



July 15, 2011

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 June 30, 2011.

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". The signature is written in a cursive style with a large initial 'O'.

Olga I. Selezneva, Ph.D.

Project Manager

enclosure

cc: Robin Gates

QUARTERLY PROGRESS REPORT - QUARTER ENDING MARCH, 2011

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 (revised date: June 1, 2011, as per Task Order No. DTFH61-10-D-00019-T-10003, award date: 9/22/2010)
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: November 20, 2010 (revised, as per contract Mod 00001 for this Task Order dated June 15, 2010)

All work under this task order has been completed. *WIM System Field Calibration and Validation Summary Reports* for all the sites included in this Task Order have been submitted to COTR and accepted upon COTR review.

No new work under this Task Order is planned for the next quarter.

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

Requisition/Reference No. 41-13-10044

Start date: September 21, 2010

Completion date: May 2, 2011 (revised, as per contract Mod 00001 for this Task Order dated February 2, 2011)

All work under this task order has been completed. *WIM System Field Calibration and Validation Summary Reports* for all the sites included in this Task Order have been submitted to COTR and accepted upon COTR review.

Repairs to the Maine SPS-5 site, which failed the validation due to an equipment fault, have not been reported to date. Consequently, a return visit has not been scheduled, and so no new work under this Task Order is planned for the next quarter.

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 (as per Task Order No. DTFH61-10-D-00019-T-10003, award dated 9/22/2010)

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 (530200)
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

During this quarter, validations were conducted for the remaining CLIN 0001A sites:

1. Washington, SPS-2 (530200) – March 29, 2011
2. Wisconsin, SPS-1 (550100) – April 12, 2011
3. Minnesota, SPS-5 (270500) – April 26, 2011
4. Michigan, SPS-1 (260100) – May 10, 2011

The CLIN 0001B validation of the additional lane at the Virginia SPS-1 site has not been performed. A return visit to conduct the validation has not been established.

Important Findings

For the Washington SPS-2 site, truck type had statistically significant effect on the GVW, and on the tandem axle trailer weight errors.

For the Wisconsin SPS-1 site, temperature affected measurement error of all axles and thus also the measurement error of the GVW. Truck type affected all measurement errors.

At the Michigan SPS-1 site, speed had statistically significant effect on measurement errors of tandem axles, temperature had statistically significant effect on the measurement errors of GVW and tandem axles on tractors, and truck type had statistically significant effect on GVW, steering axle weight, and tandem axle trailer weight errors.

For the Minnesota SPS-5 site, speed had a statistically significant effect on measurement errors of GVW and tandem axles on tractors, temperature had statistically significant effect on the measurement errors of all factors, and truck type had statistically significant effect on measurement errors of steering axle weights and the tandem trailer axle weights.

Summary of Recommended Corrective Actions

A summary of the equipment deficiencies that were noted during the validations visits conducted under Task Order 3 and their resolution status – recommended, pending resolution by FHWA or state highway agency, or completed is provided in Table 2.

Table 2 – Summary of Recommended Corrective Actions – TO3

Site ID	Recommended Action	Status
510100	It is recommended that the problems associated with the loop sensors in the additional lane be addressed to ensure that tractor-trailer trucks are captured properly.	C

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

It has been reported that the Phase II contractor has installed firmware that supports adjustments to the sensitivity and frequency settings of the inductive loops and has performed and tested these adjustments to their satisfaction.

Future Activities

Unless the return visit to the Virginia SPS-1 site to complete the validation in the additional lane is directed, no new work under this Task Order is planned for the next quarter.

All work under this task order has been completed. *WIM System Field Calibration and Validation Summary Reports* for all the sites included in this Task Order have been submitted to COTR and accepted upon COTR review.

Adjustments to the Project Schedule or Milestones

Based on Task Order No. DTFH61-10-D-00019-T-10003, award dated 9/22/2010, the completion date of Task Order 3 is June 1, 2011.

The completion of Task Order 3 on June 1, 2011 denotes the completion of the first contract year. The final contract year deliverable is Annual report. ARA has submitted Draft Annual Report for FHWA review on June 17, 2011. We are awaiting FHWA comments.

CHANGES TO FIELD PROCEDURES

Beginning with the Colorado SPS-2 Validation, ARA has incorporated an automated imbalance adjustment into the field validation process. The Phase II contractor, based on an analysis of Class 9 front axle weights from a qualified two-week data sample, provides average front axle wheel weights to ARA, which are incorporated into the WIMCal compensation factor adjustment recommendations.

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: Traffic7 (changed since the last QPR)