

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

CONTRACT NUMBER 30007680

TITLE OF WORK PROJECT
Blower System and Building Rehabilitation Project

This Contract is between the City of Portland ("City," or "Bureau") and Carollo Engineers, Inc., hereafter called Consultant. The City's Project Manager for this Contract is Cyrus Osborn.

Effective Date and Duration

This Contract shall become effective on January 1, 2022. This Contract shall expire, unless otherwise terminated or extended, on October 23, 2026.

Consideration

- (a) City agrees to pay Consultant a sum not to exceed \$4,374,679 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): Carollo Engineers, Inc.
Address: 707 SW Washington St., Suite 500, Portland, OR 97205
City of Portland Business Tax Registration Number: 424264
Citizenship: Nonresident alien [ ] Yes [x] No
Business Designation (check one): [ ] Individual [ ] Sole Proprietorship [ ] Partnership [x] 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

# Exhibit A

- (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):** 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 and Contract amount, 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 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 subconsultant payment and utilization information electronically, reporting ALL subconsultants employed in the performance of this agreement. More information on this process may be viewed on the City Procurement website at: <https://www.portlandoregon.gov/brfs/75932>. Contact the PTE Contract Compliance Specialist for submission guidelines.

Subconsultants are responsible for meeting all requirements applicable to the Consultant under this contract, including compliance with City policies and all applicable federal, state, and local laws and regulations.

### **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.

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## **STATEMENT OF THE WORK AND PAYMENT SCHEDULE**

The aeration system is a critical part of the treatment process, as it is needed to grow the biological organisms used to treat the wastewater to meet permit requirements. The CBWTP blower system consists of four blowers that supply air to a duct network that conveys the air to the aeration basins to meet the air supply needs of the organisms. The Blower Building and four DeLaval blowers were constructed and installed in the early 1970's. In the early 1990's two DeLaval blowers were replaced with Turblex blowers when the aeration system converted to more efficient fine-bubble aeration diffuser technology.

The two DeLaval blowers are approximately 50 years old, past their estimated useful life, are obsolete and no longer supported as spare parts are no longer available. In addition, service companies will no longer provide maintenance and repair service to these blowers, so they are not able to be maintained as required.

The Turblex blowers are the favored blowers to use as they offer a wider aeration turndown range compared to the DeLaval blowers, and the Turblex Blowers are still supported with parts by the manufacturer (Siemens). At any given time, up to two blowers are required to be in service to meet aeration needs, with one unit out of service. However, one Turblex is required to be available to meet aeration turndown needs, otherwise, there is a risk of wasting energy and over-aeration of the process. The Turblex blowers have the original motors from the 1970's. That is, when the Turblex Blowers were installed, the motors and controllers from the DeLaval blowers were re-installed on the Turblex blowers.

Current known aeration blower building, blower equipment, and aeration air supply system deficiencies to be addressed by this project include:

1. Synchronous motors and controllers for all blowers result in blowers not being available when needed. The current system limits motor starts to once every 24 hours and does not support automatic start/stop of the blowers. When blowers are not available to meet process air demand.
2. There are system operating conditions where the lack of blower turndown capacity results in excessive aeration and a wasted energy. These periods occur when treatment process air demand is lower than the capacity of a single blower or a when a single blower cannot meet process air demand but two blowers operating at minimum capacity deliver too much process air.
3. The aeration air distribution system piping and header leaks and there are concerns about the system's capacity to operate at higher pressures. The aeration air header box was recently repaired but lacks redundancy and is in a location that makes repairs extremely challenging.

4. The aeration header piping, serving one half of aeration basins, leaving the aeration header box has leaks and cannot be isolated. The plant cannot sustain taking half of the aeration basins at any time, making leak repairs extremely challenging.
5. The electrical switch gear was installed in the early 1970's and is nearing 50 years old, which is beyond the expected service life.
6. The blower building and non-building structural components were not designed or constructed to resist loads resulting from seismic activity.
7. The blower building roof has had past leaks and needs replacement.
8. The current building HVAC system does not condition occupied spaces including the laboratory, men's and women's locker/shower rooms, decommissioned electrical/control room, lunchroom, and office space.
9. The following issues have been identified in the non-process spaces: water damage, windows in need of replacement, failing plumbing features (addressed in early 2020) and in general, facilities are out of date including lunchroom/kitchen, locker rooms and restrooms.

This project was initiated to provide focused analysis of the entire aeration blower and supply system to replace equipment that has reached the end of its useful life, improve the air supply for better process control, reduce operating risks in the future to ensure reliability and increase energy efficiency.

## 1. GENERAL EXECUTION

### 1.1. Bureau of Environmental Services (BES) Activities

The BES Project Manager (BES PM) will provide the Consultant a Notice to Proceed (NTP) stating the date the Consultant can begin work subject to the conditions of the Contract. BES will provide overall Project direction and oversight and other specific services defined in this Contract.

### 1.2. Schedule of Work

1.2.1. The Project Schedule is detailed in Exhibit D – Contract Design Schedule. The Consultant will work closely with BES, Program Team, and others to accomplish the project goals and deadlines as defined.

### 1.3. Exhibits

Each of the exhibits attached to this Contract, including, without limitation, the Statement of Work, Contract Budget Detail, and Consultant's Hourly Billing Rate Table are expressly incorporated herein and made part of this Contract. All references to this Contract, unless specified otherwise, shall include the Exhibits.

1.3.1.1. Exhibit A – Statement of Work

1.3.1.2. Exhibit B – Contract Budget Detail

1.3.1.3. Exhibit C – Consultant's Hourly Billing Rate Table

1.3.1.4. Exhibit D – Contract Design Schedule

## 2. SCOPE OF WORK

Consultant shall provide all of the Design Services described in **Exhibit A – Statement of Work** on an ongoing basis in support of, and in conformance with, the time frames described in the Contract.

## 3. CONSULTANT PERSONNEL

The Consultant shall assign the following Key Personnel to lead the work in the capacity designated below. No change in these assignments shall be made without written authorization from BES via an amendment to the Contract that must be approved by the City Procurement Officer and the City Attorney's Office.

NAME	ROLE ON PROJECT
Dan Laffitte, PE	Project Manager
Garrett Sheehan, PE	Design Manager
Anne Conklin, PhD, PE	Process Modeling Lead

Sarah Deslauriers, PE, ENV SP	Sustainability Lead
Jason Anderson, PE	Process Mechanical Lead

#### 4. SUBCONSULTANTS

The Consultant shall assign the following subconsultants listed below to perform work in the capacity designated. There is a 20% goal of the total Contract dollars assigned to Disadvantage, Minority, Women, Service-Disabled Veteran, and Emerging Small Business (D/M/W/SDV/ESB) subconsultants. Additional tasks for D/M/W/SDV/ESB subconsultant contracts may be identified as a Project progresses and memorialized via an amendment to the Contract.

NAME	DMWSDVESB CERTIFICATION TYPE	ROLE ON PROJECT	SUBCONTRACT AMOUNT
Concise Communications, Inc.	MBE/WBE/DBE/ESB	Technical Writing	0.75%
Elcon Associates, Inc.	MBE/DBE	Electrical and Instrumentation	20.0%
NNA Landscape Architecture	MBE/DBE/ESB	Eco-roof/Landscape Architecture	3.0%
Northwest Geotech Consultants, Inc.	MBE/DBE	Geotechnical	1.5%
Perimon Group, LLC	WBE/ESB	Project CD Lead and Process Mechanical Drafting	3.0%
SEFT Consulting Group, LLC	MBE/ESB	Structural/Resiliency	10.0%
Strongwork Architecture, LLC	ESB	Building Architecture	4.0%
The Formation Lab	WBE/DBE/ESB	D/M/W/SDV/ESD Coordinator, Equity Lead	1.5%
The Greenbusch Group, Inc.	WBE	Building Mechanical (HVAC/Plumbing)	4.0%

4.1. The City will enforce all social equity Contracting and D/M/W/SDV/ESB subconsulting commitments submitted by the Consultant in the Proposal. For Contracts valued \$50,000 or more, the Consultant shall submit subconsultant payment and utilization information electronically, reporting ALL subconsultants employed in the performance of this agreement. More information on this process may be viewed on the City Procurement website at: <https://www.portlandoregon.gov/brfs/75932> . Contact the PTE Contract Specialist for submission guidelines.

#### 4.2. Subconsulting Reporting

In addition to reporting subconsultant information in the City’s Contract Compliance Reporting System, the Consultant shall prepare monthly subconsultant reports. The report shall include the following information:

- 4.2.1. Date
- 4.2.2. Contract number/Consultant’s Name
- 4.2.3. Project Title
- 4.2.4. Contract Phase
- 4.2.5. Contract Amount
- 4.2.6. Subconsultant
- 4.2.7. Subconsultant Name
- 4.2.8. COBID Designation
- 4.2.9. Role on Project under this Contract
- 4.2.10. Original Subcontract Amount
- 4.2.11. Amount Expended to Date
- 4.2.12. Amount Remaining to be Paid
- 4.2.13. Comment – include information on changes to work, if not utilizing subconsultant the reason why and when the subconsultant will be utilized.

## 5. COMPENSATION

- 5.1. The maximum that the Consultant can be paid on this Contract is \$4,374,679 (hereafter the “not to exceed” amount). The breakdown of the “not to exceed” amount is shown in Exhibit B – Contract Budget Detail. The budget provides a breakdown by Contract Tasks. Exceeding the “not to exceed” amount 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. The Consultant is entitled to receive progress payments for its work pursuant to the Contract. The City will pay Consultant based on these invoices for acceptable work based on the Contract without additional compensation unless there is a change to the Statement of Work and an amendment to the Contract. Cost reallocation of funding between Contract tasks will be authorized only through an amendment to the Contract and provided the total “not to exceed” original Contract amount is not exceeded. A bimonthly report must be provided to BES that includes any requested reallocation of task funds and details of the requested reallocation. A revised Contract Budget Detail must also be provided and submitted by the Consultant to the BES PM via email at that time. A no-cost amendment will be required once the request is approved by BES. All amendment to the Contract must be signed and approved by the Consultant, City Procurement Officer, and the City Attorney’s Office. 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.
- 5.2. 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.

## 6. PAYMENT TERMS: Net 30 Days

- 6.1. 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.
- 6.2. The Consultant shall make full payment to its subconsultants within **10 business days** following receipt of any payment made by the City to the Consultant.

### 6.3. Hourly Rates

6.3.1. The Consultant and subconsultants shall be compensated in accordance with the hourly rates set forth in attached Exhibit C - Consultant’s Hourly Billing Rate Table. In no way shall the cost of hours billed by the Consultant exceed the total Contract amount throughout the term of this Contract.

#### 6.3.2. 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.

#### 6.3.3. Rate increases are subject to the following limitations:

- 6.3.3.1. No increases will be granted before the one-year anniversary of the Contract;
- 6.3.3.2. No more than one increase shall be granted per Contract year;
- 6.3.3.3. Rate increases may not exceed the then-current average inflation rate for the West Region Class Size A (as determined from the US Department of Labor statistics);
- 6.3.3.4. Rate increases shall not be retroactive.

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

### 6.4. Subconsultant Costs

6.4.1. Compensation for subconsultants shall be limited to the same restrictions imposed on the Consultant. Subconsultant services shall be billed at cost plus a 5% mark-up. Other Direct Expenses, as stated under Standard Reimbursable Costs, shall be billed at cost without mark-up. Allowable subconsultant services can only be marked-up once. For example, the Prime is not allowed to mark-up on a second-tier subconsultant’s allowable expenses if it has already been marked-up by the Prime’s subconsultant. Mark-up is not allowable when using intergovernmental resources to complete work and will not be accepted.

## 6.5. Standard Reimbursable Costs

6.5.1. The following costs shall be reimbursed without any mark-up: preapproved travel, including mileage (only travel beyond a 100-mile radius of Portland when specifically required by the Contract shall be reimbursed); daily per diem during travel and while to conduct work specifically associated to this Contract; document reproduction directly attributable to the Contract; preapproved food and non-alcoholic beverages for Project meetings directly attributable to the Contract; and other preapproved reimbursable direct costs directly attributable to the Contract. There shall be no increase to any reimbursable(s) during the term of this Contract. The Consultant shall include a separate reimbursable line item on their submitted invoice(s) each month for applicable charges with all supporting documentation. This shall include any pre-approved travel and meals, while on approved travel (refer to Preapproval of Travel/Meals below).

### 6.5.2. Travel

It is the policy of the City that all travel shall be allowed only when the travel is essential to the normal discharge of the Consultant's responsibilities under the Contract. All travel must be for official City business only. All travel and lodging shall be conducted in the **most efficient and cost-effective manner**. Reimbursable direct costs include preapproved travel beyond a 100-mile radius of Portland. Travel shall be reimbursed as follows:

- 6.5.2.1. Airfare: Itemized receipts are required, and reimbursement is based on actual expenses incurred. All Consultant representatives shall fly "coach class" unless Consultant personally pays the difference. One check bag fee is permitted per flight.
- 6.5.2.2. Rail Travel: Receipts are required, and reimbursement is based on actual expenses incurred. All Consultant representatives shall travel by "coach class" unless Consultant personally pays the difference. For overnight rail trips, reimbursement for sleeper accommodations is limited to one roomette per person. Bedrooms are allowed only when roomettes are not available, and Consultant must provide proof of no availability. Any upgraded travel requires Consultant to personally pay the difference.
- 6.5.2.3. Car rentals: Itemized receipts are required, and reimbursement is based on actual expenses incurred. All Consultant representatives shall be limited to economy or compact-sized rental vehicles, unless there are three or more persons on official City Business, or there is a need for another type of vehicle such as a truck to meet business requirements. Prior to renting any other sized vehicle beyond an economy or compact-sized vehicle the Consultant shall receive pre-approval in writing by the Bureau of Environmental Services Project Manager. Consultant shall pay the difference otherwise.
- 6.5.2.4. Taxis/Ride-sharing Services/Mass Transit/Parking/Tolls/Gas: Receipts are required, and reimbursement is based on actual expenses incurred. Reimbursable tips are limited to 15%. Use of mass transit is strongly encouraged.
- 6.5.2.5. Private Vehicle Usage: Private Vehicle usage is not authorized under this Contract to conduct Program activities unless pre-approved in writing by the Bureau of Environmental Services Project Manager. Mileage for use of a personal vehicle and related parking expense to reach airports, train station, or other transit locations to Portland is reimbursable as long as usage of the Person Vehicle was pre-authorized. No gas expenses will be reimbursed for private vehicle usage under this Contract.
- 6.5.2.6. Meals: Receipts are not required (but must be made available upon request or for an audit) and reimbursement is based on the U.S. General Services Administration's (GSA) Meal and Incidental Expenses (M&IE) rate and guidelines per the travel year and destination – <https://www.gsa.gov/travel/plan-book/per-diem-rates> .
- 6.5.2.7. Lodging: Receipts are required, and reimbursement is based on GSA rates for the month and destination – <https://www.gsa.gov/travel/plan-book/per-diem-rates> . The GSA rates do not include lodging taxes, which may be reimbursed as a separate expense. **Expenses beyond the allowable GSA rates will NOT be reimbursed.**
- 6.5.2.8. It is the responsibility of the Consultant to request and maintain their possession itemized receipts for air, lodging, ground transportation, and registration fee (if any) expenses. Under no circumstance will the City reimburse the aforementioned expenses without a receipt.

- 6.5.2.9. When submitting invoices, the Consultant shall include supporting documentation received from the BES PM authorizing travel/meals along with all required travel receipts listed above. BES will not pay Consultant or their subconsultants for overnight or extended parking costs not related to the scope of work under this Contract or if an alternate method is available at a lesser cost.

### 6.5.3. Preapproval of Travel/Meals

- 6.5.3.1. All travel shall be pre-approved in writing by the BES PM with the consultant providing an estimated total cost of the travel. Reimbursements for travel shall include itemized receipts AND a summary page with the following information: employee name, travel purpose, travel to/from locations, dates of travel, and list of expenditures for airfare, lodging, ground transportation, registration fee, and daily per diem requested. Daily per diem must be listed per day to reflect the amount charged per day minus any deductions for provided meals. The Consultant is required to notify the BES PM regarding all travel they anticipate, including any travel beyond a 100-mile radius of Portland and indicate why this travel would be necessary.
- 6.5.3.2. When requesting authorization for travel and meals, the Consultant shall include the estimated date/times when Key Personnel, either employed with the Consultant or as a subconsultant on the Contract, will be required to travel and how this is associated with the Contract as well as indicate the location and estimated costs for that travel. The Consultant shall include the purpose and reason why a local member would not be available to perform the work and why an alternate communication method could not be used. The Consultant shall provide the preapproved email or letter that authorized travel when submitting their monthly invoice for review and approval.

