Version 7/03

APPLICATION FOR FEDERAL ASSISTANCE

		2. DATE SUBMITTED	Applicant Identifier
1. TYPE OF SUBMISSION: Application ☐ Construction ☒ Non-Construction	Pre-application ☐ Construction ☐ Non-Construction	3. DATE RECEIVED BY STATE	State Application Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: Wisconsin Department of Natural Resources	Organizational Unit: Department: Wisconsin Department of Natural Resources
Organizational DUNS: 809-611-247	Division: Air & Waste
Address: P.O. Box 7921	Name and telephone number of person to be contacted on matters involving this application (give area code)
Street: 101 S. Webster Street	Prefix: Ms / First Name: Sheralynn
City: Madison	Middle Name: Susan
County: Dane	Last Name: Stach
State: WI / Zip Code: 53707-7921	Suffix:
Country: U.S.A.	Email: Sheralynn.stach@dnr.state.wi.us
6. EMPLOYER IDENTIFICATION NUMBER (EIN): 3 9 - 6 0 0 6 4 3 6	Phone Number (give area code): (608) 264-6292 / Fax Number (give area code): (608) 267-0560
8. TYPE OF APPLICATION: ☒ New ☐ Continuation ☐ Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.) ☐ ☐ Other (specify)	7. TYPE OF APPLICANT: (See back of form for Application Types) A Other (specify): 9. NAME OF FEDERAL AGENCY: U.S. Environmental Protection Agency
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 6 6 - 0 3 4 TITLE (Name of Program): Surveys, Studies, Investigations, Demonstrations and Special Purpose Activities Relating to the Clean Air Act (B)	11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Mobile Monitoring Trailer for Roadways: Development and testing of a mobile monitoring trailer for improved VOCs and particulate carbon monitoring near roadways.
12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc): Statewide	14. CONGRESSIONAL DISTRICTS OF: a. Applicant: Second / b. Project: All
13. PROPOSED PROJECT Start Date: 10/01/2007 / Ending Date: 03/31/2009	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. O. 12372 ☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

15. ESTIMATED FUNDING:

a. Federal	$115,930.00
b. Applicant	0.00
c. State	
d. Local	
e. Other	
f. Program Income	
g. TOTAL	$115,930.00

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
☐ Yes 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: P.	Middle Name: Scott
Last Name: Hassett		Suffix
b. Title: Secretary		c. Telephone Number (give area code): (608) 266-2121
d. Signature of Authorized Representative: Scott Hassett		e. Date Signed: 4/5/07

Previous Edition Usable

Standard Form 424 (Rev. 9-2003)

INSTRUCTIONS FOR THE SF-424

This is a standard form used by applicants as a required face sheet for pre-applications and applications submitted for Federal assistance. It will be used by Federal agencies to obtain applicant certification that States which have established a review and comment procedure in response to Executive Order 12372 and have selected the program to be included in their process, have been given an opportunity to review the applicant's submission.

Item:	Entry:	Item:	Entry:
1.	Select Type of Submission.	11.	Enter a brief descriptive title of the project. If more than one program is involved, you should append an explanation on a separate sheet. If appropriate (e.g., construction or real property projects), attach a map showing project location. For preapplications, use a separate sheet to provide a summary description of this project.
2.	Date application submitted to Federal agency (or State if applicable) and applicant's control number (if applicable)	12.	List only the largest political entities affected (e.g., State, counties, cities).
3.	State use only (if applicable).	13.	Enter the proposed start date and end date of the project.
4.	Enter Date Received by Federal Agency Federal identifier number: If this application is a continuation or revision to an existing award, enter the present Federal Identifier number. If for a new project, leave blank.	14.	List the applicant's Congressional District and any District(s) affected by the program or project
5.	Enter legal name of applicant, name of primary organizational unit (including division, if applicable), which will undertake the assistance activity, enter the organization's DUNS number (received from Dun and Bradstreet), enter the complete address of the applicant (including country), and name, telephone number, e-mail and fax of the person to contact on matters related to this application.	15.	Amount requested or to be contributed during the first funding/budget period by each contributor. Value of in kind contributions should be included on appropriate lines as applicable. If the action will result in a dollar change to an existing award, indicate only the amount of the change. For decreases, enclose the amounts in parentheses. If both basic and supplemental amounts are included, show breakdown on an attached sheet. For multiple program funding, use totals and show breakdown using same categories as item 15.
6.	Enter Employer Identification Number (EIN) as assigned by the Internal Revenue Service.	16.	Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the State intergovernmental review process.
7.	Select the appropriate letter in the space provided. A. State B. County C. Municipal D. Township E. Interstate F. Intermunicipal G. Special District H. Independent School District I. State Controlled Institution of Higher Learning J. Private University K. Indian Tribe L. Individual M. Profit Organization N. Other (Specify) O. Not for Profit Organization	17.	This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit disallowances, loans and taxes.
8.	Select the type from the following list: • "New" means a new assistance award. • "Continuation" means an extension for an additional funding/budget period for a project with a projected completion date. • "Revision" means any change in the Federal Government's financial obligation or contingent liability from an existing obligation. If a revision enter the appropriate letter: A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration	18.	To be signed by the authorized representative of the applicant. A copy of the governing body's authorization for you to sign this application as official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.)
9.	Name of Federal agency from which assistance is being requested with this application.		
10.	Use the Catalog of Federal Domestic Assistance number and title of the program under which assistance is requested.		

