

**APPLICATION FOR
FEDERAL ASSISTANCE**

2. DATE SUBMITTED 3/28/2007	Applicant Identifier
3. DATE RECEIVED BY STATE 3/28/2007	State Application Identifier
4. DATE RECEIVED BY FED AGCY	Federal Identifier RFA # EPA-OAR-OAQPS-07-01

1. TYPE OF SUBMISSION

Application

Construction

Non Construction

Preapplication

Construction

Non Construction

5. APPLICANT INFORMATION

Legal Name
Arizona Department of Environmental Quality

Organizational DUNS: **804 915 312**

Address:
Street: **1110 West Washington Street**

City: **Phoenix**

County: **Maricopa**

State: **Arizona** Zip Code: **85007**

Country: **USA**

Organizational Unit
Department
Air Quality Division

Division:

Name and telephone number of person to be contacted on matters involving this application (give area code)
Prefix: **Ms.** First Name: **Nancy**

Middle Name: **C.**

Last Name: **Wrona**

Suffix:

Email: **ncw@azdeq.gov**

6. EMPLOYER IDENTIFICATION NUMBER (EIN)
86-6004791

Phone Number: (give area code) **602-771-2308**

Fax Number (give area code) **602-771-2366**

8. TYPE OF APPLICATION:

New Continuation Revision

If revision, enter appropriate letter(s) in Box(es)

Other (specify) **Request for Proposal**

7. TYPE OF APPLICANT

Other (specify)

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:
6 6 - 0 3 4

TITLE: **Community Scale Air Toxics Ambient Monitoring**

12. AREAS AFFECTED BY PROJECT
(cities, counties, states, etc.)
Statewide

9. NAME OF FEDERAL AGENCY:
U.S. EPA

11. DESCRIPTIVE TITLE OF APPLICANTS PROJECT
TITLE: Community Scale Air Toxics Ambient Monitoring

13. PROPOSED PROJECT

START DATE 07/01/07	ENDING DATE 06/30/09
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14. CONGRESSIONAL DISTRICTS OF:

a. Applicant 04	b. Project 01,02,03,04,05,06,07,08
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15. ESTIMATED FUNDING:

a. Federal	\$195,000.00
b. Applicant	\$36,900.00
c. State	.00
d. Local	.00
e. Other (in Kind)	.00
f. Program Income	.00
g. TOTAL	\$231,900.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

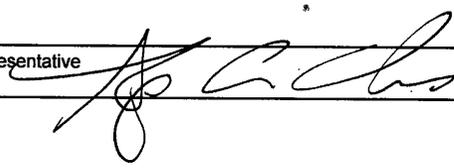
A. Yes THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE _____

B. No PROGRAM IS NOT COVERED BY E.Q. 12372 OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? If "Yes" attach an explanation. No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION / PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

A. Authorized Representative

Prefix Mr.	First Name Stephen	Middle Name A.
Last Name Owens		Suffix
B. Title Director		C. Telephone Number (give area code) 602-771-2203
D. Signature of Authorized Representative 		E. Date signed 4/12/07

BUDGET INFORMATION - Non Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function Or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New Or Revised Budget			Total (g)
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		
1. FY 08 New Money	66-034			\$195,000			\$195,000
2. FY 08 State Match	66-034				\$36,900		\$36,900
3.							
4.							
5. TOTALS				\$195,000	\$36,900		\$231,900

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY			Total (5)
	FY 08 Fed New Money	FY 08 State Match		
a. Personnel				\$18,100
b. Fringe Benefits				\$6,500
c. Travel				\$3,000
d. Equipment				
e. Supplies				
f. Contractual				
g. Construction	\$192,000			\$192,000
h. Other (in-Kind)				
i. Total Direct Charges (sum of 6a-6h)	\$195,000	\$24,600		\$219,600
j. Indirect Charges	\$195,000	\$12,300		\$12,300
k. TOTALS (sum of 6i and 6j)	\$195,000	\$36,900		\$231,900

7. Program Income

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Prescribed by OMB Circular A-102

SECTION C - NON-FEDERAL RESOURCES

	(a) Grant Program	(b) Applicant	(c) State	(d) Other Income	(e) TOTALS
8	FY 08 State Match - JATAP	\$36,900			\$36,900
9					
10					
11					
12	TOTALS (sum of lines 8 and 11)	\$36,900			\$36,900