### 6.5.4. Food and/or non-alcoholic beverages

- 6.5.4.1. Food and/or beverages may be provided to participants at training sessions, meetings or conferences that are allowable activities and have been preapproved by the BES PM in writing. In addition, the agenda, list of participants and approval from the BES PM must be included as an attachment to the monthly invoice submitted for the scheduled event. Expenses incurred for food and/or beverages provided at training sessions, meetings, or conferences must satisfy the following three (3) tests:
- 6.5.4.1.1. Test 1: The cost of the food and/or beverages provided is considered to be reasonable in cost.\*
- 6.5.4.1.2. Test 2: The food and/or beverages provided are incidental to a work-related event.
- 6.5.4.1.3. Test 3: The food and/or beverages provided are not related directly to amusement and/or social events.
- 6.5.4.2. Any event where alcohol is being served is considered a social event and, therefore, costs associated with that event are not allowable.
- 6.5.4.3. *\*Reasonable in cost shall be defined as a price that is consistent with what a reasonable person would pay in the same or similar circumstances for the same business or for the same or similar item.*
- 6.5.4.4. The Consultant and their subconsultants shall adhere to the following applicable definitions for food and beverages:
- 6.5.4.4.1. Food and/or beverages retain their common meanings.
- 6.5.4.4.2. Food and/or beverages are considered in the context of formal meals and in the context of refreshments served at short, intermittent breaks during an activity that supports the project under this Contract between the Consultant and BES.
- 6.5.4.4.3. **Beverages do not include alcoholic drinks.**

### 6.5.5. Gratuity

- 6.5.5.1. Gratuity for food, transportation, and other allowable expenses will be reimbursed at the maximum rate of 15%. Any additional tipping beyond 15% shall be paid by the Consultant.
- 6.5.5.2. **Personal expenditures or expenditures not related to the Contract are not eligible for reimbursement.**

## 7.1. 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 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.

## 7.2. 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: \_\_\_\_\_ Entity: \_\_\_\_\_

**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 MANAGER-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.

**Carollo Engineers, Inc.**

BY: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

# Exhibit A

**CONTRACT NUMBER: 30007680**

**CONTRACT TITLE: Blower System and Building Rehabilitation Project**

**CITY OF PORTLAND SIGNATURES:**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Bureau Director

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

## Exhibit A Statement of Work

### 1 SCOPE OF WORK

The Consultant shall perform the tasks listed below for this project and shall be expected to work closely with designated City personnel to accomplish goals. Required services include alternative development and evaluations, predesign, design, cost estimating, advertisement phase support, permitting assistance, construction services including assisting the contractor's system integration sub-contractor and start-up support services as required to achieve project goals.

The scope identified below is consistent with desired project outcomes. Specific scope details described below will vary and minor changes will be considered incidental to the work, major changes will be addressed as out of scope work via an amendment to the Contract that must be approved by the City Procurement Officer and the City Attorney's Office.

The project goals include:

- 1.1 Complete air demand evaluation for up to six operating scenarios to confirm flow range and pressures for current and future aeration system operation. Include up to three different future diffuser layouts.
- 1.2 Evaluate blower technology applicability for CBWTP based on the operating flow range and pressures.
- 1.3 Evaluate and recommend aeration blower system efficiency improvements for both energy and simplicity of operation. The base alternative is to replace the two DeLaval blowers (including motors and controllers) and associated piping; and replace the motors and controllers for the Turblex Blowers.
- 1.4 Replace the existing 12kV switchgear and MCC portion of MCB
- 1.5 Modify the air header system and discharge plenum to eliminate single point failure risk and increase operating pressure of system.
- 1.6 Replace or modify aeration header piping in Red Tunnel, serving one half of aeration basins, to eliminate the leaks. Include provisions for easy maintenance and repair in future.
- 1.7 Perform ASCE 41 Tier 1 seismic evaluation and develop preliminary conceptual structural improvement recommendations to improve the seismic resiliency of the blower building.
- 1.8 Evaluate and replace the building roof membrane system and building HVAC.
- 1.9 Facilitate building space planning for short and long term. Short-term planning will consider the control room and electrical control room and long-term planning will consider how the non-process spaces might eventually change.

### 2 TECHNICAL SERVICES

The following tasks and activities will be performed as part of the project. Deliverables shall be considered those tangible resulting work products that are to be delivered to the City such as reports, draft documents, data, interim findings, drawings, schematics, training, meeting presentations, final

drawings, and reports. Unless otherwise specified by the City, the Consultant shall prioritize submitting applicable deliverables electronically, and any paper-based deliverables shall be printed double-sided and in bindings or report covers that are fully recyclable, preferably using materials containing post-consumer waste (PCW) recycled content.

Unless otherwise indicated, video conferencing and/or audio conferencing shall be maximized in lieu of in-person meetings that would require long-distance travel for any participants.

The City shall furnish Consultant available studies, reports, and other data pertinent to Consultant's services; obtain or authorize Consultant to obtain or provide additional reports and data as required; furnish to Consultant services of others required for the performance of Consultant's services hereunder, and Consultant shall be entitled to use and rely upon all such information and services provided by the City or others in performing Consultant's services under the Contract.

The City shall arrange for access to and make all provisions for Consultant to enter upon public and private property as required for Consultant to perform services hereunder.

In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for potential projects, Consultant has no control over cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Consultant makes no warranty that the City's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Consultant's opinions, analyses, projections, or estimates.

The parties agree that Consultant shall be indemnified to the fullest extent permitted by law for all claims, damages, losses, and expense including attorney's fees arising out of or resulting from the construction contractor's performance of work including injury to any worker on the job site. Additionally, Consultant shall be named as additional primary insured(s) by the construction contractor's General Liability and Builders All Risk insurance policies without offset and be included in any waivers of subrogation, and all Construction Documents and insurance certificates shall include wording acceptable to the parties herein with reference to such provisions.

Consultant shall not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by construction contractors or the safety precautions and programs incident to the work of construction contractors and will not be responsible for construction contractors' failure to carry out work in accordance with the Contract Documents.

## 2.1 TASK 100 - PROJECT MANAGEMENT

2.1.1 **Task 100 Scope:** Consultant shall implement industry standard cost, scope, schedule, and quality management to facilitate coordinated Project progress, change management, prevent re-work, and monitor progress. Specifically, and throughout each phase of the Project, the Consultant shall:

2.1.1.1 Work Collaboratively with the City's Project team which will be led by the Project Manager (PM) who is primarily responsible for establishment, monitoring, and maintenance of the Project Scope, Schedule, and Budget, and the Design Manager (DM) who is primarily responsible for the delivery of technical Design Documents including the Technical Memos, the Project Development Report, and the 30%, 60%, 90%, and Issued for Bid Design Documents.

- 2.1.1.2 Utilize the City's Heron project management system (based on e-Builder Enterprise) for all project communications, invoices, document management, deliverable transmittal and review processes, and project execution. E-mail, phone, and video conference for routine project communications will be allowed.
- 2.1.1.3 Develop and maintain a project schedule and budget utilizing the Work Breakdown Structure (WBS) developed during contract negotiations.
- 2.1.1.4 Manage and coordinate resources and sub-consultants to provide quality-managed deliverables within the approved project schedule and budget.
- 2.1.1.5 Prepare and submit monthly invoices for progress payments and monthly subcontractor payment and utilization reports. Monthly invoice format will need to be pre-approved by the City Project Manager to facilitate project progress controls.
- 2.1.1.6 Meet regularly with the City's Project Manager to review status of WBS activities and deliverables in progress, activities planned for the next three weeks, project risks, decisions, and pending/potential changes. Leads for activities in progress and activities planned for the next three weeks shall participate in the meeting in person or via teleconference. BES is using Skype for Business 2016 and Microsoft Teams for teleconferencing, for routine video conferencing, and information and desktop sharing.
- 2.1.1.7 Implement strict Quality Management Program, including timely documentation, during the life of the entire project. The Consultant is expected to assign independent reviewers to coordinate design teams' and subconsultants' work products and quality against project goals and standards. Quality management is included as necessary in project phases for deliverables.

## 2.1.2 Task 100 Deliverables:

- 2.1.2.1 Project Work Plan at project kickoff, documenting communication approach, tools, QA/QC procedures, project risks, project team and contact information.
- 2.1.2.2 Project Schedule using the WBS developed during contract negotiations.
- 2.1.2.3 Project budget by WBS element.
- 2.1.2.4 Project three week look ahead schedule (every two weeks).
- 2.1.2.5 Methodology to be used for tracking and documenting project risks, issues, decisions, and change management.
- 2.1.2.6 Decisions, risks, issues, and changes log (every two weeks), organized by categories.
- 2.1.2.7 Monthly invoice and budget status report by WBS element, and Monthly Subcontractor Payment and Utilization report by the 15<sup>th</sup> of each month. Include budget reports that shows budgeted work complete, billings to date, and estimate as completion.
- 2.1.2.8 Consultant's internal Quality Management logs.

## 2.1.3 Task 100 Assumptions:

- 2.1.3.1 Task 100 effort is distributed to each major project phase.

## 2.2 TASK 200 – DISADVANTAGED BUSINESS MENTORING

### 2.2.1 Task 200 Scope:

#### 2.2.1.1 Performance Assessment:

- 2.2.1.1.1 High Risk Firms: The Formation Lab will meet Consultant PM to identify up to three high-risk D/M/W/SDV/ESB project partners and the key risk factors for each. The Formation Lab will then facilitate conversations between the Prime and the high-risk D/M/W/SDV/ESB project partners to review risk factors. These conversations will

result in an Action Plan outlining the strategy developed by the prime and subconsultant to minimize risk over the course of the project. Each plan is anticipated to include two follow-up check-in meetings with each high-risk firm.

2.2.1.1.2 Other D/M/W/SDV/ESB Firms: Performance assessments will be conducted following five project milestones (pre-design, 30%, 60%, 90%, construction mid-point). The Consultant PM will provide an assessment of the quality and schedule compliance of each project partner. Subconsultants will provide a self-assessment and have an opportunity to identify support needs. Information is gathered by The Formation Lab using Google forms. The Formation Lab will compile and summarize the results of the assessments. Where the Consultant's assessment of a subconsultant identifies that expectations were met, the summary will be provided to the consultant's project manager. Where a subconsultant's assessment indicates that expectations were not met, or were nearly met, The Formation Lab will facilitate a conversation between the Prime PM and the project partner to review the issue(s). As needed, these conversations will result in an Action Plan outlining the strategy developed by the prime and subconsultant to address issues and bring the next deliverable back on track. Up to two Action Plans will be developed over the life of the project. Strategies will identify and highlight subconsultant strengths and will seek constructive rather than punitive approaches to resolving issues. An Action Plan is jointly developed by the prime and subconsultant to address performance issues identified during an assessment. The Plan, documented by The Formation Lab, will include:

- 2.2.1.1.2.1 A description of the issue and contributing causes identified by both the prime and the subconsultant
- 2.2.1.1.2.2 The specific actions identified to correct the issue in the next deliverable, who is responsible for implementing each action, and a schedule of actions.
- 2.2.1.1.2.3 A schedule for check-in conversations including the prime, subconsultant, and The Formation Lab to track implementation progress.
- 2.2.1.1.2.4 Following delivery of the subsequent milestone and performance assessment, a conversation will identify whether the issue has been resolved.

2.2.1.2 Capacity Building Support: At the beginning of the project, The Formation Lab will coordinate with prime to draft an email describing the capacity-building support program and inviting all D/M/W/SDV/ESB project partners to participate. The invitation email will be sent by the Consultant PM. The Formation Lab will conduct support planning meetings with up to all D/M/W/SDV/ESB project partners and prepare plans outlining support activities to be conducted. The Formation Lab will provide up to 12 hours of support for up to all participating D/M/W/SDV/ESB project partners.

2.2.1.3 Project Management and Reporting: The Formation Lab will provide summary reports of performance assessment and capacity building activities at five project milestones and will meet with the Consultant PM to review progress and status, identify any issues, and discuss performance assessments as needed.

## 2.2.2 Task 200 Deliverables:

- 2.2.2.1 Draft and Final Action Plans for at-risk firms (3)
- 2.2.2.2 Assessment forms (9 forms x 5 milestones)
- 2.2.2.3 Draft and Final Action Plans for two non-at-risk firms (2)
- 2.2.2.4 Capacity-building support plans
- 2.2.2.5 Program Management and Reporting summary reports and meeting minutes.

## 2.2.3 Task 200 Assumptions:

2.2.3.1 Task 200 effort is distributed to each major project phase.

## 2.3 Task 300 – KICKOFF MEETING AND SITE VISIT

2.3.1 **Task 300 Scope:** Meet with the City project team at a kickoff meeting to review and confirm project scope, schedule, and approach. Perform project team site visit on same day.

### 2.3.2 Task 300 Deliverables:

2.3.2.1 Project Kickoff Meeting Agenda and Summary Notes, including decisions/action items.

### 2.3.3 Task 300 Assumptions:

2.3.3.1 Kickoff Meeting of 2-hour duration and Site Visit to occur on same day.

## 2.4 Task 400 – BLOWER BUILDING SCANNING SERVICES

2.4.1 **Task 400 Scope:** Perform 3D laser scan of blower building and perform point processing to convert data into Revit mode for use in design development. Areas of the existing blower building to be scanned include blower building and piping area at approximate elevation 24-feet, main blower area and blower intake areas at approximate elevation of 34-feet, areas above the blower intake area at approximate elevation of 48-feet, control room and electrical side room and the building roof.

### 2.4.2 Task 400 Deliverables:

2.4.2.1 Revit model with point cloud in Revit version 2020.2.

### 2.4.3 Task 400 Assumptions:

2.4.3.1 City to provide point cloud Revit files in required Revit version for Red and Green Tunnel areas, including existing air plenum. This work is underway under separate contract.

2.4.3.2 To the extent possible, City will remove all scrap metal, parts, pallets, and non-permanent items to allow for scanning services to be efficiently performed.

2.4.3.3 Non-process areas on east side of building will not be scanned (such as laboratory, locker rooms, laboratory, lunchroom, restrooms).

2.4.3.4 Revit model will be LOD 300. Include electrical with 1” or smaller conduit modeled as block elements/banks to account for clearances and general locations of the design process. Cable tie and hangers to be included if visible in the point cloud. Model will include lighting and fire protection/suppression.

## 2.5 TASK 500 – DATA GATHERING/ESTABLISH DESIGN CRITERIA

### 2.5.1 Task 500 Scope:

2.5.1.1 Compile available information pertaining to the project including but not limited to as-built drawings, the 2016 Facilities Plan, documents, plant operating records and data, and field observations.

2.5.1.2 Prepare data gap summary memo.

2.5.1.3 Establish facility design criteria and standards to be used for project design and incorporating BES’ existing standards, applicable building design code, occupancy rating,

electrical classification, seismic design criteria, and permitting requirements, generally accepted standards of practice for the design, construction, operation, and maintenance of municipal wastewater treatment facilities, as applicable to the CBWTP.

- 2.5.1.4 Prepare for and facilitate data gap/project design criteria development workshop.
- 2.5.1.5 Prepare workshop meeting summary and decision/action log.
- 2.5.1.6 Prepare draft technical memorandum that documents project design criteria.

## 2.5.2 Task 500 Deliverables:

- 2.5.2.1 Data Gap summary document outlining outstanding needs for discussion with staff.
- 2.5.2.2 Draft Design Criteria Technical Memorandum.
- 2.5.2.3 Workshop content, summary, and action item/decision log update.

## 2.5.3 Task 500 Assumptions:

- 2.5.3.1 Data needs associated with project includes items such as air flow, pressure, valve position, standard operating procedures, DO, Number of blowers of service, aeration basins in service, plant flow rate, electricity usage, etc.). Five years of data is requested.
- 2.5.3.2 City will provide latest as-builts, electrical/control systems studies and calculations, as-built MCC schematics, substation improvements and SCADA/PLC control information.

