November 15, 2023

Mr. David Ridley
California Air Resources Board
david.ridley@arb.ca.gov

Subject: Response to 2023CARB_SMMI-RFI001

Dear Mr. Ridley,

Trinity Consultants, Inc. is pleased to offer our responses below to CARB's RFI001 for the SMMI. All information and details in our response herein are true and accurate to the best of our knowledge as it pertains to the requested information in RFI001.

Please call me at (661) 309-6225 with any questions you may have.

Sincerely,

David L. Yoho
Project Manager
Trinity Consultant's Inc.
26368 Ruether Ave.
Santa Clarita, CA 91350
(661) 309-6225
david.yoho@trinityconsultants.com

Attachment – A
Vendor Profile

1. Identify the Company Name, address, city, state, and zip code, telephone. **Trinity Consultant's, Inc, 263680 Ruether Ave., Santa Clarita, CA 91350 (661) 309-6225 Trinity Consultant's, Inc, 3739 Pleasant Valley Rd, Placerville, CA 95667 (530) 644-4811**

2. Identify the name, title, address, phone number, and email address of the primary contact person for this RFI. **Randall Baxter – Staff Scientist: (661) 993-1659 randall.baxter@trinityconsultants.com**

3. Provide a brief overview of your company including number of years in business, number of employees, nature of business, and description of clients. **Trinity Consultant's, Inc. (founded in 1974) serves many industries including Environmental (Air Quality and Meteorology), Life Sciences, Water & Ecology and Engineering. There are approximately 5,000 employees worldwide. Our clients include Government (regulatory agencies), private sector companies.**

4. Identify any parent corporation and/or subsidiaries, if applicable. **Oak Hill Capital**

5. Give a brief description of your company's product(s), platform(s), service(s), etc. that may be relevant to this RFI. **Our team has decades of experience in Ambient Air Monitoring and Modeling, Quality Assurance, Mobile Monitoring, System Integration, Research, Saturation Monitoring studies.**

6. List and briefly describe the projects and/or activities your company was engaged within the last ten (10) years that are similar to the project identified in the RFI. **North Pole, AK PM2.5 mobile monitoring and saturation study; BAAQMD Small Sensors Center -Sensor Verification System used for testing small sensor networks but can also be used in a mobile platform mode. Environmental Defense Fund (EDF) project with Department of Health, Houston, TX mobile monitoring applications.**

7. Are there any of the requirements described in the *Proposed Environment* section not technologically feasible with your existing service(s), product(s), platform(s)? **No**

Attachment - B
Vendor Questions

I. General Questions

1. What scale of operation would be required to bid on a future RFP of the concept described here? Are there any minimum requirements necessary at which below you would not be interested in bidding on a proposal of this nature? **No minimum requirements for scale of operation. We are interested in community sized projects to larger geographic scale projects.**

2. What types of monitoring objectives have you explored using your company's mobile monitoring approaches? **Our company has provided mobile monitoring for CO, PM2.5/PM10, Black Carbon, Ozone, Meteorology, and NO/NO2/NOx using vehicles and aircraft.**

3. What are the advantages and limitations of your company's mobile monitoring services? **Advantages: Cost effective approach to meeting data quality objectives. Integrate proven 3rd party equipment that can easily be acquired on the open market. Can develop custom sensor packages that integrate different equipment from multiple manufacturers. Firm based heavily on QAQC for instrumentation. Quick deployment and user-friendly trainable systems.**

   Limitations: We are not an instrument manufacturer.

II. Engagement and Coordination

1. Describe your interpretation of what community engagement should look like throughout the process of conducting mobile air monitoring in communities. **Community engagement is crucial for meeting the community's data goals and needs. To meet the goals and provide transparency, we offer the public access to data displays via websites and encourage community feedback.**

2. What experience do you have with community and public engagement? Is any of this experience directly related to air monitoring activity and data dissemination? **We have operated several projects that engage with the community and public directly. Yes, the majority of our work is related to this.**

3. What is your experience coordinating with community members, CBOs, regulated industry, academia, and governmental agencies when planning monitoring objectives and data analysis and communication? **We have assisted communities, regulated industry, academia, and governmental agencies in designing systems and studies to meet their data objectives.**

4. Please provide the number and size ($) of technical projects previously managed for coordination and communication with both community and technical contractors.

