

183618

**CITY OF PORTLAND
AGREEMENT FOR PROFESSIONAL, TECHNICAL, OR EXPERT SERVICES**

CONTRACT NO. 30001127

SHORT TITLE OF WORK PROJECT:

Kelly Butte Reservoir

This contract is between the City of Portland, acting by and through its Elected Officials, hereafter called "City," and **MWH Americas, Inc.**, hereafter called Contractor. The City's Project Manager for this contract is **Margaret Kehrl**.

Effective Date and Duration

This contract shall become effective on **March 17, 2010**. This contract shall expire, unless otherwise terminated or extended, on **October 1, 2014**.

Consideration

- (a) City agrees to pay Contractor a sum not to exceed **\$3,300,000** for accomplishment of the work.
- (b) Interim payments shall be made to Contractor according to the schedule identified in the STATEMENT OF THE WORK AND PAYMENT SCHEDULE.

CONTRACTOR DATA AND CERTIFICATION

Name (please print): MWH AMERICAS, INC.

Address: 5100 SW MACADAM AVENUE, SUITE 420, PORTLAND, OR 97239

Employer Identification Number (EIN) 95-1878805

[INDEPENDENT CONTRACTORS: DO NOT PROVIDE SOCIAL SECURITY NUMBER (SSN) - LEAVE BLANK IF NO EIN]

City of Portland Business License # 192933

Citizenship: U.S. Nonresident alien ☐ Yes ☒ No

Business Designation (check one): ☐ Individual ☐ Sole Proprietorship ☐ Partnership ☒ Corporation
☐ Limited Liability Co (LLC) ☐ Estate/Trust ☐ Public Service Corp. ☐ Government/Nonprofit

Payment information shall be reported to the IRS under the name and taxpayer I.D. number provided above. Information must be provided prior to contract approval. Information not matching IRS records could subject you to 20 percent backup withholding.

**STANDARD CONTRACT PROVISIONS FOR
PROFESSIONAL, TECHNICAL & EXPERT SERVICES (MANDATORY PROVISIONS)**

1. Access to Records

The Contractor shall maintain, and the City of Portland ("City") and its duly authorized representatives shall have access to the books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts, and transcripts for a period of three years after final payment. Copies of applicable records shall be made available upon request. Payment for cost of copies is reimbursable by the City.

2. Audits

- (a) The City, either directly or through a designated representative, may conduct financial and performance audits of the billings and services specified in this agreement at any time in the course of the agreement and during the three (3) year period established by section 1, **Access to Records**. Audits will be conducted in accordance with generally accepted auditing standards as promulgated in Government Auditing Standards by the Comptroller General of the United States General Accounting Office.
- (b) If an audit discloses that payments to the Contractor were in excess of the amount to which the Contractor was entitled, then the Contractor shall repay the amount of the excess to the City.
- (c) If any audit shows performance of services is not efficient in accordance with Government Auditing Standards, or that the program is not effective in accordance with Government Auditing Standards, the City may pursue remedies provided under section 5, **Early Termination of Agreement** and section 7, **Remedies**.

3. **Effective Date and Duration**

The passage of the contract expiration date (as recorded on reverse side) shall not extinguish, prejudice, or limit either party's right to enforce this contract with respect to any default or defect in performance that has not been cured.

4. **Order of Precedence**

This contract consists of the terms and conditions of this contract, the Request for Proposals (RFP) issued by the City, if any, and the Contractor's proposal in response to the RFP. In the event of any apparent or alleged conflict between these various documents, the following order of precedence shall apply to resolve the conflict: a) this contract's terms and conditions, b) the City's RFP, and c) the Contractor's proposal in response to the RFP.

5. **Early Termination of Agreement**

- (a) The City and the Contractor, by mutual written agreement, may terminate this Agreement at any time.
- (b) The City, on thirty (30) days written notice to the Contractor, may terminate this Agreement for any reason deemed appropriate in its sole discretion.
- (c) Either the City or the Contractor may terminate this Agreement in the event of a breach of the Agreement by the other. Prior to such termination, however, the party seeking the termination shall give to the other party written notice of the breach and of the party's intent to terminate. If the party has not entirely cured the breach within fifteen (15) days of the notice, then the party giving the notice may terminate the Agreement at any time thereafter by giving a written notice of termination.

6. **Payment on Early Termination**

- (a) In the event of termination under subsection 5(a) or 5(b), **Early Termination of Agreement** hereof, the City shall pay the Contractor for work performed in accordance with the Agreement prior to the termination date.
- (b) In the event of termination under subsection 5(c), **Early Termination of Agreement** hereof, by the Contractor due to a breach by the City, then the City shall pay the Contractor as provided in subsection (a) of this section.
- (c) In the event of termination under subsection 5(c), **Early Termination of Agreement** hereof, by the City due to a breach by the Contractor, then the City shall pay the Contractor as provided in subsection (a) of this section, subject to set off of excess costs, as provided for in section 7(a), **Remedies**.
- (d) In the event of early termination all of the Contractor's work product will become and remain property of the City.

7. **Remedies**

- (a) In the event of termination under subsection 5(c), **Early Termination of Agreement**, hereof, by the City due to a breach by the Contractor, then the City may complete the work either itself, by agreement with another contractor or by a combination thereof. In the event the cost of completing the work exceeds the remaining unpaid balance of the total compensation provided under this contract, then the Contractor shall pay to the City the amount of the reasonable excess.
- (b) The remedies provided to the City under section 5, **Early Termination of Agreement** and section 7, **Remedies** for a breach by the Contractor shall not be exclusive. The City also shall be entitled to any other equitable and legal remedies that are available.
- (c) In the event of breach of this Agreement by the City, then the Contractor's remedy shall be limited to termination of the Agreement and receipt of payment as provided in section 5(c), **Early Termination of Agreement** and section 6(b), **Payment on Early Termination** hereof.

8. **Subcontracts and Assignment**

Contractor shall not subcontract, assign or transfer any of the work scheduled under this agreement, without the prior written consent of the City. Notwithstanding City approval of a subcontractor, the Contractor shall remain obligated for full performance hereunder, and the City shall incur no obligation other than its obligations to the Contractor hereunder. The Contractor agrees that if subcontractors are employed in the performance of this Agreement, the Contractor and its subcontractors are subject to the requirements and sanctions of ORS Chapter 656, Workers' Compensation.

9. **Compliance with Applicable Law**

In connection with its activities under this Agreement, Contractor shall comply with all applicable federal, state and local laws and regulations including the City's Equal Benefits Ordinance and its administrative rules, all of which are incorporated by this reference. Failure to comply with the Ordinance permits the City to impose sanctions or require remedial actions as stated in Section 13.1 of the administrative rules. Contractor shall complete the INDEPENDENT CONTRACTOR CERTIFICATION STATEMENT, which is attached hereto and by this reference made a part hereof.

(a) **Indemnity - Claims for Other than Professional Liability**

Contractor shall defend, save, and hold harmless the City of Portland, its officers, agents, and employees, from all claims, suits, or actions of whatsoever nature, including intentional acts, resulting from or arising out of the activities of Contractor or its subcontractors, agents or employees under this agreement. Nothing in this section requires the Contractor or its insurer to indemnify the City for any claims or losses arising out of death, or bodily injury to persons, or property damage caused by the negligence of the City.

(b) Indemnity - Claims for Professional Liability

Contractor shall defend, save, and hold harmless the City of Portland, its officers, agents, and employees, from all claims, suits, or actions arising out of the professional negligent acts, errors or omissions of Contractor or its subcontractors and sub-consultants, agents or employees in performance of professional services under this agreement. Nothing in this section requires the Contractor or its insurer to indemnify the City for any claims or losses caused by the negligence of the City.

(c) Indemnity - Standard of Care

If Contractor's services involve engineering or consulting, the standard of care applicable to Contractor's service will be the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time such services are performed. Contractor will re-perform any services not meeting this standard without additional compensation.

10. Insurance

During the term of this contract Contractor shall maintain in force at its own expense, each insurance noted below:

- (a) Workers' Compensation insurance in compliance with ORS 656.017, which requires subject employers to provide Oregon workers' compensation coverage for all their subject workers (contractors with one or more employees, unless exempt under ORS 656.027).

- (b) ☒ Required and attached or Waived by City Attorney: _____

General Liability insurance with a combined single limit of not less than \$1,000,000 per occurrence for Bodily Injury and Property Damage. It shall include contractual liability coverage for the indemnity provided under this contract, and shall provide that City of Portland, and its agents, officers, and employees are Additional Insured but only with respect to the Contractor's services to be provided under this Contract:

- (c) ☒ Required and attached or Waived by City Attorney: _____

Automobile Liability insurance with a combined single limit of not less than \$1,000,000 per occurrence for Bodily Injury and Property Damage, including coverage for owned, hired, or nonowned vehicles, as applicable:

- (d) ☒ Required and attached or Waived by City Attorney: _____

Professional Liability insurance with a combined single limit of not less than \$1,000,000 per claim, incident, or occurrence. This is to cover damages caused by error, omission or negligent acts related to the professional services to be provided under this contract. If insurance coverage is provided on a "claims made" basis, the successful Proposer shall acquire a "tail" coverage or continue the same coverage for three years after completion of the contract, provided coverage is available and economically feasible. If such coverage is not available or economically feasible, contractor shall notify City immediately.

- (e) On all types of insurance. There shall be no cancellation, material change, reduction of limits, or intent not to renew the insurance coverage(s) without 30-days written notice from the Contractor or its insurer(s) to the City.
- (f) Certificates of insurance. As evidence of the insurance coverages required by this contract, the Contractor shall furnish acceptable insurance certificates to the City at the time contractor returns signed contracts. The certificate will specify all of the parties who are Additional Insured and will include the 30-day cancellation clause and 10-day non-payment clause that provides that the insurance shall not terminate or be cancelled without 30 days or 10 days written notice first being given to the City Auditor. Insuring companies or entities are subject to City acceptance. If requested, complete policy copies shall be provided to the City. The Contractor shall be financially responsible for all pertinent deductibles, self-insured retentions, and/or self-insurance.

11. Ownership of Work Product

All work products produced by the Contractor under this contract is the exclusive property of the City. "Work product" shall include but not be limited to research, reports, computer programs, manuals, drawings, recordings, photographs, artwork and any data or information in any form; the Contractor and the City intend that such work product shall be deemed "work made for hire" of which the City shall be deemed the author. If for any reason a work product is deemed not to be a "work made for hire," the Contractor hereby irrevocably assigns and transfers to the City all right, title and interest in such work product, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrines. Contractor shall obtain such interests and execute all documents necessary to fully vest such rights in the City. Contractor waives all rights relating to work product, including any rights arising under 17 USC 106A, or any other rights of authorship, identification or approval, restriction or limitation on use or subsequent modifications. If the Contractor is an architect, the work product is the property of the Contractor-Architect, and by execution of this contract, the Contractor-Architect grants the City an exclusive and irrevocable license to use that work product.

12. Nondiscrimination

Contractor agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules, and regulations. Contractor also shall comply with the Americans With Disabilities Act of 1990 (Pub L. No. 101-336) including Title II of that Act, ORS 659.425, and all regulations and administrative rules established pursuant to those laws.

13. Successors in Interest

The provisions of this contract shall be binding upon and shall inure to the benefit of the parties hereto, and their respective successors and approved assigns.

14. Severability

The parties agree that if any term or provision of this contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the contract did not contain the particular term or provision held to be invalid.

15. Waiver

The failure of the City to enforce any provision of this contract shall not constitute a waiver by the City of that or any other provision.

16. Errors

The Contractor shall perform such additional work as may be necessary to correct errors in the work required under this contract without undue delays and without additional cost.

17. Governing Law

The provisions of this contract shall be construed in accordance with the provisions of the laws of the State of Oregon. Any action or suits involving any question arising under this contract must be brought in the appropriate court in Multnomah County Oregon.

18. Amendments

All changes to this contract, including changes to the scope of work and contract amount, must be made by written amendment and approved by the Purchasing Agent to be valid. Any amendment that increases the original contract amount by more than 25% must be approved by the City Council to be valid.

19. Business License

The Contractor shall obtain a City of Portland business license as required by PCC 7.02 prior to beginning work under this Agreement. The Contractor shall provide a business license number in the space provided on page one of this Agreement. Additionally, the Contractor shall pay all fees or taxes due under the Business License Law and the Multnomah County Business Income Tax (MCC Chapter 12) during the full term of this contract. Failure to be in compliance may result in payments due under this contract to be withheld to satisfy amount due under the Business License Law and the Multnomah County Business Income Tax Law.

20. Prohibited Interest

(a) No City officer or employee during his or her tenure or for one year thereafter shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

(b) No City officer or employee who participated in the award of this Agreement shall be employed by the Contractor during the period of the Agreement.

21. Payment to Vendors and Subcontractors

The Contractor shall timely pay all suppliers, lessors and contractors providing it services, materials or equipment for carrying out its obligations under this Agreement. The Contractor shall not take or fail to take any action in a manner that causes the City or any materials that the Contractor provides hereunder to be subject to any claim or lien of any person without the City's prior written consent.

Merger Clause

THIS CONTRACT AND ATTACHED EXHIBITS CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES. NO WAIVER, CONSENT, MODIFICATION, OR CHANGE OF TERMS OF THIS CONTRACT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION, OR CHANGE IF MADE, SHALL BE EFFECTIVE ONLY IN SPECIFIC INSTANCES AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS CONTRACT. CONTRACTOR, BY THE SIGNATURE OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT HE OR SHE HAS READ THIS CONTRACT, UNDERSTANDS IT AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

OPTIONAL PROVISIONS (selected by City Project Manager)**22. Arbitration: / X / Not Applicable / ___ / Applicable (consult with City Attorney's Office before finalizing as applicable)**

(a) Any dispute arising out of or in connection with this Agreement, which is not settled by mutual agreement of the Contractor and the City within sixty (60) days of notification in writing by either party, shall be submitted to an arbitrator mutually agreed upon by the parties. In the event the parties cannot agree on the arbitrator, then the arbitrator shall be appointed by the Presiding Judge (Civil) of the Circuit Court of the State of Oregon for the County of Multnomah. The arbitrator shall be selected within thirty (30) days from the expiration of the sixty (60) day period following notification of the dispute. The arbitration, and any

litigation arising out of or in connection with this Agreement, shall be conducted in Portland, Oregon, shall be governed by the laws of the State of Oregon, and shall be as speedy as reasonably possible. The applicable arbitration rules for the Multnomah County courts shall apply unless the parties agree in writing to other rules. The arbitrator shall render a decision within forty-five (45) days of the first meeting with the Contractor and the City. Insofar as the Contractor and the City legally may do so, they agree to be bound by the decision of the arbitrator.