## 2.6 TASK 600 – ALTERNATIVE EVALUATIONS – AERATION PROCESS AIR SYSTEM

### 2.6.1 Task 600 Scope:

- 2.6.1.1 Perform high level validation of Secondary Treatment Expansion Project (STEP) process model. This includes analysis and trending of influent and effluent conditions for existing unit processes and review of air flow rates. The model will be validated for one wet and one dry season using periods of stable operation as suggested in the provided data. Effort also includes BOD/COD conversion, two model runs (one for each season), development of air flows based on oxygen demands and comparison of critical process model outputs to actual performance.
- 2.6.1.2 Coordinate with the City to review results and, if necessary, address identified differences in air requirements between the STEP model and Consultant evaluations.
- 2.6.1.3 Identify, develop, and evaluate blower technology applicable for CBWTP based on the required operating flow ranges and system pressures.
- 2.6.1.4 Complete air demand evaluation and air distribution analysis for up to six operating scenarios to confirm flow range and pressures for current and future aeration system operation. Include up to three different future diffuser layouts.
- 2.6.1.5 Evaluate blower technology applicability for CBWTP based on the operating flow range and pressures.
- 2.6.1.6 Evaluate and recommend aeration blower system efficiency improvements for both energy and simplicity of operation. The base alternative is to replace the two DeLaval blowers (including motors and controllers) and associated piping; and replace the motors and controllers for the Turblex Blowers.
- 2.6.1.7 Evaluate existing air header system and discharge plenum to eliminate single point failure risk and increase operating pressure of system.
- 2.6.1.8 Facilitate a workshop to screen potential alternatives and to establish evaluation criteria and considerations to be addressed in the development of alternatives.
- 2.6.1.9 Develop conceptual designs, cost estimates, schedules, and risk evaluations for up to three combinations of process air blower equipment and aeration air headers and

- distribution piping to deliver the range of air required to deliver process air to the seven (7) low pressure air drop legs to existing diffuser grids in the eight (8) aeration basins.
- 2.6.1.10 Evaluate alternatives for cost, constructability, equipment procurement options with associated impacts on project schedule and other criteria as identified.
  - 2.6.1.11 Perform a limited seismic and structural analysis of the building, considering cumulative effects of proposed and past additions and alterations, relative to the triggers for mandatory seismic and gravity retrofit as defined in Chapter 34 of the 2019 OSSC.
  - 2.6.1.12 Evaluate existing blower building electrical systems and necessary modifications to allow for installation of new blowers and develop report.
  - 2.6.1.13 Prepare materials for and facilitate an Aeration Process Air System Alternatives Technical Scope Confirmation (TSC) Workshop for selection of a preferred aeration process air system alternative.
  - 2.6.1.14 Prepare a Technical Memorandum documenting the results of the alternatives evaluation.
  - 2.6.1.15 Perform quality review on biological process modeling, air distribution modeling and air header sizing and technical memorandum.
  - 2.6.1.16 Assist City in coordination required with the Energy Trust of Oregon to evaluate and apply for incentive funding for considered blower improvements. Up to three one-hour virtual meetings with Energy Trust of Oregon and the City are assumed. An allowance of forty (40) additional hours is included to gather and provide requested information in necessary format.

## 2.6.2 Task 600 Deliverables:

- 2.6.2.1 Workshop agenda, materials, and summary notes (2 workshops).
- 2.6.2.2 Draft Aeration Process Air System Alternatives Evaluation Technical Memorandum including:
  - 2.6.2.2.1 Aeration process air flow requirements determination.
  - 2.6.2.2.2 Process flow schematic.
  - 2.6.2.2.3 Large diameter air distribution piping conceptual plan.
  - 2.6.2.2.4 Electrical single line diagrams.
  - 2.6.2.2.5 Sequencing and construction phasing plan including construction phase schedule.
  - 2.6.2.2.6 Cost estimate.
  - 2.6.2.2.7 Blower Building Electrical Evaluation and Retrofit Report.

## 2.6.2.3 Task 600 Assumptions:

- 2.6.2.3.1 City will provide current BioWin model developed as part of STEP for Consultant's use.
- 2.6.2.3.2 City will provide three (3) to five (5) years of process data for plant process to allow for high level model validation.
- 2.6.2.3.3 Validation process will focus on periods of stable operation during wet and dry seasons.
- 2.6.2.3.4 An allowance of 24 hours is included for coordination with City on differences between the STEP model and those developed by the Consultant. If there are significant variations between current data and model results, a more in-depth validation.
- 2.6.2.3.5 City will identify the six operating scenarios for evaluation including flow, load, and plant process units online for evaluation. Up to three scenarios could include alternative diffuser layouts. Operating scenarios could include strategies such as plug flow, step feed or MLE. Air demands for scenarios will be developed in Consultant spreadsheet tool. No dynamic air demand modeling will be performed.

- 2.6.2.3.6 Air header improvements modifications are limited to the Red Tunnel.
- 2.6.2.3.7 Up to three blower technology types will be considered.
- 2.6.2.3.8 Efficiency improvements will consider blowers and new piping, valving and instruments associated with the project. Improvements to existing diffusers, valves, instruments, piping and valving downstream of the Red Tunnel and control strategies are excluded.
- 2.6.2.3.9 Cumulative effects of the final selections and addition will not (a) trigger a mandatory seismic retrofit of the building, or (b) strengthening for any above-grade gravity load-carrying element, or (c) result in more than 5% design gravity load increase for any foundation elements. If any foundation element experiences more than 5% design gravity load increase, a comprehensive structural condition assessment of existing foundation should be considered as an additional service.

## 2.7 TASK 700 – BLOWER BUILDING NON-PROCESS SPACES IMPROVEMENTS

### 2.7.1 Task 700 Scope:

- 2.7.1.1 Provide building space planning for short-term and long-term uses of spaces in the blower building.
- 2.7.1.2 Facilitate a workshop to identify potential future space uses and space requirements.
- 2.7.1.3 Identify and develop preliminary costs for mitigation measures to address hazards to occupant safety including lead-based paint, asbestos, mold, and hazardous materials.
- 2.7.1.4 Develop two (2) preliminary options for phased program of improvements to building spaces and building HVAC and plumbing systems to satisfy identified building space needs, both short term and long term.
- 2.7.1.5 Perform a limited seismic and structural analysis of the building to evaluate the potential impact of the improvements. Effects of the non-process improvement will be integrated with those alterations and additions considered in Task 700 to determine if cumulative effects will trigger mandatory seismic and gravity retrofit in accordance with Chapter 34 of the 2019 OSSC.
- 2.7.1.6 Facilitate a TSC Workshop for selection of the preferred phased program of improvements to blower building non-process spaces and for selection of improvements to be included in the scope of the project.
- 2.7.1.7 Prepare the Blower Building Non-Process Space Improvements Program Plan Technical Memorandum.
- 2.7.1.8 Perform quality review of technical memorandum.

### 2.7.2 Task 700 Deliverables:

- 2.7.2.1 Draft Blower Building Non-Process Space Improvements Program Plan Technical Memorandum including:
  - 2.7.2.1.1 Space planning criteria and requirements determination methodology.
  - 2.7.2.1.2 Workshop materials and results (two (2) workshops).
  - 2.7.2.1.3 Near and long-term space programming.
  - 2.7.2.1.4 Preferred improvements floor plans (and other drawings as needed to communicate short and long-term plans).
  - 2.7.2.1.5 Code compliance and egress strategy.
  - 2.7.2.1.6 Lead-based paint, asbestos, mold, and hazardous materials mitigation.
  - 2.7.2.1.7 Cost estimates.

### 2.7.3 Task 700 Assumptions:

- 2.7.3.1 Blower Building Non-Process Space Improvements Program Plan Technical Memorandum will be included as an Appendix in the Project Development Phase Report.
- 2.7.3.2 Evaluation does not include building condition or ADA evaluations, sustainability criteria evaluation, equity/inclusion considerations, building element evaluation/upgrade recommendations, life/cycle analysis or alternative carbon footprint analysis.
- 2.7.3.3 Space planning outside blower building footprint will not be required.
- 2.7.3.4 Architectural design criteria established in earlier task will be basis for space planning.
- 2.7.3.5 Consultant designer manager will attend space planning workshop virtually.
- 2.7.3.6 City to perform hazardous material testing. Consultant to coordinate with specialty mitigation firms to inquire about costs for mitigation measures.

## 2.8 TASK 800 – BLOWER BUILDING SEISMIC EVALUATION AND RETROFIT

### 2.8.1 Task 800 Scope:

- 2.8.1.1 Coordinate with BES and the Authority Having Jurisdiction (AHJ) to establish criteria to be used for building performance objectives and seismic evaluation and retrofit alternatives evaluation requirements.
- 2.8.1.2 Review existing geotechnical report/drawings.
- 2.8.1.3 Perform ASCE 41 Tier 1 seismic evaluation of the Blower Building for both building structural and non-structural components after selection of alterations and additions considered as part of Tasks 700 and 800 has been finalized.
- 2.8.1.4 Develop a single preliminary conceptual structural and non-structural seismic retrofit scheme, and develop an order of magnitude planning level costs estimate associated with the retrofit concept.
- 2.8.1.5 Prepare a Blower Building Seismic Evaluation and Retrofit Report.
- 2.8.1.6 Perform quality review of ASCE evaluations and report.
- 2.8.1.7 After development of the conceptual retrofit scheme and costs estimated, prepare for, facilitate, and prepare a meeting summary for a seismic results review workshop.

### 2.8.2 Task 800 Deliverables:

- 2.8.2.1 ASCE 41 Tier 1 Blower Building Seismic Evaluation and Retrofit Report.

### 2.8.3 Task 800 Assumptions:

- 2.8.3.1 City to provide ladder or manlift access to observe ceiling spaces, wall to floor/roof connections, etc. from below.
- 2.8.3.2 Modifications to the structure for the blower improvements will not trigger full building mandatory seismic retrofit.
- 2.8.3.3 ASCE 41 Tier 1 evaluation will be based on BPOE which has an associated building life span of generally 20 to 30 years. Tier 2 or Tier 3 evaluations are excluded.
- 2.8.3.4 If BES decides to implement some of the seismic retrofit recommendations, SEFT will perform more detailed analysis to confirm the seismic retrofit scope and update construction cost estimate as additional services prior to development of design documents for construction.
- 2.8.3.5 The building will not receive a new occupancy code designation.
- 2.8.3.6 City subject matter expert to provide required soil classification information for the ASCE Tier 1 analysis and ground improvement recommendations to allow Consultant team to develop retrofit concept and planning level estimates for seismic improvements.

## 2.9 TASK 900 – PREPARE PROJECT DEVELOPMENT PHASE REPORT

### 2.9.1 Task 900 Scope:

- 2.9.1.1 Prepare design drawings of the selected alternatives to the 20% design level.
- 2.9.1.2 Prepare construction cost estimates for the selected project scope of work.
- 2.9.1.3 Consolidate the project design criteria, alternatives analyses, 20% drawings, and construction cost estimates in a Project Development Phase Report.
- 2.9.1.4 Facilitate workshop to review report content.
- 2.9.1.5 Address any City comments and prepare the final report for the Governance Stage-gate Committee.
- 2.9.1.6 Support the City PM and DM in presenting the Draft Project Development Phase Report to the BES Governance Stage-gate Committee (GSC) for Stage Gate 2 approval to proceed with design to 30%.
- 2.9.1.7 Perform Quality management for the report.

### 2.9.2 Task 900 Deliverables:

- 2.9.2.1 Draft Project Development Phase Report that presents the investigations, data gathering, and alternatives analysis performed during the Project Development Phase. This includes the Consultant conclusions and recommendations based on evaluations performed in the Project Development Phase. Include the Technical Memoranda for these evaluations as appendices to the Project Development Phase Report. The report should also include preliminary drawings and other information below to further define the project scope and basis of design aspects which significantly impact project direction, cost, and schedule.
  - 2.9.2.1.1 Key process design conditions (should be in Technical Memoranda).
  - 2.9.2.1.2 Preliminary equipment list with major or critical equipment listed with primary control strategy.
  - 2.9.2.1.3 Major equipment selection and reliability/redundancy (should be in Technical Memoranda).
  - 2.9.2.1.4 Code interpretation and permit requirements for the project to verify that all codes and standards have been included and all relevant design conditions have been met.
  - 2.9.2.1.5 Initial evaluation of safety considerations for equipment access.
  - 2.9.2.1.6 An analysis of potential change in energy usage.
  - 2.9.2.1.7 Facility access and egress, and daily maintenance considerations.
  - 2.9.2.1.8 Description of alternatives analyzed including estimates construction and life cycle cost, schedule, conceptual design, and major risks.
    - 2.9.2.1.8.1 Construction Cost Estimate in sufficient detail to provide the expected range of accuracy of an Association for the Advancement of Cost Engineering (AACE) International Class 4 estimate: -20% to +50%.
    - 2.9.2.1.8.2 Potential Project Schedules.
    - 2.9.2.1.8.3 Preliminary Drawings:
      - 2.9.2.1.8.3.1 Preliminary Process Data Sheet.
      - 2.9.2.1.8.3.2 Process Schematic.
      - 2.9.2.1.8.3.3 Structural Drawings.
      - 2.9.2.1.8.3.4 Large Piping Layout.
      - 2.9.2.1.8.3.5 Mechanical Plans.
      - 2.9.2.1.8.3.6 Electrical one lines.

2.9.2.1.8.4 Explanation of Alternative Scoring Criteria, and results of alternative scoring (recommended alternative or alternatives).

2.9.2.1.8.5 Architectural Space Planning, Code Compliance, and Egress Plans.

### 2.9.3 Task 900 Assumptions:

2.9.3.1 One (1) meeting will be required with BES Governance Stage-gate Committee (GSC) for Stage Gate 2 review.

## 2.10 TASK 1000 – PRE-DESIGN

### 2.10.1 Task 1000 Scope:

- 2.10.1.1 Incorporate BES review comments on the Draft Project Development Phase Report into a final report.
- 2.10.1.2 Prepare a complete 30% Design Submittal as described herein and in the BES Checksheet requirements.
- 2.10.1.3 Prepare 30% cost estimate.
- 2.10.1.4 Conduct and facilitate workshop with City staff to solicit focused City input on decisions that are necessary for the development of the 30% Design Submittal.
- 2.10.1.5 Perform intra-discipline and discipline-coordinated quality management, design intent, and constructability reviews on the 30% Design Submittal. Address internal QA/QC comments on the 30% Design Submittal (or identify unresolved review comments with the proposed method to be used to address these comments in the subsequent design submittal) and submit the Final 30% Design Submittal to the City for review.
- 2.10.1.6 Support BES PM in presenting the 30% design and project cost estimate to GSC for approval of the project baseline scope, schedule, and budget.
- 2.10.1.7 IF NEEDED TASK – Provide procurement support services if blower and/or electrical equipment is to be pre-negotiated or pre-purchased.

### 2.10.2 Task 1000 Deliverables:

- 2.10.2.1 Checklist to be used for completeness of the 30% Design Submittal is BES 30% Best Practices for Milestone Reviews Check List.
- 2.10.2.2 Final Project Development Phase Report.
- 2.10.2.3 A Drawing Index that reflects the total number of drawings anticipated for the completed project.
- 2.10.2.4 Title blocks and drawing layouts that allow verification of City standards.
- 2.10.2.5 General Symbols, Legends, and Abbreviations that allow verification of City standards.
- 2.10.2.6 Design Data and Criteria (Process Schematic) established and depicted in an acceptable format.
- 2.10.2.7 Site Plan and Vicinity Map that accurately depict the existing site features and boundaries (including topographical data, coordinate system, geotechnical boring locations, etc.).
- 2.10.2.8 Site and Utility Plans that accurately depict existing utilities (above and below ground), buildings, roadways, etc.
- 2.10.2.9 Utility plans that generally identify proposed interfaces with existing utilities and with actual routing and location of connection to existing utilities roughly shown.
- 2.10.2.10 Structural plans that establish seismic modifications required, as well as modifications to the existing structure if required, and seismic supports for all equipment and piping.

- 2.10.2.11 Mechanical Plans and Sections that depict location of key equipment and key piping alignments to verify clearances and general configurations. Plans will indicate proposed equipment maintenance features.
- 2.10.2.12 Recommendations that define the level of design for fire protection systems that will be included in the final drawings. Define whether the approach is to show details on the drawings or provide a performance specification.
- 2.10.2.13 Preliminary electrical one-line diagrams and site electrical plans. Identify available corridors for routing or electrical raceways and cable tray. Identify area classifications per National Electrical Code (NEC) Article 500 and National Fire Protection Association (NFPA) 820.
- 2.10.2.14 Preliminary Process and Instrumentation Diagrams (P&IDs) that depict the mechanical equipment, piping, instrumentation, and control equipment interlocking.
- 2.10.2.15 Preliminary Table of Contents for the Technical Specifications. Include draft copies of specialized specifications that originate from sources other than Consultant guide specifications or City Furnished Division 00 and 01 specifications. Include drafts of specification sections that define schedule constraints and work sequencing and phasing requirements to maintain Plant operations during construction.
- 2.10.2.16 Preliminary equipment list that allows basic verification of equipment name and loop number, equipment size, equipment power requirements and basic controls and operating strategies.
- 2.10.2.17 Construction Cost Estimate in sufficient detail to provide the expected range of accuracy of an Association for the Advancement of Cost Engineering (AACE) International Class 3 estimate: -20% to +30%.
- 2.10.2.18 List of unresolved internal QA/QC comments on the 30% Design Submittal with the proposed approach to resolve each comment in the 60% Design Submittal.