SECTION D - FORECASTED CASH NEEDS

	(Total for 1st Year)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$192,000	\$48,000	\$48,000	\$48,000	\$48,000
14. Non-Federal	\$36,900	\$36,900			
15. TOTAL (sum of lines 13 and 14)	\$228,900	\$84,900	\$48,000	\$48,000	\$48,000

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF PROJECT

	FUTURE PLANNING PERIODS (YEARS)				
	(a) Grant Program	(b) First	(c) Second	(d) Third	(e) Fourth
16 FY 08 New Money - JATAP		\$3,000			
17					
18					
19					
20 TOTALS (sum of lines 16-19)		\$3,000			

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges	\$0.00	22. Indirect Charges - Fixed @.4991	\$12,300
23. Remarks		(base \$24,600)	

March 27, 2007

PROPOSAL TO EPA RFA NO. EPA-0AR-0AQPS-07-01: COMMUNITY-SCALE AIR TOXICS AMBIENT MONITORING: ANALYSIS OF EXISTING DATA

Metropolitan Phoenix Risk Assessment to Hazardous air pollutants Based on the 2005 Monitoring Conducted by the Joint Hazardous air pollutants Assessment Project (JATAP)

Category:

This proposal falls into the third category of RFA No. EPA-0AR-0AQPS-07-01: "Analysis of Existing Data. This category is aimed at state, local and tribal agencies which have already collected a significant amount of hazardous air pollutants monitoring data and need support to interpret their results. The objectives of a data analysis project should be consistent with those listed under Community-scale Monitoring: supporting health assessments, evaluating air quality models, or characterizing community exposures."

Applicant:

Arizona Department of Environmental Quality
Air Quality Division
1110 West Washington Street
Phoenix, Arizona 85007

Steven Peplau, Manager
Air Assessment Section
1110 West Washington Street
Phoenix, Arizona 85007
SP6@azdeq.gov

Arizona Revised Statutes, §49-401: "...The legislature ... intends to place primary responsibility for air pollution control and abatement in the department of environmental quality

§49-424. Duties of department: The department shall: ...

2. Make continuing determinations of the quantity and nature of emissions of air contaminants, topography, wind and temperature conditions, possible chemical reactions in the atmosphere, the character of development of the various areas of the state, the economic effect of remedial measures on the various areas of the state, the availability, use, and economic feasibility of air-cleaning devices, the effect on human health and danger to property from air contaminants, the effect on industrial operations of remedial measures, and other matters necessary to arrive at a better understanding of air pollution and its control. In a county with a population in excess of one million two hundred thousand persons according to the most recent United States decennial census, the department shall locate a monitoring system in at least two remote geographic sites.

...

5. Conduct investigations, inspections and tests to carry out the duties of this section under the procedures established by this article.

...

8. Encourage voluntary cooperation by advising and consulting with persons or affected groups or other states to achieve the purposes of this chapter, including voluntary testing of actual or suspected sources of air pollution.

<http://www.azleg.state.az.us/ArizonaRevisedStatutes.asp>

Funding Requested:
\$195,000

Total Project Cost: \$231,900. The additional \$36,900 is the value of in-kind labor contributions from ADEQ employees.

Planning Period:

July 2007 through June 2009

Project Description:**Executive Summary:**

The Arizona Department of Environmental Quality, on behalf of the Joint Hazardous air pollutants Assessment Project (JATAP), proposes to fulfill this Request for Proposal by conducting air quality modeling and risk assessment work based on the hazardous air pollutants monitoring data collected in 2005. This work, to involve a number of the tribal, county, and state agencies for which hazardous air pollutants concentrations were collected, will consist, in part, of constructing micro emissions inventories around each monitoring site. This emissions information, along with the hazardous air pollutants and other pollutant concentrations and meteorological information collected in 2005 will be given to a contractor for air quality, exposure, and risk assessment modeling. The projected cost is \$200,000. Through these efforts the extensive hazardous air pollutants monitoring data will be utilized to produce risk assessments that will then be presented to the monitored communities.

Background:

Founded in 2000, JATAP is a unique consortium of tribal and governmental officials that has carried out a pilot hazardous air pollutants monitoring project, compiled all Phoenix area hazardous air pollutants data, written a complete blueprint for a comprehensive hazardous air pollutants/risk assessment analysis, constructed an hazardous air pollutants emission inventory, and conducted a full-scale, seven-site hazardous air pollutants monitoring program in 2005. Funded by the EPA RFA -- Community-Scale Hazardous air pollutants Ambient Monitoring Solicitation # OAR-EMAD-03-08, Amendment 002 -- this monitoring effort has produced a rich data set of ambient hazardous air pollutants concentrations that through this proposal will be used to assess risk to the neighborhoods in the vicinity of the monitoring sites.