(b) Notwithstanding any dispute under this Agreement, whether before or during arbitration, the Contractor shall continue to perform its work pending resolution of a dispute, and the City shall make payments as required by the Agreement for undisputed portions of work.

23. Progress Reports: / X / Applicable / ___ / Not Applicable

The Contractor shall provide monthly progress reports to the Project Manager. If applicable, the STATEMENT OF THE WORK should list what information the Contractor must include in monthly progress reports.

24. Contractor's Personnel: / X / Applicable / ___ / Not Applicable

The Contractor shall assign the following personnel to do the work in the capacities designated: If applicable, list selected personnel in the STATEMENT OF THE WORK. The Contractor shall not change personnel assignments without the prior written consent of the City.

25. Subcontractors: / X / Applicable / ___ / Not Applicable

The City requires Contractors to use the Minority, Women and Emerging Small Business (M/W/ESB) subcontractors identified in their proposals, and as such the Contractor shall assign these subcontractors as listed in the STATEMENT OF THE WORK to perform work in the capacities designated. The Contractor shall not change subcontractor assignments without the prior written consent of the Purchasing Agent.

STATEMENT OF THE WORK AND PAYMENT SCHEDULE

SCOPE OF WORK

I. GENERAL BACKGROUND AND PROJECT OVERVIEW

This scope of work includes planning, site investigation, engineering, design, permitting, and Construction Management / General Contractor (CM/GC) coordination services to support the Portland Water Bureau (PWB) in the development of a new 25 million gallon (MG) reservoir at Kelly Butte. This reservoir shall include two 12.5 MG cells, replacing an existing 10 MG above-ground steel tank. This scope of work is comprised of all activities summarized in the City of Portland's RFP No. WTR081 – Request for Proposals for Kelly Butte Reservoir (October 29th, 2009) and Addendums No. 1 through 6, including: preparation of construction contract packages for use in a CM/GC procurement process, geotechnical investigations, permitting, construction cost estimating, CM/GC coordination, bidding support, and engineering services during construction. Detailed funding and schedule information is attached as Exhibits A & B, respectively. The Contractor shall complete the following tasks:

II. TASK 100: PRELIMINARY DESIGN

The preliminary design work shall lay the foundation for overall project execution, establish the comprehensive design criteria, evaluate and establish the preferred reservoir configuration and document the conceptual design for the expanded Kelly Butte Reservoir. It shall also provide geotechnical support, base map and surveying coordination, and construction planning support. Preliminary Design results shall support the PWB to address coordination with key stakeholders and permit agencies (Task 400). The Preliminary Design work shall be conducted as described in the following Tasks.

Subtask 110: Project Approach

Prior to commencing preliminary and detailed design, a project approach shall be developed that meets the aggressive project schedule while minimizing risk to the PWB. A final permitting approach and schedule, including identification of critical path activities, shall be developed. Early bid packages shall also be identified, including demolition and earthwork; a CM/GC procurement schedule shall be developed based on the need to advance work on these early bid packages. A project approach and schedule that

accommodates these early permit and construction activities shall also be developed, reviewed by key stakeholders, and finalized. This Task shall be executed as described below:

A. Permitting/Land Use Review (LUR) Approach / Schedule Technical Memorandum (TM). Permit requirements, including the permitting agency, contact information, a preliminary cost estimate and delivery schedule shall be identified. Links to design activities shall be identified and incorporated into the overall project schedule to identify critical path permitting requirements. The schedule shall include time allowed for PWB review, permit submission deadlines, anticipated meetings requirements, time required by the jurisdictional authority for review and public comment as well as time to address public comment and additional submittals that may be required for the permitting agency.

B. Construction Approach / Schedule TM. Key construction constraints and critical path construction elements shall be identified and prioritized. Based on these issues, a CM/GC Procurement Approach that accommodates all critical path items shall be developed. This procurement approach shall identify the need for early Bid Packages, potentially including:

- Demolition of Existing Kelly Butte Reservoir
- Earthwork Stockpile / Staging / Disposal

Additionally, site/construction constraints (including site access) shall also be identified and addressed in the Construction Approach and Schedule TM.

C. Design and Construction Cost Control Plan. A detailed Design and Construction Cost Control Plan shall be prepared for review by the PWB. This plan shall emphasize collaboration between the PWB, Contractor and Contractor (once on-board), to ensure final design falls within the PWB budget, while minimizing overall design and construction cost risk for the PWB. This plan shall be summarized in the Project Approach TM.

D. Conduct Project Approach Workshops. Conduct a half day workshop with Technical Advisory Committee (TAC) members, PWB staff and key stakeholders to review and discuss the DRAFT TMs prepared as part of Subtasks 110.A through 110.C.

E. Project Approach TM. Following completion of the Project Approach Workshop, Contractor shall prepare a DRAFT Project Approach Technical Memorandum (TM) for review by PWB. The TM shall consist of an Executive Summary, and FINAL versions of each of the TMs prepared as part of Subtask 110.A through 110.C, based on PWB and TAC review comments. The executive summary shall include a brief description of the overall project approach supplemented by a baseline project schedule consisting of major project tasks and milestones, clearly identifying critical path items as well as 'float' for non-critical tasks. The draft TM shall be revised based on comments received from PWB staff; the Final Project Approach Technical Memorandum shall then be issued.

Subtask 110 Contractors Expectations:

1. Contractor shall utilize and rely upon the Basis of Design Report developed by the City to the greatest extent possible.
2. All deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).
3. The Project Approach Workshop shall be convened following review and comment of the three DRAFT TMs. FINAL versions of these TMs, incorporating PWB and TAC comments and concerns, shall be issued as part of the DRAFT Project Approach TM.

Subtask 110 Contractors Deliverables:

1. DRAFT Technical Memoranda, including:
 - DRAFT Permitting/Land Use Review (LUR) Approach and Scheduling TM
 - DRAFT Construction Approach and Scheduling TM
 - DRAFT Design and Construction Cost Control Plan
2. DRAFT Project Approach TM

3. FINAL Project Approach TM

Subtask 120: Design Criteria

The Contractor shall identify a comprehensive list of reservoir design criteria. Previous engineering work by PWB related to the Kelly Butte Reservoir Project shall be reviewed by the Contractor for integration into the design criteria list. This work includes identification of all regulations, codes and standards that shall apply to the reservoir design. This Subtask shall be executed as described below:

A. Review PWB Basis of Design Report. The Contractor shall review and assimilate preliminary engineering work and preliminary criteria information completed by PWB to date. The Contractor shall utilize this information to serve as the basis for an understanding of existing conditions and progress-to-date by PWB. A partial listing of Preliminary Engineering work already underway by PWB includes:

- Preliminary Geotechnical Investigations
- Real Property Records Survey & Legal Descriptions
- Topographic Survey and Base Map Preparation
- Basis of Design Report
- Pre-Application Meetings and Permit Identification
- City of Portland Bureau of Development Services (BDS) – Land Use Services
- Public Information / Involvement

The aforementioned information shall be compiled and disseminated to Contract team members.

B. Initial Site Reconnaissance. Appropriate Contractor team members shall visit the reservoir site to observe conditions, obtain photographs, and gain a clearer understanding of development requirements and constraints. Site visits shall be coordinated with PWB staff to obtain access to buildings, vaults and other limited-access areas.

C. Develop Comprehensive List of Design Criteria. The Contractor shall develop a preliminary list of design criteria, and a separate listing of all regulations, codes, and standards that apply to the design of the reservoirs. Design criteria topic areas shall include: Demolition, Geotechnical, Seismic (including reservoir, piping and appurtenances and overflow), Structural, Civil, Stormwater (construction and post-construction), Piping, Landscape, Mechanical Systems, Electrical, I&C, SCADA, Security, Water Quality, Key Stakeholders and Permitting. The preliminary list shall be disseminated to PWB and the Technical Advisory Committee for review.

D. Conduct Criteria Workshop. Conduct a half day workshop with Technical Advisory Committee members, PWB staff and the project team's discipline design leads to review and discuss the preliminary criteria developed.

E. Prepare Design Criteria Technical Memorandum. Following completion of the Criteria Workshop, Contractor shall allow for limited follow up research and analysis on specific criteria where needed, based on PWB and Technical Advisory Committee recommendations. Once completed, Contractor shall prepare a draft Design Criteria TM for review by PWB. The TM shall include both the comprehensive listing of design criteria and a separate listing of all regulations, codes, and standards that apply to the design of the reservoir. The draft TM shall be revised based on comments received from PWB staff; the Final Design Criteria TM shall then be submitted.

Subtask 120 Contractors Expectations:

1. Contractor shall utilize and rely upon the Basis of Design Report (BDR) developed by the City to the greatest extent possible.
2. All initial design criteria shall be established as a result of the Design criteria workshop.
3. All deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

Subtask 120 Contractors Deliverables:

1. DRAFT Design Criteria TM
2. FINAL Design Criteria TM

Subtask 130: Reservoir Configuration and Appurtenance/Facilities Evaluation

The objective of this Subtask is to evaluate alternate reservoir configurations against established constraints and criteria, to identify a recommended reservoir geometry which best meets the evaluation criteria, and to look for opportunities where designs and construction means and methods can be used, rather than a custom design approach. The specific alternatives for the reservoir shall be confirmed and documented, including:

- New road improvement alternatives, including permanent and temporary paved and graveled surface access roads, access road
- Improvements of existing paved access roads and Central Church of the Nazarene (CoN) parking lot
- Overflow capacity, configuration and downstream impact mitigation
- Inlet/outlet pipe interface with existing system and reservoir circulation optimization
- Yard piping and valve layout
- Reservoir inlet/outlet meter vaults (2), buried mechanical space and relocation of existing Powell Blvd. Conduit outlet vault
- Reservoir drainage piping, including sediment removal facility for reservoir cleaning
- Site and stormwater drainage, stormwater BMPs and facilities (including on-site retention/infiltration and off-site disposal)
- Mechanical, electrical and Instrumentation and Controls (I&C) associated with automated actuated/seismic valves
- Reservoir washdown facilities
- Electrical service, including backup generator (w/ Automatic Transfer Switch (ATS))
- Reservoir ventilation and vault ventilation systems
- Supervisory Control and Data Acquisition (SCADA) per PWB standards
- Site Security, including fencing, alarms, gates, access card readers and cameras
- Dechlorination system
- Drain times, drain vaults, under-drain vaults, air-gap requirements, and access hatch locations

The Contractor shall review preliminary constraints developed by PWB and develop and document these and other constraints using PWB furnished input, along with input from Subtask 140 - Geotechnical Support. The Contractor shall meet with PWB staff to gain a clear understanding of those constraints firmly established by PWB and discuss other constraints that require further analysis and development.

A. Conceptual Reservoir Configurations TM. Identify a range of alternative conceptual reservoir geometries that meet established constraints. Utilize MWH parametric model to optimize specific factors:

- Reservoir plan dimensions
- Wall height versus hopper bottom depth
- Column spacing
- Slab dimensions (e.g. one slab per column vs. one slab per four columns)
- Earthwork/excavation
- Impacts to the following:
 - Environmental Overlays/Zones
 - Trees
 - Preliminary LUR Compliance Comments

Based on the use of Contractor parametric models, preliminary comparative cost information (including excavation requirements), past experience and engineering judgment, perform preliminary optimization of alternative reservoir geometries. Preliminary drawings of the alternatives shall present the main concrete reservoir structure (with wall and slab thickness, footing dimensions, column sizes, etc.). Meet with PWB Staff to present results and identify selected viable alternative conceptual reservoir configurations (geometries and locations) to be

further refined in subsequent subtasks. A brief summary shall be prepared to document the optimization results, and the recommended approach regarding viable alternative conceptual reservoir configurations to be considered. Comments shall be received but a revised summary shall not be prepared. Comments shall be addressed in the Preliminary Design Report.

B. Site Access and Roadways TM. Develop and evaluate conceptual configurations for site access and roadway, both for construction and long-term maintenance. Roadway design alternatives shall include right of way access off of Powell Blvd. or Division St (via residential street access), access through the CoN parking lot and transition from right of way to temporary and permanent site access road. Final recommendation shall balance the environmental impacts, constructability and 'permit-ability' of the preferred alternative.

C. Inlet/Outlet Piping Configuration TM. Develop and evaluate conceptual configurations for piping inlet/outlet to minimize water age/detention time in the reservoir, or mechanical circulation system, if necessary. The analysis shall be based upon input received from PWB for transmission line hydraulics and operational protocol/scenarios to enhance reservoir turnover. The optimized reservoir geometry shall be considered for three dimensional Computational Fluid Dynamics (CFD) modeling purposes; a total of three preliminary pipe inlet/outlet/flow alternatives shall be developed and analyzed. Preliminary evaluations developed by the team shall be presented and reviewed in a workshop with PWB staff to identify the preferred piping inlet/outlet configuration.

D. Drainage and Overflow Configuration TM. Four alternative drainage and overflow alternatives shall be developed based on best management practices established by the Bureau of Environmental Services (BES) and other jurisdictional constraints; relative risk associated with each alternative shall be quantified. Preliminary drawings shall present the alternative storm drainage requirements, dechlorination facility/strategy, overflow piping, connections and air gaps, etc. Preliminary evaluations developed by the team shall be presented and reviewed in a workshop with PWB staff to arrive at the identification of the preferred site drainage/overflow configuration.

E. Operational Considerations TM. Evaluation of operational considerations including dechlorination of reservoir drain, washdown discharge and overflow, washdown sediment removal, reservoir equipment and personnel access (to minimize confined space), reservoir ventilation, reservoir washdown piping, reservoir drain and vault ventilation

F. Electrical and I&C Considerations TM. Evaluation of electrical and I&C considerations shall include provisions for on-site standby generator (including ATS), reservoir electrical power supply and distribution, and SCADA interface.

