REGIONAL OVER-DIMENSIONAL TRUCK ROUTE STUDY

PROJECT OVERVIEW

CONSTRUCTION CRANE

Project Background

The Portland Freight Master Plan and the Regional Freight Plan both identify the need to plan for the efficient movement of over-dimensional freight vehicles within and through the metro region. In September 2015, ODOT, Metro, City of Portland, Clackamas, Multnomah and Washington Counties entered into an inter-governmental agreement to prepare a Regional Over-Dimensional Truck Route Study for the three county metro region. These partner agencies have formed the Project Management Team (PMT) for this study which is being funded through Metro's the Regional Flexible Funding Program.

Project Purpose and Outcomes

The purpose of this study is to provide local jurisdictions with a comprehensive assessment of over-dimensional truck movements in order to more effectively plan for their safe and efficient routing within and through the metro region. This project will identify and map the most commonly used and preferred routes for the safe movement of over-dimensional vehicles and document the minimum clearance requirements to accommodate over-sized loads. Physical and operational constraints and missing gaps in the over-dimensional network will be defined and recommended transportation improvements and planning-level cost considerations to remove identified constraints will be developed.

An inventory and assessment of current transportation policies and over-dimensional permitting practices will be conducted to identify potential policy changes and permitting efficiency improvements. The goal is to develop a seamless over-dimensional route system that transcends jurisdictional boundaries and to provide policy guidance for accommodating over-dimensional vehicles in state, regional and local transportation system plans and local street design guidelines.

Study Timeline and Process

The study was initiated in October 2015 and is anticipated to be complete by December 2016. The City of Portland serves as the lead agency and provides overall project management responsibilities. The Project Management Team (PMT) consists of representatives from the partner agencies and provides project oversight and guidance. The project consultant (DKS Associates) is conducting the technical planning and engineering analysis, cost considerations and final report preparation. The Stakeholder Advisory Committee (SAC) composed of representatives from the over-dimensional hauling industry provides strategic input on draft work products from the user's perspective.

SUMMARY OF PROJECT TASKS AND OBJECTIVES

EXCAVATOR

TASK 1.0: PROJECT MANAGEMENT

Objective: Define the project management structure and roles and responsibilities of the involved entities.

TASK 2.0: STAKEHOLDER INVOLVEMENT

Objective: Implement a stakeholder involvement process that generates strategic input from a broad cross-section of stakeholders that are involved with the movement of over-dimensional freight in the Metro region.

TASK 3.0: EXISTING CONDITIONS ANALYSIS

Objective 1: Document existing conditions affecting the regional over-dimensional transportation network and provide the technical foundation for identifying both short and long-term system needs and developing potential solutions.
Objective 2: Document existing state and local policies and regulations affecting over-dimensional freight movement and provide a basis for developing a more coordinated regional policy framework in providing efficient freight mobility and mitigating community impacts.
Objective 3: Describe the various permitting procedures and practices for issues over-dimensional permits by jurisdiction that provides a basis for identifying potential efficiencies in the permitting process.

TASK 4.0: CONSTRAINTS/GAPS/PROJECT NEEDS

Objective: Identify existing physical and operational constraints that impede the safe and efficient movement of over-dimensional vehicles to provide the technical basis for identifying system improvement needs.

TASK 5.0: DEVELOP AND EVALUATE SYSTEM IMPROVEMENTS AND ALTERNATIVES

Objective: Provide a quantitative framework for developing and assessing the effectiveness of potential transportation improvements that address identified system needs.

TASK 6.0: IDENTIFY AND RECOMMEND IMPROVEMENTS AND COST ESTIMATES

Objective: Identify and recommend the most viable transportation system improvements that provide for a safe and efficient regional over-dimensional freight network.

TASK 7.0: FINAL REPORT

Objective: Recommended transportation system improvements that can be adopted into the regional and local transportation system plans.

EXISTING CONDITIONS ANALYSIS FINDINGS

- 34 Regional Over-Dimensional Truck Corridors were identified for this study (see attached map)
  - 12 in Washington County
  - 10 in City of Portland
  - 7 in Clackamas County
  - 5 in Multnomah County

- Existing Conditions Analysis for each of the 34 corridors identify the following elements:
  - Corridor description and map
  - Policy designation (federal, state, regional and local)
  - Roadway characteristics (number of travel lanes, lane width, surface type and condition)
  - Roadway operations (average daily traffic volumes)
  - Over-dimensional Single Trip Permit (STP) table
  - Crossings and bridge structures
  - Identified capital improvement projects (planned/funded)