Active participants, all located in or with ties to metropolitan Phoenix, include officials from

- Fort McDowell Yavapai Nation
- Salt River Pima-Maricopa Indian Community
- Gila River Indian Community
- Maricopa County
- City of Phoenix
- Pinal County,
- Arizona Department of Environmental Quality
- U.S. EPA Region 9
- U.S. EPA, Office of Air Quality Planning and Standards

This diverse group has been operating under the aegis of the Institute of Tribal Environment Professionals (ITEP) at Northern Arizona University and its contractor, Dr. Jack Herring of Prescott College.

Proposed Work:**Introduction:**

The project has five components.

1. Micro emissions inventories around the monitoring sites will be constructed by the Phoenix-area tribes and agencies. This work will be coordinated by the Arizona Department of Environmental Quality (ADEQ).
2. The agencies and the JATAP contractor from 2005 will deliver complete data sets of hazardous air pollutants concentrations and meteorological information to a contractor chosen for the modeling portion of this proposal.
3. The contractor will perform three kinds of modeling with this information: dispersion or interpolation modeling, accounting for urban “background” concentrations, to build concentration fields in the vicinity of the 2005 monitors; exposure modeling of the affected populations; and risk assessment modeling.
4. The contractor will provide a comprehensive written report and a two-day training session – hands-on – in how the three models work for JATAP members.
5. JATAP will publicize the risk assessment findings at a variety of venues, including, but not limited to neighborhood meetings, fliers, and in meetings with the health officials closest to these monitoring sites.

Through these five components, described in greater detail in the “proposed work” section, JATAP members will not only learn risk assessment modeling; but will also be able to communicate to their communities the degree of risk associated with ambient hazardous air pollutants. In addition, the rich ambient data set from the full-scale monitoring project will be effectively mined for its intended purpose – i.e. to inform community members about the risk from hazardous air pollutants.

Hazardous air pollutants Concentrations from 2005:

This section provides a summary of the hazardous air pollutants concentrations available for this data analysis phase of JATAP. Table 1 gives the pollutants monitored at the various sites, whose locations are given in Figure 1.

Table 1. Details of JATAP Monitoring 2005

Location	Measurements	Sampling Frequency	Objective
Phoenix - JLG Supersite	VOCs, PAHs, carbonyls, continuous BC, continuous ECOC, continuous NMHC, PM metals	1 - 24-hr Sample Every 6 Days	Population Exposure
	Collocated VOCs, carbonyls, PM metals	1 - 24-hr Sample, Schedule Varies by Sample Type	Quality Assurance
West Phoenix	VOCs, PM metals	1 - 24-hr Sample Every 6 Days	Population Exposure
South Phoenix	VOCs, carbonyls, PM metals	1 - 24-hr Sample Every 6 Days	Population Exposure
Gila River Indian Community, St. Johns	VOCs, PM metals	Sampling Every 6 Days. Alternate 2 - 12-hr Samples and 1 - 24-hr Sample	Transport/ Gradient
Salt River Pima-Maricopa Indian Community, Senior Center	VOCs, PM metals	Sampling Every 6 Days. Alternate 2 - 12-hr Samples and 1 - 24-hr Sample	Transport/Gradient
Fort McDowell Yavapai Nation	VOCs	1 - 24-hr Sample Every 12 Days	Transport/Gradient
Greenwood, SW Corner of I-10/I-17	VOCs, carbonyls, PM metals	1 - 24-hr Sample Every 6 Days	Maximum Concentration
Queen Valley	VOCs, EC, PM metals	1 - 24-hr Sample Every 6 Days	Background

Volatile organic compounds (VOCs), organic and elemental carbon (OCEC), particulate matter (PM), nonmethane hydrocarbon (NMHC), black carbon (BC)

