

**AGREEMENT
CITY OF FRESNO, CALIFORNIA
CONSULTANT SERVICES**

THIS AGREEMENT is made and entered into effect on 28th of April 2022, by and between the CITY OF FRESNO, a California municipal corporation (City), and THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California Constitutional corporation, on behalf of its Merced campus (Consultant).

RECITALS

WHEREAS, the City desires to obtain professional research services for the South Central Fresno Assembly Bill 617 (AB 617) Community Health Impact Assessment (Project); and

WHEREAS, the Consultant is engaged in the business of furnishing services as a researcher for the research project contemplated by this Agreement and hereby represents that it desires to and is professionally and legally capable of performing the services called for by this Agreement; and

WHEREAS, the Consultant acknowledges that this Agreement is subject to the requirements of Fresno Municipal Code Section 4-107 and Administrative Order No. 6-19; and

WHEREAS, this Agreement will be administered for the City by its Public Works Director (Administrator) or designee.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and of the covenants, conditions, and premises hereinafter contained to be kept and performed by the respective parties, it is mutually agreed as follows:

1. Scope of Services. The Consultant, through its Principal Investigator (as defined below), shall use reasonable efforts to perform the research activities set forth in and attached hereto in the Scope of Work Statement in **Exhibit A**. Any changes to the Research Program shall be agreed to by the parties in writing. Notwithstanding the foregoing, University makes no warranties or representations regarding its ability to achieve, nor shall it be bound to accomplish, any particular research objective or results.
 - (a) Supervision of the Research Program. University's performance of the Research Program will be conducted by or under the direction of Professor Sandie Ha, (the "Principal Investigator"). In the event that Principal Investigator leaves University or becomes unable or unwilling to continue work under this Agreement University agrees to find a replacement Principal Investigator reasonably acceptable to City, which acceptance shall not be unreasonably withheld. In the event that University fails to appoint a replacement Principal investigator reasonably acceptable to City, City shall have a right to terminate this Agreement upon delivery to University of written notice of intent to terminate pursuant to this Article 2, which notice must be delivered to University not less than thirty (30) days nor more than

ninety (90) days after delivery by University to City of the name of the replacement Principal Investigator. City understands and agrees that Principal Investigator is the scientific contact for University but is not authorized to amend, modify or terminate the terms and conditions of this Agreement. Requests to amend, modify or terminate the terms of this Agreement must be directed to University's Sponsored Research Services and must comply with the notice requirements of this Agreement.

2. Term of Agreement and Time for Performance. This Agreement shall be effective from the date first set forth above (Effective Date) and shall continue in full force and effect through December 31, 2023, subject to any earlier termination in accordance with this Agreement. The services of the Consultant as described in **Exhibit A** are to commence upon the Effective Date and shall be completed in a sequence assuring expeditious completion, but in any event, all such services shall be completed prior to expiration of this Agreement and in accordance with any performance schedule set forth in **Exhibit A**.

3. Compensation.

(a) The Consultant's sole compensation for satisfactory performance of all services required or rendered pursuant to this Agreement shall be a total fee not to exceed \$303,473 paid on the basis of the rates set forth in the schedule of fees and expenses contained in **Exhibit A**.

(b) Detailed statements shall be rendered monthly for services performed in the preceding month and will be payable in the normal course of City business. The City shall not be obligated to reimburse any expense for which it has not received a detailed invoice with applicable copies of representative and identifiable receipts or records substantiating such expense. The City approves the standard invoice template attached as Exhibit D.

(c) Checks shall be made payable to The Regents of the University of California and shall be sent to:

Attn: Cashiers
5200 N. Lake Road
Merced, CA 95343

Payments should refer the Principal Investigator's last name, project title, and City of Fresno.

(d) The parties may modify this Agreement to increase or decrease the scope of services or provide for the rendition of services not required by this Agreement, which modification shall include an adjustment to the Consultant's compensation. Any change in the scope of services must be made by written amendment to the Agreement signed by an authorized representative for each party. The Consultant shall not be entitled to any additional compensation if services are performed prior to a signed written amendment.

4. Termination, Remedies, and Force Majeure.

- (a) This Agreement shall terminate without any liability of the City to the Consultant upon the earlier of: (i) the Consultant's filing for protection under the federal bankruptcy laws, or any bankruptcy petition or petition for receiver commenced by a third party against the Consultant; (ii) thirty calendar days prior written notice with or without cause by the City to the Consultant; (iii) expiration of this Agreement.
- (b) Immediately upon any termination or expiration of this Agreement, the Consultant shall (i) immediately stop all work hereunder; (ii) immediately cause any and all of its subcontractors to cease work; and (iii) return to the City any and all unearned payments and all properties and materials in the possession of the Consultant that are owned by the City. Subject to the terms of this Agreement, the Consultant shall be paid compensation for services satisfactorily performed prior to the effective date of termination. The Consultant shall not be paid for any work or services performed or costs incurred which reasonably could have been avoided.
- (c) Reserved.
- (d) Upon any breach of this Agreement by the Consultant, the City may (i) exercise any right, remedy (in contract, law or equity), or privilege which may be available to it under applicable laws of the State of California or any other applicable law; (ii) proceed by appropriate court action to enforce the terms of the Agreement; and/or (iii) recover all direct, indirect, consequential, economic and incidental damages for the breach of the Agreement. If it is determined that the City improperly terminated this Agreement for default, such termination shall be deemed a termination for convenience.
- (e) The Consultant shall provide the City with adequate written assurances of future performance, upon Administrator's request, in the event the Consultant fails to comply with any terms or conditions of this Agreement.
- (f) The Consultant shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Consultant and without its fault or negligence such as, acts of God or the public enemy, acts of the City in its contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Consultant shall notify Administrator in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, and shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to Administrator of the cessation of such occurrence.