### 2.10.3 Task 1000 Assumptions:

- 2.10.3.1 Shower, locker rooms, laboratory will not require new sanitary drainage.
- 2.10.3.2 Laboratory, entryway, locker room, lunchroom, and bathrooms on east side of building will not be modified. Improvements to non-process areas is limited to the control room and adjacent electrical control.
- 2.10.3.3 Plumbing modifications are limited to necessary renovations for new HVAC equipment.
- 2.10.3.4 All landscape related work is related to the proposed Ecoroof. No at grade landscape work (including stormwater) is currently scoped or anticipated.
- 2.10.3.5 Parking spaces are not to be modified or added to the design.
- 2.10.3.6 No new bike parking is required.
- 2.10.3.7 No tree assessment or impact mitigation is included.
- 2.10.3.8 Design of structural improvements to accommodate a Ecoroof are not included.
- 2.10.3.9 Blower room sound attenuation design is not included.
- 2.10.3.10 Plans illustrating civil topo, layout coordinates, boring locations yard piping demo and site utilities not required. City to provide benchmark and control information to be used on general site plan to establish project elevations.
- 2.10.3.11 An allowance of \$63,000 is included for early procurement assistance of the blowers including procurement package to procure submittals and subsequent submittal review. Consultant factory testing is not included in the scope.
- 2.10.3.12 Control room console and instrumentation panels as-built exploration and documentation of all I/O for active processes is required and will be performed.

## 2.11 TASK 1100 – DETAIL DESIGN ACTIVITIES

### 2.11.1 Task 1100 Scope:

- 2.11.1.1 Conduct design workshop with City staff to clarify City 30% deliverable review comments and to solicit City input into the development of the 60% Design Submittal.
  - 2.11.1.2 Prepare the 60% Design Drawings as described herein and in the BES Checksheet Requirements.
  - 2.11.1.3 Prepare 60% Design Specifications as described herein and in the BES Checksheet Requirements.
  - 2.11.1.4 Perform discipline-coordinated QA/QC and constructability reviews on the 60% Design Submittal. Address the Consultant's internal QA/QC comments on the 60% Design Submittal (or identify unresolved review comments with the proposed method to be used to address these comments in the 90% Design Submittal) and submit the final 60% Design Submittal to the City for review.
  - 2.11.1.5 Conduct bi-weekly EIC coordination meetings with City EIC staff.
  - 2.11.1.6 Prepare Construction Contract Time memorandum.
  - 2.11.1.7 Provide updated cost estimate for 60%, 90%, and final deliverable.
  - 2.11.1.8 Conduct design workshop with City staff to receive City input on the 60% design deliverable and development of the 90% Design Submittal.
  - 2.11.1.9 Prepare the 90% Design Submittal as described herein and in the BES Checksheet Requirements.
  - 2.11.1.10 Perform discipline-coordinated QA/QC and constructability reviews on the 90% Design Submittal. Address and resolve Consultant's internal QA/QC comments on the 90% Design Submittal to the City for review.
  - 2.11.1.11 Prepare sealed Final Design Submittal documents, calculations, and other documents required for a complete application for a Building Permit from the City of Portland Bureau of Development Services (BDS).
  - 2.11.1.12 Provide clarifications and changes to the Final Design Submittal documents as required to address plan review Checksheets issued by BDS and comments from BES Update the Final Design Submittal documents to incorporate and consolidate all changes made during the building permit plan review to provide the Final Project Bidding Document Submittal identified herein and in the BES Checksheet requirements.
  - 2.11.1.13 Support the BES PM in change management processes required to obtain governance approval of changes to the project scope identified in the Project Development Phase or when cost estimate updates included with 60%, 90%, and Final design deliverables require changes to the project scope or schedule.
  - 2.11.1.14 Conduct bi-weekly design team coordination meetings with City involvement.
  - 2.11.1.15 Prepare preliminary short circuit/arc flash study.
- 2.11.2 Task 1100 Deliverables:**
- 2.11.2.1 Design workshop agenda, materials, and summary notes (three (3) workshops).
  - 2.11.2.2 Checklist to be used for completeness checking of the 60% and 90% Design Submittals are the BES 60% and 90% Best Practices for Milestone Reviews Check List.
  - 2.11.2.3 60% Design Submittal including, but not limited to, the following:
    - 2.11.2.3.1 Title Sheet, Drawing Index, Location and Vicinity Map essentially complete.
    - 2.11.2.3.2 General Symbols, Legends, and Abbreviations essentially complete.
    - 2.11.2.3.3 Design Data and Criteria essentially complete.
    - 2.11.2.3.4 Site Plan with proposed final location of structures, roadways, and major site elements (i.e., fencing, gates, etc.). Include proposed contractor staging, storage, access, and offsite corridors (traffic routing plans).
    - 2.11.2.3.5 Structural plans, sections and details coordinated with other design disciplines. Documents will include seismic improvements identified in earlier project

- development phase and piping supports, including dimensional information and structural member sizes.
- 2.11.2.3.6 Mechanical plans, sections, and details with proposed final location of major equipment, piping, and appurtenances. Minor piping partially complete however adequate corridors identified. Location of equipment maintenance features finalized.
  - 2.11.2.3.7 Proposed final electrical one-line diagrams, and panel layout based on vendor provided control panels.
  - 2.11.2.3.8 Power plans, control diagrams and schedules adequately complete to review layout and design intent.
  - 2.11.2.3.9 P&IDs developed to greater detail including revisions based on proposed final equipment selection and configuration.
  - 2.11.2.3.10 Draft Specifications of Divisions 1 through 46 coordinated such that project specific information is included and non-pertinent information removed. First draft of construction sequence, milestones, and constraints.
  - 2.11.2.3.11 Equipment list that includes equipment number, equipment size, equipment power requirements, basic controls and operating strategies for all equipment anticipated on the project.
  - 2.11.2.3.12 Instrument List.
  - 2.11.2.3.13 Loop/Index List.
  - 2.11.2.3.14 Update to the Construction Cost Estimate in sufficient detail to provide the expected accuracy range of an AACE Class 2 estimate: -15% to +20%.
  - 2.11.2.3.15 Responses to 30% City Design Review Comments.
- 2.11.2.4 90% Design Submittal including, but not limited to, the following:
- 2.11.2.4.1 Title Sheet, Drawing Index, Location and Vicinity Map complete.
  - 2.11.2.4.2 General Symbols, Legends, and Abbreviations complete.
  - 2.11.2.4.3 Design Data and Criteria complete.
  - 2.11.2.4.4 Site Plan with final location of structures, contractor staging, storage, and access.
  - 2.11.2.4.5 Details of pavement and trench sections, and other civil details.
  - 2.11.2.4.6 Erosion and Sedimentation Control Plan and details.
  - 2.11.2.4.7 Structural plans, sections and details coordinated with other design disciplines. Seismic requirements, piping supports and to include structural member sizes.
  - 2.11.2.4.8 Mechanical plans, sections, and details with final location of major equipment, piping, and appurtenances. All piping layouts essentially complete.
  - 2.11.2.4.9 Final electrical one-line diagrams, control room layouts and panel layouts based on vendor provided control panel.
  - 2.11.2.4.10 Power plans, control diagrams and schedules complete and coordinated with mechanical design.
  - 2.11.2.4.11 Final lighting plan.
  - 2.11.2.4.12 Draft short circuit protective device coordination and arc flash hazard study reports.
  - 2.11.2.4.13 Final P&IDs developed to greater detail including revisions from previous comments and coordinated with final operational control strategies.
  - 2.11.2.4.14 Final version of Specifications Divisions 1 through 46 incorporating comments from the 60% submittal review and reflecting full coordination with drawings. Include final construction sequence, milestones, and constraints, measurement, and payment, and proposed bid form.
  - 2.11.2.4.15 Equipment list that includes equipment number, equipment size, equipment power requirements, and basic controls and operating strategies for all equipment on the project.
  - 2.11.2.4.16 Update to the Construction Cost Estimate in sufficient detail to provide the expected accuracy range of an AACE Class 1 estimate: -10% to +15%.

- 2.11.2.4.17 Narrative for material on selected global warming potential (GWP) concrete mix if a low GWP concrete mix is identified and approved for a project.
  - 2.11.2.4.18 Memorandum evaluating Construction Contract Time.
  - 2.11.2.4.19 Responses to 60% City Design Review Comments.
- 2.11.2.5 Final Design Document Submittal and Permitting Documents including, but not limited to, the following:
- 2.11.2.5.1 Sealed project plans, specifications, structural calculations, and other reports and documents required for a complete Building Permit Application from BDS in Adobe Acrobat .pdf electronic format, and a complete AutoCAD/MS Word set with no password protection.
  - 2.11.2.5.2 Responses to BDS check sheets, including revised project plans, structural calculations, and other reports and documents, as required by BDS, to successfully complete the BDS Building Permit Application process. All submittals shall be in Adobe Acrobat .pdf electronic format.
  - 2.11.2.5.3 Erosion and Sediment Control Plan (EPSCP).
- 2.11.3 Task 1100 Assumptions:**
- 2.11.3.1 City to provide necessary City CAD standards including AutoCAD symbols, Revit families, template files, CTB/STB files for plotting, acad.lin file for line-types, any necessary custom SHX files for text and line-types, legends, and standard typical details.
  - 2.11.3.2 City to provide CAD files for MASU for use by Consultant as basis for medium voltage one-line diagrams.
  - 2.11.3.3 No new electrical building nor associated civil site design is anticipated.
  - 2.11.3.4 An allowance of three (3) drawings is included to illustrate suggested conduit routing for loads connected to MCB. Additional drawings required to show location of loads connected to MCB will require additional effort. Effort is based on City providing existing control schematics for all existing MCC loads.
  - 2.11.3.5 Lighting design is not included for locker rooms or restrooms.
  - 2.11.3.6 Consultant standard panelboard and lighting fixture schedule will be used as information is not provided in CAD standards.
  - 2.11.3.7 Consultant standard conduit schedule will be used, which includes cable listings.
  - 2.11.3.8 Conduit development drawings will be used as allowed in the City CAD standards. Complete and detailed conduit routing for all equipment will not be shown on power and control plan drawings.
  - 2.11.3.9 Consultant's performance specification will be used for the fire alarm detection design.
  - 2.11.3.10 Cable pull calculations development is not included in the scope.
  - 2.11.3.11 City EIC leads and Consultant team EIC leads to attend bi-weekly meeting.
  - 2.11.3.12 Electrical coordination study to be prepared using SKM software and current model provided by City.
  - 2.11.3.13 The control room console and instrumentation panel replacement are included in the design. Console will be replaced in similar location and no conduit development, schedule or routing will be required for connected conduits. 340 Digital and 120 analog I/O connections are assumed for effort associated with removal of the console and instrumentation boards in control room and replacement with a new PLC panel for the control room.
  - 2.11.3.14 Level of Design (LOD) for Revit model will be 300 for process mechanical, structural, building mechanical and electrical.
  - 2.11.3.15 Electrical conduits 4-inches and larger will be modeled.
  - 2.11.3.16 Typical loop drawing to be provided.

- 2.11.3.17 Revit version 2020.2 will be basis for Revit modeling.
- 2.11.3.18 Communications from blower controls to SCADA via ethernet connection. No hardwired connections to be designed.
- 2.11.3.19 Investigation of control console signals to establish “as-built” conditions would be performed during detailed design phase.
- 2.11.3.20 Blower control and panels will be vendor designed with use of vendor provided master and unit control panels. Detailed panel layout drawings are excluded from the scope.
- 2.11.3.21 Intelligent instruments and field device networks will not be required.
- 2.11.3.22 An allowance of forty (40) hours is included to support BES PM in change management process with BES governance committee members.
- 2.11.3.23 The City will submit to Portland BDS the reports, drawings, specifications, calculations, and permit application materials prepared by the Consultant and required for Building Official review of the project compliance with applicable code requirements.

## 2.12 TASK 1200 – PROCUREMENT (BID PERIOD) SUPPORT SERVICES

2.12.1 **Task 1200 Scope:** The City of Portland’s Procurement Services Division will advertise the project, electronically distribute bid documents, manage communications with prospective bidders, conduct pre-bid conference, issue addenda, receive and evaluate bids, and award the construction contract. In support of these efforts, the Consultant will perform the following tasks as requested by the City:

- 2.12.1.1 Attend the project pre-bid conference.
- 2.12.1.2 Provide responses to bidder’s questions.
- 2.12.1.3 Prepare addenda to clarify and or modify the Final Project Bidding documents sealed by the design professional of record.
- 2.12.1.4 Prepare conformed drawings that incorporate addendum items from the addendum developed during the procurement phase.

### 2.12.2 Task 1200 Deliverables:

- 2.12.2.1 Provide responses to Bidder questions as requested by the City.
- 2.12.2.2 Addenda materials sealed by the design professional of record including revised plans and specifications as requested by the City to clarify the documents and to answer bidder questions.
- 2.12.2.3 Conformed drawings and final Revit mode incorporating addendum items.

### 2.12.3 Task 1200 Assumptions:

- 2.12.3.1 No assumptions for this task.

## 2.13 TASK 1300 CONSTRUCTION SUPPORT SERVICES

2.13.1 **Task 1300 Scope:** The City of Portland’s BES Construction Management Section will perform construction management and inspection of the construction work to ensure compliance with the plans and specifications. In support of these efforts, the Consultant shall perform the following tasks as requested by the City:

- 2.13.1.1 Attend the preconstruction conference.
- 2.13.1.2 Provide periodic construction observation and as required by codes and permits including performing the duties of the Registered Design Professional in Responsible

Charge of the project as required by the Building Official and the Oregon Structural Specialty Code.

2.13.1.3 Review submittals for compliance with the plans, specifications, and design intent.

2.13.1.4 Evaluate and respond to Requests for Information (RFI). Identify changes to design documents, if applicable.

2.13.1.5 Attend weekly construction progress meetings when requested by the City's Design or Project Manager.

2.13.1.6 Prepare Design Clarifications to modify the contract documents sealed by the design professional of record.

2.13.1.7 Evaluation of change order proposals.

2.13.1.8 Participate in the final project walk through to identify punch list items and deficiencies.

## 2.13.2 Task 1300 Deliverables:

2.13.2.1 Submittal review responses.

2.13.2.2 Review, stamp, and submit Deferred Submittals as required by the Building Official and the OSSC.

2.13.2.3 Design Clarifications sealed by the design professional of record including sketches, drawing revisions, specifications, supporting calculations, quantity take-offs, and cost estimates for the work included in the design clarification.

2.13.2.4 Evaluations of Contractor Change Order Proposal requests including assessments of contractor entitlement to additional compensation based on the contract documents, proposed quantities, unit prices, production rates, and proposed change order total cost.

2.13.2.5 Field Observation Reports as required by the City of Portland Building Official.

2.13.2.6 Final short circuit protective device coordination and arc flash hazard study.

## 2.13.3 Task 1300 Assumptions:

2.13.3.1 Consultant team will review up to 150 submittals and resubmittals with each review budgeted for 5.5 hours.

2.13.3.2 Consultant team will review up to 150 RFIs with each RFI budgeted for 4.5 hours.

2.13.3.3 A maximum of thirteen (13) design clarifications are assumed. An average of 8.5 hours per design clarification is assumed.

2.13.3.4 A maximum of twelve (12) change order proposals are assumed. An average of 8.5 hours per change order proposal is assumed.

2.13.3.5 An allowance of twenty-three (23) weekly construction meetings be various design disciplines are assumed.

2.13.3.6 An allowance of thirty-five (35) periodic construction observations are assumed.

2.13.3.7 Construction services are estimated based on an assumption of a \$16 million construction project.

## 2.14 TASK 1400 – PLC AND HMI PROGRAMMING SUPPORT SERVICES

### 2.14.1 Task 1400 Scope:

2.14.1.1 Review testing plans to be provided by Contractor's Systems Integrator.

### 2.14.2 Task 1400 Deliverables:

2.14.2.1 Review comments on submitted testing plans.

## 2.14.3 **Task 1400 Assumptions:**

- 2.14.3.1 System integration will be performed by Contractor team.
- 2.14.3.2 City or system integration subcontractor to provide PCS-related programming.

## 2.15 **TASK 1500 – FACILITY STARTUP AND OPERATION SUPPORT SERVICES**

### 2.15.1 **Task 1500 Scope:** Provide support to the City as requested to support the startup and operation of the new facilities in the context of the intended design or as modified during construction:

- 2.15.1.1 Visit the CBWTP site to observe system operation.
- 2.15.1.2 Provide input on testing parameters to verify conformance with design conditions.
- 2.15.1.3 Participate in teleconferences, respond to email inquiries, evaluate operational data and procedures.
- 2.15.1.4 Provide recommendations for operational, system, or control narrative changes to improve system performance.
- 2.15.1.5 Support City staff in providing Operator training based on design intent and installed systems.
- 2.15.1.6 Analyze equipment and process performance for conformance with intended design conditions.
- 2.15.1.7 Prepare record drawings using Contractor provided markups.
- 2.15.1.8 Prepare final short circuit/coordination study.

### 2.15.2 **Task 1500 Deliverables:**

- 2.15.2.1 Site Visit Summary Reports, and email responses, with recommendations to improve facility performance.
- 2.15.2.2 Commissioning plan approval.
- 2.15.2.3 Record Drawings in AutoCAD format, with all reference files included and no password protection.
- 2.15.2.4 Final short circuit, protective device coordination, and Arc Flash study report.
- 2.15.2.5 Construction services are estimated based on an assumption of a \$16 million construction project.

