

SAMPLE R&D PWS

HELPFUL HINT: Please note that OFPP has issued guidance stating that the first several phases of R&D work are excluded from having to use a performance-based approach. However, this template provides some guidance on how an R&D performance work statement (PWS) could be written.

SECTION C – PERFORMANCE WORK STATEMENT

BACKGROUND

In this section, describe the nature of the project being investigated and the reason for the research effort. This should include a problem statement like the one illustrated below.

Currently, transportation departments across the country are finding that the current mixture being used to create asphalt is breaking down more quickly than it should. This degradation is costing state highway agencies to replace road surfaces more frequently than planned and the cost of doing so has sky-rocketed. Development of new test procedures and mixture design methods is crucial to the effective implementation of new technologies to the state highway agencies (SHAs) and industry.

The purpose of this contract is to obtain capable and knowledgeable staff to conduct a national effort including data collection, workshops, and technical assistance in order to evaluate, validate, showcase, and promote the use of existing as well as new technology as it relates to asphalt materials, mix and pavement design, and construction quality control. To perform these tasks, [agency] maintains a stationary asphalt binder laboratory and a mobile asphalt mix test laboratory. Central to this effort would be assisting the SHAs to evaluate new equipment and test procedures on active project sites.

CONTRACT OBJECTIVE

The objective of this contract is to obtain technical assistance for the program discussed above.

SCOPE OF WORK

The Contractor shall provide all personnel, supervision and other items and services necessary to provide non-personal technical assistance to the program office as defined in this PWS. The Contractor shall perform to the standards in this contract.

DELINEATION OF CONTRACTOR TASKS

1. FIELD WORK

The Contractor shall provide sufficient manpower to perform all asphalt related tests on active project sites as specified in the testing plan developed by the contractor and approved by the Contracting Officers Technical Representative (COTR).

- 1.1 **Test Plan.** The Contractor shall develop a test plan based on the testing needs of the COTR and the requesting agency where the field work is to be performed. The details of the testing plan will require the Contractor to visit the requesting agency's place of business and discuss the specific testing needs over the telephone. Upon written approval of the test plan by the COTR, the Contractor shall ensure that all equipment required in the test plan is available in the labs and is in working order. The scheduled start of field work shall be mutually agreed upon by the COTR, requesting agency and Contractor. As a minimum each test plan should include the following routine asphalt tests:

Asphalt Binder Tests

- a. Penetration of asphalt cement.
- b. Viscosity of asphalt, kinematic, and vacuum capillary.
- c. Asphalt Specific Gravity Test.
- d. SHRP Asphalt Binder Specification Test:
 - Bending Beam Rheometer
 - Dynamic Shear Rheometer
 - Direct Tension Test
 - Pressure Aging of Asphalt Binder
 - Asphalt Viscosity using the Rotational Programmable Viscometer
- e. Superpave Asphalt Binder and Mix Database.

Asphalt Mixture Tests

- a. Flow and stability.
- b. Maximum specific gravity of bituminous mixtures.
- c. Vacuum extraction of asphalt from bituminous paving mixes.
- d. Compaction of bituminous paving mixtures utilizing the Standard Marshall Hammer, Modified Marshall Hammer (with rotating base), Texas Gyratory Compactor, and the SHRP Gyratory Compactor.
- e. Bulk specific gravity of compacted bituminous mixtures.
- f. Aggregate gradations, specific gravities, and adsorption including equipment such as CoreLok and SSDetect among other methods.
- g. Asphalt stripping and water sensitivity tests of compacted bituminous paving mixtures (AASHTO T 283).
- h. SHRP procedure for aging test on bituminous paving mixtures.

- 1.2 **Project Coordination.** The Contractor shall make all necessary arrangements, in a professional manner, with the requesting agency concerning schedule and MAMTL activities. The Contractor shall also maintain a log of all verbal and written communications with requesting agencies. The Contractor shall provide a detailed itinerary to the COTR 14 days prior to departure of the mobile asphalt mix testing laboratory (MAMTL) for a project. The Contractor shall be cognizant that other

Contractors are engaged in similar work, requiring close cooperation. The Contractor for this contract shall cooperate with all other Contractors and adjust the MAMTL's work schedule to avoid conflicts with the other Contractor's performance and work schedules.