5. How would you apply your engagement and coordination model on a statewide scale? **We would apply the same core system but customize the package to each community's needs.**

III. Mobile Monitoring Technologies and Capabilities

1. How many mobile monitoring platforms do you currently own and operate? How long have these platforms been in operation? **We currently operate the Sensor Verification FEM System for BAAQMD sensor center that can be used in a mobile platform for the last 3 years. Our mobile platforms are custom designed for clients, so we do not own the systems.**

   a. What areas/sources/locations do you have experience conducting mobile monitoring?

      North Pole Alaska, Maricopa County Arizona, LA Basin, Clark County Nevada, Houston Texas.

   b. Has collected data been used to support community emission reduction, enforcement, or other actions? Please provide examples.

      Yes,

2. Please provide operational information on your company's current mobile monitoring capabilities. This should answer the following questions:

   a. What frequency can platforms be deployed? **They can be deployed continuously depending on staff availability.**

   b. What days/hours are the platforms generally in use? **It depends on the client's data goals.**

c. What pollutants can be monitored and with what frequency? **CO, PM 2.5/PM10, Black Carbon, Ozone, Meteorology, and NO2 frequency is dependent on the instrument integrated into the system.**

d. What types of instrumentation do you use? Describe all relevant methodologies. **We have used full sized analyzers to small sensors in mobile monitoring applications, depending on the data quality objectives and logistics of the projects. TAPI, Thermo, 2B Instruments, AethLabs, Airmar, custom sample systems have all been used.**

e. What level of coverage or scale of monitoring can be accomplished within a community? (For example, how would you approach characterizing emissions from a source or identifying a leak? How long would that take?) **We would likely use two mobile monitoring vehicles, driving "grid" or "ring" patterns along with some small, fixed sensors installed within the community with a meteorological station in the area of interest to determine the areas of highest concentration. From there, we would narrow down the area until the source of the leak is identified. Smaller areas would take less time as opposed to larger areas that would take more time to identify leaks.**

f. How do you determine that you've adequately characterized a given area? **Multiple mobile runs under all conditions (meteorological and diurnal – day/night periods).**

g. What workflow processes or software do you have for managing mobile monitoring? **We use real time data collection features to determine areas of interest. These data (location and concentration) can be shown on maps following each mobile operation. Reviewing these maps over several runs can lead to discovering repeatability of high concentrations in given areas.**

3. Describe your usual approach or strategy to mobile monitoring. Include, if possible:

   a. Drive plan and operational logistics – **Safety is paramount to mobile monitoring. We typically use two people (driver and scientist). We have also used one person for applications that require driving to fixed locations, parking momentarily while sampling and then driving to the next location when driving continuously is not amenable.**

   b. Staffing – **We prefer to design user friendly systems so it's easy to train staff on operations.**

   c. Power requirements (e.g. battery powered, requires generator, etc.) **All 12-volt DC which can be ran by battery or charged by the mobile vehicle.**

   d. Consumables

   e. Quality control procedures **Our company has a strong QA/QC component, and all measurement procedures are documented and followed per the data quality objectives of each project.**

   f. Performance and acceptance criteria (e.g. precision, bias, limit of detection) **As stated above a strong QA/QC component is important to the success of any monitoring objective, especially mobile monitoring. Equipment/sensor performance acceptance is performed before every mobile monitoring operation. This includes equipment QC and calibration checks and tests to confirm that all equipment (dataloggers, computers, GPS, etc.) are functioning properly.**

   g. Data logging and storage . **We use a combination of Campbell Scientific dataloggers that upload in near real time to Bentley Systems cloud based platforms.**

   h. Notifications and communication **Alarms are generated from the Bentley Systems data system and sent via text, email, and posted to the live data display.**

4. Please provide an estimated cost to operate all applicable mobile monitoring platforms as a function of time (e.g. 1 week of monitoring) deployed and/or measurements taken.

   a. These cost estimates should include all costs associated with mobile monitoring operation. This includes but is not limited to: **Estimates below do not include equipment costs/lease as they can fluctuate depending on the requested measurement parameters and size of each study area.**

      i. Direct costs – instrumentation consumables and repairs, vehicle operation costs, staff cost to operate platforms, recharging requirements. **~8- 10k/week**

ii. Indirect costs – support staff costs, associated insurance for operation, administrative overhead, any required permits. **~2k**

iii. Data Management – costs to move data from raw data collected by instrumentation to the final data products requested by CARB. **~2k**

b. How often are invoices and payments typically required? **Monthly or Quarterly depending on the scope of the work.**

5. If an RFP is developed based on the information provided here, how much preparation time is required to deploy the platforms and begin monitoring?

