Research Problem Statement

ODOT Research Section
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I. TITLE

17-044 Evaluating the effectiveness of Freight Consolidation Centers in Oregon.

II. PROBLEM

An efficient and sustainable intermodal freight system is critical for the economic development and prosperity of Oregon. In 2008, freight dependent industries and related activities generated nearly US$ 32 billion in personal income and 770,000 jobs (ODOT, 2011). Oregon is also the ninth most trade dependent state (Metro, 2010). The Oregon Freight Demand by weight is expected to increase by 62% in 2035 compared to 2010. The truck mode share of freight is expected to increase to 78% in 2035 compared to 73% 2010, representing a 73% increase in truck freight volume by weight in 25 years (ODOT, 2011). The domination of truck mode is expected to have a significant impact on pollution, congestion, and safety in both urban areas as well as rural areas along major freight corridors.

Other countries have studied and adopted several strategies to develop a more sustainable freight system without compromising on efficiency. One increasingly popular strategy is using freight villages or urban consolidation centers (UCC). Freight villages are often larger than a UCC and typically located in the suburbs or outside the city limits whereas UCCs are located close to a commercial district. Freight villages and UCCs are expected to decrease logistics costs and reduce freight truck trips through effective consolidation of commodities. However the success of a consolidation center depends on a number of factors – location, dominant commodity types, scale and operation of existing businesses, mode share etc. Most importantly it requires support and cooperation of local legislative authorities, private sector freight operators, and business operators.

Oregon restricts the development of farmland and require cities to establish urban growth boundaries. Cities in Oregon are forecasted to grow significantly in the next 20 years (Metro, 2014). Hence, Oregon is in a unique situation.

The objective of this research is to evaluate the viability of establishing freight consolidation centers in Oregon. The proposed research is highly relevant to the existing study “15-035 Mode Shifting: Assessing the Economic, Environmental, and Safety Impacts of Short Haul Rail Hub Locations in Oregon”. The research supports the RAC priority of “efficient transportation system that supports economic opportunity and livable communities for Oregonians”.

III. PROPOSED RESEARCH, DEVELOPMENT, OR TECHNICAL TRANSFER ACTIVITY

The proposed research activity will involve:

- Conducting a detailed literature survey of freight consolidation center experience all over the world. The goal is to identify and list examples of successful and failed implementation of consolidation centers, identify specific factors responsible for the success/failure of these implementations, evaluate if these factors exist in Oregon, and some of the geographic, political, economic, technical and social constraints and challenges.
- Conduct a survey of local private freight careers, shippers, and business owners to understand their willingness to participate in a collaborative consolidation center. The goal here is to study the likelihood of different types of business as a function of their operation (large scale vs small scale/local vs regional vs national, commodity types, current delivery mechanisms and supply chain practices). A critical objective is to identify incentives which promote participation.
- Analyze how urban growth boundaries affect the viability and location of consolidation centers.

- With the help of ODOT, study the feasibility of providing incentives, policy changes, and government regulations needed for successful implementation of consolidation centers.
- Identify data needs necessary for evaluating a freight consolidation center implementation in Oregon.

IV. POTENTIAL BENEFITS

The project will significantly enhance and promote communications between ODOT, private sector freight operators, and business owners. The project will provide a clear understanding of the viability of establishing consolidation centers in Oregon and the challenges which need to be overcome. Under the right conditions, freight villages and UCCs have significant potential to provide mobility, reliability, congestion and sustainability related benefits at reduced costs. The proposed research is consistent with strategy 1.3, 2.6, 4.1, 8.1 and associated actions of the Oregon Freight Plan (ODOT, 2011).

V. IMPLEMENTATION

The research will help in ODOT in developing a framework for evaluating the evaluating the viability of freight consolidation centers in Oregon and the associated economic impacts.

VI. LIST OF REFERENCES *(optional)*

- Oregon Department of Transportation (ODOT). Oregon Freight Plan, 2011.
- Metro. Regional Freight Plan 2035, 2010.
- Metro, 2014 Urban Growth Report: Investing in our communities 2015-2035, 2014

VII. CONTACT INFORMATION

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