G. Reservoir Start-up Considerations TM. Evaluation of issues associated with reservoir start-up shall be completed, including source and disposal of reservoir hydrostatic test water, washdown and disinfection.

H. Corrosion Analysis and Coatings System Development TM. Identification of corrosion/cathodic protection issues, and development (in concert with PWB) of on-site corrosion mitigation recommendations, including active or passive cathodic protection, evaluation of alternative and selection of appropriate linings and coatings (for piping, submerged and buried valves and mechanical equipment).

I. Develop/Confirm Evaluation Criteria TM. Develop evaluation criteria to compare the conceptual reservoir layout options. Evaluation criteria shall include initial capital cost, life-cycle costs, site-specific constraints, competitive bid considerations, O&M considerations, schedule, land use compatibility, and other administrative or technical considerations, as warranted. Additional criteria may include seismic risks and geotechnical risks. Present draft evaluation criteria to PWB staff along with preliminary evaluation matrices, and preliminary weighting factors for each criterion. Review and confirm with PWB staff.

J. Final Site Utilization Development/Evaluation TM. Based on subtask 130.A through 130.E, develop and evaluate final site utilization concepts and site plans that meet established constraints. A total of three alternatives shall be developed, and shall include earthwork, access road/paving, yard piping, finished grade, buildings, and architectural and landscape features

(based on previously optimized reservoir geometry, inlet/outlet piping and drainage/overflow approach). The alternative configurations shall be developed in sufficient detail with preliminary layout drawings to allow cost analysis comparisons. Basic quantities shall be developed based on optimized reservoir configuration, optimized piping configuration (diameters and lengths), excavation and fill volumes, paving requirements, etc. Preliminary drawings shall present the preliminary site civil layout (grading and access roads), vaults, buried mechanical space(s), major piping, valving, connections, drains, air gaps, hatches and vents, circulation pumps, security (fencing, door and hatch alarms, access card readers and cameras), retaining walls, etc. Final Site Utilization Evaluation shall accommodate operational and maintenance considerations for the mechanical, electrical, yard piping and structural work to ensure adequate working clearances as required by current codes and for operations and maintenance requirements and permitting constraints. After development of the alternative conceptual site layouts and corresponding comparative cost estimates, the alternatives shall be compared against the evaluation criteria, using the evaluation matrices and weighting factors previously developed. Preliminary evaluations developed by the team shall be presented and reviewed in a workshop with PWB staff to identify the preferred site utilization alternative.

K. Temporary and Permanent Erosion Control Strategy TM. An erosion control strategy shall be developed for the recommended site utilization concept plan. At a minimum, the strategy shall conform to the City's current version of the Erosion and Sediment Control Manual and the Stormwater Management Manual and other permitting constraints.

L. Landscaping TM. A landscape approach to meet land use requirements shall be developed for the recommended site utilization concept plan. The plan shall maximize the removal of non-native vegetation and redevelopment of native species, and coordinate with the geotechnical report to recommend grading required to support recommend landscape design. In addition, the plan shall recommend mitigations to construction and visual impacts to natural resources and new facilities; approved recommendations shall be incorporated into Task 200 – Design work.

M. Surface Restoration Approach TM. A surface restoration approach shall be developed for the recommended site utilization concept plan. The plan shall include restoration of existing surfaces, coordination with final grading plan and landscaping and stormwater management requirements.

N. Site Security TM. Site security criteria, in conformance with PWB security protocol, shall be determined as part of the Site Security TM. This memo shall include provisions for security fencing, door and hatch alarms, access card readers and cameras, as needed. Final security plan shall be advanced as part of Task 200 activities.

O. Preliminary Construction Cost Estimate TM. Comparative construction cost estimates shall be prepared for each major component of the Work, including: separate structures, pipelines and roadways alternatives. These estimates shall be considered when making final recommendations for reservoir configurations alternatives.

Subtask 130 Contractors Expectations:

1. Comparative Cost Estimates shall focus on use of quantity takeoffs for concrete, earthwork, major piping, paving, and other significant cost items that can be readily estimated at this stage of concept development.
2. To the greatest extent possible, Contractor to maximize use of existing piping, valve chambers and yard piping.
3. All deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

NOTE: PWB shall develop and provide the diurnal flow condition scenarios required for 3D CFD modeling.

Subtask 130 Contractors Deliverables:

1. DRAFT Technical Memoranda, including the following.

- DRAFT Conceptual Reservoir Configuration TM
- DRAFT Site Access and Roadways TM
- DRAFT Inlet/Outlet Piping Configuration TM
- DRAFT Drainage and Overflow Configuration TM
- DRAFT Operational Considerations TM
- DRAFT Electrical and I&C Considerations TM
- DRAFT Reservoir Start-up Considerations TM
- DRAFT Corrosion Analysis and Coatings System Development TM
- DRAFT Develop/Confirm Evaluation Criteria TM
- DRAFT Final Site Utilization Development/Evaluation TM
- DRAFT Temporary and Permanent Erosion Control Strategy TM
- DRAFT Landscaping TM
- DRAFT Surface Restoration Approach TM
- DRAFT Site Security TM
- DRAFT Preliminary Construction Cost Estimate TM

NOTE: FINAL TMs to be issued as part of Subtask 160.

Subtask 140: Geotechnical Support

Geotechnical project involvement shall help overcome project constraints related to limited staging areas, large cut and fill volumes, steep slopes, and storm and overflow water retention issues. The geotechnical work shall, at a minimum, provide the necessary geotechnical information required to design and construct the project. Geotechnical tasks shall include the following:

A. Background Review

- *Aerial Photograph* – Obtain and review existing aerial photography on file with the Portland United States Army Corps of Engineers office or with the Portland Water Bureau. These photographs shall be used to evaluate and assess elements of previous site development, as well as geologic hazards that may be obscured by existing developments.
- *Construction Documents* – Review available construction documents associated with the design and construction of the existing facilities. These documents shall be used to identify the locations and configurations of existing and potentially abandoned site improvements.
- *Project Reports* – Review the Geotechnical Data Report and the Preliminary Geotechnical Report with respect to current project design.

B. Site Characterization

- *Geologic Site Reconnaissance* – A site reconnaissance shall be conducted to identify visible seepage, slumps, and other identifiable geologic hazards.
- *Subsurface Utility Locates* – Locate subsurface utilities in accordance with state law and Subtask 150.
- *Subsurface Borings* – Four (4) to six (6) additional subsurface mud-rotary or hollow-stem auger borings, as required, shall be advanced to characterize and identify subsurface conditions at the key project locations. The key locations may include foundations, cut slopes, infiltrations facilities. The borings shall have maximum approximate terminal depths of 40 to 100 feet below the ground surface. Observed soil, rock and groundwater conditions shall be recorded in a boring log to be included in a geotechnical design report. (NOTE: Contractor shall be responsible for vandalism of equipment during subsurface investigation efforts that occur during non-work hours.)
- *Test Pits* – Test pit explorations shall be conducted at the site. These explorations shall

be used to explore shallow subsurface conditions such as previously identified fill to the south of the existing reservoir, fill located northwest of the existing reservoir omitted from the preliminary geotechnical report, potential hall road alignments, and potential infiltration facilities.

- *Groundwater Evaluations* – In addition to noting water conditions encountered in the proposed explorations, the existing groundwater monitoring piezometers shall be observed and recorded at the time of the subsurface explorations. Vibrating wire or PVC stand-pipe piezometers shall be installed in two of the proposed borings. Newly installed piezometers shall be monitored once within two weeks of completing the explorations.
- *In-situ Infiltration Testing* - Conduct infiltration test(s), as required, in accordance with Appendix F of the Portland 2008 Stormwater Management Manual. This testing shall be used to aid in determining the geotechnical feasibility of on-site feasibility of infiltration facilities.
- *Laboratory Testing* – Conduct geotechnical laboratory testing on selected soil samples to determine physical and strength characteristics.
- *Seismic Evaluation* – Produce site specific seismic evaluations with seismic coefficients and design response spectra on the reservoir, piping and appurtenances, and outfall.

C. Meetings

- *Kick-off Meeting* – Attend a project Kick-off meeting with PWB to discuss project understanding, the preliminary geotechnical report, site exploration plans, and potential geotechnical related project optimizations.
- *Post-Investigation Meeting* - Attend a Post-Investigation meeting or teleconference with the Portland Water Bureau to discuss the preliminary findings from field investigations and how these findings may impact project design.
- *Draft Report Meeting* – Attend a Draft Report meeting or teleconference with the Portland Water Bureau to discuss and receive feedback prior to submitting the final geotechnical design report.

D. Geotechnical Evaluation and Design

- *Site Specific Seismic Evaluation* – Provide and incorporate site specific seismic evaluation with seismic coefficients and design response spectra. This data shall be utilized by the project team for the seismic evaluation and design of the reservoir, piping and appurtenances.
- *Surface and Subsurface Evaluation* – Conduct an evaluation of the surface and subsurface conditions of the site. This evaluation shall include, but not be limited to, analyses and recommendations for and/or estimates of:
 - Allowable bearing capacity
 - Geotechnical mat, shallow and/or deep foundation design (as required)
 - Geotechnical parameters for the design of soil nail walls
 - Recommendations for the construction of temporary and permanent cut slopes
 - Total and differential settlements
 - Modulus of subgrade reaction
 - At-rest, active and seismic lateral earth pressures
 - Friction coefficients between foundation and subgrade soils
 - Acceptable fill types including compaction criteria
 - Underdrain and footing drain requirements
 - Geotechnical pipeline construction including pipe bedding and backfill requirements
 - Trench slope and shoring parameters, construction slopes and trench shoring design shall be the responsibility of the earthwork contractor
 - Cast-in-place and mechanically stabilized earth retaining wall geotechnical design criteria
 - Mechanically stabilized slope geotechnical design criteria
 - Infiltration rates in accordance with the 2008 Portland Stormwater Management Manual
 - Short-term and post-construction slope stability
 - Review of geotechnical related project specifications, as needed, including, but not limited to: site grading, cut/fill, shoring, and retaining walls

Subtask 140 Contractor Expectations:

1. The Contractor shall rely on preliminary geotechnical data provided by the PWB for preliminary engineering design efforts. Contractor shall supplement this preliminary geotechnical data, as required, for final design.
2. Excepting the DRAFT Exploration Work Plan and the FINAL Exploration Work Plan, all deliverables shall include 1 original and 25 copies, plus one electronic version (PDF). The DRAFT and FINAL Exploration Work Plan deliverables shall include 1 original and 1 electronic version (PDF).

NOTE: PWB to provide electronic files of the Geotechnical Data Report and Preliminary Geotechnical Report, figures, etc.

Subtask 140 Contractor Deliverables:

1. DRAFT Exploration Work Plan
2. FINAL Exploration Work Plan
3. DRAFT Geotechnical Design Report
4. FINAL Geotechnical Design Report

Subtask 150: Basemaps and Surveying

A. Review of PWB Preliminary Base Mapping. The Contractor shall review PWB provided base maps for accuracy and adequacy to allow completion of the Task 100 & 200. This shall include field review of existing conditions in comparison to mapping provided.

B. On-site Utility Locates. The Contractor shall perform vacuum excavation to locate all on-site utilities.

C. Finalize Base Maps. Contractor shall perform additional base map refinement work to incorporate supplemental surveying information received. Area of coverage shall be expanded to include additional topography on the site, incorporate all new boring locations and all underground utility information. In addition, the size, species (including Latin names) and condition of all impacted trees.

Subtask 150 Contractor Expectations:

1. Construction staking is not included in this Scope of Work.
2. Existing basemap provided by the PWB identifies tree type (i.e. evergreen/coniferous or deciduous) and diameter in general. An additional tree survey shall be required to determine diameter of trees (6-inches or larger only) and tree species. Location of Fawn Lilly, if found on impacted sites, shall also be incorporated into the basemap.
3. All deliverables shall include 1 original and 25 copies, plus one electronic version (PDF) for TMs, as well as one electronic copy (DGN) with all reference files for final site survey/basemap.

NOTE: PWB to provide survey field books, as needed, to finalize basemap development.

Subtask 150 Contractor Deliverables:

1. Updated Base Map CADD files for the site, incorporating additional survey information.

Subtask 160: Preliminary Design Report

The Contractor shall combine results from Subtask 110 through 150 in a Preliminary Design Report. This Subtask shall be executed as described below:

A. Prepare Preliminary Design Report. Prepare a draft Preliminary Design Report for review by PWB and Technical Advisory Committee (TAC). The Preliminary Design Report shall be comprised of an Executive Summary, with chapters consisting of FINAL Technical Memoranda developed during Subtask 110 – 150 work, incorporating PWB and TAC review comments. The Executive Summary shall document recommended approach for all aspects of the reservoir. This DRAFT shall be revised based on comments received from PWB staff; a FINAL Preliminary Design Report shall then be issued.

Subtask 160 Contractor Expectations:

1. The Preliminary Design Report shall be comprised of an Executive Summary with chapters consisting of Final Technical Memoranda developed during Subtask 110 – 150 work, incorporating PWB and TAC review comments.
2. The Preliminary Design Report shall serve as the basis for CM/GC Procurement and preliminary Land Use / Conditional Use Permit application efforts.
3. Drawings depicting the recommended alternatives in the Preliminary Design Report shall be compiled and combined with additional 30% level design details to create the 30% design deliverable (Subtask 210).
4. All deliverables shall include 1 original and 25 copies, plus one electronic version (PDF); delivery of electronic versions of the recommended alternative drawings is addressed in Subtask 210 deliverables.

Subtask 160 Contractor Deliverables:

1. DRAFT Preliminary Design Report
2. FINAL Preliminary Design Report

III. TASK 200 - DESIGN

This task shall consist of the preparation of Contract Documents consisting of design drawings and specifications based upon the schedule, design criteria and bid packages established in Task 100 of the contract scope. Additionally, all Quality Assurance / Quality Control (QA/QC) associated with Design have been captured in this task.

Detailed design of the Kelly Butte Reservoir Project shall proceed based on the approved concepts and layouts established in the approved Preliminary Design Report, which shall form the basis of the design criteria and concepts moving forward. No significant changes to the Preliminary Design concepts shall be made except through mutual agreement between the PWB and Contractor, including applicable Scope of Work and Budget revisions, if necessary.

