Highway Construction and Traffic: Minimizing Impacts to Transit and Freight Through Best Practices

Report to the Legislature in response to Chapter 14, Laws of 2016, Section 306 (26)
December 1, 2016

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Table of Contents

Executive Summary 4
Context 6
Current Practices 7
   Practical Solutions 7
   Best Practices 11
   Issues & Opportunities 13
Process Recommendations 15
Appendix A A1
   Case Studies A1
      SR-285 – George Sellar Bridge Intersection Improvement A1
      I-5 – SR 16 Tacoma/Pierce County HOV Program A3
      SR 104 and 307 North Kitsap County Remove Fish Barrier A5
   Project Delivery Memo #16-01 Transit Outreach A7
   Stakeholder List A11
Executive Summary

The Washington State Department of Transportation (WSDOT) performs construction activities across the state to maintain and improve key components of the transportation network. Lane and road closures, detours, and other traffic control measures are necessary to complete construction while keeping drivers and workers safe. They also disrupt traffic, including transit and freight. This creates challenging tradeoffs among travel times and reliability, transportation operating costs, traffic on alternate routes, project timelines, project costs and project scope.

In 2016, the Washington State Legislature passed a budget proviso\(^1\) directing WSDOT to conduct outreach to transit agencies, and develop recommendations for minimizing impacts to transit and freight during construction.

\[
\text{“(26) (a) The department must conduct outreach to local transit agencies during the planning process for highway construction projects led by the department.}
\]
\[
\text{(b) The department must develop process recommendations for best practices in minimizing impacts to transit and freight during project construction. A report on best practices must be submitted to the transportation committees of the legislature by December 1, 2016.”}
\]

This report responds to the legislature’s request. It summarizes WSDOT’s current construction traffic practices, distills best practices from freight, transit and project outreach, and provides process recommendations for best practices to minimize construction impacts, especially for transit and freight.

This report identifies early and ongoing engagement between WSDOT, transit agencies, and freight providers as a critical best practice. Interviews with transit operators, freight providers, and WSDOT staff revealed that engagement practices were in place across WSDOT regions and projects, yet methods used for implementation varied. The report identifies opportunities for improvement largely related to engagement and collaboration, and makes the following process recommendations to minimize construction impacts on transit and freight:

- Evaluate opportunities to improve the construction traffic management program
- Review WSDOT guidance documents for consideration of transit and freight

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\(^1\) Engrossed Substitute House Bill 2524, Section 306 (26), page 54. Passed by the Washington State Legislature on March 25, 2016.
Approach

To develop this report, WSDOT worked with representatives from transit agencies, the Washington State Transit Association, Community Transportation Association of the Northwest, Washington Trucking Associations, Washington Public Ports Association, and WSDOT’s Rail, Freight, and Ports Division, Public Transportation Division, and the Government Relations, Communications, Multimodal Transportation Planning, Project Development, Environmental Services, Design, Construction, and Maintenance offices. WSDOT conducted informational interviews with 18 WSDOT staff, 21 representatives from the transit industry, and 6 representatives from the freight industry. Effort was made to interview a range of stakeholders consistent with the diversity found within the transit and freight industries. Due to limited time and staff resources, this report is limited in breadth and depth. Given more time, WSDOT would have valued the input from many internal and external stakeholders that we were unable to reach for this report. A list of interviewees is found in Appendix A.

Context

WSDOT

The Washington State Department of Transportation is the steward of a multimodal transportation system and is responsible for ensuring that people and goods move safely and efficiently in support of a strong economy, thriving communities and a healthy environment. WSDOT builds, maintains and operates the state highway and ferry systems, working in partnership with others to maintain and improve local roads, railroads, and airports. WSDOT also supports alternatives to driving, such as bus and train service, carpooling, vanpooling, special needs transportation, rural transportation, Tribal transportation, alternate work schedules, telework options, bicycling and walking. Organizationally, WSDOT construction projects are typically led in regions (Olympic, Northwest, Southwest, North Central, South Central, and Eastern) or Washington State Ferries.

Transportation projects are designed to improve the overall transportation network for all modes of travel. The Practical Solutions initiative was adopted to enable more flexible and sustainable transportation investment decisions, including, but not limited to: operational improvements, off-system solutions, transportation demand management, and strategic capital solutions.

Freight

The picture of freight in Washington helps lead to economic vitality; the health of the state’s economy depends on an efficient and effective multimodal freight system. Each year, trucks move more freight than other modes such as rail, marine, pipelines, and aviation, whether measured by tonnage or value. When measured by tonnage, trucks moved 64 percent of all freight into, out of, within, and through Washington.

Regional freight operations are disbursed among organizations large and small, including a large number of individual, for-hire operators. Based upon size and weight, trucks are allowed to operate only on specific roadways. Their service model makes them particularly subject to highway construction traffic closures as they have limited means for avoiding them by using alternate routes or schedules.

Local providers are typically located and dispatched in Washington and deliver freight within the state or within a community. Their service model can be characterized by smaller vehicles, more reoccurring trips and access to more of the road network. These aspects somewhat increase their ability to adapt to construction traffic effects.
Transit

Transit is a crucial element of our state's transportation system, economy and quality of life. Transit providers offer service to over 80 percent of the state’s population, including metropolitan areas with extensive road networks and rural areas accessed by a single road. Local service providers are the backbone of transit in Washington State. In 2015, thirty-one local transit agencies provided over 229 million passenger trips across the state.

Transit providers vary in size and in the type of service provided. Rubber-tire service models can be categorized into fixed-route and demand response. Fixed-route service follows preplanned routes on a designated schedule. Demand response service uses flexible routing, and is scheduled according to passenger needs. Much of this service in our state serves people with special transportation needs.

