

**AGREEMENT WITH TERRAPHASE ENGINEERING  
FOR PROFESSIONAL CONSULTANT SERVICES  
FOR  
CLEAN WATER PROGRAM CONSTRUCTION MONITORING SERVICES**

This agreement, made and entered into this day of \_\_\_\_\_, by and between the **CITY OF SAN MATEO**, a municipal corporation existing under the laws of the State of California, hereinafter referred to as "CITY", and Terraphase Engineering, a Corporation with offices at 1404 Franklin Street, Suite 600, Oakland, CA 94612 hereinafter referred to as "CONSULTANT":

**RECITALS:**

- A. CITY desires certain professional services hereinafter described.
- B. CITY desires to engage CONSULTANT to provide these professional services by reason of its qualifications and experience for performing such services and CONSULTANT has offered to provide the required services on the terms and in the manner set forth herein.

**NOW, THEREFORE, IT IS AGREED** as follows:

**SECTION 1 - SCOPE OF PROJECT**

The scope of services to be performed by CONSULTANT under this Agreement is described in Exhibit A, Scope of Services, attached and incorporated by reference.

**SECTION 2 - RELIANCE UPON PROFESSIONAL SKILL OF CONSULTANT**

It is mutually understood and agreed by and between the parties hereto that CONSULTANT is skilled in the professional calling necessary to perform the work agreed to be done under this Agreement and that CITY relies upon the skill of CONSULTANT to do and perform the work in the most skillful manner, and CONSULTANT agrees to thus perform the work. The acceptance of CONSULTANT's work by CITY does not operate as a release of CONSULTANT from said obligation.

**SECTION 3 - PROJECT COORDINATION/STAFFING**

**3.1 CITY**

BRAD B. UNDERWOOD, PUBLIC WORKS DIRECTOR, will be the representative of CITY for all purposes under this Agreement. Alex Price is hereby designated as the PROJECT MANAGER and shall supervise the day to day progress and execution of this Agreement.

**3.2 CONSULTANT**

CONSULTANT's services are unique and personal. CONSULTANT shall not assign or transfer its interest or obligation under this Agreement without the CITY's written consent. CONSULTANT shall not subcontract its duties under this Agreement without the CITY's written consent.

CONSULTANT shall assign a single PROJECT DIRECTOR to have overall responsibility for the progress and execution of this Agreement for CONSULTANT. Arnab Chakrabati is hereby designated as the PROJECT DIRECTOR for CONSULTANT.

CONSULTANT shall assign a PROJECT COORDINATOR to represent CONSULTANT during the day-to-day work on the Project. Jennifer Repa is hereby designated as the PROJECT COORDINATOR for CONSULTANT.

CONSULTANT shall assign additional key personnel as follows:

Nicole Tandel – Field Team Lead  
William Maddux (Rincon) – Noise Monitoring Technical Lead

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In addition, CONSULTANT is specifically authorized to subcontract with the following sub-consulting firms to assist in providing the services required by this Agreement:

Rincon Consultants, Inc.

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CONSULTANT shall be responsible for employing or engaging all sub-consultants necessary for performance of the CONSULTANT’s scope of work. CONSULTANT shall manage, evaluate, and incorporate sub-consultants work into the project as necessary. CONSULTANT agrees to comply with the City’s minimum wage ordinance as codified in Municipal Code Chapter 5.92, which differs from the state minimum wage and includes a Consumer Price Index escalator.

All work on this project shall be accomplished by the above named CONSULTANT’s personnel and sub-consultants. CONSULTANT shall not substitute personnel or sub-consultants without the CITY’s written consent.

**SECTION 4 - INDEPENDENT CONTRACTOR**

It is expressly agreed that in the performance of the professional services required under this Agreement, CONSULTANT shall at all times be considered an independent contractor as defined in Labor Code Section 3353, under control of the CITY as to the result of the work but not the means by which the result is accomplished. Nothing herein shall be construed to make CONSULTANT an agent or employee of CITY while providing services under this Agreement.

**SECTION 5 - DUTIES OF CONSULTANT**

CONSULTANT’s services shall be furnished as described below and as more particularly described in Exhibit A, Scope of Services. Any changes in the Scope of Services must be approved in advance, in writing, by the Public Works Director.

CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of all studies, reports, designs, drawings, specifications, and other items furnished by CONSULTANT under this Agreement. CONSULTANT shall, without additional compensation, correct or revise any errors or deficiencies in its studies, reports, designs, drawings, specifications, and other items.

CONSULTANT represents that it is qualified to furnish the services described under this Agreement.

All documents, drawings and specifications relating the project prepared by CONSULTANT or CONSULTANT's approved sub-consultants shall be approved, signed, and sealed by professional engineers duly registered in the State of California for each required discipline. The Contract Documents prepared by CONSULTANT shall provide for a completed project that conforms to all applicable national, state and local construction codes and ordinances, building, fire, electrical, plumbing and occupancy codes and standards.

CONSULTANT shall be responsible for employing or engaging all persons necessary to perform the services of CONSULTANT. No sub-consultant of CONSULTANT will be recognized by CITY as such; rather, all sub-consultants are deemed to be the agents of CONSULTANT, and CONSULTANT agrees to be responsible for their performance. CONSULTANT shall give its personal attention to the fulfillment of the provisions of this Agreement by all of its employees and sub-consultants, if any, and shall keep the work under its control. If any employee or sub-consultant of CONSULTANT fails or refuses to carry out the provisions of this Agreement or appears to be incompetent or to act in a disorderly or improper manner, he or she shall be discharged immediately from the work under this Agreement on demand of CITY.

CONSULTANT agrees to comply with the City's minimum wage ordinance as codified in Municipal Code Chapter 5.92, which differs from the state minimum wage and includes a Consumer Price Index escalator.

CONSULTANT shall furnish CITY with every reasonable opportunity for CITY to ascertain that the services of CONSULTANT are being performed in accordance with the requirement and intentions of this Agreement.

CONSULTANT and his subconsultants shall comply with State's Prevailing Wage Laws.

CONSULTANT or subconsultants shall not be qualified to bid on, be listed in a bid proposal, or engage in the performance of any contract for public work unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the Labor Code. For the work performed for the City, the CONSULTANT and his subconsultants shall pay the workers at the prevailing wage rate as determined by the California Department of Industrial Relations, for this locality. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

## **SECTION 6 - DUTIES OF CITY**

CITY shall provide pertinent information regarding its requirements for the project.

CITY shall examine all documents submitted by CONSULTANT and shall render decisions pertaining thereto promptly to avoid unreasonable delay in the progress of CONSULTANT'S work.

## **SECTION 7 - TERM, PROGRESS AND COMPLETION**

The services to be performed under this Agreement shall commence and be completed within three (3) years from the City issued Notice to Proceed.

It is understood and agreed that time is of the essence of this Agreement.

CITY agrees to exercise due diligence in performing its tasks to implement the CONSULTANT's timetable.

## **SECTION 8 - PAYMENT**

Payment shall be made by the CITY only for services rendered and upon submission of a payment request upon completion and CITY approval of the work performed. In consideration for the full performances of the services and any reimbursable expenses set forth in this Agreement, CITY agrees to pay CONSULTANT a fee based on verified time and materials not to exceed \$588,330. Requests for payments shall be itemized and correspond to the various items of work described in Exhibit A and shall be based on the rate and cost schedule set forth in Exhibit B.

