire" according to the copyright laws of the United States and the copyright belongs to Valley Water.

6. Copyright Claims

Co-venturers, subcontractors, Subconsultants, suppliers, and vendors to Consultant are likewise bound by these copyright terms. Valley Water makes no copyright claim and requires no release for copyrighted material or trademarked names used incidentally by Consultant.

SECTION ELEVEN

EQUAL OPPORTUNITY

1. Equal Opportunity Employer

Valley Water is an equal opportunity employer and requires its consultants to have and adhere to a policy of equal opportunity and non-discrimination. In the performance of the Agreement, Consultant will comply with all applicable federal, state, local laws and regulations, and will not discriminate against any subcontractor, employee, or applicant for employment in the recruitment, hiring, employment, utilization, promotion, classification or reclassification, transfer, recruitment advertising, evaluation, treatment, demotion, layoff, termination, rates of pay or other forms of compensation, and selection for professional development training (including apprenticeship), or against any other person, on the basis of

sex (which includes pregnancy, childbirth, breastfeeding and medical conditions related to pregnancy, childbirth or breastfeeding), race, religion, color, national origin (including language use restrictions), ancestry, religious creed (including religious dress and grooming practices), political affiliation, disability (mental and physical, including HIV or AIDS), medical condition (cancer and genetic characteristics), genetic information, marital status, parental status, gender, age (40 and over), pregnancy, military and veteran status, sexual orientation, gender identity and gender expression, the exercise of family and medical care leave, the exercise of pregnancy disability leave, or the request, exercise, or need for reasonable accommodation.

2. Compliance with Applicable Equal Opportunity Laws

Consultant's policy must conform with applicable state and federal guidelines including the Federal Equal Opportunity Clause, "Section 60-1.4 of Title 41, Part 60 of the Code of Federal Regulations," Title VII of the Civil Rights Act of 1964 as amended; the Americans with Disabilities Act of 1990; the Rehabilitation Act of 1973 (§503 and §504); the Age Discrimination Act of 1975 (42 U.S.C. §6101 et seq.); the California Fair Employment and Housing Act (Government Code §12900 et. seq.); and California Labor Code §1101 and §1102.

3. Investigation of Claims

Consultant must designate a specific position within its organization to be responsible for investigating allegations of non-compliance with the anti-discrimination and anti-harassment provisions of this Agreement. Consultant must conduct a fair, prompt, and thorough investigation of all allegations directed to Consultant by Valley Water. In cases where such investigation results in a finding of discrimination, harassment, or hostile work environment, Consultant must take prompt, effective action against the offender.

SECTION TWELVE

MISCELLANEOUS PROVISIONS

1. Entire Agreement

This Agreement, which includes the Terms and Conditions, Appendices, the Schedule(s), Attachments to the Schedule(s), and all executed Task Orders, represents the entire understanding between the Parties hereto relating to the Services described in this Agreement and supersedes any and all prior proposals or agreements, whether written or oral, that may exist between the Parties. This Agreement may not be modified or amended except in writing as stated herein. To the extent that any Schedule conflicts with this Agreement, this Agreement shall control.

2. Formation of Agreement

- A. No agreement between the Parties is formed until all applicable actions have been completed to the satisfaction of Valley Water. Valley Water Project Manager will not issue a Notice to Proceed until all required documents have been submitted and accepted by Valley Water.

B. Formation of this Agreement between the Parties requires accomplishment of the following, as applicable:

- 1) Execution of the Agreement by Consultant;
- 2) Submission by the Consultant, and acceptance by Valley Water, of evidence of all required insurance coverages and documents;
- 3) Submission by the Consultant, and acceptance by Valley Water, of evidence of all required Form 700 documents, if applicable;
- 4) Submission by the Consultant, and acceptance by Valley Water, of all required Non-Disclosure Agreements (NDA) documents as provided in the Schedule(s), Attachment Four, Reference Materials, if applicable;
- 5) Submission by the Consultant, and acceptance by Valley Water, of a Health and Safety Plan, if applicable;
- 6) Any other requirements that are deemed necessary by Valley Water; and
- 7) Execution of the Agreement by Valley Water.

3. No Assignment

- A. The expertise and experience of Consultant are material considerations for Valley Water's award and execution of this Agreement. Consultant will not assign or transfer any interest in this Agreement nor the performance of any of Consultant obligations hereunder, without prior written consent of Valley Water in the form of an amendment executed by the Parties, and any attempt to so assign this Agreement, or any rights, duties or obligations arising hereunder, will be void and of no effect. Any assignment of monies due or to become due in accordance with this Agreement, will be to the extent permitted by law, and will be subject to all proper set-offs, deductions, and withholdings in favor of Valley Water.
- B. In no event shall an assignment of any interest in this Agreement release the Consultant from its duties and responsibilities as described in this Agreement nor shall the Consultant be released from liability created by the provision of Services as described in this Agreement until such assignment takes effect. Any attempted or purported assignment without Valley Water's written consent in the form of an amendment executed by the Parties is null and void.

4. Reasonableness

Discretionary actions or approvals to be performed by the Parties will be exercised in a reasonable manner.

5. Gifts

Consultant hereby acknowledges that Valley Water policy prohibits the acceptance by Valley Water personnel of gifts of any kind from its contractors, consultants, suppliers or vendors. Consultant shall honor this policy by not sending or bringing gifts to Valley Water.

6. Audits

Consultant agrees that Valley Water and its agent(s) have the right to review, obtain, and copy all records pertaining to performance of this Agreement. Consultant agrees to provide Valley Water and its agent(s) with any relevant information requested, in electronic and hard copy format, at Valley Water's discretion, and will permit Valley Water and its agent(s) access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees (alternatively, by phone at Valley Water's discretion) and inspecting or copying books, records, accounts, computerized records, and other materials that may be relevant to the matter under investigation or subject to audit, such as by a government agency, providing Valley Water with grant funds to pay for Consultant's services for the purpose of determining compliance with this Agreement. Consultant further agrees to maintain such records for a period of three years after final payment as provided for in this Agreement.

7. Force Majeure

Neither Party will be held responsible for delays caused by acts beyond its control, such as acts of God or public enemies, utility or communication delays, or failures not caused by such Party's negligence or fault, accidents not caused by such Party's negligence or fault, labor disputes, war, or failure of the other Party to provide data as required pursuant to this Agreement.

8. Binding Effect

This Agreement is binding on the heirs, executors, administrators, successors and assigns of the Parties.

9. Choice of Law and Venue

The Parties agree that this Agreement is to be governed, construed, and enforced in accordance with the laws of the State of California. The Parties also agree that the venue of any litigation arising out of or connected with this Agreement will lie exclusively in the state trial court or Federal District Court located in Santa Clara County in the State of California, and the Parties consent to jurisdiction over their persons and over the subject matter of any such litigation in such courts, and consent to service of process issued by such courts.

10. Confidentiality

- A. Due to the nature of the services Consultant will provide pursuant to this Agreement, there may be disclosures made to Consultant of detailed information about Valley Water's operations, including on a need-to-know basis information which may be protected from public disclosure by confidentiality laws, the attorney-client privilege, and/or other provisions of law which govern the nature and timing of disclosure of public information.
- B. Consultant understands and acknowledges that Valley Water staff members providing information to the Consultant do so with the understanding that such information will be handled appropriately.
- C. In the event Consultant receives such restricted or confidential information, Consultant will limit access to the information to only those of Consultant's employees, its

subcontractors and its Subconsultants authorized by Valley Water to have the information.

- D. Consultant will notify Valley Water immediately of any request by any third party to have access to confidential information and will not disclose the requested information without first receiving express written authorization from Valley Water.
- E. The requirements stated herein will survive completion, expiration, suspension, and termination of this Agreement.

11. Release of Information Prohibited

Consultant is not permitted to provide any information concerning the Project to the media nor anyone other than authorized Valley Water personnel. Consultant will not release any information pertinent to the Project for publication, public disclosure, or in any other manner without first obtaining clearance and a release in writing from Valley Water. Any media inquiry at any time to Consultant relating to any matter concerning Services provided or requested to be provided pursuant to this Agreement will be referred immediately to Valley Water. Consultant will not communicate with the media regarding any such matter.

12. Conflict of Interest

- A. Consultant represents that there exists no actual or potential conflict of interest concerning the services to be performed pursuant to this Agreement.
- B. Consultant represents that Consultant's performance required as stated in this Agreement does not require the breach of any agreement or obligation to keep in confidence the proprietary information of another party. Consultant will not bring to Valley Water, or use in the performance of Consultant's duties as described in this Agreement, any materials or documents of another party considered confidential or proprietary unless Consultant has obtained written authorization from such party, and the informed consent of Valley Water, for the possession and use of such materials.
- C. Consultant represents and warrants that during the term of the Agreement, Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant shall not act as a Consultant or expert for any party in support of any potential or active claim or legal action against Valley Water by such party.
- D. CALIFORNIA FAIR POLITICAL PRACTICES COMMISSION STATEMENT OF ECONOMIC INTEREST FORM 700 ("FORM 700"): Upon Valley Water's request, Consultant employees, officers, agents, Subconsultants, and subcontractors shall complete, execute, and submit a Form 700 as follows:
 - 1) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, shall file, in a manner prescribed by Valley Water, an Assuming Office Statement. The Assuming Office Statement shall be filed:
 - a. Within 30 calendar days of the effective date of this Agreement; or

- b. Within 30 calendar days of Consultant hiring, adding, or promoting to a designated filer position, employees, officers, agents, Subconsultants, and subcontractors to perform services pursuant to this Agreement.
- 2) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming Office Statement, shall file in a manner prescribed by Valley Water, an amendment to their Form 700 any time there is a change to their disclosure information.
- 3) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming Office Statement, shall file an Annual Statement in a manner prescribed by Valley Water, during Valley Water's annual filing season, as determined by Valley Water;
- 4) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming Office Statement, shall file, in a manner prescribed by Valley Water, a Leaving Office Statement with Valley Water when one of the following occurs:
 - a. Upon termination of this Agreement; or
 - b. Within 30 calendar days of Consultant employees, officers, agents, Subconsultants, and subcontractors vacating a designated filing position (i.e., removed from the Project, promotion, demotion, transfer to non-designated position, end of employment, or as a result of changes in designated filer positions in Valley Water's Conflict of Interest Code).
- 5) Consultant understands and agrees that its employees, officers, agents, Subconsultants, and subcontractors may be disqualified from providing services to Valley Water pursuant to the California Political Reform Act, Government Code (GC) §81000 et. seq. and GC §1090. If any of Consultant's employees, officers, agents, Subconsultants, and subcontractors are disqualified from providing services, on written notice from Valley Water Project Manager, Consultant will have 15 calendar days to remove said employee(s), officer(s), agent(s), Subconsultant(s)' and subcontractor(s)' employee(s) from the Project and provide a replacement acceptable to Valley Water.
- 6) The failure of Consultant's employees, officers, agents, Subconsultants, and subcontractors to file an Assuming Office, Annual, Amended, or Leaving Office Statement within the time prescribed by Valley Water is deemed a material breach and may result in termination of the Agreement for cause.

13. Task Orders

- A. Some tasks and Services will be assigned to the Consultant through issuance of Task Orders. After the tasks and Services are identified and communicated to the Consultant by Valley Water Project Manager, Consultant will prepare a proposed Task Order (see Standard Consultant Agreement, Appendix Three Task Order Template). The proposed Task must identify the following:
 - 1) Description of the services, including deliverables;

- 2) The total Not-to-Exceed Fees for Consultant to complete the services, including estimated number of hours per assigned staff to complete the services;
 - 3) Proposed staff that will be assigned to complete the services, including resumes if not previously provided to Valley Water's Project Manager;
 - 4) Estimated cost of each other direct cost and reimbursable expense, including any applicable fees;
 - 5) Schedule for completing the services; and
 - 6) Copies of applicable state and federal permits required to complete the services, unless previously provided to Valley Water.
- B. Consultant agrees that the Not-to-Exceed Fees specified in a proposed Task Order will be the product of a good faith effort in exercising its professional judgment. After an agreement has been reached on the negotiable items, the finalized Task Order will be signed by both Valley Water's authorized representative referenced in the Standard Consultant Agreement, Appendix One Additional Legal Terms (Appendix One), and Consultant's authorized representative.
- C. Consultant must not commence performance of work or services on a Task Order until it has been approved by Valley Water's authorized representative and Notice to Proceed has been issued by Valley Water Project Manager. No payment will be made for any services performed prior to approval or after the period of performance of the Task Order. The period of performance for Task Orders will be in accordance with dates specified in the Task Order. No Task Order will be written which extends beyond the expiration date of this Agreement. The total amount payable by Valley Water for an individual Task Order will not exceed the amount agreed to in the Task Order.
- D. Prevailing Wage Requirements: The Scope of Services may be considered by Valley Water to be "Public Works" requiring the payment of prevailing wages. See the Standard Consultant Agreement Section Four Fees and Payments, subsection 3. Prevailing Wages, and Appendix Three Task Order Template.

14. Good Neighbor

Valley Water always strives to be a good neighbor to the community adjacent to its facilities. Consultant will ensure that disturbance to neighbors is minimized. Consultant, its staff, and Subconsultants will always interact with the members of the public in a polite and professional manner.

15. Governmental Permits and Notifications

Unless otherwise expressly stated herein or in an executed Task Order, Consultant represents and warrants that it has investigated the need for, and has or will procure, at its cost, and in its own name to the extent allowed by law, all governmental permits, notifications, approvals and inspections required for the performance of the Services. Consultant shall promptly notify Valley Water if any such permit or approval lapses or is modified or revoked. If, pursuant to applicable law, any such permits or approvals must be

procured in Valley Water's name, Consultant shall promptly so inform Valley Water and assist Valley Water in obtaining such permits or approvals.

16. Taxes and Benefits

Consultant has full and exclusive liability for the payment of, and Consultant will pay, any and all taxes and contributions for unemployment insurance, retirement benefits, workers' compensation insurance or benefits, life insurance, pensions, annuities and similar benefits and any other employment-related costs, obligations, and duties that may now or hereafter be imposed by law, collective bargaining agreements or otherwise with respect to persons employed by Consultant for the performance of Services pursuant to this Agreement.

17. Nonwaiver of Rights

The failure of either Party to this Agreement to object to or to take affirmative action with respect to any conduct of the other Party that is in violation of the terms of this Agreement will not be construed as a waiver thereof, or as waiver of any future breach or subsequent wrongful conduct.

18. Notices

Unless otherwise specified in this Agreement, all requests for written approval or legal notices must be sent to the representatives below. All notices are deemed to have been given when made in writing and when delivered or mailed to the representatives of Valley Water and Consultant at their respective addresses as follows:

VALLEY WATER:

Deputy Operating Officer, as listed in Section 1. Representatives, of the attached Schedule(s), Scope of Services

CONSULTANT:

Consultant Principal Officer, as listed in Section 1. Representatives, of the attached Schedule(s), Scope of Services

19. No Third-Party Beneficiaries

Nothing in this Agreement, whether express or implied, shall be construed to give any person or entity, other than the Parties hereto, any legal or equitable right, remedy, or claim under or in respect of this Agreement or any covenants, conditions, or provisions contained herein.

20. Severability

If a court of competent jurisdiction holds any provision of this Agreement to be illegal, unenforceable, or invalid in whole or in part for any reason, the validity and enforceability of the remaining provisions, or portions of them, will not be affected, unless an essential purpose of this Agreement would be defeated by the loss of the illegal, unenforceable, or invalid provision.

21. Debt Limitation

This Agreement is contingent on the appropriation of sufficient funding by Valley Water for the services described in this Agreement. Valley Water is subject to laws or policies which limit its ability to incur debt in future years. Nothing in this Agreement shall constitute an obligation of future legislative bodies of Valley Water to appropriate funds for purposes of this Agreement.

22. Appendices

The following listed Standard Consultant Appendices are incorporated herein by this reference as though set forth in full:

Appendix One - Additional Legal Terms
Appendix Two - Dispute Resolution
Appendix Three - Task Order Template
Appendix Four - Insurance Requirements

23. Schedule(s) and Attachments

Schedule PM, Scope of Services, and the following listed Attachments are incorporated herein by this reference as though set forth in full:

Attachment One - Fees and Payments
Attachment Two - Schedule of Completion
Attachment Three - Consultant's Key Staff and Subconsultants
Attachment Four - Reference Materials

(SIGNATURES FOLLOW ON NEXT PAGE)

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IN WITNESS WHEREOF, THE PARTIES HAVE SET FORTH BELOW THEIR CONSENT TO THE TERMS AND CONDITIONS OF THIS AGREEMENT THROUGH THE SIGNATURES OF THEIR DULY AUTHORIZED REPRESENTATIVES.

SANTA CLARA VALLEY WATER DISTRICT
Valley Water

AECOM TECHNICAL SERVICES, INC.
Consultant

By: _____
John L. Varela
Chair Pro Tem
Board of Directors

By:  _____
Associate Vice President

Date: _____

Date: 5/10/2022

ATTEST:

Consultant's Address:
300 Lakeside Drive, Ste. 400
Oakland, CA 94612

Michele L. King, CMC
Clerk, Board of Directors

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**STANDARD CONSULTANT AGREEMENT
APPENDIX ONE
ADDITIONAL LEGAL TERMS**

1. Conflict of Interest for Future Services

Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant shall not submit a proposal:

- A. For any agreement to be awarded for planning, design, construction management or the construction of any project that is related to the Services provided pursuant to this Agreement;
- B. In response to any request for proposal or Valley Water solicitation developed or prepared by or with the assistance of Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant; or
- C. For any single or sole source products/services related to the Services pursuant to this Agreement or have a financial stake in any single or sole source products/services resulting from this Agreement.

2. Dispute Resolution

If a dispute occurs between the Parties as a result of this Agreement, then the Parties agree to use the Dispute Resolution process outlined in the Standard Consultant Agreement, Appendix Two Dispute Resolution.

3. Small Business Enterprise (SBE) Participation - NOT USED

4. Task Order Approvals

- A. Services to be performed pursuant to a Task Order may only commence once a specific Notice to Proceed for that Task Order has been issued by Valley Water.
- B. Task Orders are subject to approval by Valley Water Deputy Officer unless delegated to an Assistant Operating Officer and/or the Unit Manager.
- C. Valley Water Unit Manager(s) is authorized to approve individual Task Orders in an amount not-to-exceed \$[authorization amount]. [NOT USED]
- D. The total not-to-exceed amount for any one Task Order shall not exceed \$[NTE Amount]. [NOT USED]

5. Task Order Assignments [NOT USED]

6. California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirement

Prior to Valley Water executing a Task Order for Services involving public works, as defined herein, the Consultant, and its Subconsultant(s) performing public works, must provide evidence, in the form required by Valley Water, that Consultant and its Subconsultant(s) are in compliance with the California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirements.

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

1. Consultant's Questions and Concerns

Questions regarding the Terms, Conditions, and Services relating to this Agreement will be decided by Valley Water who will furnish the decisions to Consultant in writing within 30 days after receiving a written request from Consultant.

2. Dispute Resolution

A. Alternate Dispute Resolution

Valley Water intends to use Alternate Dispute Resolution (ADR) techniques including partnering and mediation to resolve disputes relating to the Project.

B. Consultant and its Subconsultants are expected to participate in all ADR efforts.

C. The cost of partnering, training facilities, and facilitator will be borne by Valley Water.

3. Negotiations Before and During Mediation

Negotiations to resolve disputes before and during mediation are initiated for settlement purposes only, are confidential, and are not binding unless otherwise agreed by Valley Water and Consultant.

4. Voluntary Mediation

A. Initiation of Mediation

Any Party to a dispute or claim may initiate mediation by notifying the other Party or Parties in writing.

B. Request for Mediation

A request for mediation must contain a brief written statement of the nature of the dispute or claim, and the names, addresses, and phone numbers of all parties to the dispute or claim, and those who will represent them, if any, in the mediation.

C. Selection of Mediator

- 1) Upon receipt of a written request for mediation, unless otherwise agreed by the Parties, within 14 days, the Parties will confer to select an appropriate mediator agreeable to all Parties.
- 2) If the Parties cannot agree on a mediator, they hereby agree to accept a mediator appointed by a recognized association such as the American Arbitration Association.

D. Qualifications of a Mediator

- 1) Any mediator selected must have expertise in the area of the dispute and be knowledgeable in the mediation process.

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

- 2) No person shall serve as a mediator in any dispute in which that person has any financial or personal interest in the result of the mediation.
- 3) Before accepting an appointment, the prospective mediator must disclose any circumstances likely to create a presumption of bias or prevent a prompt meeting with the Parties. Upon receipt of such information, the Parties will confer and decide whether to select another mediator.

E. Vacancies

If any mediator becomes unwilling or unable to serve, another mediator will be selected unless the Parties agree otherwise.

F. Representation

- 1) Any Party may be represented by person(s) of their choice who must have full authority to negotiate.
- 2) The names and addresses of such person(s) must be communicated in writing to both Parties and to the mediator.

G. Time and Place of Mediation

- 1) The mediator will set the time of each mediation session.
- 2) The mediation will be held at a convenient location agreeable to the mediator and the Parties, as determined by the mediator.
- 3) All reasonable efforts will be made by the Parties and the mediator to schedule the first session within 60 days after selection of the mediator.

H. Identification of Matters in Dispute

- 1) Parties shall comply with the process as required by the mediator with regard to providing the mediator with a memorandum setting forth its position with regard to the issues that need to be resolved. At the discretion of the mediator, or otherwise agreed by the Parties, the Parties may mutually exchange such memoranda.
- 2) At the first session, the Parties will be expected to produce all information reasonably required for the Mediator to understand the issue(s) presented. The mediator may require each Party to supplement such information.

I. Authority of Mediator

- 1) The mediator does not have authority to impose a settlement on the Parties but will attempt to assist the Parties in reaching a satisfactory resolution of their dispute.

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

- 2) The mediator is authorized to conduct joint and separate meetings with the Parties and to make oral and written recommendations for settlement.
- 3) Whenever necessary, the mediator may also obtain expert advice concerning technical aspects of the dispute, provided the Parties agree and assume the expenses of obtaining such advice. Arrangements for obtaining such advice will be made by the mediator or the Parties, as determined by the mediator.
- 4) The mediator is authorized to end the mediation whenever, in the mediator's judgment, further efforts at mediation would not contribute to a resolution of the dispute between the Parties.

J. Privacy

- 1) Mediation sessions are private.
- 2) The Parties and their representatives may attend mediation sessions.
- 3) Other persons may attend only with the permission of the Parties and with the consent of the mediator.

K. Confidentiality

Except as provided by California or federal law or regulation:

- 1) The mediator will not divulge confidential information disclosed to a mediator by the Parties or by witnesses in the course of the mediation.
- 2) All records, reports, or other documents received by a mediator while serving as mediator, are confidential.
- 3) The mediator must not be compelled to divulge such records or to testify in regard to the mediation in any adversary proceeding or judicial forum.
- 4) The Parties must maintain the confidentiality of the mediation and must not rely on, or introduce as evidence in any arbitration, judicial or other proceedings:
 - a. Views expressed, or suggestions made by the other Party with respect to a possible settlement of the dispute;
 - b. Statements made by the other Party in the course of the mediation proceedings;
 - c. Proposals made or views expressed by the mediator; and

- L. Whether the other Party had or had not indicated willingness to accept a proposal for settlement made by the mediator.**

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

M. No Stenographic Record

There shall be no stenographic record of the mediation.