OMB Approval No. 0348-0044

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		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		$0	$0	$115,930	$0	$115,930
2.						
3.						
4.						
5. Totals		$0	$0	$115,930	$0	$115,930

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
a. Personnel			$26,806		$26,806
b. Fringe Benefits			$9,228		$9,228
c. Travel			$808		$808
d. Equipment			$48,000		$48,000
e. Supplies			$10,900		$10,900
f. Contractual			$12,999		$12,999
g. Construction			$0		$0
h. Other			$3,070		$3,070
i. Total Direct Charges (sum of 6a-6h)			$111,811		$111,811
j. Indirect Charges			$4,119		$4,119
k. TOTALS (sum of 6i and 6j)	$	$	$115,930	$	$115,930
7. Program Income	$	$	$	$	$

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.				$
9.				$
10.				$
11.				$
12. Total (SUM OF LINES 8-11)				$

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. Non-Federal	$	$	$	$	$
15. TOTAL (sum of lines 13 and 14)	$	$	$	$	$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
	FUTURE FUNDING PERIODS (years)			
(a) Grant Program	(b) First	(c) Second	(d) Third	(e) Fourth
16.	$	$	$	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: (Salary + Fringe Benefits) x 11.43 %
23. Remarks:	

Project Title:
Development and Testing of a Mobile Monitoring Trailer for Improved VOCs and Particulate Carbon Monitoring Near Roadways.

Application Category: Method Development and Evaluation

Organization: Wisconsin Department of Natural Resources

Contact Information:

Contact Person:	Mark K. Allen
Phone:	608-266-8049
Fax:	608-267-0560
E-mail:	mark.allen@wisconsin.gov

Funding Request: **$115,930**

Project period: October 1, 2007 to March 31, 2009

Project Description:

The Wisconsin DNR will develop a mobile monitoring trailer to house a gas chromatograph and a particulate carbon monitor. When developed the unit will be tested to demonstrate that data quality meet the needs of modelers and risk assessors. The trailer will provide short-term hourly measurements necessary for studying dynamic emissions and atmospheric processes. It will also provide high quality measurements at multiple locations needed to assess the public's risk.

Roadways in the urban environment are increasingly indicated as significant sources of air pollution affecting public health. Computer modeling of roadway, with Graphic Information Systems (GIS) can help us understand the roadway impacts on air quality. Improving the calibration of computer modeling will require "ground truthing" the model's predictions. Monitoring systems that can identify the spatial and temporal nature of mobile source emissions can improve models but will require extending our knowledge of volatile and particulate air pollutants in the urban environment.

Current technologies for sampling volatile organic compounds (VOCs) and particulate carbon rely on long term monitoring projects at fixed monitoring locations. While these monitoring sites provide valuable information, the area where measurements are made is limited. Furthermore, past monitoring site locations were often chosen to minimize roadway impact. Passive samplers can be used in saturation type studies near roadways and adjoining neighborhood. The Wisconsin DNR has tested alternate techniques like passive monitoring. The draw back to the passive techniques is that the samples are usually collected over weekly time periods. Passive samplers are also limited in the pollutants that can be monitored. Understanding dynamic short-term changes in pollutant concentrations requires complex analyzers. We propose to develop and test a mobile monitoring site with analyzers mounted in a trailer. The trailer will be supplied with an on-board power generator to allow system operation at field locations. The proposed system can be used to collect high quality short time resolved data near roadway and at other locations of interest.