CITY reserves the right to pay CONSULTANT not more than 95% of the "not to exceed" amount until a 100% project review is complete and the CITY determines that 100% of the project work is complete. 100% project completion shall include completion of Tasks 1 through 3 as listed in Exhibit A.

Payment for extra work or changes in the work will not be made unless for work authorized in advance in writing by the PUBLIC WORKS DIRECTOR. Prior to commencing such extra work or changes, CONSULTANT and CITY shall agree upon an estimated not-to-exceed cost for such extra work. In no event shall CONSULTANT be paid for additional work that is necessary because of CONSULTANT's errors or oversights.

CONSULTANT shall maintain complete and accurate records as to the number of hours worked by persons and the direct costs incurred during each phase under this Agreement. All such records shall be maintained on a generally accepted accounting basis and shall be clearly identified and readily accessible. CONSULTANT shall provide free access to such books and records to the CITY at all times, shall permit the CITY to examine and audit those books and records, shall permit the CITY to make copies of those books and records, and shall permit the CITY to inspect all work data, documents, proceedings, and activities related to this Agreement for a period of three (3) years from the date of final payment under this Agreement. All accounting records shall provide an understandable breakdown of costs charged to this Agreement. All records encompassed by this subparagraph, as well as supporting documentation, shall be kept separate from other CONSULTANT documents and records

and shall be maintained by CONSULTANT for three (3) years after CONSULTANT's receipt of final payment under this Agreement.

CONSULTANT shall bill the CITY within thirty (30) days for all compensable activity on the project.

CITY shall pay CONSULTANT within thirty (30) days of receipt of billings. If CITY disagrees with any portion of a billing, the CITY shall promptly notify CONSULTANT of the disagreement, and the CITY and the CONSULTANT shall attempt to resolve the disagreement. CITY's payment of any amounts shall not constitute a waiver of any disagreement.

### **SECTION 9 - CHANGES IN WORK**

CITY may order changes in scope or character of work, either decreasing or increasing the amount of CONSULTANT's services by amending this Agreement. In the event that such changes are ordered, CONSULTANT shall be entitled to full compensation for all work performed prior to receipt of notice of change. In no event shall CITY be liable for payment unless the amount of such extra compensation shall first have been agreed to in writing by CITY.

In the event that changes are ordered pursuant to this section, the schedule for progress and completion in Section 7 of this Agreement and compensation in Section 8 of this Agreement shall be adjusted by negotiation between CONSULTANT and CITY, subject to approval, if necessary by the San Mateo City Council.

### **SECTION 10 - CONFLICT OF INTEREST**

CONSULTANT understands that its professional responsibility is solely to CITY. CONSULTANT covenants that it presently has no interest, and will not acquire any interest, direct or indirect, financial or otherwise, which would conflict in any manner or degree with the performance of the services under this Agreement. CONSULTANT shall not knowingly, and shall take reasonable steps to ensure that, it does not employ a person having such an interest in the performance of this Agreement. If after employment of a person, CONSULTANT discovers that it has employed a person with a direct or indirect interest that would conflict with its performance of this Agreement, CONSULTANT shall promptly sever the employment relationship.

### **SECTION 11 - TERMINATION**

A. Without limitation to such rights or remedies as CITY shall otherwise have by law, CITY may, by ten days written notice to CONSULTANT, terminate this Agreement in whole or in part at any time, either for CITY's convenience or because of the failure of CONSULTANT to fulfill its agreement obligations. Upon receipt and within ten days of such notice CONSULTANT shall:

1. Immediately discontinue all services affected (unless the notice directs otherwise); and

2. Deliver to CITY all data, documents, reports, estimates, summaries and such other information and materials as may have been accumulated by CONSULTANT in performing this Agreement, whether completed or in progress.

B. If the termination is for the convenience of CITY, CONSULTANT shall be compensated for all authorized work performed prior to notification of termination but no amount shall be allowed for anticipated profit on unperformed services.

C. If, after any notice of termination for failure to fulfill agreement obligations, it is determined by a court or other arbitrator that CONSULTANT had not so failed, the termination shall be deemed to have been effected for the convenience of CITY. In such event, adjustment in the agreement price shall be made as provided in paragraph (B) of this section.

D. CONSULTANT may terminate this Agreement or suspend work on the project upon sixty (60) days written notice to CITY, but only in the event of substantial failure of performance by CITY or in the event CITY abandons or indefinitely postpones the Project.

E. Upon termination of this Agreement or suspension of work on the project by either CITY or CONSULTANT, all duties of CITY and CONSULTANT as set forth in Sections 5 and 6 herein above shall terminate.

#### **SECTION 12 - STATUS OF REPORTS**

All documents prepared by CONSULTANT in the performance of this Agreement, although instruments of professional service, are and shall be the property of the CITY, whether the project for which they are made is executed or not. All documents furnished to CONSULTANT by the CITY and all reports and supportive data prepared by the CONSULTANT in connection with the performance of this Agreement are the CITY's property and shall be delivered to the CITY upon the completion of CONSULTANT's services or at the CITY's written request. All reports, information, data, and exhibits prepared or assembled by CONSULTANT in connection with the performance of its services pursuant to this Agreement are confidential until released by the CITY to the public, and the CONSULTANT shall not make any of these documents or information available to any individual or organization not employed by the CONSULTANT or the CITY without the written consent of the CITY before any such release.

#### **SECTION 13 - INSURANCE**

CONSULTANT shall procure and maintain for the duration of the contract and three years thereafter (five years for building or major improvements) the insurance as specified in Exhibit C of the Agreement.

#### **SECTION 14 - NONASSIGNABILITY**

Both parties hereto recognize that this Agreement is for the personal services of CONSULTANT and cannot be transferred, assigned, or subcontracted by CONSULTANT without the prior written consent of CITY.

### **SECTION 15 - INDEMNITY**

CONSULTANT agrees to hold harmless and indemnify City of San Mateo and the Estero Municipal Improvement District, their elected and appointed officials, employees, and agents, from and against any alleged claims, loss, liability, damage, and expense arising out of CONSULTANT's performance of this Agreement, except those claims arising out of CITY's active negligence or willful misconduct. CONSULTANT agrees to defend CITY of San Mateo and the Estero Municipal Improvement District, their elected and appointed officials, employees, and, against any such claims.

### **SECTION 16 - WAIVERS**

The waiver by either party of any breach or violation of any term, covenant, or condition of this Agreement or of any provisions of any ordinance or law shall not be deemed to be a waiver of such term, covenant, condition, ordinance or law or of any subsequent breach or violation of the same or of any other term, covenant, condition, ordinance or law or of any subsequent breach or violation of the same or of any other term, condition, ordinance, or law. The subsequent acceptance by either party of any fee or other money which may become due hereunder shall not be deemed to be a waiver of any preceding breach or violation by the other party of any term, covenant, or condition of this Agreement or of any applicable law or ordinance.

### **SECTION 17 - COSTS AND ATTORNEYS FEES**

Attorney fees in an amount not exceeding \$85 per hour per attorney, and in total amount not exceeding \$5000, shall be recoverable as costs (by the filing of a cost bill) by the prevailing party in any action or actions to enforce the provisions of this Agreement. The above \$5000 limit is the total of attorney fees recoverable whether in the trial court, appellate court, or otherwise, and regardless of the number of attorneys, trials, appeals, or actions. It is the intent of this Agreement that neither party shall have to pay the other more than \$5000 for attorney's fees arising out of an action, or actions to enforce the provisions of this Agreement.