5. Confidential Information and Ownership of Documents.

- (a) It is expected that the work of this Agreement can be carried out without any of the parties disclosing confidential information to the other parties.

Any reports, information, or other data prepared or assembled by the Consultant pursuant to this Agreement shall not be made available to any individual or organization by the Consultant without the prior written approval of the Administrator. Consultant shall provide written notice to the Administrator and allow for a review period of up to sixty (60) days, if the Administrator has not responded to the Consultant's notice, the Consultant may disseminate. During the term of the Agreement, the Administrator may require the Consultant to refrain from dissemination of any reports, information, or data. All confidential documents must be clearly marked as "Confidential." If the information is orally disclosed which is deemed to be confidential, such confidential information must be reduced to writing by the City within thirty (30) days of the oral disclosure, and provided to Consultant. Consultant agrees to protect Sponsor's confidential information with the same degree of care as they would their own. The term Confidential Information for the purposes of this Agreement shall include all proprietary and confidential information of the City, including but not limited to business plans, marketing plans, financial information, materials, compilations, documents, instruments, models, source or object codes and other information disclosed or submitted, orally, in writing, or by any other medium or media. All Confidential Information shall be and remain confidential and proprietary in the City.

- (b) Reserved.
 - (c) If the Consultant should subcontract all or any portion of the services to be performed under this Agreement, the Consultant shall cause each subcontractor to also comply with the requirements of this Section 5.
 - (d) This Section 5 shall survive expiration or termination of this Agreement.
 - (e) Pursuant to the agreement between the CITY and the SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION DISTRICT (hereafter "DISTRICT"), the CITY is required to make available to DISTRICT for examination all of its records and data with respect to the matters covered by the Agreement, including the Truck Reroute Study and Health Safety analysis. The CITY shall, upon request by DISTRICT, permit DISTRICT to audit and inspect all of such records and data necessary to ensure the CITY's compliance with the terms of the Agreement, for a minimum of three (3) years from the date the Agreement is completed or otherwise terminated.
6. Professional Skill. It is further mutually understood and agreed by and between the parties hereto that inasmuch as the Consultant represents to the City that the Consultant and its subcontractors, if any, are skilled in the profession and shall perform in accordance with the standards of said profession necessary to perform the services agreed to be done by it under this Agreement, the City relies upon the skill of the Consultant and any subcontractors to do and perform such services in a skillful manner and the Consultant agrees to thus perform the services and require the same of any subcontractors. Therefore, any acceptance of such

services by the City shall not operate as a release of the Consultant or any subcontractors from said professional standards.

7. Indemnification. To the furthest extent allowed by law, the Consultant shall indemnify, hold harmless and defend the City and each of its officers, officials, employees, agents, and volunteers from any and all loss, liability, fines, penalties, forfeitures, costs and damages (whether in contract, tort or strict liability, including but not limited to personal injury, death at any time and property damage), and from any and all claims, demands and actions in law or equity (including reasonable attorney's fees and litigation expenses) that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of the Consultant, its principals, officers, employees, agents, or volunteers in the performance of this Agreement.

If the Consultant should subcontract all or any portion of the services to be performed under this Agreement, the Consultant shall require each subcontractor to indemnify, hold harmless and defend the City and each of its officers, officials, employees, agents, and volunteers in accordance with the terms of the preceding paragraph.

This section shall survive termination or expiration of this Agreement.

8. Insurance.
- (a) The Consultant is self-insured. The limits included in the Consultant's Certificate of Self Insurance, attached as Exhibit B, shall be applicable under this Agreement.
 - (b) Reserved.
 - (c) Reserved.
 - (d) Reserved.

9. Conflict of Interest and Non-Solicitation.
- (a) Prior to the City's execution of this Agreement, the Consultant shall complete a City of Fresno conflict of interest disclosure statement in the form as set forth in **Exhibit C**. During the term of this Agreement, the Consultant shall have the obligation and duty to immediately notify the City in writing of any change to the information provided by the Consultant in such statement.
 - (b) The Consultant shall comply, and require its subcontractors to comply, with all applicable (i) professional canons and requirements governing avoidance of impermissible client conflicts; and (ii) federal, state, and local conflict of interest laws and regulations including, without limitation, California Government Code Section 1090 et. seq., the California Political Reform Act (California Government Code Section 87100 et. seq.) and the regulations of the Fair Political Practices Commission concerning disclosure and disqualification (2 California Code of Regulations Section 18700 et. seq.). At any time, upon written request of the City, the Consultant shall provide a written opinion of its legal counsel and that of any subcontractor

that, after a due diligent inquiry, the Consultant and the respective subcontractor(s) are in full compliance with all laws and regulations. The Consultant shall take, and require its subcontractors to take, reasonable steps to avoid any appearance of a conflict of interest. Upon discovery of any facts giving rise to the appearance of a conflict of interest, the Consultant shall immediately notify the City of these facts in writing.

- (c) In performing the work or services to be provided hereunder, the Consultant shall not employ or retain the services of any person while such person either is employed by the City or is a member of any City council, commission, board, committee, or similar City body. This requirement may be waived in writing by the City Manager, if no actual or potential conflict is involved.
- (d) The Consultant represents and warrants that it has not paid or agreed to pay any compensation, contingent or otherwise, direct or indirect, to solicit, or procure this Agreement or any rights/benefits hereunder.
- (e) Neither the Consultant, nor any of the Consultant's subcontractors performing any services on this Project, shall bid for, assist anyone in the preparation of a bid for, or perform any services pursuant to, any other contract in connection with this Project unless fully disclosed to and approved by the City Manager, in advance and in writing. The Consultant and any of its subcontractors shall have no interest, direct or indirect, in any other contract with a third party in connection with this Project unless such interest is in accordance with all applicable law and fully disclosed to and approved by the City Manager, in advance and in writing. Notwithstanding any approval given by the City Manager under this provision, the Consultant shall remain responsible for complying with Section 9(b), above.
- (f) If the Consultant should subcontract all or any portion of the work to be performed or services to be provided under this Agreement, the Consultant shall include the provisions of this Section 9 in each subcontract and require its subcontractors to comply therewith.
- (g) This Section 9 shall survive expiration or termination of this Agreement.

