

## Exhibit C1 - Scope of Work

### Task 1: Work Plan Development

#### Community Support and Participation

This project's community involvement will build upon our existing community engagement developed in our previously mentioned OEHHA study (2016), and our ongoing Community Air Monitoring Network (2018). We will continue to engage a focused group of residents as a CSC that directs the goals and plays an active role in the monitoring.

#### Community-Specific Purpose of Monitoring

*a. Community-specific air monitoring need(s)*

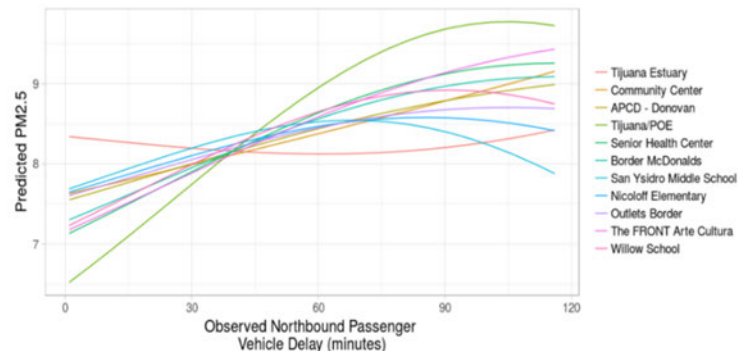
- San Ysidro sits in between three freeways (Interstate-5, Interstate-805, and State Route 905) and is directly adjacent to the largest land port of entry in the Northern Hemisphere. As a result, San Ysidro possesses the census tract with the highest levels of traffic in all of California (CES 3.0). During weekday mornings, 60,000 vehicles cue up northbound and idle for hours at the border; on the evening hours, the cars cue up both Interstate-5 and Interstate-805 southbound to return to Mexico. Additionally, I-5 and SR-905 are heavily used as the main freight truck corridor due to connection from the Port of San Diego to the US-Mexico truck-crossing in Otay Mesa.

*b. How was need discovered*

- It is evident that the community realizes the threat that these traffic patterns bring to air pollution since traffic related pollutants were the prevalent concerns chosen by the community through our “Sin Limites” community workshops and close interaction with our CSC in previous years.

*c. Documents relevant from previous, ongoing, and proposed air monitoring & gaps for this monitoring to address*

- The previous studies implemented allowed Casa and our research partners to create a prediction chart of border wait times and pollution across our monitoring sites (shown below).



- The continuation of the stationary monitoring will allow Casa to further understand air pollution patterns, as well as to complement the future low-cost monitoring that will be carried out by CARB in the city of Tijuana. CARB is set to deploy 50 purple air monitors in Tijuana soon, and having the localized data in San Ysidro to make analysis and connections will be critical.

*d. Alternative approaches to investigating and addressing air quality monitoring needs*

- Through our mobile monitoring, we aim to better understand the exposure levels through different parts of our community and the border region.

## Scope of Actions

### **Stationary Monitoring:**

Casa will refresh the sensor components of the existing monitoring network to monitor key sites in the community. Data quality has always been a priority for our project.

With continued aid of our research partners, we will set a plan for data quality control and the collaboration from the San Diego Air Pollution Control District (APCD) to allow access of their monitoring sites, our monitors will be co-located and calibrated at the Donovan monitoring site, the closest regulatory monitoring site operated by the APCD. Raw sensor data from the monitors are converted to calibrated concentrations using the calibration relationships established from the SDAPCD colocations, and will have to pass automated quality assurance checks before they are posted to our website. One of the exciting developments has been the capacity building in the community of San Ysidro and involvement of community members from the local 'maker' movement with technical skills. We plan to continue this process of transferring data handling knowledge from the University of Washington to community members and Casa Familiar. This process can be used to inform other communities how to leverage community member skills and interest to enhance understanding of air pollution and to increase community engagement. Both current and historical air quality data from the monitoring network will be available via our newly designed, community run website, building on [www.syairstudy.org](http://www.syairstudy.org), which was designed by the Community Steering Committee to provide information in both English and Spanish. We have maintained this for over a year.

### **Mobile Monitoring:**

For the three quarters, the partners working on this aspect of the project will focus on the development of the work plan which includes - assessment, selection and development of the technology.

### **Community Air Monitoring Objectives**

Our goal is to keep informing the community of San Ysidro with air quality levels, as well as to leverage the data gather and relationships formed into real-time air pollution interventions. Both, stationary and mobile monitoring, will be used to better understand pollution and exposure levels of community members.

Our objective is to continue to collect data for the next two years on our stationary monitoring, while uploading and displaying that data in our public website. We also aim to expand our outreach through social media.