### **SECTION 18 - NON-DISCRIMINATION**

CONSULTANT warrants that it is an Equal Opportunity Employer and shall comply with applicable regulations governing equal employment opportunity. Neither CONSULTANT nor any of its sub-consultants shall discriminate in the employment of any person because of race, color, national origin, ancestry, physical handicap, medical condition, marital status, sex, or age, unless based upon a bona fide occupational qualification pursuant to the California Fair Employment and Housing Act.

**SECTION 19 - MEDIATION**

Should any dispute arise out of this Agreement, any party may request that it be submitted to mediation. The parties shall meet in mediation within 30 days of a request. The mediator shall be agreed to by the mediating parties; in the absence of an agreement, the parties shall each submit one name from mediators listed by either the American Arbitration Association, the California State Board of Mediation and Conciliation, or other agreed-upon service. The mediator shall be selected by a blind draw.

The cost of mediation shall be borne equally by the parties. Neither party shall be deemed the prevailing party. No party shall be permitted to file a legal action without first meeting in mediation and making a good faith attempt to reach a mediated settlement. The mediation process, once commenced by a meeting with the mediator, shall last until agreement is reached by the parties but not more than 60 days, unless the maximum time is extended by the parties.

**SECTION 20 - LITIGATION**

CONSULTANT shall testify at CITY's request if litigation is brought against CITY in connection with CONSULTANT's services under this Agreement. Unless the action is brought by CONSULTANT, or is based upon CONSULTANT's wrongdoing, CITY shall compensate CONSULTANT for preparation for testimony, testimony, and travel at CONSULTANT's standard hourly rates at the time of actual testimony.

**SECTION 21 - NOTICES**

All notices hereunder shall be given in writing and mailed, postage prepaid, addressed as follows:

To CITY:	Brad B. Underwood Public Works Director City of San Mateo 330 W. 20 <sup>th</sup> Avenue San Mateo, CA 94403-1388
To CONSULTANT:	Terraphase Engineering Attn: Arnab Chakrabarti 1404 Franklin Street, Suite 600 Oakland, CA 94612

**SECTION 22 - AGREEMENT CONTAINS ALL UNDERSTANDINGS; AMENDMENTS**

This document represents the entire and integrated agreement between CITY and CONSULTANT and supersedes all prior negotiations, representations, and agreements, either written or oral.

This document may be amended only by written instrument, signed by both CITY and CONSULTANT.

**SECTION 23 – AUTHORITY TO ENTER INTO AGREEMENT**

CONSULTANT has all requisite power and authority to conduct its business and to execute, deliver, and perform the Agreement. Each party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and to bind each respective party.

**SECTION 24 – SEVERABILITY**

If any term or portion of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.

**SECTION 25 - GOVERNING LAW**

This Agreement shall be governed by the laws of the State of California.

**SECTION 26 - VENUE**

In the event of litigation, venue will be in the County of San Mateo.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, CITY OF SAN MATEO and Terraphase Engineering have executed this Agreement the day and year first above written.

CITY OF SAN MATEO

CONSULTANT

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Brad B. Underwood  
Public Works Director

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William Carson  
Its Authorized Agent  
President

APPROVED AS TO FORM

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Caio Arellano  
Assistant City Attorney

**Attachments:**

- Exhibit A: Scope of Services
- Exhibit B: Rate and Cost Schedule
- Exhibit C: Insurance Requirements

**EXHIBIT A**

**SCOPE OF SERVICES**

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# 1. PROJECT APPROACH

## 1a. Task 1 - General Services

Terraphase’s approach to Tasks 1.1 (Project Management), 1.2 (Workshops and Meetings), 1.3 (Quality Assurance/Quality Control [QA/QC]), and 1.4 (Management of Subconsultants) is provided in the sections below.

### Project Management (Task 1.1)

The approach for project management also applies to workshops and meetings (Task 1.2) and management of subconsultants (Task 1.4). Excellence in project management is core to the overall success of a project and essential to completing the project with clearly defined objectives and within budget, on or ahead of schedule. Terraphase proposes to manage this project out of our Oakland, California, office. Our project manager, Ms. Jennifer Repa, has considerable experience managing real-time environmental compliance data monitoring and reporting at high profile sites. She is well-versed in the principles of financial tracking, internal and external stakeholder communication, preparing and implementing project execution plans, QA/QC, and identifying and managing risks. Three key factors for ensuring consistent implementation of the project are as follows:

**Creation of a Detailed Project Execution Plan (PXP):** As part of the project baseline assessment Terraphase will work with the City to prepare an effective PXP that identifies all project stakeholders, their roles, their constraints, and presents a responsibility matrix; provides a roadmap to meet project objectives and metrics along the way that can be tracked; and identifies major project risks as well as a corrective action plan for addressing or avoiding those risks. The PXP will be a “living” document that will be modified, as necessary, as the project progresses.

1. **Cost Control:** In order to forecast potential issues, effective tracking of schedule and budget are critical facets. Terraphase will use an array of tools, including Earned Value Analysis (EVA) and Critical Path Method (CPM) to identify potential change conditions that could affect project milestones and implementing corrective actions identified in the PXP through the use of decision/corrective action logs. We maintain project cost control using our internal project management and cost accounting system (Ajera) to track all costs, including subcontractor costs. This system provides project managers with real-time updates on project costs and expenses to help track spending and to ensure that the work scope is done within budget. Tracking mechanisms will include monthly progress reports provided to the City (see example below for the Phase II ESA conducted for the Detroit Drive site WWTP expansion planning project), progress meetings throughout the duration of the project (assume 20 for the scope of work in the RFP), and attendance of risk management meetings with the City, as needed. Ms. Repa will communicate directly with the City’s Project Manager regarding the proposed project and will include Mr. Arnab Chakrabarti during attendance of the project kickoff meeting as well as workshops and progress meetings, as needed.



10/28/2016 Period End Date of Most Recent Weekly Update Report

0161.001 - Detroit Drive Site, City of San Mateo								
TASK	Description	Budget	Budget Remaining	Effort to Date	Earned Revenue	Δ Budget	% Complete	% Spent
001	<b>Project Management</b>	\$ 38,300	\$ 11,968	\$ 26,332	\$ 32,555	\$ 6,223	85%	68.8%
	001.001 General Project Management	\$ 18,600	\$ 7,055	\$ 11,545	\$ 15,810	\$ 4,265	85%	62.1%
	001.002 Workshops and Meetings	\$ 19,700	\$ 4,913	\$ 14,787	\$ 16,745	\$ 1,958	85%	75.1%
002	<b>Phase I ESA</b>	\$ 5,800	\$ (3,358)	\$ 9,158	\$ 5,800	\$ (3,358)	100%	157.9%
003	<b>Phase II ESA Work Plan</b>	\$ 6,800	\$ 235	\$ 6,565	\$ 6,800	\$ 235	100%	96.5%
004	<b>Phase II ESA</b>	\$ 152,100	\$ 9,696	\$ 142,404	\$ 150,266	\$ 7,862	99%	93.6%
	004.001 Field Preparation	\$ 7,400	\$ (635)	\$ 8,035	\$ 7,400	\$ (635)	100%	108.6%
	004.002 Field Investigation*	\$ 128,700	\$ 11,221	\$ 117,479	\$ 126,126	\$ 8,647	98%	91.3%
	004.003 Data Analysis and Reporting	\$ 18,600	\$ 1,710	\$ 16,890	\$ 16,740	\$ (150)	90%	90.8%
<b>TOTAL:</b>		<b>\$ 203,000</b>	<b>\$ 18,541</b>	<b>\$ 184,459</b>	<b>\$ 195,421</b>	<b>\$ 10,962</b>	<b>96%</b>	<b>91%</b>

\* Additional budget of \$2,500 added for groundwater contingency task approved on 9/13/16.