1.3 **Transport of MAMTL to/from project.** The Contractor shall prepare and transport the MAMTL using the tractor provided by FHWA to the agreed upon field projects. The Contractor shall adhere to all Federal and State regulations concerning the transport of the MAMTL, which includes as a minimum that all drivers have a valid Commercial Drivers License (CDL).

1.4 **Field Testing.** The Contractor shall coordinate their activities with all parties involved with the project and perform all testing included in the approved testing plan. The Contractor shall perform all asphalt tests in accordance with applicable American Association of State Highway Transportation Officials (AASHTO) or American Society for Testing and Materials (ASTM). Neither the Contractor nor his employees shall release information obtained during the testing without the express written permission of the COTR.

The Contractor shall demonstrate and explain any testing conducted to the requesting agency on an as needed basis.

The Contractor shall hold a close out meeting with the participating agency to review the results of the testing performed within 45 days of the MAMTL leaving the jobsite.

1.5 **Field Reports.** The Contractor shall submit a draft report to the COTR within 15 days after completion of Close-Out meeting. Each report shall contain as a minimum the following information:

- a. The agency and location where the field work was conducted.
- b. List of personnel and contact information from participating agency directly involved with field work.
- c. Overview of project.
- d. Time spent at the location and resources utilized.
- e. Problems encountered during the assignment and recommended solutions.
- f. Tests performed and results obtained.
- g. Evaluation of performance and aggregate test results.
- h. Recommendations to improve the equipment and/or test procedures.
- i. Graphical plots representing test results and discussion of data analysis.
- j. Conclusions.
- k. Appendix including raw test data and detailed calculations or computations.

The COTR will review and provide written comments within 10 days after receipt of the draft report. The Contractor shall revise the document to reflect the COTR's comments and submit the final field report within 7 days for acceptance by COTR.

2. EQUIPMENT AND TEST LABORATORY (“lab”) MAINTENANCE

- 2.1 Equipment Inventory.** The Contractor shall assume responsibility and maintain all equipment and material furnished by the Government. Equipment inventory lists turned over to the Contractor shall be updated semi-annually. The Contractor shall give an electronic copy as well as a hard copy of the updated inventory list to the COTR after every update. The Contractor shall also maintain a list of expendable supplies available, such as cylinder molds or neoprene pads, and provide a copy to the COTR on a monthly basis.

The Contractor shall be responsible for requesting parts and materials needed in the performance of this contract. The Contractor shall provide part numbers, a description of the service or materials required and the estimated cost from at least three vendors. Supplies needed, shall be submitted in writing to the COTR a minimum of 45 days prior to their intended use so as not to delay scheduled work.

- 2.2 Preventive Maintenance.** The Contractor shall be responsible for establishing and implementing a comprehensive preventive maintenance (PM) program covering the labs, all applicable equipment associated with the labs, the tractor used to transport the MAMTL, and the generator attached to the tractor. The PM program consists primarily of inspection, cleaning, lubrication, adjustment, calibration, and minor part and component replacement (e.g., filters, o-rings, belts, cables, fluids, oil, electrical connections, grease). The PM program is required to minimize malfunction, breakdown, and deterioration of equipment. The PM program shall also document in writing all repairs required to bring the equipment up to the manufacturer’s operating standards and provide a copy to the COTR.

This program shall include at a minimum, equipment priority, frequency, description of the maintenance to be performed, and an annual PM schedule for all equipment included in the program. The PM performed shall be as recommended by the original equipment manufacturer.

The Contractor shall submit his proposed PM program to the COTR for approval within 60 days of the contract start date, and annually thereafter. The Contractor shall be responsible for updating this program as necessary to reflect the addition, replacement or removal of equipment and furnishing a copy of the updates to the COTR.