10. Reserved.

11. General Terms.

- (a) Except as otherwise provided by law, all notices expressly required of the City within the body of this Agreement, and not otherwise specifically provided for, shall be effective only if signed by the Administrator or designee.
- (b) Records of the Consultant's expenses pertaining to the Project shall be kept on a generally recognized accounting basis and shall be available to the City or its authorized representatives upon request during regular business hours throughout the life of this Agreement and for a period of three years after final payment or, if longer, for any period required by law. In addition, all books, documents, papers, and records of the Consultant pertaining to

the Project shall be available for the purpose of making audits, examinations, excerpts, and transcriptions for the same period of time. If any litigation, claim, negotiations, audit or other action is commenced before the expiration of said time period, all records shall be retained and made available to the City until such action is resolved, or until the end of said time period whichever shall later occur. If the Consultant should subcontract all or any portion of the services to be performed under this Agreement, the Consultant shall cause each subcontractor to also comply with the requirements of this paragraph. This Section 11(b) shall survive expiration or termination of this Agreement.

- (c) Prior to execution of this Agreement by the City, the Consultant shall have provided evidence to the City that the Consultant is licensed to perform the services called for by this Agreement (or that no license is required). If the Consultant should subcontract all or any portion of the work or services to be performed under this Agreement, the Consultant shall require each subcontractor to provide evidence to the City that subcontractor is licensed to perform the services called for by this Agreement (or that no license is required) before beginning work.

12. Nondiscrimination. To the extent required by controlling federal, state and local law, the Consultant shall not employ discriminatory practices in the provision of services, employment of personnel, or in any other respect on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Subject to the foregoing and during the performance of this Agreement, the Consultant agrees as follows:

- (a) The Consultant will comply with all applicable laws and regulations providing that no person shall, on the grounds of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Agreement.
- (b) The Consultant will not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. The Consultant shall ensure that applicants are employed, and the employees are treated during employment, without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Such requirement shall apply to the Consultant's employment practices including, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising;

layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of this nondiscrimination clause.

- (c) The Consultant will, in all solicitations or advertisements for employees placed by or on behalf of the Consultant in pursuit hereof, state that all qualified applicants will receive consideration for employment without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era.
- (d) Reserved.
- (e) Reserved.

13. Independent Contractor.

- (a) In the furnishing of the services provided for herein, the Consultant is acting solely as an independent contractor. Neither the Consultant, nor any of its officers, agents, or employees shall be deemed an officer, agent, employee, joint venturer, partner or associate of the City for any purpose. The City shall have no right to control or supervise or direct the manner or method by which the Consultant shall perform its work and functions. However, the City shall retain the right to administer this Agreement so as to verify that the Consultant is performing its obligations in accordance with the terms and conditions thereof.
- (b) This Agreement does not evidence a partnership or joint venture between the Consultant and the City. The Consultant shall have no authority to bind the City absent the City's express written consent. Except to the extent otherwise provided in this Agreement, the Consultant shall bear its own costs and expenses in pursuit thereof.
- (c) Because of its status as an independent contractor, the Consultant and its officers, agents, and employees shall have absolutely no right to employment rights and benefits available to the City employees. The Consultant shall be solely liable and responsible for all payroll and tax withholding and for providing to, or on behalf of, its employees all employee benefits including, without limitation, health, welfare and retirement benefits. In addition, together with its other obligations under this Agreement, the Consultant shall be solely responsible, indemnify, defend and save the City harmless from all matters relating to employment and tax withholding for and payment of the Consultant's employees, including, without limitation, (i) compliance with Social Security and unemployment insurance withholding, payment of workers' compensation benefits, and all other laws and regulations governing matters of employee withholding, taxes and payment; and (ii) any claim of right or interest in the City employment

benefits, entitlements, programs and/or funds offered employees of the City whether arising by reason of any common law, de facto, leased, or co-employee rights or other theory. It is acknowledged that during the term of this Agreement, the Consultant may be providing services to others unrelated to the City or to this Agreement.

14. Notices. Any notice required or intended to be given to either party under the terms of this Agreement shall be in writing and shall be deemed to be duly given if delivered personally, transmitted by facsimile followed by telephone confirmation of receipt, or sent by United States registered or certified mail, with postage prepaid, return receipt requested, addressed to the party to which notice is to be given at the party's address set forth on the signature page of this Agreement or at such other address as the parties may from time to time designate by written notice. Notices served by United States mail in the manner above described shall be deemed sufficiently served or given at the time of the mailing thereof.
15. Binding. Subject to Section 16, below, once this Agreement is signed by all parties, it shall be binding upon, and shall inure to the benefit of, all parties, and each parties' respective heirs, successors, assigns, transferees, agents, servants, employees, and representatives.
16. Assignment.
 - (a) This Agreement is personal to the Consultant and there shall be no assignment by the Consultant of its rights or obligations under this Agreement without the prior written approval of the City Manager or designee. Any attempted assignment by the Consultant, its successors or assigns, shall be null and void unless approved in writing by the City Manager or designee.
 - (b) The Consultant hereby agrees not to assign the payment of any monies due the Consultant from the City under the terms of this Agreement to any other individual(s), corporation(s) or entity(ies). The City retains the right to pay any and all monies due the Consultant directly to the Consultant.
17. Compliance With Law. In providing the services required under this Agreement, the Consultant shall at all times comply with all applicable laws of the United States, the State of California and the City, and with all applicable regulations promulgated by federal, state, regional, or local administrative and regulatory agencies, now in force and as they may be enacted, issued, or amended during the term of this Agreement.
18. Waiver. The waiver by either party of a breach by the other of any provision of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of either the same or a different provision of this Agreement. No provisions of this Agreement may be waived unless in writing and signed by all parties to this Agreement. Waiver of any one provision herein shall not be deemed to be a waiver of any other provision herein.
19. Governing Law and Venue. This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of California, excluding,

however, any conflict of laws rule which would apply the law of another jurisdiction. Venue for purposes of the filing of any action regarding the enforcement or interpretation of this Agreement and any rights and duties hereunder shall be Fresno County, California.