2. **Effective Communication:** Communication with internal/external stakeholders and the project team is another critical aspect of sound project execution. We will strive to **understand the larger project objectives including priorities for cost and schedule for the proposed scope of work.** Ms. Repa will work closely within the project team to ensure that resources are properly allocated, project commitments are met, and deliverables are reviewed to ensure that they meet QA/QC Plan requirements. Our Team commits the key individuals and team members described further in Section 3c. Furthermore, Ms. Repa will work closely with the City Project Manager to identify any issues that require corrective action as soon as they can be identified and employ internal project team resources as needed.

### Quality Assurance/Quality Control (Task 1.3)

Quality control is the procedures used to implement a quality assurance program to control the quality of a final product. QC procedures include providing clear direction to technical staff; regular and timely feedback by senior technical staff; review of draft and completed work products for accuracy and completeness; approval and acceptance of work products by the project manager; and accurate documentation of decisions, assumptions, and recommendations that were made along the way to the final deliverable.

Terraphase will create a project-specific Project QA/QC Plan, which documents the necessary information required to effectively manage project quality from project planning to delivery. Project QA/QC Plans define a project's quality policies, procedures, criteria for and areas of application, and roles, responsibilities, and authorities.

The Project QA/QC Plan is created during the planning phase of the project. Its intended audience is the project manager, task managers, and staff whose support is needed to carry out the plan. The Project QA/QC Plan will be submitted to the City for review and approval.

## 1b. Task 2 - Project Startup & Equipment Selection

### Project Data and Information Review (Task 2.1)

Ms. Jennifer Repa will work closely with the City project manager to obtain and quickly review the available project information for the WWTP and UFES project sites. Terraphase assumes that all relevant documents can be shared via a web portal for quick access and review within the 2-week time frame following the notice to proceed.

### Project Kick-Off Meeting and Site Visit (Task 2.2)

The following Terraphase team members will attend the project kick-off meeting and site visit once a date and time are scheduled with the City: Ms. Jennifer Repa, Mr. Arnab Chakrabarti, and Mr. William Maddux. Our team will provide and agenda and presentation for City review prior to the meeting and prepare meeting minutes following the meeting.

### Monitoring Equipment Selection (Task 2.3)

Selection of the monitoring equipment is a critical aspect of the project. The selected equipment will need to meet the requirements of real-time monitoring with alerts while minimizing repair and calibration issues that could lead to downtime. Terraphase has experience with a variety of dust monitors at construction sites that require real-time monitoring, data-logging, telemetry with alerts for exceedances of instantaneous and time-weighted average threshold concentrations, and alarm notifications. A summary of the dust monitors capable of measuring down to fine particulate matter (i.e., particles with diameter less than 2.5 microns, PM<sub>2.5</sub>) at the UFES project site, that we have experience with, is provided in the table below. Costs are approximate and can vary with spare parts ordered, warranty extensions, and other supplemental items.

Dust Monitor Model	Telemetry Unit	Particle Size Detection Range	Advantages	Disadvantages	Purchase Price	Warranty/ Tech Support
TSI Dust Trak 8530	Thiamis/ Netronix Unit	PM <sub>2.5</sub> PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Can pair with the TSI sound Pro device &amp; Lufft Smart weather sensor with one data management portal</li> <li>• Established dust monitor brand</li> <li>• Equipment rental company can provide replacement if system needs repair</li> </ul>	<ul style="list-style-type: none"> <li>• Large setup</li> <li>• Daily battery changes, less frequent with solar panels</li> <li>• Additional cost for equipment rental if needs repair</li> <li>• Temperature and humidity can affect precision</li> </ul>	<ul style="list-style-type: none"> <li>• \$6,500 per monitor</li> <li>• \$1,000 for Netronix Thiamis 1000 telemetry unit</li> <li>• \$80/month Environet data service</li> </ul>	<ul style="list-style-type: none"> <li>• Software updates</li> <li>• Limited 2-year warranty with manufacturer recommended filter replacement and annual factory calibration</li> </ul>
Thermo Fisher Scientific ADR-1500	Thiamis/ Netronix Unit	PM <sub>2.5</sub> PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Can pair with noise monitor and weather station using one data management portal</li> <li>• Established dust monitor brand</li> <li>• Equipment rental company can provide replacement if system needs repair</li> </ul>	<ul style="list-style-type: none"> <li>• Smaller batteries than DustTrak, can last 2 days and up to 7 with solar panel</li> <li>• Additional cost for equipment rental if needs repair</li> </ul>	<ul style="list-style-type: none"> <li>• \$8,500 per monitor</li> <li>• \$1,000 for Netronix Thiamis 1000 telemetry unit</li> <li>• \$80/month Environet data service</li> </ul>	<ul style="list-style-type: none"> <li>• Software updates</li> <li>• Limited 1-year warranty</li> </ul>
PurpleAir	Verizon Hotspot	PM <sub>2.5</sub> PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• Low cost, small footprint</li> <li>• Temperature and humidity have a minimal effect on sensor precision</li> <li>• Dual laser counter immediately detects drift for calibration</li> <li>• No filters; tubing or cyclones that can skew data, low calibration frequency</li> </ul>	<ul style="list-style-type: none"> <li>• Cannot interface with established web platforms (e.g., Netronix)</li> <li>• Newer technology</li> </ul>	<ul style="list-style-type: none"> <li>• \$350 each for the PurpleAir monitors</li> <li>• \$250 for wireless hotspot with \$30/month data plan</li> </ul>	<ul style="list-style-type: none"> <li>• 1-year limited warranty</li> </ul>

In addition to dust monitoring at the UFES project site, two noise monitors will be placed at both the UFES and WWTP project sites. Terraphase team members will be supported by Rincon’s noise expert, Mr. William Maddux, with selecting the appropriate noise monitor for use in the field and subsequent operations and maintenance (O&M). A summary of noise monitors that conform to the American National Standards Institute/International Electrotechnical Commission (ANSI/IEC) Type 1 requirements are provided below:

Noise Monitor Make & Model	Decibel Range	Advantages	Disadvantages	Purchase Price	Warranty/Tech Support
Sonitus EM2030	A, Flat, and 1/3 octave band Range: 16-121 decibels (dBA)	<ul style="list-style-type: none"> <li>• IEC Type 1 noise monitor web-based reporting, cellular internet</li> <li>• Alerts by email and SMS</li> <li>• Audio Capture</li> <li>• 1/3 octave band filter option</li> </ul>	<ul style="list-style-type: none"> <li>• AC power Required</li> </ul>	<ul style="list-style-type: none"> <li>• \$10,317</li> <li>• \$1,000 annual calibration fee</li> <li>• Annual Contract for internet service after first year: \$804</li> </ul>	<ul style="list-style-type: none"> <li>• Phone tech support limited hours</li> <li>• 1-year limited warranty</li> </ul>
Sonitus EM2030P/G	A, Flat, and 1/3 octave band Range: 16-121 dBA	<ul style="list-style-type: none"> <li>• IEC Type 1 noise monitor web-based reporting, cellular internet</li> <li>• Alerts by email and SMS portable</li> <li>• Audio capture</li> </ul>	<ul style="list-style-type: none"> <li>• Battery powered, 10-day life</li> <li>• No AC power option</li> </ul>	<ul style="list-style-type: none"> <li>• \$11,660</li> <li>• \$1,000 annual calibration fee</li> <li>• Annual Contract for internet service after first year: \$804</li> </ul>	<ul style="list-style-type: none"> <li>• Phone tech support, limited hours</li> <li>• 1-year limited warranty</li> </ul>
PCB Piezotronics/Larson Davis NMS045	A, C, Flat, and 1/3 octave band Range: 18 - 140 dBA	<ul style="list-style-type: none"> <li>• IEC Type 1 noise monitor web-based reporting, cellular internet</li> <li>• Alerts by email and SMS</li> <li>• AC-powered or solar</li> <li>• Audio Capture</li> <li>• Off-line data access</li> <li>• Portable</li> <li>• 1/3 octave band filter option</li> <li>• Can add on weather station</li> </ul>	<ul style="list-style-type: none"> <li>• Higher cost</li> </ul>	<ul style="list-style-type: none"> <li>• \$14,810</li> <li>• \$1,000 annual calibration fee for meter</li> <li>• Annual Contract for internet service after first year: \$1,200</li> </ul>	<ul style="list-style-type: none"> <li>• 24-hour technical support</li> <li>• 1-year limited warranty</li> </ul>

Finally, a summary of weather stations are provided in the summary table below:

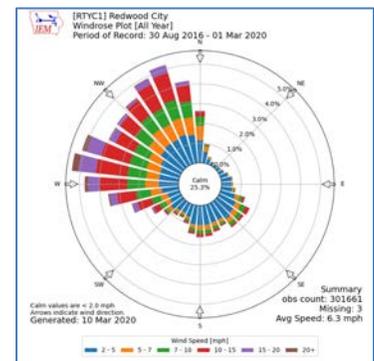
Weather Station Make & Model	Capability	Advantages	Disadvantages	Purchase Price	Warranty/Tech Support
Davis Vantage Vue & Weather Link Live wireless Bundle with console, solar power and mounting pole	Measures wind speed and direction, temperature, and humidity	<ul style="list-style-type: none"> <li>• Maintenance free-operation</li> <li>• Data access through Weatherlink app or weatherlink.com</li> <li>• Alerts by email</li> </ul>	<ul style="list-style-type: none"> <li>• Needs a wi-fi connection</li> <li>• May not be compatible with Thiamis data logger</li> </ul>	\$1,100	<ul style="list-style-type: none"> <li>• Technical support and software updates</li> <li>• 1-year limited warranty</li> </ul>
Lufft WS200-UMB Smart Weather Sensor	Measures wind speed and direction	<ul style="list-style-type: none"> <li>• Low-power, heater</li> <li>• Maintenance-free operation</li> <li>• Compatible with Thiamis data logger</li> <li>• Alerts by email and SMS</li> </ul>		\$1,200	<ul style="list-style-type: none"> <li>• Technical support and software updates</li> <li>• 1-year limited warranty</li> </ul>
PCB Piezotronics/Larson Davis NMS045	Measures wind speed and direction	<ul style="list-style-type: none"> <li>• Can be used in conjunction with the PCB Piezotronics air monitor</li> <li>• Maintenance free operation</li> </ul>	Higher cost	\$1,940	<ul style="list-style-type: none"> <li>• Technical support and software updates</li> <li>• 1-year limited warranty</li> </ul>

### 1c. Task 3 - Monitoring

As part of the monitoring task, Ms. Jennifer Repa will work closely with Mr. Daren Roth to prepare a site-specific health and safety plan that includes job safety analyses (JSA) for hazards associated with project activities. Terraphase field team staff will participate in a daily safety tailgate when on-site and will adhere to the City’s health and safety requirements.

#### Monitoring Equipment Procurement and Installation (Task 3.1)

In order to facilitate real-time monitoring of dust and noise data, including alerts for threshold exceedance, a telemetry unit will be required. Depending



on the type of dust monitor selected, there are options shown in the summary tables included in the Task 2 discussion above. The options for integrated telemetry units include established web-based data portals that can be accessed by authorized users (e.g., Thiamis 1000™ telemetry unit that operates with the Netronix web platform).

The benefit of integrating “plug-and-play” dust monitor, noise monitor, and telemetry components with established connectivity to a web-based data repository is that up-front integration issues and associated programming costs can be avoided. However, these components can have significantly higher costs compared to alternative “stand-alone” dust (e.g., PurpleAir) and noise monitors that require more effort for initial programming and linkage to a custom-built web-based platform.

Therefore, Terraphase has identified the following preliminary options for monitoring dust and noise at the UFES and WWTP project sites:

**Option 1 – Integrated System Components with Existing Web Data-Hosting Platform**

- Purchase of two (2) Thermo Scientific MIE ADR-1500 Real-Time dust monitors for proposed locations at UFES project site
- Purchase of four (4) Sonitus EM2030P/G noise monitors, two each at the WWTP and UFES project sites
- Purchase of one (1) Lufft WS200-UMB Smart Weather Sensor for measuring wind speed and direction at the UFES project site
- Purchase of five (5) Neutronix Thiamis 1000 telemetry units: two units for noise and dust monitors coupled at the UFES project site, one for the weather station at the UFES project site proposed upwind of the noise and dust monitors, and two units for the WWTP project site noise monitors. Each telemetry unit would require a monthly data subscription.
- Use of the Environet web-based platform as a data repository that includes posting of real-time dust and noise monitoring data, custom threshold setpoints and alert notification through emails and SMS texts for authorized users, graphical user interface for instantaneous and time-weighted average data. The Environet web platform is included as part of the Neutronix Thiamis telemetry subscription package.



**Option 2 – Modular System with Custom Web Data-Hosting Platform**

- Purchase of two (2) PurpleAir dust monitors for proposed locations at UFES project site. PurpleAir has its own web-based reporting platform but requires custom-built databases to identify threshold exceedances and provide alerts.
- Purchase of four (4) Sonitus EM2030P/G noise monitors, two each at the WWTP and UFES project sites
- Purchase of one (1) Lufft WS200-UMB Smart Weather Sensor for measuring wind speed and direction at the UFES project site
- Purchase of five (5) Neutronix Thiamis 1000 telemetry units: two units for noise monitors at the UFES project site, one for the weather station at the UFES project site proposed upwind of the noise and dust monitors, and two units for the WWTP project site noise monitors. Each telemetry unit would require a monthly subscription.
- Creation of a custom-web based platform by Terraphase to consolidate the different data streams.

There is a potential for significant cost savings using the PurpleAir monitors, which have been tested by the South Coast Air Quality Management District (SCAQMD) and demonstrated to have high accuracy in the PM<sub>2.5</sub> range.<sup>2</sup> However, the PurpleAir monitors do not have the same compatibility with established web portals (e.g., Environet) as other dust monitors. Creation of a custom web portal and ongoing maintenance can be costly; therefore, estimated costs for Option 1 are included in the level of effort schedule provided in Attachment B.