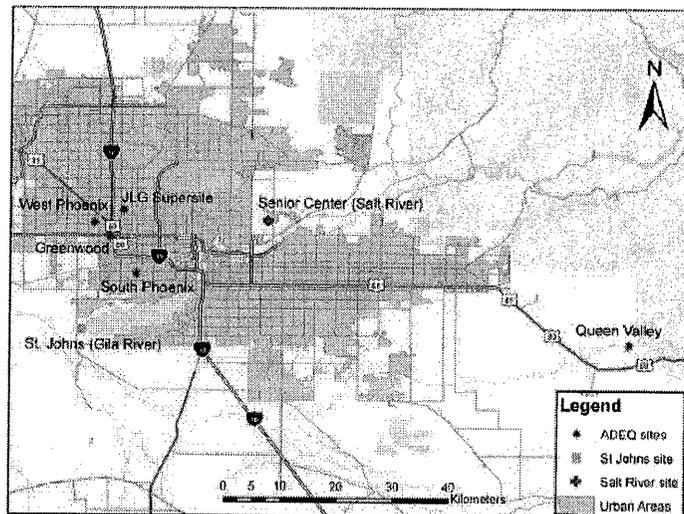


Figure 1. JATAP monitoring sites 2005

Annual average concentrations for selected gaseous air toxic compounds are given in Table 2. Note that of the 22 compounds shown, eight of them exceed the Arizona Ambient Air Quality Guideline, based on one in a million excess cancer risk. As shown in Figure 2, these concentrations are expressed as the ratio at a particular site to that of the concentration at Greenwood. Located only a few yards from a major arterial and 150 yards from a freeway that carries over 200,000 vehicles per day, Greenwood would be expected to have the highest concentrations of transportation-generated hazardous air pollutants. Figure 2 presents the ratios the three urban fringe sites to Greenwood: Queen Valley (“Queen V.”), the Gila River Indian Community site at St. Johns, and the Salt River Indian Community site (“Salt R.”). Most ratios are less than one, but there are five instances in these relatively unpolluted settings with higher concentrations than Greenwood. Figure 3 presents the three urban sites of West Phoenix, Supersite, and South Phoenix, whose concentrations are generally lower than Greenwood, but with ratios exceeding one in ten instances.

Table 2. Selected Gaseous Hazardous air pollutants Concentrations (ppbv) – Annual Averages – from the 2005 JATAP Monitoring

	2005 means in ppbv							
	AAAQG	Greenwood	Queen V.	St Johns	Salt R.	West Phx	Supersite	South Phx
1,2,4-Trimethylbenzene	NA	0.496	0.078	0.088	0.139	0.292	0.393	0.238
O-Xylene	NA	0.464	0.084	0.081	0.177	0.374	0.360	0.268
Ethylbenzene	NA	0.457	0.077	0.082	0.158	0.528	0.359	0.248
Styrene	NA	0.390	0.024				0.174	0.090
Dichloromethane	1.610	0.321	0.034	0.072	0.128	0.290	0.231	0.179
1,3-Butadiene	0.030	0.273	0.014	0.058	0.064	0.311	0.207	0.280
1,3,5-Trimethylbenzene	NA	0.187	0.032	0.054	0.067	0.131	0.161	0.094
Tetrachloroethene	0.310	0.128	0.026	0.050	0.109	0.135	0.205	0.189
Carbon tetrachloride	0.006	0.097	0.094	0.087	0.088	0.083	0.095	0.093
Chloroform	0.009	0.066	0.010	0.022	0.070	0.067	0.117	0.063
Trichloroethene	0.141	0.049	0.017	0.032	0.033	0.075	0.033	0.039
1,2-Dichloroethane	0.009	0.017	0.012	0.019	0.016	0.023	0.013	0.015
1,1-Dichloroethene	0.757	0.011	0.010	0.016	0.013	0.015	0.010	0.010
Vinyl chloride	0.005	0.011	0.010	0.012	0.008	0.011	0.010	0.008
1,2-Dichloropropane	NA	0.010	0.011	0.016	0.021	0.026	0.010	0.019
Hexachlorobutadiene	0.067	0.010	0.010	0.205	0.173	0.265	0.011	0.226
Bromoethane	NA			0.034	0.021	0.026	0.013	0.025

	2005 means in ppbv							
	AAAQG	Greenwood	Queen V.	St Johns	Salt R.	West Phx	Supersite	South Phx
Formaldehyde	0.065	7.479					4.424	3.310
Acetaldehyde	0.278	2.728					1.688	1.695
Toluene	NA	2.266	0.166	0.646	1.858	3.306	1.845	1.763
M,P-Xylene	NA	1.211	0.182	0.196	0.409	1.080	0.964	0.771
Benzene	0.044	0.844	0.115	0.185	0.500	0.736	0.758	0.706

Bold concentrations exceed the Arizona Ambient Air Quality Guideline (AAAQG) values.

