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Summary Report

Context Sensitive Solutions Technical Assistance: Washington State Department of Transportation

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Expanding the CSS/Livability Message and
Targeted Technical Assistance

June 2017

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16. Abstract <p>The Federal Highway Administration (FHWA) is sponsoring a Technical Assistance (TA) program to support states in applying Context Sensitive Solutions (CSS) to challenges they face in the transportation sector. FHWA is also inviting states that have completed a CSS process to join a virtual peer exchange where they can share information and lessons learned. Each state and state agency faces unique issues, but the results and key findings of these CSS efforts can offer valuable insight to other states.</p> <p>The Washington State Department of Transportation (WSDOT) has earned a reputation as a leader among states in applying CSS and practical solutions principles to its transportation project planning process. In 2015, WSDOT issued a new design manual which characterizes practical design as “a means to produce environmentally conscious, sustainable, context-based designs that achieve the purpose and need for the lowest cost. Implementing practical design considers the needs of all users, fostering livable communities and modally integrated transportation systems used safely by all, including motorists, freight haulers, transit, pedestrians, and bicyclists.” In addition, WSDOT has promoted practical solutions as a framework for implementing practical design, good asset management, performance-based decision making, community engagement, and least cost planning.</p> <p>The primary purpose of the TA workshop detailed in this report was to help WSDOT create a process for better applying the principles of context identification and Performance Metrics to actual project design and construction. WSDOT wished to examine its existing guidance and identify opportunities to improve it—in collaboration with state transportation engineers, planners, and key policy personnel, and with input from key stakeholder groups.</p> <p>This report documents the workshop, including workshop background, purpose, and objectives; key takeaways from the workshop; the agenda; list of attendees; a summary of all presentations and discussions during the workshop; lessons learned from the discussions, and recommendations for WSDOT from the workshop facilitators as WSDOT develops its updated design manual. There are three appendices for the report: detailed context identification questions and associated metrics developed during the workshop, process improvements generated during the workshop, and the process improvements from Appendix B, aggregated into six overarching issues.</p>					
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Background

The Washington State Department of Transportation (WSDOT) has earned a reputation as a leader among states in applying Context Sensitive Solutions (CSS) and practical solutions principles to its transportation project planning process.

In the mid-1990s, WSDOT began taking steps to more effectively incorporate project context into its design decision making process, to better align project outcomes with project needs. Over the years, WSDOT has developed and circulated valuable guidance to its project teams regarding CSS and multi-modal approaches for effective design and planning. It has also incrementally adapted its Design Manual to provide increasing design flexibility based on urban and rural context.

In 2005, WSDOT produced a guidance document for their Design Manual to help project teams better understand design flexibility. Over the next 11 years, WSDOT also introduced several new policies and guidance materials supporting CSS principles.

In 2015, WSDOT issued a new design manual which characterizes practical design as *“a means to produce environmentally conscious, sustainable, context-based designs that achieve the purpose and need for the lowest cost. Implementing practical design considers the needs of all users, fostering livable communities and modally integrated transportation systems used safely by all, including motorists, freight haulers, transit, pedestrians, and bicyclists.”*

In addition, WSDOT has promoted practical solutions as a framework for implementing practical design, good asset management, performance-based decision making, community engagement, and least cost planning. The WSDOT website defines practical solutions as *“a two-part strategy that includes: least cost planning and practical design in which WSDOT is undertaking to enable more flexible and sustainable transportation investment decisions. It encourages this by increasing the focus on project purpose and need throughout all phases of project development.”*

Purpose and Objectives of the Workshop

FHWA sponsors a Technical Assistance (TA) program to support states in applying CSS to challenges they face in the transportation sector. Each state participating in the TA program is invited to identify one issue to tackle using a CSS approach, with FHWA assistance. Participating states can also join a virtual peer exchange for sharing information, challenges, lessons learned, and successes. Each state and state agency faces unique issues, but the results and key findings of these CSS efforts can offer valuable insight to other states.

The primary purpose of this workshop was to help WSDOT create a process for better applying the principles of context identification and Performance Metrics to actual project design and construction. WSDOT wished to examine its existing guidance and identify opportunities to improve it—in collaboration with state transportation engineers, planners, and key policy personnel, and with input from key stakeholder groups.

The TA workshop had the following objectives:

- Examine challenges and opportunities from other state DOTs that have implemented CSS in all stages of transportation decision-making. Review recent and emerging research addressing the use of context to guide design decisions (e.g., NCHRP 15-52, *Developing a Context-Sensitive Functional Classification System for More Flexibility in Geometric Design*).

- Facilitate discussion among the WSDOT Region staff regarding the challenges and opportunities they have encountered with regards to understanding and integrating both context identification and performance metrics into planning and project development (programming, environmental review, and design) at key decision points (KDPs).
- Demonstrate the importance of a shared vision and goal for achieving success, using “real world” WSDOT examples. The examples were selected to illustrate the importance of considering transportation and land use context, along with WSDOT and stakeholder perspectives, when undertaking either planning or project development. An ideal solution integrates the diverse visions of the community, WSDOT, local government, and resource agencies into a shared, common vision.
- Critically review the effectiveness of existing tools and guidance developed by WSDOT. Initiate a discovery process and a plan for using the review findings to improve the process of establishing context, and of integrating associated Performance Measures into decisions, at both the planning and project levels. Consider the potential benefits of integrating emerging tools (e.g., NCHRP 15-52) into process improvement efforts.
- Identify opportunities for improving the context definition guidance document, which is part of WSDOT’s existing Design Manual. Discussion may explore opportunities and challenges associated with the development and implementation of that guidance (e.g., data, training, tools, collaboration, technical support, suitability of emerging national work, etc.). Noteworthy, is that the workshop discussion led organically to the question of how understanding and defining context supports design decisions, and a shared consensus that WSDOT’s guidance should encourage flexibility in transportation design and decision making.