<sup>2</sup> Testing center for PurpleAir monitors developed by SCAQMD in 2014, in conjunction with EPA and BAAQMD.

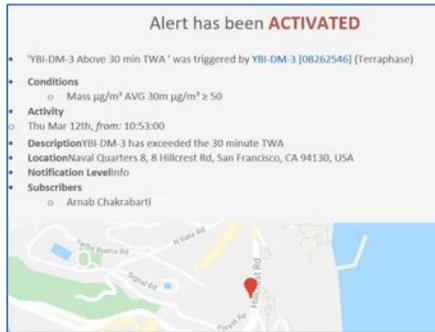
Our team also recommends construction of a fence enclosure to house the noise and dust monitors to prevent theft or damage. The dust monitor itself can be placed inside of a Tuff box with an opening for the suction inlet to provide additional security and damage protection.



### Ongoing Calibration and Maintenance (Task 3.2)

Our firm has considerable experience with O&M of dust monitors, including routine field calibrations at high-visibility construction sites. Typically, dust and

noise monitors are calibrated on a weekly basis and more frequently as needed. High dust conditions may require more frequent replacement of filters and corresponding calibration. Furthermore, most dust monitors, with the exception of the PurpleAir dust monitors, usually require a more thorough annual calibration by the manufacturer. Calibration in the field will be conducted under “clean” conditions with low dust concentrations to avoid signal bias that can lead to erroneous negative readings at low dust concentrations. As part of equipment purchase and installation, Terraphase recommends purchase of solar panels that will reduce the frequency of battery changeouts (typically once a week with solar panel installed).



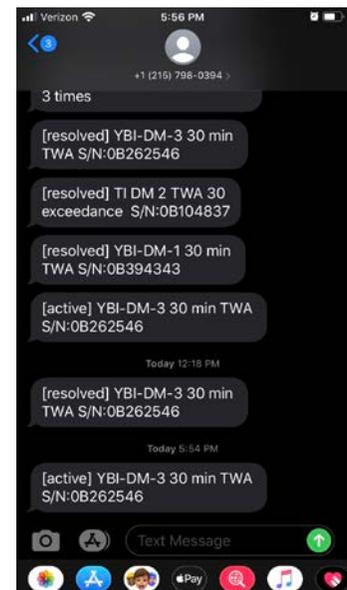
### Monitoring Threshold Exceedance Evaluation and Reporting (Task 3.3)

Terraphase has worked closely with local oversight programs (LOPs) such as the San Francisco Department of Public Health to prepare dust control plans (DCP) that ensure any conditions exceeding established corrective action thresholds are quickly identified and mitigated through active dust suppression measures. Terraphase has worked closely with general contractors and project owners at construction sites to minimize fugitive dust emissions by ensuring that standard best management practices (BMPs) are implemented properly. A number of these standard BMPs have been identified by the Bay Area Air Quality Management District (BAAQMD), including those referenced in PEIR Mitigation Measure 4-1 (e.g., limiting vehicles speeds of 15 miles per hour on unpaved roads, watering of exposed surfaces twice per day, removal of trackout on adjacent public roads using a wet sweeper, etc.). Monitoring action level thresholds for the WWTP and UFES projects have been identified as follows:

- WWTP Project Site: **Noise:** 90 average-weighted dBA
- UFES Project Site: **Noise:** 90 dBA at a distance of 25 feet from construction equipment or for any point outside of the property plane of the project, **Dust:** 82 pounds per day (lbs/day)

In addition to a routine weekly inspection, calibration, and O&M, the Terraphase Team field staff person will respond to any exceedance of corrective action levels as follows (assumed 48 exceedances per the RFP):

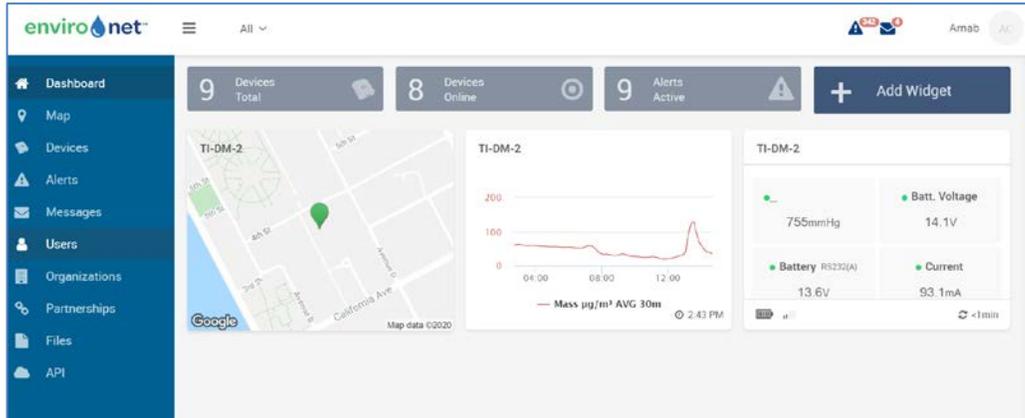
- Notification to the City and their stakeholders of any instantaneous or time-weighted dust action level exceedances, noise level exceedances, or visible dust crossing the project site boundary;
- Mobilize to project sites and perform inspection including examining UFES project work areas for fugitive dust emissions;
- Inspect monitoring equipment and perform troubleshooting;
- Once system components are operational, complete daily field log; and
- Prepare follow-up weekly report for CWP project manager summarizing exceedances, root cause analysis, and corrective measures implemented.



### Data Management (Task 3.4)

As part of data management, Terraphase team members will complete the following tasks:

- Routine inspection of the web portal to confirm dust and noise monitors are operational
- Weekly data download, QA/QC, and archiving per the QA/QC Plan prepared with the City
- Monthly reporting of data management QA/QC activities



### Equipment Removal and Transfer to Clean Water Program (Task 3.5)

Following completion of the proposed period of monitoring, all monitoring equipment, spare parts, consumables, and other ancillary equipment will be inventoried, cleaned, and packaged with documentation for the City repository. Documentation will include applicable warranties, certifications, and vendor contact information.

## **EXHIBIT B**

### **RATE AND COST SCHEDULE**

#### **Terraphase Engineering Inc.**

As of March 16, 2020

#### **Construction Noise and Dust Monitoring Support Services for City of San Mateo**

### **Rate Fee Basis**

1. Hourly charge basis will consist of the following:
  - Direct Wages: actual hourly salary for each individual
  - Fringe Benefits: 46.1% of direct wages (within regional standards)
  - Overhead: 121.5% of direct wages (within regional standards)
  - Profit: 12% (12% maximum applies to all Clean Water Program design contracts)
  
2. Hourly billing rates are effective from 3/16/2020 through 3/16/2021. Hourly and unit rates may be renegotiated by the Consultant and the City on an annual basis. Requests to revise the hourly and unit rates must be made in writing, thirty (30) calendar days prior to the requested changes taking effect. Maximum increases shall not exceed an average of 3% per year.

### **Expenses**

1. Technology Charge per direct labor hour= \$0/hour for prime consultant's hours only. List what is included in Technology Charge (e.g. computer, CADD, network, software, etc.).
  
2. Bay Area Staff
  - Personal use vehicles for Project Business and Visits to Sites - Vehicle Mileage (per mile) at Current Federal Travel Regulation (FTR).
  