If the Contractor detects that any Government equipment or component being maintained under the contract is in need of reconditioning, repair, replacement (or disposal), details including cost shall be submitted in writing to the COTR. The Contractor shall not undertake or perform any reconditioning, repair or replacement of equipment without prior authorization from the COTR. The Contractor shall solicit quotations from at least three vendors for reconditioning, repair, or replacement in excess of \$2,500.

All costs of maintenance of the tractor and laboratory trailer shall be borne by [agency]

except where the need for maintenance is caused by the negligence of the Contractor's employees.

- 2.3 **Labs, Tractor, and Generator Appearance.** The labs, tractor, and generator shall be washed, as a minimum, on a quarterly basis and/or 24 hours prior to being on display at conferences, seminars or other public events. The interior of the labs shall be kept in a clean and safe working condition at all times.

The interior of the labs shall also be cleaned 24 hours prior to being on display at public events. The entire floor surface, including corners, behind doors and under furniture shall be kept free of food, drinks, litter, dust and debris. Windows shall be cleaned monthly and kept free of film, dirt, smudges, hand prints, water or other foreign matter. The walls, counter tops and cabinets shall be cleaned weekly and kept free of film, food, drinks, dirt, smudges, hand prints, or other foreign matter. The laboratory should be kept free of food at all times during display at public events. The Contractor shall replace burned out or flickering fluorescent tubes with the same type, wattage and voltage as those removed. Fire extinguishers shall be fully charged at all times.

Rust and Corrosion. Clean rusted and corroded areas on tractor, labs, and generator as required. Prime the cleaned surfaces and paint using a high quality primer and paint suitable for surface being painted. Paint colors shall be matched as closely as possible to original or previous colors, or as otherwise approved by the COTR. Equipment identification data shall not be obscured or covered up with paint.

3. **TECHNOLOGY TRANSFER**

- 3.1. **Equipment Demonstrations and Requests for Information.** The Contractor shall provide technical assistance to interested agencies. Technical assistance can take the form of answering questions from email and phone calls within or outside [agency]. Provide literature based on requests for information within the scope of the project. Ship equipment to requesting agency and provide hands-on training. The Contractor shall provide a brief written report for each site visit documenting the participating agency, contacts and phone numbers for personnel who worked with the equipment, and summary to the COTR within 7 days of the visit.
- 3.2 **Technical Presentations.** The Contractor shall develop and make professional presentations at seminars, conferences, workshops and/or meetings on an as-needed basis. Within 7 days after each presentation, the Contractor shall forward to the COTR a brief written report of the visit. Each report shall include as a minimum the date and duration of the visit, the purpose, audience, and location of the presentation, and a brief summary of activities and any recommendations and/or observations.
- 3.3 **Technical Publications.** The Contractor shall write technical, professional quality, articles suitable for publications, newsletters, briefing papers, brochures, and develop

workshop modules on an as needed basis.

It is anticipated that these article(s) will address the lab program activities, asphalt durability and performance issues, implementation activities and other asphalt related activities. Prepare and conduct training classes and or workshops dealing with asphalt materials, mix design procedures, construction, QA/QC testing requirements, and asphalt portion (materials characterization) of mechanistic-empirical pavement design, use of nondestructive and innovative test procedures and equipment.

4.0 Additional Development Assignments. Some additional development assignments are envisioned to occur within the duration of the contract.

The type of assignments that are envisioned fall into the following categories:

- Evaluation of mechanistic-empirical pavement analysis as part of NCHRP 1-37A Design Guide **(TEXT DELETED)**
- Superpave database **(TEXT DELETED)**
- Support AASHTO and NCHRP **(TEXT DELETED)**

PERSONNEL REQUIREMENTS [IN A TRUE PWS, AGENCIES SHOULD CONSIDER LISTING ONLY THOSE KEY PERSONNEL (OFFERORS SHOULD PROPOSE THOSE KEY PERSONNEL) THEY THINK ARE APPROPRIATE, LIKE THE PROJECT OR PROGRAM MANAGER. OTHERWISE, IT IS UP TO EACH OFFEROR TO PROPOSE THE SKILLS AND SKILL MIX TO DELIVER THE REQUIRED RESULTS. IF THERE ARE LICENSING OR CERTIFICATION REQUIREMENTS, LIST THEM IN THIS SECTION.]