N. Termination of Mediation

The mediation shall be terminated:

- 1) By the execution of a Settlement Agreement by the Parties;
- 2) By a written declaration of the mediator to the effect that further efforts at mediation are no longer worthwhile; or
- 3) By a written declaration of a Party or Parties to the effect that the mediation proceedings are terminated.

O. Exclusion of Liability

No mediator shall be a necessary Party in judicial proceedings related to the mediation.

P. Interpretation and Application of These Mediation Provisions

The mediator will interpret and apply these mediation provisions insofar as they relate to the mediator's duties and responsibility.

Q. Expenses

- 1) The expenses of witnesses for each Party must be paid by the Party producing the witnesses.
- 2) All other expenses of the mediation, including required travel and other expenses of the mediator, and the expenses of any witness called by the mediator, or the cost of any proofs or expert advice produced at the direct request of the mediator, will be apportioned as the mediator finds appropriate or as otherwise agreed to by the Parties.

5. Compensation for Participation in Mediation

Neither Consultant nor Valley Water is entitled to compensation for time spent in or for negotiations or mediation to resolve questions or disputes between Consultant and Valley Water arising out of this Agreement.

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**STANDARD CONSULTANT AGREEMENT
APPENDIX THREE
TASK ORDER TEMPLATE**

Task Order No. _____

Title: _____

Agreement: Standard Consultant Agreement _____ ("Agreement") Between the Santa Clara Valley Water District ("Valley Water") and _____ ("Consultant"), dated _____.

Valley Water: _____

Consultant: _____

Dollar Amount of Task Order: Not-to-Exceed \$ _____

1. Upon full execution of this Task Order No. _____, as set forth in the Standard Consultant Agreement, Section Twelve, Miscellaneous Provisions, subsection 13. Task Orders, and the issuance of a Notice to Proceed by Valley Water Project Manager, the Consultant is hereby authorized to perform the Services described in Attachment A to this Task Order. Any costs incurred, Services performed or expenditures by the Consultant before this Task Order is executed or before the issuance of the Notice to Proceed will be considered outside the contracted Scope of Services and will not be eligible for payment.
2. Both the Scope of Services to be performed and the deliverables to be provided in accordance with this Task Order are described in Attachment A which is attached hereto and incorporated by this reference. Attachment A shall include at a minimum the following:
 - A. The Consultant personnel to be assigned to perform the Services, including resumes if not previously provided to Valley Water;
 - B. The total not-to-exceed fees amount for Consultant to complete the Services, including estimated number of hours required to perform the Services assigned to each Consultant classification;
 - C. Estimated cost of each other direct cost and reimbursable expense, including any applicable fees;
 - D. The distribution detail for each service, direct cost, and reimbursable expense. This information must be included in the invoice for the services authorized under this task order; and
 - E. Project schedule for completing the Scope of Services.
3. Consultant shall be compensated at fixed fees or at the hourly rates established in Schedule PM, Attachment One, Fees and Payments. Consultant agrees that it will provide all equipment, furnish all materials, except as may be otherwise noted in the Attachment A.
4. This Task Order becomes effective on the date of full execution by authorized representatives of the Parties and remains in effect until the earlier of: completion of the tasks set forth in Attachment A; or [expected completion date].

**STANDARD CONSULTANT AGREEMENT
APPENDIX THREE
TASK ORDER TEMPLATE**

5. Copies of applicable local, state and federal permits required to perform the Services described in Attachment A are attached to this Task Order, unless the Consultant previously provided the appropriate permits to Valley Water.
6. Consultant shall perform all Services described in Attachment A to this Task Order in accordance with the Terms and Conditions of the Agreement.
7. Prevailing Wage Requirements
 - A. The Scope of Services described in this Task Order is considered by Valley Water to be "Public Works" requiring the payment of prevailing wages. See the Standard Consultant Agreement, Section Four, Fees and Payments, subsection 3. Prevailing Wages.
 - B. In accordance with prevailing wage laws, the Director of the California Department of Industrial Relations (Director) has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes available to the particular craft, classification, or type of workers employed on the Project. These rates are set forth in the latest determination obtained from the Director, which is on file in Valley Water's Office of the Clerk of the Board of Directors and incorporated herein by reference the same as though set forth in full. The rates are also available on the State of California Department of Industrial Relations website at <http://www.dir.ca.gov>.

8. Signatures:

Signature:

NAME OF CONSULTANT FIRM
[PRINT NAME]
[PRINT TITLE]

DATE

Signature:

SANTA CLARA VALLEY WATER DISTRICT
[PRINT NAME]
[PRINT TITLE]

DATE

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**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

Please Note: Failure to comply with the instructions below could result in a delay in receiving the Notice to Proceed. The District will not be responsible for time lost or costs incurred due to failure to comply with these requirements. Please note the check-list of documents needed at the end of this Appendix Four Insurance Requirements.

Without limiting the Consultant's indemnification of, or liability to, the Santa Clara Valley Water District ("District" or "Valley Water"), the Consultant must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions as listed below.

Consultant must provide its insurance broker(s)/agent(s) with a copy of these requirements and warrants that these requirements have been reviewed by Consultant's insurance agent(s) and/or broker(s), who have been instructed by Consultant to procure the insurance coverage required herein.

In addition to certificates, Consultant must furnish District with copies of all original endorsements affecting coverage required by this Appendix. The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. **All endorsements and certificates are to be received and approved by District before the Agreement is executed.** In the event of a claim or dispute, District has the right to require Consultant's insurer to provide complete, certified copies of all required pertinent insurance policies, including endorsements affecting the coverage required by this Appendix Four Insurance Requirement document.

If your insurance broker has any questions about the above requirements, please advise him/her to call Mr. David Cahen, District Risk Manager at (408) 630-2213.

Certificates of Insurance

Consultant shall furnish the District with a Certificate of Insurance. The certificates will be issued on a standard ACORD Form.

Consultant shall instruct their insurance broker/agent to submit all insurance certificates and required notices electronically in PDF format to the designated District Contract Administrator and email a copy to: valleywater@ebix.com.

The certificates will:

1. Identify the underwriters, the types of insurance, the insurance limits, the deductibles and the policy term;
2. Include copies of all the actual policy endorsements required herein; and
3. In the "Certificate Holder" box include:

**Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Agreement/PB No. VW0008**

IMPORTANT: The agreement or PB number must be included.

**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

In the Description of Operations/Locations/Vehicles/Special Items Box:

1. Certificate Holder shall be named as Additional Insured;
2. District agreement or project number shall appear;
3. The list of policies scheduled as underlying on the Umbrella policy shall be listed; and
4. Waiver of Subrogation must be indicated as endorsed to all policies.

If Consultant receives any notice that any of the insurance policies required by this Appendix Four Insurance Requirements may be cancelled or coverage reduced for any reason whatsoever, Consultant or insurer shall immediately provide written notice to the designated District Contract Administrator that such insurance policy required by this Appendix Four Insurance Requirements is canceled or coverage is reduced.

Maintenance of Insurance

If Consultant fails to maintain such insurance as is called for herein, District, at its option, may suspend payment for work performed and/or may order Consultant to suspend all Consultant's work at Consultant's expense until a new policy of insurance is in effect.

Renewal of Insurance

Consultant will provide the District with a current Certificate of Insurance and endorsements within thirty (30) business days from the expiration of insurance.

Consultant shall instruct its insurance broker/agent to:

1. Submit all renewals of insurance certificates and required notices electronically in PDF format to:

valleywater@ebix.com

2. Provide the following information in the "Certificate Holder" box:

**Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Agreement/PB No. VW0008**

IMPORTANT: The agreement or PB number must be included.

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**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

Consultant must, at its sole cost and expense, procure and maintain during the entire period of this Agreement the following insurance coverage(s).

Required Coverages

1. Commercial General/Business Liability Insurance with coverage as indicated:

\$1,000,000 per occurrence / **\$1,000,000** aggregate limits for bodily injury and property damage

General Liability insurance must include:

- a. Coverage at least as broad as found in standard ISO form CG 00 01.
- b. Contractual Liability expressly including liability assumed under this contract.
- c. If Consultant must be working within fifty (50) feet of a railroad or light rail operation, any exclusion as to performance of operations within the vicinity of any railroad bridge, trestle, track, roadbed, tunnel, overpass, underpass, or crossway must be deleted, or a railroad protective policy in the above amounts provided.
- d. Severability of Interest.
- e. Broad Form Property Damage liability.

2. Business Auto Liability Insurance with coverage as indicated:

\$1,000,000 combined single limit for bodily injury and property damage per occurrence, covering all owned, non-owned and hired vehicles.

3. Professional/Errors and Omissions Liability with coverage as indicated:

\$2,000,000 per claim/ **\$2,000,000** aggregate

Professional/Errors and Omission Liability appropriate to the Consultant's profession, and must include:

- a. If coverage contains a deductible, or self-insured retention, it shall not be greater than one hundred thousand dollars (\$100,000) per occurrence/event.
- b. Coverage shall include contractual liability
- c. If coverage is claims-made:
 - i. Certificate of Insurance shall clearly state that the coverage is claims-made.
 - ii. Policy retroactive date must coincide with or precede the Consultant's start of work (including subsequent policies purchased as renewals or replacements).
 - iii. Policy must allow for reporting of circumstances or incidents that might give rise to future claims.
 - iv. Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of the contract of work.

**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

4. Workers' Compensation and Employer's Liability Insurance

Statutory California Workers' Compensation coverage covering all work to be performed for the District.

Employer Liability coverage for not less than \$1,000,000 per occurrence.

General Requirements

With respect to all coverages noted above, the following additional requirements apply:

1. **Additional Insured Endorsement(s):** Consultant must provide an additional insured endorsement for Commercial General/Business Liability (for both on-going and completed operations) and Business Automobile liability coverage naming the **Santa Clara Valley Water District, its Directors, officers, employees, and agents, individually and collectively**, as additional insureds, and must provide coverage for acts, omissions, etc. arising out of the named insureds' activities and work. Other public entities may also be added to the additional insured endorsement as applicable and the Consultant will be notified of such requirement(s) by the District. **NOTE:** This section does not apply to the Workers' Compensation and Professional Liability policies.

(**NOTE:** Additional insured language on the Certificate of Insurance is **NOT** acceptable without a separate endorsement such as Form CG 20 10, CG 2033, CG 2037, or CG 2038. Editions dated 07/04 are not acceptable.)

2. **Primacy Clause:** Consultant will provide evidence (either through the Certificate of Insurance, endorsement or language in the insurance contract) that consultant's insurance is primary with respect to any other insurance which may be carried by the District, its Directors, its officers, agents and employees, and the District's coverage must not be called upon to contribute or share in the loss. **NOTE:** This section does not apply to the Workers' Compensation policies.
3. **Cancellation Clause:** Consultant will provide endorsements for all policies stating that the policy will not be cancelled without 30 days prior notification to the District.
4. **Acceptability of Insurers:** All coverages must be issued by companies admitted to conduct business in the State of California, which hold a current policy holder's alphabetic and financial size category rating of not less than A- V, according to the current Best's Key Rating Guide or a company of equal financial stability that is approved by the District's Risk Manager. Non-Admitted companies may be substituted on a very limited basis at the Risk Manager's sole discretion.
5. **Self-Insured Retentions or Deductibles:** Consultant affirms that it will fully comply with all insurance requirements, and Consultant will be fully and completely responsible for payment of all SIRs and deductibles. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the Entity guaranteeing payment of losses and related investigations, claim administration, and defense expenses. Consultant agrees that in the

**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

event of a claim they will pay down any agreed upon SIR in a prompt manner as soon as bills are incurred in order to trigger the insurance related to the SIR.

6. **Subconsultants:** The Consultant shall secure and maintain or shall be responsible for ensuring that all subconsultants performing the Contract Services secure and maintain all insurance coverages appropriate to their tier and scope of work in a form and from insurance companies reasonably acceptable to the District.
7. **Amount of Liability not Limited to Amount of Insurance:** The insurance procured by Consultant for the benefit of the District must not be deemed to release or limit any liability of Consultant. Damages recoverable by the District for any liability of Consultant must, in any event, not be limited by the amount of the required insurance coverage.
8. **Coverage to be Occurrence Based:** Except for Professional Liability, all coverage must be occurrence-based coverage. Claims-made coverage is not allowed.
9. **Waiver of Subrogation:** Consultant agrees to waive subrogation against the District to the extent any loss suffered by Consultant is covered by any Commercial General Liability policy, Automobile policy, Workers' Compensation policy described in **Required Coverages** above. Consultant agrees to advise its broker/agent/insurer and agrees to provide evidence (either through the Certificate of Insurance, endorsement or language in the insurance contract) that subrogation has been waived by its insurer.
10. **Non-compliance:** The District reserves the right to withhold payments to the Consultant in the event of material noncompliance with the insurance requirements outlined above.

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**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

CHECK LIST OF DOCUMENTS NEEDED

General Liability:	A.	Limits (\$1,000,000)	
	B.	Additional Insured (Endorsement)	
	C.	Waiver of Subrogation (COI, Endorsement or policy language)	
	D.	Primacy (COI, Endorsement or policy language)	
	E.	Cancellation Endorsement	
Auto Liability:	A.	Limits (\$1,000,000)	
	B.	Additional Insured (Endorsement)	
	C.	Waiver of Subrogation (COI, Endorsement or policy language)	
	D.	Primacy (COI, Endorsement or policy language)	
	E.	Cancellation Endorsement	
Umbrella:	A.	Limits (\$)	
	B.	Primacy (Endorsement or policy language)	
Workers Comp:	A.	Limits (\$1,000,000)	
	B.	Waiver of Subrogation (Endorsement or policy language)	
	C.	Cancellation Endorsement	
Professional Liability:	A.	Limits (\$2,000,000)	
	B.	Cancellation Endorsement	

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**SCHEDULE PM
SCOPE OF SERVICES**

1. Representatives

- A. Valley Water's representatives are as listed below. Unless otherwise provided in this Agreement, all correspondence to Valley Water must be addressed to Valley Water Project Manager (VWPM).

Barton Ching (Valley Water Project Manager)
Senior Engineer
Business Support & Asset Management Unit
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3638

Phone: 408-630-3079

Email: BChing@valleywater.org

Erin Baker
Business Support & Asset Management Unit
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3638

Phone: 408-630-2608

Email: EBaker@valleywater.org

- B. The Consultant's Project Manager is as listed below. All Valley Water questions pertaining to this Agreement shall be referred to the Consultant's Project Manager.

Jason Chen (Consultant Project Manager)
Project Manager
888 SW 5th Ave, Suite 600, Portland, OR 97204
Phone: 971-323-6276
Email: jason.chen@aecom.com

- C. The Consultant's Principal Officer for this Agreement is as listed below. As per the Agreement, Section Twelve, Miscellaneous Provisions, subsection 18. Notices, all notices pertaining to this Agreement must be submitted to the Consultant's Principal Officer.

Craig Smith (Consultant Principal Officer)
Associate Vice President
300 Lakeside Drive, Ste. 400, Oakland, CA 94612

Phone: 510-874-3117

Email: craig.j.smith@aecom.com

SCHEDULE PM SCOPE OF SERVICES

2. Scope of Services

- A. This Scope of Services (Schedule PM) describes the professional planning and conceptual design services to be performed by Consultant for Valley Water's Distribution System Master Plan Implementation project (Project).
- B. Consultant shall be responsible for the services authorized to be performed under the scope of services, and shall perform the services comprising each task, except where it is expressly stated that such services will be performed by others.

3. Project Objectives

The Project will develop a comprehensive implementation plan that coordinates increasing water demands and changes to future water supplies with aging infrastructure needs and other operational improvements for the distribution system (DS) as well as integrates with the recently completed Water Supply Master Plan (WSMP).

The main objectives of the project are as follows:

- A. Define project goals and objectives including but not limited to capacity, operational, and reliability goals that align with Valley Water's WSMP.
- B. Determine improvements needed for each DS facility to meet the defined goals and objectives over a 30-year period through the following evaluations:
 - a. Identify improvements needed to meet future capacity, operational, reliability and other goals.
 - b. Develop a 30-year renewal and replacement (R/R) plan.
- C. Integrate the recommended DS improvements with other Valley Water infrastructure planning projects improvements.
- D. Synthesize improvements into projects which may provide varying levels of service at different costs, perform alternative analysis, select the preferred projects, and prepare planning study report.
- E. Develop an implementation plan, including scope, budget, and coordinated schedule, for the preferred projects (capital, operations and maintenance).
- F. Prepare a report summarizing all work completed and present the recommended 30-year Capital Improvement Program for Valley Water's DS facilities.
- G. Prepare a Programmatic Environmental Impact Report (PEIR) for the project.
- H. As a supplemental service, perform program management services beyond the initial implementation plan development to help oversee the implementation of the DS projects approved by the Valley Water Board.

4. Project Background

Valley Water seeks to provide water supply of adequate quantity and quality to the 2 million people who live and work in Santa Clara County. To fulfill this mission, Valley Water imports water into the county, manages two groundwater subbasins (total 548,000 acre-feet (AF) of operational storage capacity), and owns and operates three water treatment plants (total 220 million gallons per day (MGD) treatment capacity), an advanced water purification center (8 MGD production

SCHEDULE PM SCOPE OF SERVICES

capacity), ten reservoirs (total reservoir capacity of 166,140 AF), three pumping plants, a hydroelectric plant, twenty appropriative water rights licenses including one filed water right permit (in all total over 227,300 acre-feet per year (AFY), numerous recharge facilities in seven major recharge systems (101 ponds covering 276 acres totaling approx. 144,000 AFY of managed recharge), and related distribution facilities (142 miles of raw and treated water pipeline and more than 275 miles of jurisdictional streams, including 91 miles suitable for in-stream recharge). Valley Water is authorized to import, use, store, treat and distribute water within its jurisdictional boundaries to provide water in sufficient quantity and quality for present and future beneficial use.

Water supply is comprised of imported and local sources, as well as previously stored groundwater supplies which are both withdrawn from in-county and out-of-county storage. Imported supplies include the State Water Project (SWP) and federal Central Valley Project (CVP). Valley Water holds contracts with the State government for up to 100,000 AFY of supply from the SWP and federal government for up to 152,500 AFY of supply from the CVP, respectively. Actual deliveries depend on the availability of water supplies after meeting regulations to protect the environment and Delta water quality. The imported water delivered by the SWP and CVP is sent to Valley Water's three water treatment plants, used to supplement groundwater recharge, or stored in local and State reservoirs for use in subsequent years.

Valley Water also stores some of its imported water in the Semitropic Groundwater Bank in Kern County (total 350,000 AF storage capacity) for limited withdrawal during dry periods.

For the purpose of organizing the work of this project, the distribution system is broken up into pipelines (Raw, East Side Treated, West Side Treated, and Recycled Water), pumping facilities, canals, and wells (see Table 1 and Figure 1).

Table 1 – Valley Water Owned Conveyance Infrastructure Summary

Notes: Unless labeled otherwise, D= Diameter, L = Length; PCCP = Prestressed Concrete Cylinder Pipe (AWWA C301); CCP = Concrete Cylinder Pipe (AWWA C303) - also called Bar Wrapped Pipe (BWP); WSP = Welded Steel Pipe (AWWA C200); ERDIP = Earthquake Resistant Ductile Iron Pipe; RCP = Reinforced concrete pipe; bgs = below ground surface; gpm = gallons per minute; and N/A = Not Available.

Pipe Materials and lengths are approximate and will be provided by Valley Water in more detail in asset registries and other record drawings after issuance of the Notice-to-proceed.

Source: Appendix K by G&E Engineering Systems Inc., *Santa Clara Valley Water District Seismic Risk Assessment Pipeline Analysis Technical Memorandum 3*, pg. 28, Dec. 30, 2018.

Type		Subtype	D (inches)	Material	Year Built	L (miles)
Pipelines	Raw Water	Almaden	78	PCCP	1981	11.61
		Valley	72	PCCP	1965	
		Pipeline	72	WSP	1980	
		Anderson	54	CCP	1984	0.79
		Force Main				
		Calero	78	PCCP	1989	2.72
		Pipeline	60	WSP		
		Central	66	CCP	1964	12.66
		Pipeline		PCCP	1964	
				WSP	1964	

**SCHEDULE PM
SCOPE OF SERVICES**

Type		Subtype	D (inches)	Material	Year Built	L (miles)
		Coyote Discharge Line	N/A	RCP	1987	0.5
		Cross Valley Pipeline	78 78 54	PCCP WSP CCP	1979 1982 1983 1984	8.25
		Main Ave and Madrone Pipeline	30 36	HDPE	2019	2.65
		Pacheco Conduit (USBR)	120	PCCP Tunnel	1983	13.31
		Pacheco Tunnel Reach 1 (USBR)	120	Tunnel	1968	1.83
		Pacheco Tunnel Reach 2 (USBR)	120	Tunnel	1983	7.7
		Penitencia Force Main	66	PCCP ERDIP	1974 2016	0.45
		Rinconada Force Main	73.5	WSP	1960	1.43
		Santa Clara Conduit (USBR)	96 102	PCCP Tunnel	1984	21.81
		Santa Clara Tunnel (USBR)	102	Tunnel	1985	0.96
		Santa Teresa Force Main	72	PCCP	1989	0.41
		Stevens Creek Pipeline	20 30 36	CCP WSP	1966	4.13
	East Side Treated Water	East Evergreen Pipeline	33 48	CCP	1973	6.41
		Milpitas Pipeline	42	WSP	1992	4.61
		Parallel East Pipeline	54	WSP	1995	2.35
		Penitencia Delivery Main	60	PCCP ERDIP	1980 2016	0.45

**SCHEDULE PM
SCOPE OF SERVICES**

Type		Subtype	D (inches)	Material	Year Built	L (miles)	
	West Side Treated Water	Snell Pipeline	60 66 72	PCCP WSP Tunnel	1986	8.49	
		Campbell Distributary	20	CCP WSP	1966 1966	2.07	
		Mountain View Distributary	24	CCP	1989	1.15	
		Santa Clara Distributary	30	CCP	1966	4.13	
		Sunnyvale Distributary	33	WSP	1969	8.49	
		West Pipeline	85.5 79.5 67.5 55.5 49.5 36 30	WSP WSP WSP WSP WSP CCP CCP	1966 1966 1966 1966 1966 1966 1980	9.11	
	Recycled Water	South County Recycled Water (Gilroy Reclamation Line)	12	Steel	1978	14.5	
		Wolfe Road and Homestead Crossing Pipelines	24 14	PVC PVC	2019 2019	2.5 0.1	
	Pump Stations		Coyote Pumping Plant	six pumps, 2,000 HP each			
Pacheco Pumping Plant			12 Pumps, 2,000 HP each (13.59 m³/Sec, 310 mgd)				
Vasona Pumping Plant			2 Pumps, 200 HP each 2 Pumps, 400 HP each				
Intertie Pump Station			4 Pumps, 700 HP each				
Recycled Water Pump Stations		Area 93	432,000 kWh				
		Area 94	65,000 kWh				
		Zone 2	151,000 kWh				
		San Lucar	2 Pumps, 7.5 HP each				

**SCHEDULE PM
SCOPE OF SERVICES**

Type	Subtype	D (inches)	Material	Year Built	L (miles)
Canals	Almaden-Calero Canal			1935 concrete-lined	4
	Vasona Canal			1930's earth-lined channel	2.5
	Coyote-Alamitos Canal			1955	15
	Coyote Canal			1935	25
	Coyote Canal Extension			1950's	8.5
	Evergreen Canal			1950's	8.75
	Evergreen Pump Station			3 Pumps, 550 HP total	
Wells	Campbell Well Field			2000	Three wells Total 3MGD production capacity
	San Tomas Injection Well			1996	570' bgs 1000 gpm

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SCHEDULE PM SCOPE OF SERVICES

5. Assumptions and Requirements

A. General Assumptions and Requirements

- 1) **Manage Scope of services.** Consultant shall manage the Scope of Services such that the work is completed within the Not-to-Exceed Fees limit and in accordance with the Project schedule and ensure that all services and deliverables meet Valley Water and Project objectives and requirements.
- 2) **Deliverable Format.** Consultant shall submit deliverables in both electronic and hardcopy format, if requested. Deliverables shall be submitted in PDF and native (editable) format, including Word documents, Excel spreadsheets, PowerPoint files, AutoCAD files, etc. The hard copy deliverables shall be printed in professional quality presentation and submitted in 5 (five) copies, if requested. Valley Water may require original copies of signed documents and/or scanned (Adobe PDF) versions.
- 3) **Review of Deliverables.** Valley Water will review and comment on all Project deliverables and forward to the Consultant for revision and preparation of final versions. As determined by Valley Water, some of the deliverables may also be subject to review and comment from regulatory agencies and stakeholders following Valley Water review process. For each deliverable, Valley Water will collect comments from all Valley Water stakeholders and provide a single set of consolidated comments to the Consultant. The comments provided by Valley Water staff during the workshops will be documented by the Consultant as meeting minutes and will be included in the next revision of the documents.
- 4) **Valley Water Quality Environmental Management System.** Valley Water maintains a Quality Environmental Management System (QEMS) which has procedures, guidelines and work instructions for the performance of various Valley Water work. If requested, the Consultant will perform some of the Agreement tasks and/or sub-tasks in accordance with the QEMS framework. In such situations, Valley Water Project Manager (VWPM) will provide the Consultant with the specific QEMS procedure, guideline, and/or work instruction prior to the production of deliverables.
- 5) **Consultant Responsibility.** Consultant, with its expertise in performing the Services described herein, is responsible for making the appropriate assumptions in each task to complete each task's deliverables and to achieve the Project objectives of this Agreement as described in Section Three, Project Objectives of the Scope of Services.
- 6) **Document Control.** The Consultant is responsible for establishing and maintaining its own document control system to execute this Scope of Services. An internal document control system for this project is maintained by Valley Water.
- 7) **File Exchange Service.** Consultant will provide a file exchange service, accessible to all parties as designated by Valley Water, to facilitate communications, particularly of large files over three megabytes. Difficulties in using and transmitting information with this exchange service shall be resolved by the Consultant.

