SENT VIA EMAIL

AMENDMENT No. 2 to
CONTRACT No. 30006282
FOR
Lombard Pump Station Upgrade

This Amendment No. 2 amends Contract No. 30006282 dated 1st day of February, 2018, by and between Parametrix, Inc., ("Consultant"), a corporation of the State of Washington, and the City of Portland**,** a municipal corporation of the State of Oregon ("City") by and through their duly authorized representatives. This Amendment may refer to Consultant and City individually as a "Party" or collectively as the "Parties."

This Amendment is authorized by City Ordinance No. _____.

The Effective Date of this Amendment is _____**.** The purpose of this Amendment is to change the City's Project Manager, extend the Term, add funds to the Contract, revise the Scope of Work, revise the SUBCONSULTANTS section and revise the task breakdown to the "not to exceed" amount in the COMPENSATION section.

The Contract was previously amended as follows:

> Amendment 1, dated March 26, 2020, which extended the Term from December 31, 2021 to June 30, 2023, increased the original not-to-exceed amount of the Contract from $959,746 by $691,373 to a new total not-to-exceed amount of $1,651,119, revised the Scope of Work, revised the CONSULTANT PERONNEL section, revised the SUBCONSULTANT section and revised the task breakdown to the "not to exceed" amount in the COMPENSATION section.

The Parties agree to Amend the Contract as follows:

1. The City's Project Manager is changed from Aaron Lawler to **Cyrus Osborn**.

2. The Term is extended from June 30, 2023 to **October 21, 2024,** unless terminated sooner under the provisions of the Contract.

3. The Contract not-to-exceed amount of $1,651,119 is increased by $261,774 to a new total not-to-exceed amount of **$1,912,893.**

4. The Scope of Work is revised as shown below. New language is **BOLD** and

underlined. Deleted language is indicated in text ~~strikethrough~~. Where there is no BOLD and underline or text strikethrough language shall remain the same.

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:

- An average of 4 hours per week on project coordination with BES staff for project management.
- ~~Project level of effort and cost are based on a duration of the Design Phase of 12 months.~~
- **Project level of effort and cost are based on a Design Phase duration of up to 30 months. This assumes an estimated hours breakdown of the below:**
    - **For incorporation of Amendment 2 budget changes including updated sub agreements, accounting software, and earned value reporting template.**
        - **PM: 6 hours**
        - **DPM: 6 hours**
        - **Project Controls and Contracts: 8 hours**
        - **Accountant: 8 hours**
    - **For 13 months added under Amendment 2:**
        - **PM: 4 hours per month**
        - **DPM: 6 hours per month**
        - **Project Controls: 2 hours per month**
        - **Accountant: 1.5 hours per month**
    - **It is assumed that only a reduced level of effort will be needed for 5 additional months added under Amendment 2 during the middle and end of the permitting process:**
        - **PM: 2 hours per month**
        - **DPM: 3 hours per month**
        - **Project Controls: 2 hours per month**
        - **Accountant: 1.5 hours per month**

Subtask 302. Design Quality Control/Quality Assurance.

Parametrix will provide ongoing peer review and quality review at established milestones on all deliverables – including, but not limited to, the pump station improvements and force main sliplining design.

Parametrix will provide ongoing peer review and quality review at established milestones on the additional design deliverables and proposed design modifications included within Amendment No. 2. Quality assurance documentation will be detailed within the project management plan and will be maintained

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.~~
- **The design is anticipated to take 30 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.
- **Incorporate site security improvements developed by the new security team. These improvements include an automated sliding site access gate, mini-mesh fencing, an 8-ft fence with barbed wire, and secondary screening around the generator with a gate. Confirm that fence preferences are**

compliant with land use and zoning for pump station site. Review and assess the pump station risk / criticality / vulnerability matrix tool provided by BES.