Altering service in response to construction-related traffic closures can involve significant effort and expense that must be started well in advance. In addition to developing alternate routes and temporary bus stops, transit agencies must revise timetables to account for the additional time it takes to use an alternate route and operate in more congested traffic. Among other impacts, this results in a need for additional buses, drivers, and operating hours and extensive rider notification and outreach. Construction closures can affect people’s ability to access transit, transit’s ability to get empty buses to the start or end of a route, and the temporary use of high occupancy vehicle and transit lanes for general purpose traffic during construction.

Current Practices

WSDOT project teams consider and address construction traffic impacts, including impacts on transit and freight, throughout project development and construction. For the purposes of this report, construction project phases are defined broadly as planning, scoping and programming, design and environmental review, permitting, plans, specifications and engineering, and construction. During these phases WSDOT teams collaborate with communities, stakeholders and policymakers to identify and address opportunities and issues, consider tradeoffs, obtain funding and refine the project with increasing specificity. Project teams and stakeholders focus on construction traffic impacts with varying degrees of intensity based upon the project phase, scale and location.

One of the emerging practices at WSDOT is Practical Solutions. Below is a description of this practice, with a lens to how it can reduce construction traffic impacts. Following the description discussion focuses on the specific project phase where Practical Solutions is implemented, and how transit and freight input is incorporated into that phase of planning.

Practical Solutions at WSDOT

WSDOT is transitioning to a Practical Solutions approach in its delivery of transportation plans, projects, and services. This approach focuses on the performance objectives that need to be addressed. There are eight stages in the lifecycle of transportation systems and this Practical Solutions approach applies throughout. Each stage has varying opportunities for the public to engage. Below is a simple visualization of the “process
Broad map.” WSDOT’s 2016 update to the Community Engagement Plan (currently available for public comment) explains how the public and agencies can most effectively engage during each of the stages along this continuum. A key recommendation of this report is to find ways to educate transit and freight stakeholders to do just that. This reinforces the value of early engagement – before there is a capital project underway.

For example, transit agencies and freight haulers who participate in the corridor level studies can help WSDOT identify current and future needs, and brainstorm solutions that work on and off network (under Identify Needs and Assess Alternative Strategies). This will help reduce the potential for future conflicts especially for small capital improvement projects and operational changes.

Planning

During the planning phase corridor-level needs are considered, but project teams and stakeholders largely focus on defining the larger transportation problem, then identifying and assessing potential solutions to that problem. Transit and freight representatives (or members of regional and local organizations who represent their interests) routinely participate in plan development and planning studies. Mega-projects often produce a detailed and multifaceted corridor or program plan and share ownership of the planning process and project among organizations. Smaller, more routine projects are often incorporated into regional or local planning processes.

Scoping and Programming

During the scoping and programming phase, WSDOT’s programming staff work to define the key attributes (scope, title, budget, start date and completion date, etc.) of the proposed project. This information supports funding decisions. Standard work zone and construction traffic management practices (such as detours, lane closures, public notification) are routinely included in estimated costs and timelines.

Design, Environmental Review and Permitting

This phase starts when the project receives funding. Project teams are assigned. The teams work within the scope, schedule and budget that were established when the project was funded. During the design and environmental review phase, project teams conduct environmental analysis and review, engage stakeholders and design the project. Project teams are guided by WSDOT’s Environmental Manual, Design

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2 WSDOT Community Engagement Plan

Environmental Review includes the following steps, tailored to the size and scope of the project and its potential to impact the environment:

- Establishing the type of environmental documentation
- Developing and analyzing alternatives, as appropriate
- Analyzing and documenting environmental impacts
- Selecting an alternative and making environmental commitments (work on permits begins in this phase)
- Approving the project to move forward (SEPA/NEPA decisions and related approvals such as Endangered Species Act and Historic Preservation Act are part of this step)

The level of public and agency engagement varies with the size and scope of the project; the level of detail in the review depends on the potential for adverse environmental impact. Some small projects proceed quickly and have limited public and agency input. Large, complex projects often take several years and have multiple opportunities for input. Regardless of project size or complexity, WSDOT works with affected businesses, transit agencies and other public service providers to devise detour routes and, when possible, adjust construction methods, intensity and timing of the project to minimize impacts.

Construction traffic impacts are identified during this phase. Transit and freight representatives are routinely engaged or consulted. WSDOT’s guidance documents contain specific direction to staff to consider the needs of all modes. It is also important to note that Connecting Washington projects will follow WSDOT’s Practical Solutions framework.

The Environmental Review phase ends with approval of environmental documentation. After the environmental documents are finalized, environmental permits can be issued and the Permitting, Plans, Specifications, and Engineering phase can begin.

Final Permitting, Plans, Specifications and Engineering

During this phase, the project team obtains all remaining permits and approvals (including local, state, and federal permits, tribal negotiations, right-of-way permits, and more). This includes collaboration between project engineering and approving entities to ensure various conditions do not conflict and that the project will be constructible within the defined scope. Contracts, plans and specifications are prepared. Commitments are carried forward from prior stages and communicated to the contractor. Typically, unless the project will use a design/build delivery approach, the project is at 100 percent design when this stage is complete.

Construction

This phase implements the project, beginning with the bid and contract award, and ending with completed construction and hand-off to maintenance and operations. Throughout construction, WSDOT monitors for compliance, including construction traffic management compliance, and enforces the terms of the contract. WSDOT ensures the contractor minimizes adverse impacts and complies with commitments from prior phases. WSDOT actively works with the contractor to conduct all operations with the least possible inconvenience to the public and to provide adequate safeguards to protect the life, health, safety, and property of the public.
The design/build delivery approach differs somewhat. This approach puts responsibility on the contractor for much of the process. While there is more flexibility in a design/build project, outreach and coordination on construction traffic impacts is conducted in a manner similar to WSDOT’s traditional project delivery process.
Best Practices

The proviso request directed WSDOT to report on best practices for minimizing construction impacts on transit and freight. To do so, WSDOT performed informational interviews of fifty transit and freight stakeholders and WSDOT staff. WSDOT also looked at its internal process and guidance. The best practices listed below are distilled from interviews of WSDOT staff, transit, and freight stakeholders, and guidance.