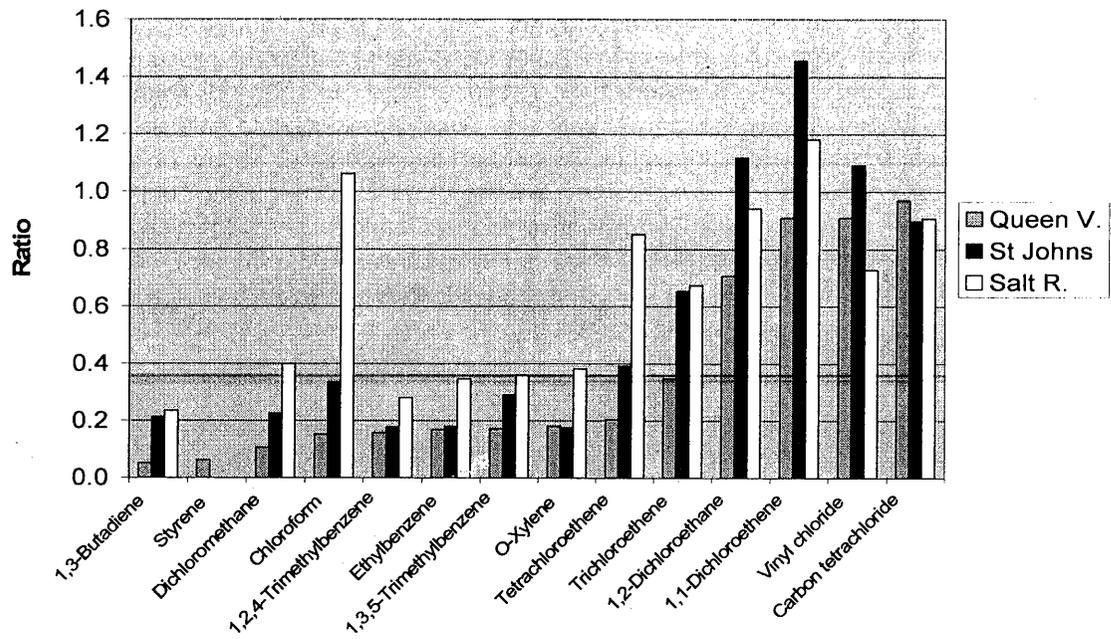


Figure 2. 2005 Annual Average Hazardous air pollutants at Three Outlying Sites, Shown as Ratios with the Highest Concentration Site -- Greenwood

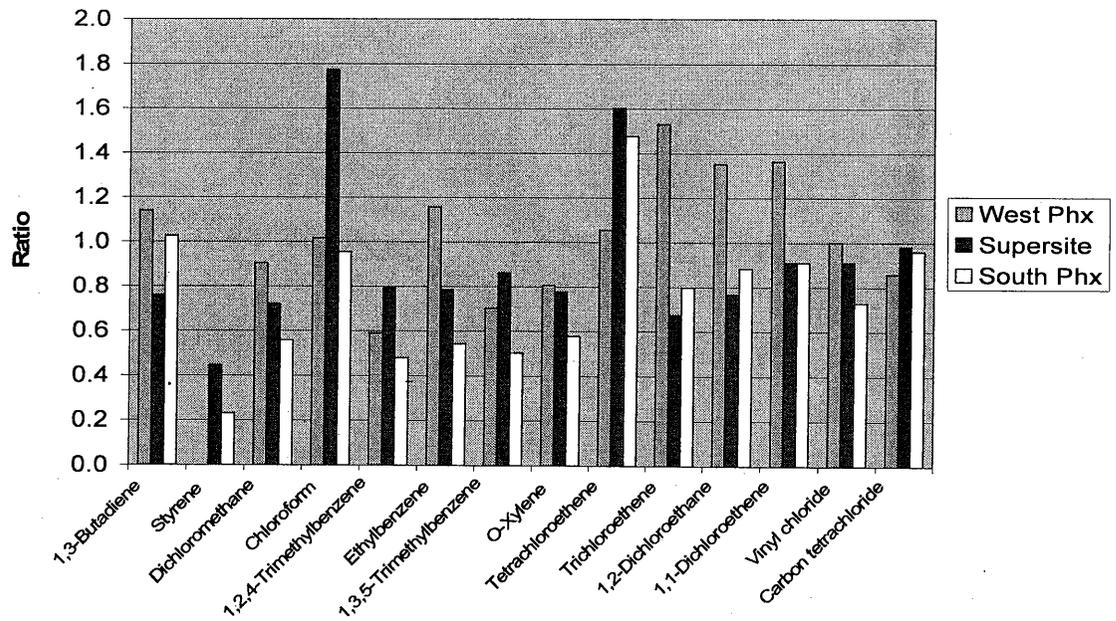


Figure 3. 2005 Annual Average Hazardous air pollutants at Three Urban Sites, Shown as Ratios with the Highest Concentration Site -- Greenwood