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.~~

- **Increase the project development impact area to (1) include a concrete mixing and staging area to the west of the pump station for ground improvements and (2) include the temporary site grading needed for ground improvements to the north, east, and south of the pump station. Include trees in the development impact area on the tree plan and existing tree schedule. To the extent possible, include mitigation trees on the planting plan.**

- **Prepare five landscape drawings suitable for implementation by the Portland Parks, conforming to City of Portland standards, and meeting the requirements defined by Urban Forestry and the project Arborist. The five drawings will include**

    - **Tree Plan**
    - **Existing Tree Schedule**
    - **Landscaping Schedule**
    - **Planting Plan**
    - **Details**

- **Provide two specifications**

    - **Meadow Seeding**
    - **Turf and Grasses**

Subtask 321. Force Main Archaeological Excavation & Exploration

Additional archaeological investigation in the areas of open cut within approximately the first 1,000 feet of the force main alignment.

Deliverables:

- Reconnaissance-level cultural resources survey field notes.
- Technical report on cultural and archaeological resources for the areas impacted by the force main sliplining. This will be included as an appendix to the original technical report.

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).
- **Based on input from BES Health and Safety leads, provide an exterior roof access ladder and parapet designed for fall protection in lieu of the initial access hatch and fall protection anchor posts initially provided and commonly used on past BES pump station projects. Additional structural modifications needed to accommodate new equipment pads, automatic gate, etc. are included within Subtasks 311, 330, and 380.**

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.
- **Provide mechanical and instrumentation details based on BES preferences to include**
    - **Radar level sensing with a junction panel and intrinsically safe barrier panel in lieu of the originally selected approach utilizing BES standard air compressors and bubbler panel.**
    - **ARV vault wireless communication in lieu of the earlier designed conduit installed within the annular space between the host pipe and the new slip lined pipe**
    - **Sump pump panel with pump alteration and submersible level transducer in lieu of sump pumps with integral float.**

- **Custom station entry panel incorporating the furnace thermostat as well as the starters for the dry well exhaust and supply fans.**

- **Coordinate with a wireless communication device manufacturer and BES to perform signal strength testing between the ARV vault located near force main stationing 16+40 and the Refuse Pump Station. Attend two testing dates for no more than 4 hours per test.**

- **Provide up to an additional 10 mechanical and instrumentation drawings and two additional specifications to incorporate the above items.**

Subtask 343. Force Main Rehabilitation

Design of rehabilitation of the Lombard Force Main utilizing direct buried ERDIP and HDPE and ERDIP liner pipes.

Coordinate force main plans with project landscape architects and arborist via in-person site visits or MS Teams meetings to review layout and identify layout alternatives. Incorporate comments.
Coordinate with BPA to avoid, in as much as is possible, permitting implications and impacts to BPA property, easements, and facilities such as transmission towers.

Deliverables:

- Up to 16 drawings detailing the rehabilitation of the force main using sliplining. Drawings to tentatively include:
  - FM-01 – Force Main Vicinity and Location Map
  - FM-02 – Force Main Alignment 0+00 to 5+00 - Plan/Profile
  - FM-03 – Force Main Alignment 5+00 to 10+00 - Plan/Profile
  - FM-04 – Force Main Alignment 10+00 to 15+00 - Plan/Profile
  - FM-05 – Force Main Alignment 15+00 to 20+00 - Plan/Profile
  - FM-06 – Force Main Alignment 20+00 to 25+00 - Plan/Profile
  - FM-07 – Force Main Alignment 25+00 to 30+00 - Plan/Profile
  - FM-08 – Force Main Alignment 30+00 to 35+00 - Plan/Profile
  - FM-09 – Force Main Alignment 35+00 to 40+00 - Plan/Profile
  - FM-10 – Force Main Alignment 40+00 to 45+00 - Plan/Profile
  - FM-11 – Force Main Alignment Large Scale Views (1 of 2)
  - FM-12 – Force Main Alignment Large Scale Views (2 of 2)
  - FM-13 – Force Main Details (1 of 2)
  - FM-14 – Force Main Details (2 of 2)
  - FM-15 – Force Main Survey Control Table (1 of 2)
  - FM-16 – Force Main Survey Control Table (1 of 2)

Assumptions:

- Provide connections for up to 2 force main connections (Refuse PS Discharge and Leachate Pressure Line).
  - Pumps at the existing Refuse PS Discharge Line (4” per as-builts or 8” per PortlandMaps) and Leachate Pressure Line (6” per as-builts, not on PortlandMaps) will be able to provide adequate head to discharge into the Lombard FM bypass and rehabilitated Force Main. Existing piping will be disconnected from the existing within +/-10 feet of the force main and reconnected to the new liner pipe. BES to provide information on existing discharge flow rates and pump head.

