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

CONTRACT NUMBER 30006282

TITLE OF WORK PROJECT
Lombard Pump Station Upgrade

This Contract is between the City of Portland ("City," or "Bureau") and Parametrix, Inc., hereafter called Consultant. The City's Project Manager for this Contract is Aaron Lawler.

Effective Date and Duration
This Contract shall become effective on February 1, 2018. This Contract shall expire, unless otherwise terminated or extended, on December 31, 2021.

Consideration
(a) City agrees to pay Consultant a sum not to exceed $959,746.00 for accomplishment of the work.
(b) Interim payments shall be made to Consultant according to the schedule identified in the STATEMENT OF THE WORK AND PAYMENT SCHEDULE.

CONSULTANT DATA AND CERTIFICATION

Name (print full legal name): Parametrix, Inc.

Address: 700 NE Multnomah, Suite 1000, Portland, OR, 97232

City of Portland Business Tax Registration Number: 380691

Citizenship: 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 will be reported to the IRS under the name and taxpayer I.D. number provided above. Information must be provided prior to Contract approval.

TERMS AND CONDITIONS

1. Standard of Care
Consultant shall perform all services under this Contract using that care, skill, and diligence that would ordinarily be used by similar professionals in this community in similar circumstances.

2. Effect of Expiration
Passage of the Contract expiration date 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 corrected.

3. Order of Precedence
This Contract consists of these Terms and Conditions, the Statement of Work and Payment Schedule, and any exhibits that are attached. Any apparent or alleged conflict between these items will be resolved by using the following order of precedence: a) these Terms and Conditions; b) Statement of Work and Payment Schedule; and c) any exhibits attached to the Contract.

4. Early Termination of Contract
(a) The City may terminate this Contract for convenience at any time for any reason deemed appropriate in its sole discretion. Termination is effective immediately upon notice of termination given by the City.
(b) Either party may terminate this Contract in the event of a material breach by the other party that is not cured. Before termination is permitted, the party seeking termination shall give the other party written notice of the breach, its intent to terminate, and fifteen (15) calendar days to cure the breach. If the breach is not cured within 15 calendar days, the party seeking termination may terminate immediately by giving written notice that the Contract is terminated.

5. Remedies and Payment on Early Termination

(a) If the City terminates pursuant to 4(a) above, the City shall pay the Consultant for work performed in accordance with the Contract prior to the termination date. No other costs or loss of anticipated profits shall be paid.

(b) If the City terminates pursuant to 4(b) above, the City is entitled all remedies available at law or equity. In addition, Consultant shall pay the City all damages, costs, and sums incurred by the City as a result of the breach.

(c) If the Consultant justifiably terminates the Contract pursuant to subsection 4(b), the Consultant's only remedy is payment for work prior to the termination. No other costs or loss of anticipated profits shall be paid.

(d) If the City's termination under Section 4(b) was wrongful, the termination shall be automatically converted to one for convenience and the Consultant shall be paid as if the Contract was terminated under Section 4(a).

(e) In the event of early termination the Consultant's work product before the date of termination becomes property of the City.

6. Assignment

Consultant 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 subconsultant, the Consultant shall remain obligated for full performance hereunder, and the City shall incur no obligation other than its obligations to the Consultant hereunder. The Consultant agrees that if subconsultants are employed in the performance of this Agreement, the Consultant and its subconsultants are subject to the requirements and sanctions of ORS Chapter 656, Workers' Compensation.

7. Compliance with Applicable Law

Consultant shall comply with all applicable federal, state, and local laws and regulations. Consultant agrees it currently is in compliance with all tax laws. Consultant shall comply with Title VI of the Civil Rights Act of 1964 and its corresponding regulations. In connection with its activities under this Contract, the Consultant shall comply with all applicable Grant Terms and conditions. This includes all terms and conditions contained in this Contract and, for a Contract involving a grant, the Grant Terms and Conditions.

8. Indemnification for Property Damage and Personal Injury

Consultant shall indemnify, defend, and hold harmless the City, its officers, agents, and employees, from all claims, losses, damages, and costs (including reasonable attorney fees) for personal injury and property damage arising out of the intentional or negligent acts or omissions of the Consultant, its Subconsultants, suppliers, employees or agents in the performance of its services. Nothing in this paragraph requires the Consultant or its insurer to indemnify the City for claims of personal injury or property damage caused by the negligence of the City. This duty shall survive the expiration or termination of this Contract.

9. Insurance

Consultant shall obtain and maintain in full force at Consultant expense, throughout the duration of the Contract and any warranty or extension periods, the required insurance identified below. The City reserves the right to require additional insurance coverage as required by statutory or legal changes to the maximum liability that may be imposed on Oregon cities during the term of the Contract.

(a) Workers' compensation insurance as required by ORS Chapter 656 and as it may be amended. Unless exempt under ORS Chapter 656, the Consultant and all subconsultants shall maintain coverage for all subject workers.

☒ Required and attached // ☐ Proof of exemption (i.e., completion of Workers' Compensation Insurance Statement)

(b) General commercial liability (CGL) insurance covering bodily injury, personal injury, property damage, including coverage for independent consultant's protection (required if any work will be subcontracted), premises/operations, Contractual liability, products and completed operations, in per occurrence limit of not less than $1,000,000, and aggregate limit of not less than $2,000,000.

☒ Required and attached // ☐ Waived by Bureau Director or designee // ☐ Reduce by Bureau Director or designee

(c) Automobile liability insurance with coverage of not less than $1,000,000 each accident, and an umbrella or excess liability coverage of $2,000,000. The insurance shall include coverage for any auto or all owned, scheduled, hired and non-owned auto. This coverage may be combined with the commercial general liability insurance policy.

☒ Required and attached // ☐ Waived by Bureau Director or designee // ☐ Reduce by Bureau Director or designee

(d) Professional Liability and/or Errors & Omissions insurance to cover damages caused by negligent acts, errors or omissions related to the professional services, and performance of duties and responsibilities of the Consultant under this Contract in an amount with a combined single limit of not less than $1,000,000 per occurrence and aggregate of $3,000,000 for all claims per occurrence. In lieu of an occurrence based policy, Consultant may have claims-made policy in an amount not less than $1,000,000 per claim and $3,000,000 annual aggregate, if the Consultant obtains an extended reporting period or tail coverage for not less than three (3) years following the termination or expiration of the Contract.

☒ Required and attached // ☐ Waived by Bureau Director or designee // ☐ Reduce by Bureau Director or designee

Continuous Coverage; Notice of Cancellation: The Consultant agrees to maintain continuous, uninterrupted coverage for the duration of the Contract. There shall be no termination, cancellation, material change, potential exhaustion of aggregate limits or

non-renewal of coverage without thirty (30) calendar days written notice from Consultant to the City. If the insurance is canceled or terminated prior to completion of the Contract, Consultant shall immediately notify the City and provide a new policy with the same terms. Any failure to comply with this clause shall constitute a material breach of Contract and shall be grounds for immediate termination of this Contract.

Additional Insured: The liability insurance coverages, except Professional Liability, Errors and Omissions, or Workers' Compensation, shall be without prejudice to coverage otherwise existing, and shall name the City of Portland and its bureaus/divisions, officers, agents and employees as Additional Insureds, with respect to the Consultant's activities to be performed, or products or services to be provided. Coverage shall be primary and non-contributory with any other insurance and self-insurance. Notwithstanding the naming of additional insureds, the insurance shall protect each additional insured in the same manner as though a separate policy had been issued to each, but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured.

Certificate(s) of Insurance: Consultant shall provide proof of insurance through acceptable certificate(s) of insurance, including additional insured endorsement form(s) and all other relevant endorsements, to the City prior to the award of the Contract if required by the procurement documents (e.g., request for proposal), or at execution of Contract and prior to any commencement of work or delivery of goods or services under the Contract. The Certificate(s) will specify all of the parties who are endorsed on the policy as Additional Insureds (or Loss Payees). Insurance coverages required under this Contract shall be obtained from insurance companies acceptable to the City of Portland. The Consultant shall pay for all deductibles and premium. The City reserves the right to require, at any time, complete, certified copies of required insurance policies, including endorsements evidencing the coverage the required.

Subconsultant(s): Upon request, Consultant shall provide evidence that any subconsultant, if any, performing work or providing goods or service under the Contract has the same types and amounts of coverages as required herein or that the subconsultant is included under Consultant's policy.

10. Ownership of Work Product
All work product produced by the Consultant under this Contract is the exclusive property of the City. "Work Product" includes, but is not limited to: research, reports, computer programs, manuals, drawings, recordings, photographs, artwork and any data or information in any form. The Consultant 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 Consultant 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. Consultant shall obtain such interests and execute all documents necessary to fully vest such rights in the City. Consultant 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 Consultant is an architect, the Work Product is the property of the Consultant-Architect, and by execution of this Contract, the Consultant-Architect grants the City an exclusive and irrevocable license to use that Work Product.

Notwithstanding the above, all pre-existing trademarks, services marks, patents, copyrights, trade secrets, and other proprietary rights of Consultant are and will remain the exclusive property of Consultant.

11. EEO Certification
The Consultant must be certified prior to Contract execution, as Equal Employment Opportunity Affirmative Action Employers as prescribed by Chapter 5.33.076 of the Code of the City of Portland.

12. Equal Benefits
Consultant must certify prior to Contract execution, that they do not discriminate by policy or practice in the provision of employee benefits between employees with domestic partners and employees with spouses as prescribed by Chapter 5.33.077 of the Code of the City of Portland.

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 Consultant shall promptly perform such additional services as may be necessary to correct errors in the services required by this Contract without undue delays and without additional cost.

17. Governing Law/Venue
The provisions of this Contract shall be interpreted, construed and enforced in accordance with, and governed by, the laws of the State of Oregon without reference to its conflict of laws provisions that might otherwise require the application of the law of any other jurisdiction. 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 Contract amount and D/M/W/ESB subcontracting commitments, must be made by written amendment and approved by the Chief Procurement Officer 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 Tax Registration
The Consultant shall obtain a City of Portland business tax registration number as required by PCC 7.02 prior to beginning work under this Contract.

20. Prohibited Conduct
The Consultant shall not hire any City employee who evaluated the proposals or authorized the award of this Contract for two years after the date the Contract was authorized without the express written permission of the City and provided the hiring is permitted by state law.

21. Payment to Vendors and Subconsultants
The Consultant shall timely pay all subconsultants and suppliers providing services or goods for this Contract.

22. Access to Records
The Consultant shall maintain all records relating to this Contract for three (3) years after final payment. The City may examine, audit and copy the Consultant's books, documents, papers, and records relating to this Contract at any time during this period upon reasonable notice. Copies of these records shall be made available upon request. Payment for the reasonable cost of requested copies shall be made by the City.

23. Audits
(a) The City may conduct financial and performance audits of the billings and services specified in this Contract at any time in the course of the Contract and during the three (3) year period established by paragraph 22. 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 Government Accountability Office.
(b) If an audit discloses that payments to the Consultant exceed the amount to which the Consultant was entitled, the Consultant shall repay the amount of the excess to the City.

24. Electronic Signatures
The City and Consultant may conduct this transaction, including any Contract amendments, by electronic means, including the use of electronic signatures.