3. Non-Bay Area Staff
  - Travel meals and hotel at Federal GSA per diem rate/day as published on the USGSA website.
  - Rental car, airline tickets, and other miscellaneous travel costs at actual cost. Receipts for all costs over \$25 shall be maintained and submitted with invoices.
  
4. Subconsultant charges at cost plus 5% markup.
  
5. Outside printing services at cost, with prior approval.
  
6. Other direct project related costs at cost, with prior approval.

### **Other**

1. Budget changes, rate increases, and any allocation of contingency dollars shall be approved by City Program Manager in advance of incurring any cost.

**RATE SCHEDULE**  
**Terraphase Engineering Inc.**  
**March 16, 2020 through March 16, 2021**

Team Member	Raw Labor Cost <sup>1</sup>	Raw Labor Cost with 1% Escalation <sup>2</sup>	Fringe Benefits <sup>3</sup> % of direct wages	Overhead <sup>4</sup> % of direct wages	Subtotal	Profit %	Hourly Billing Rate
Jennifer Repa	\$41.95	\$42.37	46.14%	121.48%	\$137.14	12%	\$153.60
Arnab Chakrabarti	\$67.31	\$67.98	46.14%	121.48%	\$220.03	12%	\$246.44
Daren Roth	\$51.46	\$51.97	46.14%	121.48%	\$168.21	12%	\$188.40
Nicole Tandel	\$39.38	\$39.77	46.14%	121.48%	\$128.72	12%	\$144.17
EKela Autry	\$26.44	\$26.70	46.14%	121.48%	\$86.42	12%	\$96.79
Molly Coates	\$28.13	\$28.40	46.14%	121.48%	\$91.92	12%	\$102.95
Melvin Thrower	\$30.00	\$30.30	46.14%	121.48%	\$98.07	12%	\$109.84
Joseph Luchette	\$48.08	\$48.56	46.14%	121.48%	\$157.17	12%	\$176.04
Jennifer Diehl	\$26.37	\$26.63	46.14%	121.48%	\$86.19	12%	\$96.54
Michael Murphy	\$37.72	\$38.09	46.14%	121.48%	\$123.29	12%	\$138.08

**Rincon Consultants, Inc.**  
**March 16, 2020 through March 16, 2021**

Team Member	Raw Labor Cost <sup>1</sup>	Raw Labor Cost with 1% Escalation <sup>2</sup>	Fringe Benefits <sup>3</sup> % of direct wages	Overhead <sup>4</sup> % of direct wages	Subtotal	Profit %	Hourly Billing Rate
William Maddux	\$56.94	\$57.51	66.20%	86.95%	\$178.69	12%	\$200.13

<sup>1</sup> Current raw labor rates.

<sup>2</sup> If a contract starts within one (1) quarter from when the Consultant would normally increase their employee rates, an increase up to 1% is allowed for all staff working in the first year, to begin at the starting date of the contract, and will be frozen until the anniversary of the contract. This will cover anticipated first year salary increases. Thereafter, an average maximum 3% increase for all staff working on the project from year 1 will apply.

<sup>3</sup> State what is included with fringe benefits here (e.g. vacation, holiday, sick leave, payroll taxes, insurance, etc.)

<sup>4</sup> State what is included with overhead here (indirect labor, building and rental expenses, taxes, supplies, administrative costs, etc.)

**Table 1**  
**Level of Effort Estimate**

Request for Proposals, Construction Monitoring Support Services for UFES and WWTP Projects  
City of San Mateo Clean Water Program