### 2.15.3 **Task 1500 Assumptions:**

- 2.15.3.1 Training support will be via virtual meetings. No site visits are included.

## 2.16 **TASK 1600 – PERMITTING SUPPORT SERVICES**

### 2.16.1 **Task 1600 Scope:** Identify and acquire the permits and approvals required from the City of Portland Building Development Services (BDS), the State of Oregon, and other regulatory agencies for construction of the project.

- 2.16.1.1 Oregon Department of Environmental Quality (DEQ) Plan Review Approval: The City will submit the Final Project Bidding Documents to Oregon DEQ for review of plans and specifications as required by OAR 340-052.
- 2.16.1.2 Prepare final letter, forms, and report for permit closeout.

### 2.16.2 **Task 1600 Deliverables:**

2.16.2.1 Letters, reports, and forms to the Building Official and other regulatory agencies as required for permit closeout.

### 2.16.3 Task 1600 Assumptions:

## 3 SUSTAINABILITY REQUIREMENTS

3.1 The Consultant will promote a multi-disciplinary, integrated approach to design and construction. This project is anticipated to improve the sustainability of the blower system and building as well as incorporate sustainability during project delivery in the following areas:

- 3.1.1 Energy efficiency-energy star labeled lighting and selection of more efficient blower technology.
- 3.1.2 Eco-roof on the blower building
- 3.1.3 [Bird-Friendly Roof Design](#)
- 3.1.4 Construction Waste Prevention

### 3.2 Concrete Environmental Product Declarations (Concrete EPDs)

For all concrete mix designs specified for the project at a volume of 50 cubic yards or more, a product-specific Type III Environmental Product Declaration (EPD) that is third-party verified and within its 5-year period of validity for that specific concrete mix design is required to be submitted to the City. EPDs shall be submitted to the Bureau of Environmental Services' Materials Testing Lab at [concreteEPD@portlandoregon.gov](mailto:concreteEPD@portlandoregon.gov) along with the other required mix design information.

### 3.3 Low Global Warming Potential (GWP) Concrete Mixes

The consultant is encouraged work with the City in identifying low GWP concrete mixes that will meet applicable performance requirements for the project. Mix-specific GWP data shall be obtained from mix-specific concrete EPDs as defined above. A low GWP is defined in relation to more typical mix alternatives that also meet the performance requirements. If a low GWP concrete mix is identified and approved for a project, the consultant shall submit to the Bureau of Environmental Services' Materials Testing Lab (at [concreteEPD@portlandoregon.gov](mailto:concreteEPD@portlandoregon.gov)) a narrative regarding the workability of the low GWP concrete mix such as set times, strength gain, finishability, and any other considerations that characterize the mix's impacts to the project schedule and cost. The narrative shall be submitted within 90 days of the low GWP mix first being used on the project.

3.4 Decisions regarding product and material selection shall incorporate best practices from the City's [Sustainable Procurement Policy](#), such as, but not limited to:

- 3.4.1 Energy efficient products/materials/technologies that support minimizing electricity/energy loads and associated carbon emissions.
- 3.4.2 Product/Materials that do not contain substances of (very) high concern (SVHC/SVC). Substances that may have serious and often irreversible effects on human health and the environment. SVHC/SHCs are typically defined as those that have one or more of the following attributes:

- 3.4.2.1 Persistent, Bioaccumulative and Toxic (PBT),
- 3.4.2.2 very Persistent and very Bioaccumulative (vPvB),

- 3.4.2.3 very Persistent and Toxic (vPT),
- 3.4.2.4 very Bioaccumulative and Toxic (vBT), or
- 3.4.2.5 known or likely to be:
  - 3.4.2.5.1 carcinogenic,
  - 3.4.2.5.2 mutagenic,
  - 3.4.2.5.3 reproductive or developmental toxicant,
  - 3.4.2.5.4 neurotoxicant, or
  - 3.4.2.5.5 endocrine disrupting

- 3.4.3 Recycled content materials and products that are designed for repairability and recyclability.
- 3.4.4 Coatings/adhesives are low-emitting and certified to meet California Department of Public Health Standard Method v1.2-2017 (or most current), (aka California Specification 01350).
- 3.4.5 Wood products are sustainably sourced. According to the Sustainable Procurement Policy, sustainably sourced wood is wood that is Forest Stewardship Council (FSC) certified, recycled, salvaged, or from an ecological restoration forestry project. Ecological restoration forestry refers to management activities that contribute to the recovery of ecosystems that have been degraded, damaged, or destroyed. Some examples of ecological restoration in forests are:

- 3.4.5.1 Harvesting small patches of trees to create compositional and spatial heterogeneity in uniform, single species plantations that developed after harvest of old-growth forests.
- 3.4.5.2 Thinning forests that have become overgrown because of fire suppression.

## 4 WORK PERFORMED BY THE CITY/OTHERS

The City has assigned a project manager to oversee the Consultants work and provide support as needed. Specific duties the City will perform include:

- 4.1 Reports, and other available documents and records requested by the Consultant.
- 4.2 Distribution of deliverables to City reviewers using Heron software. Compilation, coordination, and vetting of City review comments.
- 4.3 Survey Services: The City will provide standard utility locations for design, and general topo surveys required for project design and establish benchmarks and survey control monuments. More detailed surveying efforts shall be provided by the Consultant.
- 4.4 The City will submit the Final Project Bidding Documents to Oregon DEQ for review of plans and specifications as required by OAR 340-052.
- 4.5 Provide the City's Division 00 and Division 01 specifications to the Consultant for review and incorporation into the Final Bid Documents.
- 4.6 Construction Management and inspection services.
- 4.7 Public involvement activities, if required.
- 4.8 Land Use Review, if required.
- 4.9 Utility locates as required for project design.
- 4.10 System startup facilitation.
- 4.11 Contaminated or hazardous material testing in both process and non-process areas in the blower building.
- 4.12 The City will provide the Consultant with meeting space for project meetings if unable to utilize video conferencing and/or audio conferencing.
- 4.13 City electrical and controls staff will attend bi-weekly EIC design coordination meetings that will start after the submission of the 30% deliverable.

## 5 PLACE OF PERFORMANCE

Contract performance will take place primarily at the Consultant's facility. On occasion and as appropriate, work will be performed at City facilities, a third-party location, or any combination thereof.

## 6 PERIOD OF PERFORMANCE

The City will have the Consultant begin work immediately upon contract execution with submittal of final deliverables to the City occurring by December 2025.

## 7 ACH PAYMENTS

It is the City's policy to pay its vendor invoices via electronic funds transfers through the automated clearing house (ACH) network. To initiate payment of invoices, vendors shall execute the City's standard ACH Vendor Payment Authorization Agreement which is available on the City's website at: <https://www.portlandoregon.gov/brfs/45475>. Upon verification of the data provided, the Payment Authorization Agreement will authorize the City to deposit payment for services rendered directly into vendor accounts with financial institutions. All payments shall be in United States currency.

## 8 PUBLIC SAFETY

Public safety may require limiting access to public work sites, public facilities, and public offices, sometimes without advance notice. The Consultant shall anticipate delays in such places and include the cost of delay in the proposed cost. The Consultant's employees and agents shall carry sufficient identification to show by whom they are employed and display it upon request to security personnel. City project managers have discretion to require the Consultant's employees and agents to be escorted to and from any public office, facility, or work site if national or local security appears to require it.

The Parties acknowledge and agree that this Contract will be executed and performed during the COVID-19 pandemic. While Oregon is under a declaration of emergency associated with the COVID-19 pandemic, Consultant shall comply with all applicable requirements and guidance issued by federal, state, and local authorities pertaining to COVID-19 (including but not limited to CDC, OSHA, Governor Brown, Oregon Health Authority, and Multnomah County Health Department). The applicable guidance and requirements include, but are not limited to, those pertaining to Oregon phased reopening and sector activities, reduction in gathering sizes appropriate to the type of location and activity, complying, and implementing health protocols, maintaining social distancing, and wearing face coverings. Consultant shall have a satisfactory safety plan and protocols addressing COVID-19 precautions related to Contractor's activities under this Contract. Consultant shall monitor for updated guidance and requirements and update its plan and protocols accordingly. Consultant shall provide a copy of Consultant's safety plan and protocols to City upon City's request. Consultant is solely responsible for implementing a COVID-19 safety plan and protocols and addressing any COVID-19 related claims pertaining to its activities and provision of Services under this Contract. In the event that Consultant's employees or its subconsultant's employees exhibit symptoms of COVID-19 infection, Consultant shall follow City's contact tracing and response protocols, which will be provided to the Consultant.

Exhibit B  
Contract Budget Detail

City of Portland  
Blower Improvements Project Proposal  
Date - 9/2/21

42.9% D/M/W/SDV/ESB % Allocation
39.9% M/W % Allocation

Labor Classification	SeniorProf	SeniorProf	SeniorProf	LeadProf	SeniorProf	SeniorProf	Prof	SeniorProf	SeniorProf	Assistant Prof	Tech	LeadProf	SeniorProf	SeniorProf		Assistant Prof	SeniorT
Project Role	Project Manager	Design Manager	Quality Reviewer	Process Modeling	Sustain.	Quality Reviewer	PE / APM	CM Specialist	Electrical Lead	Electrical	Electrical CAD	Controls QA	Cost Estimating	Structural	Professional	Assistant Professional	BIM Coord
	D. LaFitte	G. Sheehan	FBD, Electrical	A. Conklin	S. Deslauriers	J. Anderson	M. Miner	M. Warriner	Doraisha	B. Taegay	B. Roepken	D. Robinson	J. Rozgony	J. Doreing	D. Chien	N. Beaton / E. Yates	R. Bar...
2021 Rates	\$268	\$262	\$270	\$213	\$261	\$243	\$144	\$280	\$280	\$129	\$164	\$219	\$279	\$278	\$159	\$136	\$2...

PHASE 100 - PROJECT DEVELOPMENT

<b>Subtask 100 - Project Management</b>	<b>160</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>130</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
101 Project Management Activities	160	60					130											
<b>Subtask 200 - MWESB Mentoring</b>	<b>18</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
201 D/M/W/SDV/ESD Performance Assessment	12	15																
202 Capacity Building Support (As Needed)	2																	
203 Reporting and Formation Lab Management	4	0																
<b>Subtask 300 - Kickoff Meeting and Site Visit</b>	<b>20</b>	<b>16</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>
301 Project Kickoff Meeting and Prep	16	8		4			24		4			2				4		
302 Site Visit (same day as Kick-off)	4	8		8			4		8							4		
<b>Subtask 400 - Blower Building Scanning Services</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>
401 Scanning and Revit Model Creation / Coordination	2	2																8
<b>Subtask 500 - Data Gathering/Design Criteria</b>	<b>19</b>	<b>23</b>	<b>0</b>	<b>22</b>	<b>8</b>	<b>0</b>	<b>58</b>	<b>0</b>	<b>23</b>	<b>20</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>
501 Compile, Review and Existing Information Gaps	3	3		12			4		10	10		4				10		
502 Prepare Data Gap Summary Memo	2	2		4			8		10	10						8		
503 Establish Facility Design Requirements and Standards	2	4			4		12											
504 and 505 Prepare for, Facilitate data gap / design criteria workshop and meet	10	12		4			22		3			4						12
506 Design Criteria and Standards Technical Memorandum	2	2		2	4		12											8
<b>Subtask 600 - Alt. Eval// Aeration Process Air Sys</b>	<b>55</b>	<b>163</b>	<b>16</b>	<b>114</b>	<b>4</b>	<b>36</b>	<b>251</b>	<b>0</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>146</b>	<b>0</b>	<b>0</b>
601 High Level Model Validation	2	6		36												42		
602 Coordinate with City on results and model differences	2	4		12												6		
603 Identify / Develop / Evaluate Blower Tech	2	18				0	24									4		
604 Air Demand for 6 Scenarios (3 diffuser layouts)	4	4		40			12									40		
605 Evaluate Blower Technologies for Applicability	2	14				0	14											
606 Evaluate Blower System Layouts (Energy and Simplicity)	6	16					16											
607 Evaluate Air Header System and Discharge Plenum for redundancy	4	12					32											
608 Alternative Screening Workshop and Prep // Identify Potential Alte	4	12		8		0	12		3									
609 Develop Selected Alternatives (Layout, Costs, Schedules, Risks)	12	28		2	4	0	40		4			24				20		
610 Evaluate Alternatives for Cost/Constructability/NPV/Procurement&	2	14				0	16									10		
611 Seismic and Structural Analysis for Project Scope	2													4				
612 Evaluate electrical, prepare report	2								24	36								
613 Workshop // Prepare Materials / Facilitate TSC	4	12		8		0	18		12									
614 Alternative Results TM (Draft and Final)	6	14		8		0	32											24
615 Quality Review	1	9	16			32												
616 Energy Trust of Oregon Meetings and Coordination	1						35											
<b>Subtask 700 - Alt. Eval// Blower Bldg Non-Process Space Imp</b>	<b>30</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>
701 Provide Short / Long Term Space Planning	4	2			2													8
702 Workshop // Identify Future Uses / Requirements	8	2																
703 Incorporate Safety Measures / Mitigation Efforts	6						20											
704 Develop Options for Phased Imprv. Plan	2								4	4		1						
705 Perform Limited Seismic and Structural Analysis for Potential Improvements		1																4
706 Workshop // Facilitate TSC // Select Imprv. Plan	4	2																
707 Prepare Program Plan	4				2				4	4		1						
708 Quality review of technical memorandum	2		6															4
<b>Subtask 800 - Alt. Eval// Seismic and Retrofit Alternatives</b>	<b>19</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>34</b>	<b>20</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
801 Establish Seismic and Building Performance Objectives with BES	1	1												3				
802 Review Existing Geotechnical Report/Drawings																		
803 ASCE 41 Tier 1 Preliminary Seismic Evaluation and Prelim Conce	2	2														4		
804 Conceptual Designs / Cost Estimate // Structural	1	1											20		4			
805 and 806 Prepare Seismic Eval / Retrofit Report and Quality Review	3	3													6			
807 Prep for, meeting summary and Seismic Results Workshop	12	2					6							12				
<b>Subtask 900 - Prepare Project Development Phase Report</b>	<b>76</b>	<b>76</b>	<b>16</b>	<b>38</b>	<b>0</b>	<b>24</b>	<b>80</b>	<b>0</b>	<b>40</b>	<b>36</b>	<b>0</b>	<b>34</b>	<b>24</b>	<b>2</b>	<b>0</b>	<b>80</b>	<b>0</b>	<b>0</b>
901 20% Alternative Design Drawings	4	4		4		0	6					12				16		
902 Prepare Construction Cost Estimates	2												24			8		
903 Prepare Draft Project Development Phase Report	12	10		8		0	12		24	36		2				40		
904 Project Development Phase Review Workshop and Prep	6	12					16		16			16		2				
904 Address City comment and prepare final report	4	4					14					4						
905 Present Report to BES GSC and Prep	8	6		6														
906 Project Development Phase Coordination Meetings	40	40		20		0	32									16		
907 Quality Management			16			24												

Labor Classification	SeniorProf	SeniorProf	SeniorProf	LeadProf	SeniorProf	SeniorProf	Prof	SeniorProf	SeniorProf	Assistant Prof	Tech	LeadProf	SeniorProf	SeniorProf		Assistant Prof	SeniorT
Project Role	Project Manager	Design Manager	Quality Reviewer	Process Modeling	Sustain.	Quality Reviewer	PE / APM	CM Specialist	Electrical Lead	Electrical	Electrical CAD	Controls QA	Cost Estimating	Structural	Professional	Assistant Professional	BIM Coord
	D. Laflite	G. Sheehan	TBD, Electrical	A. Conklin	S.S. Deshauners	J. Anderson	J. Miner	M. Warriner	Dorafsha	B. Taeggy	B. Roepken	D. Robinson	J. Rozgony	J. Doreing	D. Chien	N. Benton / E. Yates	R. Rafia
2021 Rates	\$268	\$262	\$270	\$213	\$261	\$243	\$144	\$280	\$280	\$129	\$164	\$219	\$279	\$278	\$159	\$136	\$280

**PHASE 200 - PRE-DESIGN**

Subtask 100 - Project Management	58	30	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0
I01 Project Management Activities	58	30					36										
<b>Subtask 1000 - Pre-Design (30%)</b>	<b>86</b>	<b>150</b>	<b>20</b>	<b>18</b>	<b>0</b>	<b>46</b>	<b>226</b>	<b>0</b>	<b>207</b>	<b>231</b>	<b>171</b>	<b>56</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>125</b>	<b>12</b>
I000 Incorporate BES Comments and Finalize Development Phase Report	12	12		12			32					12				32	
I001 Prepared 30% Design	40	82					120		127	191	171	12				72	12
I002 Cost Estimate									4				58				
I003 Workshop - including prep and follow up	8	20		4			16					15				16	
I004 Quality Management			16			40					24						
I005 Presentation Assistance	8	2		2			8										
I006 If Needed Blower Pre-purchase Assistance and Submittal Review	8	24	4			6	40		40			12					
I007 Pre-Design Coordination Meetings	10	10					10					5				5	