20. Headings. The section headings in this Agreement are for convenience and reference only and shall not be construed or held in any way to explain, modify or add to the interpretation or meaning of the provisions of this Agreement.
21. Severability. The provisions of this Agreement are severable. The invalidity, or unenforceability of any one provision in this Agreement shall not affect the other provisions.
22. Interpretation. The parties acknowledge that this Agreement in its final form is the result of the combined efforts of the parties and that, should any provision of this Agreement be found to be ambiguous in any way, such ambiguity shall not be resolved by construing this Agreement in favor of or against either party, but rather by construing the terms in accordance with their generally accepted meaning.
23. Attorney's Fees. If either party is required to commence any proceeding or legal action to enforce or interpret any term, covenant or condition of this Agreement, the prevailing party in such proceeding or action shall be entitled to recover from the other party its reasonable attorney's fees and legal expenses.
24. Exhibits. Each exhibit and attachment referenced in this Agreement is, by the reference, incorporated into and made a part of this Agreement.
25. Precedence of Documents. In the event of any conflict between the body of this Agreement and any Exhibit or Attachment hereto, the terms and conditions of the body of this Agreement shall control and take precedence over the terms and conditions expressed within the Exhibit or Attachment. Furthermore, any terms or conditions contained within any Exhibit or Attachment hereto which purport to modify the allocation of risk between the parties, provided for within the body of this Agreement, shall be null and void.
26. Cumulative Remedies. No remedy or election hereunder shall be deemed exclusive but shall, wherever possible, be cumulative with all other remedies at law or in equity.
27. No Third Party Beneficiaries. The rights, interests, duties and obligations defined within this Agreement are intended for the specific parties hereto as identified in the preamble of this Agreement. Notwithstanding anything stated to the contrary in this Agreement, it is not intended that any rights or interests in this Agreement benefit or flow to the interest of any third parties.
28. Extent of Agreement. Each party acknowledges that they have read and fully understand the contents of this Agreement. This Agreement represents the entire and integrated agreement between the parties with respect to the subject matter hereof and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be modified only by written instrument duly authorized and executed by both the City and the Consultant.

[SIGNATURES FOLLOW ON THE NEXT PAGE.]

IN WITNESS WHEREOF, the parties have executed this Agreement at Fresno, California, the day and year first above written.

CITY OF FRESNO,
a California municipal corporation

University of California, Merced

By: DocuSigned by:
Scott Mozier 6/3/2022
E3B84D7F7352485... _____
Scott Mozier Date
Public Works Director

By: DocuSigned by:
Jue Sun
F1DC694BB10349F... _____
Jue Sun
Name: _____

APPROVED AS TO FORM:
DOUGLAS T. SLOAN
City Attorney

Title: Director, Sponsored Projects office
(If corporation or LLC., Board Chair,
Pres. or Vice Pres.)

By: DocuSigned by:
Taylor Khoan 6/3/2022
E204C2946C944B8... _____
Taylor W. Khoan Date
Deputy City Attorney

ATTEST:
TODD STERMER, CMC
City Clerk

By: DocuSigned by:
Bernard Caney 6/6/2022
F9ABC6856CCF424... _____
Deputy Date

Any Applicable Professional License:
Number: _____
Name: _____
Date of Issuance: _____

Addresses:

CITY:
City of Fresno
Attention: Jill Gormley, City Traffic
Engineer
2600 Fresno Street
Fresno, CA 93721-2623
Phone: (559) 621-8800

CONSULTANT:
University of California, Merced
Attention: Sandie Ha, Assistant
Professor, Public Health
5200 Lake Road
Merced, CA 95343
Phone: (209) 228-3615

Attachments:

- 1. Exhibit A - Scope of Services
- 2. Exhibit B - Insurance Requirements
- 3. Exhibit C - Conflict of Interest Disclosure Form
- 4. Exhibit D – UCM Standard Invoice Template

EXHIBIT A

SCOPE OF WORK STATEMENT AND BUDGET
Consultant Service Agreement between City of Fresno (City)
and University of California, Merced (Consultant)
South Central Fresno Assembly Bill 617 (AB617) Community Health Impact
Assessment

University of California, Merced



Scope of Work Statement

Health impacts of air pollution in Fresno, CA

Sponsor: City of Fresno, California

Prepared by: Sandie Ha

Version: 3

Date: Jan 14, 2022

Last updated: March 11, 2022

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1. Problem statement

Air pollutants including fine particles and ozone have been consistently linked to many health outcomes ranging from minor respiratory irritation to cardiorespiratory complications and even premature death.¹⁻⁶ Biologic mechanisms linking air pollution to adverse health outcomes include oxidative stress, systemic inflammation, and endocrine disruption.^{7,8} Despite a significant body of work, very few studies have comprehensively evaluated health impacts of air pollution in central California, an area with significant air pollution levels, marked health disparities, and severely limited access to care.^{9,10}

2. Objectives

The objectives of this health impact assessment are three-fold. First, we seek to **assess the extent to which air pollution impacts the risk of common health outcomes across the lifespan**. These health outcomes include infant mortality, preterm delivery, childhood asthma, and cardiovascular events in the city of Fresno, CA from 2008-2019. Second, to inform policy and planning efforts, we also **calculate the excess number of cases that are attributed to air pollution in the region**. Stated differently, these estimates refer to the number of cases that could be prevented if air pollution levels are minimized. Additionally, we will also explore whether the health impacts of air pollution differ in neighborhoods with high and low socioeconomic indicators. Third, we seek to **conduct a community-based health survey to explore residents' concerns, behaviors, health outcomes, and health needs that are relevant to air pollution in the region**. This assessment is designed to be consistent with the World Health Organization's general principles of health risk assessment of air pollution¹¹, while incorporating important information that is relevant to the city of Fresno.

