

FY 2009 RESEARCH PROBLEM STATEMENT

Use this form to submit a problem statement

Submittal via E-mail is preferred: Save the form and give it a new, descriptive name, then send to:
barnie.p.jones@odot.state.or.us

ODOT Research Unit
200 Hawthorne Ave. SE, Suite B-240
Salem, OR 97301-5192

Office Phone: (503) 986-2700
FAX Phone: (503) 986-2844

TITLE

IM-09-03 Development of integrated multi-modal data warehouses for research and planning use.

PROBLEM (Description of need)

With more of a focus on data driven planning and research, and availability of more data from disparate sources, there is a need for the collection of multimodal data and distribution of quantitative measures for multimodal projects to the stake holders. In Oregon there are several sources of archived data but little integration among modes. An integrated multi-modal data warehouse can improve the evaluation of past projects, planning for future projects, creation of new types of sensing capability (probe vehicles, etc.) and cross mode impacts and improvements. The benefits of projects like those in Connect Oregon I and others can best be quantified for each of the modes if performance measurements over time are readily available to researchers and planners. To make this data readily available a repository needs to be created with an interface suitable for use by the many stakeholders. The projected value for future projects like Connect Oregon II can best be estimated if baseline data is available before and after the project implementation.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY

The proposed research is to first identify stakeholders and data sources available. The existing repositories of multimodal data will be identified and a method to allow access to the data in the individual repositories validated. Additional data resources such as probe vehicle data, weather data, safety and accident data, infrastructure changes (e.g. road and rail work and closures, bridge openings) will also be identified. An inventory of data needs/use and an inventory of data available will be used to create a standard schema across all the sets of data. The inventories can be combined by creating transformations from the local jurisdiction data definitions to a standard form (e.g. data definitions found in a standard like National Transportation Communications for ITS Protocol (NTCIP)). A web interface to the data in the standard schema will be created and a demonstration set of applications to perform data visualization will be created.

BENEFITS

One stop shopping for historic statewide traffic and transportation data. Level playing field for private sector companies trying to develop ITS applications. ODOT headquarters access to statewide data. Fundamental data for evaluating the effectiveness of construction projects to compare performance before, during and after construction. A mechanism to evaluate the center to center architecture framework. Support for research into the coherence between differing types of data (e.g. the quantitative effect of weather on transportation performance).

CONTACT PERSON:

Name, address phone number and e-mail

Daniel J. Dailey 206-543-2493

University of Washington

Seattle, WA 98195

dan@its.washington.edu

Robert Bertini 503-725-4249

Portland State University

Portland, OR 97207-9751

bertini@pdx.edu

FOR RESEARCH UNIT USE ONLY

NCHRP

SPR

POOLED FUND

STATE

OTHER

PLEASE RENAME THE COMPLETED FORM WITH A SHORT NAME RELATING TO THE RESEARCH TOPIC.

Submittal of this form via E-mail is preferred. Send to: barnie.p.jones@odot.state.or.us