SCHEDULE PM SCOPE OF SERVICES

If transmitting or receiving information does not occur in a timely manner, Valley Water will not be responsible for delays in completing Project work. Consultant may need to coordinate with Valley Water's Information Technology Division to address any firewall issues and/or permissions required to allow for these communications.

B. Project-Specific Assumptions and Requirements

- 1) Valley Water will provide written comments electronically on all draft versions of consultant's written deliverable documents.
- 2) Valley Water will schedule project meetings with Valley Water staff and external stakeholders as needed and will provide meeting space or a virtual meeting platform for all meetings.
- 3) Valley Water has compiled existing relevant plans, reports and documents and will emphasize the relevance of some reports over others in reviewing past reports.
- 4) Consultant will confirm format of technical memoranda and reports with Valley Water and will follow the same format for all deliverables.
- 5) Consultant is advised that safety and security issues may occur at Project locations. It is the Consultant's responsibility to identify, specify, and take appropriate measures to address such issues. It is recommended that the Consultant coordinate with the City of San Jose Police Department Secondary Employment Unit (SJPDSEU) for any on-site security during work hours.

6. Distribution System Master Plan Implementation Project Tasks

Summary of Project Tasks:

Task 1 - Project Management, Stakeholder Meetings, and Project Development Workshops
 Task 2 - Review Existing Records, Master Plans, and Reports
 Task 3 - Define Goals and Objectives with Board and Stakeholder Input
 Task 4 - Asset Risk and Renewal Methodology
 Task 5 - Develop Project Assessment Methodology
 Task 6 - Evaluation of Raw Water Pipelines
 Task 7 - Evaluation of East Side Treated Water Pipelines
 Task 8 - Evaluation of West Side Treated Water Pipelines
 Task 9 - Evaluation of Pump Stations
 Task 10 - Condition Assessment and Evaluation of Canals, Wells, and Recycled Water Facilities
 Task 11 - Integrate Recommendations with Other Master Plans
 Task 12 - Project Development, Evaluation, Selection, and Planning Study Report (10%)
 Task 13 - Project Implementation Plan
 Task 14 - Distribution System Master Plan Implementation Project Report
 Task 15 - Stakeholder Outreach Strategy
 Task 16 - Support Development of Technical Standards
 Task 17 - Environmental Planning and Permitting
 Task 18 - Supplemental Services

The Consultant shall provide all services and deliverables in Tasks 1 through 17 as required by this **Scope of Services** to the satisfaction of Valley Water.

SCHEDULE PM SCOPE OF SERVICES

Task 1 - Project Management

Consultant shall manage this Scope of Services such that the work is completed within the fees limit stated in Attachment One to Schedule PM, Fees and Payments, and in accordance with the Project Schedule stated in Attachment Two to Schedule PM, Schedule of Completion, while ensuring that all services and deliverables by the Consultant meet Valley Water and Project requirements.

1.1 Kickoff Meeting

Consultant shall prepare meeting materials and participate in kickoff meeting with Valley Water. The purpose of the kickoff meeting is to introduce key Valley Water and Consultant team members to one another, acquaint all participants with the purpose of and expectations for the Project, describe team members' roles and responsibilities, describe Project procedures, and summarize scope and schedule.

1.2 Project Work Plan

1.2.1 Consultant shall prepare a Project Work Plan in accordance with this Scope of Services.

1.2.2 The Project Work Plan shall include Project objectives, requirements, constraints, a detailed Project Schedule (showing major tasks and deliverables), a breakdown of Consultant's costs for the major tasks (including proposed hours), a list of the Consultant's team members and their roles and responsibilities, communication protocols (internal and external), document control procedures, and other administrative procedures.

1.2.3 The Project Work Plan shall include a Project Quality Assurance and Quality Control (QA/QC) Plan documenting the Consultant's procedures to ensure the Consultant's services and deliverables meet Valley Water requirements and accepted practices and standards of the Consultant's profession. Valley Water reserves the right to request and review the Consultant's Project documentation demonstrating its adherence with their own quality assurance procedures.

1.3 Progress Meetings and Workshops

Valley Water and Consultant key staff and subconsultants, as determined necessary and appropriate by Consultant and subject to Valley Water Project Manager (VWPM) approval, shall coordinate and attend periodic progress meetings, quarterly steering committee meetings, and workshops with Valley Water staff, as needed. At a minimum, reports for progress meetings shall include review of invoices, schedule, decision log, and progress of the work.

1.3.1 Meeting Agenda & Summary Notes

For each meeting or workshop, the Consultant shall prepare the meeting agenda and notes and submit them for review by the VWPM at least one week prior to the meeting. Within three business days following each progress meeting/workshop, Consultant shall prepare and submit a draft electronic copy of meeting summary notes to the VWPM for review and comment. Consultant shall incorporate review

SCHEDULE PM SCOPE OF SERVICES

comments and submit final meeting notes to the VWPM within one week of receiving comments.

1.3.2 **One-on-One Meetings with Valley Water Project Manager**

In a meeting/call with the VWPM, the Consultant Project Manager must provide a brief weekly update of the team's work activities completed within the week, the look-ahead activities, and the issues and actions that require Valley Water's attention. Frequency of these meetings and calls may be adjusted as directed by the VWPM.

1.3.3 **Additional Review Meetings**

Consultant shall recommend convening and attending meetings, workshops and consultations with Valley Water as needed to complete the tasks. An initial budget for these meetings shall be included in the base contract budget. Approved efforts beyond that budget shall be funded as a supplemental task.

1.4 **Progress Reports**

Consultant shall prepare a monthly progress report that will be a high-level summary of the month's activities with an overall analysis of the various projects' progress including issues and concerns and a look-ahead schedule for the following month's activities.

1.4.1 Risk Register - This will confirm, in writing, whether the Scope of Services is on schedule and whether each task is on track to be completed within the not-to-exceed amount (budget) for that task. In addition, the risk register will summarize challenges/risks, if any, that may impact Consultant's ability to satisfy the requirements of the Agreement.

1.4.2 Scope Update - This will be a narrative that summarizes overall progress in completing the Scope of Services, including accomplishments such as milestones and deliverables completed, the Tasks and Subtasks that were actively performed during the reporting period, anticipated work for the next month, issues encountered or anticipated, the Tasks that have not been started as planned or will be completed later than planned, explanations for any major variances to complete each Task within the not-to-exceed amount (budget) assigned to that task, and a plan for recovering any reported delay or bringing anticipated cost variances into alignment with the agreed upon not-to-exceed amount.

1.4.3 Fee Update - This report will show the current period and accumulated fees to date on a Subtask and Task basis, the not-to-exceed amount (budget) for each Task, the Agreement total not-to-exceed amount (budget), the estimated cost to complete the Scope of Services, and a comparison of the latter two to show any variation. The report will identify cost issues and measures to be taken to remedy issues.

SCHEDULE PM SCOPE OF SERVICES

1.4.4 Schedule Updates - This will include a four (4)-week look-ahead schedule that will encompass work for the next reporting period and will address any changes on the Schedule of Completion shown in Attachment Two to Schedule PM. This update will show comparison of the actual progress as compared to the adopted baseline schedule, include analysis of critical Tasks to identify potential delays, include methods to bring or accelerate these critical Tasks to bring the overall project in conformance with the Baseline Schedule, and reconcile scope and cost changes that impact schedule. This update will also include explanations for any changes and resulting impacts to the project schedule. This schedule update will also include approved and forecasted milestone dates.

1.5 Coordination and Communication with External Agencies

Consultant shall assist the VWPM with coordination and communication with appropriate regulatory or other agencies, as necessary, to execute this Scope of Services. This task includes support in drafting correspondence related to the Consultant's Project activities as requested by Valley Water. An initial budget for this subtask shall be included in the base contract budget. Approved efforts beyond that budget shall be funded as a supplemental task.

1.6 Decision Log

Consultant shall create and maintain a record of all decisions made during the course of the Agreement. For each decision, the log will include the date(s), key factors discussed, decision made, and impacts, if any, on scope, schedule, and fees. The Decision/Change Log will be updated by the Consultant prior to the progress meetings and will be used for discussion purposes.

Task 1 – Assumptions

1. Level of effort assumes quarterly Steering Committee Meetings (12 meetings, 2 attendees, 96 hours for meetings and 192 hours for preparation).
2. Level of effort assumes quarterly CIP Committee Meetings (12 meetings, 2 attendees, 96 hours for meetings and 192 hours for preparation)
3. Level of effort assumes Executive Committee/Board of Directors Meetings twice per year (4 meetings, 2 attendees, 32 hours for meetings and 64 hours for preparation)
4. Level of effort assumes Retailer Meetings twice per year, up to quarterly (8 meetings, 2 attendees, 64 hours for meetings and 128 hours for preparation)
5. Level of effort assumes meetings with regulatory agencies (4 meetings, 2 attendees, 32 hours for meetings and 64 hours for preparation)
6. Level of effort assumes meetings with specific stakeholder groups, such as raw water stakeholders (8 meetings, 2 attendees, 64 hours for meetings and 128 hours for preparation)

SCHEDULE PM SCOPE OF SERVICES

7. Level of effort assumes multiple meetings with retailers and other stakeholders. Consultant will be required to communicate work effort and solicit input, and to present initial findings and recommendations for various tasks, and includes 192 hours for preparation, response to draft presentation comments, attendance, and follow-up.
8. Level of effort assumes bi-weekly 1:1 project manager meetings, one of which will be monthly project progress meetings (72 meetings, 1 attendee, 288 hours for meetings and 288 hours for prep).

For assumptions #1-7, level of effort assumes VW will be facilitator, and Consultant to provide support role.

Task 1 - Deliverables

1. Project Work Plan including QA/QC Plan (Draft, Final Draft and Final)
2. Meeting agendas, summaries and notes
3. Progress reports including risk register, scope update, fee update, decision/change log,
4. Presentation materials, newsletters, graphics, etc. to support communication with external agencies and public outreach activities.
5. Project schedule (baseline and progress updates)

Task 2 - Review Existing Information

Consultant shall review existing Valley Water reports, plans, drawings, specifications and other documents related to the project in order to develop an understanding of the existing condition and functionality of Valley Water's water distribution infrastructure; and shall produce a memorandum describing the existing distribution system infrastructure.

A log of the information requested by the Consultant and provided by Valley Water shall be maintained by the Consultant.

Task 2 - Assumptions

1. Valley Water will make available the reports, plans, and other information listed in Attachment Four at the time of the Notice to Proceed. Valley Water will maintain the updated reference document table.
2. Valley Water will provide existing tables of assets: pipelines, pump stations, and canals, which include associated design parameters, to the Consultant for validation.

Task 2 - Deliverables

1. Draft and final technical memorandum on major findings from review of existing information and data as they relate to the development of the Implementation Plan.
2. Table of all pipeline segments (isolation valve to valve), including materials, thicknesses, pipe class, lengths, internal/external diameters, design maximum flows, and date of installation.

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3. Table of all pump stations, including inline valves, appurtenances, pump capacities, motor sizes, pump curves, and power requirements.
4. Table of canals listed in Task 10, including dimensions, lining, capacity, and function, based on information provided by Valley Water.
5. Table of wells listed in Task 10, including dimensions, capacity, and function, based on information provided by Valley Water.

Task 3 - Define Goals and Objectives

Consultant shall establish capacity, operational, reliability, and additional goals and objectives for the entire distribution system. The goals and objectives defined in this task will be referenced in Tasks 6, 7, 8, 9, and 10 while evaluating specific components or facilities within the distribution system.

3.1 Capacity Goals

Consultant shall use the most recent demand projections, which will be provided by Valley Water, to establish future capacity goals. Consultant will develop water demand projections at each water turnout for the years 2020 to 2050. Based on the demand projections, Consultant shall establish future conveyance capacity goals for each pipeline and pump station addressed in the project. If Valley Water's current water supplies and infrastructure cannot convey future demands, or if retailers anticipate changes to take more treated water vs. groundwater, options such as agreements with external local-area partners, additional interties, new pipelines, or other solutions should be considered in consultation with Valley Water's Water Supply Division as options to convey additional supply.

3.1.1 Water Demand Study

Develop demand projections for the years 2020 to 2050 in 5-year increments at each raw and treated water turnout.

Raw Water:

- a) Review and evaluate current and historical flows in the raw water system to all raw water turnouts
- b) Collaborate with VW and identify representative historical years for consideration
- c) Examine and assess significance of seasonal variations
- d) Identify outliers in the historical data, such as due to maintenance or unexpected outages, and consider omitting from analysis
- e) Review and evaluate raw water turnout capacities and limitations including percolation rate and pipe size
- f) Review and evaluate current groundwater monitoring data

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- g) Review and evaluate forecasting information from the VW Water Evaluation and Planning (WEAP) Model
- h) Consider future in-stream recharge, and potential shift to injection or new percolation ponds due to FAHCE restrictions (2030-2040)
- i) Consider possible increase in groundwater pumping by retailers translating to increase in recharge requirements. This will require dedicated meetings with raw water customers to discuss future water supply needs and projections for groundwater use.
- j) Develop progression of projected raw water demands by turnout in 5-year increments 2020 to 2050.
- k) Review projected raw water demands with retailers and VW, then finalize demands. Up to two group workshops/review meetings are assumed.

Treated Water:

- a) Review Urban Water Management Plan projections and VW's Total Water Demand model to develop treated water demands at each treated water turnout from 2020 to 2050 in 5-year increments.
- b) Review projected demands with retailers and VW, then finalize demands.

3.2 Operational Goals

Consultant shall develop optimized distribution system operational goals. Operational goals shall include optimal flow ranges for individual pipelines, efficient movement of water from source to demand, and operational flexibility to allow for regular maintenance and unplanned repairs. Operational goals should include consideration for pressure transients and efficient operation of pump stations. The Consultant shall benchmark Valley Water's distribution system operator staffing with comparable agencies and evaluate how different levels of staff would affect operational goals, performance of preventative maintenance, and other typical operational goals.

3.3 Reliability Goals

Consultant shall help Valley Water develop reliability goals for the raw and treated water distribution systems. Based on these system goals, Consultant shall develop reliability goals for the pipelines, canals, wells, and pump stations. These distribution system reliability goals should be aligned with the Water Treatment Plant Master Plan Implementation Project reliability goals. Consultant shall benchmark with other agencies and jurisdictions and shall review professional literature. Reliability goals may be in the form of recommended outage duration, recommended levels of redundancy in water transmission, or another format as recommended by the Consultant. The goals shall be established to continue service with limited interruption following a major earthquake, pipeline failure, source outage, power outage, or other disruption. The reliability goals may vary according to the type of outage (i.e., planned and unplanned) and may be adjusted following the development of projects based on stakeholder feedback on acceptable cost for

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differing levels of reliability. The basis for determining cost impact of reliability options will be described.

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3.4 Additional Goals

Consultant shall identify additional goals for the project that may include, but are not limited to, infrastructure goals not identified in Valley Water's Water Supply Master Plan (WSMP), additional environmental or regulatory goals (such as environmental releases), ease of operations and maintenance and efficiency improvement goals, and climate change adaptability and other environmental or social benefits goals.

Task 3 – Assumptions

1. The demand projections are being updated by Valley Water and will be provided for the years 2020 to 2050 in 5-year increments for each treated water retailer separated by east and west treated water distribution systems.
2. Valley Water will provide historic data for raw water demands at each raw water turnout.
3. Valley Water will provide the consultant with an initial WEAP model output with preliminary raw water demand projections to 2050 in 5-year increments.

Task 3 – Deliverables

1. Results of Water Demand Study in table format with list of relevant assumptions.
2. Draft and final technical memorandum on capacity goals and objectives.
3. Draft and final technical memorandum on operational goals and objectives.
4. Draft and final technical memorandum on reliability goals and objectives.
5. Draft and final technical memorandum on additional goals and objectives.

Task 4 - Asset Risk and Renewal Methodology

Consultant shall coordinate with the Asset Management Program to develop a methodology to determine the criticality of pipeline, pump station, and well assets. The methodology shall be consistent with Valley Water's Asset Management Program Risk Methodology, included in Attachment Six.

Consultant shall review and update guidelines for determining the Probability of Failure (POF) and Consequence of Failure (COF) scores for the pump stations, wells, and canal assets. Consultant may also include a factor to account for redundancy (R).

All guidelines shall be consistent with Valley Water's Asset Management Program. Consultant shall update guidelines by asset type consistent with asset types identified in Valley Water's Asset Management Program.

Consultant shall account for failure mechanisms for different asset types in POF score methodology.

For assets or facilities that do not have recent or detailed condition assessment data, the Consultant shall recommend appropriate condition assessment technologies or methodologies as well as a recommended schedule with priorities to perform the needed assessments.

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Valley Water Asset Management Program COF criteria, provided in Attachment Six, shall be used as the basis for COF development. However, the Consultant shall use staff interviews, workshops and Level of Service (LOS) criteria to refine the COF categories and scoring. In addition, Consultant will identify POF criteria that may emerge from LOS specific to this Distribution System project. Examples include required capacities to meet future water supply/demand conditions, and operational criteria (e.g. velocity and pressure) that may be used to assess functional performance of assets such as pipelines and pump stations.

Specific to pipeline asset renewal methodology, Consultant shall review and utilize the Large Diameter Pipeline Analysis and Risk Report, which will be provided by Valley Water. The Consultant shall also review and incorporate updated information provided by Valley Water, best practices from similar jurisdictions, professional best practices, and the latest research in the field of large diameter pipeline asset condition assessment and renewal. Consultant shall review scheduling approach, prioritization methods, and scope (by asset type) of pipeline asset management activities including inspection and rehabilitation.

Consultant will use revised COF and POF criteria to update the prioritization of asset management activities. This prioritization, and review of risk factors, will be used to determine where it is appropriate to shift the scheduling of asset management intervention strategies, such as inspections and rehabilitations, from a time-based approach to a risk basis. The existing schedule of intervention strategies will be reviewed (including frequencies) and recommendations will be provided regarding schedule revisions based on risk.

Review of existing data and identification of data needs, such as condition or inventory, to support the updated risk prioritization methods will be performed. As describe above, recommendations for addressing condition data gaps will be provided. Recommendations regarding data inventory and hierarchy will be provided.

Task 4 – Assumptions

1. Data collection/development to address data gaps are not included.

Task 4 - Deliverables

1. Draft and final technical memorandum on asset risk and renewal methodology.

Task 5 - Project Assessment Methodology

Consultant shall develop a methodology for assessing and comparing the conceptual and feasible alternatives of potential capital and programmatic pipeline, pumping plant, canal and well projects. The methodology shall include screening and rating criteria, cost estimating, and benefit analysis.

5.1 Screening/Rating Criteria

Consultant shall develop initial screening criteria to be used in the evaluation of conceptual alternatives and more detailed rating criteria to be used in the evaluation of feasible alternatives, and for identifying and setting the priority for each of the recommended projects. Consultant shall

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consider other Implementation Projects' rating criteria in development of rating criteria for this project. Consultant shall collaborate with Valley Water in at least one workshop conducted by the Consultant to select value weighting for the screening/rating criteria. Environmental justice and racial equity shall be considered as a rating criteria for the recommended projects.

5.2 Cost Estimating

Consultant shall develop a methodology for estimating project lifecycle costs, which will include estimating methodology for: non-capital projects (i.e., operations or maintenance projects); non-construction costs for capital projects such as planning, design, construction management, right-of-way, and land acquisition; detailed analysis of lifecycle operations and maintenance costs for capital and non-capital projects; and capital construction costs.

Capital construction cost estimating methodology shall include itemized capital construction costs for projects, with details corresponding to the design level and availability of project information. The construction cost estimate will include direct construction costs for materials, labor and equipment, including sales tax, appropriate markups for general contractor's general requirements/general conditions, overhead, and profit. The estimate will also include contingencies for design development and estimating factors in accordance with the estimating guidelines set forth by the Association for the Advancement of Cost Estimating (AACE). The estimate will be priced in current dollars. A separate line-item allowance will be added to project the current costs to the expected or assumed mid-point of construction.

Consultant shall develop cost estimates using information from vendor quotes specific to proposed facilities, historical construction estimates and cost data, and professional experience with similar projects. Capital costs will include construction-related materials and equipment costs, tax, contractor overhead and profit, owner's reserve for change orders, construction management, and engineering services for design and construction. The O&M costs will include replacement of short-life assets (such as appurtenances, flow meters, and replacement parts), energy/power, dewatering efforts, and labor.

For project alternative analysis, a planning level cost estimate consistent with AACE Class 5 estimate (3%-5% design) with an expected accuracy range of -30% to +50% can be used. In developing the basis-of-conceptual (10%) design for the recommended projects, Consultant shall collect quotes from pipe and equipment manufacturers/suppliers and provide a level of accuracy of costs consistent with AACE Class 4 estimate with an expected accuracy range of -30% to +30%.

5.3 Project Benefits

Consultant shall develop a methodology to analyze lifecycle benefits for projects. The methodology will quantify benefits and develop a cost-benefit ratio for projects. Some benefits may be measured qualitatively, and some may be measured quantitatively (i.e., cost per acre-foot or similar using 30-year and 100-year cost basis), depending on the data available, but will be consistent across all projects and opportunities analyzed.