- See Subtask 349: Railroad Coordination for coordination efforts associated with the railroads located along the force main alignment.
- BES will provide seismic and subsurface information for the length of the force main (using existing soil liquefaction hazard maps and characterization information, etc.). Additional borings may be required at the locations of the new ARV and VRV vaults as well as in the vicinity of the discharge manhole, to be determined by BES geotechnical engineer. BES to provide any required borings and associated geotechnical analysis to provide expected lateral spreading and settlement along the profile of the force main.

Subtask 344. Force Main Structures

Design of new structures along the Lombard Force Main to house the ARV and VRV, and improvements at the force main discharge.

Update project details for Pier Park site access and layout based on feedback from project arborist and City of Portland Parks. Coordinate force main plans with project landscape architects and arborist via in-person site visits or MS Teams meetings to review layout and identify layout alternatives. Incorporate comments.

Deliverables:

- Up to five (5) drawings detailing the new ARV and VRV vaults and discharge improvements. Drawings to tentatively include:
    - FS-01 – ARV/VRV Vault 1 - Plan + Sections
    - FS-02 – ARV/VRV Vault 2 - Plan + Sections
    - FS-03 – ARV/VRV Vault 3 - Plan + Sections
    - FS-04 – Discharge Manhole Demo - Plan + Sections
    - FS-05 – Discharge Manhole New Work - Plan + Sections

Assumptions:

- Assumes carbon canister-based odor control will be used at ARV locations and no odor control will be required at vacuum relief locations. Odor control will not be provided at the discharge manhole.
- New vault and manhole structures will use precast concrete assemblies.
- ARV/VRV valves will use BES standard assemblies by ARI similar to those provided for the Inverness Force Main.
- Monitoring of the valve vault will be achieved via floats connected back to the pump station via a pair of conductors and conduit routed through the existing force main, above the new HDPE pipe.
- The new vaults will be able to drain, via gravity to a nearby gravity sewer.
- Sump pumps and any other electrical and controls components and elements will not be required within the vaults. If sump pumps or more complex telemetry then that detailed above is required it will be provided using funds within the established design contingency fund.
- Vaults and Discharge Manhole drawings will be created using Revit.
- No 3D scanning of existing structures will be performed.

Subtask 345. Force Main Bypass Piping

Alignment and general requirements for bypass piping to allow the Lombard Force Main to be taken out of service for the rehabilitation of the force main.

Deliverables:

- Up to 3 drawings detailing the general bypass piping arrangement of the force main. Drawings to tentatively include:
    - BP-01 – Force Main Bypass Alignment 0+00 to 25+00

- BP-02 – Force Main Bypass Alignment 25+00 to 45+00
- BP-03 – Force Main Bypass Details (1 of 1)

Assumptions:

- Bypass piping will provide connections for up to 2 force main connections (Refuse PS and Leachate Pressure Line).
  - Pumps at existing Refuse PS and Leachate Pressure Line will be able to provide adequate head to discharge into common line with the Lombard FM bypass.
- No coordination will be required with railroads located along the force main alignment. If coordination is required additional funds will need to be allocated for this task.
- Assumes that bypass piping can be located on ground along existing sidewalks. No pedestrian or bicycle rerouting plans will be required.
- Assumes only one road crossing (N Columbia Blvd, south of N Burgard Rd.), one private driveway, and two public park access road crossings will be required.

Subtask 346. Force Main Erosion and Sediment Control

Alignment and general requirements for erosion and sediment control (E&SC) drawings for construction activities.