**PHASE 300 - DESIGN**

Subtask 100 - Project Management	220	100	0	0	0	0	140	0	0	0	0	0	0	0	0	0	0
I01 Project Management Activities	220	100					140										
<b>Subtask 200 - MWESB Mentoring</b>	<b>36</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
E01 D/M/W/SDV/ESD Performance Assessment	26	20															
E02 Capacity Building Support (As Needed)	10	10															
E03 Reporting and Formation Lab Management	10	10															
<b>Subtask 1100 - Detailed Design</b>	<b>257</b>	<b>448</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>112</b>	<b>544</b>	<b>56</b>	<b>672</b>	<b>860</b>	<b>683</b>	<b>204</b>	<b>254</b>	<b>40</b>	<b>0</b>	<b>417</b>	<b>0</b>
I101 Workshop Prep, Workshop and Minutes (not to exceed 3 workshop)	32	60					60		42			36					
I102, I109, I111, I113 60/90/100 Drawings	120	200					250		507	760	683					280	
I103, I109, I111, I113 60/90/100 Specifications	40	60					100		38	58						102	
I104 I110 Quality Management (including EIC Support)	4	4	100			112		40				133		40			
I105 EIC Bi-Weekly Coordination Meetings		35					35		35			35					
I116 Construction Contract Time Memorandum	2	4					16	16									
I107 Cost Estimating	8	12					36		12								
I114 Change Management Assistance with BES Governance Committee	12	28											254				
I115 Detailed Design Bi-weekly Coordination Meetings (Design Phase E)	35	35					35										35
I116 Draft Short Circuit / Coordination Study		2							20	30							
I117 Respond to City of Portland BDS Review Comments	4	8					12		12	12							
I118 Fire Department Coordination Meeting									6								

**PHASE 400 - PROCUREMENT SUPPORT SERVICES**

Subtask 100 - Project Management	30	6	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0
I01 Project Management Activities	30	6					28										
<b>Subtask 1200 - Procurement (Bid Period) Support Services</b>	<b>20</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>0</b>									
E201 Prep for and Attend Pre-Bid Conference	6	2															
E202 Provide Responses to Bidder Questions	6	12					40										
E203 Prepare Addendum	6	16					40										
E204 Prepare Conformed Drawings	2	2					16										

**PHASE 500 - CONSTR. SUPPORT SERVICES**

Subtask 100 - Project Management	190	80	0	0	0	0	180	0	0	0	0	0	0	0	0	0	0
I01 Project Management Activities	190	80					180										
<b>Subtask 200 - MWESB Mentoring</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
E01 D/M/W/SDV/ESD Performance Assessment	4	3															
E02 Capacity Building Support (As Needed)																	
E03 Reporting and Formation Lab Management	2	2															
<b>Subtask 1300 - Construction Support Services</b>	<b>78</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>314</b>	<b>0</b>	<b>134</b>	<b>216</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>155</b>	<b>0</b>
I301 Pre Construction Conference	4						4										
I302 and I309 Site Visits / necessary observations including those for ORSSC and final walk through		26					17		12	24							
I303 Submittal Reviews	40	50					160		60	100	40					90	
I304 RFI Review / Responses	30	40					80		30	60	40					65	
I305 Construction meetings		13					33		12	12							
I306 & I307 DC and CO Proposal Support	4	12					20		20	20	20						
<b>Subtask 1400 - PLC and HMI Programming Services</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
I401 Review testing plan and test forms provided by systems integrator		8					12		8			16					
<b>Subtask 1500 - Facility Start-up and Operation Support Services</b>	<b>0</b>	<b>180</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>172</b>	<b>0</b>	<b>36</b>	<b>36</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
I501 Observe System Operation		44					20										
I502 Provide testing parameter input for design condition compliance		16					16					4					
I503 Participate in teleconferences, emails and evaluate procedures		24					24		16	16							
I504 Provide input on operational changes to improve performance		32					8					4					
I505 Operator Training for Design Intent		40					40										
I506 Analyze equipment conformance with design conditions		24					24					4					
I507 Prepare Record Drawings							40										
I508 Prepare final short circuit, protective device coordination, and Arc Flash study report.			8						20	20							
<b>Subtask 1800 - Permitting Support Services</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
I801 Prepare Final Letter to Building Official	1													2			
<b>TOTAL</b>	<b>1,381</b>	<b>1,581</b>	<b>166</b>	<b>204</b>	<b>16</b>	<b>218</b>	<b>2,321</b>	<b>56</b>	<b>1,184</b>	<b>1,443</b>	<b>954</b>	<b>351</b>	<b>380</b>	<b>85</b>	<b>0</b>	<b>969</b>	<b>20</b>



							The Formation Lab (M/W/ESB Coordinator)								Greenbusch Group (HVAC/Plumbing)					
Total Hours							Expenses	Total for Sub	Principal	Sr. Engineer	Pr. Engineer	Designer	CAD Manager	Total Hours	Expenses	Total for Sub	Principal Eng/Geol	Senior Eng/Geol	Project Eng/Geol II	Project Eng/CM
\$235	\$205	\$174	\$144	\$113	\$87			\$215	\$150	\$100	\$100	\$115				\$180	\$160	\$150	\$130	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	\$ -	\$ -	42	76	80	0	107	305	\$ -	\$ -	0	0	0	0
							\$ -	\$ -							\$ -	\$ -				
							\$ -	\$ -	16	50	70		95	231	\$ -	\$ -				
							\$ -	\$ -	10	18				28	\$ -	\$ -				
							\$ -	\$ -	6	8	10		12	36	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -	10				10	10	\$ -	\$ -				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	112	0	26,320	0	0	0	0	0	0	0	0	0	0	0	0
67.0						67		15,745						0						
30						30		7,050						0						
15						15		3,525						0						
0	0	0	0	0	0	0	\$ -	\$ -	123	156	246	0	284	809	\$ -	\$ -	0	0	0	0
							\$ -	\$ -	8	12				20	\$ -	\$ -				
							\$ -	\$ -	24	90	160		260	534	\$ -	\$ -				
							\$ -	\$ -	6	34	56			96	\$ -	\$ -				
							\$ -	\$ -	50	20	30		24	124	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -	35					35	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	0	0	0	0	0	0	\$ -	\$ -	0	24	0	0	20	44	\$ -	\$ -	0	0	0	0
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -		8				8	\$ -	\$ -				
							\$ -	\$ -		12				12	\$ -	\$ -				
							\$ -	\$ -		4				8	\$ -	\$ -				
0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21	0	0	0	0	0	21	0	4,935	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17.0						17		3,995						0						
4						4		940						0						
0	0	0	0	0	0	0	\$ -	\$ -	12	132	70	0	6	220	\$ -	\$ -	0	0	0	0
							\$ -	\$ -		8				8	\$ -	\$ -				
							\$ -	\$ -		36				36	\$ -	\$ -				
							\$ -	\$ -	2	36	50			88	\$ -	\$ -				
							\$ -	\$ -	8	24	16			48	\$ -	\$ -				
							\$ -	\$ -		24				24	\$ -	\$ -				
							\$ -	\$ -	2	4	4			16	\$ -	\$ -				
0	0	0	0	0	0	0	\$ -	\$ -	0	16	0	0	0	16	\$ -	\$ -	0	0	0	0
							\$ -	\$ -		16				16	\$ -	\$ -				
0	0	0	0	0	0	0	\$ -	\$ -	40	0	0	0	0	40	\$ -	\$ -	0	0	0	0
							\$ -	\$ -	12					12	\$ -	\$ -				
							\$ -	\$ -	12					12	\$ -	\$ -				
							\$ -	\$ -	8					8	\$ -	\$ -				
							\$ -	\$ -	8					8	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
							\$ -	\$ -						0	\$ -	\$ -				
0	0	0	0	0	0	0	\$ -	\$ -	0	0	0	0	0	0	\$ -	\$ -	0	0	0	0
							\$ -	\$ -						0	\$ -	\$ -				
193	0	0	0	0	0	193	\$ -	\$ 45,355	313	510	396	43	437	1,699	\$ 5,200	\$ 243,150	0	0	0	0



											Elcon Engineers (Electrical)						NNA Landscape				
Project Manager	Senior Engineer III	Engineer II	Senior Designer III	Designer	Technical	Revit Designer / Modeler	CADD Tech	Admin	Total Hours	Expenses	Total for Sub	Senior Land. Arch	Land. Arch	Land. Designer	Total Hours	Expenses	Sub-total	Project Manager	Cad Technician III	Cad Technician II	
\$180	\$177	\$125	\$138	\$108	\$107	\$161	\$115	\$91				\$156	\$112	\$86				\$151	\$116	\$103	
11	1	0	4	0	0	3	0	3	22	0	\$ 3,466	0	0	0	0	0	0	0	0	0	
11	1	0	4	0	0	3	0	3	22	0	\$ 3,466	0	0	0	0	0	0	0	0	0	
22	276	70	198	0	0	94	180	0	840	\$ -	\$ 124,720	11	18	28	57	\$ -	\$ -	\$ 6,140	35	211	56
19	132	70	158			90	176		645		\$ 92,068	1	4	12	17			\$ 1,636	31	203	56
1	24								25		\$ 4,428										
1	8								8		\$ 1,416		6		6						672
2	24					4	4		34		\$ 5,712	2	4	12	18						1,792
									0		\$ -			4	8						792
	80		40						120		\$ 19,680				0						0
	8								8		\$ 1,416	8			8						1,248
112	10	0	36	0	0	34	0	28	220	0	\$ 34,930	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
112	10	0	36	0	0	34	0	28	220	0	\$ 34,930	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
									0		\$ -				0						
									0		\$ -				0						
									0		\$ -				0						
127	321	704	1,168	0	0	193	1,101	34	3,648	\$ -	\$ 489,655	15	83	94	192	\$ -	\$ -	\$ 19,720	93	559	151
3		24	24						51		\$ 6,852				0						
88	231	561	1,017			169	1,021	22	3,109		\$ 413,832	6	24	64	94			\$ 9,128	87	559	151
3	48	40	28					12	131		\$ 18,996	3	18	6	27			\$ 3,000			
4	28	40	12			24	80		188		\$ 25,396	6	16	24	46			\$ 4,792			
22		35	35						92		\$ 13,165				0			\$ -			
3									0		\$ -				0			\$ -			
3	2	4	40						49		\$ 6,914				0			\$ -			
									0		\$ -				0			\$ -			
									0		\$ -				0			\$ -			
									0		\$ -		25		25			\$ 2,800	6		
									0		\$ -				0			\$ -			
4	12		12						28		\$ 4,500				0			\$ -			
									0		\$ -				0			\$ -			
11	1	0	4	0	0	3	0	3	22	\$ -	\$ 3,466	0	0	0	0	\$ -	\$ -	0	0	0	
11	1	0	4	0	0	3	0	3	22	\$ -	\$ 3,466	0	0	0	0	\$ -	\$ -	0	0	0	
5	18	0	60	0	0	32	16	0	132	\$ -	\$ 19,538	0	16	14	30	\$ -	\$ -	\$ 2,996	0	80	0
6									6		\$ 1,062				0			\$ -			
2			30						32		\$ 4,500	5			6			\$ 672			
4			30			16	16	0	66		\$ 9,276	5		6	12			\$ 1,188		40	
	12					16	16		28		\$ 4,700	4		8	12			\$ 1,136		40	
57	6	0	22	0	0	21	0	17	133	\$ -	\$ 21,092	0	0	0	0	\$ -	\$ -	0	0	0	
57	6	0	22	0	0	21	0	17	133	\$ -	\$ 21,092	0	0	0	0	\$ -	\$ -	0	0	0	
0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	0	0	0	0	\$ -	\$ -	0	0	0	
									0		\$ -				0			\$ -			
									0		\$ -				0			\$ -			
									0		\$ -				0			\$ -			
12	180	0	152	0	0	136	0	4	484	\$ -	\$ 77,257	4	55	14	73	\$ -	\$ -	\$ 7,988	10	54	0
6									6		\$ 1,062				0			\$ -			
2	16							2	20		\$ 3,375		15		15			\$ 1,680			
8	80		100			50		2	240		\$ 37,633		14	10	24			\$ 2,428			
4	40		52			60			152		\$ 23,916	4	8	4	16			\$ 1,864	6	44	
10									10		\$ 1,770				10			\$ 1,120			
28						26			56		\$ 9,502		8		8			\$ 896	4	10	
4	40	20	0	0	0	0	0	0	64	\$ -	\$ 10,300	0	0	0	0	\$ -	\$ -	\$ -	0	0	
4	40	20							64		\$ 10,300				0			\$ -			
28	120	0	128	0	0	40	40	4	360	\$ -	\$ 55,349	0	0	0	0	\$ -	\$ -	\$ -	4	50	0
8								4	12		\$ 1,805				0			\$ -			
4	16								20		\$ 3,552				0			\$ -			
4	40		40						84		\$ 13,320				0			\$ -			
4	40		40						84		\$ 13,320				0			\$ -			
4	16		16						36		\$ 5,760				0			\$ -			
4	8		8						20		\$ 3,240				0			\$ -			
									0		\$ -				0			\$ -		4	
			24			40	40		104		\$ 14,352				0			\$ -		50	
0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	0	0	0	0	\$ -	\$ -	\$ -	0	0	
438	1,039	834	1,845	0	0	571	1,345	99	6,171	\$ -	\$ 877,252	40	238	194	472	\$ -	\$ -	\$ 49,580	192	1,078	207



# Exhibit A

							SEFT							Strongwork							
Principal	Lead Eng.	Engineer	Designer	Drafter	Total Hours	Expenses	Total for Sub	Principal	QA/QC	Arch 2	Drafter	Total Hours	Expenses	Sub-total	SR PLS II	Sr. Survey Tech II	2-Person Field Crew	Survey Tech I (CAD)	Project Coordinator	Total Hours	Expenses
\$210	\$195	\$170	\$125	\$125				\$186	\$163	\$105	\$88				\$165	\$135	\$175	\$120	\$90		
12	12	0	0	0	24	0	4,860	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	12	0	0	0	24	0	4,860	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	73	55	80	52	270	375	42,560	25	7	30	44	106	-	12,813	0	0	0	0	0	0	0
1	4	2			7		1,330	2	1	4	4	11		1,307							
5	27	45	80	52	209		30,465	4	2	20	40	66		6,690							
	1	4			5		875					0		-							
					1		-					8		1,488							
4	2	4			10	375	2,285	1	4	4		9		1,258							
	5				5		975	2		2		4		582							
	24				24		4,680					0		-							
	10				10		1,950	8				8		1,488							
\$ 26	\$ 26	\$ -	\$ -	\$ -	\$ 52	\$ -	\$ 10,530	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
26	26	-	-	-	52	-	10,530	-	-	-	-	0	-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
28	108	153	183	138	627	975	98,926	73	130	110	152	465	-	59,694	0	0	0	0	0	0	0
					0		-	12		12		24		3,492							0
16	59	131	178	131	515	975	78,250	16	26	70	152	264		27,940							0
2	4	16			22		3,998	8	84	18		110		17,070							0
10	10	6	5	5	36		6,446	2	20	10		32		4,682							0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
	35				35		6,962	35				35		6,510							0
					0		-					0		-							0
2	3	10	2	2	19		3,269					0		-							0
					0		-					0		-							0
1	1	0	0	0	2		405	0	0	0	0	0		-	0	0	0	0	0	0	0
1	1				2		405					0		-							0
2	7	4	0	1	14	25	2,720	4	0	0	8	12		1,448	0	0	0	0	0	0	0
	4				4		812					0		-							0
1	2	2			5		978					0		-							0
1	1	2		1	5	25	930					0		-							0
					0		-	4			8	12		1,448							0
15	15	0	0	0	30		6,075	0	0	0	0	0		-	0	0	0	0	0	0	0
\$ 15	\$ 15				\$ 30		\$ 6,075					\$ -		\$ -							\$ -
0	0	0	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0	0	0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
3	50	41	66	8	168	825	29,053	48	8	22	19	97		14,214	0	0	0	0	0	0	0
					0		-	4				4		744							0
	2	8	20		30		4,510	15				15		2,790							0
1	8	19	32		60	825	10,376	6	4	16	9	35		4,240							0
2	8	14	8	8	40		6,749	4	4	6	6	20		2,554							0
	20				20		4,139	15				15		2,790							0
	12		6		18		3,279	4			4	8		1,096							0
0	0	0	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0	0	0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
					0		-					0		-							0
1	0	2	0	0	3		584	0	0	0	0	0		-	0	0	0	0	0	0	0
1		2			3		584					0		-							0
182	461	353	447	237	1,688	18,725	297,417	267	167	307	260	1,001		131,998	8	49	136	0	4	197	8