Goals for the monitoring project will be the following:

1. Purchase and equip a trailer to function as a mobile monitoring platform. The trailer should provide an operational environment for analytical instruments.
2. Install a Perkin Elmer Automated Ozone Precursor Analysis System on board the trailer and develop methods for operating the analyzer on-board the trailer.
3. Install a Magee Aethalometer on board the trailer and develop operating conditions for this analyzer on-board the trailer.
4. Field test the system and assess the utility of the monitoring trailer for various monitoring scenarios.
5. Deploy the Mobile Monitoring Trailer in field studies and use monitoring data to aid in the validation of modeling results and to improve risk assessments.

Background Information:

Air pollution in the urban environment is increasingly indicated as a significant factor affecting the public health. Within urban areas, roadway emissions are thought to be very significant and sometimes the most significant source of air pollution. EPA has reported mobile source emissions may account for 50% or more of the cancer risk in urban areas (Federal Register, Vol. 71). Currently much of the work to document health risks is epidemiological. Several studies have shown increased respiratory health problems associated with traffic related air pollutants (Morgenstern et. al.,2007, Pierse, et. al.,2006). There are also studies showing relationships between traffic counts and respiratory health effects (Ciccone, et. al.,1998). While there is increasing evidence to suggest links between health effects and mobile source air pollution there is not a firm link between distance from roadway and asthma (Livingstone, et. al.,1996). While questions exist about risks in relation to one's proximity to roadways, it has been shown that exposure to mobile source emissions increases health problems including cardiovascular disease, respiratory diseases and cancers.

Significant risk drivers from mobile sources include benzene and fine particulate matter. Benzene is a ubiquitous aromatic hydrocarbon that is present in gasoline and is also formed in many combustion processes. Benzene is a known human carcinogen and is considered one of the most significant risk drivers in the urban environment. Mobile source emissions make up the major source of benzene in the urban environment (Fruin et.al., 2001). Models show that the exposure from roadways is related to the distance from the roadway (Funk and Lurmann, 2001). Monitoring studies suggest that for mobile source pollutants, like benzene, the outdoor and indoor air concentration are similar and indicate ambient air is the most important exposure driver (Paynes-Struges et. al., 2004).

The use of ethanol additive and ethanol based fuels has been shown to reduce benzene concentrations in ambient air. The increased use of locally produced ethanol is seen as a way to reduce dependence on imported petroleum. Efforts to increase the use of ethanol might be helped by measurement of current benzene exposure and demonstration of reductions as ethanol based fuel use is increased.

Many questions remain about benzene in the urban environment that warrant further study. First, what are the accuracy of the current stationary source and mobile source inventories in predicting ambient benzene concentrations? How to address the relative contributions of both major roadways and the numerous minor urban roadways as sources of benzene? Are there other significant sources that also need to be addressed or that might be more easily controlled? How

quickly is benzene dispersed from the roadways to the adjoining environment? What are benzene exposures in neighborhood environment?

Roadways are also a major source of fine and ultra fine particulate matter. The fine particulate matter (PMfine) can enter deeply into the lungs and cause tissue damage. Diesel emissions are a major source of PMfine. The 1999 National Air Toxic Assessment (NATA) assigned 100% of the diesel PM from mobile sources. Fine particulate matter can also be linked with VOCs. The group of heavier, less reactive VOCs called "aromatics" have been associated with the formation of organic carbon (OC) fine particles (Grosjean and Seinfeld, 1989). Consequently, measurements of aromatic VOCs (e.g., toluene, benzene, xylene) would be helpful in estimating the relative impact of these precursors to OC PMfine at monitoring sites. PMfine is currently monitored by filter-based techniques and some limited real-time analytical instruments (TEOMs and Aetholometers). The passive monitoring techniques used by the WDNR to measure roadway benzene concentrations are not effective at measuring particulate matter. We believe that analytical techniques like the aetholometer will provide data that when combined with the VOC measurements will provide toxicologists and other health professionals the data necessary to assess major risk sources in the urban atmosphere.