Deliverables:

- Up to 6 drawings detailing the general erosion and sediment control measures for construction of the force main rehabilitation measures. Drawings to tentatively include:
  - EC-01 – Force Main Alignment E&SC Plan 0+00 to 10+00
  - EC-02 – Force Main Alignment E&SC Plan 10+00 to 20+00
  - EC-03 – Force Main Alignment E&SC Plan 20+00 to 30+00
  - EC-04 – Force Main Alignment E&SC Plan 30+00 to 40+00
  - EC-05 – Force Main Alignment E&SC Plan 40+00 to 45+00
  - EC-06 – Force Main E&SC Details

Assumptions:

- Stormwater management and drainage reports/plans will not be required. Inlet protection may be required.
- The 1200-C permit, if required, will be filed and procured by the Construction Contractor. Per discussions with BES, all pipeline work in the Right-of-Way is self-permitted by the Owner. Additionally, 1200-C permits are based on disturbed/exposed earth at a given time, not the total disturbed earth over the duration of the project, so for pipeline work, where approximately 100-ft is disturbed at a time, a 1200-C permit is typically not required.

Subtask 347. Force Main Surface Restoration

Alignment and general requirements for bypass piping to allow the Lombard Force Main to be taken out of service for the rehabilitation of the force main.

Deliverables:

- Up to six (6) drawings detailing the general bypass piping arrangement of the force main. Drawings to tentatively include:
  - SR-01 – Surface Restoration 0+00 to 10+00
  - SR-02 – Surface Restoration 10+00 to 20+00
  - SR-03 – Surface Restoration 20-00 to 30+00
  - SR-04 – Surface Restoration 30+00 to 40+00

- SR-05 – Surface Restoration 40+00 to 45+00
- SR-06 – Surface Restoration Details (1 of 1)

Assumptions:

- Assumes both concrete and asphaltic pavement restoration.
- Surface will be generally replaced / repaired in kind.
- Landscaping beyond standard seed, straw, and replacement of minor vegetation in kind is not included.

Subtask 348. Traffic Control for Force Main Rehabilitation

Describes traffic control needed for sliplining. Includes one meeting with the City of Portland Bureau of Transportation (PBOT) and Trimet, if needed, to review the proposed rehabilitation method and develop a Traffic control Plan (TCP) meeting the requirements of those agencies. Submit draft TCP.

Deliverables:

- Draft Traffic Control Plan (TCP), this is to be included as a supplement to the Traffic Control Specification. Final TCP to be submitted by the Construction Contractor.
- Up to 5 drawings detailing the traffic control requirements to allow for rehabilitation of the force main using sliplining. Drawings to tentatively include:
  - TC-01 – Traffic Control 0+00 to 25+00
  - TC-02 – Traffic Control 25+00 to 45+00
  - TC-03 – Traffic Control Columbia Blvd and Burgard Rd
  - TC-04 – Traffic Control Bypass Force Main Crossing Installation
  - TC-05 – Traffic Control Details (1 of 2)
  - TC-06 – Traffic Control Details (2 of 2)

Assumptions:

- Assumes only one private driveway and two public park access road crossings will be required to route the bypass pipe to the discharge FM.
- No pedestrian or bicycle rerouting plans will be required.

Subtask 349. Railroad Coordination

The current force main alignment crosses under 3 railroads. Parametrix will coordinate directly with the railroad owner to understand and incorporate the bypass pumping requirements and any sliplining requirements at these crossings for design.

Additional Parametrix involvement in the background research of rail line ownership and existing easements as the current ownership rights was unclear in the surveyed documents provided by PBOT. Preparation of figures for use in application forms. Coordination with BES for completion of application forms and payment options.

Assumptions:

- Nemariam will provide up to 80 hours of coordination with the railroad owner.
- ~~Parametrix will provide up to 18 hours of coordination with the railroad owner~~
- **Parametrix will provide up to 60 hours of coordination with BES and up to two railroad owners for the three railroad crossings included in the project.**

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.
- **Provide a permanent fuel polishing system for the standby generator, as the generator fuel tank is anticipated to be more than 300 gallons.**
- **Add and modify conduit to accommodate controls components noted in Subtask 340, including but not limited to radar level sensors and for the automatic gate noted in Subtask 311.**
- **Modify conduit and panel wiring diagrams to incorporate the ventilation system controls into the station entry panel.**

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. The force main sliplining portion is exempt from Environmental Review. Per ORS 33.430.080, maintenance, repair, and replacement of existing utilities is exempt from Environmental Review, if the size is not increased. In this case, the force main diameter will decrease, and the footprint of the force main will be unchanged.
- 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.