Scope of Work for Contract Documents

This subtask outlines the format and organization for all computer aided drafting and design (CADD) standards, drawings, technical specification and final design calculations required to produce Contract Documents for construction. The Contract Documents consist of Drawings and Specifications. The Contract Documents are further described below.

A. Contract Drawings. The drawings shall be prepared in electronic format using MicroStation V8XM format, in compliance with PWB standards. The drawings shall generally be organized as follows:

- *General sheets* - include cover title sheet, location map, vicinity map, drawing index, design criteria, traffic haul route, legal description, plot plan, general notes, elevation datum, symbols and abbreviations
- *Demolition/TEESC sheets* – include demolition plans and details, temporary erosion control plans, details and notes
- *Civil sheets* - include site plan, survey bench marks, contractor staging areas, site grading and paving plans, storm drainage plans, all yard and reservoir piping

(plans and profiles), fencing and details

- *Landscaping sheets* – include top soil and planting plans, irrigation plans, and details
- *Structural sheets* – include structural design standards, general notes, geotechnical, seismic and structural design criteria; all plans, sections, and details for the reservoir structure; all plans, sections, and details for ancillary structures and facilities such as drain/underdrain vaults, vents, air-gaps and recirculation/disinfection vault/building facilities
- *Mechanical sheets* – include general mechanical symbols, abbreviations and general notes, piping and equipment schedules, all plans, sections, and details for all piping, valves, pumps (recirculation and drain), cross connection protection assemblies, and other miscellaneous disinfection system requirements
- *Electrical sheets* - include symbols, abbreviations and general notes, electrical site plan, single line diagram, service load calculation table, panel schedules, and all power and lighting plans, schematics, and details for all equipment
- *Instrumentation and Control sheets* – include instrumentation symbols and abbreviations, Piping and Instrumentation Diagram (P&ID) schematics, SCADA details, Control Panel elevations, Input/Output's, and schematics, and Security sheets (including door and hatch alarms, cameras and access card readers, panels and details)

All preliminary and final drawing submittals shall be initialed by the design Engineer, draftsman, drawing checker, and the person responsible for review of the Contractor's completed work.

B. Contract Specifications. The Contractor shall prepare detailed technical specifications for the reservoir. The Contractor shall prepare Sections (or Divisions) 2-43 following the 2004 MasterFormat Construction Specifications Institute (CSI) specification format. The Contractor shall be responsible for preparing "stand alone" specifications, including general and supplemental conditions (if needed), bidding instructions, Division 1 in CSI format, etc., incorporating requirements from the PWB standard Class 100 specifications and Supplemental General Requirements 007200 as modified for CM/GC contract, as required. NOTE: When appropriate, the Contractor shall incorporate applicable City of Portland Standard Specifications.

C. Engineering Calculations. Design calculation sheets shall be initialed by the design Engineer and by the person checking the design calculations before transmitting them for PWB's review.

Contractor Expectations:

1. Contractor shall follow PWB's CADD Standards, Drafting Criteria, Title Blocks, and Contractor Specification Guidelines in the preparation of the Contract Documents.
2. Stormwater design shall be based on BES best management practices, as defined in the most current version of the Erosion and Sediment Control Manual and the Stormwater Management Manual, and as required by other jurisdictional constraints.
3. Specifications shall use the 2004 MasterFormat Construction Specifications Institute format.

Contractor Deliverables:

1. Described under Subtask 210 - 250: Design Milestones.

Subtask 210 - 250: Design Submittals (30%, 60%, 90%, 95% & 100%)

Design Milestone submittals shall be used to conduct quality reviews, solicit stakeholder comments, and assess project status and progress. Milestone submittals shall consolidate the work from Contract Documents (Subtask 210 - 250), QA/QC (Subtask 260), Cost Estimating (Subtask 270), and Permitting (Task 400). Design deliverables shall be coordinated with critical path items identified in Task 100 – Project Approach and Schedule. Following internal QA/QC procedure, the Contractor shall provide copies

of QA/QC documents for formal review by the PWB, and other agencies as required. The Contractor shall consider formal review comments received on each submittal and provide a response to each comment indicating if the design was changed to incorporate the comment, or rationale for why the comment did not result in a design change. Design delivery milestones are summarized below:

- A. **Subtask 210 - Preliminary Design (30%).** The Preliminary Design (30%) submittal shall consist of drawings representing the recommended alternative, as presented in the FINAL Preliminary Design Report. These drawings, coupled with the specifications content listed below, shall serve as the foundation for CM/GC Procurement and preliminary Land Use / Conditional Use Permit application. The Preliminary Design shall include the following:

Specifications:

- Draft Table of Contents
- Draft Specification Sections (for major work items only)
- Draft CM/GC Procurement Specifications (Section 0070000) to the 95% level. Revisions made to Section 0070000 and submitted to PWB prior to the Intermediate Design Milestone.
- Final CM/GC Procurement Specifications (revised per PWB review comments)

Drawings:

- Drawing List
- Process Flow Diagram
- Hydraulic Profile
- Equipment List
- Preliminary Standard Details
- Preliminary Site Key Plan
- Existing Site Plan
- Preliminary Erosion Control Plan
- Preliminary Site Plan
- Preliminary Horizontal Control and Paving Plan
- Preliminary Grading and Drainage Plan
- Preliminary Yard Piping Plan and Profiles (with pipe sizes and connections to existing pipes)
- Preliminary Site Sections Demonstrating Cut/Fill Requirements (Minimum of Four)
- Preliminary Stormwater, Sediment Removal and Dechlorination Facilities
- Preliminary Reservoir Plan
- Preliminary Cross-section of each structure
- Preliminary Electrical One-lines
- Preliminary P&ID

Other Supporting Information:

- Permitting and LUR Memo
- Draft Design Technical Memoranda
- Supporting Engineering Documentation
- Cost Estimate (Class 4)
- Updated Design Schedule
- QA/QC Documentation

- B. **Subtask 220 - Design Development (60%).** 60% design likely to coordinate with CM/GC Cost Estimate, final Conditional Use and preliminary building permitting needs. The Design Development submittal shall include the following:

Specifications:

- Final Table of Contents
- Draft Specification Sections (for all sections)
- Final Section 0070000

Drawings:

- Drawing List
- Process Flow Diagram
- Hydraulic Profile
- Equipment List
- General Notes and Symbols
- Standard Details
- Project Specific Details
- Minor Civil Structures
- Demolition Drawings
- Construction Staging/Storage Areas
- Site Key Plan
- Existing Site Plan
- Site Plan
- Erosion Control Plan
- Horizontal Control and Paving Plan
- Road Profiles
- Grading and Drainage Plan
- Yard Piping Plan and Profiles
- Site Sections Demonstrating Cut/Fill Requirements (Minimum of Four)
- Stormwater, Sediment Removal and Dechlorination Facility
- Landscaping Plan
- Reservoir Plan
- Cross-section of each structure
- Electrical One-lines
- Preliminary Electrical Plans
- P&ID
- Site Security Plan

Other Supporting Information:

- DRAFT O&M Manual which consists of control strategies and operational overview
- Tabulated Comment Response for Preliminary Design (30%) Review Log
- Updated Permitting and LUR Memo
- Land Use Permit Applications
- Updated Design Technical Memoranda
- Supporting Engineering Documentation
- Additional Engineering Documentation
- Cost Estimate (Class 4)
- Updated Design Schedule
- QA/QC Documentation

C. Subtask 230 - Construction Documents (90%). The 90% design submittal shall be used for formal bidability, constructability, operation, and environmental (BCOE) Review. It shall also be used to coordinate with GMP preparation and permit applications. The Construction Document submittal shall include the following:

- Tabulated Comment Response for Design Development (60%) Review Log
- 90% Drawings
- 90% Specifications
- Updated Design Technical Memoranda
- Permit Applications
- Updated Permitting and LUR Memo
- Supporting Engineering Documentation
- Cost Estimate (Class 3)
- Draft O&M Manual
- Updated Design Schedule
- QA/QC Documentation

D. Subtask 240 - Pre-Final Design (95%). The 95% design submittal is the final opportunity for PWB and other stakeholders to review and provide comments on the plans and specifications. It shall include the following:

- Tabulated Comment Response for Construction Document (90%) Review Log
- 95% drawings
- 95% specifications
- Updated Design Technical Memoranda, including summary of outstanding design issues
- Supporting Engineering Documentation
- Updated Permitting and LUR Memo
- Supporting Engineering Documentation
- Revised Cost Estimate (Class 3)
- Draft O&M Manual
- Updated Design Schedule
- Status Memo
- QA/QC Documentation

E. Subtask 250 - Final Design (100%). The Final Design submittal includes all materials needed to begin issuing packages for bidding. It shall include the following:

- Tabulated Comment Response for Construction Document (95%) Review Log
- 100% Stamped Drawings
- 100% Stamped Specifications
- Final Design Report Memorandum
- Building Permit Applications and Other Permit Applications
- Updated Permitting Memo
- Cost Estimate (Class 2)
- Calculations, digital photos, graphics, reports, plans and specifications, addenda, estimates and Other Supporting Engineering Documentation. When possible, deliverables shall be submitted electronically on CD-R, DVD-R or flash drives, depending on size.
- O&M Manual (prior to closeout of contract). See Subtask 520.H for details.
- QA/QC Documentation

Additionally, the 100% Conformed Drawings shall include review comments received from permit agencies and final modifications identified during preparation of the GPM, as appropriate. The Contractor shall provide PE stamped copies of 100% Conformed Drawings to PWB. NOTE: Any changes from the Pre-Final Design Documents shall be clouded to best document changes from to the GMP.

Subtask 210 – 250 Contractor Expectations:

1. Contractor to prepare the design drawings for the demolition and replacement of the Kelly Butte Reservoir, site piping and appurtenances based on the preliminary list of drawings provided as Table 1 and Table 2, respectively.
2. Budget for compiling PWB's comments is an allocation based on the assumption of 8-hours effort per submittal review.
3. Design deliverables shall include 3D PDF's for PWB engineering and operations review/comment; these 3D PDF's shall be used throughout the design process to facilitate early buy-in from plant operations and maintenance staff.
4. Excepting the 95% deliverable, all design deliverables shall include 1 original and 25 copies (1/2 sized plan sets), one full size set of plans, plus one compiled electronic version (PDF), as well as one electronic copy (DGN) with all resource reference files for design drawings. The 95% submittal shall be limited to 1 original and 15 copies (1/2 size plan sets).
5. All deliverables and resulting work products from the Work shall become the property of the PWB.

NOTE: PWB to provide tabulated review comments for all submittals to Contractor. It is assumed that reviews from the PWB, key stakeholders and permit agencies review shall occur simultaneously so Contractor can address comments from all agencies

concurrently.

Task 210 – 250 Contractor Deliverables:

1. Preliminary Design (30%) Submittal, including:
 - DRAFT CM/GC Procurement Documents (90%)
 - FINAL CM/GC Procurement Documents (100%)
2. Design Development (60%) Submittal
3. Construction Documents (90%) Submittal
4. Pre-Final Design (95%) Submittal
5. Final Design (100%) Submittal

Subtask 260: QA/QC

A. Design QA/QC. Quality Assurance/Quality Control (QA/QC) includes the QA/QC oversight function for all in-house and sub-Contractor work in accordance with the Quality Management Plan and procedures developed in Task 100. QA/QC work shall be coordinated with other Task 200 activities, including a Technical Advisory Committee Meeting, Constructability Review, review of deliverables, monitoring and compliance. Specific QA/QC work includes the following:

Quality Management. A Quality Manager shall be assigned to the project that shall be responsible for implementing MWH QA/QC procedures. Specific responsibilities of the QM shall include the following:

- Preparing and updating the Quality Management Plan
- Consolidating internal QA/QC comments, tracking progress on preparation of responses, and closing out comments with reviewers
- Auditing compliance with MWH QA/QC requirements and the project-specific Quality Management Plan.
- Coordinating quality activities among MWH and subcontractors.

Technical Advisory Committee Meeting. Conduct an in-house Technical Advisory Committee meeting early in the Design phase (approximately 30% submittal) to review the design criteria and obtain input from senior MWH technical staff. PWB staff is encouraged to attend this review.

Constructability Reviews. Provide constructability review early in the Design phase (approximately 30% submittal, prior to CM/GC procurement) to obtain input from senior Contractor construction staff for guidance and input. The Contractor shall participate in PWB's BCOE review process as part of this activity.

QA/QC Reviews. Each design-phase milestone deliverable shall be reviewed by at least three senior personnel, identified in the QA/QC plan, that are not directly involved in the production of the work. Comments from these reviewers shall be consolidated into a QA/QC log and formal responses to each comment shall be prepared by the design team. The QA/QC reviews shall include discipline reviews, interdisciplinary reviews and a comprehensive final review at the 90% submittal stage. Participation in PWB's BCOE review process shall be part of this activity.

Subtask 260 Contractor Expectations:

1. Contractor QA/QC procedures shall be followed with enhancement as appropriate to comply with PWB and project-specific requirements.
2. All QA/QC deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).
3. The PWB reviews and length of time required for the reviews are anticipated as follows:
 - Written comments 15 days after receipt of the Preliminary Design (30% level) submittal.
 - Written comments 20 days after receipt of the Design Development (60% level) submittal.
 - Written comments and BCOE review 30 days after receipt of the Construction Document (90% level) submittal following the formal BCOE review.

- Written comments 15 days after receipt of the Pre-Final Design (95% level) submittal.
- Written comments 21 days after receipt of DRAFT O&M manuals.
- Written comments 7 days after addenda submittal
- Written comments 21 days after addenda submittal
- Written comments 21 days after draft technical memorandum submittals
- Longer review periods shall be required for any reviews conducted by City Attorney, other Bureaus, and other Public Agencies.