In assessing exposure, studies have shown poor correlation between self-reported traffic air pollutants exposure and modeled concentrations near roadways (Heinrich,J. et.al.). Modeling has been and will continue to be the primary tool used to show the dispersion of air pollutants from the roadways. The model concentration data can in turn be used to assess the risk of the public. Modeling efforts like the Regional Air Impact Modeling Initiative (RAIMI) combine dispersion modeling with risk assessment to form an important assessment tool that can be used at the state, local and neighborhood levels of analysis. We expect this effort to be especially important for understanding exposure gradients in areas near roadways, which increasingly have been identified in the public health literature as being a potentially variable to consider in epidemiology.

The ability to ground truth modeling data becomes very important if that data is to be used by regulators. Currently the ability to check data is limited to a few monitoring stations. The National Air Toxics Trend System (NATTS) network compromises only 22 stations nationally. While these NATTS sites provide the highest quality data they are very limited in the areas they reach. Assessing the impacts of benzene and other significant volatile pollutants requires the NATTS site data be supplemented with PAMS monitoring data and with local monitoring data. Even with multiple networks taken together the number of monitoring points is smaller than available data for ozone and particulate networks. Another unknown is whether kriging techniques or inverse distance weighting used with regional pollutant data can be effectively be used to interpolate toxic pollutant concentrations.

Examples of the limitation of current modeling include;

- RAIMI modeling of the Milwaukee interstate highway emissions showed benzene concentrations of 0.2 to .27 ug/m3 at the roadway's edge. Modeling also showed the benzene concentration decreasing with increasing distance from the roadway. Recent monitoring by the Wisconsin DNR at modeled locations found benzene concentrations ranging from .6 to 1.3 ug/m3. Monitoring also showed that concentration remained high in the neighborhood adjacent to the roadway. Monitoring suggests the modeling was significantly lower than the monitored values and there is concern that modeling does not correctly show benzene distribution in the urban environment.
- Wisconsin toxicology staff question why NATA risks from background are high, especially in rural Wisconsin like Forest and Vilas counties where most of the land is national forest.

Wisconsin toxicology staff believe it is implausible the background risks in these counties are truly as high as what shows up in NATA.

Air monitoring studies focusing on roadways has been limited. Many current monitoring sites were set up to avoid direct impacts from roadways. Additional monitoring studies will be needed if we are to demonstrate the value of modeling and to better understand the causal link between roadway traffic, increased emissions, spatial and temporal exposure gradients and provide and estimate of exposure that can be potentially lined to studies of health effects. In Wisconsin, monitoring studies will be of direct benefit to DNR planning staff and to other state and local health agencies.

Efforts to link epidemiological studies, modeling, monitoring, and risk assessment can be used by regulators to determine if emission reductions like those proposed for mobile sources (Federal Register, Vol. 71) can obtain the desired risk reductions.

Proposed development of a mobile monitoring trailer

Wisconsin has a well-established and developed Photochemical Assessment Monitoring Program. The program makes use of discrete sampling for VOC and carbonyl compounds. The program has also routinely operated a field deployed gas chromatographic system, the Perkin Elmer Automated Ozone Precursor Analysis System (hereafter AutoGC). The AutoGC system provides hourly monitoring of 55 hydrocarbons compounds, many of which originate from mobile sources. In recent years the Wisconsin DNR has extended the value of the AutoGC system by using the system to analyze passive sample collected near roadways. We will be phasing out the current PAMS AutoGC monitoring site thus making the AutoGC system available for other uses.

The gas chromatographic system is complex, comprised of an air sampler, a sample preparation system (Automated Thermal Desorption System), a gas chromatograph with dual FIDs, a data interface, and computer. The components are not easily transportable. Moving the system to alternate locations would require dissembling the system and then reassembling at the new location. To continue to operate the AutoGC system and to extend its operations the Wisconsin DNR will develop a mobile monitoring trailer to house the system. Within the mobile monitoring trailer the assembled AutoGC system can be operationally maintained. To increase the value of the monitoring trailer we plan to add a particulate carbon monitor. Together the gas chromatograph and the particulate carbon monitor will provide valuable data supporting studies of roadway air pollutants. When developed the unit will be tested to show data quality meets the needs of modelers and risk assessors. The trailer will provide short-term hourly measurements necessary for studying dynamic emissions and atmospheric processes. It will also provide high quality measurements at multiple locations needed to assess the public's risk. After the current modeling project is finished, this system can continue to be used for monitoring roads or it can be used to study other locations in Wisconsin (e.g., near point sources, to evaluate whether emissions have been adequately characterized.