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Task 5 - Deliverables

1. Draft and final technical memorandum on project assessment methodology

Task 6 - Evaluation of Raw Water Pipelines

Consultant shall conduct evaluations of all the raw water distribution system pipelines as identified in Table 1 in the project background and will assess future maintenance, operation, and replacement needs to meet the project goals established in Task 3.

6.1 Capacity Evaluation

The Consultant shall manipulate or modify the VW hydraulic model to verify and determine the existing pipeline capacities and recommend capital projects for improvements, modifications, or additional pipelines required to meet the project goals established in Task 3.

Hydraulic Model Verification

- Three hydraulic models (Raw Water System, East-Side Treated Water System, and West-Side Treated Water System) are used to model Valley Water's distribution system. The consultant shall take the following steps to verify the hydraulic models:
- Review previous reports, technical memos, and materials documenting development and basis for the hydraulic models.
- Meet with VW model subject matter experts to discuss model use, including modeling techniques, boundary conditions, operational constraints, supply/demand constraints, control points, typical scenarios, areas of concern and focus.
- Review three hydraulic models (Raw Water System, East-Side Treated Water System, and West-Side Treated Water System) including:
 - Geospatial representation
 - Elevation assumptions
 - Facility/pipeline attributes
 - Demand/supply nodes
 - Control schemes and rules
- Run models with current data, and process and review hydraulic model results.
- Review scenario model run results and collaborate with VW model subject matter experts to ensure consistency and accuracy in modeling approach and methods.
- Collect system information, compare and verify reasonable accuracy of results.
 - The three models will be verified through comparison of model results to data collected from existing monitoring instruments in each system. These instruments will include pressure sensors, flow meters, water level indicators, and status indicators for valves (Open/close or position) and pumps (on/off or speed). For key locations where instruments do not exist but is required for model setup, Consultant will work with Valley Water to develop a set of reasonable assumptions regarding the status of system components. Valley Water will supply Consultant with reports of representative conditions from these

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instruments. The operating conditions, including initial pump and valve status, will be used to set the operating status and boundary conditions for the models representing each system. Separate modeling scenarios will be created for each model verification and the results from these scenarios will be compared with instrument readings and the differences between model results and instrument readings will be tabulated. Model adjustments to complete the verification step could include modifications of the pump and valve settings incorporated into the model to better reflect system operations.

- Prepare a Hydraulic Model Verification Report for each of the three models that describes the selection of the verification scenario, extraction and processing of the instrument readings, set up of the models, and comparison of the model results with the instrument readings. This report will present a conclusion as to the fitness of the models for future evaluations and whether any of the models require additional adjustment for continued use.

6.2 Reliability Evaluation

Consultant shall assess each pipeline for reliability and redundancy capability and recommend projects to meet the reliability goals established in Task 3.

6.3 Operational Evaluation

Consultant shall assess each pipeline for optimized operations, routine maintenance needs, operational flexibility and redundancy, and other operational goals identified in Task 3.

6.4 Additional Goals Evaluation

Consultant shall assess each raw water pipeline as appropriate for additional goals established in Task 3.

6.5 Projects of Concern Evaluation

Consultant shall work with Valley Water staff to validate the list of currently ongoing infrastructure improvements identified, or new Water Supply Master Plan projects, some of which are listed below. Consultant shall gather information from staff interviews and site-visits and evaluate if and how the improvements identified should be included as part of the Raw Water Pipelines recommendations.

The current on-going infrastructure improvement projects related to Raw Water Pipelines are listed below:

- Vasona Valve Replacement Project
- Vasona Pumping Plant Upgrade Project
- Pacheco Reservoir Expansion Project (PREP)
- 10-Year Pipeline Inspection and Rehabilitation Project
 - Pacheco Conduit
 - Santa Clara Conduit
 - Almaden Valley Pipeline
 - Cross Valley Pipeline
 - Calero Pipeline
 - Central Pipeline

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- Stevens Creek Pipeline
 - Penitencia Force Main
 - Rinconada Force Main
 - Santa Teresa Force Main
- Almaden Valley Pipeline Replacement Project

6.6 - Asset Renewal and Replacement Evaluation

Consultant shall evaluate the Raw Water distribution system pipelines included in Table 1 in the Project Background excluding the Almaden Valley Pipeline, Main & Madrone Pipeline, and Penitencia Force Main.

6.6.1 Desktop Assessment

Valley Water recently completed an updated large-diameter pipeline failure and cost risk assessment as part of the Large-Diameter Pipeline Analysis and Risk Report. The Consultant shall summarize the findings of that report and supplement the report with all other reports and documents related to recent pipeline condition assessments provided by Valley Water, including detailed vault condition assessments performed for Capital Projects and asset management condition data, in their desktop assessment of each pipeline asset.

6.6.2 Risk Assessment and Estimated Remaining Useful Life

In accordance with the risk and renewal methodology developed in Task 4 and utilizing the Large Diameter Pipeline Analysis and Risk Report, Consultant shall review the risk assessment for the pipelines and determine an estimated remaining useful life for each pipeline. The Consultant shall review the POF and COF scores and methodology for developing those scores provided in the Large Diameter Pipeline Analysis and Risk Report and make recommendations for updates to the scores or methodologies. Consultant shall estimate remaining useful life for each pipeline considering the information from this subtask as well as the desktop assessment in subtask 6.6.1.

6.6.3 Renewal and Replacement Recommendations

Consultant shall review Valley Water's existing renewal and replacement schedule for the pipeline assets and, based on risk assessment and remaining useful life evaluation, modify and update the renewal and replacement schedule, as well as the pipeline management strategies used to develop the renewal and replacement schedule. This schedule shall be used as a prioritized list of renewal and replacement recommendations.

The consultant shall prioritize the recommendations in accordance with the risk and renewal methodology, and such that pipelines in poorest condition or near the end of their useful life and whose failure would have the highest consequence of failure (COF) will be located at the top of the list (i.e., need immediate attention). The consultant shall also review Valley Water's pipeline management strategies which include ideal intervals for inspection, rehabilitation, and replacement, and provide recommended updates to the strategies.

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Consultant shall prepare a technical memorandum summarizing the findings from the desktop assessments, the risk assessment, the estimation of remaining useful life, the prioritization and phasing of renewal and replacement recommendations, and management strategy recommendations including recommendations for ideal intervals for and types of internal pipeline inspection. Consultant shall provide recommendations of advanced technology or other tools Valley Water could use in the future to cost-effectively evaluate and update POFs for pipeline assets. Consultant shall also identify additional data Valley Water should consider collecting to further refine POF scores.

Task 6 – Assumptions

1. Valley Water will provide the Consultant with current raw, east-side treated, and west-side treated pipeline hydraulic models developed in InfoWater, an Innovyze software.

Task 6 – Deliverables

1. Draft and final hydraulic model verification report.
2. Draft and final technical memorandum on Raw Water Pipelines capacity, reliability, operational, additional goals and projects of concern evaluations.
3. Draft and final technical memorandum on Raw Water Pipeline asset renewal and replacement evaluation including desktop and field assessment findings, risk and useful life assessment, renewal and replacement recommendations, and management strategy recommendations including new technologies and tools for inspection.

Task 7 - Evaluation of East Side Treated Water Pipelines

Consultant shall conduct evaluations of each of the East-Side Treated Water distribution system pipelines identified in Table 1 in the project background and assess future maintenance, operation, and replacement needs to meet the project goals established in Task 3.

7.1 Capacity Evaluation

Consultant shall complete hydraulic model verification for VW's East-Side hydraulic model as part of Task 6.1. The Consultant shall use the model to verify and determine the existing pipeline capacities and recommend capital projects for improvements, modifications, or additional pipelines required to meet the project goals established in Task 3.

7.2 Reliability Evaluation

Consultant shall assess each pipeline for reliability and redundancy capability and recommend projects to meet the reliability goals established in Task 3.

7.3 Operational Evaluation

Consultant shall assess each pipeline for optimized operations, routine maintenance needs, operational flexibility and redundancy, and other operational goals identified in Task 3.

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7.4 Additional Goals Evaluation

Consultant shall assess each East-Side treated water pipeline as appropriate for additional goals established in Task 3.

7.5 Projects of Concern Evaluation

Consultant shall work with Valley Water staff to validate the list of currently ongoing infrastructure improvements identified, some of which are listed below. Consultant shall gather information from staff interviews and site-visits and evaluate if and how the improvements identified should be included as part of the East-Side Treated Water Pipelines recommendations.

The current on-going infrastructure improvement projects related to East-Side Treated Water Pipelines are listed below:

- Pipeline Maintenance Program (10 -Year Pipelines Inspection and Rehabilitation Project)
 - Snell Pipeline
 - East Pipeline
 - Parallel East Pipeline
 - Milpitas Pipelines (Includes SFPUC Intertie)
 - Penitencia Delivery Main
- IRP2 Additional Line Valve Project – Downstream of Penitencia Modulating Vault (East Pipeline)
- IRP2 Additional Line Valve Project – Between Skyway Turnout and Pinos Turnout (Snell Pipeline)
- Treated Water Isolation Valves Project – Between BART Turnout and Gibraltar Turnout (Milpitas Pipeline)

7.6 Asset Renewal and Replacement Evaluation

Consultant shall evaluate the East-Side Treated Water distribution system pipelines included in Table 1 in the Project Background excluding the Penitencia Force Main.

7.6.1 Desktop Assessment

Valley Water recently completed an updated large-diameter pipeline failure and cost risk assessment as part of the Large-Diameter Pipeline Analysis and Risk Report. The Consultant shall summarize the findings of that report and supplement the report with all other reports and documents related to recent pipeline condition assessments provided by Valley Water, including detailed vault condition assessments performed for Capital Projects and asset management condition data, in their desktop assessment of each pipeline asset.

7.6.2 Risk Assessment and Estimated Remaining Useful Life

In accordance with the risk and renewal methodology developed in Task 4 and utilizing the Large Diameter Pipeline Analysis and Risk Report, Consultant shall review the risk assessment for the pipelines and determine an estimated remaining useful life for each pipeline. The Consultant shall review the POF and COF scores and methodology for developing those scores provided in the Large Diameter Pipeline Analysis and Risk Report and make recommendations for updates to the

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scores or methodologies. Consultant shall estimate remaining useful life for each pipeline considering the information from this subtask as well as the desktop assessment in subtask 7.6.1.

7.6.3 Renewal and Replacement Recommendations

Consultant shall review Valley Water's existing renewal and replacement schedule for the pipeline assets and, based on risk assessment and remaining useful life evaluation, modify and update the renewal and replacement schedule, as well as the pipeline management strategies used to develop the renewal and replacement schedule. This schedule shall be used as a prioritized list of renewal and replacement recommendations.

The consultant shall prioritize the recommendations in accordance with the risk and renewal methodology, and such that pipelines in poorest condition or near the end of their useful life and whose failure would have the highest COF will be located at the top of the list (i.e., need immediate attention). The consultant shall also review Valley Water's pipeline management strategies which include ideal intervals for inspection, rehabilitation, and replacement, and provide recommended updates to the strategies.

Consultant shall prepare a technical memorandum summarizing the findings from the desktop assessments, the risk assessment, the estimation of remaining useful life, and the prioritization and phasing of renewal and replacement recommendations, and management strategy recommendations including recommendations for ideal intervals for and types of internal pipeline inspection. Consultant shall provide recommendations of advanced technology or other tools Valley Water could use in the future to cost-effectively evaluate and update POFs for pipeline assets. Consultant shall also identify additional data Valley Water should consider collecting to further refine POF scores.

Task 7 - Deliverables

1. Draft and final technical memorandum on East-Side Treated Pipelines capacity, reliability, operational, additional goals and projects of concern evaluations.
2. Draft and final technical memorandum on East-Side Treated Pipelines asset renewal and replacement evaluation including desktop and field assessment findings, risk and useful life assessment, the prioritization and phasing of renewal and replacement recommendations, and management strategy recommendations including new technologies and tools for inspection.

Task 8 - Evaluation of West Side Treated Pipelines

Consultant shall conduct evaluations of each of the West-Side Treated Water distribution system pipelines identified in Table 1 of the project background and assess future maintenance, operation, and replacement needs to meet the project goals established in Task 3.

8.1 Capacity Evaluation

Consultant shall complete hydraulic model verification for VW's West-Side model as part of Task 6.1. The Consultant shall use the model to verify and determine the existing pipeline capacities and recommend capital projects for improvements, modifications, or additional pipelines required to meet the project goals established in Task 3.

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8.2 Reliability Evaluation

Consultant shall assess each pipeline for reliability and redundancy capability and recommend projects to meet the reliability goals established in Task 3.

8.3 Operational Evaluation

Consultant shall assess each pipeline for optimized operations, routine maintenance needs, operational flexibility and redundancy, and other operational goals identified in Task 3.

8.4 Additional Goals Evaluation

Consultant shall assess each West-Side treated water pipeline as appropriate for additional goals established in Task 3.

8.5 Projects of Concern Evaluation

Consultant shall work with Valley Water staff to validate the list of currently ongoing infrastructure improvements identified, some of which are listed below. Consultant shall gather information from staff interviews and site-visits and evaluate if and how the improvements identified should be included as part of the West-Side Treated Water Pipelines recommendations.

The current on-going infrastructure improvement projects related to West-Side Treated Water Pipelines are listed below:

- Reliability Improvement Project – This project will improve Rinconada Water Treatment plant reliability by adding a new raw water ozonation facility, a new flocculation and sedimentation with plate settler clarification facility and a new dual media filtration system as well as increasing the plant capacity from 80 million gallons per day (mgd) to 100 mgd.
- Pipeline Maintenance Program (10-Year Pipelines Inspection and Rehabilitation Project)
 - West Pipeline
 - Rinconada Force Main
 - Santa Clara Distributary
 - Campbell Distributary
 - Sunnyvale Distributary
 - Mountain View Distributary
- IRP2 Additional Line Valve Project – Downstream of Santa Clara Distributary (West Pipeline)
- IRP2 Additional Line Valve Project – Between Rainbow Turnout and Mann Turnout (West Pipeline)
- Treated Water Isolation Valves Project – Upstream of Cox Turnout (West Pipeline)
- Treated Water Isolation Valves Project – Downstream of Mann Turnout (West Pipeline)

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8.6 Asset Renewal and Replacement Evaluation

Consultant shall evaluate the West-Side Treated Water distribution system pipelines included in Table 1 in the Project Background.

8.6.1 Desktop Assessment

Valley Water recently completed an updated large-diameter pipeline failure and cost risk assessment as part of the Large- Diameter Pipeline Analysis and Risk Report. The Consultant shall summarize the findings of that report and supplement the report with all other reports and documents related to recent raw water pipeline condition assessments provided by Valley Water, including detailed vault condition assessments performed for Capital Projects and asset management condition data, in their desktop assessment of each pipeline asset.

8.6.2 Risk Assessment and Estimated Remaining Useful Life

In accordance with the risk and renewal methodology developed in Task 4 and utilizing the Large Diameter Pipeline Analysis and Risk Report, Consultant shall review the risk assessment for the pipelines and determine an estimated remaining useful life for each pipeline. The Consultant shall review the POF and COF scores and methodology for developing those scores provided in the Large Diameter Pipeline Analysis and Risk Report and make recommendations for updates to the scores or methodologies. Consultant shall estimate remaining useful life for each pipeline considering the information from this subtask as well as the desktop assessment in subtask 8.6.1.

8.6.3 Renewal and Replacement Recommendations

Consultant shall review Valley Water's existing renewal and replacement schedule for the pipeline assets and, based on risk assessment and remaining useful life evaluation, modify and update the renewal and replacement schedule, as well as the pipeline management strategies used to develop the renewal and replacement schedule. This schedule will be used as a prioritized list of renewal and replacement recommendations.

The consultant shall prioritize the recommendations in accordance with the risk and renewal methodology, and such that pipelines in poorest condition or near the end of their useful life and whose failure would have the highest COF will be located at the top of the list (i.e., need immediate attention). The consultant shall also review Valley Water's pipeline management strategies which include ideal intervals for inspection, rehabilitation, and replacement, and provide recommended updates to the strategies.

Consultant shall prepare a technical memorandum summarizing the findings from the desktop assessments, the risk assessment, the estimation of remaining useful life, and the prioritization and phasing of renewal and replacement recommendations, and management strategy recommendations including recommendations for ideal intervals for and types of internal pipeline inspection. Consultant shall provide recommendations of advanced technology or other tools Valley Water could use in the future to cost-effectively evaluate and update POFs for pipeline assets. Consultant shall also identify additional data Valley Water should consider collecting to further refine POF scores.

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Task 8 - Deliverables

1. Draft and final technical memorandum on West-Side Treated Water Pipeline capacity, reliability, operational, additional goals and projects of concern evaluations.
2. Draft and final technical memorandum on West-Side Treated Pipelines asset renewal and replacement evaluation including desktop and field assessment findings, risk and useful life assessment, the prioritization and phasing of renewal and replacement recommendations, and management strategy recommendations including new technologies and tools for inspection.

Task 9 - Evaluation of Pump Stations

Consultant shall conduct evaluations of Pacheco Pumping Plant, Coyote Pumping Plant, Vasona Pumping Plant, and the Intertie Pump Station and assess and recommend future maintenance, operation, and replacement needs and/or capital projects to meet the project goals established in Task 3. In this task, the Consultant shall review the remaining useful life for each pumping facility. Vasona Pumping Plant will be excluded from subtask 9.6.

9.1 Capacity Evaluation

The Consultant will use Valley Water's hydraulic models and most recent pump efficiency or pump curve information, where available and provided by Valley Water, to verify and determine the existing pump station capacities and recommend improvements, modifications, or additional pump stations required to meet the project goals established in Task 3.

9.2 Reliability Evaluation

Consultant shall assess each pump station for reliability and redundancy capability and recommend projects to meet the reliability goals established in Task 3. The reliability evaluation shall consider the operation of the PREP pump station in the raw water distribution system.

9.3 Operational Evaluation

Consultant shall assess each pump station for optimized operations, routine maintenance needs, operational flexibility and redundancy, and other operational goals identified in Task 3. This may include evaluating individual pump run time, operations logs, efficiencies at different pump operating speeds, or other operational information provided by Valley Water.

Valley Water recently completed a pump efficiency analysis for the Pacheco Pumping Plant. Consultant shall review the work completed for Pacheco Pumping Plant and conduct pump efficiency analyses for the Coyote Pumping Plant and Intertie Station.

9.4 Additional Evaluation

Consultant shall assess each pump station for additional goals established in Task 3.

9.5 Projects of Concern Evaluation

Consultant shall work with Valley Water staff to validate the list of currently ongoing infrastructure improvements or new Water Supply Master Plan projects identified, some of which are listed

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below. Consultant shall gather information from staff interviews and site-visits and evaluate if and how the improvements identified should be included as part of the pump station recommendations.

The current on-going infrastructure improvement projects related to the pump stations are listed below:

- Pacheco Pumping Plant and Coyote Pumping Plant Power Reliability Investigation
- Coyote Pumping Plant Adjustable Speed Drives Replacement Project
- Vasona Pumping Plant Upgrade Project
- Pacheco Reservoir Expansion Project: Pump Station

9.6 Asset Renewal and Replacement Evaluation

Consultant shall evaluate the pump stations included in Table 1 in the Project Background.

9.6.1 Desktop Assessment

The Consultant shall review existing reports, documents, and asset management data provided by Valley Water to perform a desktop assessment of each pump station. The desktop assessment shall include an overall evaluation of each pump station (e.g. when was it last upgraded and what is the current capacity) and an evaluation of the condition of the assets at each pump station which, at a minimum, includes: pumps, valves, actuators, motors, and electrical components.

9.6.2 Field Condition Assessment

Consultant shall complete field condition assessment of the Pacheco Pumping Plant, Coyote Pumping Plant, and Intertie Pump Station to further refine and update POF scores. The adjustable speed drive for the Coyote Pumping Plant is currently being rehabilitated. Consultant shall evaluate the remainder of the facility.

Consultant shall conduct field condition assessments and document all field investigation findings. Field visits shall be conducted with senior level Consultant staff with site/civil, process/mechanical, structural, electrical and instrumentation expertise to assess the condition of specific processes and subcomponents.

For each facility, Consultant shall prepare an inspection plan that includes inspection location, procedure, field work sequencing and schedules, any shutdown impacts to the facility including shutdown durations, data management protocols, safety procedures, points of contact and evaluation checklist and forms to document field observations and findings. Consultant shall schedule a conference call to review the inspection plan and collect Valley Water comments. Scope of the inspection will be within the budget allowance. Consultant will not be required to conduct field assessments for assets that are not accessible, or for electrical or instrumentation assets, however, could recommend detailed assessments for these types of assets to be done later if more information is needed.

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Consultant shall coordinate with Valley Water to schedule site visits and any specific interviews with plant staff. Valley Water staff will be available during the preliminary reconnaissance and condition assessment field visits and will answer questions and escort Consultant staff to the facility areas.

9.6.3 Risk Assessment and Estimated Remaining Useful Life

Using the risk and renewal methodology developed in Task 4, Consultant shall conduct a risk assessment for pump stations. The Consultant shall consider Valley Water's asset management program data for asset POF and COF scores, as well as information from the other evaluations completed in this Task including desktop and field condition assessment, and capacity, reliability, operational, other goals and project of concern evaluations.

Consultant shall determine the remaining useful life of the pump stations. Consultant shall develop a methodology for determining the useful life, which shall consider the information from this task including desktop and field condition assessment, and capacity, reliability, operational, other goals and project of concern evaluations.

9.6.4 Renewal and Replacement Recommendations

Consultant shall review Valley Water's existing renewal and replacement schedule from Valley Water's Asset Management Planning Tool for the Coyote Pumping Plant, Pacheco Pumping Plant, and Intertie Pump Station and, based on risk assessment and remaining useful life evaluation, will make recommendations to modify and update the renewal and replacement schedules. This schedule will be used as a prioritized list of renewal and replacement recommendations in future phases.

The Vasona Pumping Plant Upgrade Project, currently underway, is a major rehabilitation of the facility.

For Pacheco Pumping Plant, Valley Water has done a preliminary analysis comparing pump rebuild vs. replacement in-kind vs. replacement with submersible pumps. Consultant shall review and validate this work.

Consultant shall present the findings of Tasks 9.1 and 9.2 in a technical memorandum (TM).

Consultant shall prepare a technical memorandum summarizing the findings from the desktop assessments, field condition assessments, the assessment of capacity, reliability, operational, other goals and projects of concern, the risk assessment, the estimation of remaining useful life, and the prioritization and phasing of renewal and replacement recommendations .

Consultant shall provide recommendations of advanced technology or other tools Valley Water could use in the future to cost-effectively evaluate and update POFs for pump station assets. Consultant shall also identify additional data Valley Water should consider collecting to further refine POF scores or to further assist with identifying recommended improvement projects or project development. The TM shall include initial recommendations, which will be fully vetted in future tasks, for improvements to address deficiencies, risks and the operation and maintenance of the assets. The TM shall provide recommendation of how to proceed with Project Development.

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Task 9 – Assumptions

1. Valley Water staff will provide the preliminary design flows and pressures from the PREP so that the Consultant can model and include the future operation of the PREP pump station in this Task 9.1.

2. Informational: Valley Water is currently in early stages of design for the expansion of the Pacheco Reservoir and new Pacheco Reservoir Pump Station, which is jointly called the Pacheco Reservoir Expansion Project (PREP).