Subtask 260 Contractor Deliverables:

1. Project Quality Management Plan

Quality Review Documentation for Milestone Submittals Subtask 270: Cost Estimating

The Contractor shall develop opinions of probable construction cost as part of the 30%, 60%, 90%, and 100% submittals (NOTE: Cost estimate for 95% submittal shall be a revision of the Class 3 estimate prepared for the 90% submittal). The cost opinions shall be prepared following the *AACE International Recommended Practice No. 17R-97: Cost Estimate Classification System* and *Recommend Practice No. 18R-97: Cost Estimate Classification System – as Applied in Engineering, Procurement, and Construction for the Process Industries*. Estimating services are provided with PWB's acknowledgement that other than Contractor's good faith performance of the services, Contractor has no control over costs of labor, materials, competitive bidding environments and procedures, unknown field conditions, financial and/or market conditions or other factors affecting the cost of the construction and the operation of the facilities, all of which are beyond Contractor's control and are unavoidably in a state of change. Contractor cannot and does not make any warranty, promise, or representation, either express or implied that proposals, bids, opinions of probable construction costs, or cost of operation or maintenance shall not vary substantially from probable cost estimates. Cost opinions shall be tabulated by project element in a form compatible to that used by the CM/GC negotiating team to compare and evaluate the GMP.

Subtask 270 Contractor Expectations:

1. Cost opinions shall be prepared in accordance with AACE Estimate Class 4 at the 30% design level, AACE Estimate Class 4 at the 60% design level, and AACE Estimate Class 3 at the 90% design level. An update of the Class 3 estimate shall be prepared for the 95% submittal. A Class 2 estimate shall be prepared for the 100% submittal. These later cost estimates shall help support the establishment of a GMP.
2. All Cost Estimate deliverables shall include 1 original and 25 copies, plus one electronic version (PDF);

Subtask 270 Contractor Deliverables:

1. 30% Opinion of Probable Construction Cost
2. 60% Opinion of Probable Construction Cost
3. 90% Opinion of Probable Construction Cost
4. 95% Revised Opinion of Probable Construction Cost
5. 100% Opinion of Probable Construction Cost

IV. TASK 300: CM/GC PROCUREMENT

The Contractor team shall support PWB in the selection of a CM/GC, include the CM/GC in design development activities, and assist with procurement of construction services through the CM/GC. Coordination with the CM/GC during design is included in Task 200, and coordination during construction is included in Task 500.

A. Subtask 310 – Preparation of RFP

The Contractor shall prepare a 90% DRAFT RFP for selection of a CM/GC for PWB review/comment. The Contractor shall assist the PWB in preparing the associated Statement of Findings, advertisements for the DJC and any other CM/GC procurement-related documentation, as required.

B. Subtask 320 – Support during Selection

The Contractor shall assist PWB with the evaluation of proposals submitted in response to the CM/GC Request for Proposal (RFP). Assistance during Guaranteed Maximum Price (GMP) negotiations shall be provided for up to three phases of construction, including design clarification and opinions of construction costs and review of final GMP.

C. Subtask 330 – Partnering

The Contractor shall sponsor and participate in two, 8-hour partnering workshops with PWB staff, CM/GC contractor representatives, and other key stakeholders during the design, and two 4-hour follow-up workshops during construction; a third-party partnering expert shall facilitate these meetings. The team shall also prepare a draft partnering meeting to present and finalize at the initial workshop. The team shall also support these workshops with design information and graphics required for their conduct and shall provide experienced facilitation, as required. Finally, the Contractor shall develop the Partnering Agreement for review/comment by both PWB and the Contractor.

Task 300 Contractor Expectations:

1. CM/GC shall be selected following the 30% Design Deliverable Milestone
2. All CM/GC procurement deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).
3. Contractor shall attend up to 20 meetings with PWB and CM/GC staff relating to design, permitting and other topics that may arise over the course of construction. Contractor assumes these meetings can be coupled with weekly construction meetings to increase overall project efficiency.

Task 300 Contractor Deliverables:

1. DRAFT and FINAL CM/GC procurement documents included as part of Subtask 210 Deliverables.
2. Support documentation for CM/GC procurement, as needed
3. Advance materials, meeting materials, and meeting notes for CM/GC partnering workshops
4. DRAFT and FINAL Partnering Agreement.

V. TASK 400: PERMITTING AND PUBLIC OUTREACH SUPPORT

Permitting and public outreach support shall be conducted in close coordination with PWB. The overall objective of this task is to obtain project approval from all stakeholders, including permitting agencies and the public.

Subtask 410: Permitting Strategy and Planning

Building on the pre-application planning work performed as part of Subtask 110, a comprehensive strategy for obtaining land use and other permits shall be developed. This strategy shall be developed in coordination with PWB staff and other stakeholders to identify anticipated permits, thresholds for review, timelines and implications for project design and construction. The plan also shall identify opportunities for early coordination with regulatory agencies that may facilitate the permitting process. The action plan shall contain information on all permits required for the project.

A permit tracking matrix shall be maintained to track the progress of each permit identified in the work plan. This matrix is a comprehensive summary of permit needs, requirements, and criteria. It is a working document that shall provide ongoing tracking of permit review progress and rapid “permit impact” response to any proposed design or construction changes. The matrix shall be updated on a monthly basis, or more often if requested by the City or Contractor Project Manager.

A. **Data Collection/Assessment.** The Contractors permitting team shall compile and review all of the information relevant to Kelly Butte, including City land use and environmental plans, land use case history in the area, and all applicable documents related to the PWB water supply and distribution system.

Local traffic and stormwater studies shall be reviewed, in addition to natural resource and other data from Portland Parks and Recreation (PP & R), Bureau of Environmental Services (BES), and Bureau of Planning and Sustainability. Information pertinent to state permitting agencies (e.g., Department of Environmental Quality, Department of Transportation, and Department of Human Services) shall also be reviewed. Once all data is reviewed, the team shall make an assessment of any data gaps that need to be filled, potential issues to be addressed, when and by whom. The team shall also identify any related design, process or schedule implications.

B. Preliminary Review of Alternatives. As identified in the summary of the pre-application conference (EA 09-156894) held October 26, 2009, the site contains high quality resources which are protected by the strictest environmental regulations in the City. Any work within environmentally zoned areas shall need a detailed alternatives analysis, including alternative locations, designs and construction methods for the access road and reservoir. From a scheduling standpoint, this analysis must begin as early as possible and must be coordinated with preliminary layout, design and construction studies for any work in the EC or EP zones. Data on vegetation, wildlife habitat, and other applicable resources shall be compiled from published sources and field assessments, and reviewed together with geotechnical data as part of the impact evaluations for the various locations, design and construction alternatives considered.

C. Develop Permit Action Plan and Tracking Matrix. The purpose of the permit action plan is to provide a summary of anticipated permits, thresholds for review, timelines and implications for project design and construction. The plan also shall identify opportunities for early coordination with regulatory agencies that may facilitate the permitting process. The action plan shall contain information on all permits required for the project. This information shall include:

- Permit name, issuing agency, contact information
- Project element triggering permit and project specific requirements
- Permit costs and team responsibilities
- Permit schedule with milestones, PWB review periods, agency meetings, synchronized with design/construction milestones
- Summary of permit status, comments, unresolved issues and action plan
- Coordination and review of design plan sheets/specifications related to permit
- Reference section listing code citations, correspondence, supporting documentation

The draft plan shall be updated at later design stages to reflect current design and construction plans.

D. Develop Mitigation Strategies. During this subtask, Contractor shall develop up to 3 mitigation concepts for the project, with a range of treatment options for individual project elements (e.g., reservoir, road, stormwater areas). In addition, meetings shall be held, as necessary, with design team and/or PWB to review and further develop concepts. The Contractor shall prepare landscape/mitigation schematic and design plans, and to develop stormwater management strategies and conceptual plans that provide mitigation value without significant detrimental impacts. The Contractor shall lead field meetings, as necessary, to review mitigation options with PWB and design team, including one with BDS staff if requested by PWB Project Manager. Contractor shall attend meetings, as necessary, to coordinate and refine construction management and stormwater plans for consistency with mitigation plan. Draft plans shall be provided to PWB for review and comment (allow 3 weeks), after which comments shall be incorporated (1 week) and receive a brief final review with PWB and team before including in LUR package.

Subtask 410 Contractor Expectations:

1. The following permits shall be required for the Kelly Butte Reservoir Project:

City of Portland
 BDS Clearing permit
 BDS Grading permit
 BDS Site Development permit
 BPS Recycling permit
 PBOT Street opening permit
 BDS Noise variance
 BDS Building permits
 PP&R Urban forestry permit

State Permits

DEQ NPDES 1200-C permit
 DEQ Disposal permit
 ODOT ROW access and drainage permits
 DHS Drinking Water Program plan review
 SHPO Archaeological permits

2. All permitting deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

Subtask 410 Contractor Deliverables:

1. DRAFT Permitting Technical Memorandum

Subtask 420 – Permit Application Preparation

For each permit identified in Subtask 410, permit application packages shall be compiled, circulated to PWB for review, and then submitted according to the permitting schedule. As comments or requests for additional information are received, formal or informal responses shall be prepared in a timely manner, as required.

Subtask 420 Contractor Expectations:

1. DSL/Corps permits related to discharge to Johnson Creek or wetland impacts are not included in this scope of work
2. Field meetings shall be held, as necessary, to review potential design and construction refinements, impacts to vegetation and other natural resources
3. Need to assume that we get an incomplete letter, requiring minor revisions to the Land Use Application.
4. All permitting deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

NOTE: Permit fees shall be paid by PWB

Subtask 420 Contractor Deliverables:

1. DRAFT and FINAL applications for permits listed in Subtask 410
2. Corrections and/or responses to permitting agency comments, as required.

Subtask 430 – Permit Tracking

After permit applications are submitted, the permitting coordinator shall update the permit tracking matrix with the actual submittal date, and follow up with each permitting agency to check on permit status and the agencies' needs for additional information, if any. The permit team shall monitor any design refinements to alert the team of any potential design changes required or schedule impacts. The permit tracking matrix shall be updated monthly, or as requested by PWB. At each design milestone, the Permitting Technical Memorandum shall be updated and submitted to PWB, along with supporting information. All updates shall include a description of the status and cost estimate for each permit and an updated permitting schedule. Any new issues, delays or actions required/taken to meet the timeline for start of construction shall be highlighted in each update. Provide complete application and required documentation to be submitted with the permit applications(s) for any land use permits that shall be required for the project with the 60% Permitting/LUR Update. Provide all required Permit applications including any supporting documentation, plans specifications, calculations, etc. required for permits at the 90% permitting/LER Update. Provide all required Permit applications and approved permits to date including any supporting documentation, plans, specifications, calculations, etc. required for the permits. Provide all required Building Permit applications, Land Use decisions, 1200-C applications, including any supporting documentation, plans, specifications, calculations, etc. required for the permits at the Final Design Milestone.

The permitting coordinator shall maintain a permit notebook that contains submitted permit applications, all correspondence with each permitting agency, and other relevant information. The permit notebook shall be a working document, and shall be finalized once all permits have been executed.

Should the land use decision be appealed, Contractor shall work with PWB and City Attorney's office to coordinate the applicant's response at the City Council appeal hearing and mitigation, if necessary.

Subtask 430 Contractor Expectations:

1. Meetings with regulatory agency staff shall be held, as necessary.
2. The permitting coordinator shall participate in bi-weekly meetings with PWB project manager and stakeholders on permits and land use application
3. All permitting deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

Subtask 430 Contractor Deliverables:

1. 60% Permitting/LUR Update
2. 90% Permitting/LUR Update
3. 95% Permitting/LUR Update
4. Final Permitting Memo
5. Final Permit Notebook

Subtask 440 – Public Outreach

The Contractor team shall assist in public education and involvement activities in the Design Project Management Plan and provide the following support services for PWB's Public Outreach Plan, as required by PWB, including:

- A. **Community Pre-assessment.** Contractor to complete a Community pre-assessment, including:
 - Compiling and maintaining a stakeholder/property owner/agencies/businesses/interested parties mailing and contact list
 - Completing selected stakeholder interviews
 - Producing a public issues/stakeholder background summary and ongoing concerns/issues/interest log to share with project team
- B. **Information material.** Provide preparation and production of informational materials, as needed. These may include flyers, brochures, signs, posters, monthly newsletter, comment forms, maps, charts, drawings for design and construction (for public use). This also includes any updates to the project Facebook page or blog posts and community updates.
- C. **Media Inquiries.** Assist with / prepare media inquiries or press releases, as needed.
- D. **Fact Sheet Mailers.** Provide fact sheet mailer text, layout, printing and mailing services for public notifications.
- E. **Meeting Support.** Provide meeting planning and preparation, logistics, facilitation and documentation for public outreach meetings. Provide coordination and attendance at up to 20 community activities/meetings, including neighborhood and business association meetings, neighborhood fairs, farmers markets, etc. This task includes any related display and presentation materials, such as posters and PowerPoint presentations.

Subtask 440 Contractor Expectations:

1. Up to ten stakeholder interviews shall be conducted.
2. Up to 50 pages of informational materials shall be prepared
3. Up to 62 media inquiries or press releases shall be prepared (one per month during the first year, 2 per month during construction.)
4. Six public notification mailings of 700 pieces per mailing shall be provided

5. Participate in six public outreach meetings, each meeting shall be approximately 2-hours long.
6. Preparation support for 20 community activities/meetings shall be provided.
7. Permit subcontractor shall attend monthly public outreach meetings, shall attend 5 public outreach preparation meetings, and work with Public Outreach subcontractor to respond to 10 public comments and requests for information.
8. All Public Outreach deliverables shall include 1 original plus one electronic version (PDF). Copies of the original shall be done by others.

Subtask 440 Contractor Deliverables:

1. DRAFT Community Pre-Assessment
2. FINAL Community Pre-Assessment
3. Public outreach materials as described above.

VI. TASK 500: ENGINEERING SERVICES DURING CONSTRUCTION

The Contractor shall provide assistance during construction by designating one Engineer and support staff that is committed to the project. Additional staff shall provide technical support, as required. Specific construction-phase activities are described below.