The Wisconsin DNR's development of this mobile monitoring trailer will provide an important monitoring tool to better understand the sources, dispersion, and temporal and spatial variations in concentrations of both VOCs, like benzene, and of particulate carbon. While benzene and particulate carbon will be the primary focus of the project, the gas chromatographic system will measure related hydrocarbons to support the assessment of the sources and the impacts of roadway emissions.

Soundness of Proposed Methodology
The Wisconsin DNR has an established record of carrying out environmental projects similar to what is here proposed. In 1999, the Wisconsin DNR partnered with the states of Minnesota and Michigan to develop a mobile monitoring platform for measuring mercury emissions (Taylor-Morgan, Swain, and Allen, 2003). The mercury monitoring trailer, show in Figure 1, has proven to be an effective tool for investigating mercury emissions. We will use the mercury monitoring trailer as a model for the support environment in the new monitoring trailer.

Wisconsin staff have experience in the operation and maintenance of the Perkin Elmer Automated Ozone Precusor Analyzer. We have operated the system each summer since 1999. Wisconsin DNR's current methodologies and methods have been proven in the Photochemical Assessment Monitoring Station (PAMS) and Urban Air Toxic Monitoring (UATM) projects. Staff have experience in processing, reviewing, and managing the gas chromatographic data. This includes experience with TotalChrom (Perkin Elmer) and VOCdat (STI) software. The Wisconsin DNR has established operating procedures for these parameters including Standard Operating Procedures (SOPs) and Quality Assurance Project Plans (QAPPs).

The Wisconsin DNR staff have operated the sonic three dimensional meteorological monitoring system we propose to add to the monitoring trailer. This unit was used in our 2005 study of mercury fluxes (Allen, Adamski et. al.,2005). Wisconsin staff have experience in roadway monitoring including a short intensive study of reformulated gasoline components (Allen, Grande and Foley, 1996) and our current study with passive samplers. These monitoring projects have included monitoring near roadways as well as exposure studies during vehicle refueling.

To facilitate the operation of the trailer, the Wisconsin DNR has already established several sites in the state where a monitoring trailer, as planned, can be operated on available line power. These include a Milwaukee site, a Chiwaukee Prairie site, and two sites in Madison.

Benefits of the Project:

The project will provide an important tool for the collection of data to be used in model evaluation and risk assessment. Once developed and tested, the monitoring trailer will be useful for evaluating emissions near roadways and the diffusion of pollutants like benzene into adjoining neighborhoods. The monitoring technique should provide data for "ground truthing" emission models and risk models. The technique will also be useful in evaluating shifting emission patterns that may result from changing roadway and population patterns. The measurement data from this project would provide support in interpreting the RAIMI study in Milwaukee County and the on-going RAIMI modeling effort in Dane County. The mobile monitoring trailer could be used to support the Dane County Healthy Community Initiative, which has identified the prioritization of pollutant sources as a key activity. Mobile sources have been identified as significant contributors to air pollution in Dane County.

The monitoring trailer would also be of value to provide readily available monitoring to follow up exceptional events. Examples of this include the July 2005 tire fire in Watertown, Wisconsin. The trailer will not be used for first response but may find value in follow up monitoring to help assess continued risk to exposed populations in the aftermath and clean up process.

Statement of Work Tasks:
Task 1: Develop the guidance documents for staff to initiate and complete the monitoring project

Objectives: Develop a complete project plan for assembling the mobile monitoring trailer.

Methods: The Project Plan will be developed to ensure EPA and DNR managers are fully informed of the goals and methods that will be used in the monitoring project. The plan should outline how component parts will be purchased, how the parts will be assembled, and tested. The monitoring plan will outline work tasks assigned to project staff. It will also indicate staff responsibilities. The Project Monitoring Plan plans will include detailed information on selecting monitoring sites, sampling schedules, staff work assignments, and data management. Existing DNR software tools and databases will be assessed for the ability to store and manage project data. If necessary, a plan will be developed to handle data that does not conform to the existing database standards.

Outputs: A Project Plan and other guidance documents for project staff to use in conducting the monitoring study

Completion time: December 1, 2007.

Task 2: Procure a custom-outfitted trailer and associated components to assemble a mobile monitoring platform.