Category	Units	Rate	Task 1 - General Services						Task 2 - Project Startup & Equipment Selection						Task 3 - Monitoring										TOTALS					
			Task 1.1 Project Management		Task 1.2 Workshops and Meetings		Task 1.3 Quality Assurance/Quality Control		Task 2.1 Project Data and Information Review		Task 2.2 Project Kick-off Meeting and Site Visit		Task 2.3 Monitoring Equipment Selection		Task 3.1a WWTP Monitoring Equipment Procurement and Installation		Task 3.1b UFES Monitoring Equipment Procurement and Installation - UFES		Task 3.2a WWTP Ongoing Calibration and Maintenance		Task 3.2b UFES Ongoing Calibration and Maintenance		Task 3.3 Monitoring Threshold Exceedance Evaluation and Reporting				Task 3.4 Data Management		Task 3.5 Equipment Removal and Transfer to CWP	
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
<b>Labor</b>																														
Principal	Hour	\$246.44	10	\$2,464	10	\$2,464	8	\$1,972	4	\$986	6	\$1,479	4	\$986		\$0		\$0	8	\$1,972	30	\$7,393	16	\$3,943	8	\$1,972		\$0	104	\$25,630
Associate	Hour	\$188.40		\$0		\$0	4	\$754		\$0		\$0		\$0	8	\$1,507		\$0		\$0		\$0		\$0		\$0		\$0	12	\$2,261
Senior Project (Project Manager)	Hour	\$153.60	180	\$27,648	184	\$28,262	32	\$4,915	20	\$3,072	20	\$3,072	40	\$6,144	12	\$1,843	12	\$1,843	70	\$10,752	120	\$18,432	96	\$14,746		\$0	4	\$614	790	\$121,344
Senior Project (Database Manager)	Hour	\$176.04		\$0		\$0		\$0		\$0		\$0	4	\$704		\$0		\$0		\$0		\$0	90	\$15,844		\$0		\$0	94	\$16,548
Project	Hour	\$144.17		\$0		\$0		\$0	4	\$577		\$0		\$0	16	\$2,307	16	\$2,307	140	\$20,184	240	\$34,601	192	\$27,681		\$0	16	\$2,307	624	\$89,962
Senior Staff	Hour	\$138.08	60	\$8,285	80	\$11,046		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	100	\$13,808		\$0		\$0	240	\$33,139
Staff II	Hour	\$102.95		\$0		\$0	48	\$4,942		\$0	32	\$3,294	32	\$3,294		\$0		\$0		\$0		\$0		\$0		\$0		\$0	112	\$11,530
Staff I	Hour	\$96.79		\$0		\$0		\$0		\$0		\$0		\$0	12	\$1,161	12	\$1,161		\$0		\$0		\$0		\$0		\$0	24	\$2,323
GIS/Database Technician II	Hour	\$96.54		\$0		\$0	8	\$772		\$0	8	\$772	4	\$386		\$0		\$0		\$0		\$0	60	\$5,792	240	\$23,170		\$0	320	\$30,893
Administrator 1	Hour	\$77.40	60	\$4,644	20	\$1,548		\$0	2	\$155	1	\$77		\$0	4	\$310	6	\$464		\$0		\$0		\$0		\$0	2	\$155	95	\$7,353
Technician II	Hour	\$109.84		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	16	\$1,757	16	\$1,757
<b>Total Terraphase Labor</b>				<b>\$43,041</b>		<b>\$43,321</b>		<b>\$13,354</b>		<b>\$4,789</b>		<b>\$8,695</b>		<b>\$11,514</b>		<b>\$7,128</b>		<b>\$5,776</b>		<b>\$32,907</b>		<b>\$60,426</b>		<b>\$52,162</b>		<b>\$54,793</b>		<b>\$4,833</b>		<b>\$342,740</b>
<b>Direct Costs</b>																														
<b>Equipment</b>																														
Miscellaneous field equipment	Day	\$50.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	0	\$0
Photoionization Detector	Day	\$75.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	0	\$0
GPS unit	Day	\$200.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	0	\$0
Personal protective equipment	Day	\$30.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	0	\$0
Truck	Day	\$125.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	0	\$0
Site Inspection Fee	Day	\$750.00		\$0		\$0		\$0		\$0		\$0	1	\$750	2	\$1,500	35	\$26,250	85	\$63,750	24	\$18,000		\$0		\$0		\$0	147	\$110,250
Thermo Scientific MIE ADR-1500 Dust Monitor	Day	\$8,500.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$17,000		\$0		\$0		\$0		\$0		\$0		\$0	2	\$17,000
Dust Monitor External Cable Assay - 12/24 VDC	Each	\$85.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$170		\$0		\$0		\$0		\$0		\$0		\$0	2	\$170
Dust Monitor Cyclone Assembly for PM <sub>2.5</sub>	Each	\$580.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$1,160		\$0		\$0		\$0		\$0		\$0		\$0	2	\$1,160
Dust Monitor Filters	Each	\$39.00		\$0		\$0		\$0		\$0		\$0		\$0	4	\$156		\$0		\$0		\$0		\$0		\$0		\$0	4	\$156
Solar Panel Kit - 65W for Extended Power	Each	\$420.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$840		\$0		\$0		\$0		\$0		\$0		\$0	2	\$840
Spare Batteries for Dust and Noise Monitors (12V Marine Battery)	Each	\$172.00		\$0		\$0		\$0		\$0		\$0	2	\$344	4	\$688		\$0		\$0		\$0		\$0		\$0		\$0	6	\$1,032
Pelican Case to House Dust Monitors	Each	\$285.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$570		\$0		\$0		\$0		\$0		\$0		\$0	2	\$570
Dust Monitor Steel Fence Enclosure	Each	\$2,400.00		\$0		\$0		\$0		\$0		\$0		\$0	2	\$4,800		\$0		\$0		\$0		\$0		\$0		\$0	2	\$4,800
Sonitus EM2030P/G Noise Monitor	Each	\$11,660.00		\$0		\$0		\$0		\$0		\$0	2	\$23,320	2	\$23,320		\$0		\$0		\$0		\$0		\$0		\$0	4	\$46,640
Noise Monitor Calibration Fee	Year	\$1,000.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0	2	\$2,000	4	\$4,000		\$0		\$0		\$0		\$0	6	\$6,000
Noise Monitor Annual Internet Contract Fee (after Year 1)	Year	\$804.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	2	\$1,608		\$0		\$0		\$0		\$0	2	\$1,608
Lufft WS-200 UMB Smart Weather Station	Each	\$1,200.00		\$0		\$0		\$0		\$0		\$0		\$0	1	\$1,200		\$0		\$0		\$0		\$0		\$0		\$0	1	\$1,200
Netronix Thiamis 1000 Telemetry Unit	Each	\$1,000.00		\$0		\$0		\$0		\$0		\$0	2	\$2,000	3	\$3,000		\$0		\$0		\$0		\$0		\$0		\$0	5	\$5,000
Environet Web Portal Subscription Service	Month	\$80.00		\$0		\$0		\$0		\$0		\$0		\$0		\$0	8.5	\$680	21.5	\$1,720		\$0		\$0		\$0		\$0	30	\$2,400
<b>Total Equipment</b>				<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$26,414</b>		<b>\$54,404</b>		<b>\$28,930</b>		<b>\$71,078</b>		<b>\$18,000</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$198,830</b>
Direct Cost Handling Charge		10%		\$0		\$0		\$0		\$0		\$0		\$2,641		\$5,440		\$2,893		\$7,108		\$1,800		\$0		\$0		\$0		\$19,880
<b>Subconsultant - Rincon Consultants, Inc.</b>																														
Senior Scientist	Hour	\$200.13		\$0		\$0	8	\$1,601	6	\$1,201	10	\$2,001	4	\$801	4	\$801	35	\$7,005	60	\$12,008		\$0		\$0		\$0		\$0	127	\$25,417
Subconsultant Markup		5%		\$0		\$0		\$80		\$60		\$100		\$40		\$40		\$350		\$600		\$0		\$0		\$0		\$0		\$1,271
<b>Total Subconsultant Costs</b>				<b>\$0</b>		<b>\$0</b>		<b>\$1,681</b>		<b>\$1,261</b>		<b>\$2,101</b>		<b>\$841</b>		<b>\$841</b>		<b>\$7,355</b>		<b>\$12,608</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$26,690</b>
<b>Travel Costs</b>																														
Mileage	Mile	\$0.55		\$0	116	\$64		\$0		\$0	116	\$64		\$0		\$0		\$0		\$0		\$0		\$0		\$0	116	\$64	348	\$190
<b>Total Travel Costs</b>				<b>\$0</b>		<b>\$64</b>		<b>\$0</b>		<b>\$0</b>		<b>\$64</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$64</b>		<b>\$190</b>
<b>Total Estimated Project Cost</b>				<b>\$43,040</b>		<b>\$43,390</b>		<b>\$13,350</b>		<b>\$6,470</b>		<b>\$10,020</b>		<b>\$13,620</b>		<b>\$37,020</b>		<b>\$66,460</b>		<b>\$72,090</b>		<b>\$151,220</b>		<b>\$71,960</b>		<b>\$54,790</b>		<b>\$4,900</b>		<b>\$588,330</b>

## EXHIBIT C

### INSURANCE REQUIREMENTS

#### MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 12 07 covering CGL on an “occurrence” basis, including products-completed operations, personal & advertising injury, with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if CONSULTANT has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
3. **Workers’ Compensation:** as required by the State of California, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease.
4. **Professional Liability (Errors and Omissions):** Insurance appropriate to the CONSULTANT’s profession, with limit no less than **\$1,000,000** per occurrence or claim, **\$2,000,000** aggregate

If the CONSULTANT maintains higher limits than the minimums shown above, the City requires and shall be entitled to coverage for the higher limits maintained by the CONSULTANT.

#### **Other Insurance Provisions**

The insurance policies are to contain, or be endorsed to contain, the following provisions:

#### ***Additional Insured Status***

**The City, its elected and appointed officials, employees, and agents are to be covered as insureds on the auto policy for liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the CONSULTANT; and on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONSULTANT including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the CONSULTANT’s insurance (at least as broad as ISO Form CG 20 10, 11 85 or both CG 20 10 and CG 20 37 forms if later revisions used).**

#### ***Primary Coverage***

For any claims related to this contract, the **CONSULTANT’s insurance coverage shall be primary** insurance as respects the City, its elected and appointed officials, employees, and agents. Any insurance or self-insurance maintained by the City, its elected and appointed officials, employees, or agents shall be excess of the CONSULTANT’s insurance and shall not contribute with it.

#### ***Notice of Cancellation***

Each insurance policy required above shall provide that **coverage shall not be canceled, except after thirty (30) days’ prior written notice** (10 days for non-payment) has been given to the City.

#### ***Waiver of Subrogation***

CONSULTANT hereby grants to City a waiver of any right to subrogation which any insurer of said CONSULTANT may acquire against the City by virtue of the payment of any loss under such insurance. CONSULTANT agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

***Deductibles and Self-Insured Retentions***

Any deductibles or self-insured retentions must be declared to and approved by the City. The City may require the CONSULTANT to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.

***Acceptability of Insurers***

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the City.

***Verification of Coverage***

CONSULTANT shall furnish the City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONSULTANT's obligation to provide them. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.