   a. Do you have recommendations for a minimum timeline to achieve potential monitoring objectives described here? **Depends on the measurements of the system, the amount of systems, and data objectives of the client.**

   b. What is the maximum number of platforms that you could deploy by early 2025? **Depends on the clients request and availability of parts from manufacturers. Trinity has a resources across the country to expedite deployment.**

6. Do you have experience developing Community Air Monitoring Plans (CAMPs) as defined by the CARB Community Air Protection Program Blueprint[1] or similar? Please provide examples of community-focused monitoring plans or similar. **Yes for the City of Paramount.**

7. Do you have existing standard operating procedures (SOPs) or quality assurance project plans (QAPPs) for your mobile monitoring approach? **Yes for the SVS and the MHAT Systems.**

IV. Data Collection, Storage, Reporting

1. In what format do you generally provide data to your clients? What is your final data product? **It is all dependent on the clients needs. Typically, we provide a product that is in a format that can be submitted to EPA.**

2. Do you have off-the-shelf, or modifiable-off-the-shelf, data management products compatible with mobile monitoring data? **Yes**

3. What is your experience in mobile monitoring data analysis and visualization? Specifically, do you have any experience using ESRI products to manage and visualize data? **Yes we have used ArcGIS for these studies.**

4. What is your experience in public dissemination of complex information? To what extent have you generated data visualization for the public? **We currently run live data displays for the City of Paramount and have done data visualization for tribal nations.**

5. What suggestions do you have for handling large amounts of data from a variety of sources (e.g. multiple mobile monitoring platforms) into cohesive data visualizations? **Do map based data visualization which creates a virtual monitoring network. Similar to what was done in North Pole Alaska**

V. Feedback

1. Provide input on the requirements or areas listed in this RFI. Specifically, CARB is looking for:

   a. Availability of existing systems that perform all or a portion of the requirements in Section II – C. New systems cannot be built using funds in a potential RFP. **This limits CARB to options that will best fit each community. An integration approach will allow CARB to be cost effective and get the best solution possible for a community.**

   b. Questions, suggested modifications, or additions to the proposed environment that would allow or encourage potential bidders. Please include justifications for any suggested changes and concept modifications. **None**

Attachment - C
Rough Order of Magnitude Cost Estimate

Rough Order of Magnitude	
Estimated range of cost per month of full-time monitoring. *This may be costs associated with conducting monitoring, engagement activities to support monitoring, or both. If this is not applicable, please specify a different time range or more appropriate metric to quantify your capabilities. Please describe what "full-time monitoring" looks like for you and itemize costs with as much specificity as possible.*	Equipment lease ~$ 8k Monthly Operations (40 hours/week): ~45k (two people); ~28k (one person) Indirect costs: ~4k
Estimated range of cost to complete a full year of monitoring.	Equipment lease ~$ 60k Yearly Operations (40 hours/week for 48 weeks): ~500k (two people); ~300k (one person) Indirect costs: ~40k

Answers and Assumptions Used in Cost Estimate

Please answer, in as much detail as possible, the State's questions (1-4) below.
Also, please provide details pertaining to the assumptions, expectations, and/or performance parameters used as the basis of the cost estimate.

THE STATE's QUESTIONS and VENDOR'S RESPONSE/ANSWERS:

1. What is the timeline for your mobile platform(s) (that is, how many platforms do you have operational right now, and what is your timeline for launching more)? Will your platform(s) depend on additional funding to reach and sustain maximum planned capacity? **We would likely need ~1 – 2 months of "build-up" time to be ready. Yes, reaching a higher capacity would depend on additional funding.**
2. Approximately how much monitoring can be accomplished in the period of a month? A year? **Depends on the scope of each project and the required equipment.**
3. Are there any requirements that would preclude you from competing should an RFP be released? If yes, what suggested changes would allow you to compete? **Section II – C. New systems cannot be built using funds in a potential RFP. This limits the RFP to manufacturers or people already working with CARB on mobile monitoring.**
4. Are any of the goods, products, or services you've identified in your RFI response available on a Federal GSA or State of CA LPA? If yes, please identify the contract type, name, and number. **Unsure**

VENDOR'S ASSUMPTI ONS:

What assumptions have you made in preparing a response to this RFI? **There is plenty of room in this RFI for different interpretations of what is truly being requested. Our assumptions and cost estimates are very "rough" as a relatively small mobile monitoring campaign measuring only PM2.5 over a small geographic area will be quite different than a mobile monitoring campaign measuring multi-pollutants over a much larger area of interest.**