In addition, Valley Water is currently in the early planning phase of a complete overhaul of Vasona Pumping Plant. The project includes replacement of pumps, motors, drives, valves, actuators, and associated electrical, and instrumentation and control equipment. The project will improve the pumps station's operation and reliability; increase operational flexibility; prepare for future capacity needs; and reduce operation and maintenance costs. Currently, the design expectations are for the Vasona pumps to provide the following flows: (155 cfs to RWTP; 120 cfs to STWTP)

Task 9 – Deliverables

1. Proposed field assessments, procedures, and inspection plans.
2. Draft and final technical memorandum on the findings from the desktop assessments, field condition assessments, the risk assessment, the estimation of remaining useful life, the assessment of capacity, reliability, operational, other goals and projects of concern and initial renewal and replacement recommendations.
3. Draft and final technical memorandum on pump station asset renewal and replacement evaluation including desktop and field assessment findings, risk and useful life assessment, and renewal and replacement recommendations.

Task 10 – Condition Assessment and Evaluation of Canals, Wells, and Recycled Water Facilities

Task 10.1 Evaluation of inactive Canals

Inactive facilities include: Coyote-Alamitos Canal, Coyote Canal, Coyote Canal Extension, Evergreen Canal, and Evergreen Pump Station.

For inactive facilities: Intent is to identify projects and solutions to support decommissioning or alternate uses for inactive facilities. Safe decommissioning considerations may include removal of the facility, abandoning structures in place, and/or restoration of lands. Consultant shall review background information including as-builts, past studies and reports, interview staff, review condition and risk assessment data, and perform site visits as needed. Consultant shall identify, assess, and plan solutions for the safe decommissioning or alternate use of the inactive facilities.

Task 10.2 Condition Assessment and Evaluation of Wells

Evaluation of Campbell Well Field: Consultant shall interview Valley Water staff, perform research, hydraulic modeling, and conduct visual site visits of the Campbell Well Field facility with

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support from the Water Treatment Plant Master Plan Implementation Project consultant, who will provide water quality expertise.

Consultant shall evaluate any benefits provided by the well field and/or potential future uses and produce a technical memorandum, with a recommended action to maintain the facility in an operable state, alter the facility status to standby, or to decommission the facility. The technical memorandum shall include an implementation plan and schedule for implementing the new recommendation.

Evaluation of San Tomas Injection Well: Consultant shall evaluate whether the San Tomas Injection Well should be decommissioned. As part of this analysis, Consultant shall assess the well condition (visual site visit), operational issues, and potential for modifications to facilitate future use by interviewing Valley Water staff and/or evaluating well design and condition. Consultant shall draft a technical memorandum, which includes an implementation plan and schedule for implementing the new recommendation.

Task 10.3– Condition Assessment and Evaluation of Recycled Water Facilities

This task evaluates Valley Water's recycled water pipelines identified in Table 1 of the Project Background excluding the Wolfe Road Recycled Water Pipeline, but including the San Lucar Pump Station. Pipelines include pipelines, valves, turnouts, meters, and pump stations associated with those recycled water pipelines. Recycled water pipelines are identified in the project background section.

10.3.1 Capacity Evaluation

Recycled Water Facilities will not be evaluated to meet capacity goals.

10.3.2 Reliability Evaluation

Consultant shall assess each recycled water pipeline to meet the reliability goals established in Task 3.

10.3.3 Operational Evaluation

Consultant shall assess each pipeline for optimized operations, routine maintenance needs, operational flexibility and redundancy, and other operational goals identified in Task 3.

10.3.4 Additional Evaluation

Consultant shall assess each recycled water pipeline as appropriate for additional goals established in Task 3.

10.3.5 Projects of Concern Evaluation

Consultant shall work with Valley Water staff to validate the list of currently ongoing infrastructure improvements identified, some of which are listed below. Consultant shall gather information from staff interviews and site-visits and evaluate if and how the improvements identified should be included as part of the Recycled Water Pipelines recommendations.

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The current on-going infrastructure improvement projects related to Recycled Water Pipelines are listed below:

- Purified Water Project – The Purified Water Project elements include a new advanced water purification facility, water conveyance pipeline, and associated facilities for replenishing groundwater with about 11,200 acre-feet per year of purified water at the groundwater recharge ponds in Campbell along Los Gatos Creek. The advanced water purification facility will be located either in Palo Alto or in San José immediately adjacent to and integrated with the existing SVAWPC at Zanker Road.
- South County Recycled Water Pipeline Phase 1B - will construct an additional 18,500 linear feet of pipeline.
- South County Recycled Water Pipeline Phase 2 - will be completed through cost-sharing opportunities with the City of Gilroy and land developers to construct approximately 3,900 linear feet of 30-inch diameter pipe.
- South County Recycled Water Pipeline Phase 1 - to be completed through cost-sharing opportunities with the land developers through coordination by the City of Gilroy to construct approximately 9,200 linear feet of 24-inch diameter pipe.

10.3.6 Asset Renewal and Replacement Evaluation

Consultant shall conduct an initial desktop assessment based on existing records, then conduct supplemental field assessment to establish the condition of the recycled water pipelines and their pump stations.

10.3.6.1 Desktop Assessment

Consultant shall review reports, plans and specifications and any additional information relevant to the recycled water pipelines. Consultant shall prepare a summary of desktop assessment findings and a list of proposed field assessments for Valley Water review and approval.

The Consultant shall incorporate the findings of all reports and documents provided by Valley Water in a desktop assessment of each recycled water pipeline. The desktop assessment, based on existing documents, shall include an overall evaluation of each pipeline and an evaluation of the condition of the assets which, at a minimum, includes pipes, valves, pump stations (if applicable), turnouts, telemetry cables, pull boxes, and appurtenance vaults.

The Consultant shall summarize the findings of the desktop assessment in a report. The report shall also include a list of proposed field assessments for Valley Water review and approval.

10.3.6.2 Field Condition Assessment

Consultant shall develop the field condition assessment procedure for the recycled water facilities identified in the desktop assessment for needing further field assessment. Consultant shall prepare an inspection plan that includes inspection location, procedure, field work sequencing and schedules, any required facility outages, data management protocols, safety procedures, points of contact and evaluation checklist and forms to document field observations and findings. Consultant shall schedule a conference call to review the inspection plan and collect Valley Water comments.

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Consultant shall coordinate with Valley Water to schedule site visits and any specific interviews with recycled water operations staff. Valley Water staff will be available during the preliminary reconnaissance and condition assessment field visits and will answer questions and escort Consultant staff to the facility areas.

Consultant shall conduct field condition assessments and document all field investigation findings. Field visits shall be conducted with senior level Consultant staff with site/civil, structural, mechanical, and expertise to assess the condition of specific structures or site and equipment conditions.

10.3.6.3 Risk Assessment and Estimated Remaining Useful Life

Using the risk and renewal methodology developed in Task 4, Consultant shall conduct a risk assessment for recycled water pipelines. The Consultant shall consider Valley Water's asset management program data for asset POF and COF scores, as well as information from the other evaluations completed in this Task including desktop and field condition assessment, and capacity, reliability, operational, other goals and project of concern evaluations.

Consultant shall determine the remaining useful life of the recycled water pipelines. Consultant shall develop a methodology for determining the useful life, which shall consider the information from this task including desktop and field condition assessment, and capacity, reliability, operational, other goals and project of concern evaluations.

10.3.6.4 Renewal and Replacement Recommendations

Consultant shall review Valley Water's existing renewal and replacement schedule from Valley Water's Asset Management Planning Tool for the Recycled Water Pipelines (and associated facilities) and, based on risk assessment and remaining useful life evaluation, Valley Water will modify and update the renewal and replacement schedules. This schedule will be used as a prioritized list of renewal and replacement recommendations in future phases.

Consultant shall present the findings of Task 10.3 in a technical memorandum (TM). Consultant shall prepare a technical memorandum summarizing the findings from the desktop assessments, field condition assessments, the assessment of capacity, reliability, operational, other goals and projects of concern, the risk assessment, the estimation of remaining useful life, and the prioritization and phasing of renewal and replacement recommendations.

The TM shall include initial project recommendations for improvements to address deficiencies, risks and the operation and maintenance of the assets. The TM shall provide recommendation of how to proceed with Project Development.

Task 10 – Assumptions

1. Valley Water will provide documentation of previous canal studies that have been done.
2. Valley Water will provide GIS information and recently completed condition assessment data for the SCRWA pipeline facilities.

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Task 10 – Deliverables

1. Draft and final technical memorandum on inactive canals identifying solutions, plans, and engineering recommendations for decommissioning of inactive facilities.
2. Draft and final technical memorandum on Campbell Well Field recommendation to operate, place in stand-by, or decommission.
3. Draft/Final TM on San Tomas Injection Well recommendation to operate or decommission.
4. Draft and final technical memorandum on Recycled Water Facilities to document evaluations including desktop assessment findings, risk and useful life assessment, and renewal and replacement recommendations.

Task 11 - Integrate Recommendations with other Master Plans

Consultant shall integrate recommendations for the Distribution System Master Plan Implementation Project (DS MP IP) with other Valley Water implementation projects and master plans provided in Attachment Four. Coordination should start early and continue throughout the development of the project. Consultant shall use the latest information available from the other projects.

11.1 Integrate Water Treatment Plant Master Plan Implementation Project Recommendations

Consultant shall include reviewing and tracking findings, and documenting the overlap, conflicts and potential collaboration between the Water Treatment Plant Master Plan Implementation Project (WTP MP IP) and DS MP IP in the Draft Problem Definition Report in Subtask 11.4, and that planned future capacity needs are aligned within both projects.

Consultant shall evaluate recommendations from both projects together to eliminate repetitive recommendations, i.e. if the Water Treatment Plants Implementation Plan recommends a new pipeline, then it may be combined with the Distribution System Master Plan implementation projects.

11.2 Integrate SCADA Master Plan Implementation Project Recommendations

Consultant shall review findings from the SCADA Master Plan Implementation Project (SCADA MP IP) efforts and ensure their recommendations are not competing efforts with the Distribution System Implementation Plan recommendations. Consultant shall evaluate recommendations from both projects together to eliminate repetitive recommendations, i.e. if SCADA MP IP recommends a new facility, new technology, or new infrastructure for the distribution system, then it may be combined with the distribution system master plan implementation project.

11.3 Integrate Countywide Water Reuse Master Plan Recommendations

Consultant shall include reviewing and tracking findings, and documenting the overlap, conflicts and potential collaboration between the Countywide Water Reuse Master Plan (CWRMP) and DS MP IP in the Draft Problem Definition Report in Subtask 11.4.

Consultant shall evaluate recommendations from both projects together to eliminate repetitive recommendations, i.e. if the CWRMP recommends new infrastructure that may impact Distribution System needs and/or implementation projects.

11.4 Problem Definition Report

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Consultant shall prepare a Draft and Final problem definition report to summarize and document all the problems, findings and recommendations identified from Tasks 6 – 11. This report summary becomes the basis for project development and alternatives analysis.

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Task 11 – Assumptions

1. Valley Water will arrange meetings and check-ins with the other project teams throughout the project.

Task 11 - Deliverables

1. Draft and final problem definition report.

Task 12 - Project Development, Evaluation, Selection, and Planning Study Report (10%)

Consultant shall develop a list of project alternatives and perform a comprehensive alternative analysis to select a final set of preferred projects. Consultant shall use the project assessment methodology developed in Task 5 to evaluate the project alternatives. Final selected projects will be further developed in the Planning Study Report to a basis of design level.

12.1 Generate Feasible High-Level Projects to Address Needs

Consultant shall further develop feasible alternatives into high-level potential projects which address the needs and recommendations identified in Tasks 6 through 11.

Consultant and Valley Water will jointly screen potential high-level projects with an initial fatal flaw analysis to remove those that are not practical or feasible. This initial screening may rely on qualitative data and engineering judgement by the project team, incorporating input from Valley Water staff, management, retailers, and stakeholders. Considerations for classifying projects as impractical or unfeasible include recognizing projects with contractual hurdles, high costs, limited benefits, environmental constraints, and community considerations.

Consultant and Valley Water will jointly consider the results of the initial fatal flaw analysis. Consultant will work with VW to consider the number of feasible projects for development and identify an approach to accomplish conceptual and feasible alternatives development for all feasible projects in order to progress to Task 12.2 (where projects will be assessed and portfolios formulated). Consultant and Valley Water will jointly evaluate the feasible potential projects and determine if detailed alternatives analysis or further project development is required based on the specific project type. Consultant will develop site plans, process diagrams, and AACE Class 5 cost estimates for up to 10 identified high-level projects and alternatives.

Planning-level hydraulic modeling utilizing the existing hydraulic models verified in Task 6 may be required to confirm general system hydraulic constraints can be met. Detailed project-specific model development and calibration is not included in this scope.

12.2 Develop Project Ratings and Identify Preferred 30-Year Project Portfolio

Consultant will gather all feasible high-level projects from Task 12.1 in a single table and develop project ratings using the project assessment methodology developed in Task 5.1 to identify preferred projects. After project ratings are developed, the Consultant will perform a comprehensive project scoring evaluation in order to assemble and propose preferred 30-year project portfolios. Options or variations for preferred project portfolios will be presented to internal

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and external stakeholders. Based on internal and external stakeholder input, a final preferred 30-year project portfolio will be selected. Task 12.2 will result in the selection of a final preferred project portfolio for the 30-year planning horizon.

12.3 Planning Study Report

It is assumed that Task 13 can be performed in parallel with this subtask so that Task 12.3 can be informed by the Task 13 sequencing assessment of the selected portfolio. This subtask will be performed with input from Valley Water. The sequencing exercise in Task 13 may consider projects costs and benefits, funding constraints, and a sequence that achieves the most benefits early in the 30-year program. Task 13 will identify an appropriate sequence and schedule for implementation in collaboration with Valley Water and can inform Task 12.3 on which projects to develop for the Planning Study Report.

Consultant and Valley Water will jointly consider the results of the Task 12.2 final selected portfolio. Consultant will work with VW to consider the number, type, and scale of final portfolio projects for development, and identify an approach to accomplish appropriate project development for the Planning Study Report. For the purposes of budget allocation, it is assumed that for projects to be initiated in the first 10 years, Consultant will develop the projects to a basis of design level and develop AACE Class 4 cost estimates for up to three discrete projects that include up to a total of 10 miles of new or replacement pipeline and one pump station (in a predominantly urbanized setting for Environmental purposes).

Consultant will prepare a Planning Study Report to document the entire project formulation process performed as part of Tasks 12.1 and 12.2. This report will include the project background, objectives, problem definition, conceptual and feasible alternatives analyses (if applicable), the recommended projects, the basis for the selection of portfolios, and basis of design.

Task 12 – Assumptions

1. Basis of Design

- a. For each project type and each facility, the Planning Study Report will include a Basis of Design Criteria summary table and 10% conceptual level engineering to include, but not be limited to:
 - i. Major project elements list
 - ii. Pumping Plant hydraulic and process flow diagrams or hydraulic profile for pipeline infrastructure
 - iii. Key design and performance criteria
 - iv. Conceptual site layouts (generic plans and section view) or plans and profiles for pipeline infrastructure
 - v. Potential equipment vendors (as well as any related procurement issues)
 - vi. Recommendations for levels of automation/control
 - vii. Specific discipline considerations (civil/site, mechanical, electrical, instrumentation and controls, etc.)
 - viii. Major operations and maintenance considerations (access, redundancy needs, etc.).
 - ix. Lifecycle cost estimates

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- b. As part of the SCADA Master Plan Implementation Project, new SCADA standards will be developed. Consultant will use the new SCADA standards to develop the basis of design for the projects. Design criteria shall comply with Valley Water, Local, State, and Federal agency requirements.
2. Meetings
 - a. The level of effort assumes that multiple meetings/workshops with Valley Water will be required to review work in progress, solicit input and feedback, and coordinate all work activities in this task.

Task 12 - Deliverables

1. Meeting agendas, minutes, and presentations.
2. One draft and one final Planning Study Report.

Task 13 - Project Implementation Plan

Consultant shall develop a comprehensive implementation plan for the preferred projects over a 30-year period. Consultant shall determine how Valley Water can most efficiently and cost-effectively implement these projects. The preferred projects shall be assembled into a feasible construction schedule based on the projects' priorities, dependencies and sequencing. This schedule shall determine the capital requirements for 5-year intervals within the 30-year planning horizon. The plan will be a living document that will continue to be updated throughout the 30-year period to address any changes that arise. Scheduling and phasing of the preferred projects shall align with Valley Water's other implementation and master plan projects. Consultant shall also perform a staffing evaluation and provide a recommended staffing plan to complement the implementation schedule of the preferred projects.

Task 13 - Deliverables

1. Draft and final project implementation plan including staffing plan

Task 14 - Distribution System Master Plan Implementation Project Report

Consultant shall prepare a final report that incorporates the conclusions of all tasks completed as part of this project. The report shall present a recommended 30-year Capital Improvement Program for Valley Water's Distribution System that includes a suite of recommended capital improvement projects and an implementation plan. The report shall provide additional recommendations and/or items for future consideration, such as evaluation of current methods and cycles for renewal/replacement as well as operational and maintenance changes that may increase asset life.

Task 14 - Deliverables

1. Draft and Final Distribution System Master Plan Implementation Project Report
2. Close-out checklist of all tasks and deliverables completed.

Task 15 - Stakeholder Outreach Strategy

Consultant shall develop a stakeholder outreach strategy and provide technical support to the stakeholder outreach effort as well as holding workshops throughout the project to obtain stakeholder input and concurrence.

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Consultant shall develop a stakeholder outreach plan that identifies internal and external stakeholder groups. Valley Water may form a separate Technical Advisory Group (TAG) consisting of experts in several disciplines and regulatory bodies and ask Consultant to work with the TAG group as part of the stakeholder outreach plan. The plan shall describe how and when outreach will be conducted to the various groups. Outreach may include individual meetings, group meetings, email/written or other communication. The plan shall identify the goals of each stakeholder meeting or communication.

Consultant shall facilitate the meetings and support Valley Water staff on technical, regulatory, or other matters. The consultant's primary involvement in the Stakeholder Outreach effort shall be to 1) recommend method, timing, and goal of outreach throughout the duration of the project, 2) prepare slides, handouts and/or other materials for the stakeholder meetings and workshops, 3) facilitate and present information at stakeholder meetings and 4) during the outreach process, perform additional technical, regulatory and/or environmental analyses to support the ongoing stakeholder meetings.

Consultant shall prepare presentation materials and make presentations to the Valley Water Board and stakeholders if needed. Consultant shall summarize the stakeholder outreach process and results in a technical memorandum.

Task 15 – Assumptions

1. Valley Water staff will be responsible for organizing and conducting the stakeholder meetings.

Task 15 - Deliverables

1. Draft and final stakeholder outreach plan
2. Stakeholder meeting facilitation, materials, displays and handouts, and minutes
3. Presentation materials for Valley Water Board meetings
4. Draft and final technical memorandum on Stakeholder outreach process and results

Task 16 – Development of Technical Standards

Consultant will help Valley Water develop technical standards for use on future pipeline or pump station design projects. The standards shall include items that are typical for most pipeline or pump station projects and include general, civil, structural, mechanical, electrical, and instrumentation and control systems disciplines. The standards may include high-level design standards with owner preferences and guidelines. The Consultant may propose what they see fit for Valley Water's pipeline and pump station related specifications.

Through a series of meetings, interviews, and workshops, Consultant will solicit input from Valley Water regarding the following:

- Standard details that have proven valuable based upon Valley Water experience.

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- Standard specifications that have proven valuable based upon Valley Water experience. Interest will be in performance of “consumable” items such as valves and pumps, and coatings and linings
- Performance history of pipeline appurtenances, including vaults, air valves, blowoffs and drainage ways.
- Maintenance records especially related to right-of-way for pipelines and access to and within for maintenance of pump stations.
- “Lessons Learned” on Valley Water projects.
- Valley Water experience with materials, especially regarding real versus assumed design factors of safety and design life of components.
- Any relevant documents that Valley Water wants to share.

Task 16 – Assumptions

The following initial level of effort budgeted depends on the extent of existing documentation:

1. Request and review of data from Valley Water (120 labor hours assumed)
2. Workshops with Valley Water staff and related documentation (120 hours assumed, assumes two main groups of stakeholders)
3. Draft Design Guidelines for Pump Stations (200 hours assumed)
4. Draft Design Guidelines for Pipelines (200 hours assumed)

Task 16 – Deliverables

1. Technical standard guidelines for pipelines and pump stations (.docx, .pdf).

Task 17 - Environmental Planning and Permitting

Quality Management

Close coordination between the environmental consultant, Valley Water environmental planners, engineers, and Project Team throughout the course of the project is expected to ensure that critical information for conceptual design, alternatives analysis and environmental analysis is available to the appropriate Project Team members in a timely manner.

The first version of each deliverable shall be submitted as a draft to Valley Water for review and comment. All deliverables such as technical memoranda, larger deliverables, and other lengthy documents should be delivered within the allowable time determined by Valley Water.

17.1 Project Description

17.1.1 Collect Background Information on the Project

Consultant shall work with the Project Team to identify additional existing background information, compile a list of all available information and submit the list to Valley Water for review. As early as possible, PEIR consultant shall identify the federal nexus, if any, and the requirements for compliance with NEPA.

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17.1.2 Prepare Base Map

Consultant shall prepare a base map for the Project area and its environs. The map shall be prepared in a Geographic Information System (GIS) format compatible with Valley Water's GIS system; have an appropriate level of detail to serve as a basis for the analysis associated with task 17.1.2, and subsequent environmental analysis; be constructed in a manner consistent with the protocol for information sharing of Valley Water's GIS department; and be consistent with applicable metadata requirements.

Examples of appropriate level of detail would include inclusion of features located within 300' of the exterior boundary of project site at a scale of 1" =100'; record boundaries, easements and preliminary title reports; and topography, site improvements and public infrastructure.

17.1.3 Analyze Existing Data and Information, Based on Draft Problem Definition and Objectives, and Define Key Technical Environmental Issues to be Addressed

Consultant shall analyze the existing data and information, based on the draft problem definition and project objectives, in order to define key technical issues to be addressed. Based on this analysis, Consultant shall identify environmental concerns for the project, needed permits, and the alternatives and document these in a technical memorandum for Valley Water review.

17.1.4 Generate Project Description

Consultant shall meet with the Project Team to discuss refining the problem definition and project objectives, based on the review and analysis conducted in the previous three items. The problem definition and project objectives will be used to define parameters of environmental analysis and field investigations, as well as the foundation for drafting the detailed project description for use in the CEQA document.

Task 17.1 - Assumptions

1. Assumes that a federal asset will not be part of this PEIR and thus NEPA compliance is not required, and that any associated work for NEPA compliance would be additional work that could be authorized under Task 18.
2. Valley Water has a current contract in place for design and environmental consulting services specific to the planned rehabilitation of the Almaden-Calero Canal (Amendment No. 3 to Agreement No. A3639A). This scope excludes any efforts associated with the Almaden-Calero Canal facility as it relates to CEQA compliance or regulatory permitting.
3. Quality Management: Valley Water staff is responsible for ensuring that project design meets Valley Water engineering design specifications and Board Ends Policies. Valley Water's Environmental Planning Unit for the project is responsible for quality assurance/quality control for work products associated with the environmental planning and review process and environmental management objectives. The VW Environmental Planner shall provide consolidated comments to Consultant, and these consolidated comments shall serve as the basis for the final version of the document. The documents shall adhere to Valley Water CEQA guidelines and formats.