Project Description:

Through this proposal, members of JATAP will conduct risk assessment to ambient hazardous air pollutants – *considering only the inhalation pathway* -- in metropolitan Phoenix, based on the available data collected in 2005 by the JATAP, Maricopa County, and the Arizona Department of Environmental Quality. In addition to the specialized monitoring conducted by the JATAP in 2005, Maricopa County operated 24 air monitoring sites for several criteria pollutants:

- Ozone 17 sites
- Carbon Monoxide 13 sites
- Nitrogen oxides 5 sites
- Sulfur dioxide 2 sites
- Continuous PM10 7 sites
- Continuous PM2.5 2 sites
- Filter PM2.5 4 sites
- Filter PM10 14 sites.

The Arizona Department of Environmental Quality also made the same measurements at its central city “Supersite” (except sulfur dioxide), along with speciated PM2.5, continuous elemental and organic carbon, filter-based aerosol characterization with an IMPROVE monitor, and continuous nonmethane hydrocarbons. An extensive network of meteorological measurements is available throughout the metropolitan Phoenix area.

ADEQ, as the principal applicant in this proposal, will hire a contractor who will explain how these measurements from the permanent air monitoring networks could best augment the 24-hour integrated measurements of particulate and gaseous hazardous air pollutants of the JATAP’s intensive monitoring. In conducting the full risk assessment the contractor will consider the work elements listed below and will explain how comprehensive this assessment could be given the limitations of the fixed network. For example, could a reasonably definitive risk assessment for the entire metropolitan area be produced, or would it be necessarily limited to neighborhoods close to the monitors? Given the lack of a model-ready hazardous air pollutants emissions inventory, the contractor will have only the micro emissions inventories around the JATAP monitoring sites. The contractor will develop analytical methods to determine exactly how the relationships between these micro emissions and the measured hazardous air pollutants concentrations could be understood in the confounding light of urban transport. Furthermore, the contractor will explain what methods will be employed to extrapolate these relationships to those large parts of the metropolitan area that were not monitored. Prospective work elements are:

1. JATAP members will build the micro emissions inventories around the monitoring sites.
2. The contractor will build spatial concentration fields of hazardous air pollutants from the monitoring data around the six monitoring sites, in circular areas with a radius of about five kilometers (the Queen Valley background site will be omitted).. ,.
3. The contractor will recommend two exposure models: one, based on monitoring data, for use in this proposal; the other, for later use in the JATAP if simulated concentrations on a regional basis become available.
4. The contractor will assess exposure with the recommended exposure model.
5. The contractor will characterize risk.

6. The contractor will write a technical report, and deliver a presentation at ADEQ.
7. JATAP members will conduct workshops in the affected communities to convey the risks of hazardous air pollutants and will evaluate their attendance and effectiveness.

Risk Assessment: Model Discussion:

The choice of the exposure and risk assessment models is up to the contractor. ADEQ staff and the contractor will jointly determine the exact form of the air quality model to be employed. The following ambient air monitoring data will be available.

- Every sixth-day, 24-hour averages of air gaseous hazardous air pollutants (method TO-15) and carbonyl compounds at eight sites for one year (2005);
- Every sixth-day 24-hour averages of speciated fine particulates at eight sites (PM_{2.5}, x-ray fluorescence metals)
- Continuous PM₁₀ (three sites), continuous ozone (25 sites), carbon monoxide (eight sites), nitrogen oxides (five sites) continuous non-methane hydrocarbons (1 site);
- Filter-based PM₁₀ (mass only) at numerous sites, most every sixth day, a few every third day: 24-hour averages; and
- Wind speed, wind direction, temperature, relative humidity, and other meteorological variables at about 75 sites.

Particular challenges in this air quality modeling will be converting the 24-hour averages into hourly values; as well as distinguishing the urban regional concentrations from the near field.