The workshop took place on December 14, 2016 at the Kent Maintenance Center in Kent, Washington. It was attended by 20 participants representing several regions of the state—Eastern, Olympic, South Western, South Central, North Western, and North Central Washington—as well as WSDOT headquarters (HQ). The workshop was facilitated by CSS subject matter experts (SMEs).

Key Takeaways

Lessons learned from the TA included:

- For WSDOT, it is important to coordinate with the Comprehensive Planners – early and continuously.
- There are likely multiple metrics that go along with each guiding question – but knowing which metric to use is an aspect of understanding the context.
- CSS is an iterative process. Throughout the design and planning process, it should be applied repeatedly, and especially when large project changes are occurring.
- The dominant issue brought out in the discussions of process was the need for enhanced resources and staffing to help the public understand the issues during planning and scoping. The second dominant issue is finding a way to work with the state legislature to ensure that WSDOT’s philosophy of incorporating multi-modal uses and livability principles are in alignment with the State’s transportation priorities.

- Being flexible and exerting engineering judgement to take alternative approaches, when warranted, is good! Ensure that decisions are supported and warranted with quantitative, evidence-based reasoning, and are well documented.

The following recommendations were provided to WSDOT as it begins developing the 2017 guide manual:

1. **Define context.** WSDOT's design manual and the project development process both contain points at which context should be defined; however, neither document offers direction on how to define context nor what to do with the resulting defined context. WSDOT should develop a formal process for when and how to ask the Context Questions generated as part of this technical assistance, as well as when and how to assign Performance Metrics.
2. **Build in a Scoping phase.** The Scoping phase should be promoted as a key component of the Project Development process. As WSDOT is defining it now, the Scoping phase should be highlighted in between the Planning and Design processes, and cover the policy framework, managing system assets, identification of need, and assessing alternative strategies.
3. **Work in coordination with others in the community.** WSDOT should collaborate with local jurisdictions, MPOs, and other state and local agencies to create regionally integrated transportation and land use plans. WSDOT should consider bringing on "on-call" consultants capable of supplying technical assistance to communities on how to create a local network and land use plan that supports WSDOT's mission to provide appropriate mobility for all. This will help advance WSDOT's approach to project development and its community engagement efforts which may increase opportunities for collaborative comprehensive planning.

Meeting Agenda

The meeting was entitled “How Does Defining Context Help You Make Decisions?,” and was held on December 14, 2016.

Timeframe	Session or activity
8:30 am to 9:15 am	<u>Session 1: Introductions</u> , including individual perspectives on context definitions and using those in design and the use of the tools
9:15 to 9:30 am	<u>Session 2: WSDOT Practical solutions overview</u> – Presented by John Donahue, WSDOT
9:00 to 9:30 am	<u>Session 3: National overview of CSS</u> – Presented by CSS SMEs; and George Merritt, FHWA
9:30 to 10:45 am	<u>Session 4: Perspectives on using context in decision making</u>
10:45am to 11:00 am	<i>Break</i>
11:00am to 12:00pm	<u>Session 5: Using context identification guidance</u>
12:00 pm to 1:00 pm	<i>Lunch</i>
1:00 pm to 2:00 pm	<i>(Continued)</i> <u>Session 5: Using context identification guidance</u>
2:00pm to 3:30pm	<u>Session 6: Working with Performance Measures</u>
3:30 pm to 4:00 pm	<i>Break</i>
4:00 pm to 5:00 pm	<u>Session 7: Process improvements and action items</u>

The above agenda includes some modifications to the working agenda for clarity and to reflect the final sessions that were held.

Meeting Attendees

FHWA and WSDOT assembled several interested parties, including state transportation engineers, planners, and key policy personnel. An effort was also made to gather input from key stakeholder groups, but attendance was not possible. The attendee selection reflected FHWA's and WSDOT's intent to convene a good cross section of skills, expertise, and backgrounds.

Name	Region	Discipline
Jim Farris	Alaskan Way Viaduct	Design
Charlene Kay	Eastern	Planning
Tracey Partridge	Eastern	Design
Bonnie Gow	Eastern	<i>[Not provided]</i>
Mike Frucci	Eastern	<i>[Not provided]</i>
John Shambaugh	Northwest – Mount Baker Area	Planning
Amity Trowbridge	Northwest	Program Management
Emma Lance	North Central	Design
Mosstafa Sadia	North Central	Design
Tom Slimak	Olympic	Design
Forrest Suttmiller	Olympic	Planning
Troy Suing	South Central	Program Management
Brian White	South Central	Design
Dave Bellinger	Southwest	Design
Karena Houser	HQ	Planning
Jeremy Jewkes	HQ	Planning
Kent Kalisch	HQ	Design
Jim Mahugh	HQ	Design
Kyle Miller	HQ	Planning
John Donahue	HQ	Design
George Merritt	FHWA Resource Center	Safety and PBPD

Meeting Summary

The following pages summarize the meeting sessions and activities, as outlined in the Meeting Agenda above. The first four sessions were presentations with some discussion; the next three were facilitated working sessions in which participants were given a task to complete.