Exhibit C  
 Consultant's Hourly Billing Rate Table

City of Portland  
 Blower Improvements Project  
 Proposal Date - 9/2/21

42.9% D/M/W/SDV/ESB % Allocation  
 39.9% M/W % Allocation

57.1% 1.0% 5.6% 0.0% 20.1% 1.1% 4.0% 0.2% 6.8%

Labor Classification	Carollo Labor Cost	Carollo Direct Costs	Carollo Total Costs	DBE/ESB/WBE	WBE		DBE, MBE	DBE/ESB/MBE	ESB/WBE	DBE, ESB, MBE, WB	ESB/MBE
				The Formation Lab (M/W/ESB Coordinator)	Greenbusch Group (HVAC/Plumbing)	NW Geotech	Elkon Engineers (Electrical)	NNA Landscape	Perimon Group	Concise Communications	SEFT
Project Role				Total for Sub	Total for Sub	Total for Sub	Total for Sub	Sub-total	Total for Sub	Sub-total	Total for Sub
2021 Rates											

**PHASE 100 - PROJECT DEVELOPMENT**

Subtask 100 - Project Management	\$ 81,690	\$ -	\$ 81,690	\$ -	\$ -	\$ -	\$ 7,135	2,592	1,808	760	12,150
Subtask 200 - MVESB Mentoring	\$ 8,754	\$ -	\$ 8,754	\$ 14,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtask 300 - Kickoff Meeting and Site Visit	\$ 21,121	\$ 2,600	\$ 23,721	\$ -	\$ 4,225	\$ -	\$ 4,116	\$ 672	\$ -	\$ -	\$ 3,000
Subtask 400 - Blower Building Scanning Services	\$ 2,660	\$ -	\$ 2,660	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ -	\$ -
Subtask 500 - Data Gathering/Design Criteria	\$ 41,856	\$ -	\$ 41,856	\$ -	\$ 3,045	\$ -	\$ 8,358	1,896	1,206	1,140	3,300
Subtask 600 - Alt. Eval // Aeration Process Air Sys	\$ 176,802	\$ 4,200	\$ 181,002	\$ -	\$ -	\$ -	\$ -	\$ 1,928	\$ 13,421	\$ 1,520	\$ 16,869
Subtask 700 - Alt. Eval // Blower Bldg Non-Process Space Imp	\$ 22,820	\$ -	\$ 22,820	\$ -	\$ 18,795	\$ -	\$ -	\$ -	\$ -	\$ 1,140	\$ 7,100
Subtask 800 - Alt. Eval // Seismic and Retrofit Alternatives	\$ 21,956	\$ 1,000	\$ 22,956	\$ -	\$ 1,330	\$ -	\$ -	\$ 1,308	\$ -	\$ 1,140	\$ 3,410
Subtask 900 - Prepare Project Development Phase Report	\$ 112,228	\$ 3,000	\$ 115,228	\$ -	\$ 17,345	\$ -	\$ 17,870	\$ 4,340	\$ 3,533	\$ 2,280	\$ 24,980

**PHASE 200 - PRE-DESIGN**

Subtask 100 - Project Management	\$ 30,488	\$ -	\$ 30,488	0	0	0	\$ 3,466	0	0	0	4,860
Subtask 1000 - Pre-Design (30%)	\$ 284,532	\$ 3,000	\$ 287,532	\$ -	\$ 40,735	\$ -	\$ 124,720	\$ 6,140	\$ 35,577	\$ -	\$ 42,500

**PHASE 300 - DESIGN**

Subtask 100 - Project Management	\$ 111,690	\$ -	\$ 111,690	0	0	0	\$ 34,930	\$ -	\$ -	\$ -	\$ 10,500
Subtask 200 - MVESB Mentoring	\$ 17,752	0	\$ 17,752	26,320	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
Subtask 1100 - Detailed Design	\$ 953,751	\$ 8,000	\$ 961,751	\$ -	\$ 107,105	\$ -	\$ 489,655	\$ 19,720	\$ 94,567	\$ 190	\$ 98,900

**PHASE 400 - PROCURE SUPPORT SERVICES**

Subtask 100 - Project Management	\$ 14,986	\$ -	\$ 14,986	\$ -	\$ -	\$ -	\$ 3,466	\$ -	\$ -	\$ -	\$ 4,860
Subtask 1200 - Procurement (Bid Period) Support Services	\$ 28,682	\$ -	\$ 28,682	\$ -	\$ 5,900	\$ -	\$ 19,538	\$ 2,996	\$ 9,311	\$ -	\$ 2,700

**PHASE 500 - CONSTR. SUPPORT SERVICES**

Subtask 100 - Project Management	\$ 108,827	\$ -	\$ 108,827	\$ -	\$ -	\$ -	\$ 21,092	\$ -	\$ -	\$ -	\$ 6,000
Subtask 200 - MVESB Mentoring	\$ 3,097	0	\$ 3,097	\$ 4,935	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtask 1300 - Construction Support Services	\$ 218,530	\$ 8,000	\$ 226,530	\$ -	\$ 33,070	\$ -	\$ 77,257	\$ 7,988	\$ 7,792	\$ -	\$ 29,000
Subtask 1400 - PLC and HMI Programming Services	\$ 10,154	\$ -	\$ 10,154	\$ -	\$ 2,400	\$ -	\$ 10,300	\$ -	\$ -	\$ -	\$ -
Subtask 1500 - Facility Start-up and Operation Support Services	\$ 97,037	\$ 4,000	\$ 101,037	\$ -	\$ 9,200	\$ -	\$ 55,349	\$ -	\$ 6,422	\$ -	\$ -
Subtask 1600 - Permitting Support Services	\$ 874	\$ -	\$ 874	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500
<b>TOTAL</b>	\$ 2,370,287	\$ 33,800	\$ 2,404,087	\$ 45,355	\$ 243,150	\$ -	\$ 877,252	\$ 49,580	\$ 175,638	\$ 8,170	\$ 297,400

**Consultant**

CAROLLO ENGINEERS, INC.		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Senior Professional / Principal	\$250-\$280	Less than 3.1
Senior PM	\$230-\$250	3.1 or less
Lead Project Professional	\$200-\$230	3.1
Project Professional	\$170-\$200	3.1
Professional	\$140-\$180	3.1
Assistant Professional	\$110-\$140	3.1
Senior Technicians	\$170-\$200	3.1
Technicians	\$130-\$170	3.1
Document Processing	\$95-\$115	3.1

**Subconsultants**

THE FORMATION LAB (WBE/DBE/ESB #12434)		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal	\$235	1.94
Project Coordinator	\$123	3.1

THE GREENBUSCH GROUP, INC. (WBE #638)		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal	\$198-\$227	2.71
Mechanical Engineer	\$151-\$175	2.71
Mechanical Designer	\$78-\$130	2.71
CADD	\$92-\$114	2.71

NORTHWEST GEOTECH CONSULTANTS, INC (MBE/DBE #1035)		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal	\$175-\$255	3.1
Senior Engineer/Eng. Geol.	\$155-\$175	3.1
Project Engineer/Geologist II	\$125-\$155	3.1
Project Engineer Geologist I	\$105-\$125	3.1
Staff Engineer/Geologist II	\$90-\$105	3.1
Staff Engineer Geologist I	\$75-\$90	3.1
Soils Technician II	\$65-\$85	3.1
CAD Technician	\$75-\$105	3.1
Administrative Assistant II	\$70-\$105	3.1

Administrative Assistant I	\$50-\$70	3.1
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**ELCON ASSOCIATES, INC. (MBE/DBE #9251)**

Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal	\$221-\$250	2.768
Project Manager 2	\$194-\$221	2.768
Project Manager 1	\$180-\$194	2.768
Senior Engineer 3	\$161-\$177	2.768
Senior Engineer 2	\$144-\$160	2.768
Senior Engineer 1	\$125-\$144	2.768
Engineer 2	\$111-\$124	2.768
Engineer 1	\$97-\$111	2.768
Senior Designer 3	\$127-\$138	2.768
Senior Designer 2	\$119-\$126	2.768
Senior Designer 1	\$111-\$118	2.768
Electrical Designer 2	\$98-\$111	2.768
Electrical Designer 1	\$83-\$97	2.768
Designer Intern	\$55-\$69	2.768
Accounting - Admin Manager	\$69-\$85	2.768

Based on Elcon's 2020 multiplier of 2.768 (151.66% overhead and 10% fee)

**NNA LANDSCAPE ARCHITECTURE (MBE/DBE/ESB #11078)**

Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal / Senior Landscape Architect	\$156	3.1
Associate Landscape Architect	\$112	3.1
Landscape Designer	\$86	3.1

**THE PERIMON CAD GROUP (WBE/ESB #10135)**

Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Project Manager	\$147.75-\$150.70	3.1
Cad Technician III	\$114.11-\$116.39	3.1
Cad Technician II	\$100.56-\$102.57	3.1
Cad Technician I	\$87.02-\$88.76	3.1

**CONCISE COMMUNICATIONS, INC. (MBE/WBE/DBE/ESB # 9079)**

Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal Tech Writer	\$95	N/A

SEFT CONSULTING GROUP, LLC (MBE/ESB #8994)		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal	\$210	3.1
Lead Engineer / Project Manager	\$195	3.1
Project Engineer / Associate PM	\$170	3.1
Design Engineer	\$145	3.1
Designer	\$125	3.1

STRONGWORK ARCHITECTURE, LLC (ESB #1861596)		
Labor Classification	2020-2021 Hourly Billing Rate	Multiplier
Principal Architect	\$186	3.1
Lead Architect	\$163	3.1
QA/QC Specs	\$163	3.1
Senior Architect / PM	\$142	3.1
Architect 3	\$126	3.1
Architect 2	\$105	3.1
Architect 1	\$88	3.1
Senior Designer	\$109	3.1
Designer	\$101	3.1
Drafter	\$88	3.1
Intern	\$79	3.1
Admin	\$79	3.1

Exhibit D  
Contract Design Schedule

City of Portland BES Blower Project Schedule BES Blower Schedule 21-06-18.mpp							
D	Task Name	Duration	Start	Finish	Predecessors	Successors	Notes
1	Notice to Proceed	0 days	Mon 10/4/21	Mon 10/4/21		3,27	
2	Task 300 - Kickoff Meeting and Site Visit	20 days	Mon 10/4/21	Fri 10/29/21			
3	Kickoff Meeting Preparation (and Subcontractor Contracts)	20 days	Mon 10/4/21	Fri 10/29/21	1	4,5,7,13,91	
4	Kickoff Meeting	0 days	Fri 10/29/21	Fri 10/29/21	3		
5	Site Visit	0 days	Fri 10/29/21	Fri 10/29/21	3	31,75	
6	Task 400 - Blower Building Scanning Services	55 days	Mon 11/1/21	Fri 1/14/22			
7	Scan Facilities	15 days	Mon 11/1/21	Fri 11/19/21	3	8	
8	REVIT Model Development	25 days	Mon 11/22/21	Fri 12/24/21	7	9	
9	Quality Management Review	5 days	Mon 12/27/21	Fri 12/31/21	8	10	
10	Finalize REVIT Model	10 days	Mon 1/3/22	Fri 1/14/22	9	11	
11	Deliver Final REVIT Model	0 days	Fri 1/14/22	Fri 1/14/22	10		
12	Task 500 - Geotechnical Investigations and Material Testing	90 days	Mon 11/1/21	Fri 3/4/22			
13	Utility Locates	10 days	Mon 11/1/21	Fri 11/12/21	3	14,15	Reduced from initial assumed duration.
14	Geotechnical Explorations and Lab Testing	20 days	Mon 11/15/21	Fri 12/10/21	13	18	
15	Timber Pile Evaluation - Mobilization	5 days	Mon 11/15/21	Fri 11/19/21	13	16	
16	Timber Pile Excavation and Lab Testing	5 days	Mon 11/22/21	Fri 11/26/21	15	17,18	
17	Timber Pile Basement Repairs	5 days	Mon 11/29/21	Fri 12/3/21	16		
18	Preliminary Results Available	15 days	Mon 12/13/21	Fri 12/31/21	14,16	19	Reduced from initial assumed duration.
19	Draft Geotechnical Report	20 days	Mon 1/3/22	Fri 1/28/22	18	22,20	Reduced from initial assumed duration.
20	Quality Management Review	5 days	Mon 1/31/22	Fri 2/4/22	19	21	
21	Finalize Draft Geotechnical Report	15 days	Mon 2/7/22	Fri 2/25/22	20		
22	Deliver Draft Geotechnical Report	0 days	Fri 1/28/22	Fri 1/28/22	19	23	
23	City Review	10 days	Mon 1/31/22	Fri 2/11/22	22	24	
24	Final Geotechnical Report	15 days	Mon 2/14/22	Fri 3/4/22	23	25,92	
25	Deliver Final Geotechnical Report	0 days	Fri 3/4/22	Fri 3/4/22	24	106	
26	Task 600 - Data Gathering & Establish Project Design Criteria	95 days	Mon 10/4/21	Fri 2/11/22			
27	City Provides Available Data	10 days	Mon 10/4/21	Fri 10/15/21	1	28	
28	Review City Provided Plant Data	10 days	Mon 10/18/21	Fri 10/29/21	27	29	
29	Develop Additional Data Request and Memo	5 days	Mon 11/1/21	Fri 11/5/21	28	30	
30	City Provides Additional Data	10 days	Mon 11/8/21	Fri 11/19/21	29	42	
31	Develop Draft Project Design Criteria	20 days	Mon 11/1/21	Fri 11/26/21	5	32	
32	Workshop - Design Project Criteria and Data Gap	0 days	Fri 11/26/21	Fri 11/26/21	31	33	
33	Prepare Draft Project Design Criteria TM	20 days	Mon 11/29/21	Fri 12/24/21	32	34	
34	Quality Management Review	5 days	Mon 12/27/21	Fri 12/31/21	33	35	
35	Finalize Draft Project Design Criteria TM	10 days	Mon 1/3/22	Fri 1/14/22	34	36	
36	Submit Draft Project Design Criteria TM	0 days	Fri 1/14/22	Fri 1/14/22	35	37	
37	City Review	10 days	Mon 1/17/22	Fri 1/28/22	36	38	
38	Receive City Consolidated Review Comments	0 days	Fri 1/28/22	Fri 1/28/22	37	39	
39	Develop Draft Response to City Review Comments	10 days	Mon 1/31/22	Fri 2/11/22	38	40	
40	Submit Draft Response to City Review Comments	0 days	Fri 2/11/22	Fri 2/11/22	39	106	
41	Task 700 - Alternative Evaluations - Aeration Process Air System	200 days	Mon 11/22/21	Fri 8/26/22			
42	Review City's BioWin Model	15 days	Mon 11/22/21	Fri 12/10/21	30	43	
43	Meeting - BioWin (if needed)	0 days	Fri 12/10/21	Fri 12/10/21	42	44	
44	Update BioWin Model and Confirm Existing Process Air Req's	10 days	Mon 12/13/21	Fri 12/24/21	43	45	
45	Develop Air Demands (6 City Defined Scenarios) and Distribution Analysis	15 days	Mon 12/27/21	Fri 1/14/22	44	46	
46	Develop Distribution Analysis for Air Demands	15 days	Mon 1/17/22	Fri 2/4/22	45	47,48,49	
47	Identify, Develop, and Evaluate Blower Technology	25 days	Mon 2/7/22	Fri 3/11/22	46	50	Reduced from initial assumed duration.
48	Evaluate Aeration Blower System Efficiency Improvements	25 days	Mon 2/7/22	Fri 3/11/22	46	50	Reduced from initial assumed duration.
49	Evaluate Existing Air Header System and Discharge Plenum	25 days	Mon 2/7/22	Fri 3/11/22	46	50	Reduced from initial assumed duration.
50	Quality Management Review	5 days	Mon 3/14/22	Fri 3/18/22	47,48,49	51	