25. Merger Clause
This Contract encompasses the entire agreement of the parties, and supersedes all previous understandings and agreements between the parties, whether verbal or written.

26. Dispute Resolution/Work Regardless of Disputes
The parties shall participate in mediation to resolve disputes before conducting litigation. The mediation shall occur at a reasonable time after the conclusion of the Contract with a mediator jointly selected by the parties. Notwithstanding any dispute under this Contract, the Consultant shall continue to perform its work pending resolution of a dispute, and the City shall make payments as required by the Contract for undisputed portions of the work. In the event of litigation no attorney fees are recoverable. No different dispute resolution paragraph(s) in this Contract or any attachment hereto shall supersede or take precedence over this provision.

27. Progress Reports: /☒/ Applicable /☐/ Not Applicable
If applicable, the Consultant shall provide monthly progress reports to the Project Manager as described in the Statement of the Work and Payment Schedule.

28. Consultant's Personnel: /☒/ Applicable /☐/ Not Applicable
If applicable, the Consultant shall assign the personnel listed in the Statement of the Work and Payment Schedule for the work required by the Contract and shall not change personnel without the prior written consent of the City, which shall not be unreasonably withheld.

29. Subconsultants
The Consultant shall use the subconsultants identified in its proposals. The Consultant t shall not change subconsultant's assignments without the prior written consent of the Chief Procurement Officer. The City will enforce all social equity Contracting and Disadvantaged, Minority, Women and Emerging Small Business (D/M/W/ESB) subcontracting commitments submitted by

the Consultant in its proposals. Failure to use the identified D/M/W/ESB subconsultants without prior written consent is a material breach of Contract.
For Contracts valued $50,000 or more, the Consultant shall submit a Monthly Subconsultant Payment and Utilization Report (MUR), made part of this Contract by reference, reporting ALL subconsultants employed in the performance of this agreement. Contact the PTE Contract Compliance Specialist for submission guidelines.

30. Third Party Beneficiaries
There are no third-party beneficiaries to this Contract. Enforcement of this Contract is reserved to the parties.

31. Conflict of Interest
Consultant hereby certifies that, if applicable, its Contract proposal is made in good faith without fraud, collusion or connection of any kind with any other proposer of the same request for proposals or other City procurement solicitation(s), that the Consultant as a proposer has competed solely on its own behalf without connection or obligation to, any undisclosed person or firm. Consultant certifies that it is not a City official/employee or a business with which a City official/employee is associated, and that to the best of its knowledge, Consultant, its employee(s), its officer(s) or its director(s) is not a City official/employee or a relative of any City official/employee who: i) has responsibility in making decisions or ability to influence decision-making on the Contract or project to which this Contract pertains; ii) has or will participate in evaluation or management of the Contract; or iii) has or will have financial benefits in the Contract. Consultant understands that should it elect to employ any former City official/employee during the term of the Contract then that the former City official/Consultant employee must comply with applicable government ethics and conflicts of interest provisions in ORS Chapter 244, including but not limited to ORS 244.040(5) and ORS 244.047, and the City's Charter, Codes and administrative rules, including lobbying prohibitions under Portland City Code Section 2.12.080.

32. Respectful Workplace Behavior
The City of Portland is committed to a respectful work environment, free of harassment, discrimination and retaliation and other inappropriate conduct. Every individual has a right to work in a professional atmosphere where all individuals are treated with respect and dignity. The City's HR Rule 2.02 covers all employees with the City of Portland as well as consultants, vendors or consultants who provide services to the City of Portland. By signing this Contract/Agreement, the Consultant indicates compliance with all terms and conditions contained in this Contract including HR 2.02.

STATEMENT OF THE WORK AND PAYMENT SCHEDULE

SCOPE OF WORK

The Lombard PS is located at 12902 N. Lombard Street and was constructed in 1983 on City of Portland property. The facility is a wet well/dry well type sewage pump station utilizing a below grade, 37-foot-deep, 30-foot inside diameter concrete caisson. The electrical and instrumentation equipment, in addition to ventilation equipment and restroom facilities, are located in an 18-foot by 30-foot reinforced concrete masonry unit (CMU) building located atop the caisson top slab.

The dry well has space for up to four pumps with two spaces occupied by 125 hp dry pit vertical centrifugal pumps that provide a firm pumping capacity of just over 9 MGD or 6,500 gpm. The station accepts flows from three pump stations, Marine Drive PS, Columbia Slough PS, and Simmons PS and discharges through an approximately 4,800-foot-long, 30-inch-diameter concrete cylinder pipe force main, of which 500 LF was realigned and replaced with HDPE pipe in 2005. The force main empties into the St. Johns Interceptor on 9000 N. Terminal Road, which then discharges into the Columbia Boulevard Wastewater Treatment Plant (CBWTP).

The primary project objectives are to improve the site, building, and heating and ventilation and provide the needed permit support. The proposed improvements and key goals for this project are:

- Provision of a standby power generator, transfer switch, and associated stand-alone covered structure.
- Replacement of the existing pumps with screw centrifugal pumps, similar to design conducted by Parametrix for the Airport Way 01 Pump Station in 2016.
- Replacement of the seal water system or evaluation and selection of a flush-less mechanical seal.
- Completion of a seismic vulnerability assessment for the pump station site and replacement of the existing circular stairs with code compliant circular stairs.
- Condition assessment of the existing wet well/dry well structure and assessment of the existing building including an evaluation of upgrading to an eco-roof system. If an upgrade to an eco-roof is not possible, an Energy Star-rated roof membrane system will be provided.

- Condition assessment of the existing force main and discharge manhole.
- Evaluation of odor treatment requirements and treatment options.
- Preparation of draft and final Storm Water Management Reports.
- Identification of applicable permitting, land use (LU), and Bureau of Development Services (BDS) requirements and preparation of LU and BDS Building Permit application packages.
- An optional task during the predesign phase to provide a Technical Memorandum on building information modeling (BIM). Technical memo will include the results of a feasibility evaluation and a cost estimate for use of 3D building information modeling (BIM) during final design to augment and enhance the 3D CAD drafting.

The Parametrix team will work closely with the BES design, operations, and maintenance staff to integrate their preferences in the predesign and design processes, as much as is practicable. During construction, the Parametrix team, as the engineer-of-record (EOR), will provide timely responses to submittals and contractor requests for information (RFI's) to facilitate the construction contractor's work and help ensure construction is completed in accordance with the approved design. At the completion of construction, the EOR will also complete and submit the required Oregon Department of Environmental Quality (DEQ) certification form(s).

The project will be organized and invoiced based on the following tasks. This statement of work also lists subtasks for conducting the work; these subtasks will not appear on invoices and are for Consultant use in tracking costs and monitoring project progress.

TASK	DESCRIPTION	BES TYPE OF WORK (TOW) CODE
20	Predesign Phase	20P
20.12	Predesign Project Management	20P12
20.14	Predesign	20P14
30	Design Phase	30D
30.12	Design Project Management	30D12
30.14	Design	30D14
40	Advertise-NTP Phase	40A
40.12	Advertise-NTP Project Management	40A12
40.14	Advertise-NTP Assistance	40A14
50	Services During Construction (SDC) Phase	50C
50.12	SDC Project Management	50C12
50.14	Services During Construction	50D14
60	Startup/Closeout Phase	60S
60.12	Startup/Closeout Project Management	60S12
60.14	Services During Startup/Closeout	60S14

Task Descriptions

Phases, tasks, and subtasks needed to complete the project are listed below. The tasks will be configured to conform to Heron. For example, there will be individual project management tasks for Predesign, Design, Advertisement, Construction, and Startup/Close Out Phase services. Input from BES will be needed for all tasks. All deliverables will be provided in draft form for BES review. In addition to the formal reviews of deliverables, the following items will be provided by BES:

- Hazardous Material Assessment.
- Subsurface information including geotechnical, and stormwater infiltration borings.
- Survey Data and associated CAD Files in AutoCAD Format.
- Draft and Final Flow Analysis Report.
- Preparation of Final Design Report and Assembly of Contract Documents for Procurement.

- Provision of relevant background information.
- Coordination with PBOT ROW Acquisition agent for any easement related changes.
- Formal submission of all permit applications.
- Liquefaction remediation recommendation.

Phase 20. Predesign

Task 20.12. Predesign Project Management

The project management task is broken into two subtasks. Invoices to BES will be at the task level.

Subtask 201. Predesign Project Management

Coordinate the team, set up project tracking and filing systems, and prepare subconsultant agreements. Prepare a project schedule. Prepare monthly invoices, subconsultant utilization reports, and progress reports. Prepare project correspondence, and maintain project files.

Deliverables:

- Agreements, schedules, subconsultant utilization report, and monthly progress reports and invoices.
- All progress reports and invoices will be submitted and processed through Heron.

Assumptions:

- Project level of effort and cost are based on a duration of the Predesign Phase of 5 months.

Subtask 202. Predesign Quality Control / Quality Assurance

Parametrix will provide ongoing peer review and quality review at established milestones on all deliverables.

Deliverables:

- Documentation of QC reviews, available upon request.

Task 20.14. Predesign

Work includes a project kickoff meeting, collecting background data, and site visits. The project team will identify issues that will affect the design, concisely evaluate appropriate alternatives for each issue, and make recommendations in a Predesign Report to document the process. Based on the report findings and recommendations, the project team will prepare preliminary design drawings and a cost estimate representing 30% design completion. The predesign phase is anticipated to take five months to complete, and work will be divided into the following subtasks.

Subtask 210. Kickoff, Background Data, Site Visits.

This task will consist of the following elements:

- Conduct a kickoff meeting with the project team. The kickoff meeting agenda will include communication, BES and Parametrix team members and roles, overview of project goals and objectives, regulatory issues, overview of scope of work, identify needed data and availability, identify contacts at agencies and stakeholders (ODOT, PBOT), and anticipated schedule (NTP, additional survey, geotechnical work, field visit, Predesign Report, and design submittals).
- Collect available background data from BES including the following:
    - Record drawings, historical flows, ACAD drawings, previous reports, survey data, and example specifications.
    - Direction from BES on City standards or preferences for site access, maintenance vehicle parking, wet well access, standby power generator, and new heating and ventilation systems. For example, identify if desire continuous or intermittent ventilation, providing supply and exhaust fans for wet wells, and preferred types of ventilation fans.
    - Data on odor complaints or air or liquid concentrations of hydrogen sulfide.
    - Direction from BES on City standards or preferences for new fall protection system

- Current City of Portland standards on Eco-roofs.

- Meet with electric utility staff to coordinate the design of electric utility power services to the new pump station and the demolition of the existing electrical service.
- Work with BES to identify limits of additional topographical survey, if needed.
- Conduct a site visit by key disciplines to observe conditions, access to the wet well, heating and ventilation system, and approach for sewage pump replacement. Interview BES operations and engineering staff to identify preferences, issues, and constraints regarding ventilation system, wet well access, and confined space entry.

Deliverables:

- Kickoff meeting agenda and concise meeting minutes.
- List of requested data needs to support the project.
- Figure and description of proposed limits of topographic survey.
- Photographs and notes from site visit.