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Existing Best Practices</th>
<th>Reference</th>
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<tbody>
<tr>
<td>All Phases</td>
<td>WSDOT, transit, freight, local jurisdiction and other community stakeholders participate in ongoing dialog about transportation projects and managing their effects on the movement of people and goods during construction. This best practice was found to be in place across WSDOT regions. The methods used varied by region and community.</td>
<td>Community Engagement Plan</td>
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<tr>
<td>Planning</td>
<td>WSDOT engages with transit and freight groups in corridor sketch initiative to help define vision for highway corridors.</td>
<td>Project Delivery Memo 16-01 Transit Outreach (Appendix A)</td>
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<td>WSDOT’s Community Engagement Plan encourages inclusive outreach, seeking to hear from all voices, promoting several outreach techniques that those interviewed for this report said are effective (two-way communication at earliest stages, outreach, website, news releases)</td>
<td>Community Engagement Plan</td>
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<td>WSDOT provides traffic and construction information via email alerts to the trucking community through a Freight Alert Advanced Notification System.</td>
<td>Website</td>
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<td></td>
<td>Include transit agencies in communication and outreach efforts and encourage transit agencies to engage in long-range planning, statewide and regionally.</td>
<td>Project Delivery Memo 16-01 Transit Outreach (Appendix A)</td>
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<tr>
<td>Scoping and</td>
<td>WSDOT Connecting WA project interactive webpage provides project list to stakeholders and the public</td>
<td>Website</td>
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<tr>
<td>Programming</td>
<td>WSDOT provided all transit agencies the list of active improvement projects and WSDOT contact information.</td>
<td>Letter from Brian Lagerberg, Director of WSDOT Public Transportation Division, dated July 28, 2016</td>
</tr>
<tr>
<td>Design and</td>
<td>During design, and applying the practical solutions approach, project teams consider transit and freight as part of context setting, needs identification, economic vitality.</td>
<td>Design Manual</td>
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<tr>
<td>Environmental</td>
<td>WSDOT’s guidance for public involvement during environmental review (NEPA and SEPA) includes direction to engage service providers, businesses, transits, tribes, local communities, and user groups.</td>
<td>Environmental website and manual</td>
</tr>
<tr>
<td>Review</td>
<td>Transit and traffic-related impacts are included in WSDOT’s environmental review. Best practices include the technical analysis conducted for SEPA checklists, Environmental Assessments (EA) and Environmental Impact Statements (EIS). For example, transportation analysis reports completed for EA and EIS, include analysis of: “Potential effects of projects on transit, pedestrians, bicycles, rail crossings, ferry operations, airport safety zones, parking, and vehicle traffic on adjacent and connecting roadways need to be evaluated and discussed in the environmental document. The effects can be positive or negative, temporary or long-term. Mitigation for unavoidable impacts, especially construction impacts, should also be discussed.” (Section 455.03) Changes in travel time and accessibility for all modes and impacts on transit dependent</td>
<td>Environmental Manual</td>
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<tr>
<td>Project Phase</td>
<td>Existing Best Practices</td>
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<td>Populations are included in the study of Social and Community effects. (Section 468)</td>
<td>Project Delivery Memo 16-01 Transit Outreach (Appendix A)</td>
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<td>Project teams are conducting project-specific outreach to local transit agencies.</td>
<td>SR 520, I-90, I-405 mentioned in interviews</td>
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<td></td>
<td>Effective partnerships during project design. Examples include Sound Transit, Metro and WSDOT partnering on projects, integrating transit, highway safety and mobility improvements.</td>
<td>Alaska Way Viaduct Replacement Project</td>
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<td>Draft and Final Environmental Impacts Statements for the SR99 Alaskan Way Viaduct Replacement Project examined the duration of construction and its impacts on local and regional transit and port activities.</td>
<td>Website</td>
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<td>WSDOT leads intensive, multi-agency construction traffic project collaboration focused on the greater Puget Sound region. Two or more years prior to construction, WSDOT tracks state and local construction projects, estimates and analyzes likely traffic impacts, and identifies potential conflicts and hot spots. WSDOT engages state and local project teams, ports and transit agencies to coordinate and take preventative action to minimize the risk of construction traffic impacts.</td>
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<td>Permitting, Plans, Specifications, and Engineering</td>
<td>As details are finalized, project engineers identify traffic control plans and detour routes. A best practice is communicating this information to affected freight, transit, and other users.</td>
<td>Interview</td>
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<td>Testing detour routes with transit and freight in advance of setting them.</td>
<td>Interview</td>
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<td>Construction</td>
<td>Two-way communication allowed stakeholders and WSDOT to have their needs met during and after construction.</td>
<td>East George Sellar Bridge Improvement Project Case Study (Appendix A)</td>
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<td>As more detailed and certain information is available about construction projects, WSDOT reviews and permits construction traffic closures, detour routes and conducts stakeholder and public outreach. This intensive coordination continues throughout the construction phase and includes freight and transit.</td>
<td>Examples: Alaska Way Viaduct Replacement Project, East George Sellar Bridge Improvement Project Case Study (Appendix A)</td>
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<td>Ongoing public outreach: media relations (press releases, media events, etc.), motorist outreach and traveler information, community outreach (email alerts, mailers, presentations, advertisements, etc.), stakeholder outreach (freight alerts, construction coordination meetings, etc.).</td>
<td>Community Engagement Plan</td>
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<td>Setting up and monitoring clear detours and alternate routes, including routes that meet freight and transit needs (grade, width, height, etc.).</td>
<td>Interviews</td>
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<td>Night work/off-peak work and incident management helps to reduce the delays through active construction.</td>
<td>Interviews</td>
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<td>Coordinate construction projects and changes to construction schedules and closures and coordinate day-to-day operations among agencies.</td>
<td>Interviews</td>
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<td>Weekly stakeholder communication about specific closures.</td>
<td>Interviews</td>
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<td>Manage special situations to help keep people and goods moving (oversize loads, special events, etc.).</td>
<td>Interviews</td>
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<td>Expedite construction and reduce construction traffic closures as much as possible.</td>
<td>Interviews</td>
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**Issues & Opportunities**

