

AMENDED AGREEMENT FOR SERVICES

This agreement is entered into between the Puget Sound Clean Air Agency, a municipal corporation of the laws of the State of Washington, hereinafter referred to as the "Agency" and the University of Washington, Grant and Contract Services, 3935 University Way N.E., Seattle, WA 98105-6613, hereinafter referred to as the "Consultant".

WITNESSETH

WHEREAS, the Board of Directors of the Puget Sound Clean Air Agency deems it desirable to utilize the services of the Consultant to enhance the existing high-resolution mesoscale meteorological modeling tools for western Washington in support of air-quality forecasting for Air Quality Index levels, Agency wood smoke Burn Bans, predicted air stagnation conditions that enhance high fine-particle or ozone events and for planning and testing control scenarios for the Agency; and

WHEREAS, the Consultant represents and warrants that it is available, experienced, and qualified to perform said services with specific expertise and experience in high-resolution meteorological modeling; and

NOW, THEREFORE, the Agency and the Consultant mutually agree as follows;

1. Services

Contractor Shall:

Provide a suite of meteorological analyses and forecast products to the Agency created from twice daily, operational runs using the current and future regional versions of the Pennsylvania State/NCAR Mesoscale Model (MM5).

Create twice-daily (0000Z/1200Z) forecast, Skew-t diagrams, and Meteograms and time-height cross-section graphic products valid at 3 hourly increments from initialization through 72 hours. These products will be for both the 12 and 4-km (through 48-h) domain. Add additional sites as provided by Puget Sound Clean Air Agency.

Develop the capacity for verification at levels above the surface using radiosonde, profiler, and aircraft (ACARS) data.

Develop the capability for selecting model output products at random locations across Washington State using a point and click map interface. Products to include Meteograms, Time/Height Series and Soundings.

Participate in a MM5 verification project to determine model skill in predicting selected meteorological parameters that significantly impact air quality. The consultant will be expected to provide such support as necessary to complete the model assessment following a collaborative technical design process.

Amended Items:

Using the assessment conducted by Washington State University in 2004 (Vaughn, et al), normalize formulations of the ventilation index products and implement changes to improve the clarity of the products to describe: Excellent, Good, Marginal, Poor and Very Poor ventilation conditions.

Implement a full suite of Puget Sound and Washington state map backgrounds to improve readability of graphical products.

Develop online tutorial information to provide more detailed explanations of all MM5 products especially those critical to air quality applications.

Evaluate various approaches to creating analyses of record over the Northwest.

Make improvements in modeling system to enhance forecast skill.

Improve the processing speed of all 12k and 4km products to provide output products to air quality customers earlier in each run cycle.

Evaluate expanding all forecast products out to 96 hours

Develop all necessary processes to insure seamless transition of all graphical products should the consortium decide to move to WRF as our operational model.

Timeline:

Work on new changes in ventilation index: May 2005-September 1st, 2005
New verification system for upper air data: May 2005-November 1st, 2005

Improvements to modeling system: Entire period

Evaluate expansion of forecast time periods: December 1, 2005

Evaluate feasibility of creating an "Analysis of Record" data assimilation capability for all MM5/WRF domains.

Improve speed in delivery of output products. October 30, 2005
Improve readability of products: May – October 1, 2005
Online tutorial: May 2005-September 1, 2005
Random selection of output: September 2005 to end of period.

This agreement extends the previous agreement to February 1st 2006 and increases the total award to \$45,000.

The Agency Project Manager for this study is Mike Gilroy (206) 689-4001
MikeG@psc Clean Air.org. The Consultant shall report results to and submit documents, reports, and invoices to the Project Manager.

2. **Compensation**

The Agency shall retain the Consultant for the total amount of this Agreement, which shall be increased to \$45,000. The Consultant shall invoice the Agency upon completion of the tasks indicated above. The Consultant shall submit invoices to the Manager of Finance and Purchasing, invoices shall be paid within thirty (30) days after review and approval of the Project Manager. Invoices must contain a breakdown of the work performed per task.

The termination of the Agreement is *February 1, 2006*.

3. **Changes** The Agency may, from time to time, require changes in the scope of services to be performed hereunder. Such changes shall be mutually agreed to by and between the Agency and the Consultant and shall be made only by written amendments to this Agreement.

4. **Termination** Either party may terminate this Agreement at any time with or without cause by giving a thirty day (30) written notice to the other party of such termination and by specifying the effective date of the termination; provided that the termination shall be preceded by a face-to-face meeting between the Consultant and the Agency. Upon termination of this Agreement, the Agency, in addition to any other rights provided in this Agreement, may require the Consultant to deliver to the Agency any property specifically produced or acquired for the performance of such part of this Agreement as has been terminated.

The Agency shall pay to the Consultant the amount agreed upon by the Consultant and the Agency for (i) completed work and services for which no separate price is stated, (ii) partially

completed work and services, (iii) other property or services which are accepted by the Agency, and (iv) the protection and preservation of property, unless the termination is for default, in which case the Agency shall determine the extent of the liability of the Agency. The Agency may withhold from any amounts due the Consultant such sums as the Agency determines to be necessary to protect the Agency against potential loss or liability.

5 Agency Access to Data The Consultant shall provide the Agency, at no additional charge, access to all data generated under this Agreement. "Data" includes all information that supports the findings, conclusions, and recommendations of the Consultant's reports, including computer models and the methodology for those models.

6 Consultant Not An Employee of the Agency The Consultant and his or her employees or agents, shall at all times be an independent contractor and not an employee of the Agency and shall not be entitled to compensation or benefits of any kind other than as specifically provided herein. The Consultant will not hold himself/herself out as or claim to be an officer or an employee of the Agency or of the State of Washington by reason hereof, nor will the Consultant make any claim of right, privilege or benefit which would accrue to an employee under Chapter 41.06 RCW.