Assumptions:

- The kickoff meeting will take place at the at BES offices at the Columbia Boulevard Wastewater Treatment Plant.
- One initial site visit will be conducted by four Parametrix staff (Project Manager, civil engineer, structural engineer and staff engineer), and Elcon electrical engineer.
    - No confined space entries will be performed during the site visit.
    - During the site visit, BES will provide staff to assist with access to the pump station dry well and discharge manhole.
    - Sewage pump replacement is anticipated to involve removal of the existing pumps and replacement with new pumps and use the existing suction pipe penetrations / wall flanges.
- Surveying will be provided by City of Portland.
- BES will make all reasonable efforts to provide any requested data in a timely manner.
- BES will provide Parametrix a copy of their 30, 60, and 90 percent design checklist forms prior to the kickoff meeting.

Subtask 220. Zoning and Permit Needs

Review background site conditions and applicable land use regulations. Strata will schedule and attend an Early Assistance land use meeting with the Bureau of Development Services (BDS) and review findings and coordinate next steps based on the results of the Early Assistance meeting. Strata and Parametrix will coordinate landscaping requirements with MZLA. Strata will prepare a technical memorandum discussing land use and permitting requirements and summarize land use constraints and the recommended approach. The technical memorandum will be included as an appendix in the predesign report.

Deliverables:

- Documents to support Early Assistance meeting.
- Notes from Early Assistance meeting.
- Land use technical memorandum providing a summary of zoning requirements and list of permits to complete the project.
- Summary text for inclusion in the predesign report.

Assumptions:

- Work will be performed by Strata with review and coordination with Parametrix.

Subtask 221. Archaeological Survey & Boring Observations

This task will consist of the following elements, conducted by Applied Archaeological Research (AAR), as a subconsultant to Parametrix:

- Background research conducted via the Oregon State Historic Preservation Office's (SHPO's) on-line archaeology database and the AAR library. The background research will focus on pertinent records, documents, and reports related to the previous cultural resource studies performed in and near the project area and a summary review of appropriate

literature on the area's archaeology, prehistory, history and natural history. A special focus on the background research will be to determine the spatial relationship between the Lombard Pump Station upgrade project-area and previously recorded archaeological site 35MU44/46. From the research it will be determined if the project area is within the boundaries of the site.

- The reconnaissance level cultural resource survey will entail an archaeologist walking closely spaced survey transects across areas anticipated to be disturbed by the proposed construction project. During the survey, exposures of mineral soil will be closely inspected for the presence of artifacts or other indicators of archaeological resources (such as fire-cracked rock or discolored sediment). Artifacts will be analyzed in the field and not collected. The likelihood that the project area contains subsurface archaeological resources will be assessed.

- Preparation of a technical report that will include a description of the project area's physical setting, a review of the appropriate compliance issues, a review of the background research, a description of the project methods, an inventory of cultural resources located as a result of the survey, a discussion of the potential status for located resources to be eligible for listing on the National Register of Historic Places, and a recommendation for further archaeological investigations, if appropriate. The report will include a project area vicinity map, a project area configuration map, a map showing the location of any cultural resources found during the reconnaissance (if appropriate), and photographs showing the conditions of the project area the time of the investigation.

- AAR will be on site during the performance of geotechnical borings and will observe the soils removed as a result of to determine the likelihood of undisturbed archeological resources. This subtask includes hours allowing for up to three days (of 8 hours each) of observation and for logging and recording an archaeological resource if found.

Deliverables:

- Reconnaissance level cultural resource survey field notes.
- Technical report on cultural and archeological resources within the area and their impact on the proposed project improvements.

Assumptions:

- The area of investigation and assessment will focus on the area inside the property line and the area outside of the property line out to 50' from the property line. This is because improvements or disturbances are not anticipated to occur outside of the above described area.
- The construction contractor may stage equipment outside of the fence but it is anticipated that the activities will be limited to the parking of vehicles and equipment and is not anticipated to include ground disturbance. However, because it is possible that minor ground-disturbing activities may be required outside of the fence, such as trenching to repair, maintain, or replace inflow and outflow pipes, the area for the cultural resource study will extend 50 feet in all directions from the existing compound.
- A force main runs from pump station generally east along Lombard for 1,800 feet. The route of the force main is excluded from the study area, except for the part of it that is within 50 feet of the pump station.
- Any artifacts found during the reconnaissance level cultural resource survey will be analyzed in the field. If an archaeological resource is found it will be logged and recorded with SHPO.
- No subsurface testing on public land can be done without an excavation permit issued by the Oregon SHPO. If it is determined No efforts related to obtaining an excavation permit have been included within this subtask.
- The report will be prepared in a format acceptable to the Oregon SHPO.

Subtask 230. Workshop

Facilitate a meeting with BES, key Parametrix team discipline leads, and other stakeholders. Prepare an agenda, and preliminary sketches to discuss during the workshop. Each discipline will contribute to a draft basis of design. Purpose of the meeting is to identify and review BES preferences, constraints, learn other stakeholder preferences, and to review and finalize the basis of design for the pump station. A preliminary agenda is outlined below:

- Review land use requirements.
- Discuss pump station improvement options. These are anticipated to include:

- Standby power generator (portable or permanent) and its housing.
- Conceptual site plan alternatives. Location for monopole housing HYDRA antenna.
- Stormwater management.
- Building and structural improvements.
- Seismic vulnerability.
- Pump and piping improvements in the dry well.
- HVAC improvements.
- Electrical improvements.
- Flow meter upgrade.
- Access improvements (dry well stairway and wet well ladder/platforms and fall protection).
- Wet well corrosion improvements (coating).
- Temporary pump-around during construction.
- Odor and noise mitigation.
- Landscaping considerations.

- Review draft basis of design.
- After meeting, minutes will be prepared and distributed and the basis of design will be revised based on comments and direction received at the workshop.

Deliverables:

- Selected handout with conceptual options and figures to support workshop. These will be provided to the BES Design Project Manager prior to the meeting.
- Proposed draft basis of design for meeting. These will be provided to the BES Design Project Manager prior to the meeting.
- Meeting agenda. This will be provided to the BES Design Project Manager prior to the meeting.
- Final basis of design as outcome of meeting.
- Meeting minutes.

Assumptions:

- The workshop will be conducted at BES offices at the Columbia Boulevard Wastewater Treatment Plant and may take up to four hours.
- Key BES staff will attend the workshop, such as design, operations, and management that are able to make decisions affecting project.
- Attendance will be by five Parametrix staff (project manager, civil engineer, structural engineer, HVAC/odor control engineer, staff engineer), Strata land use planner, and Elcon electrical engineer.

Subtask 240. Stormwater Management

Background. The pump station is located within the 500-year flood plain, on the edge of the transition between the 500- and 100-year flood plains, and about 100 feet from the banks of the Columbia Slough. As part of the pre-design phase, the required stormwater approach will be selected based on selected site design and infiltration testing. Draft and final storm water management reports or forms will be prepared during the design phase to document the existing conditions and proposed stormwater improvements depending on the required stormwater approach.

The suitability of the existing pump station roof to accommodate an eco-roof will be evaluated (in another task), and, if feasible, it would decrease the amount of impervious surfaces onsite. Additionally, the pavement onsite may be removed and replaced with permeable pavement (in another task) to further reduce the amount of impervious surfaces. As discussed in more detail within the land use task, care will be taken during design to avoid site grading changes that would extend outside of the existing paved area or into the nearby 100-year floodplain. This avoids compensatory excavation and compliance with Title 24.50 Flood Hazard Areas that come from fill placed in the 100-year flood hazard area.

Work will include the following: Identify onsite stormwater management methods utilizing the BES stormwater management manual and green building practices. Use presumptive approach and prepare a stormwater report that incorporates site mitigation measures to convey and treat stormwater.

Deliverables:

- Conceptual approach and design criteria for managing stormwater at the pump station site.
- Draft Stormwater Management Report.
- Final Stormwater Management Report.

Assumptions:

- Pervious pavement, an eco-roof, and if necessary a swale located within the property boundaries will satisfy stormwater requirements.
- Infiltration testing will be performed by BES.
- Treatment of offsite stormwater runoff (outside of pump station property) will not be included.

Subtask 250. Pump Station Options

This task will consist of the following elements for options inside the pump station structure:

- Evaluation of pump options (to focus on methods to provide minimum scouring velocity in force main), wet well volume needs, and valve and flow meter vault configurations that accommodate design flows and the existing facility.
- Contact manufacturer's representatives of new sewage pumps. Conduct preliminary steady state hydraulic analysis to size the sewage pumps and discharge piping.
- Confirm building dimensions can accommodate proposed equipment.
- Develop preliminary demolition and pump-around plan.
- Consideration of designs that emphasize ease of short-term construction access and long-term operator access, cleaning, and maintenance.

Deliverables:

- Proposed pump, discharge piping, and vault layout, preliminary hydraulics, and preliminary costs to be included in the Predesign Report.

Assumptions:

- Work in this task is limited to within the pump station building and the exterior flow meter vault.
- BES will provide the basis of flow from the sanitary sewage drainage basin that will be used to size the capacity of the sewage pumps.
- Assumes contractor can use temporary pumps to pump from existing wet well to downstream of proposed improvements on the force main. Connection to the existing force main will be by contractor furnished equipment.

Subtask 260. Force Main Transient Analysis

A hydraulic transient or water hammer analysis will be performed using Flow Science modeling software. The hydraulic transient analysis will include the following:

- An analysis of high transient pressures in the system and recommendations to reduce the pressure, if necessary.
- An analysis of low transient pressures in the system and recommendations for protection at the pump station and along its force main.
- Identify locations (station number or distance from an intersection) of protection needed along the force main to minimize or mitigate transient pressures that may cause damage.
- A technical memorandum summarizing the hydraulic transient analysis with recommendations.

Assumptions:

- BES will furnish copies of scaled drawings showing the force main in both plan and profile.

- The flows used in the transient analysis will be the flow range established in the steady state analysis.
- A preliminary transient analysis (model run) will be conducted for submittal with the 30 percent submittal. The transient analysis will be refined and finalized with a second modeling run using the 90 percent design.
- If the force main experiences the formation of vapor cavities from low transient pressures, the assumed recommended type of protection are air inlet or vacuum valves.
- The worst-case scenario used in the analysis for high transient pressures is an across-the-line start of all available pumps.
- The worst-case scenario used in the analysis for low transient pressures is a power outage shutdown with all available pumps running.
- Design of the protective measures are included in the design task.

Deliverables:

- Preliminary transient analysis will be based on BES provided draft flow analysis and final transient analysis will be updated based on BES provided final flow analysis and force main drawings.
- A draft (concurrent with 30% design) technical memorandum summarizing the hydraulic transient analysis and any recommendations.
- A final (concurrent with 90% design) technical memorandum summarizing the hydraulic transient analysis and any recommendations.