Presentations

Session 1: Introductions

Participant Introductions

The day began with introductions. Each attendee introduced him or herself and described any experience or general perspectives they had regarding practical design solutions, context-sensitive solutions, and the various tools used to define context.

During the introductions, it became clear that the participants possessed widely varied levels of experience and knowledge with practical design, practical solutions, and CSS:

- **New and inexperienced participants:** Several new WSDOT employees indicated they had not been exposed to practical design and practical solutions, however, they were in attendance to learn what was involved in those concepts. The Team acknowledged that this absence of experience could introduce challenges for those participants to assist in evaluating the existing resources and processes. However, several of these new WSDOT personnel had active projects that needed to incorporate the principles of CSS, so they could leverage the workshop as an opportunity for peer-to-peer exchanges of experiences and successful approaches.
- **Experienced and knowledgeable participants:** On the opposite end of the spectrum, several other participants had been with WSDOT for many years and showed a keen understanding of the relationship between land use and transportation. These experienced practitioners had a good understanding of CSS and knew something of practical solutions and the design manual, but some of them had some misconceptions about CSS. Two of these experienced participants mentioned the importance of economic development and addressing community desires for transportation projects to create economic opportunity. They talked about the challenges of meeting that demand, though each had a slightly different perspective and experience—from helping communities learn to recognize new opportunities, to being unable to fully address the economic expectations because the primary objective was to meet a basic transportation need. Some of these participants had the impression that CSS and practical solutions were only about addressing community economic demands.

Participants also reported the following challenges, interests, and questions:

- Participants face a great challenge in trying to meet basic needs and contextual needs in the face of budgetary constraints, and in making tradeoffs and prioritizing among those various needs. Several participants expressed interest in understanding how to make those tradeoffs more effectively.
- Some attendees had read or used the new design manual and found it helpful, but didn't seem to find the answers to all their questions regarding defining context, making tradeoffs, and staying within a budget.
- Several participants observed that projects that would benefit from using the design manual are usually handed to them with a scope and direction already defined, leaving little room for them

to apply the design manual. They wondered how they could effectively “go back” and reconsider context and need using the practical solutions approach.

- Participants expressed a general interest in and willingness to use practical solutions more if it led to better outcomes and better projects. Participants looked forward to hearing from their peers about how they were implementing practical solutions.

Opening Remarks

Comments provided during the introductions were synthesized and set the stage for the workshop’s expectations. Participants were reminded that the planning process involves finding the best solution that meets all the competing needs to the greatest extent possible within the given limitations. It was also mentioned that the *Connecting Washington* projects provide opportunities to be creative and flexible in determining what the ultimate solution might be.

One theme for the workshop was communicated as “blowing away all the barriers.” Participants were asked to think about what elements and tools they would need to deliver the best possible solution for a project, fully addressing the context and circumstances. One example provided was WSDOT’s Basis of Design documents which are a great tool that allows for documentation of design decisions, so that they can be defended and explained later.

Comments shared from other DOTs on CSS and design considerations include:

- *“We’ve looked at a lot of different information and what I ultimately ended up doing was just what the design manual said to do.”*
- *“Well, I’d like to be able to do this, but the “Green Book” says I need to do it a specific other way.”*

Comments like these reflect a rigidity and inflexibility that prevent truly elegant solutions. The practical solutions framework is all about prioritizing flexibility. It’s about empowering engineers and designers to think freely and holistically during the design phase, apply their expertise and best judgment, and broaden the scope to allow new alternatives and solutions that go beyond a rigid, prescriptive solution. This approach leads to creative solutions that truly meet the needs of the project while meeting all the standard requirements. Flexibility has been a hot topic in design for nearly 20 years, but implementing it is another story. CSS is about encouraging engineers to think creatively, consider how all transportation modes operate holistically as a system, and design practical solutions that fully incorporate the complete context.

Session 2: WSDOT Practical Solutions Overview

John Donahue, WSDOT, provided a short overview of the practical solutions approach and the history of the practical design manual. He explained the basic tenets of practical solutions, such as the expectations that a designer should look first at operational and demand management; that the results should benefit the system beyond the project; and that the solution should not compromise safety. Mr. Donahue explained that a practical solutions approach seeks to integrate the various needs of stakeholders as well as the context into which the project is being introduced. Mr. Donahue noted that the decisions reached through a practical solutions approach and the practical design manual should be performance-based and should focus on the needs of stakeholders.

Mr. Donahue also reminded the group that WSDOT is very focused and committed to robust community engagement and encourages multi-disciplinary collaborative decision making, and he positioned the

workshop as an opportunity to learn about the many tools available for addressing context and reaching practical solutions.

George Merritt, FHWA, offered his perspective regarding the importance of, and emphasis on, performance measurement for FHWA going forward. He offered that Performance Measures may make project delivery more challenging, but that understanding context will help alleviate those challenges. On May 20, 2017, FHWA's rulemaking on System Performance National Performance Management Measures took effect, except for certain portions of the final rule pertaining to the measure on the percent change in CO₂ emissions generated by on-road mobile sources on the National Highway System (the GHG measure), which has been delayed indefinitely.¹ Excluding the GHG measure, the final rulemaking on national performance measures sets forth measures that State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) will use to identify and track the following characteristics within their jurisdiction:

- the performance of the Interstate and non-Interstate National Highway System (NHS) to carry out the National Highway Performance Program (NHPP);
- freight movement on the Interstate system; and
- traffic congestion and on-road mobile source emissions with the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program.