3. Administration

The study will be led by Dr. Sandie Ha from the University of California, Merced. The assessment is expected to be completed in 18 months. During the study period, the PI will be available for public meeting to provide updates and/or discuss any potential issues or questions.

Administrative activities including IRB approval, data request, and survey design will be started prior to the study period (but after contract approval) to ensure timely completion.

4. Brief research methods

To provide a comprehensive assessment the community's health related to air pollution, the study will consist of two components including 1) a **population-based health risk assessment** and 2) a **community health survey**. The population-based health risk assessment will provide population-based estimates that are useful for health impact estimation, policy decisions and community planning. Meanwhile, the community health needs survey will provide more details about residents' concerns, behaviors, health status, and needs that will further support policy decisions and intervention efforts.

4.1 Population-based health risk assessment

4.1.1 Overview.

In the population-based health risk assessment, we will be spatiotemporally linking large population-based health databases to air pollution estimation surfaces as well as other social environment indicators (more details on data sources are described in *section 4.1.3*). The resulting dataset will provide estimation of air pollution exposures by individuals at any space-time and allows the opportunity to evaluate whether air pollution exposures are associated with the risk of specific health outcomes of interest across the lifespan.

4.1.2 Health outcomes of interest

To capture the wide range of potential health impacts of air pollution, we will be assessing multiple health effects across the lifespan in different age groups. These specific health outcomes include infant mortality and preterm birth among pregnant women and infants <1 year, asthma among children <18 years, and cardiovascular events (i.e., stroke, heart attack, etc) among adults ≥18 years in Fresno, CA. To address environmental injustice, we will also evaluate whether certain neighborhoods, indicated by area-level socioeconomic indicators, are more susceptible to the health effects of air pollution.

4.1.3 Data sources

The research team will be linking large population-based databases from a several well-known sources to ensure generalizability (Table 1). Data for air pollution, traffic/highway, truck routes, meteorological conditions, environmental injustice indicators, adverse pregnancy outcomes (i.e., infant mortality, preterm birth), and healthcare encounters (i.e. ED visits, hospitalization) for asthma and cardiovascular disease will be geocoded and spatiotemporally linked based on residential zip-code. Zip-code is the smallest geographical indicator available due to data privacy. The resulting linked file allows a comprehensive estimation of daily air pollution exposures, neighborhood characteristics, distance from major roads, and health information for each individual (e.g., all births and all emergency room visits and hospitalizations) in the databases.

For adverse pregnancy outcomes, addresses are available for more detailed spatial analyses. (See Section 4.1.4 below)

| Types of data | Data source | Year | Data description |
|--|--|---|---|
| Air pollution | San Joaquin Valley Air District | 2007-2020 | Daily concentration of air pollution estimated for all zip-codes in Fresno |
| Major roadways, truck routes | Caltrans | 2008-2019 | Major roadways, truck routes, traffic density in Fresno |
| Meteorological data | EPA Air Monitoring Network | 2007-2020 | Daily meteorological data at local monitors located in Fresno |
| Adverse pregnancy outcomes (e.g., infant mortality, preterm birth) | California Vital Statistics Birth Cohort Data | 2008-2018 (2018 is the latest year available) | Linked birth and death certificates for all births registered in Fresno |
| Asthma and cardiovascular | California's Office of Statewide Health Planning and Development (OSPHD) | 2008-2019 (2019 is the latest year available) | Patient-level administrative data abstracted from individual patient records and facility-level utilization data on healthcare services from hospitals and healthcare facilities in Fresno |
| Environmental Justice indicators | CalEnviroScreen 4.0 from the The Office of Environmental Health Hazard Assessment (OEHHA) *Note: a new version is available but the older 2018 version is closer to the study period. | 2021 | Environmental scores for all census tracts in Fresno based on potential exposures to pollutants, adverse environmental conditions, socioeconomic factors and prevalence of certain health conditions. |
| Neighborhood and contextual characteristics | American Community Survey and US Census | 2010 | Provides neighborhood socioeconomic indicators (e.g., income, education, etc) for all zip-codes in Fresno |

4.1.4. Study design and analytic approach

We will be using the time-stratified case-crossover design and analyses to fully control for potential time-invariant confounding. This innovative approach is commonly and increasingly used to evaluate the effects of air pollution on acute outcomes in the literature.¹²⁻¹⁶ To assess potential delayed effects of air pollution, we will evaluate risks within one week of exposure. Conditional logistic regression models will be used to calculate excess risk of health outcomes associated with air pollution exposures.

For pregnancy outcomes, we will be able to obtain residential address of the mother at delivery. Thus, in addition to the analyses mentioned above, we will also perform a more detailed spatial analysis which assesses whether proximity to major roadways, truck routes, or the distribution center are associated with elevated risk of adverse pregnancy outcomes. Such analysis will compare births

<500m away from a source to those who live further away. Potential confounders of interest will be evaluated using directed acyclic graphs.

We will also explore differences in health impacts of air pollution based on neighborhood characteristics. For example, at the same level of air pollution exposure, we will identify whether certain communities have more health impacts compared to others (i.e. more susceptible to impact of air pollution).

4.2 Community-based health survey

4.2.1 Overview

In order to supplement the population-based health risk assessment, we will also conduct a community-based health survey to obtain more details regarding residents' health status, concerns, awareness, and needs. We will be working with our established community partner to conduct a survey of ~1000-2,000 randomly selected Fresno residents living at varying distance from distribution center. The survey we will be administered by trained interviewers, and will assess residents' concerns, health status, behavior, and health needs that are relevant to air pollution exposures.

