



October 14, 2010

Ms. Robin Hobbs, *HAAM 30-C*
Phone: (202) 366-4004
U.S. Department of Transportation
Federal Highway Administration
Office of Acquisition Management
Mail Stop: E65-101
Washington, DC 20590

Ms. Debbie Walker, HRDI-13
Federal Highway Administration
Pavement Performance Division
6300 Georgetown Pike
McLean, VA 22101

Reference: **Quarterly Progress Report for**
ARA LTPP Contract Weigh-In-Motion Calibrations and Validations
FHWA Contract No. DTFH61-10-D-00019

Dear Ms. Hobbs and Ms. Walker:

Enclosed please find one copy of our Quarterly Progress Report (QPR) for the quarter ending September 30, 2010.

If you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,
Applied Research Associates, Inc.

A handwritten signature in blue ink that reads "Olga I. Selezneva".

Olga I. Selezneva, Ph.D.
Project Manager

enclosure

cc: Robin Gates

QUARTERLY PROGRESS REPORT - QUARTER ENDING SEPTEMBER, 2010

Contract Title: Weigh-In-Motion Calibrations and Validations

Contract Number: DTFH61-10-D-00019

Contract Project Manager: Olga I. Selezneva, Ph.D.

Contract Summary

Contract Start Date: April 28, 2010

Contract Completion Date: April 27, 2011

Contracting Officer (CO): Robin Hobbs, HAAM 20-B, Phone: (202) 366-4004

CO's Technical Representative: Debbie Walker, HRDI-13, Phone: (202)-493-3068

SUMMARY OF WORK PERFORMED LAST QUARTER

Task Order No. DTFH61-10-D-00019-T-10001

Requisition/Reference No. 41-13-10024

Start date: June 21, 2010

Completion date: October 20, 2010

CLIN 0001A – Conduct WIM System Field Calibrations and Validations (LTPP Lane Only) for the following sites:

1. Arizona, SPS-1 (040100)
2. Arizona, SPS-2 (040200)
3. California, SPS-2 (060200)
4. Delaware, SPS-1 (100100)
5. Louisiana, SPS-1 (220100)
6. Maryland, SPS-5 (240500)
7. Ohio, SPS-1 (390100)
8. Ohio, SPS-2 (390200)

Accomplishments

During this quarter, validations were conducted at the following sites:

1. Delaware, SPS-1 (100100) – July 14, 2010
2. Louisiana, SPS-1 (220100) – July 28, 2010
3. California, SPS-2 (060200) – August 11, 2010
4. Maryland, SPS-5 (240500) – August 25, 2010
5. Arizona, SPS-2 (040200) – September 7, 2010
6. Arizona, SPS-1 (040100) – September 9, 2010
7. Ohio, SPS-1 (390100) – September 22, 2010
8. Ohio, SPS-2 (390200) – September 22, 2010

Submission of the validation reports was on hold pending FHWA comments. To date, the revised Delaware SPS-1 has been submitted to COTR for review. The Louisiana SPS-1 report is under final ARA Project Manager review and will be submitted by October 20, 2010. All other reports are undergoing revision and will be submitted by November 12, 2010.

Important Findings

From the validations performed under Task Order 1, several significant findings are being reported:

- 1) At all sites, a cross-classification exists between Classes 3, 4, 5 and 8 vehicles. In most cases, light trailers connected to Class 3 or 5 vehicles are involved. Other times, it is the heavy weight of a Class 3 vehicle, or light Class 5 vehicles with dual tires on the rear axle. The classification of short Class 4 vehicles as Class 5 vehicles by the WIM systems is a consistent problem.
- 2) Misclassifications of Class 10 vehicles occur because there is not a classification bin for Class 10s with more than 6 axles. This was a significant problem at the Louisiana SPS-1 site.
- 3) At the sites instrumented with quartz piezo WIM sensors, a relationship between weight estimation and temperature appears to exist when pavement temperatures exceed 100 degrees Fahrenheit. It is estimated that the WIM system demonstrates a 1 to 2 percent drift in weight estimations over a 30 degree change in temperature. These sites include:
 1. Delaware, SPS-1 (100100)
 2. Louisiana, SPS-1 (220100)

Summary of Recommended Corrective Actions

This section of the report contains summary of recommended corrective actions by task order and their resolution status: recommended, pending resolution by FHWA or state highway agencies, or completed.

A summary of the equipment deficiencies noted during the validations visits is provided in Table 1. No other problems with the equipment were noted and no corrective measures were taken in the field.