**City of Portland BES  
Blower Project Schedule  
BES Blower Schedule 21-06-18.mpp**

ID	Task Name	Duration	Start	Finish	Predecessors	Successors	Notes
51	Workshop Prep and Address QM Comments	10 days	Mon 3/21/22	Fri 4/1/22	50	52	
52	Workshop - Screen Aeration Process Alternatives and Develop Eval Criteria (Part 1)	0 days	Fri 4/1/22	Fri 4/1/22	51	53	
53	Develop and Evaluate Selected Alternatives including Life Cycle/Schedule	30 days	Mon 4/4/22	Fri 5/13/22	52	54	
54	Workshop Prep	5 days	Mon 5/16/22	Fri 5/20/22	53	55	
55	Workshop - Select Aeration Process Improvement (Part 2 - TSC)	0 days	Fri 5/20/22	Fri 5/20/22	54	56,65	
56	Prepare Draft Aeration Process Air System Alternatives TM	25 days	Mon 5/23/22	Fri 6/24/22	55	57	
57	Quality Management Review	5 days	Mon 6/27/22	Fri 7/1/22	56	59,58	
58	Finalize Draft Aeration Process Air System Alternatives TM	10 days	Mon 7/4/22	Fri 7/15/22	57		
59	Submit Draft Aeration Process Air System Alternatives TM	0 days	Fri 7/1/22	Fri 7/1/22	57	60	
60	City Review	10 days	Mon 7/4/22	Fri 7/15/22	59	61	
61	Receive City Consolidated Review Comments	0 days	Fri 7/15/22	Fri 7/15/22	60	62	
62	Develop Draft Response to City Review Comments	10 days	Mon 7/18/22	Fri 7/29/22	61	63	
63	Submit Draft Response to City Review Comments	0 days	Fri 7/29/22	Fri 7/29/22	62	106	
64	<b>Develop Recommended Electrical Recommendations</b>	<b>70 days</b>	<b>Mon 5/23/22</b>	<b>Fri 8/26/22</b>			
65	Electrical Investigations and Recommendations	20 days	Mon 5/23/22	Fri 6/17/22	55	66	
66	Prepare Draft Electrical Retrofit Report	15 days	Mon 6/20/22	Fri 7/8/22	65	67	
67	Quality Management Review	5 days	Mon 7/11/22	Fri 7/15/22	66	68	
68	Finalize Draft Electrical Retrofit Report	10 days	Mon 7/18/22	Fri 7/29/22	67	69	
69	Submit Draft Project Design Criteria TM	0 days	Fri 7/29/22	Fri 7/29/22	68	70	
70	City Review	10 days	Mon 8/1/22	Fri 8/12/22	69	71	
71	Receive City Consolidated Review Comments	0 days	Fri 8/12/22	Fri 8/12/22	70	72	
72	Develop Draft Response to City Review Comments	10 days	Mon 8/15/22	Fri 8/26/22	71	73	
73	Submit Draft Response to City Review Comments	0 days	Fri 8/26/22	Fri 8/26/22	72	106	
74	<b>Task 800 - Blower Building Non-Process Spaces Improvements</b>	<b>145 days</b>	<b>Mon 11/1/21</b>	<b>Fri 5/20/22</b>			
75	Perform Initial Non-Process Space Improvement Investigations	20 days	Mon 11/1/21	Fri 11/26/21	5	76	
76	Workshop Prep	10 days	Mon 11/29/21	Fri 12/10/21	75	77	
77	Workshop - Non-Process Space Improvements Workshop	0 days	Fri 12/10/21	Fri 12/10/21	76	78	
78	Develop 2 Long/Short Term Options	30 days	Mon 12/13/21	Fri 1/21/22	77	79	
79	Quality Management Review	5 days	Mon 1/24/22	Fri 1/28/22	78	80	
80	Finalize 2 Long/Short Term Options	10 days	Mon 1/31/22	Fri 2/11/22	79	81	
81	Workshop Prep	15 days	Mon 2/14/22	Fri 3/4/22	80	82	
82	Workshop - TSC Selection of Long/Short Term Improvements for Project	0 days	Fri 3/4/22	Fri 3/4/22	81	83	
83	Prepare Draft Non-Process Space Improvements Plan	20 days	Mon 3/7/22	Fri 4/1/22	82	84	
84	Quality Management Review	5 days	Mon 4/4/22	Fri 4/8/22	83	85	
85	Finalize Draft Non-Process Space Improvements Plan	10 days	Mon 4/11/22	Fri 4/22/22	84	86	
86	City Review	10 days	Mon 4/25/22	Fri 5/6/22	85	87	
87	Receive City Consolidated Review Comments	0 days	Fri 5/6/22	Fri 5/6/22	86	88	
88	Develop Draft Response to City Review Comments	10 days	Mon 5/9/22	Fri 5/20/22	87	89	
89	Submit Draft Response to City Review Comments	0 days	Fri 5/20/22	Fri 5/20/22	88	106	
90	<b>Task 900 - Blower Building Seismic Evaluation and Retrofit</b>	<b>210 days</b>	<b>Mon 11/1/21</b>	<b>Fri 8/19/22</b>			
91	Establish w/ AHJ and City Criteria for Seismic Evaluation and Retrofit	40 days	Mon 11/1/21	Fri 12/24/21	3	92	
92	Perform Tier 1/2/3 Seismic Evaluation	40 days	Mon 3/7/22	Fri 4/29/22	91,24	93,94	
93	Develop Conceptual Design / Planning Costs for Base Project	15 days	Mon 5/2/22	Fri 5/20/22	92		
94	Develop Conceptual Design / Planning Costs for Voluntary Retrofits	15 days	Mon 5/2/22	Fri 5/20/22	92	95	
95	NEW TASK: Workshop Prep	10 days	Mon 5/23/22	Fri 6/3/22	94	96	
96	NEW TASK: Workshop - Seismic Improvements Selection	0 days	Fri 6/3/22	Fri 6/3/22	95	97	
97	Prepare Draft Blower Building Seismic Evaluation and Retrofit Report	30 days	Mon 6/6/22	Fri 7/15/22	96	100,98	
98	Quality Management Review	10 days	Mon 7/18/22	Fri 7/29/22	97	99	
99	Finalize Draft Blower Building Seismic Evaluation and Retrofit Report	15 days	Mon 8/1/22	Fri 8/19/22	98		
100	Submit Draft Blower Building Seismic Evaluation and Retrofit Report	0 days	Fri 7/15/22	Fri 7/15/22	97	101	

City of Portland BES Blower Project Schedule BES Blower Schedule 21-06-18.mpp							
ID	Task Name	Duration	Start	Finish	Predecessors	Successors	Notes
101	City Review	10 days	Mon 7/18/22	Fri 7/29/22	100	102	
102	Receive City Consolidated Review Comments	0 days	Fri 7/29/22	Fri 7/29/22	101	103	
103	Develop Draft Response to City Review Comments	15 days	Mon 8/1/22	Fri 8/19/22	102	104	
104	Submit Draft Response to City Review Comments	0 days	Fri 8/19/22	Fri 8/19/22	103	106	
105	<b>Task 1000 - Prepare Project Development Phase Report</b>	<b>100 days</b>	<b>Mon 8/29/22</b>	<b>Fri 1/13/23</b>			
106	Prepare 20% Design	20 days	Mon 8/29/22	Fri 9/23/22	63,104,25,40	108,107	
107	Prepare 20% Construction Cost Estimate	10 days	Mon 9/26/22	Fri 10/7/22	106	108	
108	Prepare Draft Project Development Phase Report	20 days	Mon 10/10/22	Fri 11/4/22	106,107	109	
109	Quality Management	5 days	Mon 11/7/22	Fri 11/11/22	108	110	
110	Finalize Draft Project Development Phase Report	15 days	Mon 11/14/22	Fri 12/2/22	109	111	Involves coordination with several discipline team members.
111	Submit Draft Project Development Phase Report	0 days	Fri 12/2/22	Fri 12/2/22	110	112	
112	City Review	10 days	Mon 12/5/22	Fri 12/16/22	111	113	
113	Receive City Consolidated Review Comments	0 days	Fri 12/16/22	Fri 12/16/22	112	114	
114	Develop Draft Response to City Review Comments	5 days	Mon 12/19/22	Fri 12/23/22	113	115	
115	Submit Draft Response to City Review Comments	0 days	Fri 12/23/22	Fri 12/23/22	114	116	
116	Incorporate City Draft Project Development Phase Report Review Comments	10 days	Mon 12/26/22	Fri 1/6/23	115	117	
117	Prepare for GSC	5 days	Mon 1/9/23	Fri 1/13/23	116	118	
118	BES Governance State-gate Committee Approval (Stage Gate 2)	0 days	Fri 1/13/23	Fri 1/13/23	117	120,124FS+5	
119	<b>Task 1100 - Pre-Design</b>	<b>85 days</b>	<b>Mon 1/16/23</b>	<b>Fri 5/12/23</b>			
120	Finalize Project Development Phase Report	20 days	Mon 1/16/23	Fri 2/10/23	118	121	
121	Submit Final Project Development Phase Report	0 days	Fri 2/10/23	Fri 2/10/23	120		
122	Workshop Prep - Design Content Preferences	15 days	Mon 1/23/23	Fri 2/10/23	118FS+5 days	123	
123	Workshop Design Content Preferences	0 days	Fri 2/10/23	Fri 2/10/23	122	124FF+25 days	
124	30% - Prepare Internal Draft Deliverables	45 days	Mon 1/23/23	Fri 3/24/23	118FS+5 days	125	
125	Quality Management Review	5 days	Mon 3/27/23	Fri 3/31/23	124	127,126	
126	30% Construction Cost Estimate	10 days	Mon 4/3/23	Fri 4/14/23	125		
127	30% Finalize Draft Deliverables	15 days	Mon 4/3/23	Fri 4/21/23	125	128	
128	30% Submitted to City	0 days	Fri 4/21/23	Fri 4/21/23	127	129,133	
129	City Review for GSC	10 days	Mon 4/24/23	Fri 5/5/23	128	130	
130	Prepare for GSC	5 days	Mon 5/8/23	Fri 5/12/23	129	131	
131	BES Governance State-gate Committee Approval (Stage Gate 3)	0 days	Fri 5/12/23	Fri 5/12/23	130	134FS+5 days	
132	<b>Task 1200 - Detailed Design Activities</b>	<b>295 days</b>	<b>Mon 4/24/23</b>	<b>Fri 6/7/24</b>			
133	30% Workshop Prep	5 days	Mon 4/24/23	Fri 4/28/23	128	134	
134	30% Design Workshop	0 days	Fri 5/19/23	Fri 5/19/23	133,131FS+5	135	
135	City Review	10 days	Mon 5/22/23	Fri 6/2/23	134	136	
136	Receive City Consolidated Review Comments	0 days	Fri 6/2/23	Fri 6/2/23	135	137	
137	60% - Prepare Internal Draft Deliverables	50 days	Mon 6/5/23	Fri 8/11/23	136	138	
138	Quality Management Review	10 days	Mon 8/14/23	Fri 8/25/23	137	140,139	
139	60% Construction Cost Estimate	10 days	Mon 8/28/23	Fri 9/8/23	138		
140	60% Finalize Draft Deliverables	15 days	Mon 8/28/23	Fri 9/15/23	138	141	
141	60% Submitted to City	0 days	Fri 9/15/23	Fri 9/15/23	140	142	
142	60% Workshop Prep	5 days	Mon 9/18/23	Fri 9/22/23	141	143	
143	60% Design Workshop	0 days	Fri 9/22/23	Fri 9/22/23	142	144	
144	City Review	10 days	Mon 9/25/23	Fri 10/6/23	143	145	
145	Receive City Consolidated Review Comments	0 days	Fri 10/6/23	Fri 10/6/23	144	146,147	
146	90% - Prepare Internal Draft Deliverables	45 days	Mon 10/9/23	Fri 12/8/23	145	148	
147	Prepare Draft Construction Contract Time Memorandum Including QA/QC	30 days	Mon 10/9/23	Fri 11/17/23	145	148	
148	Quality Management Review	10 days	Mon 12/11/23	Fri 12/22/23	146,147	150,149	
149	90% Construction Cost Estimate	10 days	Mon 12/25/23	Fri 1/5/24	148		
150	90% Finalize Draft Deliverables	15 days	Mon 12/25/23	Fri 1/12/24	148	151	

City of Portland BES Blower Project Schedule BES Blower Schedule 21-06-18.mpp							
ID	Task Name	Duration	Start	Finish	Predecessors	Successors	Notes
151	90% Submitted to City	0 days	Fri 1/12/24	Fri 1/12/24	150	152	
152	90% Workshop Prep	5 days	Mon 1/15/24	Fri 1/19/24	151	153	
153	90% Design Workshop	0 days	Fri 1/19/24	Fri 1/19/24	152	154	
154	City Review	10 days	Mon 1/22/24	Fri 2/2/24	153	155	
155	Receive City Consolidated Review Comments	0 days	Fri 2/2/24	Fri 2/2/24	154	157,156	
156	Governance Approval Update (If Needed, all inclusive of prep, meeting, etc)	30 days	Mon 2/5/24	Fri 3/15/24	155		
157	100% - Prepare Internal Draft Deliverables	40 days	Mon 2/5/24	Fri 3/29/24	155	158	Reduced from initial assumed duration. This seems very tight.
158	Quality Managemet Review	5 days	Mon 4/1/24	Fri 4/5/24	157	159	Reduced from initial assumed duration.
159	100% Finalize Draft Deliverables	15 days	Mon 4/8/24	Fri 4/26/24	158	160	
160	100% Submitted to City and BDS	0 days	Fri 4/26/24	Fri 4/26/24	159	161	
161	Prepare and Provide Supporting Information for City Building Permit Application	10 days	Mon 4/29/24	Fri 5/10/24	160	162	Reduced from initial assumed duration.
162	Update 100% Documents based on BDS Comments	20 days	Mon 5/13/24	Fri 6/7/24	161	163	
163	Submit Bid Documents for City Advertisement	0 days	Fri 6/7/24	Fri 6/7/24	162	165	
164	<b>Task 1400 - Procurement (Bid Period) Support Services</b>	<b>70 days</b>	<b>Mon 6/10/24</b>	<b>Fri 9/13/24</b>			
165	Advertise	30 days	Mon 6/10/24	Fri 7/19/24	163	166SS+15 d	Assumed 6 week advertisement period.
166	Pre-Bid Meeting	0 days	Fri 6/28/24	Fri 6/28/24	165SS+15 day		
167	Bid Opening	0 days	Fri 7/19/24	Fri 7/19/24	165	168,169	
168	Bid Evaluation Period	20 days	Mon 7/22/24	Fri 8/16/24	167	170	Allowed 1 month for City evaluation period.
169	Conformed Documents	20 days	Mon 7/22/24	Fri 8/16/24	167	173	
170	City Council Award	0 days	Fri 8/16/24	Fri 8/16/24	168	171	
171	Execute Contract and Prepare Notice to Proceed	20 days	Mon 8/19/24	Fri 9/13/24	170	173	Allowed 1 month for release of notice to proceed.
172	<b>Task 1500 - Construction Support Services</b>	<b>550 days</b>	<b>Fri 9/13/24</b>	<b>Fri 10/23/26</b>			
173	Issue Notice to Proceed	0 days	Fri 9/13/24	Fri 9/13/24	171,169	174	
174	Prepare Purchase Order for Blowers and Electrical Gear	15 days	Mon 9/16/24	Fri 10/4/24	173	175,187	
175	Blower Submittal 1 Prep	20 days	Mon 10/7/24	Fri 11/1/24	174	176	
176	Blower Submittal 1 Review	15 days	Mon 11/4/24	Fri 11/22/24	175	177	
177	Blower Submittal 2 Prep	20 days	Mon 11/25/24	Fri 12/20/24	176	178	
178	Blower Submittal 2 Review	15 days	Mon 12/23/24	Fri 1/10/25	177	179	
179	Blower Submittal 3 Prep	20 days	Mon 1/13/25	Fri 2/7/25	178	180	
180	Blower Submittal 3 Review	10 days	Mon 2/10/25	Fri 2/21/25	179	181	
181	Blower Fabrication	260 days	Mon 2/24/25	Fri 2/20/26	180	182	
182	Blower Testing Air End	10 days	Mon 2/23/26	Fri 3/6/26	181	183	
183	Blower Transport 1	20 days	Mon 3/9/26	Fri 4/3/26	182	184	
184	Blower Testing FAT	10 days	Mon 4/6/26	Fri 4/17/26	183	185	
185	Blower Transport 2	10 days	Mon 4/20/26	Fri 5/1/26	184	186	
186	Blower Deliver	0 days	Fri 5/1/26	Fri 5/1/26	185	197	
187	Electrical Submittal 1 Prep	40 days	Mon 10/7/24	Fri 11/29/24	174	188	JD mentioned 2 - 3 months for first submittal. Brett mentioned 4
188	Electrical Submittal 1 Review	15 days	Mon 12/2/24	Fri 12/20/24	187	189	
189	Electrical Submittal 2 Prep	20 days	Mon 12/23/24	Fri 1/17/25	188	190	
190	Electrical Submittal 2 Review	10 days	Mon 1/20/25	Fri 1/31/25	189	191	Reduced from initial assumed duration.
191	Electrical Submittal 3 Prep	20 days	Mon 2/3/25	Fri 2/28/25	190	192	
192	Electrical Submittal 3 Review	10 days	Mon 3/3/25	Fri 3/14/25	191	193	
193	Electrical Fabrication	160 days	Mon 3/17/25	Fri 10/24/25	192	194	JD mentioned 6 months. Brett mentioned 8 to 12 months.
194	Electrical Transport	20 days	Mon 10/27/25	Fri 11/21/25	193	195	
195	Electrical Deliver	0 days	Fri 11/21/25	Fri 11/21/25	194	196	
196	Electrical Install	120 days	Mon 11/24/25	Fri 5/8/26	195	197	JD mentioned 6 months. Brett guess the same.
197	Blower Installation in Phases	120 days	Mon 5/11/26	Fri 10/23/26	186,196	198	
198	Final Completion	0 days	Fri 10/23/26	Fri 10/23/26	197		