4.2.2 Health outcomes of interest

The survey will be capturing several important health domains that are relevant with respect to pollution exposures. These include address (for geocoding); demographics; health conditions; surrounding environmental conditions; employment; general health behaviors; knowledge, perception and practice related to air pollution; sources of air pollution and health information; neighborhood concerns; and healthcare utilization and access.

4.2.3 Study design and analytical approach

This survey will employ a cross-sectional design. We will be providing descriptive statistics of the health outcomes described in *section 4.2.2*. We will also compare needs, concerns and other health indicators across demographic groups using t-tests or chi-square tests as appropriate. Comparisons will also be made between those who live closer to the distribution center and those who live further away.

5. Deliverables

Through the contract period, the researchers and sponsor will be engaged in ongoing discussion to ensure timely and high-quality deliverables. Deliverables and their tentative due dates are presented in Table 2 below.

7. Estimated Budget

Please see attached Excel sheet

8. References

1. Grande G, Ljungman PLS, Eneroth K, Bellander T, Rizzuto D. Association Between Cardiovascular Disease and Long-term Exposure to Air Pollution With the Risk of Dementia. *JAMA Neurol.* 2020;77(7):801-809.
2. Hayes RB, Lim C, Zhang Y, et al. PM2.5 air pollution and cause-specific cardiovascular disease mortality. *Int J Epidemiol.* 2020;49(1):25-35.
3. Schraufnagel DE, Balmes JR, Cowl CT, et al. Air Pollution and Noncommunicable Diseases: A Review by the Forum of International Respiratory Societies' Environmental Committee, Part 2: Air Pollution and Organ Systems. *Chest.* 2019;155(2):417-426.
4. Orru H, Ebi KL, Forsberg B. The Interplay of Climate Change and Air Pollution on Health. *Curr Environ Health Rep.* 2017;4(4):504-513.
5. Lee JT. Review of epidemiological studies on air pollution and health effects in children. *Clin Exp Pediatr.* 2021;64(1):3-11.
6. Guo LQ, Chen Y, Mi BB, et al. Ambient air pollution and adverse birth outcomes: a systematic review and meta-analysis. *J Zhejiang Univ Sci B.* 2019;20(3):238-252.
7. Fiordelisi A, Piscitelli P, Trimarco B, Coscioni E, Iaccarino G, Sorriento D. The mechanisms of air pollution and particulate matter in cardiovascular diseases. *Heart Fail Rev.* 2017;22(3):337-347.
8. Yang D, Yang X, Deng F, Guo X. Ambient Air Pollution and Biomarkers of Health Effect. *Adv Exp Med Biol.* 2017;1017:59-102.
9. Lighthall D, Capitman J. *The Long Road to Clean Air in the San Joaquin Valley: Facing the Challenge of Public Engagement.* Fresno, CA: California State University, Fresno.;2007.
10. Bengiamin M, Capitman JA, Chang X. *Healthy people 2010: A 2007 profile of health status in the San Joaquin Valley.* Fresno, CA: California State University, Fresno;2008.
11. WHO. *Health risk assessment of air pollution – general principles.* Copenhagen: WHO Regional Office for Europe: World Health Organization;2016.
12. The Case-Crossover Design: A Method for Studying Transient Effects on the Risk of Acute Events. *Am J Epidemiol.* 2017;185(11):1174-1183.
13. Szyszkowicz M, Tremblay N. Case-crossover design: air pollution and health outcomes. *Int J Occup Med Environ Health.* 2011;24(3):249-255.
14. Janes H, Sheppard L, Lumley T. Case-crossover analyses of air pollution exposure data: referent selection strategies and their implications for bias. *Epidemiology.* 2005;16(6):717-726.
15. Mittleman MA, Maclure M, Robins JM. Control sampling strategies for case-crossover studies: an assessment of relative efficiency. *Am J Epidemiol.* 1995;142(1):91-98.
16. Maclure M. The case-crossover design: a method for studying transient effects on the risk of acute events. *Am J Epidemiol.* 1991;133(2):144-153.

BUDGET JUSTIFICATION:

PI: Sandie Ha

Project Title: Health impacts of air pollution in Fresno, CA

Project Period: 1/01/2022 - 6/30/2023

A. SENIOR PERSONNEL:

A.1. Dr. Sandie Ha will commit a total of 3 person months. She will work on, and supervise the research assistants working on the project.

B. OTHER PERSONNEL:

B.1. The Graduate Student Researcher (TBD) will commit 13 person academic months and 4 person summer months. The GSR will help with data management and analyses during the academic year. During summer two Graduate Student Researchers will help with survey data cleaning, management, and analysis.

B.2. The Undergraduate Student Assistant will assist with recruitment efforts, survey instrument design, data cleaning and management. The student will also be helping with administrative tasks such as IRB application and data acquisition.

Salaries are based on current actual salaries and are projected to include a 3% annual cost-of-living adjustment (and merit, if applicable) effective each year, consistent with institutional policy.

C. FRINGE BENEFITS:

- a. 3% benefit rate is used for PI/Co-PIs.
- b. 45.7% benefit rate is used for Research Scientists.
- c. 14% benefit rate is used for Post-Doctoral Scholars.
- d. 3% benefit rate is used for Graduate Student Researchers.