PERFORMANCE STANDARDS & QUALITY ASSURANCE PLAN

The following table contains:

1. The PWS requirements that the Government will inspect. The absence of any contract requirements from the following table shall not detract from its enforceability nor limit the rights or remedies of the Government under any other provisions of the contract, including the clause entitled, "Inspection of Services."
2. The performance standards for each listed requirement. The performance standard represents the minimum requirement that the Government requires the Contractor to achieve.
3. The acceptable quality level that specifies an allowable deviation from the performance

standard for that service to be found acceptable.

4. The financial incentives and penalties of this performance-based acquisition. Contractor performance that meets the acceptable quality level for each standard will be deemed acceptable performance by the Government. To earn incentive, the Contractor must exceed the quality level specified for a standard. Performance that fails to meet the acceptable standard will result in the assessment of a penalty.
5. The surveillance methods (located under Section E of the contract) the Government will use to evaluate the Contractor's performance for the listed requirements.

PERFORMANCE REQUIREMENTS SUMMARY (PRS)

1. List the PWS requirements that the government will inspect. The absence of any contract requirements from the PRS shall not detract from its enforceability nor limit the rights or remedies of the government under any other provisions of the contract, including the clause entitled "Inspection of Services."
2. Define the standard of performance for each listed service.
3. Set forth the allowable deviation from the standard performance for that service to be found acceptable. Performance that exceeds the standard will be rewarded in accordance with Section H - Special Contract Requirements, Award Fee Evaluation Plan Procedures.
4. Set forth the surveillance methods (located under Section E of the contract) the Government will use to evaluate the Contractor's performance for the listed tasks.

Definitions

Accuracy:	Data or facts presented can be verified with a minimal amount of errors.
Completeness:	All necessary information is included, minimum omissions, comprehensive.
Professional:	Conform to the technical or ethical standards of a profession. Display the conduct, appearance, and qualities that characterize or mark a profession. Possess skill, experience and competence in a profession. Deals effectively in group discussions with sensitive or controversial matters.
Quality:	Deliverables use clear, concise language, are well laid out and adequately describe with sufficient detail the requirements. High level of detail is maintained during all aspects of contract and are documented in writing as appropriate. High standard of work maintained at all times. Produce high quality, precise, well organized work with minimum rewrites and editorial reviews.
Day:	Where acceptable quality levels are defined in days, a day is defined as weekday (Monday through Friday), not including recognized government holidays.

[Agency] will evaluate Contractor performance using the following performance measurement methods against the following performance standards. Contractor performance will be rewarded or penalized in accordance with the following incentives:

PERFORMANCE REQUIREMENTS SUMMARY

NOTE: The standards below apply to work performed under Tasks 1-3.

PERFORMANCE REQUIREMENTS	PERFORMANCE STANDARD	ACCEPTABLE QUALITY LEVEL	INCENTIVE/PENALTY	SURVEILLANCE METHOD
1. Develop test plan, coordinate schedule, transport MAMTL to field project, provide asphalt testing support and document results.	Timeliness & Accuracy: Develop appropriate test plan based on job requirements 30 days prior to scheduled start of field work as determined by COTR. Ensure equipment required in test plan is available and in working order 90% of the time. Coordinate schedule for field work with requesting agency 30 days prior to departure as mutually agreed upon by Contractor and COTR. Maintain log of verbal and written communications with requesting agency. Provide COTR with detailed itinerary 14 days prior to departure as determined by COTR. Pack MAMTL, ensure MAMTL and tractor are road worthy 3 days prior to departure, and transport MAMTL to specified location safely and in a professional manner within 24 hours of mutually agreed upon time. Coordinate with all parties involved with project, including holding kickoff meeting and conducting subsequent activities. Perform tests included in approved test plan and hold a close out meeting with the participating agency to review the results of the testing performed within 45 days of the MAMTL leaving the jobsite. Perform analysis on data from Superpave performance tests within 10 days of completing testing and maintain Superpave and performance test database and update within 7 days of leaving project site. Provide COTR draft report within 15 days of the completion of Close-Out meeting and provide final report within 7 days of receiving COTR's comments.	93%	Incentive or penalty equal to 4% of Contractor's unit price for six month evaluation period.	100% inspection