Subtask 261. Force Main Condition Assessment Methods Evaluation

This subtask includes a preliminary engineering evaluation to determine probable pipe failure modes in addition to evaluation of alternative methods for physical assessment of the existing force main's condition. This subtask will be primarily conducted by infrastructureMD with the permitting evaluation activities of this work to be performed by Parametrix. In general, the following process will be used for this subtask:

- Request to BES for existing data, such as the most recent record drawings of the force main, lay drawings, manufacturer specifications/shop drawings, repair records and other available information and photos from previous leaks or failures, and work order history on the force main.
- Meeting with BES operations staff to discuss goals, potential testing methods, and approaches. This will include two – three meetings with BES that will be used as detailed below. Any time not used will be used in conjunction with Subtasks 341 & 342 to discuss the results of the selected inspection(s).
    - Discuss with BES the goals of the inspections and condition assessments in terms of information gathered, projected pipe lifespan, and certainty of results.
    - Discuss the operations group's capabilities regarding shut down and dewatering of the pipe in addition to discussions regarding flow rates and pressures needed if a free-swimming device is selected.
    - Present inspection options and anticipated results to BES. BES will then provide input and buy into the inspection method(s) and technologies proposed.
    - A pre-inspection meeting may be scheduled to ensure coordination between all parties and the extent to which the various parties will be involved in the inspections.
- General desktop evaluation of the existing force main configuration and age. This includes a preliminary engineering evaluation looking at the structural design of the pipeline to determine what the failure mechanism will most likely be on this pipeline.
- Feasibility evaluation of the selected test methods for both concrete cylinder pipe and HDPE pipe. This will include:
    - Whether an identified method can be conducted while the pipeline is in service, during a limited duration shut-down, or if the method requires a full shutdown with vacuum truck storage or pump around pumping.
    - Summary of condition information provided at conclusion of a test.
    - If the identified test method has a satisfactory record of performance for similar applications.

- Contact manufacturer's representatives of testing technologies to review applicability to the Lombard Force Main, collect technical data, and obtain cost proposals. Summarize findings in a concise technical memorandum. The technical memorandum will be included as an appendix in the Predesign Report.

Deliverables:

- Concise technical memorandum on potential force main testing and inspection methods, anticipated failure modes for this particular pipeline, and any specific testing recommendations based on technical feasibility and preferences communicated by BES. BES will provide buy-in on the recommended inspection methods and technology(ies) prior to submission of the technical memorandum. The technical memorandum will be included as an appendix in the Predesign Report and will serve to guide the inspection and condition assessment technology selected for performance under Subtasks 341 & 342 (contingency). Based on information contained within the technical memorandum and internal preferences, BES to provide direction on the technology and methods of proceeding with force main inspection and condition assessment.

Assumptions:

- An outline of the contents of the technical memorandum follows:
    - Background and Purpose.
    - Existing Conditions: Force main characteristics, force main alignment observations, repair records, discharge manhole condition, and preliminary steady state hydraulics.
    - Condition assessment options, to include soil corrosion evaluation, external visual inspection and ultrasonic thickness testing, cableless video inspection with leak/gas pocket detection using *Pipe Inspector* or *SmartBall*, internal high resolution electromagnetic inspection using *PipeDiver* or *See Snake*, leak noise correlation, and coupon sampling. For each of these options, an overview of each method will be provided in addition to a tabulation comparing each option which will include applicability to the Lombard PS force main, temporary pump around requirements, and a preliminary cost of each.
    - Permitting Requirements. Discuss agency (ODOT, PBOT), land use, and environmental permits needed to implement the condition assessment options. (Parametrix to perform)
    - Conclusions and recommendations. Summarize findings and provide recommendations for implementation.
    - Appendices: references cited, selected existing drawings, hydraulic system curve, and selected literature on testing technologies.
- This task does not include any field work or design efforts required based on the outcome of the test results (such as the design effort for force main rehabilitation or replacement). Any design efforts needed for pipeline access to perform inspection and condition assessment services is included under Subtasks 341 & 342 (contingency).

Subtask 262. Wet Well Condition Assessment

This task also includes the following elements:

- Collect and review available background data from BES on the condition of the existing wet well.
- Review BES requirements for confined space entry. Coordinate with BES safety manager on appropriate measures for entry into the wet well. Coordinate with local suppliers to obtain equipment to support confined space entry.
- Project team members will conduct a site visit to observe the wet well. Two Parametrix staff will conduct one site visit, one will assume duties of a competent observer, and the other will conduct a confined space entry into the wet well to observe conditions and conduct sounding hammer blows of accessible portions of wet well surfaces.
- Parametrix will conduct a pre-entry briefing with the BES safety coordinator to review the proposed procedures. Parametrix will serve as the responsible party during entrance.
- Based on observations and physical testing of the concrete surface in the wet well during the site visit, Parametrix will consult with Greenman Pederson and make a qualitative assessment of its condition and appropriate rehabilitation methods.

Deliverables:

- A concise technical memorandum with recommendations for rehabilitation, with selected photographs. The technical memorandum will be included as an appendix in the Predesign Report.

Assumptions:

- Wet well testing will consist of sounding with a hammer to assess delamination of concrete. This will provide preliminary information to assess the condition. During the construction phase, after the contractor has cleaned the wet well, Parametrix and GPI will again enter the wet well and confirm the condition and better define the extent of cracking, if any.
- BES will assist with access to wet well.
- The existing ladders and platforms will be used by Parametrix staff for entry into the wet well.
- Parametrix will provide temporary equipment for ventilation, fall protection, and a gas meter to meet BES/ OSHA confined space requirements.
- No air or water quality testing will be performed.

Subtask 263. Discharge Manhole Condition Assessment

The hydrogen sulfide gaseous concentrations will be measured within the headspace of the discharge manhole by placing an analyzer in the manhole. Based on the testing results and observations of the concrete surfaces within the discharge manhole during the site visit, Parametrix will make a qualitative assessment of its condition. Parametrix will work with GPI to assess potential rehabilitation methods.

Deliverables:

- Discharge manhole concrete surface condition observations, to include recommendations for rehabilitation, to be included in the Predesign Report.
- Results of hydrogen sulfide testing will be concisely summarized in the body of the predesign report and a chart showing concentrations measured will be included as an appendix to the predesign report.

Assumptions:

- Discharge manhole concrete surface testing will consist of sounding with a hammer to assess delamination of concrete.
- Measurement of the hydrogen sulfide concentration within the air space will be conducted over a seven-day period.
- BES will assist with access to discharge manhole for hammer testing and for placement and retrieval of hydrogen sulfide analyzer, including assisting with any needed traffic control.
- No confined space entry into the discharge manhole will be performed. Testing and analyzer placement will be performed from the ground surface.
- No water quality testing will be performed.

Subtask 270. OPTIONAL Building Information Modeling (BIM) Evaluation

Owner may request Parametrix to further develop BIM for this project. The hours included herein allow for preparation of a technical memorandum on the use and cost of 3D BIM modeling in the proposed building and pump station configuration. Memorandum would include the advantages and disadvantages of BIM modeling, example graphics, and estimated professional fees for implementing BIM for this project design.

Deliverables:

- As Negotiated

Assumptions:

- The use of BIM is not included within the project at this time.

Subtask 280. Site/Civil, HVAC, Odor, Structural, Electrical Predesign

Based on workshop and basis of design developed previously, disciplines will perform the following:

- Site/Civil: Assess needed site grading, access, and parking. Incorporate drainage and stormwater management based on previous task. Integrate onto the site the previously developed discharge piping layout, flow meter vault configuration, and proposed temporary pump-around scheme.
- HVAC and Odor:
    - Develop preliminary building heating and ventilation requirements. Conduct preliminary air flow and heating calculations for the pump station. Review applicability for added features such air flow monitoring/alarm, types of fans, and material of construction.
    - Contact manufacturer's representatives of odor scrubber, fan and heating systems, and other added features.
    - High-level evaluation of up to three odor control technologies may be provided; however, given the relatively isolated location and anticipated intermittent use, it is anticipated that activated carbon (potentially mixed with Potassium Permanganate) will be the main focus of the evaluation and the technology selected for development.
    - Perform fixture count to determine interior plumbing modifications and backflow prevention devices.
- Structural:
    - Conduct concise code review of OSHA standards with respect to egress requirements and proposed circular stair improvements.
    - Determine conceptual structural needs for pump station wet well and building improvements, replacement of circular stairs into dry well, generator pad, and eco-roof feasibility on the existing pump station building.
    - Evaluate design alternatives for fall protection system.
    - Evaluate condition and capacity of existing roof framing and building system to determine feasibility of replacing the existing roof with an Eco-roof. Prepare a technical memorandum summarizing findings including estimated cost. Provide recommendations on whether to implement an Eco-roof or an Energy Star-rated roof.
- Electrical:
    - Elcon will confirm route of electrical service and determine preliminary sizing of electrical service equipment and preliminary standby generator sizing.
    - Elcon will coordinate with BES who will provide information regarding pump station controls, SCADA/telemetry, and instrumentation requirements, quantities, and locations. These instruments include level sensors, a flow meter, and miscellaneous minor instruments such as pressure gauges, etc.
    - Elcon will perform preliminary electrical design and complete the energy efficiency forms and calculations.

Deliverables:

- Preliminary site plan with site layout alternatives, stormwater management improvements; utility criteria.
- Monopole location
- Conceptual ventilation for wet well and building
- Preliminary Eco-roof structural calculations and concise technical memorandum summarizing feasibility of implementing an Eco-roof.
- Preliminary structural needs for pump station and generator pad.
- Preliminary electrical design criteria.
- Documentation for energy efficiency applications.
- Technical information to support the City's public outreach efforts.

Assumptions:

- All of the above deliverables, with the exception of the outreach supporting information, will be included in the Predesign Report.
- Field soil testing to estimate soil infiltration, allowable bearing pressure, and estimated settlement for the standby power generator pad will be provided by the City.
- Noise mitigation will not be included.
- No traffic control design is included.
- The engine-generator set will be housed outside of the existing electrical/control building in a manufacturer supplied weatherproof enclosure.

Subtask 281. Seismic Vulnerability

Utilizing the geotechnical report provided by BES, in conjunction with the existing record drawings and current seismic design standards and site-specific needs, a seismic evaluation of the existing structure and mechanical systems will be performed per the most current version of The American Society of Civil Engineers (ASCE) *Seismic Evaluation of Existing Buildings*, ASCE 41. Structural and mechanical deficiencies/hazards at the existing pump station will be identified that would prohibit "immediate occupancy" after a seismic event. Based on the deficiencies/hazards identified, rehabilitation strategies will be identified, utilizing *Seismic Evaluation and Retrofit of Existing Buildings*, ASCE 41. A list of recommended improvements will be developed, including order of magnitude costs, in order to upgrade the pump station to where "immediate occupancy" is possible after a seismic event. For the purpose of this task "immediate occupancy" refers to the post-earthquake damage state in which only very limited structural and mechanical damage has occurred. The basic vertical- and lateral-force-resisting systems of the building retain almost all their pre-earthquake strength and stiffness. The risk of life-threatening injury from structural and mechanical damage is very low, and although some minor structural and mechanical repairs might be appropriate, these repairs would generally not be required before re-occupancy. Continued use of the building is not limited by its structural or mechanical condition but might be limited by damage or disruption to nonstructural elements of the building, furnishings, or equipment and availability of external utility services.

Deliverable:

- Technical memorandum on seismic hazards identified, recommended improvements, and concept-level cost estimate.