Objectives: To purchase or procure through other means (loans, rental, etc.) components to be assembled into a monitoring trailer platform. Purchase other equipment or supplies required for the project.

Methods: Capital equipment and supplies will be procured using standard State of Wisconsin procedures for obtaining resources. Wisconsin DNR staff will oversee the assembly and installation of trailer systems. Staff will directly install all necessary monitoring equipment.

Outputs: Sampling components to be assembled into a mobile monitoring trailer.

Completion time: March 31, 2008

Task 3: Test the operation of an Aethlometer to be used in the monitoring trailer. Develop analytical procedure for routine operation of the Aethlometer by Wisconsin DNR staff.

Objectives: To develop operational experience in the operation of the Aetholometer, in collecting and in validating data. New monitoring equipment for the monitoring trailer includes an Aethlometer. This system has not been used before by DNR staff and prior to deploying the Aethlometer on the trailer we will test the operation at an existing fixed site.

Methods: The development and optimization of analytical procedures for the Aetholometer will follow instrument operating instructions as well as standard Wisconsin DNR practices for testing new equipment. Staff will investigate quality control tests that could be used to demonstrate the quality of the measurement.

Outputs: Preliminary Standard Operating Procedures and Quality Assurance Plans for the operation of the Aetholometer.

Completion time: April 30, 2008

Task 4: Installation of the Ozone Precusor Analyzer and the Aetholometer in the monitoring trailer.

Objectives: To complete the mobile monitoring trailer and install the analytical systems to be housed in the trailer.

Method: The Ozone Precusor Analyzer would be dissembled and the components moved into the trailer. The components would be secured appropriately to prevent damage and allow operation. Guidance for the reassembly is provided in Perkin Elmer's VOC Ozone Precusor Analyzer User's Manual (0993-8970). Staff may also make use of experts consultants (Chromian) if needed to resolve assembly and operational issues. The installation of the Aetholometer will make use of experience gathered in Task 3.

Outcomes: When completed the mobile monitoring trailer should be operational and ready for field-testing.

Completion Time: May 15, 2008.

Task 5: Use the Trailer to conduct Summer PAMS Monitoring

Objectives: Conduct summer 2008 PAMS monitoring using the trailer sited at the current Milwaukee SER Headquarters PAMS site (55-079-0026).

Methods: Monitoring will follow the protocols currently used at the Milwaukee PAMS site.

Outcomes: By using the trailer for PAMS monitoring we will continue PAMS data collection, gain experience, and gain confidence in the use of the trailer platform.

Completion time: September 15, 2008.

Task 6: Field-test the trailer for Roadway and other monitoring operations.

Objectives: To operate the trailer at several test location to show the operational use of the trailer.

Method: Several field studies will be undertaken to test the operational capability of the trailer's analytical system to measure for continuous short term (1-hour) concentrations.

Outcomes: This task will complete the field studies part of the project.

Completion Time: Roadway study will be completed by December 31, 2008.

Key Project Personnel:
Project Manager(PM) – Mark Allen will serve as overall manager for the project. He has experience in writing all necessary documentation for the project. He has experience in the purchasing and overseeing contractual work like that required for the project. He also has experience in the operation and maintenance of the AutoGC system to be used on the monitoring trailer.
Project Technical Leader – David Grande will oversee technical operation of the monitoring trailer and oversee the field studies conducted with the trailer. Mr. Grande has extensive experience in conducting monitoring field studies.

Additional information on Mr. Allen and Mr. Grande has been included in Attachment B of this proposal.

Collaboration:

When the mobile monitoring trailer has been assembled and tested the Wisconsin DNR will work with the Wisconsin Department of Health and Family Services in planning and conducting any roadway or other field studies. The Wisconsin DNR will also work with local health agencies including the City of Madison in conducting field studies.

Letters of support from the Wisconsin Department of Health and Family Services and the Madison Department of Public Health are included in Attachment A to this proposal.

Project Budget:

a. Personnel	$26,806
b. Fringe Benefits	$9,228
c. Contractual Costs	$12,999
d. Travel	$808
e. Equipment	$48,000
f. Supplies	$10,900
g. Other	$3,070
h. Total Direct Costs	$111,811
i. Total Indirect Costs: must include documentation of accepted indirect rate	$4,119
j. **Total Cost**	**$115,930**

Additional Resources: The above budget reflects the funds needed to complete this project. The project will make use of existing equipment and DNR facilities. Included are a gas chromatographic analysis system and a sonic three-dimensional meteorological sensor. The existing PAMS monitoring sites in Milwaukee will be used for the initial field study and the WDNR Science and Operations Center in Madison will be used for assembling and testing the mobile monitoring system.