Subtask 510 – Submittal and RFI Review

- A. Submittal/Shop Drawing Reviews.** Receive and log all shop drawings, material samples, and other submittals transmitted to Contractor from the PWB. Review these submittals for conformance to the intent of the Contract Documents. Compile written comments and return shop drawings to the PWB upon completion of the review process. Maintain a shop drawing submittal file/tracking system. Evaluate substitution(s) and 'or equal(s)' proposed by the Contractor during construction and provide recommendations to the PWB for final approval.
- B. Address Request for Clarification / Request for Information (RFC's/RFI's).** Provide requested clarification and interpretation of the contract plans and specifications. Receive, log and provide written response to all formal Requests for Clarification (RFC's) and Requests for Information (RFI's) received from the Contractor via the PWB.
- C. Issue Design Change Notifications.** Provide design change notification, as required, to accommodate Engineer and/or PWB changes in the field.
- D. Address Potential Change Orders.** Provide requested review and input to the PWB regarding change order proposals. If requested, prepare Requests for Proposals for work considered beyond the GMP.

Subtask 510 Contractor Expectations:

1. Written responses to shop drawings and submittals shall be returned within 7 days of receipt by the Engineer.
2. Written responses to requests for information shall be returned within 7 days of receipt by the Engineer.

NOTE: PWB shall perform the majority of construction engineering, contract administration and payment.

Subtask 510 Contractor Deliverables:

1. Submittal and Shop Drawing Reviews
2. RFI/RFC Responses.

Subtask 520 – Field Services and Meetings

- A. **Engineering Inspection.** The Contractor shall schedule and provide an experienced and qualified design engineer of record to periodically visit the construction site to assess the progress and quality of the assigned aspects of the work. Based on information and observation obtained during such visits, the Contractor shall determine if the work is proceeding in accordance with the contract documents. Written reports shall be provided to the PWB, noting observations and recommendations based on the site visits.
- B. **Meetings and Site Visits.** Appropriate staff shall attend meetings, including the pre-construction conference, weekly construction progress meetings, and other meetings, as requested.
- C. **Subcontractor Selection Support.** Assist the CM/GC and the PWB during selection of subcontractors.
- D. **Startup and Testing Assistance.** Assist PWB engineering and operations staff with the review of startup plans and observation of startup and testing activities.
- E. **Prepare Punch List.** Perform an initial and final review and inspection of the construction work and prepare an initial and final list of items to be corrected (i.e. "Punch List").
- F. **Claims and Change Order Assistance.** As requested, Contractor shall provide timely assistance in the evaluation and preparation of any RFPs directed to the CM/GC for work outside of the GMP and/or responses to construction claims.
- G. **Review Contractor provided O&M Manual.** Review Contractor-provided Operations and Maintenance (O&M) Manuals and provide written review comments to PWB. DRAFT O&M manuals shall be reviewed in terms of their compliance with Contractor/Manufacturer requirements as described in the technical specifications and shall include schematics, maintenance schedules, trouble-shooting data and overhaul procedures for any equipment installed.
- H. **Provide Overall Reservoir O&M Manual.** Contractor shall prepare Final compiled O&M manual for operations and maintenance of the reservoir, including a complete operating manual with schematics in a format previously agreed upon between the Contractor and the PWB. Manual shall include reservoir maintenance procedures, maintenance frequency, and equipment maintenance including, but not limited to: hoses, drains, and screens. Final compiled O&M Manual shall incorporate PWB comments and CM/GC O & M submittals, including all warranties.

Subtask 520 Contractor Expectations:

- 1. The project engineer shall attend every other weekly construction meeting. The project manager shall attend one construction meeting per month.
- 2. All field service deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).
- 3. Subcontractor selection support shall consist of six 2-hour meetings.
- 4. Engineers of record shall make the following site visits during construction for the purposes of special inspection and/or coordination of submittal review with contractor to expedite review process:
 - Civil – 12 site visits
 - Architectural – 3 site visits
 - Landscape Architect – 3 site visits
 - Structural – 16 site visits
 - Mechanical – 3 site visits
 - Electrical – 3 site visits
 - I&C – 3 site visits
 - Security – 3 site visits

Subtask 520 Contractor Deliverables:

1. Special Inspection Reports
2. Draft and Final O&M Manual
3. Punch List Items and Completion Reports

Subtask 530 – Record Drawings

A. Prepare As-Built Drawings. Based on data furnished by the Construction Contractor, Contractor shall prepare as-built drawings in MicroStation conforming to PWB standards. Drawings shall be provided on Mylar and electronically on CD-ROM or DVD. When possible, as-built conditions shall be incorporated into the Contract Documents on a 'real-time' basis to minimize risk of miscommunication during construction. The Contractor shall maintain an FTP site that shall contain a log of the most recent documents (including revision type and date), as well as a .PDF copy of the most recent Contract Documents.

Subtask 530 Contractor Expectations:

1. Final Record Drawings shall include 1 original and 12 copies (1/2 sized plan sets), one full size set of plans, plus one compiled electronic version (PDF), as well as one electronic copy (DGN) with all reference files for all record drawings.

Subtask 530 Contractor Deliverables:

1. As-Built Drawings and Specifications

TASK 600: PROJECT MANAGEMENT

Project Management includes all work associated with organization, control, monitoring, scheduling, invoice preparation, and all other activities inherent with the Contractor's management of in-house work and the sub-Contractors' work. Project Management services for this project shall be divided into three distinct phases: Phase 1 – Initial Project Setup, Phase 2 – Design and Permitting (Task 100 through 400), and Phase 3 – Services During Construction (Task 500). Project Management tasks associated with each of these phases are further described below:

Subtask 610: Initial Project Setup

Set up the initial job numbers, files, subcontractor agreements, and internal systems necessary to control the activities of all in-house and subcontractor work for the project. This includes developing the work breakdown structure, internal budgets, schedules, personnel assignments, subcontractor agreements, and monitoring systems. It also includes preparation of a Project Execution Plan, Project Health and Safety Plan and Quality Management Plan.

A. Develop Project Baseline. Develop a baseline schedule and budget for the Contractor team activities. The baseline schedule shall include a breakdown of activities, sequencing and constraints on those activities, major milestones, deliverable dates, and the project critical path. The baseline budget shall include estimated costs for activities based on anticipated resources required for each activity.

B. Health and Safety Plan. Prepare a Project Health and Safety Plan to identify and address potential hazards during the Preliminary Engineering, Design and Permitting, and Services during Construction Phases of the Project.

C. Integrate Quality Management Plan. Integrate the Quality Management Plan prepared under Subtask 260 with the Project Execution Plan (PXP) and other project management activities, including the Construction Quality Management Plan.

D. Risk Management Plan. Conduct a risk brainstorming session with key PWB and Contractor staff. Prepare qualitative analysis of risks and opportunities and identify significant risks. Produce a risk

register for significant risks. Identify risk management strategies for risks included on the risk register. Establish a formal process for tracking and managing changes that impact critical business functions such as cost, schedule, risk and scope changes.

E. Change Management Plan. Prepare a change management plan that identifies procedures for recommending changes to the scope, schedule, or budget of the project. Identify who has authority to approve changes of various types.

F. Project Execution Plan. Prepare a PXP that integrates the work described above into a document that shall serve as a resource for the project team and a guide for execution of the project. The PXP shall include the deliverables, as summarized below.

Subtask 610 Contractor Expectations:

1. Project Management shall be based on the MWH Project Management Practices and MWH's Design Framework.
2. All Project Management deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

Subtask 610 Contractor Deliverables:

1. Project Execution Plan (PXP), including:
 - Project Baseline
 - Project Design Management Plan
 - Project Health and Safety Plan
 - Organizational Chart
 - Risk Management Plan
 - Risk and Conflict Management
 - Change Management Plan
 - Quality Management Plan
 - Construction Quality Management Plan

Subtask 620: Project Management during Design and Permitting (Tasks 100 – 400)

A. Project Management/Project Controls. Review and monitor project schedule and budget on a weekly basis, including management of in-house and subcontractor activities. Allocate resources and make adjustments, as necessary, to meet project objectives. Prepare project schedule updates monthly, as necessary, to reflect the progress of the work and changes to the schedule. Manage risk, quality, and change according to the plans developed in Subtask 610: Initial Project Setup. Update PXP at major milestones or as appropriate. Develop protocols to identify crucial design and performance criteria and establish a project baseline from which all proposed changes shall be compared. In addition, Contractor to coordinate with a project oversight committee made up of PWB staff that shall review and approve all changes from the project baseline established in the Preliminary Design Report.

B. Status Reports/Invoices. Prepare monthly progress reports for submittal with monthly invoices. Progress reports shall include the following:

- Work accomplished by task
- Schedule conformance
- Fee budget conformance
- Key decisions made and/or needed
- Problems encountered / proposed plan for resolution
- Scope of work revisions

C. Meetings. Conduct regular project status meetings with the City as further described below:

- *Weekly Progress Meetings.* Conduct weekly progress meetings with PWB staff until a lesser frequency is acceptable as determined by PWB. Prepare an agenda for all meetings and document all meetings with written meeting minutes providing a brief

summary of issues discussed and decisions made.

- *Additional Meetings.* Contractor Project Manager and Design Manager shall be available to attend up to 20 additional meetings. These meetings may be spread throughout Task 100 - 400, as needed.
- *Maintain Work Task Tracking Document.* Prepare and update weekly a work task tracking document. This document shall list specific detailed activities in progress, capture questions and issues that need follow-up work, track information requests, etc, along with "who" is responsible for next steps.

D. QA/QC Monitoring and Project Reviews. The QA/QC manager shall monitor the QA/QC activities and shall notify the team of any detected noncompliance with the QMP. Contractor shall also conduct quarterly project reviews (3) with a MWH Senior Project Manager during the Design and Permitting to assess overall project status and identify any QA/QC issues.

Subtask 620 Contractor Expectations:

1. Project management activities for Subtask 620 (Tasks 100 – 400) work shall extend over a period of 12 months.
2. The weekly meetings with PWB staff typically be held at PWB's office or Contractor's office, but may require site/area tours with key PWB staff. When possible, weekly meeting shall be held at Contractor's office, where video conferencing shall be employed. It is expected that meetings shall proceed on a weekly basis until the 90% submittal, at which point meetings shall change to an average of once every two weeks. A total of 32 meetings are expected with an average duration of 4 hours. The Contractor Project Engineer shall attend every meeting. The Contractor Project Manager and Project Engineer shall attend every weekly meeting; an average of one other technical staff shall attend one weekly meeting per month (NOTE: Cost associated with this technical support is captured in Task 100-200 activities). The Principal in Charge shall attend one meeting per month, for a total of 12 meetings. Subcontractor staff attendance at the weekly meetings shall be limited to the budget available, and only for times when critical work activities are occurring.
3. Weekly design meetings shall be coordinated with permit and land use application progress meetings.
4. Non-task specific "Additional Meetings" are assumed to have an average duration of 4 hours, and shall be attended by both the Project Manager and Project Engineer.
5. All Project Management deliverables shall include 1 original and 25 copies, plus one electronic version (PDF).

Subtask 620 Contractor Deliverables:

1. Master Project Schedule and Cash Flow Projections and updates
2. Monthly Status Reports & Invoices
3. Weekly Progress Meeting Minutes

Subtask 630: Project Management for Services during Construction (Task 500)

A. Project Management. Provide project management during the Construction phase for all in-house work including: maintaining files, monitoring budgets, schedule, personnel assignments, preparation of brief monthly status reports and processing of invoices.

B. Status Reports/Invoices. Prepare monthly progress reports for submittal with monthly invoices. Progress reports shall include the following:

- Work accomplished by task
- Schedule conformance
- Fee budget conformance
- Key decisions made and/or needed
- Problems encountered / proposed plan for resolution
- Scope of work revisions

- Subcontractor Payment and Utilization Report

C. Attend Progress Meetings/Site Visits. Attend, as requested, regularly scheduled weekly job meetings with Contractor and/or specifically requested site visits to review the progress of the work and help to identify and address field issues as they occur. Provide a written report outlining observations of the work in progress.

D. QA/QC Monitoring and Project Reviews. The QA/QC manager shall monitor the QA/QC activities and shall notify the team of any detected noncompliance with the Quality Management Plan (QMP). The Contractor shall also conduct quarterly project reviews (3) with an MWH Senior Project Manager during the Design and Permitting to assess overall project status and identify any QA/QC issues.

Subtask 630 Contractor Expectations:

1. Project management activities for Subtask 630 (Task 500) work shall extend over a period of 24 months.
2. The weekly meetings with PWB and Contractor staff shall be held at the project construction site offices. It is expected that MWH attendance at these meetings shall average once every two weeks. A total of total of 48 meetings are expected with an average duration of 4 hours. Regular attendance shall include the Contractor Project Manager or the Contractor Project Engineer. Subcontractor staff attendance at the weekly meetings shall be limited to times when critical work activities are occurring.

NOTE: General construction management and construction contract administration shall be performed by the PWB.

Subtask 630 Contractor Deliverables:

1. Monthly Status Reports & Invoices (2 copies of status reports and one invoice)
2. Construction Quality Management Plan (included in PXP, as part of Task 610 Deliverables)

Subtask 640: Project Management for Post-Construction Services

A. Project Management and Controls. Project management activities after construction shall be similar to those described in Tasks 620 and 630, but reduced to a level appropriate to the reduced level of activity required after completion of construction.

B. Project Closeout. This subtask involves the orderly closure of project work and administrative activities. The following actions shall be performed as part of this subtask:

- *Scope Verification.* Contractor shall review the scope of work with PWB to verify that all work has been completed in accordance with the contract.
- *Document Lessons Learned.* A half-day meeting shall be held with key Contractor, client, and stakeholder staff to identify actions to be repeated or avoided on future projects. Results of this meeting shall be recorded and distributed to participants.
- *Archive Documents.* Project documents shall be collected from the Contractor team and archived according to the MWH records retention policy and project-specific requirements.

VII. TASK 700: PROJECT MITIGATION

Additional mitigation to be authorized in writing by the PWB in order to respond to outside permitting agency requirements, other design and construction services change requirements, potentially including:

- Geotechnical
- Survey of non-PWB property or PWB property not adjacent/contiguous with Reservoir site
- Design mitigations

- Permitting/Land Use
- Site Security
- Additional Special Inspections
- In addition to the tasks listed under this contract there may be miscellaneous tasks associated with the work under this contract that have not been specifically identified. The Contractor and PWB Project Manager shall coordinate those tasks and shall agree in writing to the deliverables and completion requirements.