The University of California, Merced Composite Fringe Benefit Rates (CFBR) have been reviewed and federally approved by the Department of Health and Human Services (DHHS) for use by all fund sources for FY21. Rates beyond June 30, 2021 are estimates and are provided for planning purposes only. Future CFBR rates are subject to review and approval by DHHS on an annual or bi-annual basis. Fringe benefits are assessed as a percentage of the respective employee's salary. *For more information, please see:*

<https://bfs.ucmerced.edu/departments/costing-and-policy/cbr>

D. TUITION AND FEES:

The University of California, Merced provides full remission of tuition, all fees, and graduate student health insurance to all graduate students who are employed on-campus at 25% time or greater during the academic year. The rates are based on current graduate fees and are escalated annually in the budget at a rate of 10% per year. Additional information regarding the fee remission program can be found at:

https://catalog.ucmerced.edu/content.php?catoid=17&navoid=1626#fee_schedule

E. TRAVEL:

E.1. Domestic: Funding is requested for domestic travel for conferences for professional development and learn relevant methods for the project. Estimated breakdown of costs are as follows:

| Item | Year 1 | Year 2 | Total |
|-------------------------|--------------|--------------|--------------|
| Airfare | 1,500 | 1,500 | 3,000 |
| Lodging | 800 | 800 | 1,600 |
| Meals | 300 | 300 | 600 |
| Conference Registration | 300 | 300 | 600 |
| Transportation | 100 | 100 | 200 |
| TOTAL: | 3,000 | 3,000 | 6,000 |

E.2. Foreign: Funding is requested for foreign travel for conferences for professional development and learn relevant methods for the project. Estimated breakdown of costs are as follows:

| Item | Year 1 | Year 2 | Total |
|-------------------------|--------------|----------|--------------|
| Airfare | 3,000 | 0 | 3,000 |
| Lodging | 1,500 | 0 | 1,500 |
| Meals | 300 | 0 | 300 |
| Conference Registration | 600 | 0 | 600 |
| Transportation | 600 | 0 | 600 |
| TOTAL: | 6,000 | 0 | 6,000 |

International per diem rates can be found here:

https://aoprals.state.gov/web920/per_diem.asp

F. OTHER DIRECT COSTS:

F.1. Materials and Supplies: Funding is requested for purchasing:

F.1.1. Four (4) high performance computers for the management and linkage of large datasets.

F.1.2. Software: ArcGIS will be used to link spatial data

F.1.3. Vital statistics requests

F.1.4. Data storage: A larger server to accomodate the large amount of data necessary to conduct the proposed studies.

F.2. Consultant Services: Funding is requested for consultant (TBD). Environmental justice expert consultants will advise on issues surrounding incorporating environmental justice measures into the analyses.

F.3. UCM Biostatistics Core: An on-site recharge facility will provide comprehensive statistical and data analysis support.

F.4. Geocoding: UC Merced GIS Lab will be consulted to assist with geocoding birth certificate data.

G. INDIRECT COSTS:

Per the sponsor's policy, indirect costs have been limited to 30% of total direct costs.

EXHIBIT B

UNIVERSITY OF CALIFORNIA

PROOF OF SELF-INSURANCE COVERAGE

The Regents of the University of California are often requested by outside parties to provide evidence of the University's self-insurance coverage in conjunction with agreements and contracts negotiated by its employees on UC campuses and medical centers. Examples of situations where the University may be required to provide evidence of insurance include:

- Using an off-campus location to host an event, ceremony, athletic event, theatre production, practice space, job fair, educational outreach event, etc.
- Leasing or renting equipment, motor vehicle(s), or real estate
- Research grant sub-awards
- Affiliation (non-healthcare/medical related) and Professional Services Agreements

The University of California self-funds its liability exposures, so does not issue individual certificates of insurance. The UC Office of Risk Services has developed a Certificate of Self-Insurance Coverage document (COC) to illustrate the self-funded retention levels maintained for each liability program. The COC is available on-line for use by entities conducting business with the university as evidence of the self-funded retention levels, coverage terms, and limits routinely requested. The self-insurance limits accepted in each specific written agreement or contract shall be the limits that apply should a loss arise, regardless of the limits provided in the on-line Certificate of Self-Insurance Coverage document.

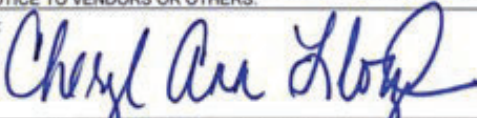
The UC COC Site is solely for the use and benefit of the vendors and organizations which contract with the University of California and not for resale or other transfer to or use by or for the benefit of any other person or entity. You may print copies for use within your organization, provided that you do not modify the COC in any way, nor distribute any copies outside your organization. You may not use any of the University of California's names or marks in any manner that creates the impression such names or marks belong to or are associated with you or imply any endorsement by the University of California, and you acknowledge that you have no ownership rights in and to any of these names or marks. You will not use the Site, the information contained therein or any of the University's names or marks in unsolicited mailings or spam material. You may not link directly to the COC ("deep link") or bring up or present the COC or other content of this site within another web site ("frame").

Official Correspondence must be sent via postal mail to:

Chief Risk Officer
Office of Risk Services
Office of the President
University of California
1111 Franklin St., 10th Floor
Oakland, CA 94607-5200
510-987-9832
RiskServices@ucop.edu

Please contact the local Risk Manager at the specific University of California location where you are contracting if you have insurance coverage questions:

- [Campus Risk Managers Directory](#)
- [Hospital Risk Managers Directory](#)

| CERTIFICATE OF SELF-INSURANCE COVERAGE | | | | | | Date: June 7, 2021 |
|--|--|---------------|--|---|--|--|
| PRODUCER/INSURED The Regents of the University of California Office of the President Office of Risk Services 1111 Franklin St., 10 th Floor Oakland, CA 94607-5200 510-987-9832 | | | This Certificate is issued as a matter of information only to authorized viewers for their internal use only and confers no rights upon any viewer of this Certificate. The Certificate does not amend, extend or alter the coverage described below. This Certificate may only be copied, printed and distributed by an authorized viewer for its internal use. Any other use, duplication or distribution of the Certificate without the written consent of the Regents of the University of California is prohibited. | | | |
| ENTITIES AFFORDING COVERAGE | | | | | | |
| COMPANY LETTER A The Regents of the University of California | | | | | | PARTICIPATION 100 % |
| COVERAGES | | | | | | |
| THIS IS TO CERTIFY THAT THE REGENTS OF THE UNIVERSITY OF CALIFORNIA IS A GOVERNMENTAL ENTITY THAT HAS A SELF-FUNDED RETENTION FOR LIABILITIES DESCRIBED BELOW, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY WRITTEN CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY PERTAIN. THIS SELF-FUNDED PROGRAM IS SUBJECT TO ALL PROVISIONS OF THE BYLAWS AND STANDING ORDERS OF THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, WHICH DOES NOT PERMIT ANY ASSUMPTION OF LIABILITY WHICH DOES NOT RESULT FROM THE NEGLIGENT ACTS OR OMISSIONS OF ITS OFFICERS, AGENTS OR EMPLOYEES. | | | | | | |
| CO LTR | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE | POLICY EXPIRATION DATE | LIMITS | |
| A | GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCURRENCE | Self-Insured | July 1, 2021 | July 1, 2022 | GENERAL AGGREGATE PRODUCTS-COMP/OP AGG PERSONAL & ADV INJURY CONTRACTUAL LIABILITY EACH OCCURRENCE | \$ Not applicable \$ 5,000,000 \$ 5,000,000 \$ 5,000,000 \$ 5,000,000 \$ |
| A | AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> GARAGE LIABILITY | Self-Insured | July 1, 2021 | July 1, 2022 | COMBINED SINGLE LIMIT BODILY INJURY (PER PERSON) BODILY INJURY (PER ACCIDENT) PROPERTY DAMAGE | \$ Not applicable \$ 2,500,000 \$ 2,500,000 \$ 2,500,000 |
| A | PROPERTY <input checked="" type="checkbox"/> FIRE & EXTENDED PERILS | Self-Insured | July 1, 2021 | July 1, 2022 | EACH OCCURRENCE AGGREGATE | \$ 7,500,000 \$ Not applicable \$ |
| A | WORKERS' COMPENSATION AND EMPLOYERS LIABILITY | Self-Insured | July 1, 2021 | July 1, 2022 | STATUTORY LIMITS EACH ACCIDENT DISEASE - POLICY LIMIT DISEASE - EACH EMPLOYEE | \$ As required by California Law \$ As required by California Law \$ As required by California Law |
| DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS | | | | | | |
| ADDITIONAL COVERED PARTY - AS REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH RESPECT TO GENERAL LIABILITY AND AUTOMOBILE LIABILITY | | | | | | |
| LOSS PAYEE - AS REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH RESPECT TO PROPERTY COVERAGE | | | | | | |
| CERTIFICATE HOLDER APPLICABLE PARTY AS REQUIRED BY WRITTEN CONTRACT OR AGREEMENT | | | | CANCELLATION SHOULD THE REGENTS ELECT TO DISCONTINUE SELF-INSURING ITS LIABILITIES, THE REGENTS WILL UPDATE PROOF OF SELF-INSURANCE ON ITS WEBSITE. THE REGENTS SHALL NOT BE OBLIGATED TO PROVIDE INDIVIDUAL NOTICE TO VENDORS OR OTHERS. By:  | | |
| CHERYL A. LLOYD, AVP & CHIEF RISK OFFICER | | | | | | |

**EXHIBIT C
DISCLOSURE OF CONFLICT OF INTEREST**

South Central Fresno Assembly Bill 617 (AB617) Community Health Impact
Assessment

| | | YES* | NO |
|---|--|--------------------------|-------------------------------------|
| 1 | Are you currently in litigation with the City of Fresno or any of its agents? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 | Do you represent any firm, organization, or person who is in litigation with the City of Fresno? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3 | Do you currently represent or perform work for any clients who do business with the City of Fresno? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 | Are you or any of your principals, managers, or professionals, owners or investors in a business which does business with the City of Fresno, or in a business which is in litigation with the City of Fresno? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 | Are you or any of your principals, managers, or professionals, related by blood or marriage to any City of Fresno employee who has any significant role in the subject matter of this service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6 | Do you or any of your subcontractors have, or expect to have, any interest, direct or indirect, in any other contract in connection with this Project? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| * If the answer to any question is yes, please explain in full below. | | | |

Explanation: _____

N/A

DocuSigned by:

Jue Sun

F1DC694BB10349F...

Signature

5/27/2022

Date

Jue Sun

(Name)

Jue Sun

(Company)

The Regents of the University of California

(Address)

5200 N. Lake RD. Merced, CA 95343

(City, State Zip)

EXHIBIT D



P.O. Box 2450, Merced, CA 95344
(209) 724-4371 fax (209) 724-4459

Invoice No. 1

INVOICE

| | | | |
|----------------------|--------------|------------|--|
| Customer Name | | | |
| Address | | | |
| City | State | ZIP | |
| | | | |

| | |
|---------------|-------|
| Date | |
| P.O. # | |
| Email: | |

Payment is requested for costs incurred in connection with the project number - titled: GNT0000 xxx -

| Category | Date | Budget | Total Expenses | Current Expenses |
|---------------------------|------|--------|----------------|------------------|
| ACADEMIC SALARIES & WAGES | | | | |
| BENEFITS | | | | |
| OVERHEAD | | | | |
| SUPPLIES & EXPENSES | | | | |
| TRAVEL & ENTERTAINMENT | | | | |
| TOTAL | | | | |
| Amount Requested | | | | |

Please pay to the order of:
The Regents of the University of California

With your payment, please indicate:

Mail payment to:
University of California, Merced
Campus Cashiering Services
P.O. Box 2450
Merced, CA 95344

By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate, and the expenditures, disbursements and cash receipts are for the purposes and objectives set forth in the terms and conditions of the Federal award. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (U.S. Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-3812).