Informational interviews with transit and freight stakeholders and WSDOT staff helped provide a better understanding of how current tools and policies are being implemented. The interviews also help shed light on challenges faced during construction, ways to minimize impacts, and improve processes. In total, fifty interviews were conducted: twenty-one with transit agencies and other service providers throughout the state, including Tribes and special needs providers; eighteen interviews within WSDOT that included project managers, project engineers and planners; and eleven interviews with freight stakeholders.

Those interviewed agreed on several topics:

- Good relationships with clear and consistent communication are of paramount importance.
- Earlier information about detours and closures is most useful, but stakeholders understand that changes happen.
- Existing construction traffic management efforts are effective and efficient at minimizing construction impacts on transit and freight. Examples include hot spots analysis, work zone review, and regional office coordination efforts before and during construction.
- Safety is paramount. There is a shared commitment to ensuring the safety of all users during construction and operations.

**Summary of key issues raised by Transit**

- Transit providers are concerned about schedule reliability and the need to add service to meet transit schedules during construction.
- Construction project funding is determined early on and is allocated to specific project elements and phases. This makes it difficult to make adjustments to address transit needs identified late in the process.
- Special needs transportation providers are concerned about avoiding safety and health impacts to passengers, such as missing appointments due to the additional time spent in traffic.
- Maintaining coordination through project phases and/or changes in staff is a challenge.

**Summary of key issues raised by Freight**

- Trucks are the widest, heaviest, longest vehicles on the road and are impacted by weight, width and vertical restrictions.
- Clear lane markings through construction are very important.
- WSDOT is a large organization which makes it difficult to know who to communicate with.
- Reliability of the transportation network is paramount.
- Consistency in communication methods for sharing alternative routes, anticipated delays, and lane restrictions is needed.
- Notification using electronic information signs is most helpful when they are located far enough in advance to minimize impacts.

**Summary of key issues raised by WSDOT Staff**

- Project design may be at less than 30% during public and agency review period, meaning that sometimes construction impacts are not fully identified until final design.
- Last minute changes and how to deal with them need to be addressed.
- Truck drivers and dispatchers are a diffuse group; it’s difficult to reach many of them.
• Truck drivers and dispatchers cover large amounts of territory; it is not possible to provide them closure information that is relevant to their trip.
• Transit and freight organizations do not always have the capacity to engage with WSDOT, despite everyone’s best intentions.
• Major transportation projects take years, if not decades, to move from planning through construction. This creates continuity and collaboration challenges for WSDOT and stakeholders.
• Recruiting and retaining staff with construction traffic management expertise is challenging in the current labor market.
• Outdated technology hampers WSDOT’s ability to plan for construction traffic closures, manage and route traffic during closures, and adapt in real time during closures.

Opportunities

• Improve and intensify construction traffic planning collaboration; work together to develop solutions that better support both project delivery and the movement of people and goods.
• Enhance education about issues, impacts, and needs while engaging stakeholders through established forums such as transit and freight advisory committees.
Process Recommendations

WSDOT will continue to apply best practices throughout all phases of transportation project delivery and operations. Based on the information gathered for this report, the process recommendations outlined below would help to further minimize construction impacts to freight and transit.

**Recommendation 1: Evaluate Opportunities to Improve the Construction Traffic Management Program**

WSDOT should work with partner organizations to consider incremental improvements to its construction traffic management programs. Some ideas to consider with stakeholders are listed below:

- Expand the geographic scope of construction traffic planning hot spots analysis, which currently focuses on Whatcom, Skagit, Snohomish, King, Pierce, and Thurston counties
- Explore whether technology could be acquired and used to improve construction traffic planning, operations and real-time management
- Explore new ways to provide construction traffic hot spots information beyond the current emails, web pages, and hot spot meetings to make the information relevant to decision-makers
- Consider whether stakeholders would use information about likely construction traffic closures beyond designated hot spots, where conflicts between projects are unlikely to occur
- Explore opportunities to use the construction traffic information to improve collaboration across transportation asset owners

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<th>i. Legislation Required:</th>
<th>None</th>
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| ii. Fiscal Impact:      | a) Initial assessment can be performed by WSDOT  
                          b) Implementation is likely to require additional FTE and budget to support expanded program*
                          *Fiscal impacts will affect both WSDOT and partner organizations, including transit and freight |
| iii. Anticipated Timeline: | Assessment complete by December 2017 |
| iv. Benefit:            | Identifies likely construction traffic conflicts early and supports efforts to identify more effective and low-cost ways to manage the risks, standardize communication flow, create shared responsibility, reduces “surprises,” improves relationships |
Recommendation 2: Review WSDOT Guidance Documents for Consideration of Transit and Freight

WSDOT regularly updates its manuals and guidance documents to keep up with changes in law and policy. WSDOT should undertake a review of the manuals and other guidance documents used by staff to improve consistency in the consideration of transit and freight during all phases. As part of the review, WSDOT should consider the incorporation of best practices where they effectively minimize construction impacts. Topics to consider include:

- Identify ways to engage freight and transit groups in WSDOT's practical solutions approach particularly early in the development of corridor plans.
- Identify transit and freight stakeholders, and input opportunities in capital project design and environmental review.
- Clarify WSDOT's SEPA guidance so that potential impacts on transit and freight service are consistently considered.