Assumptions:

- This task includes a seismic analysis of the existing pump station structure and identification of mitigation solutions.
- This task does not include the design efforts to implement recommended seismic improvements other than those explicitly identified in the design tasks.
- Any supporting calculations will be limited to major components. A detailed seismic assessment and structural modeling of the pump station will not be performed.

Subtask 290. Predesign Report

Consolidate issues from the above tasks into the predesign report to document options analysis to help BES make informed decisions. Document the final pump station basis of design to form a clear outline for efficiently completing the design. Prepare project schedule from predesign through construction completion. Submit draft report, participate in a review meeting, and provide written response to City comments. Establish CAD standards for project drawings.

Deliverables:

- Draft and final predesign report.
- Design review checklist form.
- Representative ACAD file of drawings.
- The anticipated report content is outlined as follows:
    - Executive Summary, Background, Project Objectives, Description of Existing Site and Pump Station.
    - Evaluation of Key Issues and Components:
        - Existing Wet Well and Force Main Condition Assessment and Recommendations.

- Pump Station Flows, Pump Sizing, and Force Main Hydraulics.
- Site Issues: Layout, Stormwater Management, Erosion Control.
- Code, Dimensions, Eco-Roof Evaluation and Materials of Construction.
- Monopole location (to be shown on the site plan).
- Piping, Valve and Appurtenances.
- Heating and Ventilation.
- Odor Control.
- Electrical System Needs: Electrical Load, Power Source, Lighting, and Standby Power.
- Proposed Construction Sequence and Temporary Pump-Around.
- Land Use Description, Standards and Codes, and Required Permits.
- Anticipated Design and Construction Schedule.

o Basis of Design, Design Documents, and Estimated Construction Cost.

o Appendices: Workshop Minutes, Preliminary Hydraulics, Twelve 30% Design Drawings (1) Cover Sheet, (2) Civil Site Plan with temporary pump around, (3) Demolition, (4) Structural Building Plan of Stairway, (5) Structural of Generator Pad, (6) Structural of Eco-Roof on pump station building, (7) Mechanical Plans: ground floor and pump level, (8) Mechanical Elevation: pump and duct elevations, (9) Electrical Site Plan, (10) Electrical One Line Diagram, (11+12) Electrical Building Plans), Listing of Drawings and Specification Sections, Opinion of Probable Construction Cost, and technical memorandums prepared in previous tasks

Assumptions:

- No surveying is included. Any surveying would be provided by City of Portland, and topographic survey data will be provided five weeks prior to delivery of draft predesign report.
- The draft and final predesign report and 30% drawings will be prepared and distributed electronically for BES review.
- BES will provide one set of consolidated comments on the draft predesign report and 30% drawings.
- Review of BES comments on the draft predesign report and 30% drawings can be conducted by telephone.

Phase 30. Design

Task 30.12. Design Project Management.

The project management task is broken into two subtasks. Invoices to BES will be at the task level.

Subtask 301. Design Project Management. Coordinate the team, prepare monthly invoices, subconsultant utilization reports, and progress reports. Update project schedule. Prepare project correspondence and maintain project files.

Deliverables:

- Subconsultant utilization report and monthly progress reports and invoices.
- All progress reports and invoices will be submitted and processed through Heron.

Assumptions:

- Project level of effort and cost are based on a duration of the Design Phase of 12 months.

Subtask 302. Design Quality Control/Quality Assurance. Parametrix will provide ongoing peer review and quality review at established millestones on all deliverables.

Deliverables:

- Documentation of QC reviews, available upon request.

Task 30.14. Design.

Using the basis of design developed from the predesign phase, the Parametrix team will prepare 60%, 90%, 100%, and bid ready design documents. Parametrix will provide drawings at request of City's public outreach efforts. Documents will be submitted for BES's review and comments. Comments will be addressed and updated documents prepared.

Overall Assumptions Applicable to All Design Subtasks:

- Assumes dry well pump station, and a new generator in a sound-attenuating, weatherproof enclosure.
- Compliance with City's Green Building Policy, BES CAD standards, BES 2010 Design Standards.
- No force main redesign is provided at this time.
- Pump station construction documents will be issued for bid as one complete package.
- BES will provide listing of titles of instrumentation and control drawings with its 60% comments and provide draft copies of those drawings for coordination purposes two weeks prior to submittal of 90% design submittal.
- The design is anticipated to take 9 months. Schedule is dependent upon BES providing response to design submittals within 30 days of receipt and BDS providing their check sheets and resolution of their comments within three months of Parametrix's submittal of the 100% design documents to BES.

Subtask 310. General, Demolition

- Prepare three general ("G") drawings: cover, index and basis of design, and abbreviations.
- Prepare two drawings showing needed demolition. Include needed demolition to remove seal water system, replace existing sump pumps, and relocate pumps, piping, supports and pedestals from pump positions 1 and 2 to positions 3 and 4.

Subtask 311. Site/civil, Drainage, and Erosion Control

- Comply with BES, and City standards.
- Design site and stormwater management improvements, details will be determined based on predesign outcome. A stormwater report will provide details for stormwater management.
- Prepare up to five civil ("C") drawings: Site plan showing yard piping and temporary pump around, two civil details, and two erosion and sediment control drawings.

Subtask 320. Landscaping

- Review City codes pertaining to site landscape development.
- Coordinate with Portland Parks and BES on the planting design.
- Prepare two landscape drawings by Marianne Zarkin Landscape Architecture: a landscape plan and details sheet with plant schedule suitable for implementation by the Portland Parks, conforming to City of Portland standards.

Subtask 321. OPTIONAL Archaeological Excavation and Exploration

If Task 221 and the project predesign indicates that construction activities may be in close proximity to an area of archeological significance then additional subsurface excavations and investigation may need to occur within the improvement areas identified during design. This is being added as a contingent task that will require approval of BES to allow for use of these funds. This task includes adequate funds to allow for the following activities:

- Complete and receive an executed Oregon State Historic Preservation Office's (SHPO's) permit to allow for excavation of shovel test probes (STPs)
- Excavations of STPs and preparation of a report of the findings.
- Recording of an archaeological resource if it is found.
- Costs associated with processing and analyzing artifacts or costs associated with preparing artifacts for curation are not included within this contingent subtask. If artifacts are found this would be determined based on the specific artifacts found.

Subtask 330. Structural

- Design eco-roof or Energy Star–rated roof, structural upgrades identified in the predesign phase, dry well, stairway, wet well epoxy coating, seismically rated pipe, and equipment supports. Design door for restroom.
- Repair of cracks in concrete and block walls in wet well will be designed for unit price (per linear foot); estimated length will be confirmed during the construction phase after the contractor cleans the wet well and conducts surface preparations for coating.
- Prepare ten structural ("S") drawings: 2 note sheets, 1 plan sheet, 1 eco-roof sheet, 1 stair details, 1 pump base, mono-pole, and structural details sheet, 1 miscellaneous structural sheet to include information on a generator pad and any associated details, 3 seismic detail sheets (see Subtask 331).

Subtask 331. Seismic Detailing and Design

- Design of structural improvements and development of seismic details for the improvements identified within the predesign Subtask 281 as necessary to allow for "immediate occupancy."
- Preparation of 3 seismic detail sheets.
- Coordination of pipe and mechanical penetrations across various site structures. Discussion of anticipated differential settlement with geotechnical engineer; evaluation of existing conditions; selection of appropriate settlement mitigation methods; incorporation into appropriate mechanical details.
- Coordination of HVAC and Odor control equipment, pipe, and duct mountings with structural engineer and equipment manufacturers.

Subtask 332. OPTIONAL Seismic Detailing and Design Contingency

- Performance of any additional seismic improvements not accounted for with Subtask 332 but determined necessary during Subtask 281 or during the course of design. This could include additional seismic analysis and/or modeling to confirm and/or eliminate alternatives identified within Subtask 281. Work will be performed under this task only as directed by BES.

Subtask 340. Mechanical – Pumping System

- Conduct steady state hydraulics. Design dry well pumps, valves, air/vacuum release valve, and sewage discharge piping (up to flow meter vault). Design new flow meter in existing vault.
- Design washdown water service, backflow prevention devices for washdown and potable use, and replacement plumbing fixtures.
- BES preference is for a magnetic flow meter and BES will provide their preference for flow meter type and, if available/applicable, manufacturer and model number. Parametrix will incorporate these requirements into the specifications.
- Prepare five mechanical ("M") drawings:(1) Plan of dry well, (2) Elevation of dry well/wet well, (3) Pumping Details, (4) mechanical details, and [5] flow meter vault and details.

Subtask 341. Force Main Inspection and Assessment

- Conduct, through an appropriate sub-consultant identified within Subtask 261, an inspection of the existing 30" concrete cylinder pipe. For the purpose of budgeting this Subtask, infrastructureMD was identified as the subconsultant as they have relationships with multiple inspection technology firms capable of providing inspection services for pipe of this type and size. If an inspection method is determined to be the best value within Subtask 261 but exceeds the budget allocated within this Subtask, Subtask 342 will be used for additional contingent funds.
- This task includes hours for infrastructureMD and Parametrix staff to review the inspection and recommendations provided by the selected inspection firm, provide any additional input and information, and deliver a concise technical memorandum detailing the probable condition of the force main. Inspection firm shall provide a report of their findings with recommendation for repairs or rehabilitation of joint, cylinder, etc.

- This task also includes hours for infrastructureMD and Parametrix staff to provide pipeline insertion location recommendations, design, and up to two drawings for up to two taps and/or fittings that may need to be installed to allow access to the pipeline for inspection. NOTE: the installation of any improvements is NOT included within this scope of work and will be coordinated with BES to be provided by either their staff or an outside contractor. If this is not needed this money can be used for inspection, reporting, or additional rehabilitation recommendations.
- All efforts will be made to allow inspection data to be delivered in a format compatible with and capable of being integrated into BES' existing GIS Data. BES will provide guidance to preferred format(s) prior to inspection firm selection.

Subtask 342. Force Main Inspection and Assessment Contingency

This is being added as a contingent task that will require approval of BES to allow for use of these funds. This subtask is limited to the budget allocated herein. The below activities are possible uses for these funds; however, not all of the bellow tasks will necessarily be provided:

- Inspection and assessment of the existing force main using a technology deemed a better value, but more costly then that included within Subtask 341.
- Design of more than two access points along the length of the pipeline or development of more detailed design documents.
- Additional review, assessment, or engineering hours if needed to evaluate inspection results from a technology other than that identified within Subtask 341.

Subtask 350. Heating/Ventilation and Odor Treatment

- Design heating, ducts, and ventilation for building and wet well. Assumes generator not in building and in manufacturer provided weatherproof enclosure.
- Design carbon scrubber sited outside and odor treatment system.
- Prepare three drawings: (1) HVAC Plan, (2) HVAC Sections & details, and (3) standard details.

Subtask 360. Electrical.