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4. Valley Water shall provide Consultant with:
 - a. any updates to the project goals, objectives and draft preliminary project description that have occurred since the issuance of the RFP.
 - b. Valley Water data and information relevant to the project; a list of other known available documents relevant to the project.
 - c. A list of information, including the source(s) and keeper(s) of the information that may be relevant to the project but is not in Valley Water's possession.

17.1 - Deliverables

1. List and Copies of Background Data and Other Compiled Information
2. Base Map and metadata
3. Memorandum Identifying Environmental Concerns for the Project/Proposed Alternatives
4. Draft Project Description (for CEQA process)

17.2 Initial Environmental Assessment

17.2.1 Gather and Organize Environmental Information Relevant to the Project

Consultant shall work with Valley Water to identify any existing environmental data not previously identified in task 17.1. Consultant shall then gather existing environmental documents, memos, data, plans and policies and other information relevant to the project. Such information may include, but is not limited to: hazards and hazardous materials assessments of the property(ies) involved; programmatic environmental impact report (PEIR) for similar facilities in the vicinity

and/or other projects on the property(ies) involved; biological, or cultural resource studies, Valley Water Watershed Management Initiative (WMI) data and report information specific to the project vicinity; engineering, hydraulic and/or geotechnical reports for the project area; FEMA reports; other mapping, reports and documentation of special status species in the vicinity of the project site; planning documents by the affected jurisdiction(s), including relevant General Plans, Project Plans and/or Master Plans; and other relevant materials. Consultant shall submit this list to Valley Water for review.

17.2.2 Summarize Environmental Conditions and Constraints Based on Existing Data

Consultant shall review existing reports, plans and policies and other information relevant to the project, as identified in task 17.2.1. Consultant shall analyze the environmental conditions, based on existing data, focusing on relevant environmental statutes and regulations that include, but are not limited to, the Migratory Bird Treaty Act, state and federal Endangered Species Acts, cultural and archaeological statutes, noise ordinances and traffic laws.

Results of this analysis shall be summarized by the Consultant in a technical memorandum. The technical memorandum should also identify additional data requirements and environmental issues not previously identified. The technical memorandum shall be submitted to the Project Team for review.

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17.2.3 Prepare Field Investigation Plan

Based on the data requirements identified under task 17.2.2, Consultant shall develop a field investigation plan, and submit it to Valley Water for review. These investigations shall include, but may not be limited to, biological surveys for sensitive and non-sensitive species, habitat assessments, water quality impact assessment, wetland delineations, investigation of cultural resources and other environmental considerations required under CEQA.

17.2.4 Conduct Site Visit and Surveys, As Appropriate

In accordance with the approved field investigation plan, Consultant shall conduct field investigations on the biological, cultural and other environmental resources, as applicable, within the project vicinity. Consultant shall prepare a technical report, along with supporting field notes, photos and other relevant materials, as appropriate.

17.2.5 Compile Documentation in Support of Draft CEQA Initial Determination Memo

This internal Valley Water document provides the rationale for the use of a particular CEQA document for a project. Consultant, in consultation with the Environmental Planner, shall prepare supporting documentation for draft CEQA Initial Determination Memo, and submit it to Valley Water for review.

17.2 – Assumptions:

1. Valley Water is responsible for finalizing the CEQA Initial Determination Memo, based on the material provided by Consultant.

17.2 – Deliverables

1. List of References, and Environmental Data and documents for the Project
2. Environmental Factors Technical Memorandum identifying additional data required, major environmental constraints, and environmental conditions not previously identified
3. Field Investigation Plan
4. Site visit survey notes, aerial photographs, ground level photographs and other appropriate documentation; technical memorandum summarizing field work outcomes
5. Supporting documentation for draft CEQA Initial Determination Memo

17.3 Environmental Investigations, Surveys and Studies

The Environmental Investigations task includes assessments needed to evaluate environmental impacts of the project as required by CEQA and other applicable laws and regulations. Tasks under task 17.2 Environmental Investigations, Surveys and Studies must link closely with 17.2.4, 17.3.A.2, 17.3.C.1, 17.4.A.2 and 17.4.A.5, which require expertise in all areas related to CEQA clearance, especially biological resources.

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17.3.1 Conduct Additional Site Visit(s) and Survey(s)

Consultant and Valley Water shall meet to discuss additional site investigations beyond those designated as mandatory in the final Field Investigation Plan, created under task 17.2.3. If the Field Investigation Plan does not include additional field investigations beyond those deemed mandatory, then Consultant shall amend the Field Investigation Plan, and submit it to Valley Water for review. Based on Valley Water's written consent, Consultant shall conduct additional site visits and surveys, as necessary, and submit to Valley Water for review an addendum to the technical memorandum summarizing field work outcomes.

17.3.2 Determine Baseline Environmental Conditions

Consultant shall prepare a report that details the existing site conditions, as determined through completion of tasks 17.2 and 17.3.1 and submit to Valley Water for review. Based on the problem definition and project objectives, this report shall identify design considerations related to biological goals and objectives, habitat requirements, cultural and other environmental resources and potential future conditions. This report shall establish the baseline environmental conditions for the CEQA process and shall be submitted to Valley Water for review. This baseline shall be used to establish the level of CEQA evaluation required for the project.

17.3.3 Identified Required Permits

Consultant shall identify needed permits related to cultural resources, wetlands, creeks, fisheries, etc. early in the project to allow sufficient time to prepare and apply for the permits.

17.3 - Deliverables

1. Amended Field Investigation Plan; Site Visit Survey Notes, Photographs (Aerial and Ground Level) and Other Appropriate Documentation; Addendum to Technical Memorandum Summarizing Field Work Outcomes
2. Baseline Environmental Conditions Technical Report
3. U.S. Army Corps of Engineers Waters of the U.S. Jurisdictional Determination (wetlands delineation)

17.4.A Programmatic Environmental Impact Report

17.4.A.1 Prepare Notice of Preparation and Public Scoping Meeting

In collaboration with Valley Water, Consultant shall prepare the Notice of Preparation (NOP).

Consultant shall provide a summary of the NOP in formats suitable for publication in a newspaper of general circulation and web posting. The NOP work will include distribution to interested parties for notification of public scoping meetings to solicit public and agency input on the scope and content of the PEIR. This distribution list will be maintained by the PEIR Consultant team for

SCHEDULE PM SCOPE OF SERVICES

subsequent mailings. Consultant's Project Manager and key staff will participate in a public scoping meeting to be arranged by VW communications unit. Consultant will present a brief summary of the NOP and answer questions. Consultant will prepare appropriate display materials (PowerPoint presentation, display boards) for use at the public meeting.

17.4.A.2 Assist with Development and Screening of Project Alternatives

Consultant shall work closely with Valley Water's engineering and environmental planning staff to develop criteria for evaluating Conceptual Alternatives. Consultant shall assist Valley Water in developing the Conceptual Alternatives by identifying environmentally beneficial features into the conceptual alternatives. Consultant shall document the inclusion of environmentally beneficial features (e.g., avoidance, minimization, enhancements) within the project. Consultant shall prepare a technical memorandum documenting the evaluation process, as well as the conceptual alternatives, and provide this memo to Valley Water for review.

17.4.A.3 Refine Project Description

Consultant shall work with Valley Water Project Team to refine the project description, based on the review and analysis in Tasks 17.2 and 17.3, and the previous three subtasks, to produce a draft detailed project description consistent with the recommended projects resulting from Task 12.3 for use in the CEQA process. The revised project description is subject to Valley Water review and may require two (2) drafts prior to final.

17.4.A.4 Prepare Administrative Draft PEIR (ADEIR), Including Mitigation Monitoring and Reporting Program

Consultant shall work closely with Valley Water Project Team to develop and document the screening criteria, evaluate the retained alternatives, and identify the preferred alternative(s). Results of this evaluation shall form the basis of the alternatives analysis in the Administrative Draft PEIR that Consultant shall prepare, working closely with Valley Water's Project Team.

As part of the Administrative Draft PEIR, Consultant shall prepare a Mitigation Monitoring and Reporting Program for the project. Required format is a matrix showing impacts, mitigation measures, timing, status and document references.

The first PEIR delivered to Valley Water shall be an Administrative Draft document. Valley Water shall review the Administrative Draft and provide consolidated comments to Consultant for use in preparing the Draft PEIR. In addition, each document prepared for compliance with CEQA requirements shall be prepared in such a way that the document fully satisfies CEQA requirements.

17.4.A.5 Prepare Draft PEIR, including Mitigation Monitoring and Reporting Program

Based on Valley Water comments compiled by the Environmental Planner and provided to Consultant, Consultant shall revise the Administrative Draft PEIR. The resulting document shall be the Draft PEIR, including the Mitigation Monitoring and Reporting Program. Valley Water shall review a screen check copy of the Draft PEIR to ensure that Valley Water comments have been incorporated before presentation to the Board of Directors.

SCHEDULE PM SCOPE OF SERVICES

Draft Programmatic Environmental Impact Report – Public Noticing and Participation Requirements

17.4.A.6 Prepare Notice of Completion and Filing with the State Clearinghouse

In coordination with Valley Water Environmental Planner, Consultant shall prepare the Notice of Completion (NOC) to be filed with the State Clearinghouse.

17.4.A.7 Prepare Information for Valley Water Website

Consultant shall provide the Draft PEIR and other materials, as appropriate, to fulfill public notice requirements for posting on Valley Water website.

Task 17.4 Assumptions

- Analysis limited to the number and type of projects consistent to and as defined and assumed under Task 12.3. Consultant and Valley Water will jointly consider the number, type, and scale of final portfolio projects for development, and identify an approach to accomplish appropriate project evaluation. For the purposes of budget allocation, it is assumed that the PEIR analysis would address up to three discrete projects that include up to a total of 10 miles of new or replacement pipeline and one pump station in a predominantly urbanized setting.

17.4.A - Deliverables

1. Notice of Preparation
2. Technical Memorandum on the Screening Process for Conceptual Alternatives, Including Detailed Documentation of Conceptual Alternatives - Draft and final technical memorandum documenting the screening process to be used for evaluation of Conceptual Alternatives, including documentation of each Conceptual Alternative in sufficient detail that it may be accurately evaluated.
3. Documented Public Comments - Public scoping materials ; Documented Public Scoping Comments.
4. Draft and Final Project Description -Draft and Final Project Description (for CEQA document).
5. Administrative Draft PEIR, Including Mitigation and Monitoring Plan.
6. Public Draft PEIR Public Draft PEIR, Including Mitigation Monitoring and Reporting Program.
7. File Notice of Completion with State Clearinghouse.

Final Programmatic EIR

17.4.B.1 Respond to Public Comments

In collaboration with Valley Water Project Team, Consultant shall prepare responses to public comments on the Draft PEIR for review by Valley Water Project Team to ensure responses are consistent with Valley Water policy.

SCHEDULE PM SCOPE OF SERVICES

17.4.B.2 Prepare Final PEIR

Based on the public comments and the Response to Comments Report (task 17.4.B.4), Consultant shall prepare the Administrative Final PEIR, incorporating the public comments and responses. The Administrative Final PEIR shall include the Mitigation Monitoring and Reporting Program. Monitoring protocols shall include mitigation elements, a detailed description of equipment and supplies, sampling design (with rationale), data to be collected, sample sizes (as appropriate), timing and frequency of data collection, data analysis, related success criteria, adaptive management activities, and estimated cost.

Consultant shall provide the Administrative Final PEIR to Valley Water for review. Based on Valley Water comments on the Administrative Final the Consultant shall prepare the Final PEIR.

17.4.B.3 Prepare Findings and Statement of Overriding Considerations

In coordination with Valley Water, Consultant shall prepare the CEQA Findings and Statement of Overriding Considerations, as directed.

Consultant shall submit the Draft Findings and Statement of Overriding Considerations to Valley Water for comment and prepare the final version of these documents based on Valley Water comments resulting from that review.

17.4.B.4 Prepare Notice of Determination (NOD)

Consultant shall prepare the Notice of Determination, in coordination with Valley Water Environmental Planner. This sub-task should be done concurrently with item 17.4.B.8, below.

17.4.B.5 Assist with Public Hearing/Adoption of PEIR

If needed, Consultant shall provide support for Valley Water staff for the public meeting or hearing where Valley Water Board of Directors considers the PEIR for approval. This support may include preparation of materials, answering technical questions at the meeting/hearing, and/or presenting the environmental component of the program. Consultant shall record public comments during this meeting and provide these to Valley Water.

17.4.B – Assumptions:

1. 17.4.B.1: Valley Water shall collect and collate written public comments on the Draft PEIR and provide these collated comments to Consultant.
2. 17.4.B.2: Valley Water shall review a screen check copy of the Final PEIR to ensure that Valley Water comments have been incorporated.

17.4.B - Deliverables

1. Draft and Final Noticing for Valley Water Website and State Clearinghouse Filing.
2. Notice of Completion.
3. Public Hearing Displays, Handouts, Meeting Notes, presentations.

SCHEDULE PM SCOPE OF SERVICES

4. Draft and Final Response to Public Comments Report. This document will be part of the Final PEIR, and so the final version will be included under Task 17.4.B.5.
5. Administrative Final PEIR and MMRP.
6. Final PEIR and MMRP
7. Findings and Statement of Overriding Considerations, if required.
8. Notice of Determination.
9. Meeting Notes, Public Hearing Displays, Presentation, Handouts, Meeting Notes.

17.5 Regulatory Permitting Assistance

This task is intended to produce the permit applications, environmental documents and other support material needed for project implementation. Valley Water Environmental Planner shall take the lead in negotiations with regulatory agency staff. Consultant shall provide support as noted below.

17.5.1 Assist with Initial Regulatory Agency Consultations

Under the direction of Valley Water Environmental Planner, Consultant shall assist in planning and attending initial consultation(s) with regulatory agency personnel. Consultant shall be responsible for keeping detailed notes of meeting(s).

17.5.2 Prepare Draft Permit Applications

In consultation with Valley Water Environmental Planner, Consultant shall identify the necessary permits for the proposed project and prepare the necessary permit applications for the project. The application shall be provided to Valley Water for review.

17.5.3 Prepare Biological Assessment

In consultation with Valley Water Environmental Planner and Biologist, Consultant shall prepare the Biological Assessment, as appropriate, for special status species that are present in the project area and could be impacted by the project. The Biological Assessment shall be reviewed by Valley Water.

17.5.4 Compile/Identify Possible Permit Terms and Conditions

In consultation with Valley Water Environmental Planner and based upon the Mitigation and Monitoring Plan, Consultant shall prepare a matrix of possible permit terms and conditions likely to result from permitting the project. Consultant shall prepare a technical memorandum on possible permit terms and conditions, including the matrix mentioned above, and submit it to Valley Water for review.

17.5.5 Prepare Final Permit Application

Based on the comments received from Valley Water, Consultant shall prepare the final permit applications for the project.

SCHEDULE PM SCOPE OF SERVICES

17.5.6 Provide Support to Valley Water Team During Permit Negotiations

Consultant shall provide support to Valley Water Project Team during permit negotiations. This support may take the form of strategizing with Project Team members, preparing handouts and/or displays, attending meetings to answer questions and/or give short presentations. At Valley Water discretion, Consultant may be responsible for preparing meeting notes to document meeting discussions and outcomes.

Task 17.5 Assumptions

1. Analysis limited to the number and type of projects consistent to and as defined and assumed under Task 12.3. Consultant and Valley Water will jointly consider the number, type, and scale of final portfolio projects for development, and identify an approach to accomplish appropriate project evaluation. For the purposes of budget allocation, it is assumed that the permitting effort would focus on up to three discrete projects that include up to a total of 10 miles of new or replacement pipeline and one pump station in a predominantly urbanized setting.

17.5 - Deliverables

1. Initial Consultation Meeting Notes
2. Draft Permit Applications.
3. Biological Assessment - draft, then final Biological Assessment.
4. Technical Memorandum on Possible Permit Terms and Conditions.
5. Final Permit Applications and other permit documentations as required and requested by appropriate agency/ies.
6. (Optional) Ongoing Meeting Notes. Consultant shall submit, in one package, all technical info that went into the biological assessment and permit applications. This may include, but not be limited to, GIS files, vegetation or wildlife survey results, cultural, and resource data.

Task 18 - Supplemental Services

Valley Water may require, and the Consultant will perform, Supplemental Services on an as-needed basis. Prior to performing such Supplemental Services, Consultant must obtain written authorization in the form of a Task Order approved by Valley Water's Office of Integrated Water Management DOO and executed by both Parties. The form of this Task Order will be as per the Standard Consultant Agreement, Section Twelve, Miscellaneous Provisions, Subsection 13, Task Orders; and, Appendix Three, of the Standard Consultant Agreement, Task Order Template.

Consultant may provide additional quantities of previously identified services as requested by Valley Water. Consultant may provide additional services for any quantity of tasks and deliverables beyond those stated in Tasks 1 through 17.

18.1 - Program Management Services

Consultant may provide program management services beyond the initial implementation plan development, to help oversee the implementation of the Distribution System Master Plan Implementation projects approved by the Valley Water Board and included in the Capital Improvement Program. Consultant shall coordinate with multiple project management teams on

SCHEDULE PM SCOPE OF SERVICES

the work approach for the program. If this option is exercised, the specific scope of services would be negotiated and executed by Valley Water and the Consultant as a task order.

Program Management Work Plan

Consultant shall prepare a program management work plan in accordance with the program's scope and shall include the Consultant's approach to effectively manage and administer the program including processes, procedures, techniques and methods to monitor the schedule and budget of the multiple implementation projects, communication protocols, document control and other administrative procedures.

Program Quality Assurance and Quality Control Plan

Consultant shall prepare a program QA/QC plan of the procedures to monitor the performance and provision of the services and deliverables to meet Valley Water requirements, accepted industry and professional practices, and standard of care.

Program Risk Management Plan

Consultant shall create and maintain a program risk management plan that includes the identification of known risks, potential impacts and probability, risk response strategies, and mitigation measures which will minimize or resolve impacts to the program.

Management of Meetings

Consultant shall organize and conduct the following meetings at a frequency mutually agreed upon or as directed by Valley Water. Consultant shall prepare agendas and minutes for these meetings.

- Monthly progress meetings with the Consultant and Valley Water PM to review the monthly invoice and progress report.
- Progress meetings with various implementation project management teams, Valley Water staff and other participants as necessary to discuss the progress and planned work, project issues, potential changes, the review of recent activities and agenda items, exchange of new information, planning and coordination of upcoming design/construction and related activities, as well as any other areas for discussion.
- Special technical meetings to resolve issues with various implementation project management teams, designers, contractors, utilities, regulators, local agencies having jurisdiction, Valley Water's plant operations and maintenance staff, and any other participants.
- One-on-one meetings with Valley Water to provide a brief update of the program activities completed, the look-ahead activities, and the issues and actions that require Valley Water's attention, in a weekly/bi-weekly meeting/conference call with Valley Water PM.

Coordination and Communication

Consultant shall assist Valley Water with the coordination and communication with external agencies and stakeholders, projects and programs by others, and program participants, including Valley Water's management and operations and maintenance staff, implementation project managers, designers and contractors, including support in drafting correspondence related to the program management activities and other related issues.

SCHEDULE PM SCOPE OF SERVICES

Consultant shall serve as the primary point of communication for coordination between the implementation project management teams, other program management teams and other parties; receive program correspondence and prepare draft responses; and transmit Valley Water-approved responses. Consultant shall maintain program-level correspondence logs, decision logs and action items logs.

Consultant shall establish, implement, manage and maintain a Master Calendar of all significant events and meetings for the program's projects, and a Master Project Directory listing all program participants, their role on the program, address, phone numbers(s), email, and other pertinent information, which shall be accessible by all team members.

Consultant shall provide program specific input to Valley Water's Capital Improvement Program and long-term financial forecast on an annual basis.

If requested, Consultant shall prepare board agenda packages and make presentations to the Valley Water Board.

18.1 - Deliverables

1. Program management work plan
2. Program QA/QC plan
3. Program risk management plan
4. Monthly actual progress and completed activities against planned activities reports
5. Monthly budget and schedule reports with early warning indicators
6. Monthly progress reports
7. Meeting agenda and minutes
8. Master calendar and master project directory
9. Board agenda packages and presentation materials

18.2 - Additional Services

Consultant may provide additional quantities of previously identified services as requested by Valley Water. Consultant may provide additional services for any quantity of tasks and deliverables beyond those stated in Tasks 1 through 17, to include but not be limited to:

1. Additional meetings and workshops;
2. Additional time allotted for meetings;
3. Additional status/progress reports;
4. Additional phone conference calls;
5. Additional support to Valley Water in preparing Valley Water deliverables;
6. Additional pages or copies of technical memoranda, plans, reports, drawings, and specifications;
7. Additional public outreach support;
8. Additional field condition assessment work;
9. Additional studies required;
10. Additional field work as needed such as Inspections, Field Surveying, and Potholing work;
11. Additional work associated with integrating recommendations from the other implementation and master plan project efforts into the DSIP recommendations; and
12. Additional work associated with environmental planning and permitting, such as NEPA

**SCHEDULE PM
SCOPE OF SERVICES**

7. Attachments

The following listed Schedule PM are incorporated herein by this reference as though set forth in full:

Attachment One - Fees and Payments
Attachment Two - Schedule of Completion
Attachment Three - Consultant's Key Staff and Subconsultants
Attachment Four - Reference Materials
Attachment Five – Technical Standards Examples
Attachment Six – Valley Water's Risk Methodology and Matrix

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**SCHEDULE PM
ATTACHMENT ONE
FEES AND PAYMENTS**

1. Total Authorized Funding

Total payment for Services performed, to the satisfaction of Valley Water, as described in the Schedule(s) will not exceed a total amount of **\$5,992,234** (Not-to-Exceed Fees or NTE). Under no conditions will the total compensation to the Consultant exceed this NTE payment amount without prior written approval in the form of an amendment to this Agreement executed by Valley Water's Board of Directors (Board), or Chief Executive Officer, or designee, as authorized by the Board.

2. Cost Breakdown

The NTE total compensation of this Agreement consists of the following task fee breakdown. No services will be performed, or fees paid by Valley Water to the Consultant for Supplemental Services without prior written authorization by Valley Water as stated in this Agreement.