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<th>i. Legislation Required:</th>
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<td>ii. Fiscal Impact:</td>
<td>Initial assessment can be performed by WSDOT</td>
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<tr>
<td>iii. Anticipated Timeline:</td>
<td>Complete by December 2017</td>
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<td>iv. Benefit:</td>
<td>WSDOT’s internal guidance and manuals will clarify and reiterate WSDOT’s intent to actively engage our partners including transit and freight in improving project delivery and system operations. This is consistent with other efforts to make sure the agency’s manuals align with Practical Solutions, workforce diversity and inclusive community engagement.</td>
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In addition to the two process recommendations notes above, WSDOT should continue its efforts to apply Practical Solutions approaches, in support of early engagement with stakeholders. In doing so, WSDOT should pursue opportunities to more productively engage transit and freight stakeholders and develop early, actionable construction traffic ideas that support project delivery, safety and the movement of people and goods.
Appendix A (Case Studies, Project Delivery Memo, Stakeholder List)

Case Studies

The case studies below illustrate techniques to reduce impacts, and provide insight into the challenges and barriers faced during both small and large, mega-projects.

East George Sellar Bridge Improvement Project (SR 285 & SR28)

Two-way communication allowed both Link Transit and WSDOT to have their needs met during and after construction.

Project Overview

The SR 285 Senator George Sellar Bridge is one of two Columbia River Crossings in the immediate Wenatchee area and serves to connect the southern ends of Wenatchee and East Wenatchee. Intersections adjacent to the east end of the bridge created concerns associated with weaving movements, causing substantial delays, accidents, and a general concern for traffic safety. This, coupled with projections showing an increase in traffic volume, led WSDOT to make improvements to the east approach to the bridge.

The project increased the capacity of the intersections on streets leading to the east end of the bridge, by adding lanes, limiting turning movements at intersections, and bringing the streets up to current standards. Additionally, there were several new Intelligent Transportation System (ITS) elements installed, including:

- An automatic congestion detection system that alerts drivers to traffic or delays ahead
- Several overhead electronic signs transmitting real-time messages to motorists passing below
- New flashing crossing signs for pedestrians

Transit and Freight Use

SR 285 serves as a major freight corridor, and is identified in the Washington State Freight Mobility Plan as a T2 Truck Freight Economic Corridor (Freight corridors carrying 4 to 10 million tons per year). Additionally, three fixed-route transit services travel this corridor. During peak mid-day services, there are approximately 14 bus tips per hour. The corridor is also used by special needs transit providers.

Construction Traffic and Work Zone Impacts

Construction of this project consisted of widening SR 285, including the Wenatchee Avenue Bridge, and widening Mission Street from Snohomish Street to SR 285. Given that the Sellar Bridge is one of two access points in and out of Wenatchee, with 60,000 vehicles using it per day, construction was primarily limited to night time work, leaving two lanes open. Movable barriers allowed for construction crews to open it back up to four lanes during the day. Construction lasted almost two years, with the majority of work being completed during summer months.
Practices Used to Minimize Impacts

WSDOT used many tools to help minimize impacts to transit and freight during construction including engagement with Link Transit early in the planning phase and throughout the project’s duration.

During design and construction, a bus stop had to be moved once during construction and again after construction, as the original stop was no longer accessible due to the removal of a turning system. Of early and consistent coordination with WSDOT, Link Transit was able to notify customers well ahead of time and minimize disruption to their routines. Link Transit reported frequent communication with WSDOT through emails, in-person meetings and phone calls.

Outcome Summary

The two most significant factors related to minimizing freight and transit impacts during this construction project were frequent communication and construction timing. Two-way communication allowed both Link Transit and WSDOT to have their needs met during and after construction. Early awareness of future stop impacts provided time for adjustments to be made to schedules and stop locations. Night time construction minimized impacts to freight on this important freight route.
I-5 – SR 16 Tacoma/Pierce County HOV Program

Last minute changes during construction made it difficult for Pierce Transit to maintain regular service. Despite consistent points of engagement throughout this decades long mega-project, these changes, along with long-term detours, created major cost burdens and service disruptions.

Project overview

The Washington State Department of Transportation (WSDOT) is building a series of projects to provide operational improvements including the addition of high-occupancy-vehicle (HOV) lanes on I-5, SR 16, and SR 167 in Pierce County. By constructing HOV lanes, WSDOT will maximize freeway capacity by encouraging transit and ride-sharing. The projects also improve safety and mobility, minimize traffic noise impacts, enhance nearby wetlands, improve methods to treat storm water runoff, and add new electronic tools to better manage traffic and communicate with the traveling public.

The HOV projects are in various stages. Some projects are complete, some under construction, others in design, and some are unfunded. WSDOT started construction in 2001 and the series of projects will continue through 2020. This case study focuses on the I-5 M Street to Portland Avenue – HOV project.

There are three subcomponents to the I-5 M Street to Portland Avenue – HOV project; (1) the full replacement of Pacific Avenue overpass, (2) the full replacement McKinley Way overpass, (3) and the widening of I-5 to include four general-purpose lanes and one HOV lane in each direction. The bridge replacements are necessary to accommodate the widening of I-5.

Transit and Freight Use

Pacific Avenue and McKinley Way overpasses are not designated freight routes but do see freight use by local delivery haulers. Both overpasses are used by Pierce Transit for fixed-route service. During peak PM service, Routes 1 and 53 cross the Pacific Ave Overpass with 20 and 4 trips per hour respectively. Pierce Transit Route 42 crosses McKinley Way with 4 trips per hour. The corridor is also used by special needs transit providers and deadheading Pierce Transit busses. Overpass removal caused disruptions to both local freight haulers and to transit users.