2. Maintain Government furnished equipment and expendable supplies and establish and maintain an inventory. Develop a preventive maintenance program for equipment, MATL, tractor, and generator. Demonstrate upkeep of labs' appearance.	Completeness & Timeliness: Provide COTR an electronic copy of equipment inventory semi-annually & expendable supplies monthly, as well as written list of any parts or materials needed a minimum of 45 days prior to intended use. Provide COTR with proposed preventive maintenance program within 60 days of contract award and annually thereafter. Perform preventive maintenance inspections and/or repairs within 15 days of approved recommended schedule & maintain log of all preventive maintenance services performed. Wash exterior surfaces, clean windows, clean interior of tractor and labs (weekly), on a quarterly basis and/or 24 hours prior to exhibition. Clean, prime and paint exterior of MATL, truck, and generator as required.	95%	Incentive or penalty equal to 3% of Contractor's unit price for six month evaluation period.	100% inspection
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HELPFUL HINT: TIMELINESS AND ACCURACY ARE TWO THINGS THAT CAN BE MEASURED. HOWEVER, IF THE FOCUS IS ON RESULTS, THE STANDARDS SHOULD BE TIED TO ACHIEVING THOSE RESULTS. DID WE FIND A BETTER MIXTURE FOR THE ASPHALT, THAT IS COST-EFFECTIVE AND CAN BE UTILIZED BY THE SHA'S?

3. Provide technical assistance to interested agencies through phone calls, literature, site visits, equipment loans, technical presentations and technical publications.	Timeliness & Accuracy: Loan available equipment to requesting agency within 14 days of request or equipment availability. Maintain up to date record of all equipment on loan. Provide available literature to requesting agencies within 7 days of receiving request. Develop professional presentations at least 14 days in advance of the presentation for the COTR to review and provide brief written report to COTR within 7 days after each presentation. Prepare and submit technical publications for a mutually agreed upon due date.	90%	Incentive or penalty equal to 3% of Contractor's unit price for six month evaluation period.	Random inspection
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The FHWA will evaluate the Contractor's performance under Tasks 1-3 (CLIN 0001 and CLIN 0002) against the performance standards described above every six months and provide a detailed performance evaluation of the Contractor's overall performance during that period.

Incentive/Penalty

The Government's evaluation of the Contractor's performance for the 6 month period will include a determination of the incentive or penalty assessed for that period. If an incentive is earned, the Contractor may request payment of the incentive on its monthly invoice submission for the month immediately following notification of the evaluation. Any penalty assessed for the period shall be deducted from the unit price on the monthly invoice submission for the month immediately following notification of the evaluation.

Contractor Supervision

The Contractor shall provide total supervision of its staff. Government personnel are not authorized or permitted to supervise any Contractor personnel. The Contractor's Program Manager, shall communicate with the COTR to determine the Government's work requirements as set forth in the Statement of Work and shall assure that these requirements are fulfilled. In the event the designated Program Manager is incapacitated due to illness or injury or otherwise is removed by the Contractor during the contract performance, replacement of the incumbent Program Manager shall be subject to the prior written approval of the Contracting Officer.

Review and Approval of Contractor Performance

The COTR will review the completeness, accuracy, and quality of all products completed by the Contractor. Before final acceptance will be made, the COTR will make an inspection of the product and see to it that tests and measurements were performed in accordance with accepted laboratory procedures. All computations, such as trend analysis and uncertainty calculation, shall be fully documented.

GENERAL INFORMATION

Operations: [LOCATIONS AND HOURS OF OPERATION LISTED HERE.]

Travel: All travel must be approved by the COTR and if approved for Government reimbursement will be paid for in accordance with Government Travel Regulations in effect at the time of travel. No travel or per diem will be paid when the employee is working within 50 miles of his/her home.