COST BREAKDOWN

Task	Description	Not-to-Exceed Fees
1	Project Management, Stakeholder Meetings, and Project Development Workshops	\$641,078
2	Review Existing Records, Master Plans, and Reports	\$60,635
3	Define Goals and Objectives with Board and Stakeholder Input	\$137,611
4	Asset Risk and Renewal Methodology	\$197,704
5	Develop Project Assessment Methodology	\$127,413
6	Evaluation of Raw Water Pipelines	\$239,906
7	Evaluation of East Side Treated Water Pipelines	\$186,663
8	Evaluation of West Side Treated Water Pipelines	\$197,088
9	Evaluation of Pump Stations	\$319,780
10	Evaluation of Canals, Wells, and Recycled Water Facilities	\$267,974
11	Integrate Recommendations with Other Master Plans	\$192,003
12	Project Development, Evaluation, Selection, and Planning Study (10%)	\$715,773
13	Project Implementation Plan	\$60,226
14	Distribution System Master Plan Implementation Project Report	\$57,226
15	Stakeholder Outreach Strategy	\$110,526
16	Support Development of Technical Standards	\$147,559
17	Environmental Planning and Permitting	\$1,633,069
18	Supplemental Services	\$700,000
Total Not-to-Exceed Fees		\$5,992,234

**SCHEDULE PM
ATTACHMENT ONE
FEES AND PAYMENTS**

2. Terms and Conditions

A. Payments for Services performed, as described in this Schedule, which applies to the specific Services, will be based on the following terms:

1. Valley Water will pay for Services provided by the Consultant according to the schedule of rates for professional, technical, and administrative personnel, as well as materials and supplies as listed below in the Hourly/Unit Rate Schedule.
2. The stated hourly rates are effective for the term of this Agreement unless otherwise revised as indicated. After 12 months from the date this Agreement is entered into by parties ("anniversary date"), and each 12 months thereafter, these hourly rates may be negotiated by the Consultant and Valley Water, provided Consultant submits written notice to Valley Water of Consultant's request to revise the hourly rates 90 calendar days prior to the anniversary date of this Agreement. Both parties will use as a benchmark for negotiations the percent change for the previous 12 months of the "Employment Cost Index (ECI), for total compensation for private industry workers, for the San Francisco-Oakland-San Jose, CA CSA Census region and metropolitan area (not seasonally adjusted)" as published by the U.S. Department of Labor, Bureau of Labor Statistics, or 2.5%, whichever is less. A negative index will result in rates remaining the same. Such rate revisions are subject to written approval by Valley Water's Deputy Operating Officer.

B. Reimbursable Expenses

1. All reimbursable expenses not already covered in overhead may include, but are not limited to, mapping, rendering, printouts, leased equipment, mailing and delivery services, printing services, film and processing, plotting, and supplies. These other direct expenses as approved by Valley Water Project Manager will be billed on a monthly basis at actual cost linked to each Agreement Task, provided that the Task total NTE amount is not exceeded. Consultant shall provide receipts for each other direct expense item(s) with monthly invoices submitted. No markup will be applied to reimbursable expenses, either by the Consultant or by its subconsultants, subcontractors, or vendors. Consultant shall provide invoices for all such services regardless of cost.
2. Equipment purchased on behalf of Valley Water that costs \$50 or more must receive the prior written approval of Valley Water Project Manager. All equipment purchased on behalf of Valley Water and paid for by Valley Water shall become the property of Valley Water and be delivered to Valley Water prior to expiration of this Agreement.
3. Travel expenses are reimbursed at actual costs. Travel and overnight accommodations, including per diem, required for performance of this Agreement will be paid at reasonable cost not to exceed the U.S. General Services Agency Per Diem Rates for Sunnyvale/Palo Alto/San Jose, California area, provided prior approval has been obtained from Valley Water Project Manager. For air travel, Valley Water will pay the cost of a coach class or equivalent ticket. Where air travel is required, Valley Water will pay the total cost of taxi, rideshare, public transportation, or a rental car, which may include insurance, gas, car fee, and taxes and will be paid at the actual costs incurred. Vehicle rental is limited to a compact or economy model unless prior

**SCHEDULE PM
ATTACHMENT ONE
FEES AND PAYMENTS**

approval has been obtained from Valley Water Project Manager for a different type of vehicle.

4. A markup of 5% will apply to the Consultant only to manage Subconsultants, subcontractors and vendors, including lab services.

C. Prevailing Wage Requirements

1. scope of service performed under this Agreement may be considered a “public work.” If prevailing wage rates apply to a Task or Task Order, then See Standard Consultant Agreement Section Four, Fees and Payments, subsection 3. Prevailing Wages.
2. In accordance with prevailing wage laws, the Director of the California Department of Industrial Relations (Director) has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes available to the particular craft, classification, or type of workers employed on the Project. These rates are set forth in the latest determination obtained from the Director, which is on file in Valley Water’s Office of the Clerk of the Board of Directors and incorporated herein by reference the same as though set forth in full. The rates are also available on the State of California Department of Industrial Relations website at <http://www.dir.ca.gov>.
3. Valley Water’s offices are closed to the public. The prevailing wage rates are therefore not available for public review in the Office of the Clerk of the Board of Directors and currently only available online.

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**SCHEDULE PM
ATTACHMENT ONE
FEES AND PAYMENTS**

HOURLY/UNIT RATE TABLE

CLASSIFICATION	HOURLY/ UNIT RATE
Consultant/Prime: AECOM	
Principal-In-Charge	\$281.21
Project Manager	\$240.65
Technical Advisor QA/QC	\$240.65
Engineer/Scientist 3	\$223.75
Engineer/Scientist 2	\$183.60
Engineer/Scientist 1	\$154.91
Outreach Specialist	\$164.94
Cost Estimator	\$216.31
Program Manager	\$223.75
CAD/GIS Designer	\$129.08
Technical Editor	\$143.44
Project Controls	\$110.86
Subconsultant(s): H.T. HARVEY	
Principal	\$256.25
Associate Ecologist	\$173.96
Subconsultant(s): JHCE	
Principal Engineer	\$209.38
Sr. Mechanical Engineer/Hydraulics	\$249.56
Engineer/Scientist Grade 6	\$242.06
Engineer/Scientist Grade 5	\$240.06
Engineer/Scientist Grade 4	\$141.98
Subconsultant(s): SAYLOR	
Principal Cost Estimator/QAQC	\$225.00
Sr. Estimator/Project Manager	\$181.21
Sr. mechanical/Plumbing Estimator	\$209.23
Sr. Electrical Estimator	\$217.14
Sr. Estimator	\$171.21
Junior Estimator	\$108.82

**SCHEDULE PM
ATTACHMENT ONE
FEES AND PAYMENTS**

CLASSIFICATION	HOURLY/ UNIT RATE
Subconsultant(s): COORD STRATEGIES	
Program Manager	\$184.43
Subconsultant(s): JDH	
Principal Corrosion Engineer	\$240.01
Sr. Corrosion Engineer	\$225.00
Corrosion Engineer	\$185.01

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**SCHEDULE PM
ATTACHMENT TWO
SCHEDULE OF COMPLETION**

1. This Agreement commences on the Effective Date, subject to accomplishment of all conditions to formation of an agreement listed in the Agreement at Section Twelve, Miscellaneous Provisions, subsection 2. Formation of Agreement.
2. This Agreement expires three (3) years, with the option of two-one (1) year term extensions, after the Effective Date, unless, prior to its expiration, its term is modified by a written amendment hereto, and signed by both Parties.
3. Valley Water and Consultant may agree to modify the schedule specified for Consultant's performance as an administrative modification to the Agreement and will confirm such modification in writing.

PROJECT SCHEDULE

Task	Description	Duration From Notice to Proceed (months)
1	Project Management, Stakeholder Meetings, and Project Development Workshops	36
2	Review Existing Records, Master Plans, and Reports	2
3	Define Goals and Objectives with Board and Stakeholder Input	4
4	Asset Risk and Renewal Methodology	6
5	Develop Project Assessment Methodology	6
6	Evaluation of Raw Water Pipelines	18
7	Evaluation of East Side Treated Water Pipelines	18
8	Evaluation of West Side Treated Water Pipelines	18
9	Evaluation of Pump Stations	18
10	Evaluation of Canals, Wells, and Recycled Water Facilities	18
11	Integrate Recommendations with Other Master Plans	24
12	Project Development, Evaluation, Selection, and Planning Study (10%)	32
13	Project Implementation Plan	32
14	Distribution System Master Plan Implementation Project Report	36
15	Stakeholder Outreach Strategy	36
16	Support Development of Technical Standards	36
17	Environmental Planning and Permitting	36
18	Supplemental Services	36

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**SCHEDULE PM
ATTACHMENT THREE
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

1. Consultant's Key Staff assigned to the Project are as follows:

Team Member	Classification	Project Role	Contact Information
Craig Smith	Principal	Principal-In-Charge	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-874-3117 craig.j.smith@aecom.com
Jason Chen	Project Manager	Project Manager	888 SW 5th Avenue, Suite 600 Portland, OR 97204 971-323-6276 jason.chen@aecom.com
Derrick Wong	Technical Advisor	Plan Development Lead; Planning/CIP	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-874-3117 craig.j.smith@aecom.com
Devan Thomas	Technical Advisor	Senior Technical Advisor/QC	105 Commerce Valley Dr W, 7th Flr Markham, ON L3T 7W3 Canada 416-577-3338 devan.thomas@aecom.com
Luis León	Technical Advisor	Senior Technical Advisor/QC	300 S Grand Ave Los Angeles, CA 90071 909-579-3971 luis.leon@aecom.com
Steve Leach	Technical Advisor	Senior Technical Advisor/QC	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-874-3205 steve.leach@aecom.com
Bill Martin	Technical Advisor	Senior Technical Advisor/QC	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-874-3020 bill.h.martin@aecom.com
Chris Macey	Technical Advisor	Asset Management	99 Commerce Dr, Winnipeg, MB R3P 0Y7 Canada 204-928-7423 chris.macey@aecom.com
Mathew Francis	Technical Advisor	Risk & Resiliency	756 East Winchester Street, No 400 Murray, UT 84107 801-904-4108 mathew.francis@aecom.com

**SCHEDULE PM
ATTACHMENT THREE
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

Team Member	Classification	Project Role	Contact Information
Kathy Beduhn	Engineer/Scientist 3	Modeling	200 Indiana Ave Stevens Point, WI 54481 715-342-3007 kathy.beduhn@aecom.com
Lindle Willnow	Engineer/Scientist 3	Surge	250 Apollo Drive Chelmsford, MA 01824 978-905-3228 lindle.willnow@aecom.com
Andy Romer	Technical Advisor	Pipeline Engineering	999 Town & Country Rd, Suite 300, Orange, CA 92868 949-226-2656 andy.romer@aecom.com
Paul Moulton	Technical Advisor	Pump Station Engineer	9 Jonathan Bourne Drive Pocasset, MA 02559 508-833-6958 paul.moulton@aecom.com
Juan Sorensen	Technical Advisor	Canals	2020 L St, Suite 400 Sacramento, CA 95811 916-679-2012 juan.sorensen@aecom.com
Mark Reitz	Technical Advisor	Wells	8050 N. Palm Avenue Fresno, CA 93711 559-490-8304 mark.reitz@aecom.com
Phil Meymand	Technical Advisor	Seismic Hazards	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-874-1723 philip.meymand@aecom.com
Tom Guinn	Technical Advisor	Operations	One E 1st Street, Suite 1411 Reno, NV 89501 775-870-4923 tom.guinn@aecom.com
Mark Whiteley	Technical Advisor	Staffing	150 California Street San Francisco, CA 94111 415-796-8100 mark.whiteley@aecom.com
Martin Hammer	Cost Estimator	Cost Estimating	4840 Cox Rd Glen Allen, VA 23060 804-515-8533 martin.hammer@aecom.com

**SCHEDULE PM
ATTACHMENT THREE
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

Team Member	Classification	Project Role	Contact Information
Chris Bessa	Technical Advisor	Constructability	300 Lakeside Drive, Suite 400 Oakland, CA 94612 510-893-3600 chris.bessa@aecom.com
Chris Hill	Technical Advisor	Water Treatment	7650 W Courtney Campbell Causeway Tampa, FL 33607-1462 813-286-1711 christopher.hill@aecom.com
Vijay Sundaram	Technical Advisor	Water Reuse	2020 L St, Suite 400 Sacramento, CA 95811 916-993-7617 vijay.sundaram@aecom.com
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**SCHEDULE PM
ATTACHMENT THREE
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

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**SCHEDULE PM
ATTACHMENT THREE
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

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2. The following Subconsultants are authorized to perform Services on the Project:

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**SCHEDULE PM
ATTACHMENT FOUR
REFERENCE MATERIALS**

Ref No.	Description
1	Valley Water Non-Disclosure Agreement (NDA) and Personal Non-Disclosure Agreement (PNDA) (FC 1650 or FC 1882)
2	Valley Water Board Policies
3	Water Supply Master Plan
4	Countywide Water Reuse Master Plan
5	2015 South Bay Water Recycling Strategic and Master Plan
6	2015 South County Recycled Water Master Plan (update finalized May 2016)
7	Groundwater Management Plan
8	Urban Water Management Plan (incl water shortage contingency plan)
9	District-wide Asset Management Plan
10	Maximo Asset registry (excel download)
11	Asset Management Planning Tool database: asset rehab, replacement and cost forecasting (excel download)
12	2005 Infrastructure Reliability Project Report
13	2016 Infrastructure Reliability Project Report
14	Condition Assessment Data for all large diameter pipelines (Typically less than 10 yrs. old per pipeline)
15	As-built drawings, laysheets, specifications and reports for existing facilities and improvements
16	Shop drawing information if needed for assessment
18	5-year Maintenance Work Plan and Review Report
19	5-year Capital Improvement Program
20	Facilities Operations and Maintenance Plans
21	Acoustic Fiber Optic Prestressed Concrete Cylinder Pipe Monitoring Data for Pacheco Conduit, Almaden Valley Pipeline, Cross Valley Pipeline, Calero Pipeline, & Central Pipeline

**SCHEDULE PM
ATTACHMENT FOUR
REFERENCE MATERIALS**

Ref No.	Description
22	Raw Water Pipeline Hydraulic Model - in Infowater [Available by Dec 2021]
23	East Side Treated Water Pipeline Hydraulic Model - in Infowater [Available by Dec 2021]
24	West Side Treated Water Pipeline Hydraulic Model - in Infowater [Available by Dec 2021]
25	Risk Analysis Results for Large Diameter Pipeline Assets Report [2019] 511pgs
26	Seismic Risk Assessment Pipeline Analysis *Appendix to Ref No. 25* [2018] 376pgs
27	GIS Based Large Diameter Pipeline Assets Risk Model [2020]
28	Pump vibration monitoring data, pump curves, pump rebuild as-builts and documentation
29	Memo and reports related to Canals from Task 10.2
30	VW Pipeline Design Criteria
31	VW QEMS Planning and Design Phase Work Breakdown Structure Item Descriptions.
32	Santa Clara Valley Water District (Valley Water) Standards for GIS Products April 2021 version: http://gis.valleywater.org/Download/GIS_PRODUCT_STANDARDS.pdf

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**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

EXAMPLE 1

HIGH PERFORMANCE BUTTERFLY VALVES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Furnish and install high performance butterfly valves with manual, electric and hydraulic/pneumatic actuators per the drawings and Table A.

B. Related sections:

1. Section 01 44 00 – Submittal Procedures
2. Section 01 34 11 – Seismic Qualification and Certification
3. Section 01 54 72 – Shop Inspection
4. Section 01 57 71 – Field Testing and Startup
5. Section 01 91 03 – Seismic Design Criteria
6. Section 05 02 62 – Flange Bolting
7. Section 09 94 55 – High-build Epoxy Coatings
8. Section 01 90 13 – Asset Identification Tags
9. Section 33 11 11 – Instruments and Recorders
10. Section 33 10 01 – Basic Mechanical Materials and Methods
11. Section 33 12 16.32 – Electric Motor Valve Actuators
12. Section 33 12 16.34 – Hydraulic & Pneumatic Valve Actuators
13. Section 33 12 16.51 – Altitude Valve Systems
14. Section 33 12 16.55 – Seismic Valve Systems
15. Section 40 20 20 – Mechanical Piping

The entries below (next page) are examples. Customize Table tables A and B per project requirements.

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ATTACHMENT FIVE
TECHNICAL STANDARDS**

TABLE A								
HIGH PERFORMANCE BUTTERFLY VALVES								
TAG NUMBER	QTY	SIZE	ASME CLASS	TYPE	MAXIMUM VELOCITY ³ (FT/SEC)	Maximum Differential Pressure Forward/Reverse (psi)	Cv, MIN ²	ACTUATOR TYPE ³ / SERVICE ⁴
	2	8"	150	Lugged	16	Per Valve's Pressure Class ⁵	2,000	Water-Hydraulic Cylinder / MOD
	1	3"	150	Lugged	16	Per Valve's Pressure Class ⁵	150	Gear and Handwheel
<p>1. Handwheel Rotation To Open: Counterclockwise.</p> <p>2. Cv given is approximate for valve full open position; refer to Table B for detailed flow requirements for modulating service valves.</p> <p>3. When actuator types are either Water Hydraulic Cylinders, Pneumatic or Electric Motor type see Section 33 12 16.32 – Electric Motor Valve Actuators and/or Section 33 12 16.34 – Hydraulic & Pneumatic Valve Actuators for additional requirements.</p> <p>4. Actuator Service: OC = Open-Close service, MOD = Modulating service</p> <p>5. Per AWWA C519-18 article 4.2.8.2.2: Manufacturer shall size actuator based on the valve's pressure class except where prior approval has been granted in writing by the Engineer</p>								

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TABLE B							
FLOW CRITERIA							
Tag Number	Controllable Flow Point	Flow (gpm)	Upstream Pressure (psig)	Downstream Pressure (psig)	Estimated Required Cv (gpm)	Estimated Pipe Velocity (feet/sec)	Approx. Valve Position (% open)
FFFF- SSS-EEE- III-MM	Minimum						15%
	Typical						
	Maximum						85%
FFFF- SSS-EEE- III-MM	Minimum						15%
	Typical						
	Maximum						85%
1. Fluid is water at 60 deg F. 2. The appropriate upstream and downstream reducers must be included in valve sizing. The Contractor shall coordinate any change of valve basic size and be responsible for any resulting cost change. 3. Maximum sound level shall not exceed ___ dBA measured 6 feet from valve.							

1.2 SUBMITTALS

- A. All butterfly valves furnished shall be by the same manufacturer, unless approved in writing by the Engineer prior to submittals or manufacture.
- B. Submittals shall include electric motor, hydraulic and pneumatic valve actuator data (as required in Table A); see Sections 33 10 16 - Electric Motor Valve Actuators and 33 10 16 - Hydraulic & Pneumatic Valve Actuators for additional requirements.
- C. Submit the following prior to fabrication:
 1. See the submittal content requirements listed in "High-Performance Butterfly Valve Technical Submittal Checklist" attached at the end of this section.
 2. Each page of the submittal shall have a unique sequential page number (hand-written is acceptable but must be completely legible).
 3. The first page of the submittal shall include the "High-Performance Butterfly Valve Technical Submittal Checklist" completed by the manufacturer's representative. Each submittal requirement listed in the checklist shall include the corresponding submittal page number(s).

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4. If the "High-Performance Butterfly Valve Technical Submittal Checklist" is not included with the submittal, or if all portions of the checklist are not completed accurately by the manufacturer's representative, the submittal will be returned without review.
- D. Submit the following prior to shipping:
1. Operation and Maintenance (O&M) manuals in accordance with Section 01 33 00 – Submittal Procedures
 2. Certified copies of shop tests
 3. Affidavit of Compliance: The manufacturer shall furnish the District with an affidavit stating that the valve and valve actuator and all materials used in its construction conform to the applicable requirements of this specification, and that all tests specified therein have been performed and all test requirements have been met
 4. Field Test Procedures (in accordance with Section 01 57 15 - Field Testing and Startup)
- E. Submit the following prior to field testing:
1. Manufacturer's Certificate of Proper Installation (a copy shall also be included in the final O&M Manuals)
 2. Detailed lesson plans for on-site training classes
 - 3.
- F. Submit after field testing:
1. Field Test Results (a copy shall also be included in the final O&M Manuals)

1.3 REFERENCES

- A. MSS SP-68 – High Pressure Offset Seat Butterfly Valves
- B. API 609 – Butterfly Valves – Lug Type and Wafer Type
- C. ANSI/AWWA C504-15 – AWWA Standard for Rubber-seated Butterfly Valves
- D. ANSI/AWWA C519-18 – AWWA Standard for High Performance Waterworks Butterfly Valves
- E. AWWA M49, Third Edition – Quarter-Turn Valves, Head Loss, Torque, and Cavitation Analysis

ANSI/ISA-75.11 – Inherent Flow Characteristics and Rangeability of Control Valves

1.4 QUALITY ASSURANCE

A. General

1. Dimensional and materials check shall be made against approved submittals. Motor, hydraulic and pneumatic actuated valves shall be tested. See Sections 33 10 16 – Electric Motor Valve Actuators and 33 10 16 – Hydraulic and Pneumatic Valve Actuators.
 - i. Seismic requirements for valves with powered actuators:

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2. Refer to Section 01 45 11 – Seismic Qualification and Certification.

B. Shop Inspection:

1. The Engineer will witness the following tests at the valve manufacturer for each valve: shell hydrostatic test and seat leakage test(s).
2. The Engineer will release the valves for shipping after satisfactory completion of all tests.
3. Provide notification for Engineer to be present for testing. See Section 01 42 20 – Shop Inspection for inspection advance notification requirements and District travel expenses.
4. Failure by the Engineer to inspect or witness tests at the manufacturer's plant shall not be construed as waiving inspection upon delivery.

1.5 Manufacturer's Field Services (*IF REQUIRED*):

- A. **Manufacturer's Representative:** The Contractor shall furnish the services of a factory trained field representative designated by the equipment/system manufacturer, who shall be present at the project site to provide the services listed below. The manufacturer's representative shall have superior knowledge of all aspects of the equipment/system being furnished in this section. The manufacturer through their field representative shall advise the Contractor and the Engineer of the proper procedures for each of the services listed.
- B. **Training Services:** the manufacturer's representative shall be present at the site and classroom designated by the Engineer, for the minimum number of days listed below.

Minimum Total Time (Person-Days*)	Manufacturer's Service
	Installation assistance and certification.
	Field testing and startup (see Section 01 65 07 - Field Testing and Startup for additional requirements)
	Training of District personnel: See Section 01 75 00 - Demonstration and Training for additional requirements.
The person-days shown are total days for each service listed. One person-day is equivalent to 8 hours. The person-days shown are the minimum days required for each service, and travel time to and from the site and/or classroom is not included.	

1.6 Package Responsibility

- A. The valve manufacturer shall be responsible to supply the complete valve package including the valve, gear, actuator, and attached instrumentation. The valve manufacturer shall enlist the services of the gear and actuator manufacturer(s) as required to meet all requirements of this Section.

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PART 2 - PRODUCTS

2.1 GENERAL

- A. Service Conditions and Environmental Requirements: Treated water (potable) as specified in Section 33 10 01 – Basic Mechanical Materials and Methods.
- B. Complete Assembly:
 - 1. The Valve/Actuator shall be delivered fully assembled with valve and actuator as required by Tables A and B.
- C. Shaft extensions with epoxy coated extension bonnets shall be provided as part of the actuator connection to the valve as required by Table A.
- D. Valve shall be suitable for continuous throttling service, within the ranges given in Table B.
- E. Valve shall provide a range of flows controllable by PID logic as listed in Table B.