I-5 through Tacoma is critical to both transit and freight. It is designated as a T-1 Truck Freight Economic Corridor carrying more than 10 million tons of freight per year. All construction efforts needed to minimize disruptions to this economic lifeline.

Construction Traffic and Work Zone Impacts

The I-5 M Street to Portland Avenue – HOV project required total road closures of the Pacific Avenue and McKinley Way overpasses spanning I-5. The Pacific Avenue overpass was closed from Spring of 2015 until Summer of 2016. The McKinley Way overpass closed in summer of 2016, and is planned to stay closed approximately 18 months.
Practices Used to Minimize Impacts

WSDOT conducted public involvement activities during early planning for the program. Stakeholders were engaged, including Pierce Transit and the City of Tacoma, about detour agreements and their modifications. Pacific Avenue and McKinley Way overpasses closures were staggered to provide alternate routes. Additionally, WSDOT held public presentations, open houses and hearings to provide opportunities for public input and to inform transit users of service changes. Other communication strategies included:

- Weekly email updates
- Phone calls from WSDOT staff
- Media releases
- "HOT spot" construction traffic management meetings between WSDOT and transportation stakeholders
- Updates from WSDOT project managers
- Staff coordination meetings

Outcome Summary

Although several communication methods are working well to address impacts, WSDOT is conducting ongoing conversations with Pierce Transit to identify future opportunities to improve coordination and communications about traffic impacts. Quarterly meetings continue between WSDOT, Pierce Transit, and jurisdictions in Tacoma/Pierce County to establish ongoing lines of communication. Despite consistent points of engagement throughout this decades long mega-project, late changes in construction timing, along with long-term detours, created major cost burdens.
SR 104 & 307 North Kitsap County Remove Fish Barriers

Project overview

State highways crossing over rivers and streams in thousands of places in Washington state can impede fish migration. For over two decades, the Washington State Department of Transportation's (WSDOT) Fish Passage Barrier Removal Program has worked to identify and remove barriers to fish passage caused by culverts under state highways and reconnect streams to keep waterways healthy.

In 2013, a federal court injunction required WSDOT to significantly increase efforts in removing State-owned culverts that blocked habitat for salmon and steelhead. An estimated 989 culverts apply to this injunction, with 825 of them having significant habitat. To achieve compliance, WSDOT will need to correct an average of 30 to 40 culverts per year, with work beginning in 2015 and extending through 2030.

As part of this work, WSDOT replaced three culverts associated with Grover’s Creek, Gamble Creek and Dogfish Creek in North Kitsap County under State Routes (SR) 104 and 307 in the summer of 2016. WSDOT also built a new stream channel for Grover’s Creek.

Transit and Freight Use

SR 104 is not a designated freight route but does see freight use. SR 104 is also used by Kitsap Transit for routes 91 and 92. During peak service, routes 91 and 92 consist of approximately 4 bus trips per hour. The corridor is also used by special needs transit providers. SR 307 has limited freight use, and no fixed-route transit service.

Construction Traffic and Work Zone Impacts

The SR 104 and SR 307 North Kitsap County fish passage improvement project required total road closures. WSDOT staggered the weeklong SR 104 road closure with the two-week long SR 307 road closure. Throughout this time, all traffic including transit and freight had to use detours on the following routes:

- Grover’s Creek on SR 104 at milepost 22.41
- Gamble Creek on SR 307 at milepost 4.62
- Dogfish Creek on SR 307 at milepost .5

Practices Used to Minimize Impacts

To minimize impacts, WSDOT staggered the timing of the SR 104, and SR 307 projects, and performed construction on weekdays when traffic volumes were low. WSDOT also began engagement with the public and roadway users two months prior to construction. This extra time allowed for more extensive outreach to the communities along the route and to ferry riders, as SR 104 is the access road to the Kingston Ferry. WSDOT coordinated with Kitsap Transit and Kitsap County during the construction concept phase to establish detour agreements and transit reroutes.
In addition to standard new releases and traffic advisories, WSDOT informed residents and stakeholders of the closures at various community meetings. WSDOT also teamed with a representative from Kitsap Transit at some of the meetings so the public could have a better understanding of the service changes. Other tools used for outreach before and during construction included:

- A postcard informing people along the route of closures, along with an opportunity to sign-up for email updates
- A frequently asked questions (FAQ) document, updated on a regular basis, written in a friendlier style to grab reader’s attention
- Email updates, which included the FAQs
- Social media posts
- Webpage updates

Unique Project Challenges

- Because construction occurred on the access road to the Kingston Ferry, Kitsap Transit opted not to provide transit service to the ferry during the closure.
- Possibilities of delays for passengers disembarking from Washington State Ferries due to road closure backups
- Issues with effectively communicating that WSDOT may need to alter the construction schedule due to weather or unknown construction issues causing road closures to last longer

Outcome Summary

Due the early engagement and a more personalized approach, WSDOT was able to minimize impacts to roadway users, including transit and freight, during the construction of the project. Kitsap Transit had enough time to plan for service changes on the detour routes, and by partnering with WSDOT during outreach, had opportunities to inform the public with minimal effort.
Project Delivery Memo #16-01 Transit Outreach
June 27, 2016

TO:
Tom Baker, Bridge and Structures Engineer
Kevin Dayton, Deputy Chief Engineer, Olympic Regional Administrator
Lorena Eng, Northwest Regional Administrator
Mike Frucci, Acting Eastern Regional Administrator
Joe Hedges, Alaskan Way Viaduct Program Administrator
Brian Lagerberg, Public Transportation Division Director
Nicole Mcintosh, Director, Terminal Engineering, WSF
Julie Meredith, SR 520 Program Administrator
Keith Metcalf, Deputy Secretary
John Metcalf, Director, Traffic Operations, State Traffic Engineer
Ron Pate, Director, Rail, Freight, and Ports Division
Patty Rubstello, Assistant Secretary for Tolling
Dan Sarles, North Central Regional Administrator
Kris Strickler, Southwest Regional Administrator
Craig Stone, Executive Director, Puget Sound Gateway Project
Todd Trepanier, South Central Regional Administrator
Megan White, Director, Environmental Services Office
Kerri Woehler, Director, Multimodal Planning Division

FROM:
Linea Laird, P.E., Assistant Secretary of Engineering & Regional Operations
Amy Scarton, Assistant Secretary Community and Economic Development

SUBJECT:
Project Delivery Memo #16-01 Transit Outreach

PURPOSE AND DIRECTION
Effective immediately, all affected project teams must conduct outreach to local transit agencies.