7. Indemnification The Consultant shall release, indemnify, defend and hold harmless the Agency, its Board of Directors, officers, employees and agents from and against any and all liability, loss, damage, expense, actions, or claims, including costs and attorney's fees which the Agency, its Board of Directors, officers, employees and agents may hereafter sustain, incur, or be required to pay asserting or arising directly or indirectly due to any act or omission of the Consultant, its agents, employees or subcontractors, in the execution, performance or failure to adequately perform the Consultant's obligations pursuant to this Agreement. Provided, however, this paragraph does not purport to indemnify the Agency against liability for damages arising out of bodily injuries to persons or damages caused by or resulting from the sole negligence of the Agency, its Board of Directors, its officers, employees and agents in the execution, performance or failure to adequately perform its obligations pursuant to this Agreement.

8. Subcontracting Neither the Consultant nor a subcontractor of the Consultant (this phrase should be deleted when there is no subcontractor involved) shall enter into subcontracts for any of the services or work contemplated under this Agreement without obtaining prior written approval of the Project Manager.

9. Social Security and Other Taxes The Consultant assumes full responsibility for the payment of all wages, payroll taxes, use, sales, income or other form of taxes, fees, licenses,

or payment required by any State, County or Federal legislation which are now or may, during the term of this Agreement, be enacted as to the Consultant and as to all duties, activities and requirements by the Consultant in performance of the work, and the Consultant shall assume exclusive liability therefore, and meet all requirements thereunder pursuant to any rules and regulations that are now and may be promulgated in connection therewith.

10. **Licensing, Accreditation, and Registration** The Consultant shall comply with all applicable local, state, and federal licensing, accreditation, and registration requirements/standards, necessary for the performance of this Agreement.

11. **Industrial Insurance Coverage** As required by Chapter 51.12 RCW, the Consultant shall provide or purchase industrial insurance coverage prior to performing work under this Agreement and shall maintain full compliance with Chapter 51.12 RCW during the term of this Agreement. If a Consultant is exempt from the requirements of Chapter 51.12 RCW, he/she must carry appropriate liability insurance equivalent to the coverage provided under that chapter. The Agency will not be responsible for the payment of industrial or liability insurance premiums or for any other claim or benefit for this Consultant, or any subcontractor or employee of the Consultant, which might arise under the industrial insurance laws during the performance of duties and services under this Agreement. If the Department of Labor and Industries, upon audit, determines that industrial insurance payments are due and owing as a result of work performed under this Agreement, those payments shall be made by the Consultant; the Consultant shall indemnify the Agency and guarantee payment of such amounts.

12. **Limitation of Authority** Only the Agency's Project Manager shall have the express, implied or apparent authority to alter, amend, modify or waive any clause or condition of this Agreement except for clauses or conditions required by law. Furthermore, any alteration, amendment, modification or waiver of any clause or condition of the Agreement is not effective or binding unless made in writing and signed by the Agency's Project Manager.

13. **Governing Law** This Agreement shall be governed by the laws of the state of Washington. The Consultant, by execution of the Agreement, acknowledges the jurisdiction of the courts of the state of Washington in this matter.

14. **Severability** If any provision of this Agreement or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which can be given effect without the invalid provision, and to this end the provisions of this Agreement are declared to be severable.

15. Nondiscrimination During the performance of this Agreement, the Consultant shall comply with all federal and state nondiscrimination laws, regulations and policies.

16. Noncompliance with Nondiscrimination Laws In the event of the Consultant's noncompliance or refusal to comply with any nondiscrimination law, regulation, or policy, this Agreement may be rescinded, canceled or terminated in whole or in part, and the Consultant may be declared ineligible for further Agreements with the Agency. The Consultant shall, however, be given a reasonable time in which to remedy this noncompliance.

17. Utilization of Minority and Women-Owned Business Enterprises To the extent practicable, when performing the services agreed to under this Agreement, the Consultant should utilize minority-owned and women-owned business enterprises certified by the Office of Minority and Women's Business Enterprises under the state of Washington certification program and shall be subject to applicable requirements of Chapter 39.19 RCW.

18. Content and Understanding This Agreement contains a complete and integrated understanding and agreement between the parties.

**7. The Consultant shall perform the work under this agreement as an independent contractor. Each party to this Agreement agrees to indemnify and to hold harmless the other party from damage to persons or property resulting from the negligence on the part of itself, its employees, its agents, or its officers. Neither party assumes any responsibility to the other party for the consequences of any act or omission of any person, firm or corporation not a party to this agreement.

IN WITNESS HEREOF, the Agency and the Consultant have executed this Agreement.

PUGET SOUND CLEAN AIR AGENCY

CONSULTANT

University of Washington

By:

Bill Evans Date 5-26-05
Board of Directors, Chairperson

Carol Zuches
CAROL ZUCHES
ASST. VICE PROVOST FOR RESEARCH
OFFICE OF SPONSORED PROGRAMS

Attest:

By:

Dennis J. McLerran
Executive Director

Date 5/26/05

Approved as to Form:

By:

Laurie Halvorson
Laurie Halvorson
General Counsel

Date 5/26/05

Budget : P.I. C. Mass, Univ. of Washington

Period: May 1 2005 through Dec 31, 2005

Salaries	C. Mass	Professor, 1 Mo 20%	2,070
D Ovens	Research Meteorologist, 1.2months 100%		6427
Total Salaries			8497
Benefits	Faculty 22.6%, Prof. Staff, 25.5%		2107
Services	Computing services		1589
Supplies	Computing back up supplies etc.		1000
Equipment			
Total Direct Costs			13193
Indirect Costs	51.6% of Direct costs Excl Equipment		6807
Total			20,000