Quality Assurance for the Project:
The primary goal for this project is to develop a working monitoring station that can be transported to locations for short term monitoring studies. As outline in this proposal the mobile station would be able to measure VOCs, particulate carbon, and ancillary measurements (meteorology). Quality assurance goals for the project will be to develop operating procedures and quality control plans to ensure reliable data measurements are made with the analytical systems. Important quality assurance tasks for this project include the following:

- Develop necessary quality assurance plans for the project. Quality assurance plans currently exist for the operation of the analytical system at fixed sites. The goal will be to review and update those plans to address operations in the mobile trailer.
- Develop and document analytical methods used for air sampling on the mobile trailer.
- Develop a data management plan to store and review project data collected on the trailer.
- Use statistical tests to evaluate monitoring data collected on the trailer and establish confidence in the measurements.

Reporting
The Wisconsin DNR has an established record of providing quarterly technical reports detailing all current project activities conducted during the previous 90 days. We will continue these reports and will include activities associated with this project. The report will also address any significant findings that will affect activities in the next calendar quarter.

A final report on the project will be submitted to the designated EPA Project Officer by March 31, 2009. The final report will describe the work completed in this project and will detail all air monitoring studies carried out with the trailer over the course of this project. Included in the final report will be the work to assemble the trailer and install analytical systems in the trailer; all testing conducted to optimize and evaluate the operation of the analytical systems; a summary of the trailer operations during the 2008 PAMS monitoring season (June, July, and August). Summaries of follow-up studies will list the goals of the monitoring project and how the mobile monitoring station addressed those goals.

The Wisconsin DNR will work with EPA's Air Quality System staff to, where appropriate, include ambient monitoring data in the AQS database. It may be necessary for AQS to develop new routines to handle data collected with the sampling proposed in this project.

References:
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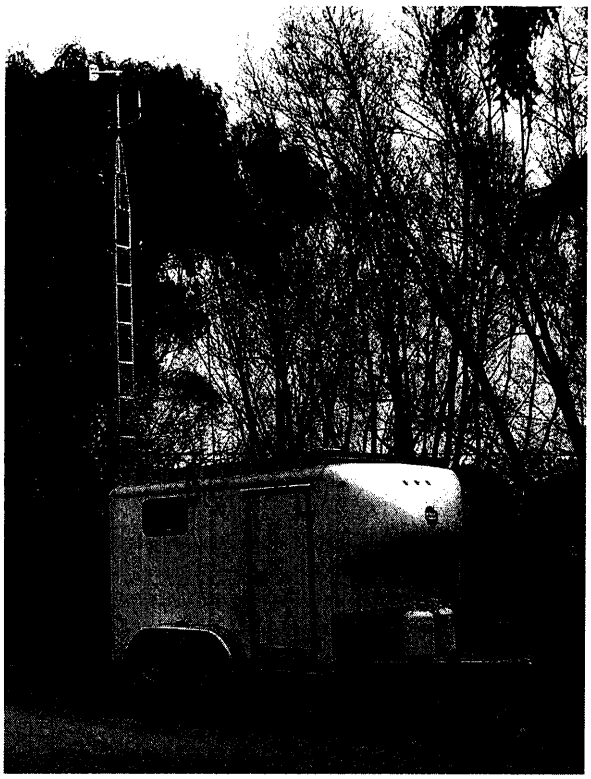

Figure 1: The Mercury Monitoring Trailer was developed cooperatively by Michigan, Minnesota, and Wisconsin. This mobile laboratory for monitoring mercury emission will be a model for the mobile monitoring station we propose to develop for VOC and fine particulate carbon.