The electrical design conducted by Elcon as a subconsultant to Parametrix:

- Develop preliminary electrical plans, including site layout, coordinate and initiate electrical service design with electric utility, layout site electrical service, create preliminary one-line diagram, perform selection and sizing of generator, Automatic Transfer Switch (ATS), overcurrent protection and electrical distribution equipment.
- Prepare electrical calculations.
- Coordinate SSPC and HYDRA selection, layout, documentation provided by BES staff in the development of interconnection diagrams.
- Performance of initial short-circuit, protective device coordination, and arc flash studies at the completion of the design phase. These studies will be submitted to BES as part of the complete design package and will become part of the basis for approval of Contractor submittals for motor control centers, panelboards, disconnect switches and other switching or protective apparatus.
- Prepare electrical specifications, including for the contractor prepared arc flash study and short circuit coordination study.
- *Prepare* eighteen electrical drawings. It is assumed that the base loop diagrams (reference drawings) will be provided by BES. Project specific interconnect diagrams will then be created based on the controller and specific equipment to be used for this project; these are included within the eighteen drawings referenced above.

Assumptions:

- BES will address any and all needed improvements to control systems and all PLC, HMI, and HYDRA programming.
- Electrical system design assumes detailed instrumentation and control cabinet design will be provided by BES and be to BES standards, utilizing PLC and radio communications to interface with City-provided HYDRA system.

- Construction contractor will prepare arc flash and coordination/short circuit study based on Elcon's specification.

Subtask 370. Permit Assistance and BDS Responses.

Prepare the narrative project description and findings for a Type II Conditional Use land use review and a Type II Environmental review. Provide site plans for the land use review applications. Coordinate to respond to questions and requests for additional information from BDS planners during the land use review process. Provide assistance during BDS review of final design and respond to BDS checksheets during the building permit phase. The work will be performed by Parametrix and Strata and will consist of the following elements:

- Research, coordinate, and prepare narrative and will coordinate figures and other application materials with Parametrix for the land use reviews and application review and comment.
- Address comments from BDS review checksheet prior to bidding. Assist BES with BDS building permit approval.

Deliverables:

- Draft and final applications for land use reviews, narratives and site plans for land use review.
- Responses to BDS checksheets, including revised drawings as necessary.
- Engineer stamped and signed calculations, and technical documents for BES to obtain building permit.

Assumptions:

- The project will require a Type II Conditional Use Review and Type II Environmental Review. If the design allows for the project to be consistent with Exhibit C.26 of LU 12-167334 CN HO and will not extend into the floodplain, the project may only require a Type I CRNP expedited review.
- Comments from BDS plan reviews will not require changes to the basis of design.

Subtask 380. Specifications and Cost Estimates

- All specifications in 6-digit CSI format. Comply with City specification standards. Prepare recommendations for Bid Form and measurement/payment specifications to BES. BES prepares remainder of Divisions 0 and 1.
- Prepare specifications for demolition to supplement City standard specifications. Prepare civil specification sections to supplement City standard specifications, for earthwork, dewatering, asphalt, pervious pavement, and temporary pump-around plan. Prepare structural specifications for metals, concrete, grout, roof, fall protection, hardware, concrete repairs, and coatings. Prepare mechanical specifications for sewage pumps, sump pumps, vibration standards, piping, valves, pipe supports, HVAC, plumbing, and odor treatment systems. Electrical specifications under electrical subtask.
- Prepare probable construction cost at 60%, 90%, and 100% design levels. The specific estimating contingencies, design contingencies, and assumed overhead and profit will be discussed with BES prior to submission of probable construction cost estimates. In general, these three (3) estimates fall into the Class 1 and Class 2 Estimate Classes as defined by AACE.
- Includes preparation of specifications for repair methods and application of epoxy coating for wet well, with GPI consultation:
    - Design documents will estimate an amount of cracking and some amount of surface repair of the concrete in wet well.
    - The bid form will list estimated values for linear feet of crack repair and estimated square feet of surface repair.
    - These estimated areas for repair will be confirmed during contractor's construction by Parametrix and GPI.

Subtask 390. Submittals – 60%, 90%, and Bid Set.

- For 60% design submittal, assemble documents into one package for BES review. Comply with BES 60% checklist. Team conference call with BES to review comments.
- For 90% design submittal, address 60% comments, update and assemble documents into one package for review by BES and DEQ. Comply with BES 90% review comments. Team conference call with BES to review comments.

- Comply with BES 60% and 90% design checklist.
- For 100% and Bid Set Submittal, address 90% comments from BES and DEQ and assemble 100% documents for BES final review, then complete the bid-ready set. Comply with BES milestone checklist. Assist BES with preparation of final Design Report package.

Deliverables:

- BES 60% and 90% design checklist form.
- 60% drawings, sample CAD files, construction sequence schedule, and cost opinion. Written response to BES comments.
- 90% design, sample CAD files, stamped and signed calculations, updated cost opinion, Final Stormwater Report, and construction sequence schedule. Written response to BES and DEQ comments.
- Bid-ready stamped and signed structural calculations (four sets), specifications, and full and half-size drawings (also electronic files of all drawings (ACAD and PDF). Final cost estimate and a detailed construction sequence schedule.
- Stamped and signed copies of all design calculations prepared for the project.
- Short circuit, protective device coordination, and arc flash studies at the completion of the design phase.
- See Task 260 for deliverables associated with the force main transient analysis. Final transient analysis will be performed under Task 260 and submitted within the 90% Design Package.

Phase 40. Advertise-NTP

Task 40.12 Advertise – NTP Project Management.

The Advertise – NTP Project Management Task includes one subtask. Invoices to BES will be at the task level.

Subtask 401. Advertise – NTP Project Management. Coordinate the team, prepare monthly invoices, subconsultant utilization reports, and progress reports. Prepare project correspondence and maintain project files.

Deliverables:

- Subconsultant utilization report and monthly progress reports and invoices.
- All progress reports and invoices will be submitted and processed through Heron.

Assumptions:

- Project level of effort and cost are based on a duration of the Advertise – NTP Phase of 4 months.

Task 40.14 Advertise – NTP Assistance.

The Advertise – NTP Assistance Task includes one subtask.

Subtask 410. Assist During Advertising/Bidding. Attend pre-bid meeting and document bidders' questions. Respond through BES to bidders' questions and provide design clarifications. Prepare addenda and support BES. Assist BES with evaluation of bids and make award recommendation.

Deliverables:

- Written responses, addenda and clarifications, and award recommendation.

Assumptions:

- Four month duration from BES and City approvals of bid set through advertisement, bidding, award, and contractor notice-to-proceed.
- Does not include support during any bid protests.

Phase 50. Services During Construction (SDC)

Task 50.12. SDC Project Management.

The SDC Project Management task includes one subtask. Invoices to BES will be at the task level.

Subtask 501. SDC Project Management. Coordinate the team, prepare monthly invoices, subconsultant utilization reports, and progress reports. Prepare project correspondence and maintain project files.

Deliverables:

- Subconsultant utilization report and monthly progress reports and invoices.
- All progress reports and invoices will be submitted and processed through Heron.

Assumptions:

- Project level of effort and cost are based on a duration of the SDC Phase of 12 months.

Task 50.14. Services During Construction.

Assumptions for Services During Construction:

- BES will provide construction project management and administration, perform routine (daily) observation of construction progress, check materials or equipment furnished by construction contractor for compliance with submittals and the design, prepare daily construction observation reports, take construction progress photographs, conduct and attend weekly job progress meeting with the construction contractor, prepare meeting minutes, coordinate review of submittals, maintain construction-related files, coordinate construction contractor's requests for information, process change proposals and change orders, review and process construction contractor's periodic payments, prepare all correspondence with construction contractor, and be the primary point of contact with the construction contractor and appropriate agencies.
- BES will maintain submittal files and review selected submittals.
- BES will conduct punch list inspections and prepare the punch list.
- BES will consolidate test results and provide copies to Parametrix.
- The City will provide any surveying during construction.

The Services During Construction Task will be divided into the below-listed subtasks and is anticipated to have a duration of 12 months.

Subtask 510. Submittal Reviews. Review submittals and prepare written responses to BES through email and the BES Heron filing software. Review testing results.

Deliverables:

- Written comments/responses submitted by email on contractor submittals utilizing Heron.

Assumptions:

- Review up to 200 submittals and resubmittals, including all disciplines.
- Includes review of the construction contractor's submittal on arc flash and coordination/short circuit study.
- BES reviews controls, telemetry and instrumentation/control associated submittals.

Subtask 520. Coordination and Response to Requests for Information/Clarification (RFI/RFC). Provide interpretation and clarification of design during construction through formal responses to requests for information/clarification (RFI/RFC) from BES and the contractor. Prepare written responses to RFIs/RFCs to BES by email and the Heron system. Provide verbal and email responses to questions from BES.

Deliverables:

- Written RFI/RFC responses.
- Email responses to BES's emailed questions.

Assumptions:

- Assume 60 RFIs/RFCs for Parametrix review and response.
- Includes an assumed effort for general coordination and telephone or email responses over the course of construction with the BES project manager.
- RFI/RFCs and their responses will not be received or made directly from or to the contractor or from the BES construction manager, but done through the BES project manager and the Heron system.
- BES reviews controls, telemetry and instrumentation/control associated RFIs/RFCs and questions.

Subtask 521. OPTIONAL Archaeological Excavation and Exploration

If Tasks 221 and 321 conclude that construction activities will be in close proximity to an area of archeological significance then an Archaeologist will need to be present to observe those areas during critical times of construction excavation. This is being added as a contingent task that will require approval of BES to allow for use of these funds. This task includes adequate funds to allow for the following activities:

- Archaeological monitoring for up to 5 days with 10 hours assumed each day.
- Submission of a report(s) detailing results and/or findings during monitoring.
- Recording of an archaeological resource if it is found.
- Costs associated with processing and analyzing artifacts or costs associated with preparing artifacts for curation are not included within this contingent subtask. If artifacts are found this would be determined based on the specific artifacts found.

Subtask 530. Site Visits/Meetings. Conduct selected site visits to observe construction progress for conformance to the design intent. Includes BDS-required structural inspections. Prepare written reports for each visit. Attend selected progress meetings when concurrent with site visits.

Deliverables:

- Written site observation reports and documentation of BDS inspections.

Assumptions:

- Up to eight total site visits by Parametrix: four by structural engineer for rebar and concrete and BDS requirements and four by civil/mechanical engineers. Up to three visits by Elcon for electrical observations are included. Assume 4 hours per site visit to include travel, time on the site, and observation report preparation.
- Site visits and attendance at construction meetings will be conducted concurrently. No separate times are allocated for attendance at construction meetings or site visits.

Subtask 540. Construction Design. Modifications in the design may be needed because of changes in field conditions, owner preferences or additions, and contractor suggestions. This task may include the following elements:

- Prepare calculations, review vendor literature, and review proposed changes or technical options.
- Prepare sketches, drawings, or specifications to depict design changes.
- Prepare opinions of probable construction costs for design changes.

Deliverables:

- Hand-drawn sketches or technical descriptions or directives, as required.
- Cost opinions.
- Recommendations and correspondence.

Assumptions:

- For each firm, hour estimates were made for engineering and drafting to support added engineering. The hours for these allowances are shown on the budget spreadsheet.

- A minimum amount of drawings or details will be prepared in ACAD.
- This task covers effort needed when more significant design effort is needed than would be required for a response to an RFI/RFC; for example, a typical RFI/RFC response might take an hour.
- If further design work is desired, additional hours may be negotiated.