Mr. Merritt broadly explained the importance of understanding and defining context. When there is, a transportation need or performance gap, the contextual elements of the built and natural environment can offer clues explaining its cause, and subsequently help find a solution. He explained how changes in land use can influence whether a transportation facility can operate as initially designed. It is important to understand land use changes and how they impact the transportation system and its ability to meet the needs of many users. He noted that solutions don't always need to originate from WSDOT—other State agencies and regional stakeholders can contribute and help determine an ideal solution. A critical principle of CSS and practical solutions is knowing how and where to reach out for information.

Because several of the participants were unfamiliar with practical solutions, and others had some misconceptions about it, the session concluded with a summary on what practical solutions are, what they aren't, and the process for applying a practical solutions approach.

Session 3: National Overview of CSS

George Merritt from the FHWA resource center kicked off the session with the national perspective and the upcoming efforts on advancing performance based practical design. George pointed out one of the key drivers for pursuing performance based practical design is the lack of funding to meet all the demands on the transportation system. This is also the basis for WSDOT to pursue practical solutions. Both programs encourage the analysis of fundamental needs and put forth the concept of looking to operational, safety, and modal solutions to address those needs.

George put emphasis on FHWA's direction that the transportation system should accommodate all users and modes. He spent some time discussing the use of the AASHTO "Green Book" and that while it is a set of standards, those standards should not become barriers. He encouraged participants to make

¹ More information on the Final Performance Management Rule can be found at <https://www.fhwa.dot.gov/tpm/rule.cfm>

design exceptions on every project, and to document them well. If the exceptions are based on Performance Measures with contextual benefits, then they should feel confident in making those exceptions.

George pointed to the new FHWA “[Guide for Achieving Multimodal Networks](#)” as an example resource encouraging state DOT’s to be more inclusive with their design decisions. The guide offers methods and best practices for incorporating new modal elements into a project to provide community benefits. He talked about the importance of community engagement and communication when tackling the issues of multi-modal solutions.

The importance of Performance Measures was discussed, along with their applicable tradeoffs. The discussion focused on getting good quantifiable data to understand the tradeoffs, while understanding that some data will be more qualitative in nature. The concepts of balancing high performance with other factors, particularly cost, was also discussed. WSDOT was advised to be prepared to answer questions regarding whether or not closing a performance gap by the last 20 or 25% is worth the additional expenditure.

A question was posed to the group about how to consider these additional modal elements on an interstate highway. This led to a vigorous discussion of examples where other modal elements have been integrated into the interstate system, and how that decision was driven by the context. The group also recognized that it can be challenging to integrate multi-modal elements into the interstate system, because of the fundamental purpose for which the system was designed. Some helpful resources include FHWA’s updated highway design standards, www.fhwa.dot.gov/programadmin/standards.cfm and AASHTO’s publication, *A Guide for Achieving Flexibility in Highway Design*, 1st Edition.

Session 4: Perspectives on Using Context in Decision Making

Stakeholder Perspectives

This portion of the workshop focused on facilitators and attendees providing perspectives on using context in project decision making. Unfortunately, due to scheduling conflicts, non WSDOT stakeholders were not able to attend the workshop. Instead, facilitators shared their experiences as stakeholders on many transportation projects and context defining efforts.

Information was shared on stakeholder engagement strategies and the Pennsylvania and New Jersey *Smart Transportation Guide* was specifically referenced, which is a resource that Pennsylvania and New Jersey DOTs use for their stakeholder involvement efforts. It was mentioned that one of the biggest challenges to successful engagement was a lack of transparency.

Participants were reminded to involve stakeholders early in the process because they have vital information that WSDOT engineers and designers need to accurately define the project and the context. Stakeholders also have information that a model output can’t uncover, but that could explain a model output. The process of actively soliciting and using stakeholder insights is critical to successful projects.

Group Discussion

The facilitators initiated a peer-to-peer exchange and asked participants to share with the group their experiences with stakeholder engagement, and any interesting cases of stakeholder perspectives they could explain. From the discussion, some interesting information emerged. First, WSDOT doesn’t always need to lead the way in solving a problem. Sometimes other parties are better positioned to identify a solution. Another participant shared an experience with the public engagement process. The process was challenging at the beginning, but ultimately was successful due to the organizing agency shifting its

attention and committing to work directly with the community and stakeholders to find a solution. This scenario of beginning a planning process without stakeholder engagement, meeting resistance or problems, and then restarting the process with greater stakeholder involvement, generated a lot of discussion and sharing of ideas.

The session was summarized with an emphasis on transparency and openness to ideas as important factors for facilitating successful engagement efforts. Engagement must start early, even if it is challenging, because it yields such valuable insight into the context and stakeholder perspectives, and can ultimately shape decisions for the better. Stakeholders aren't only affected by projects—they have valuable information about how facilities and infrastructure are being used and how users view them. For example, local public works employees know the streets and understand the local network better than anyone—they have insight into the basic needs of local residents and businesses. They may know about specific safety issues. Talking to local stakeholders can reveal insight that a model would never find.

Transparency and Cooperation

Facilitators discussed lack of transparency among state DOTs in regards to how design decisions are reached. For example, a frequent issue encountered among communities is a desire to address traffic calming by constructing “road diets,” also known as right-sizing. However, it is important to help the communities understand challenges a state DOT faces in trying to meet numerous needs of a community as well as the considerations for incorporating design solutions that are context sensitive.