CONTRACTOR PERSONNEL

The Contractor shall assign the following personnel to do the work in the capacities designated:

NAME	ROLE ON PROJECT
Wade Hathhorn	Principal in charge
Harry Dunham	Project Manager
Jude Grounds	Project Engineer

SUBCONTRACTORS

The Contractor shall assign the following subcontractors to perform work in the capacities designated:

NAME	ROLE ON PROJECT
Ace Consultants	Civil/Pipeline Technical Support, Surveying, CAD/Design Support
Cascade Design Professionals	Stormwater/Site Access Support, Structural Project Support
Heritage Research Associates	Cultural Resource Services
HK Electrical Engineers, LLC	Electrical Engineering / Security
JLA Public Involvement	Public Outreach and Communication
Nevue Ngan Associates	Landscape Architecture
V & A Engineering	Corrosion and Seismic Evaluation
Winterbrook Planning	Permitting Planning Lead

The City shall enforce all diversity in workforce and Minority, Women and Emerging Small Business (M/W/ESB) subcontracting commitments submitted by the Contractor in its Proposal. For contracts valued \$100,000 or more, the Contractor shall submit a Monthly Subcontractor Payment and Utilization Report (MUR), made part of this contract by reference, reporting ALL subcontractors employed in the performance of this agreement. An electronic copy of the MUR may be obtained at: <http://www.portlandonline.com/shared/cfm/image.cfm?id=119851>.

COMPENSATION

Contractor shall be paid the not to exceed amount of **\$3,300,000**. The Contractor shall be paid based on its hourly rates, costs incurred in paying its subcontractors, if any, plus any authorized expenses, as set forth in more detail below. The "not to exceed amount" is the maximum amount of compensation due the Contractor for all the work required by the contract. Errors in estimating the number of hours necessary to perform the work is the sole responsibility of the Contractor.

PAYMENT TERMS: Net 30 Days

Hourly Rates

The Contractor shall be reimbursed in accordance with the rates listed on the attached Exhibit A, Summary of Project Fee.

Subcontractor Costs

Compensation for subcontractors shall be limited to the same restrictions imposed on the Contractor. The maximum markup on subcontractor services shall not exceed 5%.

Adjustment of Labor Rates

Each year the contract is in force, hourly rates may be adjusted annually to an amount not to exceed the average inflation rate for the Portland Metropolitan Area as determined from the US Department of Labor statistics and certified by the City of Portland Auditor. Other than the impact of inflation as described above, compensation rates may not be increased. Increases to labor rates shall not increase the not-to-exceed amount of \$3,300,000.

Progress Payments

On or before the 15th of each month, the Contractor shall submit to the Water Bureau's Accounts Payable an invoice for work performed by the Contractor during the preceding month. The invoice shall contain the City's Contract Number and set out all items for payment including, but not limited to: the name of the individual, labor category, direct labor rate, hours worked during the period, tasks performed, and the percentage of work successfully completed for each task. The Contractor shall also attach photocopies of claimed reimbursable expenses. The City's Project Manager shall stamp and approve all subconsultant invoices and note on the subconsultant invoice what they are approving as "billable" under the contract. The billing from the prime should clearly roll up labor and reimbursable costs for the prime and subconsultants – matching the subconsultant invoices. Prior to initial billing, the Contractor shall develop a billing format for approval by the City. Invoices shall either be e-mailed to: wb.accountspayablesection@ci.portland.or.us (this is the preferred method)

or sent to:

City of Portland Water Bureau
Attn: Portland Water Bureau Accounts Payable
1120 SW 5th Avenue, Room 609
Portland, OR 97204

The City shall pay all amounts to which no dispute exists within 30 days of receipt of the invoice. Payment of any bill, however, does not preclude the City from later determining that an error in payment was made and from withholding the disputed sum from the next progress payment until the dispute is resolved.

The Contractor shall make full payment to its subcontractors within 10 business days following receipt of any payment made by the Bureau to Contractor.

INDEPENDENT CONTRACTOR CERTIFICATION STATEMENT

SECTION A

CONTRACTOR CERTIFICATION I, undersigned, am authorized to act on behalf of entity designated below, hereby certify that entity has current Workers' Compensation Insurance.

Contractor Signature

Date

2. MAR. 200

Entity

MWH Americas, Inc.

If entity does not have Workers' Compensation Insurance, City Project Manager and Contractor complete the remainder of this form.

SECTION B

ORS 670.600 Independent contractor standards. As used in various provisions of ORS Chapters 316, 656, 657, and 701, an individual or business entity that performs labor or services for remuneration shall be considered to perform the labor or services as an "independent contractor" if the standards of this section are met. The contracted work meets the following standards:

1. The individual or business entity providing the labor or services is free from direction and control over the means and manner of providing the labor or services, subject only to the right of the person for whom the labor or services are provided to specify the desired results;
2. The individual or business entity providing labor or services is responsible for obtaining all assumed business registrations or professional occupation licenses required by state law or local government ordinances for the individual or business entity to conduct the business;
3. The individual or business entity providing labor or services furnishes the tools or equipment necessary for performance of the contracted labor or services;
4. The individual or business entity providing labor or services has the authority to hire and fire employees to perform the labor or services;
5. Payment for the labor or services is made upon completion of the performance of specific portions of the project or is made on the basis of an annual or periodic retainer.

City Project Manager Signature

Date

SECTION C

Independent contractor certifies he/she meets the following standards:

1. The individual or business entity providing labor or services is registered under ORS Chapter 701, if the individual or business entity provides labor or services for which such registration is required;
2. Federal and state income tax returns in the name of the business or a business Schedule C or form Schedule F as part of the personal income tax return were filed for the previous year if the individual or business entity performed labor or services as an independent contractor in the previous year; and
3. The individual or business entity represents to the public that the labor or services are to be provided by an independently established business. Except when an individual or business entity files a Schedule F as part of the personal income tax returns and the individual or business entity performs farm labor or services that are reportable on Schedule C, an individual or business entity is considered to be engaged in an independently established business when four or more of the following circumstances exist. Contractor check four or more of the following:

- _____ A. The labor or services are primarily carried out at a location that is separate from the residence of an individual who performs the labor or services, or are primarily carried out in a specific portion of the residence, which portion is set aside as the location of the business;
- _____ B. Commercial advertising or business cards as is customary in operating similar businesses are purchased for the business, or the individual or business entity has a trade association membership;
- _____ C. Telephone listing and service are used for the business that is separate from the personal residence listing and service used by an individual who performs the labor or services;
- _____ D. Labor or services are performed only pursuant to written contracts;
- _____ E. Labor or services are performed for two or more different persons within a period of one year; or
- _____ F. The individual or business entity assumes financial responsibility for defective workmanship or for service not provided as evidenced by the ownership of performance bonds, warranties, errors and omission insurance or liability insurance relating to the labor or services to be provided.

Contractor Signature

Date

CONTRACTOR SIGNATURE:

This contract may be signed in two (2) or more counterparts, each of which shall be deemed an original, and which, when taken together, shall constitute one and the same Agreement.

The parties agree the City and Contractor may conduct this transaction, including any contract amendments, by electronic means, including the use of electronic signatures.

I, the undersigned, agree to perform work outlined in this contract in accordance to the STANDARD CONTRACT PROVISIONS, the terms and conditions, made part of this contract by reference, and the STATEMENT OF THE WORK made part of this contract by reference; hereby certify under penalty of perjury that I/my business am not/is not in violation of any Oregon tax laws; hereby certify that my business is certified as an Equal Employment Opportunity Affirmative Action Employer and is in compliance with the Equal Benefits Program as prescribed by Chapter 3.100 of Code of the City of Portland; and hereby certify I am an independent contractor as defined in ORS 670.600.

MWH Americas, Inc.

BY: 


Date: 2. MAZ. 2010

Name: MIKE WATSON

Title: VICE PRESIDENT

Contract No. 30001127Contract Title: Kelly Butte Reservoir

CITY OF PORTLAND SIGNATURES:

By: 
Bureau DirectorDate: 03.05.2010By: _____
Purchasing Agent

Date: _____

By: _____
Elected Official

Date: _____

Approved:

By: _____
Office of City Auditor

Date: _____

Approved as to Form:

APPROVED AS TO FORM

By: 
Office of City Attorney
CITY ATTORNEYDate: 3/4/10

SUMMARY OF PROJECT FEE

Exhibit A, pg. 1

TASK	Individual/Classification Project Rate (2.64 Multiplier)	MWH Key Staff ²								Supv.	Senior	Prof.	Sr.	Assoc.	Total Hours	Labor	Other	Project	Total	Total	Task Fee	
		PIC	PM	PE/DM	Struct QC	Civil QC	Civil Lead	Struct Lead	Gen QC	Engr.	Engr.	Engr.	Designer	Designer		Admin	Cost	Direct Cost	Expenses ³	MWH ⁵		Subconsultants
		\$250	\$186	\$147	\$219	\$170	\$144	\$217	\$209	\$151	\$124	\$104	\$110	\$82	\$69							
Task 100 – Preliminary Engineering																						
Task 110 – Project Planning		8	30	100	0	0	40	0	0	0	0	80	0	0	0	258	\$36,399	\$3,391	\$1,200	\$37,599	\$5,000	\$42,599
A. Permitting Approach			4	20								10				34	\$4,727					
B. Construction Approach			6	20			10					10				46	\$6,542					
C. Design and Construction Cost Control Plan			6	24			10					20				60	\$8,173					
D. Conduct Project Approach Workshop		4	8	16			10					20				58	\$8,371					
E. Project Approach TM		4	6	20			10					20				60	\$8,586					
Task 120 – Design Criteria		4	24	50	0	0	24	24	0	32	40	0	0	60	0	258	\$36,206	\$3,402	\$1,300	\$37,506	\$2,000	\$39,506
A. Review BODR			6	8			4	4		4	8			8		42	\$5,990					
B. Initial Site Reconnaissance			4	8			4	4		4	4			8		36	\$5,123					
C. Develop Comprehensive List of Design Criteria			2	10			4	4		8	8		12			48	\$6,472					
D. Conduct Criteria Workshop		4	8	8			8	8		8	8		8			60	\$9,412					
E. Prepare Design Criteria TM			4	16			4	4		8	12		24			72	\$9,209					
Task 130 –Reservoir Configuration and Appurtenance/Facility Evaluat		10	50	70	12	24	24	24	20	16	188	240	0	60		738	\$97,294	\$10,009	\$4,100	\$101,394	\$26,000	\$127,394
A. Conceptual Reservoir Configuration TM			4	8		2	2	12	2		16			12		58	\$8,537					
B. Site Access and Roadways TM		2	4	8		2	4		2		16			12		50	\$6,722					
C. Inlet/Outlet Configuration TM		2	4	6		2	6	2	2	16	100	240		6		386	\$44,491					
D. Drainage and Overflow Configuration TM		2	6	8		2	4	2	2		8			6		40	\$6,046					
E. Operational Considerations			4	6		2		2	2		2					18	\$3,067					
F. Electrical and I&C Considerations TM			2	2	8	1			1					4		18	\$3,127					
G. Reservoir Startup Considerations TM			4	4		2		2	2							14	\$2,526					
H. Corrosion Analysis and Coatings System Development TM			2	2		1	2		1							8	\$1,334					
I. Develop/Confirm Evaluation Criteria		2	2	4		1					8					17	\$2,619					
J. Final Site Utilization Development/Evaluation TM		2	6	10		4	4	4	4		16			8		58	\$8,685					
K. Temporary and Permanent Erosion Control Strategy TM			4	4		1	2		1		8		4			24	\$3,319					
L. Landscape TM			2	2		1					4		2			11	\$1,496					
M. Surface Restoration Approach TM			2	2		1			1		4		2			12	\$1,705					
N. Site Security TM			2	2	4	1					2		2			13	\$2,125					
O. Preliminary Construction Cost Estimate TM			2	2		1					4		2			11	\$1,496					
Task 140 – Geotechnical Support		0	8	20	0	0	0	0	0	100	240	200	0	160	0	728	\$83,228	\$10,676	\$19,530	\$102,758	\$0	\$102,758
A. Background Review			2	4						16	24	20		16		82	\$9,746					
B. Site Characterization				4						24	32	24		16		100	\$11,987					
C. Meetings			2	4						8	24	16		8		62	\$7,462					
D. Geotechnical Evaluation and Design			4	8						52	160	140		120		484	\$54,032					
Task 150 – Basemaps and Surveying			4	16	0	0	0	0	0	0	0	0	24	40		84	\$9,026	\$1,216	\$10,750	\$19,776	\$46,000	\$65,776
A. Review Preliminary Base Mapping			2	8									8	16		34	\$3,744					
B. Establish Horizontal and Vertical Control													2	2		4	\$384					
C. Finalize Base Maps			2	8								14	22			46	\$4,898					
Task 160 – Preliminary Design Report		4	12	16	0	4	2	4	2	4	2	2	0	8	4	64	\$9,836	\$775	\$1,550	\$11,386	\$0	\$11,386
A. Prepare Preliminary Design report		4	12	16		4	2	4	2	4	2	2		8	4	64	\$9,836					
TASK 100 SUBTOTAL		26	128	272	12	28	90	52	22	152	470	522	24	328	4	2,130	\$271,989	\$29,469	\$38,430	\$310,419	\$79,000	\$389,419
TASK 200 - DESIGN																						
Task 210 – 30% Design		6	60	60			60	24	16	140	200	100		420	60	1,146	\$133,704	\$17,614	\$5,600	\$139,304	\$56,000	\$195,304
Task 220 – 60% Design		6	86	91			72	43		196	240			480	62	1,276	\$153,661	\$19,485	\$9,650	\$163,311	\$79,000	
Task 230 – 90% Design		2	106	76			92	33		196	300			410	52	1,267	\$155,861	\$19,217	\$10,400	\$166,261	\$99,520	
Task 240 – 95% Design		1	40	16			24	18		60	80			120	16	375	\$47,353	\$5,581	\$6,400	\$53,753	\$24,470	
Task 250 – Conformed (100%) Set		1	16	16			16	12		40	40			80	16	237	\$29,166	\$3,538	\$4,400	\$33,566	\$7,850	
Task 260 – QA/QC			60	16	60	80		12	40							268	\$51,259	\$2,546	\$6,000	\$57,259	\$4,200	
Task 270 – Cost Estimating		6	12	24			20			24	32			40	2	160	\$21,158	\$1,520	\$1,900	\$23,058	\$3,000	
TASK 200 SUBTOTAL		22	380	299	60	80	284	142	56	656	892	100	0	1,550	208	4,729	\$592,161	\$69,501	\$44,350	\$636,511	\$274,040	\$910,551
TASK 300 - CM/GC Procurement																						
Task 310 – CM/GC Selection & Support		4	40	120								80			40	284	\$37,175	\$3,743	\$800	\$37,975	\$0	\$37,975
Task 320 – Contract Packages		2	24	180	24	24	16	16				120		280	40	726	\$84,866	\$9,926	\$1,700	\$86,566	\$0	
Task 330 – Partnering		8	32	64			16	16				40				176	\$27,320	\$2,215	\$10,050	\$37,370	\$0	
TASK 300 SUBTOTAL		14	96	364	24	24	32	32	0	0	0	240	0	280	80	1,186	\$149,361	\$15,884	\$12,550	\$161,911	\$0	\$161,911