Background
The focus of this memo is project specific outreach to local transit agencies. The 2016 Budget Proviso includes the following direction:

Sec. 306. 2015 1st sp.s. c 10 s 306 (uncodified) is amended to read as follows:
FOR THE DEPARTMENT OF TRANSPORTATION-
IMPROVEMENTS-PROGRAM
(26) (a) The department must conduct outreach to local transit agencies during the planning process for highway construction projects led by the department.
(b) The department must develop process recommendations for best practices in minimizing impacts to transit and freight during project construction.
A report on best practices must be submitted to transportation committees of the legislature by December 1, 2016.

This memo presents direction to the project teams to comply with section (26) (a).

A separate implementation strategy will be prepared for section (26) (b) which includes consideration of impacts to freight as well as transit.

WSDOT works closely with transit agencies in the delivery and operation of the state’s multimodal system. While our partnership with transit agencies is not new, the proviso is an opportunity to demonstrate our commitment to continually improve our engagement with stakeholders, including transit agencies.

Projects Affected
The proviso is a condition set on the appropriations to Program I. See projects listed on pages 2-23 in the budget (LEAP March 7, 2016) http://leap.leg.wa.gov/leap/Budget/Detail/2016/CTLEAPDoc2016-2-0307.pdf

The proviso only affects projects on the Program I list that are led by the department. The proviso refers to the “planning process for highway construction projects” which we interpret as the planning, early design, and/or environmental review phases.

As a reminder, transit agencies not only operate fixed route bus and rail services, they also operate transportation services for people with special needs, vanpools, park and ride lots and other ride-sharing services. Project teams should engage transit agencies if their project has the potential to adversely affect any of these services.

ACTIONS REQUIRED
Improvement Project teams are required to include transit agencies in their outreach efforts. In addition, projects funded in other program areas (including Bridge Preservation – Replacement, and Ferry Terminal Preservation) are strongly encouraged to reach out to transit agencies to minimize the potential for disruption in transit services.

Projects in planning stage shall:
1. Work with Public Transportation Division to identify transit agencies in your project area. Check your Corridor Sketch database to see if it already has the information.
2. Conduct project specific outreach to the local transit agency. This should include written correspondence providing a project contact name and telephone number.
3. Include transit agencies in the communication and outreach efforts.
4. Encourage transit agencies to take advantage of opportunities for longer range planning that may affect transit agencies that also occurs through the state's MPOs and RTPOs.
Projects in design phase shall:
1. Determine whether or not your project has the potential to impact transit operations.
2. Consult your region’s Public Transportation Community Liaison for assistance (see resources). Some projects are unlikely to have any impact (such as those with activities that do not alter the flow of traffic in any way: could include installing guardrail, noise wall, ITS, stormwater mitigation). If no impacts are likely, document in your project file.
3. If yes, identify transit agencies with services in your project area, including any planned detour routes.
4. Conduct project specific outreach to the local transit agency. This should include written correspondence providing a project contact name and telephone number.
   a. Projects subject to SEPA should maximize SEPA’s public and agency comment opportunity. Work with your environmental office to ensure that you are circulating SEPA checklists and notices to transit agencies.
   b. Projects that are exempt from SEPA still need to conduct the outreach to local transit agencies.
   c. During design, consider adding local transit agency representatives to your Multiagency, Interdisciplinary, and Stakeholder Advisory (MAISA) team.
5. Throughout project delivery, include transit agencies in the project communication and outreach plan.

Projects in construction are requested to:

Consistently supply information to WSDOT’s Construction Traffic Management team and region. Emphasize the use of the construction traffic hot spots and associated information and analysis where applicable www.wsdot.wa.gov/construction/planning.

No reporting is associated with section 26 (a), however, projects are asked to submit any best practices to Development Division (Carol Lee Roalkvam) for inclusion in the report required under section 26 (b).

**Development Division with Public Transportation Division**
1. Prepare informational mailing to individual transit agencies statewide providing them the list of active improvement projects, including WSDOT contact information.
2. Seek input from within WSDOT as well as with transit and freight stakeholders for the development of the report specified in the proviso Section (26) (b).

**Resources:**
1. Public Transportation Division Resources
   a. List of Transit Authorities. Attached, and posted on line at Washington transit authorities map
   b. WSDOT’s Construction Traffic Management group www.wsdot.wa.gov/construction/planning
   c. WSDOT’s Public Transportation Division Community Liaisons and their designated regions: www.wsdot.wa.gov/Transit/contact.htm

3. WSDOT’s Environmental Manual provides direction to our project teams to consider transit impacts from proposed projects. The full manual is on-line at www.wsdot.wa.gov/Publications/Manuals/M31-11.htm. See Chapter 400 (our overall direction on NEPA/SEPA) and Chapter 460 (Transportation). In addition to the manual, specific procedural guidance for document preparers is located online at www.wsdot.wa.gov/Environment/Compliance/techguidance.htm. The guidance for transportation specifies transit outreach, and the guidance for social effects includes access to transit and other public services.

