SPR RESEARCH PROGRAM
SECOND-STAGE PROBLEM STATEMENT
FY 2017

ODOT Research Unit
555 13th St NE
Salem, Or 97301-6867

Phone (503) 986-2700
Fax (503) 986-2844

I. PROBLEM NUMBER AND TITLE

17-039_AST Freight Data to Support the Identification and Justification of MAP-21 & FAST Act Investments

II. RESEARCH PROBLEM STATEMENT

The FAST (Fixing America's Surface Transportation) Act hast created a *new annual* $1.25 billion formula to target investments in the National Highway Freight Network over FY 2016-2020. The FAST Act continues the development of a national freight strategic plan and framework laid out by MAP-21 (Moving Ahead for Progress in the 21st Century Act). Both the FAST Act and MAP-21 emphasize the measurement of baseline conditions and the ability to clearly demonstrate the higher reliability and efficiency of the proposed freight network improvements.

FHWA documentation related to Prioritization of Projects to Improve Freight Movement guidance (PPIFM) includes eligibility criteria and information that is needed to demonstrate how the project will improve freight movement efficiency. Efficiency improvements can be demonstrated by "a comparison between forecasted conditions if the project is not built (the baseline) and anticipated conditions after the project is complete, focusing on such factors as travel time savings, improvements in travel time reliability, congestion reduction, etc." (FHWA, 2012, 2014).

MAP-21 also requires each state to develop a freight plan that is comprehensive and can be utilized to organize short-term and long-term freight planning activities and investments. The Oregon Freight Plan or OFP (ODOT, 2011) identifies Oregon's key freight-dependent industries, highlights strategic routes for each freight-dependent industry, and establishes a strategic freight network. ODOT has identified a strategic freight network in the OFP, yet, there are numerous sections of the freight strategic network where ODOT does not have the needed baseline data to demonstrate efficiency improvement and prioritize projects.

Data is necessary to measure baseline, demonstrate efficiency improvement, and prioritize projects. The proposed research is consistent with actions 1.1.1, 1.1.3, 1.3.3, and strategy 2.2 of the Oregon Freight Plan as well as recommendations from ODOT freight performance measure research (FPM, 2010). Presently, there are two active freight studies funded through ODOT, SPR 783 "Truck Parking: An Emerging Safety Hazard to Highway Users" and "Potential for Freight Mode Shifting in Oregon." Unfortunately, these studies, the Oregon Freight Plan, and/or the SWIM model cannot be used to meet the demands of MAP-21 and FAST Act investment justifications.

III. RESEARCH OBJECTIVES

The goal of this project is to examine data gaps, related MAP-21 and FAST act requirements, along the OFP freight strategic network. Data sources will be compiled and analyzed regarding quality and coverage. This project will: (i) identify and map data gaps, (ii) study how existing data sources can be integrated to answer MAP-21 requirements, and (iii) analyze how data gaps can be addressed in the near-future.

IV. WORK TASKS, COST ESTIMATE AND DURATION

The specific tasks to complete the study are described below.

Task 1: Literature Review (*2 months*)

The review will focus on two components critical to this research: 1) studies related to the improvement of freight movements efficiency and 2) a review of similar efforts at other state DOTs.

Task 2: Data Sources (*3 months*)

The research team will identify existing and potentially useful data sources. Although these data sources are either limited in geographic coverage or data detail, the combination of sources can be potentially useful. Data sources will be compiled and analyzed regarding quality and coverage. Data sources that can be

considered include (not a comprehensive list): 1) FHWA Travel Time in Freight Significant Corridors data that covers I-5 and I-84, 2) Private vendor travel time data, for example 5 minute and 1 minute archived INRIX data purchased by ODOT, 3) WIM and ATR datasets, 4) PORTAL and Port of Portland data in the Portland Metropolitan Region, and 5) Additional available data from the Motor Carrier Division.

Task 3: Definition of Relevant Performance Measures (*2 months*)

Utilizing the outputs of Tasks 1 and 2 the research team (in consultation with the TAC) will produce a list of necessary and desirable performance measures to demonstrate freight efficiency improvements and prioritize projects as required by MAP-21 and FAST guidelines.

Task 4: Estimation of Performance Measures and Data Gaps (*4 months*)

Existing data sources will be integrated to produce performance measures delineated in Task 3. Data gaps will be listed and mapped. In consultation with the TAC some sections of the network will be prioritized.

Task 5: Recommendations for Future Data Collection Efforts (*4 months*)

The research team will provide a priority-based ranking of locations with data gaps. Next steps and actions necessary to fill data collection gaps will be detailed.

Task 6: Final Report (*3 months*)

Prepare and submit a final report which describes the research study, conclusions, and recommendations for future data collection actions. The final report will include maps and databases with estimated freight performance measures as well as data gaps.

The project is estimated to cost $178,000 with an 18 month schedule.

V. IMPLEMENTATION

This research project will be implemented by ODOT's Freight unit and Planning Section. This research will implement data collection efforts and recommendations already laid out in the ODOT's State Freight Plan. The State Freight Plan is already compliant with MAP-21 and FAST and this research will help fill the data gaps necessary to justify freight improvement investments.

VI. POTENTIAL BENEFITS

When this project is completed ODOT will be better prepared to utilize existing freight data, identify future data needs, and justify investments that qualify for federal funding. This project is timely due to the new funding opportunities contained in the recently passed FAST Act in December 2015. The FAST Act creates a *new annual* $1.25 billion formula to target investments in the National Highway Freight Network over FY 2016-2020. MAP-21 and the FAST Act emphasize the measurement of baseline conditions and the ability to clearly demonstrate freight network reliability and efficiency increases.

VII. SUBMITTED BY

Stage 1 Submitter	***Stage 2 Submitter***	***Person Responsible For Implementation***
Miguel Figliozzi, PSU, 503-725-2836 figliozzi@pdx.edu Avinash Unnikrishnan, PSU uavinash@pdx.edu Salvador Hernandez, OSU Sal.Hernandez@oregonstate.edu	Miguel Figliozzi, PSU, 503-725-2836 figliozzi@pdx.edu Avinash Unnikrishnan, PSU uavinash@pdx.edu Salvador Hernandez, OSU Sal.Hernandez@oregonstate.edu	Chris Cummins, Freight Program Manager 503-986-3703 Erik Havig, Planning Section Manager 503-986-4127

REFERENCES

FHWA (2012), Prioritization of Projects to Improve Freight Movement Guidance, https://www.fhwa.dot.gov/map21/guidance/guidesec1116.cfm, accessed Nov. 1, 2015

FHWA (2012), Section 1116: Prioritization of Projects to Improve Freight Movement Questions & Answers. https://www.fhwa.dot.gov/map21/qandas/qasec1116.cfm, accessed Nov. 8, 2015

ODOT (2011), Oregon Department of Transportation, Oregon Freight Plan

FPM (2010), Star McMullen and Chris Monsere, Freight Performance Measures, http://www.oregon.gov/ODOT/TD/TP_RES/docs/reports/2010/freight_performance_measures.pdf