SUMMARY OF PROJECT FEE

Exhibit A, pg. 2

TASK	Individual/Classification	MWH Key Staff ²								Supv.	Senior	Prof.	Sr.	Assoc.	Admin	Total Hours	Labor Cost	Other Direct Cost	Project Expenses ³	Total MWH ⁵	Total	Task Fee					
		PIC	PM	PE/DM	Struct QC	Civil QC	Civil Lead	Struct Lead	Gen QC	Engr.	Engr.	Engr.	Designer	Designer							Subconsultants						
Project Rate (2.64 Multiplier)		\$250	\$186	\$147	\$219	\$170	\$144	\$217	\$209	\$151	\$124	\$104	\$110	\$82	\$69												
TASK 400 - Permitting and Public Outreach																											
Task 410 – Preliminary Permitting		0	8	12	0	0	0	0	0	0	180	0	0	68		268	\$31,094	\$3,904	\$900	\$31,994	\$135,000	\$166,994					
A. Data Collection/Assesment				2							64			20		86	\$9,848	\$1,266	\$450	\$10,298							
B. Prelimnary Review of Alternatives				4	6						76			32		118	\$13,653	\$1,716	\$450	\$14,103							
C. Develop Permit Action Plan and Tracking Matrix				2	2						20			8		32	\$3,797	\$461	\$0	\$3,797							
D. Develop Mitigation Strategies				2	2						20			8		32	\$3,797	\$461	\$0	\$3,797							
Task 420 – Permitting During Design			8	12												20	\$3,254	\$190	\$2,050	\$5,304	\$94,500	\$99,804					
Task 430 – Construction Permitting			8	12												20	\$3,254	\$190	\$900	\$4,154	\$90,000	\$94,154					
Task 440 – Public Outreach			10	10												20	\$3,333	\$190	\$9,100	\$12,433	\$157,516	\$169,949					
TASK 400 SUBTOTAL		0	34	46	0	0	0	0	0	0	180	0	0	68	0	328	\$40,935	\$4,474	\$12,950	\$53,885	\$477,016	\$530,901					
TASK 500 - ESDC																											
Task 510 – Submittal / RFI Review		4	80	300						480	420		80	240	60	1,664	\$217,027	\$23,747	\$3,200	\$220,227	\$16,300	\$236,527					
A. Submittal/Shop Drawing Review																											
B. Address RFC's/RFI's																											
C. Address Potential Change Orders																											
Task 520 – Field Services & Meetings ³		0	126	252	0	0	144	208	0	28	216	0	0	0	24	998	\$158,986	\$12,072	\$8,800	\$167,786	\$17,200	\$184,986					
A. Engineering Inspection							128	192			96					416	\$72,001										
B. Meetings and Site Visits			96	192												288	\$46,097										
C. Start -up and Testing Assistance			8	24							24					56	\$7,982										
D. Prepare Punch List			8	16		16					16					56	\$8,127										
E. Claims and Change Order Assistance			8	8			16				24					56	\$9,104										
F. Review Cntractor Provided O&M Manual			4	8						24	48					84	\$11,475										
G. Provide Overall Reservoir O&M Manual			2	4						4	8			24	42	\$4,200											
Task 530 – Record Drawings		2	16	40						40	70		60	160	24	412	\$45,463	\$7,779	\$2,000	\$47,463	\$2,900	\$50,363					
TASK 500 SUBTOTAL		6	222	592	0	0	144	208	0	548	706	0	140	400	108	3,074	\$421,476	\$43,597	\$14,000	\$435,476	\$36,400	\$471,876					
TASK 600 - Project Management																											
Task 610 – Initial Project Setup		4	40	60											40	144	\$20,015	\$1,368	\$2,550	\$22,565	\$0	\$22,565					
Task 620 – Project Management for Design (includes meetings)		48	472	552											120	1,192	\$189,300	\$11,324	\$18,000	\$207,300	\$0	\$207,300					
Task 630 – Project Management for ESDC (incliudes meetings)		32	172	304											80	588	\$90,206	\$5,586	\$7,500	\$97,706	\$0	\$97,706					
TASK 600 SUBTOTAL		84	684	916	0	0	0	0	0	0	0	0	0	0	240	1,924	\$299,521	\$18,278	\$28,050	\$327,571	\$0	\$327,571					
TASK 700 - Project Mitigation																											
Task 710 – Project Mitigation																					212	\$24,051	\$2,014	\$79,600	\$103,651	\$45,000	\$148,651
TASK 700 SUBTOTAL																					212	\$24,051	\$2,014	\$79,600	\$103,651	\$45,000	\$148,651
TOTALS		152	1,544	2,489	96	132	550	434	78	1,356	2,248	862	164	2,626	640	13,583	\$1,799,493	\$183,218	\$229,930	\$2,029,423	\$911,456	\$2,940,879					

¹ Project total is based upon Scope of Work. Changes to the project from those stated in the Scope of Work may result in a change in total project cost.

² Rates are based upon assumed labor costs; actual rates may vary based on individuals identified.

³ Project Expenses Include, but are not limited to, travel, lodging and reproduction.

⁴ Reproduction fees assume \$1250 for Preliminary Design Report and \$2500 for each of the design submittals.

⁵ 'Total MWH' does not include Other Direct Costs; these costs are summarized in the overall Project Total

Gross Profit (MWH Labor)	\$130,330
Other Direct Charges (MWH Labor)	\$183,218
Subconsulting Mark-Up	\$45,573
PROJECT TOTAL ¹	\$3,300,000

ID	Task Name	Duration	Start	Finish	2010				2011				2012				2013				2014	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1	Task 000 – Notice to Proceed & Kick-off Meeting	0 days	Mon 4/5/10	Mon 4/5/10		4/5																
2	Task 100 – Preliminary Engineering	70 days	Mon 4/5/10	Fri 7/9/10																		
50	Task 200 – Design	200 days	Fri 6/18/10	Fri 3/25/11																		
90	Task 300 – CM/GC Procurement	144 days	Wed 4/7/10	Mon 10/25/10																		
115	Task 400 – Permitting & Public Outreach Support	311 days	Mon 4/5/10	Mon 6/13/11																		
148	Task 500 – Engineering Services During Construction	750 days	Mon 3/28/11	Fri 2/7/14																		
166	Task 600 – Project Management	1026 days	Mon 4/5/10	Mon 3/10/14																		

183618

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

8/31/2010

DATE (MM/DD/YYYY)

2/25/2010

PRODUCER Lockton Companies, LLC Denver
8110 E Union Avenue
Suite 700
Denver CO 80237
(303) 414-6000

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED MWH Americas, Inc.
1311890 (Formerly: Montgomery Watson Americas, Inc.)
370 Interlocken Blvd., Suite 300
Broomfield, CO 80021
POR-1 / AUG2014

INSURERS AFFORDING COVERAGE**NAIC #**

INSURER A: Traveler's Indemnity Company

INSURER B: Travelers Property Casualty Co of America

25674

INSURER C: St. Paul Fire & Marine Ins. Co.

INSURER D: LEXINGTON INSURANCE COMPANY

INSURER E:

COVERAGES MWHGL01 VX

THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER AND THE CERTIFICATE HOLDER.

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

INSR LTR	ADD'L LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	VTC2KCO5643B187IND09	8/31/2009	8/31/2010	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ Excluded PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	VTC2JCAP5643B083TIL09	8/31/2009	8/31/2010	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO	NOT APPLICABLE			AUTO ONLY - EA ACCIDENT \$ XXXXXXXX OTHER THAN EA ACC \$ XXXXXXXX AUTO ONLY: AGG \$ XXXXXXXX
C		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> UMBRELLA FORM RETENTION \$	QK0830061	8/31/2009	8/31/2010	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$ XXXXXXXX \$ XXXXXXXX \$ XXXXXXXX
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? NO If yes, describe under SPECIAL PROVISIONS below	VTC2JUB5026L18109 (AOS)	8/31/2009	8/31/2010	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER
B			VTRJUB5643B09509	8/31/2009	8/31/2010	E.L. EACH ACCIDENT \$ 1,000,000
B			(AZ,MA,OR,WI)			E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
						E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D		OTHER Professional Liability	015448968	10/1/2009	10/1/2010	\$5,000,000 each Claim \$5,000,000 aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

RE: LaboRFP No. WTR081 - Professional, Technical and Expert Services. The City of Portland, and its agents, officers and employees are included as Additional Insured as respects General Liability.

APPROVED AS TO FORM

CERTIFICATE HOLDER

10809260

City of Portland
Attn: Andrew Urdahl
1120 SW 5th Avenue
Portland, OR 97204

CITY ATTORNEY

CANCELLATION

[M455192]

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ~~SEND BY FAX~~ MAIL 60 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. ~~NO FURTHER ACTION SHALL BE REQUIRED OF THE CERTIFICATE HOLDER.~~
~~THESE POLICIES ARE NOT TO BE CANCELLED BY THE INSURER OR ITS AGENTS OR REPRESENTATIVES.~~

AUTHORIZED REPRESENTATIVE

Charles M. McDaniel

ACORD 25 (2001/08)

For questions regarding this certificate, contact the number listed in the 'Producer' section above and specify the client code 'MWHGL01'.

© ACORD CORPORATION 1988

Named Insured: MWH Americas, Inc., MWH Constructors, Inc., MWH Global, Inc., MWH Soft, Inc. et. al.

Carrier: TRAVELERS INDEMNITY COMPANY Policy Number: VTC2KCO5643B187IND09 Eff: 8/31/09-8/31/10

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**BLANKET ADDITIONAL INSURED
(CONTRACTORS)**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

1. WHO IS AN INSURED - (Section II) is amended to include any person or organization that you agree in a "written contract requiring insurance" to include as an additional insured on this Coverage Part, but:
 - a) Only with respect to liability for "bodily injury", "property damage" or "personal injury"; and
 - b) If, and only to the extent that, the injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the "written contract requiring insurance" applies. The person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.
2. The insurance provided to the additional insured by this endorsement is limited as follows:
 - a) In the event that the Limits of Insurance of this Coverage Part shown in the Declarations exceed the limits of liability required by the "written contract requiring insurance", the insurance provided to the additional insured shall be limited to the limits of liability required by that "written contract requiring insurance". This endorsement shall not increase the limits of insurance described in Section III - Limits Of Insurance.
 - b) The insurance provided to the additional insured does not apply to "bodily injury", "property damage" or "personal injury" arising out of the rendering of, or failure to render, any professional architectural, engineering or surveying services, including:
 - i. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and
 - ii. Supervisory, inspection, architectural or engineering activities.
 - c) The insurance provided to the additional insured does not apply to "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the "written contract requiring insurance" specifically requires you to provide such coverage for that additional insured, and then the insurance provided to the additional insured applies only to such "bodily injury" or "property damage" that occurs before the end of the period of time for which the "written contract requiring insurance" requires you to provide such coverage or the end of the policy period, whichever is earlier.
3. The insurance provided to the additional insured by this endorsement is excess over any valid and collectible "other insurance", whether primary, excess, contingent or on any other basis, that is available to the additional insured for a loss we cover under this endorsement. However, if the "written contract requiring insurance" specifically requires that this insurance apply on a primary basis or a primary and non-contributory basis, this insurance is primary to "other insurance" available to the additional insured which covers that person or organization as a named insured for such loss, and we will not share with that "other insurance". But the insurance provided to the

Named Insured: MWH Americas, Inc., MWH Constructors, Inc., MWH Global, Inc., MWH Soft, Inc. et. al.

Carrier: TRAVELERS INDEMNITY COMPANY Policy Number: VTC2KCO5643B187IND09 Eff: 8/31/09-8/31/10

additional insured by this endorsement still is excess over any valid and collectible "other insurance", whether primary, excess, contingent or on any other basis, that is available to the additional insured when that person or organization is an additional insured under such "other insurance".

4. As a condition of coverage provided to the additional insured by this endorsement:
- a) The additional insured must give us written notice as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, such notice should include:
 - i. How, when and where the "occurrence" or offense took place;
 - ii. The names and addresses of any injured persons and witnesses; and
 - iii. The nature and location of any injury or damage arising out of the "occurrence" or offense.
 - b) If a claim is made or "suit" is brought against the additional insured, the additional insured must:
 - i. Immediately record the specifics of the claim or "suit" and the date received; and
 - ii. Notify us as soon as practicable.

The additional insured must see to it that we receive written notice of the claim or "suit" as soon as practicable.

- c) The additional insured must immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.
 - d) The additional insured must tender the defense and indemnity of any claim or "suit" to any provider of "other insurance" which would cover the additional insured for a loss we cover under this endorsement. However, this condition does not affect whether the insurance provided to the additional insured by this endorsement is primary to "other insurance" available to the additional insured which covers that person or organization as a named insured as described in paragraph 3. above.
5. The following definition is added to SECTION V. - DEFINITIONS:
- "Written contract requiring insurance" means that part of any written contract or agreement under which you are required to include a person or organization as an additional insured on this Coverage Part, provided that the "bodily injury" and "property damage" occurs and the "personal injury" is caused by an offense committed:
- a. After the signing and execution of the contract or agreement by you;
 - b. While that part of the contract or agreement is in effect; and
 - c. Before the end of the policy period