2.2 VALVE

- A. Valve shall have a minimum (full open) flow coefficient, Cv, as required by Table A in gpm of water at 60 degrees F (at 1 psi of pressure differential). Valves for modulating service shall also conform to the flow requirements listed in Table B, and the published Cv shall be within the maximum deviation range permitted by ISA-75.11 over the entire opening range.
- B. Body shall be threaded lug, also known as a "single flange", or flanged as shown in Table A and sized for installation between two ASME B16.5 standard flanges, pressure class as shown in Table A.
- C. Valves for Open-Close service (OC) shall be single, double or triple off-set seat design. Valves for modulating service (MOD) shall be of double or triple off-set seat design to minimize seat wear and eliminate torque peaks in the control range.
- D. Valve Materials:
 - 1. Body and disc: Stainless Steel ASTM A351 Gr CF8M, A744 Gr CF8M, or A182 F304 or F316
 - 2. Retaining Ring: Stainless Steel, Type 304 or 316
 - 3. Stem - Stainless Steel: Type 304, 316, or 17-4PH ASTM A564-Type 630. Other types of manufacturer recommended stainless steel may be submitted for approval by the Engineer.
 - 4. Seat: Reinforced TFE or Ultra-High-Molecular-Weight-Polyethylene (UHMWPE)
 - 5. Bearings: 316 SS, TFE-coated graphite, or reinforced TFE. Other types of manufacturer recommended corrosion resistant materials may be submitted for approval by the Engineer
 - 6. Packing: PTFE, reinforced TFE or UHMWPE
 - 7. Seal Rings: Viton (FKM)
 - 8. Retaining Ring Screws: Stainless Steel, Type 304 or 316
 - 9. Stem/Disc Pins: Stainless Steel, Type 304, 316 or 17-4PH
 - 10. Bolting: Stainless steel conforming to the same material and grade requirements as the flange bolting requirements in Section 05 05 26 – Flange Bolting

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- E. The valve shall comply with MSS SP-68 and API-609.
- F. Coatings:
 - 1. All interior and exterior surfaces of carbon steel or cast-iron gear operator bodies and electric actuators, including aluminum, shall be coated with 8 mils of hi-build epoxy in accordance with Section 09 96 56.05 – High-Build Epoxy Coatings. All sharp edges shall be rounded to 1/16" radius prior to application of the coating.
 - 2. Stainless steel, brass and bronze parts shall not be coated.
- G. Acceptable products (open/close service):
 - 1. Pratt
 - 2. Bray/McCannalok Series 40
 - 3. Pentair Keystone K-Lok
 - 4. DeZurik
 - 5. Or equal as approved by the Engineer
 - ii. Acceptable products (modulating service):
 - 6. Pratt
 - 7. Bray/McCannalok Series 40
 - 8. Pentair Keystone K-Lok
 - 9. Or equal as approved by the Engineer

2.3 Valve Factory Testing

- A. Shell and Seat Test: In accordance with MSS SP-68

2.4 Valve Actuators

- A. All valve actuators shall comply with the provisions of this article.
- B. Mechanical Stop-Limiting Devices: Set and locked in the valve factory prior to the seat leakage test. If necessary, field adjustments may be made by the valve manufacturer's authorized representative.
- C. Position Indicators: Required on the gearbox enclosure for all exposed actuators (when actuator is above ground or in a vault). Buried actuators shall not have position indicators on gear box but shall position indicator in valve box near surface.
- D. Extension Stem Supports: Provide supports for exposed extension stems as shown on the drawings. Actuator extension stems shall have a support at the top, just below the operating nut and the maximum unsupported span shall not exceed 6 feet regardless of the quantity of supports shown on the drawings.
- E. Valve operating shaft extension per District's Standard Drawing 1241-A, unless otherwise shown.

All valves shall be furnished with means for being locked with padlock, or padlock and chain, or other secure means approved by the Engineer.

- A. Torque:
 - 1. The rated torque capability of each actuator assembly shall at a minimum meet the Actuator Sizing Torque (AST). The actuator sizing torque (AST) shall be calculated by the manufacturer and based on the minimum required sizing torque (MRST) times the application factor (AF).

$$AST = AF \times MRST$$
 - 2. The application factor (AF) is defined in AWWA C519 Table 2 below. The valve's required torque shall be as defined in AWWA C519: minimum required shaft torque (MRST). The minimum required shaft torque (MRST) shall be provided by

SCHEDULE PM ATTACHMENT FIVE TECHNICAL STANDARDS

the manufacturer. The torque at both the seated position (seating and unseating) and the midstroke maximum (5 degrees to 90 degrees) total dynamic run (opening or closing) shall be evaluated using the valve under the differential pressure and pipeline velocity shown in Table A.

Table 2 Actuator application factors (AF)

	Type of Actuator						
	Manual	Electric Motor			Pneumatic & Hydraulic		
Actuator type of service	On-off or throttling	On-off or throttling	Modulating		On-off with air On-off, throttling, or modulating with water or oil	On-off, throttling, or modulating with air and positioner	On-off, throttling, or modulating with air and without positioner
Position	All	All	Seating or unseating torque (T_{su} or T_{us} 0° to 4°)	Midstroke torque (T_{ms} or T_{ms} 5° to 90°)	All	All	All
Application factor	1.00	1.25	1.25	2.00	1.25	1.50 or 2.00*	5.00

T_{ms} = total opening torque at valve angle θ , T_{su} = total seating torque, T_{us} = total unseating torque
* 2.00 when cylinder volume is equal to or less than 80 in.³ (1.3 L)

- B. Actuators shall be sized and installed by the valve manufacturer's authorized representative and installed at the factory prior to factory test and shipment.

1.2 MANUAL GEAR AND HANDWHEEL ACTUATORS

- A. The manual gear and handwheel actuator shall comply with AWWA C519, except as modified herein.
- B. Handwheels:
- Surfaces shall be smooth with no rough edges to cut or abrade the person operating the valve.
 - The maximum handwheel diameter shall be 24".
 - The maximum rim pull shall not exceed 40-lbs at the actuator sizing torque (AST), described herein.
- C. Torque Tube and Extension Bonnet (install when shown on the drawings): The gearbox shall be mounted to the top of the 3-foot tall floor-stand or mounted to the integral valve housing as shown on the drawings. The gearbox shall multiply the torque from the gear input shaft to the vertical torque tube. Torque tubes shall be used instead of shafting material for lengths longer than 3-ft. Contractor shall field verify the extension bonnet and torque tube lengths, and the Contractor shall coordinate these requirements directly with the valve manufacturer.

1.3 Electric-Motor, Water-Hydraulic Cylinder, or pneumatic cylinder Actuators

- A. Valves that require electric motor actuators or water-hydraulic/air-pneumatic cylinder actuators (see Table A) shall be provided with actuators conforming to the requirements of Sections 33 10 16 – Electric Motor Valve Actuators and 33 10 10 – Hydraulic and Pneumatic Valve Actuators, respectively.

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- 1.4 Direct Mount Chain Wheels:
- A. Furnish and install on all manual actuators with handwheel centerline 6 feet above finish floor, or higher.
 - B. Direct mount to input shaft.
 - C. Chain Wheel: Cast iron with epoxy coating, aluminum, or stainless steel
 - D. Chain: 316 Stainless steel
 - E. The chain and chain wheel sprockets shall be per DIN 766.
 - F. Chain guides shall be provided.
 - G. The maximum chain pull shall not exceed 40-lbs at the actuator sizing torque (AST), described herein.
 - H. Acceptable Products: Rotork Gears DMCW or equal as approved by the Engineer.
- 1.5 Position Switches
- A. Required for manual and cylinder actuated valves when shown on the P&ID or when noted in Table A herein.
 - B. Proximity type position switches. See Section 33 10 11 – Instruments and Recorders.
 - C. Proximity switches shall be factory mounted and tested prior to shipment. Switches shall activate at the % open or closed given on the applicable P&ID. If not given on the P&ID, position switches shall be adjusted in the field as directed by the Engineer and tested.
- 1.6 EQUIPMENT TAGS
- A. Provide equipment tags per Section 01 91 13.10 – Asset Identification Tags.

PART 2 - EXECUTION

2.1 SHIPPING AND HANDLING

- A. All valves 18" and larger shall be bolted to skids.
- B. Valves shall be shipped with full face flange protectors in place. Flange protectors shall be replaced after any inspections.
- C. If stored outdoors, valves shall be covered with tarpaulins, or plastic sheeting, and shall comply with the manufacturer's recommendations for storage and handling.
- D. All valves will be inspected upon delivery for compliance with these specifications. Any valve found not to comply with the contract documents will not be accepted until deficiencies are corrected.

2.2 INSTALLATION

- F. Notify the Engineer of the scheduled delivery date for the valves a minimum of five workdays prior to the actual delivery. The Engineer will inspect the valves within two days upon delivery to the job site. The valves shall not be installed prior to inspection by Engineer but shall be uncrated and ready for inspection. Defects found in the coatings shall be repaired prior to installation. The manufacturer's authorized representative and the Contractor shall insure that the valves are installed in accordance with the instructions supplied by the manufacturer and in accordance with the drawings.
- G. All valves installed in horizontal piping shall be installed with the shaft horizontal, unless otherwise shown on the drawings or recommended by the manufacturer and approved by the Engineer. This orientation provides a self-cleaning action.
- H. All valves shall be mounted with the seat side facing upstream, unless otherwise recommended by the manufacturer and approved by the Engineer. This orientation minimizes torque requirements.

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- I. All valves shall be installed with good access to the valve handwheel. For motor actuated valves, the installed orientation shall allow easy access to the manual override lever and handwheel and the push-button controls. Also, the installed position shall provide for easy access and removal of limit switch compartment cover, termination enclosure cover and motor. All installed valve orientations shall be approved by the Engineer.
- J. The manufacturer's authorized representative shall complete the Manufacturer's Certificate of Proper installation prior to operating the valves.
- K. Initial adjustments and startup of the valves shall be done in the presence of the package manufacturers' authorized representative.
- L. Field Finish: Coating of all non-buried ferrous valves and valve gear shall be the system and color as designated on the "Finish, Coating and Color Schedule" on the drawings. Stainless steel parts, including valve bodies and bolting shall not be coated.

2.5 Field Testing

- A. In addition to the required factory hydrotesting, valves shall be leakage tested with the piping. See section 40 30 20 – Mechanical Piping.
- B. Functional Testing:
 - 1. The Contractor shall provide services as specified in Section 01 57 17 – Field Testing and Startup, and as specified herein.
 - 2. Complete the field functional tests in accordance with the Field Functional Test Form at the end of this section, and as directed by the Engineer.
 - 3. Additional testing shall be performed on power actuated valves in accordance with Sections 33 12 10 – Electric Motor Actuators and 33 12 10 – Hydraulic and Pneumatic Valve Actuators (actuator type as listed in Table A).
- C. Performance Testing:
 - 1. Perform in accordance with Section 01 75 17 – Field Testing and Startup.
 - 2. For modulating service valves, record pressures and flows at the points specified in Table B and verify that the valve Cv versus percent open matches the approved curve.

2.6 SUPPLEMENTS

- A. The following supplements follow END OF SECTION and are a part of this section:
 - 1. High-Performance Butterfly Valve Technical Submittal Checklist
 - 2. Field Functional Test Data Form

END OF SECTION

**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

**HIGH-PERFORMANCE BUTTERFLY VALVE
TECHNICAL SUBMITTAL CHECKLIST**

(Manufacturer's Representative to complete one form per type of valve)

SPEC. SECTION TITLE & NO:		
Valve Tag No.		
SUBMITTAL CONTENT REQUIREMENTS		Page No.
2. Certified manufacturers' drawings shall show dimensions, construction details, and materials used for all parts of valves including:		
a. Drawings showing valve and operator dimensions, construction details, parts list, weights, and materials, including ASTM material information. Copper alloys shall have the ASTM specification and UNS designation numbers provided.		
b. Electrical wiring diagrams for position switches, power and control systems		
3. Control valve sizing data sheet demonstrating conformance with Table B, including the following information at minimum flow, typical flow, maximum flow, and valve full open:		
a. Flow rate in gpm, inlet and outlet pressures in psig, pressure drop in psid, inlet temperature in degrees F, Cv, valve % open, calculated noise level in dBA, pipeline inlet and outlet size and thickness		
4. Curve of valve Cv versus degrees open for all valves. Minimum Cv at 90 degrees must meet or exceed Cv's given in Table "A".		
5. Curve of valve flow (GPM) vs. % open valve stem position with inlet/outlet conditions given in Table B.		
6. Calculations for predicted cavitation		
7. Curve for dBA (noise level) with inlet/outlet conditions given in Table B		
8. Illustrations of the proposed actuator mounting orientation for each valve as shipped from the factory. This shall conform to the drawings. Assume that the valve will be installed with the seat side facing upstream, unless otherwise shown.		
9. NSF/ANSI 61 certification for each size and type of valve or all materials in contact with potable water		
10. Minimum Required Shaft Torque (MRST): Include the complete equations and the basis and references for any coefficients used. Calculations shall be verifiable with AWWA M49, Third Edition. The flow velocity and the differential pressure conditions shall be per "Pressure Class" in Table A. The follow torque variable shall be calculated and included for each valve size, type, and operating condition:		
a. Total seating torque: (AWWA M49-3 rd Edition, equation 3-1)		
b. Total unseating (break) torque: (AWWA M49-3 rd Edition, equation 3-2)		
c. Total Opening (run) torque: (AWWA M49-3 rd Edition, equation 3-3)		
d. Total closing (run) torque: (AWWA M49-3 rd Edition, equation 3-4)		
Minimum supporting data shall include torque tables or curves, with maximum valve opening increments of 10 degrees, to illustrate bearing torques and dynamic torques throughout the operating range.		
11. Manual valve actuators. Calculations shall be verifiable with AWWA M49. At a minimum, submit the following for each actuator:		
a. Data sheet for actuator including torque output capability and gear ratio, open direction, position indicator and limit switches (if applicable)		
b. Actuator sizing torque (AST) of the actuator assembly, as defined by AWWA C519: (Application Factor (AF, per AWWA C519 table 2) multiplied by the minimum required shaft torque (MRST). AST = AF x MRST		
c. Handwheel diameter		
d. Actuator Mechanical Advantage		
e. Handwheel rimpull/AWWA nut input		
Append Powered Valve Actuator Technical Submittal Checklist (see Table A).		

**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

I. Pretest Documentation/Setup

Documents:

Yes No NA

Comments:

a) Interconnection & Loop diagrams provided

☐ ☐ ☒

b) Mfr Cert of Proper Installation provided

☐ ☐ ☐

c) Technical Submittal complete (contractor show EADOC record)

☐ ☐ ☐

d) Spare Parts provided

☐ ☐ ☒

e) Final O&Ms provided (contractor show final O&Ms)

☐ ☐ ☐

f) Pipe pressure tests completed for adjacent piping (contractor to show test records).

☐ ☐ ☐

Field Test Setup (Identify any test instrument, special setups like tanks, hoses, etc.):

II. Field Functional Test

1. Calibration/Loop/Electrical

Yes No NA

Comments:

☐ ☐ ☒

2. Installation Check

Pass Fail NA

Comments:

2.1 Verify that the valve has been installed with the stem horizontal.

☐ ☐ ☐

2.2 Verify that the valve has been installed with the seat side facing upstream.

☐ ☐ ☐

2.3 Verify that the valve handwheel/operator has been installed so that it is easily accessible and there is no interference.

☐ ☐ ☐

2.1 Correct equipment tags have been installed (tags shall match P&IDs). Valve pots for buried services shall be properly tagged.

☐ ☐ ☐

2.2 All fields on Asset List Spreadsheet completed for device (Contractor shall show inspector at the time of the test that the asset list is complete and

☐ ☐ ☐

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**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

3. Operations Check	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
3.1 Stroke each valve fully open to fully closed, using the valve's actuator (electric, hydraulic, etc.), three times with valves under operating pressure. Verify valve opens and closes smoothly.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.2 For valves with manual operating features (handwheels, nuts, chainfall), count and record the number of turns of the manual operator needed to fully open and close the valve (two values). Account for any discrepancies between actual number turns and the number of	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.4 <u>Handwheel Rim Pull Test</u> : Verify the maximum rim pull is less than 40-lbs under any operating condition including breakaway.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.5 <u>Leakage Test (this test is in addition to the pressure testing specified in 40 20 20 – Mechanical Piping)</u> : Close the valve and apply the corresponding system operating pressure given in the Mechanical Piping Schedule in Section 40 20 20 to one side of the valve and atmospheric pressure to the other. Test duration shall be a minimum of 15 minutes. Verify that the valve seat leakage is drop tight. Open a drain or loosen a nearby flange as necessary to verify the valve is leak tight. If there are any signs of leakage, the valves shall be	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Controls Check None	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
5. Alarms Check None	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
6. Run Check None	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
7. Other Tests and Checks	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
7.1 For valves with electric or hydraulic/pneumatic actuators, complete the actuator tests and append that form to this data form (valve and actuator functional tests shall be completed)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

III. Participants/Witness

Test conducted:

By
(signature): _____
Title: _____

Date: _____

Company
Name: _____

By
(signature): _____
Title: _____

Date: _____

Company
Name: _____

Owner Witness:

By
(signature): _____
Title: _____

Date: _____

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**SCHEDULE PM
ATTACHMENT FIVE
TECHNICAL STANDARDS**

**TECHNICAL STANDARDS
EXAMPLE 2**

Link to City of Sunnyvale's publicly-available design standards,
<https://www.sunnyvalecleanwater.com/water-pollution-control-master-plan>.

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**SCHEDULE PM
ATTACHMENT SIX
VALLEY WATER'S RISK ASSESSMENT METHODOLOGY AND MATRIX**

Risk Methodology

Overview

The Valley Water measures risk as Business Risk Exposure (BRE). BRE is calculated as follows:

$$\text{BRE} = (\text{Probability of Failure}) \times (\text{Consequence of Failure}) \times (\text{Redundancy})$$

Each of these components is discussed below in more detail.

Probability of Failure (PoF)

PoF is equal to an asset's condition score. The condition score indicates how close the asset is to failure. Scores range from 1 to 5, as shown below:

- 1 – Excellent (Normal Maintenance Required)
- 2 – Minor Defects Only
- 3 – Maintenance Required
- 4 – Major Renewal Required
- 5 – Unserviceable or Failed

Valley Water performs field condition assessments and assigns an overall condition score, which becomes the asset's PoF. An example of asset condition assessment criteria for a mixer is shown in Table 1. The assessor evaluates the asset for each inspection criteria and assigns the appropriate rating. The assessor then assigns an overall condition score, typically equal to the worst scoring criteria. For example, if 'shaft alignment' is 'failure imminent', but all other criteria are 'excellent', the asset would receive an overall score of 5, because it requires immediate maintenance. The overall condition/PoF score is loaded into the asset databases in Maximo and AMPT and is monitored for changes over time.

Table 1: Example Condition Assessment Criteria

Inspection Criteria	Rating				
	1	2	3	4	5
Corrosion	Negligible	Minor	Moderate	Major	Excessive
Support	Excellent		Moderate		Inadequate, Failure Imminent
Functional	Excellent Mixing at all flows	Mixing adequate under all flow conditions	Mixing adequate under most flow conditions	Mixing inadequate 50% of time	Inadequate Mixing
Shaft Alignment	Excellent	Minor Wear but no Misalignment	Moderate Wear or Misalignment	Major Wear	Failure Imminent
Belt/Chain	Excellent	Minor Wear	Moderate Wear	Major Wear	Failure Imminent

**SCHEDULE PM
ATTACHMENT SIX
VALLEY WATER'S RISK ASSESSMENT METHODOLOGY AND MATRIX**

Consequence of Failure (CoF)

Consequence of failure measures impacts of asset failure. The Valley Water evaluates the social, environmental, and financial effects of asset failure to determine CoF. To calculate CoF, subject matter experts assign a score for six categories using a standardized matrix, shown in Table 2 on the following page. The total CoF score is the sum of the scores for each of the six categories. The minimum CoF score is zero, which would occur if an asset scored zero in each of the six categories. The maximum CoF score is 30, which would occur if an asset scored five in each of the six categories. CoF scores do not vary much over time, unless external conditions change, such as an area becoming more populated.

Redundancy

Redundancy accounts for back-up assets or extra capacity within a system. The asset management program is working to develop standards for measuring redundancy and incorporating it into the BRE score.

Total BRE Score

To recap, the Valley Water measures risk associated with an asset with a Business Risk Exposure (BRE) score.

$$\text{BRE} = (\text{Probability of Failure}) \times (\text{Consequence of Failure}) \times (\text{Redundancy})$$

Probability of Failure equals the asset's condition score, which ranges from one to five. Consequence of Failure is determined using the matrix in Table 4, and ranges from zero to thirty. Total BRE scores, therefore, can range from 0 to 150.

The total BRE score is used to determine when an asset requires action or a changed maintenance strategy. Valley Water generally follows the BRE score thresholds below. These thresholds identify when an adjustment in an asset's management strategy is needed. The thresholds may be adjusted over time as risk scores are refined. The thresholds were developed by comparing BRE scores to actual maintenance practices. The critical risk BRE score threshold was set at the point where the Valley Water has typically initiated an asset replacement or rehabilitation project. The moderate risk threshold was set at the point where the Valley Water has typically initiated more frequent condition monitoring of an asset.

BRE Score	Risk Category	Action
61 – 150	Critical	Develop and implement a risk mitigation strategy such as accelerated asset replacement or rehabilitation
51 – 60	Moderate	Implement more frequent condition monitoring
0 – 50	Low	Continue routine maintenance program as planned

In addition, the total BRE score is useful in determining relative risk among assets.

Rehabilitation work on an asset with a higher BRE score should be prioritized over work on an asset with a lower BRE score.

**SCHEDULE PM
ATTACHMENT SIX
VALLEY WATER'S RISK ASSESSMENT METHODOLOGY AND MATRIX**

CONSEQUENCE OF FAILURE MATRIX

	Parameter	0	1	2	3	4	5
Social	Service Delivery	No reduction in service	Reduction of service to a localized area and alternatives exist	a) Reduction of service to a localized area and no alternatives exist b) Reduction of service to entire region and alternatives exist	a) Interruption of service to localized area and alternatives exist b) Reduction of service to entire region and no alternatives exist	a) Interruption of service to localized area and no alternatives exist b) Interruption of service to entire region and alternatives exist	Interruption of service to entire region and no alternatives exist
	Community Impacts	No injury or impact to public well-being; no damage to community property; and no reduction in essential community service (i.e., traffic, hospitals)	a) First-aid injury b) Impacts public wellbeing for one week or less c) Minor repairable damage to 25 or fewer structures d) Reduction of service to a localized area and alternatives exist	a) Recordable injury b) Impacts public wellbeing for one week to one month c) Minor repairable damage to more than 25 structures d) Reduction of service to a localized area and no alternatives exist e) Reduction of service to entire region and alternatives exist	a) Short-term disability b) Impacts public wellbeing for more than one month c) Repairable damage to one or more structures d) Interruption of service to localized area and alternatives exist e) Reduction of service to entire region and no alternatives exist	a) Permanent disability b) Complete loss of 10 or fewer structures c) Interruption of service to localized area and no alternatives exist d) Interruption of service to entire region and alternatives exist	a) Death b) Complete loss of more than 10 structures c) Interruption of service to entire region and no alternatives exist
	Workplace Safety	No injury or impact to well-being	a) First-aid injury b) Impacts wellbeing for one week or less	a) Recordable injury b) Impacts wellbeing for one week to one month	a) Short-term disability b) Impacts wellbeing for more than one month	Permanent disability	Death
Environmental	Environmental Impacts	No damage	Damage to localized area and recovery in less than 1 year	a) Damage to localized area and recovery in 1-2 years b) Damage to widespread area and recovery in less than 1 year	a) Damage to localized area and recovery in 3-5 years b) Damage to widespread area and recovery in 1-2 years	Damage to widespread area and recovery in 3-5 years	Permanent localized or widespread damage
Economic	Financial Impacts	No loss	Loss of less than \$25,000	Loss of \$25,000 - \$250,000	Loss of \$250,000 to \$2.5 Million	Loss of \$2.5 to \$25 Million	Loss of more than \$25 Million
	Impact to Reputation	No damage	Public complaints to Valley Water staff	Incidental media coverage and attention of Board members	Incidental media coverage and fewer than 20 public complaints to Board members	Widespread media coverage and 20 or more public complaints to Board members	Widespread media coverage, 20 or more public complaints to Board members, plus potential for criminal charges