### **Roles and Responsibilities**

- Casa Familiar:
  - Project lead: organization between partners, data management, community engagement, communications and reporting
  - Management of data: through previous AB617 funding, Casa is undergoing a full transition of data management from University of Washington to Casa Familiar

- Casa will have full ownership and control of the data and will display data in our public website [www.syairstudy.org](http://www.syairstudy.org)
- Community engagement & organization:
- Communications & reporting:
  - San Diego State University: data calibration, characterization, analysis, and report writing, assistance in dissemination and community trainings as needed – *stationary monitoring*
  - University of Washington: data calibration, assurance checks, analysis of data recollected – *stationary monitoring*
  - Comite Civico del Valle: collaboration development of community-based monitoring
  - Tracking California: provide post-data collection technical assistance for this project, particularly in data analysis and interpretation. This could include descriptive and modeled analysis of the data and recommendations based on the study findings for policy change. Tracking will also assist in results communication activities such as developing reports, maps, and factsheets.

## Task 2: Monitoring

### **Stationary monitoring:**

The stationary monitoring consists on the refreshing the sensor components of our existing community monitors. These monitors are sited in 13 key locations that include

- San Ysidro School District school sites (4)
- APCD's Donovan Monitoring Site (1)
- Tijuana River Valley Estuary (1)
- Businesses near the Port of Entry (3)
- Community residencies (2)
- Casa Familiar Community Centers (2)

The monitors measure the pollutants particulate matter (PM<sub>2.5</sub> & PM<sub>10</sub>), and traffic related gases (NO & CO). The data collected will go directly to Casa Familiar, as well as a University of Washington, to be made public by showing it through our public website ([syairstudy.org](http://syairstudy.org)).

*QA/QC plan:* Since we have been working with our research partners for ongoing projects, there has been a Quality Assurance Project Plan (QAPP) developed for the data collected by these monitors. The monitors will first undergo a calibration process that will be done by co-locating our community monitors next to reference monitors from the APCD. Additionally, our quality control process involves checking whether data collection reach 75% data completeness, and whether concentrations are within reasonable limits for ambient concentrations.

### **Mobile monitoring:**

The mobile monitoring will be developed through collaboration with Comite Civico del Valle to further understand the transnational patterns of the border region. Once the monitor has been designed and created, the mobile monitoring will be used to assess the levels of pollution that our transnational community experiences. It will also allow us to better appreciate the exposure difference of our community members who cross everyday between San Ysidro and Tijuana.

### **Task 3: Community Engagement**

We will focus our efforts in sustaining and expanding our current community steering committee. Quarterly meetings with the CSC will allow us to maintain involvement of the CSC throughout the development of the mobile monitoring. We intend to also constantly upload updates of our developments to our webpage and social media to keep the general audience engaged.

We plan to align our efforts in anticipation of APCD's submittal for a Community Emissions Reduction Plan. For this reason, we plan to extend our outreach to not only residents but also local businesses, the San Ysidro School District, and other stakeholders. Additional to our existing community air network engagement, we will leverage existing partnerships within the community as a mode to engage residents at a large scale. For example, throughout our years of operation, we have established a series of festivals and community events that work to distribute information to community members while reinforcing trust with the organization. This work will also be directly leveraged and paired with our focused transportation justice and community greening efforts within San Ysidro.

### **Task 4: Workforce Development**

The position created through this funding, Casa Familiar-based Air Monitoring Technician, will allow us to once again provide a high-quality job for the community within our own organization. In addition, we plan to involve volunteers from the local 'maker' movement and engage community members with technical skills to apply them to air pollution problems. We will also train at least one graduate student from San Diego State University. SDSU is a Hispanic serving institution that aims to elevate priority populations through inclusion of students from minority and disadvantaged backgrounds in community-based research and engagement related to public health. The SDSU School of Public Health is the most diverse in the US. Past SDSU students who interned in the San Ysidro low-cost network received training in environmental justice. One (Liliana Jaime) is now employed with the San Diego Air Pollution Control District, and she will take her community perspective to that position. Another (Beverly Caceres) is employed at the San Diego County Department of Environmental Health. In addition to the graduate student who will receive internship funding through this project, SDSU and Dr. Quintana will also offer unpaid internships to graduate and undergraduate students to provide training in community-based participatory research.

## Task 5: Reporting

All the project partners will be involved in the development of a final report that will highlight best practices, challenges, lessons learned, and an analysis of the data. We will be working with our research partners to pair the data with existing regulatory monitoring data from nearby APCD stations. We will be leveraging the Black Carbon data that is being collected at the Fire Station #29 in San Ysidro to compare to our PM measurements to predict the possible sources.

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