Risk Assessment: Special Considerations:

- The contractor will recommend two types of risk assessment models: one that depends on ambient measurements only; another that relies on modeled simulations. The latter type of model could be employed in a future year if the emission inventory and air quality modeling are carried out.
- The contractor will perform a risk assessment based on the ambient measurements, their interpolated concentration fields, and the micro emissions inventories.
- The contractor will demonstrate how the concentration fields will be built: with interpolation methods, dispersion models, or other suitable tools.
- The contractor will need to consider “work-arounds” for the overly large census tracts of the Indian Communities and other rural areas.
- The contractor should consider an exposure model that accounts for the time spent driving on congested freeways and arterials.

- The contractor should be wary of “national-based” activity statistics: in Phoenix, more people may spend more time outdoors, especially in the winter and on summer evenings, and less time outdoors in the searing summer heat.
- The contractor will consider the use of indoor and outdoor concentrations obtained from the literature, which will be supplied by JATAP staff.

Table 3. Tasks, Deliverables, Timeline:

Task	Agent	Deliverable	Date
Award contract	ADEQ	Signed contract with risk assessment consultant	September 2007
Construct micro emissions inventories	JATAP members	Electronic version of gaseous and particulate air toxic emissions, hourly, in vicinity of monitors	December 2007
Determine exact form of air quality modeling and risk assessment	JATAP members, Contractor	Complete modeling protocol from contractor	January 2008
Air quality, exposure, and risk assessment modeling	Contractor	Final report, electronic files	November 2008
Two-day training for JATAP members	Contractor	Training on models and methods employed by the contractor	December 2008
Attendance at a national monitoring conference	Contractor, JATAP members	Present paper at the conference	2009

Environmental Outputs and Outcomes:

The environmental benefits of conducting this work, for the short- and mid-term, concern at least three tangible aspects of hazardous air pollutants control:

- Performing the risk assessment would be the first major step in recouping EPA’s investment in the 2005 monitoring program. Considering that \$500,000 was spent on the project, and that JATAP members contributed much in-kind labor, the information collected is of a magnitude that necessitates a human risk analysis.
- JATAP members will benefit from both getting to know their local emissions better in constructing the micro emissions inventories and from the training in the modeling system.
- Local communities in the vicinity of the monitors will benefit from having definitive information on the actual threats posed by hazardous air pollutants.
- EPA’s National-scale Air Toxics Assessment (NATA) will benefit through comparisons of its modeled concentrations with this set of measurements and of its risk assessment with the risk determined in this proposal. As an example, the 1999 NATA mean concentration estimates for eight compounds were 50 to 70% lower than the seven-site annual means from the 2005 JATAP monitoring. NATA’s estimate for vinyl chloride, on other hand, was 250% higher than the JATAP average.

- Of particular interest to the national air toxics community are the hazardous air pollutant concentrations at the Greenwood site – the one close to two major freeways and a major arterial. This unique site provides concentration profiles within a freeway corridor, from which near-freeway risk assessments can be made.

JATAP has as its overarching goal a complete, metropolitan-wide risk assessment, based on a comprehensive gridded emissions inventory, using meteorological, regional air quality model with fine resolution (2x2 or 4x4 kilometers), exposure, and risk assessment models. Although the work proposed here would have limited geographical extent, the risk estimates produced would serve as a stepping stone to interpret the results of any future, more definitive work. Furthermore, as this goal includes a vigorous community outreach effort, the future work would lead to a much more comprehensive educational campaign that would provide hazardous air pollutants/risk information to the educational and medical communities throughout the area.

JATAP's members have met regularly for six years. These meetings will continue as the Project progresses and will serve to gauge how well the milestones are being met. The overall success of the project will be determined by

1. Populations for which the contractor can assess risk, i.e. the size of geographic study areas that could be extended away from the monitoring sites.
2. How well the contractor is able to account for urban background concentrations of hazardous air pollutants; and how well the contractor can estimate the hourly variation in concentrations based on permanent gaseous and particulate monitors.
3. How effective the community outreach efforts are at conveying the hazardous air pollutants information.

The results of this work will be transferable to other areas in metropolitan Phoenix with similar wind fields and emission densities. Other western cities with similar climates would be able to use the study to estimate risks in neighborhoods not unlike those around the monitoring sites. The monitoring record, as summarized in Table 2, provides national investigators a clear picture of hazardous air pollutants concentrations in metropolitan Phoenix and can be used in any kind of national survey work.