WSDOT could consider coaching communities during their project outreach to inform the public on how to effectively engage in the transportation decision-making process. Communities often need better guidance on how to work with and support DOTs in responding to community demands—for example, by addressing concerns of decision makers, making land use decisions and local grid connection projects to reduce pressure on the state highway system, and anticipating community questions. Helpful Federal resource include US DOT's Every Place Counts Leadership Academy Transportation Toolkit (<https://www.transportation.gov/leadershipacademy>); and State resources include Pennsylvania and New Jersey DOT's *Smart Transportation Guide* (specifically Chapters 3, 4, and 5, which are written directly to communities).

Conflict within a community is not technically the responsibility of a state DOT. However, when it lingers unresolved, it can complicate or delay project delivery. In such cases, WSDOT may need to intervene and consider the question: *How do we, within our existing processes, (and using the Context Questions), find and even create opportunities to go out and help the community?* Additionally, WSDOT could find opportunities to put some of the burden of decision making process back on the community.

Case Study: Idaho Transportation Department

A case study was shared involving the Idaho Transportation Department (ITD), where a project schedule was readjusted to accommodate the process of building community consensus around alternatives for a project design.

The schedule was adjusted in part when a city mayor asked ITD to make the downtown more pedestrian-oriented. ITD developed a proposed alternative, presented it to community, and received significant backlash. In response, ITD put the project on hold for three months, developed sketches of several possible options, and asked the mayor to vet the schemes with community members. The mayor successfully achieved consensus around one design and accepted responsibility for any subsequent dissatisfaction among the community.

This is a good example of how WSDOT might delegate relevant decision-making to communities, and avoid taking the heat for conflicts arising within a community.

Visualizations

Community members often lack the ability to accurately visualize a finished project—a shortcoming that can lead not only to misunderstandings, but also to infighting among constituents. Participants were informed of several high-quality rendered visualizations (examples in Figure 1) that can be an effective tool for helping community members reach agreement on a project scope.



Figure 1: Example of a visualization developed for Hemphill Street in Fort Worth, Texas (accessible at https://dl.dropboxusercontent.com/u/3329542/PPS_Hemphill/index.html). Source: Project for Public Spaces

Participant Experiences

WSDOT representatives in attendance shared some of their own experiences. Below are some excerpts from the shared experiences:

- **Widening Highway 2:** Developers wanted to widen a portion of Highway 2, but the local jurisdiction didn't want to widen it despite frequent car crashes and many other issues. WSDOT specified upfront that it did not claim responsibility for reaching a resolution—that was the job of the developers and the jurisdiction.
- **Siting a new rail station:** WSDOT worked with a local government and property owner to site a new rail station. They decided together to locate the station on the west end of the property. WSDOT created a corresponding design, presented it to the community, and received significant pushback. So WSDOT redesigned the station, essentially from scratch, but this time worked closely with community members to understand their needs. In the end, a compromise was reached and everyone was happy with the result. If more robust coordination had occurred upfront, WSDOT could have saved a lot of time and money.
- **Resurfacing the Alaskan Way Viaduct:** One of the participants described working on a high-profile project involving bridge repair and resurfacing for the Alaskan Way Viaduct. The project team began implementing the project scope as defined, but realized the development was going to impact a large portion of the community, and thus revised the scope to include a public outreach effort. The outreach led the project team to conclude that impacts were going to be too significant, so they backtracked and re-designed the scope of work to accommodate community needs. The additional outreach enabled the team to reduce the duration of the impact, and the added transparency improved relations with the community.

These example projects identified several common values: transparency, openness to ideas, supporting communities, and applying these values *early* in the process. Applying these principles early can be

difficult, because sometimes a project begins when the scope has already been determined—however, it is still important to gather input and insight about the project context.

Working Sessions

Participants participated in three working group sessions. The first involved generating and refining context identification questions. The second involved creating metrics for measuring performance against those questions. The final breakout session focused on generating action items for process change. Details on how these sessions evolved are shared below.

Session 5: Using Context Identification Guidance

During this session, participants worked to develop and refine questions to help collect the information necessary for the design decision-making process; understand what information is needed; and understand how to solicit responses to the questions.

This facilitated discussion began with a series of “starter” questions—borrowed from NCHRP 8-68, *Going the Distance Together: A Citizen’s Guide to Context Sensitive Solutions for Better Transportation Practitioners Guide*—grouped into seven categories:

- Process Evaluation
- Built Environment and Land Use
- Natural Environment and Resources
- Economy
- Housing and Education
- Social and Cultural
- Public Health and Safety

The full list of starter questions can be found in Appendix A. Many questions also included sub-questions. Figure 2 shows an example starter question and sub-questions. During the process of refining the questions, each participant was asked apply a green sticky note to questions they thought were applicable and helpful for determining context, and red sticky notes to indicate questions they considered not applicable. The facilitators then led a discussion among the group regarding why the participants did or did not like specific questions, and how the questions that were widely disliked could be improved to be more relevant. Discussing and analyzing this rationale was important to understanding motives, and ultimately relevant to context. Some of the concerns and points of contention are summarized below.

- **Public health and safety:** State DOTs across the United States are increasingly asking and debating whether public health and safety are the responsibility of the transportation industry, and whether the mission of state DOTs needs to change to accommodate that responsibility. The decline in walking and biking as modes of transportation—coupled with the deterioration of the American diet—are fueling obesity and related diseases, which contribute to spiraling health care costs. State health departments across the country are reaching out to state DOTs for help, even though historically health has not been part of the mission of state DOTs, including WSDOT. Further, as state and federal governments are forced to invest more into public health,

Economic Context

Where is commercial activity located/desired?