Attachment A: Letters of Support

Jim Doyle
Governor

Kevin R. Hayden
Secretary

State of Wisconsin

Department of Health and Family Services

DIVISION OF PUBLIC HEALTH

1 WEST WILSON STREET
P O BOX 2659
MADISON WI 53701-2659

608-266-1251
FAX: 608-267-2832
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dhfs.wisconsin.gov

March 9, 2007

Mr. Mark Allen
Chemist
Division of Air and Waste
Environmental Analysis & Outreach Section
Wisconsin Dept. of Natural Resources
101 S Webster Street - AM/7
Madison WI 53703

Dear Mark:

This letter offers enthusiastic support for the Wisconsin Department of Natural Resources application for a USEPA Community Assessment Monitoring Grant to fund the project, "Development and Testing of a Mobile Monitoring Station for Improved VOCs and Particulate Carbon Monitoring Near Roadways".

Characterizing roadway emissions, in particular VOC and particulate components, is an important step in assessing health impact. Developing a mobile monitoring capability to respond to and evaluate emission sources outside of fixed monitoring stations is also a desirable objective. We anticipate this project will enhance our ability to respond to and evaluate community airborne exposures throughout the State of Wisconsin. We therefore support the funding and implementation of this project.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Henry A. Anderson, MD
Chief Medical Officer
Bureau of Environmental & Occupational Health
Wisconsin Division of Public Health
ANDERHA@dhfs.state.wi.us
(608) 266-1253

This is a photocopy of the support letter. The original letter is held in the Wisconsin DNR's files.

Mobile PAMS Monitoring 10/01/2007 - 03/31/2009			
A.			
	FTE	Project Manager: 150 hours @ $27.00/hr	$4,050
		Technical Manager: 300 hours @ $23.354/hr	$7,006
		FTE subtotal	$11,056
	LTE	Electrical Technicial: 1,040 hours @ $15.144/hr	$15,750
		LTE subtotal	$15,750
		Salary Total	$26,806
B.	**Fringe**		
	FTE	$11,056 * 48.45%	$5,357
	LTE	$15,750 * 24.58%	$3,871
		Fringe Total	$9,228
C.	**Travel**		
	Travel to Milwaukee for oversite and service: $108 meals (2 staff for 6 trips)		$108
	Travel to various locations statewide for monitoring operations: $200 meals (2 staff for 10 trips) + $500 lodging		$700
		Travel Total	$808
D.	**Equipment**		
	Wells Cargo Cw1212-102 Trailer		$7,000
	Interior trailer walls and workbench cabinets		$5,000
	Generator with transfer		$5,000
	Met tower folding		$6,000
	Aethalometer with PM2.5 Inlet		$25,000
	Perkin Elmer Ozone Precurseor Analysis System		$0
	CSAT Three dimensional meter		$0
		Equipment Total	$48,000
E.	**Supplies**		
	LP gas tanks with mounts and controls		$1,000
	Miscellaneous trailer hardware		$1,000
	Laptop computer for datalogger (including docking station, software licenses and miscellaneous parts)		$3,500
	BUD electrical rack		$1,000
	Uninterruptible power source		$1,000
	GPS unit with data logging		$500
	Gas regulators (3 @ $600 each)		$1,800
	Gas line tubing and fittings		$200
	Gas line filters (6 @ $150 each)		$900
		Supplies Total	$10,900
F.	**Contractual**		
	SLOH	UATM-SS comparison sampling (8 @ $306.08 ea)	$2,449
	Campbell Scientific	recalibration	$550
	Chromian	GC service	$10,000
		Contractual Total	$12,999
G.	**Construction**	Construction Total	$0
H.	**Other**		
	Vehicle Expense (Milwaukee): 6 trips*200 miles/trip*$.46 per mile		$552
	Vehicle Expense (Madison): 10 trips*30 miles/trip*$.46 per mile		$138
	Vehicle Expense (statewide): 10 trips*300 miles/trip*$.46 per mile		$1,380
	Administration: Allocable share of general office supplies and expenses (such as pens, pencils, printer paper, note paper, tape, postage, copy machine costs, computer usage, etc.)		$1,000
		Other Total	$3,070
I.	**Total Direct Charges (sum of A - H)**		**$111,811**
J.	**Indirect**		
	Salaries + Fringe * Indirect Rate (.1143)		
		Indirect Total	$4,119
K.	**Totals (sum of I and J)**		**$115,930**

Surplus equipment valued at $96,032 purchased from state funds in FY99.
Surplus equipment valued at $7,392 purchased from state funds in FY04.

Mileage reflected under "other" based on how it hits the acctg system
Mileage reflected under "other" based on how it hits the acctg system
Mileage reflected under "other" based on how it hits the acctg system