- Prepare civil specifications related to the force main including:

  - Up to 5 specifications associated with the ARV/VRV vaults and force main discharge structures and equipment. These are preliminarily to include:
    - Combination Air Valves
    - Precast Unground Structures
    - Flap Gate (at discharge manhole)
    - Odor Control (at combination valves)
    - Miscellaneous Appurtenances/Contingency

  - Up to 4 specifications associated with the rehabilitation of the force main. These are preliminarily to include:

    - Sliplining Means and Methods
    - HDPE Pipe Material
    - Earthwork/Excavation
    - Hydrostatic Testing

  - Up to 2 specifications associated with the surface restoration along the force main alignment. These are preliminarily to include:

    - Nonpaved Surface Restoration
    - Concrete and Asphalt Pavement

  - Up to 1 specification associated with the force main bypass piping, this is considered a delegated design to be provided and permitted by the Construction Contractor.
  - Up to 1 specification associated with traffic control.
  - No specifications will be provided for the E&SC beyond the City Standard Specifications and project specifications Divisions O and 1.

- **Provide updated specifications for wireless communication equipment, associated mounting information, automatic security gate. and other items and appurtenances added under Amendment 2. Effort associated with adding an integrated fuel polishing unit to the generator is included within Subtask 360. Also includes updating associated cost estimate with additional equipment and alternative communication approaches.**

Subtask 391. Submittal – 60%

For 60% design submittal, assemble documents into one package for BES review. Comply with BES 60% checklist. Team meeting with BES to review comments.

Deliverables:

- BES 60% design checklist form.
- 60% drawings, sample ACAD or Revit files, construction sequence schedule, and engineer's opinion of probable cost for the pump station improvements and force main rehabilitation.
- Written responses to BES comments.

Subtask 392. Submittal – 90%

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

Deliverables:

- BES 90% design checklist form.
- 90% design, sample CAD files, stamped and signed calculations, updated engineer's opinion of probable cost, final stormwater report, and construction sequence schedule for the pump station improvements and force main rehabilitation.
- Written responses to BES and DEQ comments.
- See Task 260 for deliverables associated with the force main transient analysis. Final transient analysis will be performed and submitted within the 90% Design Package.
- Short circuit, protective device coordination, and arc flash studies provided as part of the 90% Submission of the design phase, see subtask 360.

Subtask 393. Submittal – 100%/Bid Set

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.

Provide two additional focus group meetings to resolve any modifications or design changes as required to address railroad or BPA coordination comments. Meetings will be up to 2 hours long and include prior material preparation and provisions of meeting minutes.

Deliverables:

- Bid-ready stamped and signed structural calculations (four sets), specifications, and full and half-size drawings (also electronic files of all drawings (ACAD or Revit files and PDFs). Final engineer's opinion of probable cost and a detailed construction sequence schedule for the pump station improvements and force main rehabilitation.
- Written responses to BES and DEQ comments.
- Stamped and signed copies of design calculations prepared for the project as required to obtain the necessary permits.

Subtask 399. OPTIONAL - Contingency & Management Reserve

This subtask provides contingency and management reserve funds. These funds can only be accessed with written authorization from the BES project manager. A document detailing the specific services and an associated fee estimate will be required prior to use of any of the allocated contingent funds. The quantity of funds within this task has been generally set to allow for the resolution of the following issues and/or provision of the following items should the need arise:

- Railroad crossing details or additional coordination exhibits.
- Details to allow for coordination of the bypass piping with the two existing bridges along the proposed alignment.

- Air and vacuum relief vault sump pumps, more complex telemetry systems (above and beyond a float), and potential power service to the associated vaults.

The quantity of funds within this task has been generally set to allow for the resolution of the following issues and/or provision of the following items should the need arise:

- **Address any additional comments or requested modifications from BPA or the rail roads. Modify the existing design to accommodate or address feedback from the Type III Landuse review**

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 18 months. This includes 4 hours per week for the project manager, 2 hours per month for the project coordinator, and 1 hour per month for the project accountant.

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.