Subtask 550. Short Circuit and Arc Flash Reports. Elcon will conduct reviews of contractor prepared Short Circuit, Coordination, and Arcflash (SCCAF) Study submittals.

Deliverables:

- Written responses to comment on submittal content for compliance with specifications.

Assumptions:

- The contractor will prepare the SCCAF submittals based upon the specifications prepared by Elcon.

Subtask 560. Wet Well Condition, Surface Preparation, and Coating Inspections.

Understanding: After construction contractor is selected, it will demolish mechanical equipment in the existing wet well and set up a temporary pumping system for the sewage. The construction contractor will then clean the wet well, and set up scaffolding, ventilation, and confined space retrieval equipment to allow Parametrix and GPI to conduct entries into the wet well.

This subtask is divided into three elements:

- Initial Inspection. After the contractor conducts cleaning, Parametrix and GPI will conduct an inspection of the wet well. Parametrix's engineer will prepare a report recommending the extent of needed concrete repairs. GPI will prepare a report recommending methods of surface preparations and confirm coatings needed.
- Surface Preparation Inspection. After the contractor completes cleaning and surface preparation, GPI will conduct entry into the existing wet well and inspect the concrete surface to ensure its suitability for application of the plural epoxy coating and prepare a report of findings.
- Coating Inspection. After contractor coats the wet well interior, GPI will perform the following:
    - Conduct high voltage holiday testing of the wet well epoxy coating system in accordance with ASTM D 4787 for Concrete and ASTM D5162 for Ductile Iron Pipe.
    - Perform adhesion test of the wet well epoxy coating system in accordance with ASTM D7234 for concrete surfaces and ASTM D4541 for metallic surfaces.
    - Prepare a test report summarizing findings.

Deliverables:

- Tests reports with photographs for the Initial Inspection, Surface Preparation Inspection, and Coating Inspection. Reports to be provided electronically in PDF format via email.

Assumptions:

- Parametrix will conduct one site visit during the Initial Inspection.
- GPI will have a total of four days on-site, one day each for the first two inspections, and two days for the Coating Inspection. Neither GPI nor Parametrix will conduct follow-up visits after the Surface Preparation Inspection nor after the holiday Coating Inspection to confirm if the contractor corrected the noted deficiencies.
- The contractor (or others) will provide the following (it is our intent that the Contractor provide these services as they are typically called out within the Construction Specifications):
    - A fan for ventilation of the pump station wet well, as needed for entry and to dry the walls.
    - Fall protection and retrieval equipment.
    - Qualified observer for confined space entry by Parametrix and GPI.
    - Plugs or valves to stop flow into the pump station.
    - Removal and reinstallation of the new submersible pumps.
    - Cleaning the wet well sufficiently for each inspection. For Coating Inspection, sufficient for spark testing.

- Electricity and lighting in the wet well.

- Due to the hardness of the finish coat, it will be necessary to use a two-part epoxy glue for the adhesion test of the coating - the pull dollies require a 24-hour cure. Two days will be required to conduct this testing. GPI costs include lodging and meals.
- Adhesion values obtained per ASTM D4541 will be reported numerically by GPI to BES and Parametrix without any comment as to pass or fail. GPI will provide comments on the test results compared to ASTM D4541. Parametrix will provide recommendations to BES for actions by the Contractor to correct coating system deficiencies in the event that the adhesion tests are not within the ASTM guidelines.
- GPI and Parametrix will provide individual personal safety equipment (hard hats, harness, safety glasses) for confined space entry in accordance with applicable codes and regulations.
- Surface preparation and coating inspections will be performed by GPI's currently NACE-Certified Coating Inspector. All team staff conducting wet well entries will have current confined space training.

Phase 60. Startup/Close Out

Task 60.12. Startup/Closeout Project Management.

This project management task includes one subtask. Invoices to BES will be at the task level.

Subtask 601. Startup/Closeout Project Management. Coordinate the team, prepare monthly invoices, subconsultant utilization reports, and progress reports. Prepare project correspondence and maintain project files.

Deliverables:

- Subconsultant utilization report and monthly progress reports and invoices.
- All progress reports and invoices will be submitted and processed through Heron.

Assumptions:

- Project level of effort and cost are based on a duration of the Startup/Closeout Phase of three months.

Task 60.14. Startup/Closeout Assistance.

The Startup/Closeout Task contains two subtasks.

Subtask 610. Startup Assistance: Review contractor startup test plan and schedule. Parametrix and Elcon will assist BES for one day on-site and observe contractor startup of the pump station. This should include draw down tests and performance tests of the sewage pumps, checking the flow meter and pressure gauges, checking operation of vacuum/air relief valves and other valves, observing operation of the standby generator and automatic transfer switch, and checking selected electrical equipment. After successful startup and project completion by the construction contractor, prepare a letter to DEQ certifying construction was completed in accordance with design.

Manufacturers' representatives will provide startup assistance and training on their specific equipment. Parametrix will review contractor's startup plan and prepare worksheets to document sewage pump performance. Parametrix will utilize BES's project-specific startup worksheets.

Deliverables:

- Written report on findings submitted by email.
- Letter certifying construction compliance to DEQ.

Assumptions:

- Parametrix and Elcon staff will be on-site for one full day for startup assistance.
- BES will meet with the construction contractor regarding testing and startup to review contractor's test plan and schedule.
- BES will facilitate contractor's scheduling of manufacturer representatives to be on-site at the same time that Parametrix and Elcon staff are on-site.
- Manufacturer representatives will provide the number of days of startup service as defined in the contract specifications.

- Manufacturers will provide reports documenting startup test results for their equipment.
- BES will provide copies of its startup worksheets to Parametrix prior to Parametrix's site visit.
- Parametrix and Elcon staff will not operate any equipment.
- BES will provide startup services for all control, telemetry, and instruments.

Subtask 620. Operations and Maintenance Manual. Prepare a narrative O&M manual following BES guidelines and meeting DEQ requirements. The following are anticipated sections of the O&M manual:

- Section 1. Introduction and Description of System
- Section 2. System Control and Operation
- Section 3. Utilities
- Section 4. Routine Maintenance
- Section 5. O&M Scope of Work
- Section 6. Safety and Reference Documents (bound separately, by BES)
- Section 7. Emergency Plans and Procedures Reference Documents (bound separately, by BES)
- Section 8. Equipment Literature (bound separately, by BES)
- Appendices: Test Reports, certifications, start-up data; table of contents of contractors O&M data; and suppliers contact information

Deliverables:

- Draft O&M Manual in pdf format delivered by email.
- Final O&M Manual in Word and pdf formats delivered on a CD. Figures will be ACAD and/or pdf as required by BES. Three hard copies in 3-ring binders, with sections tabbed as required by DEQ.

Assumptions:

- BES will provide and insert appropriate safety, city reference, and policy documents for O&M Manual.
- The O&M will not address operation nor maintenance of the force main.
- BES will provide electronic copies of table of contents of contractor's O&M data, supplier's contract information, pump factory test reports, manufacturer's startup reports, manufacturer's proper installation certifications, and supplier's contact information for Parametrix's insertion into the O&M manual.
- BES will provide any needed O&M data related to instrumentation, control, and their telemetry systems.

CONSULTANT PERSONNEL

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

NAME	ROLE ON PROJECT
Jennifer Murphy	Project Manager
Alexandra Reiling	Design Manager
Erik Dee-Olsen	Stormwater Design
Mike Pyszka	Structural Engineer
Joel Linke	Modeling

SUBCONSULTANTS

The Consultant shall assign the following subconsultants to perform work in the capacities designated:

NAME	DMWESB CERTIFICATION TYPE	ROLE ON PROJECT	SUBCONTRACT AMOUNT
i-Ten Associates Inc.	MBE/DBE	CAD	$46,683
Rivero Design	DBE/ESB/MBE/WBE	CAD	$20,520
Elcon Associates, Inc.	MBE	Electrical Engineering	$150,010
Applied Archaeological Research, Inc.		Archaeological Investigation	$21,350
Strata Land Use Planning	ESB/WBE	Land Use / Permitting	$9,200
Greenman-Pedersen, Inc.		Wetwell/Manhole Condition Assessment	$4,900
infrastructure MD, Inc.	WBE	Pipeline Inspection	$174,160
Marianne Zarkin Landscape Architect LLC	DBE/ESB/WBE	Landscape Architecture	$9,213

The total subcontracting to D/M/W/ESB firms on this contract is estimated at $409,786 or 42.7% of the Contract amount.

The City will enforce all social equity contracting and D/M/W/ESB subcontracting commitments submitted by Consultant in its Proposal. Consultant shall not add, eliminate, or replace any Subconsultant assignments without the prior written consent of the Chief Procurement Officer; failure to use the identified D/M/W/ESB Subconsultants without prior written consent is a material breach of contract. Any changes must be reported and submitted to the PTE Contract Compliance Specialist on the Subconsultant Change Request Form found on Procurement Services' website under Contractor Resources. All changes to this Contract, including changes to the D/M/W/ESB subcontracting commitments, must be made by written amendment and approved by the Chief Procurement Officer to be valid.

For contracts valued $50,000 or more, the Consultant shall submit a Monthly Subconsultant Payment and Utilization Report (MUR), made part of this Contract by reference, reporting ALL Subconsultants employed in the performance of this Contract. An electronic copy of the MUR may be obtained by contacting the PTE Contract Compliance Specialist.

COMPENSATION

The maximum that the Consultant can be paid on this Contract is $959,746 (hereafter the "not to exceed" amount.). The "not to exceed" amount includes all payments to be made pursuant to this Contract, including reimbursable expenses, if any. Nothing in this Contract requires the City to pay for work that does not meet the Standard of Care or other requirements of the Contract. The actual amount to be paid Consultant may be less than that amount.

The task breakdown of the "not to exceed" amount is shown in the table below. Consultant may not reallocate compensation between tasks without the written approval of the City. The Contract Manager is authorized to provide written approval for reallocation of funds between tasks, if the reallocation does not affect the contract not to exceed amount. The necessity for Optional Tasks will be determined by the City. No work or charges may proceed on Optional Tasks without written authorization of the City' Project Manager.

Task No.	Description	Task Amount Not-To Exceed	
		Optional Tasks	Core Projects
20	Predesign	$11,530	$237,678
30	Design	$123,450	$419,489
40	Advertise		$7,757
50	Construction	$9,533	$110,684
60	Startup/Closeout	$5,947	$33,678
Total Tasks Not-To-Exceed Amount:		**$150,460**	**$809,286**
	Total Core Project and Optional Tasks Amount:		**$959,746**

The Consultant is entitled to receive progress payments for its work pursuant to the Contract as provided in more detail below. The City will pay Consultant based on these invoices for acceptable work performed and approved until the "not to exceed" amount is reached. Thereafter, Consultant must complete work based on the Contract without additional compensation unless there is a change to the scope of work.

Any estimate of the hours necessary to perform the work is not binding on the City. The Consultant remains responsible if the estimate proves to be incorrect. Exceeding the number of estimated hours of work does not impose any liability on the City for additional payment.