If you have any questions, please contact Carol Lee Roalkvam, Development Division roalkvc@wsdot.wa.gov, 360-705-7126; or Stan Suchan, Public Transportation Division, suchans@wsdot.wa.gov, 206-464-1192.

cc:
Region Project Development Engineers
Region Construction Engineers
Region Planning Engineers
Lynne Griffith
Jeff Carpenter
Chris Christopher
Kathleen Davis
Nancy Boyd
# Stakeholder List

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Organization</th>
<th>Stakeholder Group</th>
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<tbody>
<tr>
<td>Carol Lee Roalkvam</td>
<td>Environmental Services Policy Manager</td>
<td>WSDOT</td>
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<tr>
<td>Marco Foster</td>
<td>Assistant State Construction Engineer</td>
<td>WSDOT</td>
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<tr>
<td>Colin Newell</td>
<td>Assistant State Construction Engineer</td>
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<tr>
<td>Dave Erikson</td>
<td>State Construction Engineer</td>
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<tr>
<td>Jim Mahugh, PE</td>
<td>Assistant State Design Engineer</td>
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<tr>
<td>Marco Foster</td>
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<td>MaryLou Nebergall</td>
<td>Assistant State Construction Engineer</td>
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<td>Brian Nelson</td>
<td>Alaskan Way Viaduct Deputy Program Administrator</td>
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<td>David Sowers</td>
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<tr>
<td>John Wynands</td>
<td>Asst. Regional Administrator for Project Development</td>
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<tr>
<td>Meagan Lott</td>
<td>Communications</td>
<td>WSDOT</td>
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<tr>
<td>Travis Phelps</td>
<td>NWR Communications Manager</td>
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<tr>
<td>Matthew Pahs</td>
<td>Multimodal Freight Systems Planner</td>
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<tr>
<td>Brian Lagerberg</td>
<td>Director of Public Transportation</td>
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<td>Craig Stone</td>
<td>Executive Director</td>
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<td>Mike Gribner</td>
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<td>Kris Strickler</td>
<td>Regional Administrator</td>
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<tr>
<td>Stan Suchan</td>
<td>Project Development and Evaluation Manager</td>
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<td>Francois Larrivee</td>
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<td>Larry Ham</td>
<td>Operations Planning Supervisor, CTRAN</td>
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<tr>
<td>Matt Hansen</td>
<td>Manager of Customer, King County Metro</td>
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<tr>
<td>Irin Limargo</td>
<td>Traffic Systems &amp; Engineering Supervisor, King County Metro</td>
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<tr>
<td>Bruce Phillips</td>
<td>Planner, Link Transit</td>
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<tr>
<td>Kelly Scalf</td>
<td>CEO/GM, Okanogan Transit</td>
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<td>Richard Evans</td>
<td>General Manager, Pacific Transit</td>
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<td>Madelyn Carlson</td>
<td>CEO, People for People</td>
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<td>Dan Pike</td>
<td>Executive Director of Planning and Community Development, Pierce Transit</td>
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<td>Dixie Sciacqua</td>
<td>Special Events Coordinator, Pierce Transit</td>
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<td>Justin Leighton</td>
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<tr>
<td>Kevin Futrell</td>
<td>Transit Project Planner, City of Yakima</td>
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<tr>
<td>Shirley Allen</td>
<td>Managing Member, Mercy Transportation</td>
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<tr>
<td>Brandy Bachman</td>
<td>Sky Harbor Shuttle</td>
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<tr>
<td>Andrea Tull</td>
<td>Senior Project Manager, Sound Transit</td>
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<td>David Turissini</td>
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<td>Jason Suzaka</td>
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<td>Rob LaFontaine</td>
<td>General Manger, Twin Transit</td>
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<tr>
<td>Steve Hutchins</td>
<td>President/CEO, ATS Transit</td>
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<tr>
<td>Tom Hingson</td>
<td>Transportation Service Director, Everett Transit</td>
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<tr>
<td>Wendy Clark-Getzin</td>
<td>Clallam Transit</td>
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<td>Chris Herman</td>
<td>Washington Ports</td>
<td>Freight</td>
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<tr>
<td>Sheri Call</td>
<td>Washington Trucking Association</td>
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<tr>
<td>Sean Ardussi</td>
<td>Senior Freight Mobility Planner, Puget Sound Regional Council</td>
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<tr>
<td>Barbara Ivanov</td>
<td>Chief Operating Officer, Supply Chain Transportation and Logistics Center, University of Washington</td>
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<tr>
<td>Christine Wolfe</td>
<td>Senior Planner, Northwest Seaport Alliance</td>
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<tr>
<td>Matt Harris</td>
<td>Director of Trade, Washington State Potato Commission</td>
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<tr>
<td>Clayton Ritter</td>
<td>Director of Supply Planning and Performance, Nintendo</td>
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<tr>
<td>Jeremy Foreman</td>
<td>General Transportation Manager, Wal-Mart</td>
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<tr>
<td>Kirk Watkins</td>
<td>Safety Manager, Wal-Mart</td>
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<tr>
<td>Tilden Curl</td>
<td>Owner/Operator, Tecco Trucking</td>
<td>Freight</td>
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<tr>
<td>Jon DeVaney</td>
<td>President, Washington State Tree Fruit Association</td>
<td>Freight</td>
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WSDOT Guidance Excerpts

As an additional reference for this report, WSDOT staff compiled excerpts from WSDOT’s current manuals and guidance documents. The manuals referenced were the following:

- **Design Manual M22-01.13**
- **Environmental Manual M31-11**
- **Traffic Manual M51-02**
- **Construction Manual M41-01**
- **Standard Specifications for Road, Bridge, and Municipal Construction**

A 20-page compilation of excerpts is available on request. The excerpts illustrate specific areas in project delivery where project teams consider transit and freight needs, as well as general direction on stakeholder outreach and traffic impact analysis.