- What is the character of primary commercial areas (for example, town center, neighborhood commercial, strip commercial, mall/shopping center)?
- How does the transportation system support or hinder commercial activity for each primary commercial location?

Figure 2: Example of the Context Questions used during the workshop. Source: Parsons Corporation

less funding is available to transportation. So indirectly, it is in the interest of state DOTs to help promote active transportation.

- **Community-wide consensus:** The Process Evaluation question, “Is there community-wide consensus?” sparked some concern. Participants commented that there will never be 100% community consensus, because there will always be dissenting opinions. Participants developed and proposed a suggested rewording: “Are there barriers to building community-wide consensus? If so, what are they?”
- **Climate change:** Objections were raised regarding the Natural Environment and Resources question about climate change, because some stakeholders still do not acknowledge it. The facilitators suggested that a way forward is to avoid the phrase “climate change,” and instead focus on determining the specific impacts (e.g., sea level rise, storm events, etc.), which assets are at risk, and how to improve resilience (climate-related or otherwise).
- **Housing market:** One participant expressed concern regarding the question about house prices, noting that home prices are influenced by so many factors that it’s difficult to anticipate the effect of a transportation facility. The group decided to keep the question, with the understanding that the question is not necessarily about prices decreasing; many transportation projects boost economic vitality and home prices.



Figure 3: Context Questions posted on the sticky wall. Photo Credit: Cian Fields, Cadmus Group

Following this discussion, participants were divided into six working groups and assigned one category of questions to each group. The groups were tasked with refining all the questions in their assigned category—editing questions, discarding questions they felt were unnecessary, and adding any additional questions that were needed. Each group posted its revised questions to onto the sticky wall (Figure 3). The participants all had a chance to review the questions and “vote” again with blue stickers (like) and red stickers (dislike).

Each group then each received a new set of questions and completed this task again. The edits, as well as the final questions, are listed in Appendix A.

Session 6: Working with Performance Measures

Opening Remarks

A brief presentation on NCHRP 15-52: *Developing a Context Sensitive Functional Classification System for More Flexibility in Geometric Design* was provided during the opening remarks. The research objective of NCHRP 15-52 is to review the traditional functional classification scheme and revise it to include context and the potential impacts of the change on other areas of measurement. The report recommends five classifications, each based on contextual factors such as density, land use, and building forms. In addition, the new classification system provides information about serving multiple modes, user

accommodations, and considerations for the whole network performance. The report is expected to be published by September 2017.

The research findings generated significant discussion. Participants were interested in how to consider the whole system beyond just a single project, and how to identify the benefits of that broader perspective on performance. WSDOT participants discussed the benefits of evaluating at the level of entire corridors, and being flexible when applying Performance Measures.

The topic of establishing Performance Measures based on the contextual-defining questions was introduced. The discussion began by providing FHWA's definition of Performance Measures, taken from its performance-based practical design guidance. The process of developing Performance Measures began by asking four questions:

- How should we measure the type of performance?
- What is the current performance level?
- How do we determine whether the current performance is acceptable?
- What level of performance should we target?

Six WSDOT performance categories were introduced and compared to the context categories from NCHRP 15-52, and those that were used in the context defining exercise so that the group could see the clear relationship between them (Figure 4). The key takeaway was that demonstrating excellence in the six WSDOT performance categories requires spending time defining the context, because performance and context are so closely linked.

Participants were presented with the baseline and contextual guidance in the WSDOT design manual and were invited to share any experiences they had working with the manual. Participants then discussed how Performance Measures can be used as a communication tool and a way to engage the community. The group discussed the scoping process as an elastic and iterative process that needs reevaluation as the project is defined and developed over time.

Identifying Performance Metrics

The participants were tasked with developing metrics for each of the questions developed during Working Session 1, as well as processes for monitoring performance with regards to the question during project execution and delivery. These Performance Metrics are also listed in Appendix A. Over the course of this exercise, the following discussion topics emerged.

- **Finding the data:** When WSDOT begins developing processes for using the Performance Metrics, it will be important to consider who has the necessary qualitative and quantitative data. There may be more than one way to measure something, so it is essential to know the context to pick the best measurement approach—lending further credence to the importance of Context Questions.

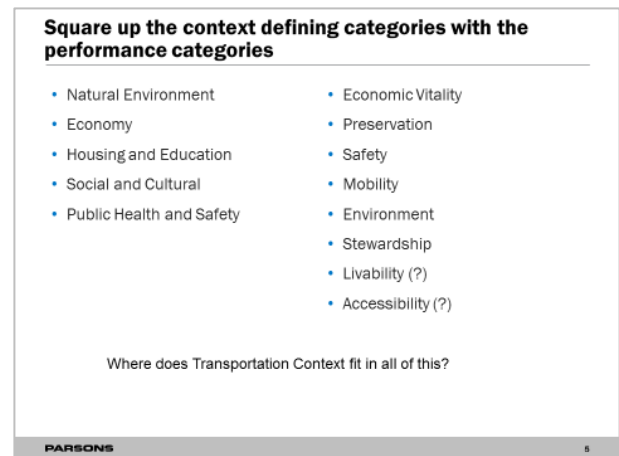


Figure 4: Comparison of WSDOT performance categories with the context categories. Context categories are on the left and performance categories are on the right.

Source: Parsons Corporation

- **Educating communities:** WSDOT recognizes that sprawl and development based on automobile access are less beneficial to communities, in the long run, compared to following more traditional, walkable approaches. Exploring this concept with communities is not easy, but there are several ways to do it. One is scenario planning, which involves calculating the projected transportation, land use, and financial performance of various development scenarios, and presenting them to communities in a user-friendly way.

