



**SPR Quarterly Progress Report**  
April 1, 2007 through June 30, 2007

Date July 16, 2007

**TO:** Technical Advisory Committee Members:  
Rene Renteria, Oregon Department of Transportation  
Larry Ilg, Oregon Department of Transportation  
Don Crownover, Oregon Department of Transportation  
Elizabeth Hunt, Oregon Department of Transportation  
Jim Huddleston, Asphalt Paving Association of Oregon  
Anthony Boesen, Federal Highway Administration

**FROM:** Norris Shippen, Research Coordinator (ph: (503) 986-3538)

**1. Project**

Mechanistic Pavement Design Input Parameters  
SPR-642

**2. Key Dates**

Start Date for ODOT: October 2005  
Completion Date for ODOT: February 2008

**3. Principal Investigator**

Todd V. Scholz, Ph.D., P.E.  
School of Civil and Construction Engineering  
Oregon State University  
Corvallis, Oregon 97331-2302

**4. Progress**

- Dynamic modulus testing and data reduction was completed on six cores (three from the HMA-over-aggregate-base section and three from the HMA-over-rubblized-PCC section) obtained from the I-5 MP 239 site.
- Evaluation of the design inputs for the two sections at the I-5 site was initiated but terminated due to having to make too many assumptions pertaining to information required by the MEPDG software. An internal document was prepared detailing the requisite information.
- The StrainBook for collection of strain data was returned to OSU from the manufacturer with no reported problems.
- To be able to utilize the software provided with the StrainBook, the circuitry for each strain gage was modified to include a potentiometer (trim pot) to null out the offset of the Wheatstone bridge for each strain gage. The trim pots were installed on the circuits for all 24 strain gage bridges and all but one worked as planned (the only one that did not seem to work was due to a failed strain gage).

- On May 31 the outside lane of the I-5 MP 239 site was closed beginning at approximately 9:00PM to install the axle sensors and conduct FWD testing and strain measurement resulting from the known loads imparted by the FWD. The axle sensors were successfully installed and strain measurements were successfully obtained from the FWD-imparted loads during the lane closure. The work was completed by approximately 4:30AM on June 1.
- On June 7 axle load data, axle load location (via photography), resulting strain from the axle loads, and pavement temperatures were successfully recorded for approximately 115 trucks.
- A final decision was made to instrument a bridge end on the Sunriver Interchange project near Bend. The PI has kept in contact with Loren Campbell with regard to the paving schedule and has been informed that this activity will occur beginning August 8 at the earliest.
- The work plan was modified to include a no-cost extension through February 2008 so that the new site can be instrumented and additional data can be collected from this new site and the existing I-5 site.

5. **Problems**

- Nothing significant.

6. **Work Planned for Next Quarter**

- Set up the data acquisition system for the axle sensor strips installed at the I-5 MP 239 site.
- Collect additional data from the I-5 MP site for the months of July, August, and September.
- Instrument the Sunriver Interchange project and collect initial site data.
- Continue analysis of existing data collected thus far.

7. **Finances**

SPR Project Summary

VENDOR	FY'06	FY'07	FY'08	TOTALS
ORIGINAL BUDGET				\$ -
REVISED BUDGET	\$ 41,544	\$ 70,700	\$ 12,743	\$ 124,987
EXPENDITURES - VENDOR	\$ 41,544	\$ 59,825	\$ -	\$ 101,369
BALANCE	\$ -	\$ 10,875	\$ 12,743	\$ 23,618
ODOT	FY'06	FY'07	FY'08	TOTALS
ORIGINAL BUDGET	\$ 40,000	\$ 80,000	\$ 40,000	\$ 160,000
REVISED BUDGET	\$ 9,023	\$ 28,000	\$ 15,977	\$ 53,000
EXPENDITURES - ODOT	\$ 9,023	\$ 29,807	\$ -	\$ 38,830
BALANCE	\$ -	\$ (1,807)	\$ 15,977	\$ 14,170
PROJECT	FY'06	FY'07	FY'08	TOTALS
ORIGINAL BUDGET	\$ 40,000	\$ 80,000	\$ 40,000	\$ 160,000
REVISED BUDGET	\$ 50,567	\$ 98,700	\$ 28,720	\$ 177,987
EXPENDITURES - PROJECT	\$ 50,567	\$ 89,632	\$ -	\$ 140,199
BALANCE	\$ -	\$ 9,068	\$ 28,720	\$ 37,788