- 20,611 Single Trip Permit (STP) records issued by ODOT between December 2012 and December 2015 were evaluated to identify overall width, height, length, weight and commodity type moved.
  - Commodities Moved: Excavators, Cranes and Log Loaders account for 29% (5,938 permits) of commodities moved.
  - Frequent Routes: I-5, US26, I-205, I-84, I-405 account for 24% of the most frequent routes.
  - High Loads: 60% of the high loads were < 14-feet, 30% between 14-15-feet and 10% were 15-feet or higher. The highest load was a transformer at 18-feet, 2-inches moved between Happy Valley and Oregon City.
  - Wide Loads: Excavators accounted for 24% of wide loads between 11-12 feet. Dozers and Excavators accounted for 23% of wide loads between 13-14 feet. The widest load was a steel skirts at 25-feet moved from Newberg to Portland.
  - Long Loads: 60% of the loads were between 70-90 feet in length with excavators accounting for 15% of these movements. The longest load was a heat exchanger at 225-feet moved from the Oregon/Washington border at I-205 to Hillsboro.
  - Heavy Loads: 75% of the heavy loads were between 120,000-160,000 lbs. with excavators accounting for 20% of these movements. The heaviest load was a 662,212 lbs. transformer moved between Oregon City to Clackamas.

EXCAVATORS ARE THE MOST FREQUENT OVER-DIMENSIONAL COMMODITY, FOLLOWED BY CRANES AND LOG LOADER

SYSTEM-WIDE PHYSICAL CONSTRAINTS

Key observations about the overall corridor constraints include:

- None of the corridors have major width constraints.
- Clackamas County has no critical over-dimensional constraints that limit movement. (Note: (C1) US26/SE 282nd bridge overpass being raised to accommodate over-height vehicles in 2018).
- 5 corridors have weight limit constraints (N. Portland Rd, Murry Blvd, SW 185th Ave, Hwy 217, 99W).
- 12 corridors have vertical constraints that enable less than 100% of regional over-dimensional trips:
  - (M1) SW 257th/Kane Corridor – 13'6" I-84 bridge over NW Graham Rd. Constriction in 2018.
  - (P1) Marine Drive Corridor – 16'8" BNSF Railroad bridge over Marine Drive.
  - (P3) Columbia Blvd Corridor – 16'5" UPRR bridge and a 16' pedestrian bridge.
  - (P4) US30 Bypass Corridor – 15'10" NE 42nd Ave bridge is the lowest on entire US30B corridor.
  - (P7) NE Airport Way Corridor – 16'8" I-205 bridge over NE Airport Way.
  - (P10) NE 82nd Ave Corridor – 15'8" NE Columbia Blvd bridge over NE 82nd Ave.

SYSTEM-WIDE GAPS AND NEEDS

The following system-wide gaps and needs were identified by the project Stakeholder Advisory Committee and interviews with stakeholders from the over-dimensional hauling industry:

- Permit Process – The process for obtaining over-dimensional permits varies by agency and is not fully automated. State, County and some Cities each issue their own over-dimensional permits.
- System Wide Congestion – Some regional freeways and other preferred over-dimensional truck routes have frequent congestion, especially during the peak travel periods (e.g., I-5, US 26).
- Access to Project Sites – Areas not designed for large trucks are challenging to access with large pieces of construction equipment like cranes (e.g. South Waterfront in Portland). Trucks need to access dense urbanized areas when development occurs and truck access is often overlooked.

SYSTEM IMPROVEMENT TOOLBOX

Common types of over-dimensional constraints were observed throughout the system. A solutions toolbox was developed to summarize the types of solutions available and associated order of magnitude cost ranges.

- Vertical Constraints include low power lines, bridge overpasses, signal mast arms, railroad bridges, overhead sign structures and tree canopy.
  - Solutions range from "low cost" improvements such as raise/replace low utility poles and overhead sign structures, to "high cost" structural improvements such as lower road elevation at undercrossing or raise bridge overpass structure.
- Width Constraints include traffic signal mast arms, traffic controller cabinets, utility poles, bridge structures and pavement widths.
  - Solutions range from "low cost" improvements such as allow truck movement to occur in both travel lanes to "high cost" improvements such as reconstruct narrow bridge to full width to provide adequate vehicle width.
- Weight Constraints primarily involve weight-limited bridge structures.
  - Solutions are typically "high/higher cost" bridge retrofits or complete rebuilds or replacement.

NEXT STEPS

- Complete conceptual design evaluations for the three identified focus areas: (1) UPRR over Columbia Blvd, (2) Scholls Ferry Over-crossing of Hwy 217, (3) Grahams Ferry Road under-crossing of Portland & Western Railroad.
- Complete Tasks 6 – Transportation System Improvements and Alternatives Report.
- Hold Final PMT and SAC meetings in November/December 2016.
- Complete Task 7 - Final Report.
- Present findings and recommendations as requested.