While this process may be costly to prepare for each project, lessons learned could be gleaned from scenario planning done by other jurisdictions. For instance, see the [Envision Utah example from NCHRP 8-36](#). Additionally, another tool that WSDOT could use to help communities develop more sustainably is a scenario planning tool used by the Centralina Council of Governments under a regional planning initiative called *Connect our Future* (<http://www.connectourfuture.org/tools/return-on-investment/>)

After the groups presented their proposed metrics and had a chance to discuss each one, the facilitators led a discussion regarding the utilization of the metrics. Two questions emerged:

- Who needs to be engaged in the development of a new metric?
- Where does the data necessary for measuring performance originate?

In closing, there was a discussion on the importance of understanding context for selecting the right measure and measurement. Participants generally understood that not all metrics will necessarily apply in all contexts, even similar ones. One participant proposed that planners should factor in future state conditions of land use and the implications for designs being developed now. Another participant asked how WSDOT can anticipate community concerns and be responsive to them. These questions and suggestions also raised another issue that had surfaced throughout the day, which was the need for more planning resources and comprehensive plan development. Without sufficient planning resources, WSDOT remains in a reactive mode and not close enough to these local or even regional planning efforts to be proactive and responsive.

Session 7: Process Improvements and Action Items

The purpose of this working session was to generate ideas and next steps for process improvement. Participants were once again placed into working groups, where they brainstormed issues and actions that will require further attention in 2017. The results of this session are provided in in Appendices B, C, and D:

Appendix B lists the issues in order of votes received.

Appendix C aggregates the issues into overarching categories.

The predominant need expressed by the WSDOT representatives—in the final session discussion, in voting, and throughout the day—was to do a better job anticipating problems and issues earlier in the process. Project delivery would benefit from investing more resources, time, and process before a defined project scope is imposed on the project delivery process. Out of the 57 total votes cast for suggested process changes, 29 fell into the categories of scoping/early public engagement/better planning and data, reflecting the group’s focus on those early elements of the project development process.

Below is a complete listing of the process issues in which the WSDOT participants expressed interest. More detail can be found in Appendix C and in the “Recommendations to WSDOT” section, below.

1. Better scope definition and community engagement early in the process (overarching issue).

2. Better alignment between state legislature involvement with WSDOT projects and the realities of delivering transportation projects.
3. Consistency from region to region and balance of decision-making between headquarters and the regions.
4. Develop better Performance Metrics and a process for how to use them.
5. Facilitating and tracking flow of a project through delivery.
6. Ensuring that policy gets into the trenches.

Analyzing the six issues outlined above reveals that several of them are related. Participants considered better scope definition and community engagement important for resolving issues. Participants were reminded of the importance of conducting public involvement early in the process as opposed to waiting until the project design phase to fully engage citizens and reconciling perspectives of stakeholder groups. Facilitating public engagement early, during the initial scoping phase, has the potential to yield better alignment with decision-makers.

Similarly, one way to achieve more consistency among regions and with headquarters would be to develop better Performance Metrics (again, early during planning and scoping) and track them throughout the project duration. This will tie back into the Context Questions and Performance Metrics.

Lessons Learned

There were several shared moments of realization, consensus, and clarity throughout the day. Some of these included:

- For WSDOT, it is important to coordinate with the Comprehensive Planners – early and continuously.
- There are likely multiple metrics that go along with each guiding question – but knowing which metric to use is an aspect of understanding the context.
- CSS is an iterative process. Throughout the design and planning process, it should be applied repeatedly, and especially when large project changes are occurring.
- The dominant issue brought out in the discussions of process was the need for enhanced resources and staffing to help the public understand the issues during planning and scoping. The second dominant issue was the identification of the need to find a way to minimize the state legislature from pressing WSDOT to implement projects that didn't meet the new WSDOT philosophy regarding multi-modal uses and livability.
 - After discussion, it became apparent that the two dominant issues were related. If the public comes to "see what WSDOT staff sees" in terms of the better value of the right project up front, the legislature will follow.
- Being flexible and exerting engineering judgement to take alternative approaches, when warranted, is good! Ensure that decisions are supported and warranted with quantitative, evidence-based reasoning, and are well documented.

Recommendations to WSDOT

The following recommendations were provided to WSDOT in preparation for the development of their 2017 guide manual:

