



**SPR Quarterly Progress Report**  
January 1, 2007 through March 31, 2007

Date April 9, 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: June 2007

**3. Principal Investigator**

Todd V. Scholz, Ph.D., P.E.  
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**4. Progress**

- The test equipment and data acquisition system and software were successfully set-up for the purposes of dynamic modulus testing.
- The 6-inch cores sampled from the test site were cut to 4-inch diameter cores. The bulk specific gravity was determined on each core.
- Dynamic modulus testing was initiated on the cored samples.
- Meetings were held at ODOT to discuss potential upcoming projects for an additional data collection site. Potential sites identified included one near Lowell on Highway 58, the Redmond by-pass project, a project in Maupin, one near Hebo, and two along Highway 101 on the coast. Subsequently, Liz Hunt identified a project on US 97 near the Sunriver Interchange as a potential site. Investigations are ongoing prior to final decisions as to which site to instrument. However, efforts to acquire the instruments (strain gages) were initiated.

**5. Problems**

- Cutting the 6-inch diameter cores to 4-inch diameter cores took much longer than anticipated due to having to establish a new set-up using less-than-optimal equipment.
- Setting up the test equipment and data acquisition system and software was problematic and took much longer than anticipated. This was due to having to move the equipment from the Apperson Hall labs to the labs in Graf Hall, requiring that it all be re-established from scratch.
- The StrainBook for collection of strain data in the field was sent back to the manufacturer to troubleshoot problems associated with blowing fuses inside the device. Therefore, field data could not be collected. A circuit board was replaced in the units and the system is being returned to OSU.

**6. Work Planned for Next Quarter**

- Completion of dynamic modulus testing and data reduction for the cored samples.
- Evaluation of the design inputs for the two asphalt pavement sections at the I-5 site.
- Install the axle sensor instruments at the I-5 site.
- Additional acquisition and analysis of strain data from the I-5 site.
- Finalize the decision for the additional project to instrument and make all preparations to do so.
- Modify the work plan to extend the project (a no-cost extension) so that the new site can be instrumented and additional data can be collected from this new site and the existing I-5 site.

**7. Finances**

SPR Project Summary

<b>VENDOR</b>	<b>FY'06</b>	<b>FY'07</b>	<b>FY'08</b>	<b>TOTALS</b>
ORIGINAL BUDGET				\$ -
<b>REVISED BUDGET</b>	<b>\$ 41,544</b>	\$ 66,101	\$ 17,342	\$ 124,987
EXPENDITURES - VENDOR	\$ 41,544	\$ 48,757	\$ -	\$ 90,301
<b>BALANCE</b>	<b>\$ -</b>	\$ 17,344	\$ 17,342	\$ 34,686
<b>ODOT</b>	<b>FY'06</b>	<b>FY'07</b>	<b>FY'08</b>	<b>TOTALS</b>
ORIGINAL BUDGET	\$ 40,000	\$ 80,000	\$ 40,000	\$ 160,000
<b>REVISED BUDGET</b>	<b>\$ 9,023</b>	\$ 25,000	\$ 15,977	\$ 50,000
EXPENDITURES - ODOT	\$ 9,023	\$ 13,564	\$ -	\$ 22,587
<b>BALANCE</b>	<b>\$ -</b>	\$ 11,436	\$ 15,977	\$ 27,413
<b>PROJECT</b>	<b>FY'06</b>	<b>FY'07</b>	<b>FY'08</b>	<b>TOTALS</b>
ORIGINAL BUDGET	\$ 40,000	\$ 80,000	\$ 40,000	\$ 160,000
<b>REVISED BUDGET</b>	<b>\$ 50,567</b>	\$ 91,101	\$ 33,319	\$ 174,987
EXPENDITURES - PROJECT	\$ 50,567	\$ 62,321	\$ -	\$ 112,888
<b>BALANCE</b>	<b>\$ -</b>	\$ 28,780	\$ 33,319	\$ 62,099