Table 1. Summary of recommended corrective actions and their status.

Site ID	Recommended Action	Status*
100100	Leading loop insulation resistance value was noted to be below standard specifications. This needs to be investigated further.	R
220100	None	N
060200	Solar panel is cracked from what appears to be flying debris from the highway and should be replaced.	R
240500	None	N
040200	The pavement at the site of the old WIM system load cells may affect the performance of the current LTPP WIM system and requires remediation.	R
040100	None	N
390100	None	N
390200	None	N

Status: R = recommended; P = pending resolution by FHWA or state highway agencies; C = completed; N = none.

Adjustments to the Project Schedule or Milestones

A one-month extension for the completion of Task Order 1 was requested in order to implement required changes to the validation report formats based on recently received comments from FHWA.

Task Order No. DTFH61-10-D-00019-T-10002

Requisition/Reference No. 41-13-10044

Start date: September 21, 2010

Completion date: February 1, 2011

CLIN 0001A – Conduct WIM System Field Calibrations and Validations (LTPP Lane Only) for the following sites:

1. Arkansas, SPS-2 (050200)
2. Illinois, SPS-6 (170600)
3. Kansas, SPS-2 (200200)
4. Maine, SPS-5 (230500)
5. New Mexico, SPS-1 (350100)
6. New Mexico, SPS-5 (350500)
7. Tennessee, SPS-6 (470600)
8. Texas, SPS-1 (480100)

CLIN 0001B – Conduct WIM System Field Calibrations and Validations (Additional WIM Lane) for the following sites:

1. Texas, SPS-1 (480100)

Accomplishments/Important Findings/Corrective Actions

During this quarter, preliminary work on scheduling field calibrations and validations has started. The majority of work under this Task order will take place in the final quarter of 2010 and the first quarter of 2001.

Future Activities

Validation visits to the sites contained in Task Order 10002 have been tentatively scheduled as follows:

1. Maine, SPS-5 (230500) – November 16, 2010
2. Illinois, SPS-6 (170600) – December 7, 2010
3. Kansas, SPS-2 (200200) – December 21, 2010
4. New Mexico, SPS-1 (350100) – January 4, 2011
5. New Mexico, SPS-5 (350500) – January 6, 2011
6. Texas, SPS-1 (480100) – January 18, 2011
7. Arkansas, SPS-2 (050200) – February 1, 2011
8. Tennessee, SPS-6 (470600) – February 15, 2011

Summary of Recommended Corrective Actions

No actions to report yet.

Adjustments to the Project Schedule or Milestones

None

Task Order No. DTFH61-10-D-00019-T-10003

Requisition/Reference No. 41-13-10045

Start date: September 22, 2010

Completion date: June 1, 2011

CLIN 0001A – Conduct WIM System Field Calibrations and Validations (LTPP Lane Only) for the following sites:

1. Colorado, SPS-2 (080200)
2. Indiana, SPS-6 (180600)
3. Michigan, SPS-1 (260100)
4. Minnesota, SPS-5 (270500)
5. Pennsylvania, SPS-6 (420600)
6. Virginia, SPS-1 (510100)
7. Washington, SPS-2 (520200)
8. Wisconsin, SPS-1 (550100)

CLIN 0001B – Conduct WIM System Field Calibrations and Validations (Additional WIM Lane) for the following sites:

1. Virginia, SPS-1 (510100)

Accomplishments/Important Findings/Corrective Actions

During this quarter, preliminary work on scheduling field calibrations and validations has started. The majority of work under this Task order will take place in the first and second quarters of 2011.

Future Activities

Validation visits to the sites contained in Task Order 10003 have been tentatively scheduled as follows:

1. Indiana, SPS-6 (180600) – November 3, 2010
2. Pennsylvania, SPS-6 (420600) – November 29, 2010
3. Virginia, SPS-1 (510100) – February 28, 2011
4. Colorado, SPS-2 (080200) – March 14, 2011
5. Washington, SPS-2 (520200) – March 28, 2011
6. Michigan, SPS-1 (260100) – April 11, 2011
7. Minnesota, SPS-5 (270500) – April 25, 2011
8. Wisconsin, SPS-1 (550100) – May 9, 2011

Summary of Recommended Corrective Actions

No actions to report yet.

Adjustments to the Project Schedule or Milestones

None

MASTER SCHEDULE APPENDIX

A SharePoint web site has been developed to house Master schedule information. The following is the link to the SharePoint web site:

https://sharepoint.ara.com/MWD/it LTPP_SPSWIM

Username: spswim
Password: 986TzUbm