The Arizona Department of Environmental Quality's Air Quality Division has conducted numerous air pollution control and applied air pollution science projects for 35 years. Among these programs have been the control of sulfur dioxide from copper smelters; numerous State Implementation Plans for particulates, carbon monoxide, and ozone; the continuing vehicle inspection and maintenance programs in Phoenix and Tucson; granting permits to large, stationary sources; periodic inspections of permitted sources; and the operation of a statewide network of air pollutant monitors, whose data are checked for quality, archived, submitted to EPA, and are interpreted and analyzed.

Key Personnel

Steven Peplau, Manager, Air Assessment Section (36 staff), former Director (six years) of the Maricopa County Air Quality Department, former engineer and upper-level manager for the Connecticut Department of Air Quality (25 years)

Peter Hyde, Supervisor, Air Evaluation Unit (6 staff), 30 years experience in the applied scientific aspects of air pollution control, including air quality modeling, dispersion and regional, and the numerical analysis of emissions and air pollutant concentration data.

Table 4. Budget:

	Requested	Match
Total this grant	\$195,000	\$36,900
Personnel		
Salaries & Wages	0	\$18,100
Fringe Benefits/Indirect	0	\$18,800
Non-Personnel		
Contract Services	\$192,000	0
Equipment	0	0
Supplies	0	0
Travel	\$3,000	0
Other Costs	0	0
Personnel Breakdown		
Salaries & Wages		
2 analysts/1 manager (3 months)		\$18,100
Fringe Benefits		
@.36 times salary		\$6,500
Indirect .4991 times \$24,600		\$12,300
Total Salaries and Wages		\$36,900
Contract Services		
One risk assessment	\$152,000	
One outreach coordinator	\$40,000	
Total	\$192,000	
Out of State Travel		
2 staff attend one EPA conference	\$3,000	

Environmental Results Past Performance and Programmatic Capability:

The Arizona Department of Environmental Quality's Air Quality Division has successfully executed and documented numerous projects in the last 35 years, most of them funded through EPA Region 9. A sampling is given in Table 5.

Table 5. ADEQ Projects

Agreement	Nature of work	Outcome	Documentation
JATAP 2005 monitoring	\$500K grant for hazardous air pollutants monitoring to ADEQ and two tribal governments	Successful	JATAP QAPP Sonoma Final Report
National Hazardous air pollutants Trends Station	Conduct monitoring in accordance with this program at the Phoenix Supersite	Successful, Chrome VI added in 2007	Data submissions to AQS
Nogales PM Source Apportionment	3-yr study by ASU, overseen by ADEQ, 200K	In progress	Quarterly reports
Western Arizona Sonora Border Air Quality Study	Multi-year PM and hazardous air pollutants monitoring, emissions inventory, air quality modeling, risk assessment	1-yr of air pollution monitoring to finish in April 2007; along with 3 yrs of met monitoring; EI is underway with a \$300K contract	Monthly meetings, preliminary data analyses, annual reports to the border coordinator of Region 9
Tonto National Monument Aerosol Study	Chemical characterization of fine PM; trajectory analyses through \$200K grant to ASU	Successful	Doctor's thesis by Charity Courtney, January 2007
Phoenix PM source apportionment	\$250K, 3-yr project to using organic tracers to identify sources of the aerosol by ASU	Monitoring & chemical analyses completed; data analysis underway	Quarterly reports

The organizational experience within the Air Assessment Section is extensive as it relates to conceiving, contracting out, or carrying out multi-dimensional projects. The Section's annual budget is \$1,200,000, a majority of which is spent on contractors and major instrument purchases. The Department's Procurement Office provides excellent service in obtaining technical assistance from contractors. Three staff specializes in emission inventory work and the latest vehicular and non-road models are in use.

The three objectives of the project are building the micro emissions inventories, selecting and consulting with the contractor to craft the best possible risk assessment, and conveying its results to the affected communities. These will be achieved by ADEQ taking the lead coordination role with the JATAP members to ensure that the inventories are built consistently. Regular meetings and review of the various inventories will be conducted by ADEQ staff. While contractor selection may be straightforward, designing the precise form of the air quality modeling to maximize the representativeness of the monitored data is not. ADEQ staff has ample experience in both dispersion and grid-based regional models to ensure that the contractor's modeling protocol will be sufficient. Through their collective experience and expertise, ADEQ staff is more than capable of guiding this proposed project to a successful completion.