If work is completed before the "not to exceed" amount is reached, the Consultant's compensation will be based on the Consultant's bills previously submitted for acceptable work performed and approved.

PAYMENT TERMS: Net 30 Days

Hourly Rates

The billing rates shall not exceed those set forth below:

LABOR CLASSIFICATION	MINIMUM BILLING RATE ($/HR)	MAXIMUM BILLING RATE ($/HR)
Parametrix, Inc.		
Admin Assistant	$ 52.92	$ 89.30
Admin Assistant Senior	$ 58.81	$ 99.21
BD Program Manager	$ 161.91	$ 336.96
CADD Operator I	$ 58.81	$ 99.21
CADD Operator II	$ 65.32	$ 110.23
CADD Operator III	$ 80.66	$ 136.10
CADD Supervisor/Tech Lead	$ 89.62	$ 151.20
CADD Services Manager	$ 109.49	$ 184.78
Consultant Senior	$ 163.46	$ 250.00
Designer I	$ 72.60	$ 122.47
Designer II	$ 80.66	$ 136.10
Designer III	$ 89.62	$ 167.14
Designer IV	$ 109.49	$ 184.78
Designer Senior	$ 121.06	$ 249.54
Division Manger Regional	$ 163.46	$ 250.00
Electrical Designer I	$ 80.66	$ 136.10
Electrical Designer II	$ 89.62	$ 151.20
Electrical Designer III	$ 99.08	$ 167.14
Electrical Designer IV	$ 109.49	$ 184.78
Electrical Designer Senior	$ 121.06	$ 249.54
Electrical Engineer I	$ 80.66	$ 136.10
Electrical Engineer II	$ 89.62	$ 151.20
Electrical Engineer III	$ 99.08	$ 167.14
Electrical Engineer IV	$ 109.49	$ 204.24
Electrical Engineer Senior	$ 133.80	$ 250.00
Engineer I	$ 72.60	$ 122.47
Engineer II	$ 80.66	$ 136.10
Engineer III	$ 89.62	$ 167.14
Engineer IV	$ 109.49	$ 184.78
Engineer Senior	$ 121.06	$ 249.54
Graphic Designer	$ 72.60	$ 136.10
Graphic Designer Senior	$ 89.62	$ 167.14
GIS Technician	$ 65.32	$ 110.23
GIS Analyst	$ 72.60	$ 122.47
GIS Analyst Senior	$ 80.66	$ 136.10
Hydrogeologist I	$ 72.60	$ 122.47
Hydrogeologist II	$ 80.66	$ 136.10
Hydrogeologist III	$ 89.62	$ 167.14
Hydrogeologist IV	$ 109.49	$ 184.78
Hydrogeologist Senior	$ 121.06	$ 249.54
Planner I	$ 72.60	$ 122.47
Planner II	$ 80.66	$ 136.10
Planner III	$ 89.62	$ 167.14
Planner IV	$ 109.49	$ 184.78
Planner Senior	$ 121.06	$ 249.54
Principal/Principal Consultant	$ 180.67	$ 336.96
Project Accountant	$ 65.32	$ 110.23

Project Accountant Senior	$ 72.60	$ 136.10
Project Coordinator	$ 65.32	$ 110.23
Project Coordinator Senior	$ 72.60	$ 122.47
Publications Specialist I	$ 58.81	$ 99.21
Publications Specialist II	$ 65.32	$ 122.47
Publications Specialist Senior	$ 72.60	$ 136.10
Publications Supervisor	$ 89.62	$ 167.14
Scientist/Biologist I	$ 72.60	$ 122.47
Scientist/Biologist II	$ 80.66	$ 136.10
Scientist/Biologist III	$ 89.62	$ 167.14
Scientist/Biologist IV	$ 109.49	$ 184.78
Scientist/Biologist Senior	$ 121.06	$ 249.54
Tech Aide	$ 52.92	$ 89.30
Tech Aide Senior	$ 58.81	$ 99.21
Technical Editor	$ 72.60	$ 136.10
Technical Editor Senior	$ 89.62	$ 167.14
i-Ten Associates Inc.		
Drafter	$ 60.00	$ 90.00
Project Manager	$ 90.00	$ 130.00
Senior Project Manager	$ 100.00	$ 140.00
Rivero Design		
Civil Designer / Drafter	$ 90.00	$ 120.00
Elcon Associates, Inc.		
Principal	$ 242.00	$ 250.00
Project Manager / Sr. Engineer	$ 151.00	$ 241.00
Sr. Electrical Designer	$ 109.00	$ 138.00
Jr. Designer	$ 77.00	$ 96.00
CADD	$ 73.00	$ 88.00
Administrative / Accounting	$ 73.00	$ 81.00
Applied Archaeological Research, Inc.		
Architectural Historian	$ 78.50	$ 80.10
Artifact Analyst	$ 62.50	$ 68.00
Asst. Archaeologist	$ 52.50	$ 58.00
Graphic Artist	$ 68.00	$ 73.00
Lab Director	$ 68.00	$ 73.00
Lab Technician	$ 52.50	$ 58.00
Office Admin.	$ 68.00	$ 73.00
Principal Investigator	$ 113.00	$ 118.00
Project Archaeologist	$ 70.00	$ 75.00
Project Manager	$ 78.50	$ 80.10
infrastructureMD, Inc.		
Senior Project Manager	$ 170.00	$ 230.00
Project Manager	$ 165.00	$ 215.00
Technical Consultant	$ 160.00	$ 210.00
Senior Project Professional	$ 155.00	$ 205.00
Project Professional	$ 140.00	$ 185.00
Associate Professional	$ 130.00	$ 175.00
Professional	$ 120.00	$ 160.00
Senior Technician	$ 100.00	$ 140.00
Technician	$ 85.00	$ 115.00
Senior Specialist	$ 115.00	$ 160.00
Specialist 3	$ 105.00	$ 140.00
Specialist 2	$ 85.00	$ 115.00
Specialist 1	$ 70.00	$ 95.00

Marianne Zarkin Landscape Architect		
Principal Landscape Architect	$ 105.00	$ 140.00
Project Manager	$ 105.00	$ 140.00
Landscape Architect	$ 86.25	$ 115.00
CAD Drafting	$ 72.75	$ 97.00
Administrative	$ 56.25	$ 75.00
Greenman-Pedersen, Inc.		
Branch Manager	$ 187.50	$ 250.00
Project Director	$ 187.50	$ 250.00
Senior Project Manager	$ 135.00	$ 180.00
Senior Engineer	$ 120.00	$ 160.00
Senior Landscape Architect	$ 120.00	$ 160.00
Senior Planner	$ 120.00	$ 160.00
Project Manager	$ 112.50	$ 150.00
Project Engineer	$ 93.75	$ 125.00
UAS Pilot	$ 93.75	$ 125.00
Senior Inspector	$ 82.50	$ 110.00
Coatings Inspector	$ 82.50	$ 110.00
Engineer	$ 75.00	$ 100.00
Landscape Designer	$ 75.00	$ 100.00
Survey Crew Chief	$ 75.00	$ 100.00
Inspector	$ 75.00	$ 100.00
Sr. Technician	$ 67.50	$ 90.00
Assistant Engineer	$ 60.00	$ 80.00
Jr. Inspector	$ 60.00	$ 80.00
Technician	$ 48.75	$ 65.00
Intern	$ 48.75	$ 65.00
Administration	$ 41.25	$ 55.00
Strata Land Use Planning		
Principal Planner	$ 90.00	$ 110.00

Standard Reimbursable Costs

The following costs will be reimbursed without mark-up:

- Out-of-Town Travel. Travel (transportation, lodging and per diem) of Consultant and/or experts when specified in the contract or requested by BES, directly attributed to specific project tasks and when to a location outside a 100mile radius of Consultant's project office. Travel will be preapproved by the City's Project Manager and travel costs will be reimbursed in accordance with the City's Travel Expense Guidelines.
- Photocopying/Reproduction Costs. Copying and reproduction of documents that cannot be handled by Consultant inhouse and are sent to an outside vendor.

Subconsultant Costs

Compensation for subconsultants shall be limited to the same restrictions imposed on the Consultant. The maximum markup on subconsultant services shall not exceed 5%.

Adjustment of Labor Rates Due to Inflation

Annual adjustment of hourly rates will be considered upon written request from the Consultant. Approval of a request for rate increases is solely within the City's discretion and under no circumstances is the City obligated to approve such a request.

Rate increases are subject to the following limitations:

- No increases will be granted before the one-year anniversary of the Contract;
- No more than one increase shall be granted per Contract year;
- Rate increases may not exceed the preceding calendar year's Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) average inflation rate for the Portland Metropolitan Area (as determined from the U.S. Bureau of Labor Statistics);
- Rate increases shall not be retroactive.

Other than the impact of inflation as described above, hourly rates may not be increased.

Progress Payments

On or before the 15th of each month, the Consultant shall submit to the City's Project Manager an invoice for work performed by the Consultant 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, and tasks performed. The Consultant t shall also attach photocopies of claimed reimbursable expenses, if applicable. The Consultant 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 Consultant shall develop a billing format for approval by the City.

The City shall pay all amounts to which no dispute exists within 30 calendar 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 Consultant shall make full payment to its subconsultants within 10 business days following receipt of any payment made by the City to Consultant.

ACH Payments

It is the City's policy to pay its Consultant invoices via electronic funds transfers through the automated clearing house (ACH) network. To initiate payment of invoices, Consultant shall execute the City's standard ACH Vendor Payment Authorization Agreement.

Upon verification of the data provided, the Payment Authorization Agreement will authorize the City to deposit payment for services rendered directly into Consultant accounts with financial institutions. All payments shall be in United States currency.

WORKERS' COMPENSATION INSURANCE STATEMENT

IF YOUR FIRM HAS CURRENT WORKERS' COMPENSATION INSURANCE, CONSULTANT MUST SIGN HERE:

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

Consultant Signature: _____ Date: 3/16/18 Entity: Parametrix, Inc.

IF YOUR FIRM DOES NOT HAVE CURRENT WORKERS' COMPENSATION INSURANCE, CONSULTANT MUST COMPLETE THE FOLLOWING INDEPENDENT CONSULTANT CERTIFICATION STATEMENT:

As an independent Consultant, I certify that I meet 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 Consultant 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. Consultant: 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.

_____ _____

Consultant Signature Date

FOR CITY USE ONLY

PROJECT MANANGER-COMPLETE ONLY IF CONSULTANT DOES NOT HAVE WORKER'S COMPENSATION INSURANCE
ORS 670.600 Independent Consultant 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 consultant" 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

CONSULTANT 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 Consultant 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 Chapters 5.33.076 and 5.33.077 of Code of the City of Portland; and hereby certify I am an independent consultant as defined in ORS 670.600.

Parametrix, Inc.

By: _____ Date: 3/16/18

Name: Richard Roché

Title: Operations Manager

CONTRACT NUMBER: 30006282

CONTRACT TITLE: **Lombard Pump Station Upgrade**

CITY OF PORTLAND SIGNATURES:

By: _____ Date: _____
Elected Official

Approved:

By: _____ Date: _____
Office of City Auditor

Approved as to Form:

By: _____ Date: _____
Office of City Attorney