- **Provide review of submittals related to the wireless communication, automatic security gate, radar level equipment and intrinsically safe barrier panels, and other items added and modified elements within Amendment No. 2.**

Deliverables:

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

Assumptions:

- 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.
- ~~Review up to 300 submittals and resubmittals, including all disciplines~~
- **Review up to 312 submittals and resubmittals, including all disciplines**
- **A good faith effort will be made to provide a response to each submittal within 5 business days.**

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.

- **Provide review of and responses to Requests for Information (RFIs) related to the wireless communication, automatic gate, radar level equipment and intrinsically safe barrier panels, and other added items and modified elements within Amendment No. 2.**

Deliverables:

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

Assumptions:

- ~~Assume 100 RFIs/RFCs for Parametrix review and response.~~
- **Assume 108 RFIs/RFCs for Parametrix review and response**
- **A good faith effort will be made to provide a response to each RFI/RFC within 2 business days**.
- 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 14 total site visits by Parametrix: four by structural engineer for rebar and concrete and BDS requirements and 10 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. Observation report to be provided via email.
- 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 for the pump station improvements and force main rehabilitation. 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 Bear Inspection and Consulting to conduct entries into the wet well.

This subtask is divided into three elements:

- Initial Inspection. After the contractor conducts cleaning, Parametrix and Bear Inspection and Consulting will conduct an inspection of the wet well. Parametrix's engineer will prepare a report recommending the extent of needed concrete repairs. Bear Inspection and Consulting will prepare a report recommending methods of surface preparations and confirm coatings needed.
- Surface Preparation Inspection. After the contractor completes cleaning and surface preparation, Bear Inspection and Consulting 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, Bear Inspection and Consulting 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.
- Bear Inspection and Consulting 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 Bear Inspection and Consulting 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 Bear Inspection and Consulting.
    - 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. Bear Inspection and Consulting costs include lodging and meals.
- Adhesion values obtained per ASTM D4541 will be reported numerically by Bear Inspection and Consulting to BES and Parametrix without any comment as to pass or fail. Bear Inspection and Consulting 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.
- Bear Inspection and Consulting 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 Bear Inspection and Consulting's currently NACE-Certified Coating Inspector. All team staff conducting wet well entries will have current confined space training.
- Inspections are expected not to exceed 40 hours – including travel time for Bear Coatings and Inspection.

Subtask 599. OPTIONAL - Contingency & Management Reserve
This subtask provides contingency and management reserve funds. These funds can only be accessed with written authorization from the BES project manager.

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.

- **Provide up to 12 hours of startup assistance for incorporation and configuration of wireless communication equipment, radar level equipment, intrinsically safe barrier panels, and other added items and modified elements within Amendment No. 2.**

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 for the pump station. Parametrix will be on-site for two full days of activities associated with the force main and ARV/VRV startup, two hours associated with preparations for the site visit, and four hours of follow up.
- 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
- **Provide narratives for the engineer's O&M manual to detail the wireless communication equipment, radar level equipment, intrinsically safe barrier panels, and other added items and modified elements within Amendment No. 2.**

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 include operation and 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.

Subtask 630. OPTIONAL - As-Built Drawings

As-built drawing markups related to the force main rehabilitation and improvements.

- **As-built drawing markups related to the wireless communication equipment, radar level equipment, intrinsically safe barrier panels, and other added items and modified elements within Amendment No. 2.**
- **The Original Contract included 60 hours of time with no scope language associated with it. A credit (in the form of credited and reduced hours in budget) for the associated fee has been applied to this LOE.**
- **Amendment 1 included effort for 42 drawings related to the force main. Because some scope was removed (traffic control) and other sheets were determined not to be needed, only 28 sheets related to LOE rates for hours per sheet for drafting/model and engineering as defined in the assumptions the force main design were included into the design. A credit (in the form of reduced and credited hours in budget) has been included for the 14 unused force main sheets.**

Assumptions:

- Assume that each drawing takes no more than 2 hours of CAD work.
- Accurate red-line drawings will be maintained by BES CM and the Contractor and turned over prior to starting this subtask.
- **Markups for drawings provided under other contracts will not be updated under this task, but will instead be updated through the associated, separate contracting mechanism. E.g. this task does**

not include effort to update the force main landscape drawings as the landscape architect (Greenworks) is contracted directly to BES under a separate on-call.

- **A total of 163 record drawings will be prepared for draft and final submissions.**
    - **Effort for 42 drawings related to the force main was included in Amendment 1**
    - **Force Main Landscaping (25 total) as-built drawings are not included in this scope of work. The landscape-architect-of-record for that work is not part of this contract.**
    - **BES will update the Reference drawings (9 total).**
    - **Effort for the remaining 87 sheets is included in this amendment. This assumes an average LOE of 2.0 hours per sheet for drafting/modeling, and 0.5 hours per sheet for engineering final review.**
    - **Up to two, 2-hour meetings are included.**

- **Electrical as-builts will not include physically modeled or drawn conduit beyond that shown in the initial bid documents.**

5. The SUBCONSULTANT section is revised as shown in the table below:

NAME	DMWESB CERTIFICATION TYPE	ROLE ON PROJECT	CURRENT SUBCONTRACT AMOUNT	AMENDMENT 2	REVISED SUBCONTRACT AMOUNT
i-Ten Associated, Inc	DBE/MBE	CAD	$46,683	-	$46,683
Rivero Design	D/M/W/ESB	CAD	$66,360	$28,280	$94,640
Elcon Associates, Inc	DBE/MBE	Electrical Engineering	$150,010	$23,865	$173,875
Applied Archaeological Research, Inc.	**None**	Archaeological Investigation	$21,350	-	$21,350
Strata Land Use Planning	ESB/WBE	Land Use / Permitting	$17,600	-	$17,600
Greenman-Pedersen, Inc	**None**	Wetwell/ Manhole Condition Assessment	$0	-	$0
infrastructureMD, Inc.	WBE	Pipeline Inspection	$27,860	-	$27,860
Marianne Zarkin Landscape Architect LLC	DBE/ESB/WBE	Landscape Architecture	$9,213	$17,665	$26,878
Cooper Zietz Engineers, Inc. dba Akana	DBE/MBE	Structural	$192,680	$27,780	$220,460
Nemariam Engineers & Associates, LLC, dba Haregu Nemariam Engineering LLC	DBE/ESB/ MBE/WBE	Traffic & Railroad	$79,530	-	$79,530
Bear Inspection & Consulting, LLC	**None**	Coating Inspections	$7,760	-	$7,760

The revised amounts to D/M/W/ESB firm on this Contract is estimated at **$687,526** or **35.94%** of the Contract amount.

6. The task breakdown in the COMPENSATION section is revised as shown in the table below:

Task No.	Description	Current Task Amount Not-to-Exceed		Amendment 2		Revised Task Amount Not-to-Exceed	
		Optional Tasks	Core Projects	Optional Tasks	Core Projects	Optional Tasks	Core Projects
20	Predesign	$20,030	$440,054	-	-	$20,030	$440,054
30	Design	$67,160	$745,032	$26,719	$194,151	$93,879	$939,183
40	Advertise	-	$14,106	-	-	$0	$14,106
50	Construction	$23,533	$264,965	-	$7,736	$23,533	$272,701
60	Startup/Closeout	$32,666	$43,573	$29,366	$3,802	$62,032	$47,375
Total Task Not-to-Exceed Amount:		$143,389	$1,507,730	$54,453	$193,014	$199,474	$1,713,419
Total Core Project and Optional Tasks Amount:		$1,651,119		$261,774		$1,912,893	

All other terms and conditions of the Contract remain unchanged by this Amendment and in full force and effect.

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This Amendment 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 instrument. The Parties agree that they may execute this Amendment by electronic means, including the use of electronic signatures.

IN WITNESS WHEREOF, the Parties hereby cause this Amendment to be executed.

PARAMETRIX, INC.

_____

Authorized Signature Date

_____

Printed Name and Title

Address: _____

_____

Phone: _____

Prepared by Janie Garcilazo

Sent to Parametrix, Inc., via email

Contract Number: 30006282 **Amendment Number: 2**

Contract Title: Lombard Pump Station Upgrade

CITY OF PORTLAND SIGNATURES

By: _____ Date: _____
Chief Procurement Officer

By: _____ Date: _____
Elected Official

Approved:

By: _____ Date: _____
Office of City Auditor

Approved as to Form:

By: _____ Date: _____
Office of City Attorney