1. **Define context.** WSDOT's design manual and the project development process both contain points at which context should be defined; however, neither document offers direction on how to define context nor what to do with the resulting defined context. WSDOT should develop a formal process for when and how to ask the Context Questions generated as part of this technical assistance, as well as when and how to assign Performance Metrics, to include:
 - a. WSDOT should collect a subset of the participants to rework the Context Questions to ensure they are appropriate and directive.
 - b. The reworked Context Questions can be assigned to different phases of the project lifecycle, starting with Planning.
 - c. Some Context Questions should be repeated from phase to phase, and should evolve as appropriate. For instance, one of the questions: *"Is the existing and planned transportation land use context primarily auto dependent or multi-modal?"* This question should first be asked at the beginning of project delivery, specifically during Scoping (see recommendation number 2 regarding creation of a formal scoping process). Shortly after the Scoping phase begins, the question should be refined to read: *"Should our project scope be adjusted to support local biking, walking, or transit use?"* If the answer to this question is yes, then later, at the end of preliminary design, the question should ask: *"What elements have we included in the project scope to support local biking, walking, or transit use?"*
 - d. WSDOT should include Performance Measure development and utilization techniques and methods in the Context Questions development process. The list of Performance Measures that were suggested for the questions could be used as an example of mapping measures to objectives (the questions).
 - e. The list of questions asked, answers, and comparisons to Performance Metrics should travel with the project from one stage to another (e.g., Planning to Project Initiation to Scoping to Preliminary Design to Final Design to Construction). See Recommendation #2 for suggested implementation of this process through a scope development phase.
2. **Build in a Scoping phase.** The Scoping phase should be promoted as a key component of the Project Development process. As WSDOT is defining it now, the Scoping phase should be highlighted in between the Planning and Design processes, and cover the policy framework, managing system assets, identification of need, and assessing alternative strategies. Here are some criteria for navigating the Scoping phase:
 - a. Scoping should be completed before a project is entered into the Statewide Transportation Improvement Program (STIP) for the following reasons:
 - i. Once a project is placed into the STIP, the schedule of delivery for each phase (Design, Right of Way, Construction) is made public.
 - ii. Having publicly announced delivery expectations increases the likelihood that elected officials will press WSDOT for delivery.
 - iii. Since the scope is announced to the public, a constituency for that scope is generated. Once a constituency has been established, it becomes problematic to switch to a more appropriate project definition as new information on feasibility arises.

- iv. When a project scope must be changed, the project's status in the STIP also changes and causes the Metropolitan Planning Organizations and WSDOT to scramble to "fill holes" in the Program.
 - b. Scoping should include both internal and external outreach. WSDOT can use this phase as an opportunity to emphasize its multi-disciplinary and community engagement techniques as applied directly to the development of project and contextual needs.
 - i. Internal outreach should include a broad spectrum of WSDOT departments, such as Operations, Maintenance, Utilities, Traffic Engineering, Structures, Right of Way, and Access Management, in addition to the Environmental and Public Engagement departments.
 - ii. External stakeholders should include local communities, environmental and permitting agencies; and advocacy groups.
 - c. WSDOT should prepare a Scoping Report to document the process and decisions made under this phase. This report can be used as the preface to the design documentation.
 - i. The Scoping Report can be used as a basis for design exceptions.
 - ii. The report should contain a description of the Context Questions that were used to define context and the Performance Measures that were selected.
 - iii. The report should provide a simple structure to report on Performance Measure accomplishment.
 - iv. The report should document the thinking behind all design decisions, particularly as it relates to internal stakeholders. Often, when a project takes several years to develop, support units such as Traffic Engineering and Utilities departments will need to be reminded of why the project was scoped the way it was.
 - d. WSDOT should develop a formal list of commitments made to project stakeholders, and mandate that the list be reviewed during each transition from one stage to another (e.g., Preliminary Design to Final Design; Final Design to Construction)
- 3. **Work in coordination with others in the community.** WSDOT should work in collaboration with local jurisdictions, MPOs, and other state and local agencies to create regionally integrated transportation and land use plans. WSDOT may wish to consider bringing on "on-call" professional services staff capable of supplying technical assistance to communities on how to create a local network and land use plan that supports WSDOT's mission to provide appropriate mobility for all. The benefits to WSDOT's approach to project development and its community engagement efforts would far outweigh the costs of providing these comprehensive planning opportunities. Below is suggested rationale for investing in comprehensive planning efforts:
 - a. Solutions that focus only on the movement of vehicles are no longer viable for many contexts:
 - i. Congestion is increasing at an exponential rate despite major investment in building new roads and/or adding capacity to existing ones.
 - ii. Transportation funding remains flat, while fix-it-first needs are skyrocketing.
 - iii. Citizen resistance is mounting as stakeholders no longer accept Interstate-era designs in their communities.
 - iv. Sprawling patterns of land use are overtaxing the ability of governments to provide the infrastructure necessary to accommodate development and growth.
 - v. Concerns about obesity and poor health among Americans are increasing, and there is increasing evidence that the sprawling development patterns of the last 50 years

are a major contributing factor. This concern will indirectly affect the amount of funding available to WSDOT in the future.

- b. Integrated transportation and land use planning, done either at the corridor or subarea level, will provide the following return on investment to WSDOT:
 - i. Communities will be educated on how to develop land use plans and street networks that don't layer large amounts of local traffic onto the state highway system. For instance, in a community looking to create or revitalize a new town center, the development plan could site local trip origin generators (such as commercial centers, schools, and clinics) on local streets, thereby increasing the potential for the state highway to handle regional and commuting traffic.
 - ii. Understanding current and future development in a corridor will reveal opportunities to share expenses with developers, and will help ensure internal road networks built by developers are coordinated with the future transportation needs of the public.
 - iii. Communities will recognize that funds are limited and each agency is facing the significant demands of maintaining existing infrastructure. Therefore, as the cost of accommodating community goals increases, the need for the community to find ways to help fund these improvements also increases.

The NCHRP 08-36 Task 86 study *Corridor Approaches to Integrating Transportation and Land Use* includes examples of how to produce integrated transportation and land-use studies in local communities (available at the following link:

<http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=909>)

Appendix A

Appendix A demonstrates the development of context identification questions and associated metrics, as broken down by category. The original, “starter questions” can be found in the “Original Question(s)” column. Any question that is highlighted orange is one that was added by WSDOT workshop participants. Any metric that is highlighted purple were also added to build further upon what the workshop participants developed. Beyond these few additional metrics, all other content is verbatim from the workshop participants, unedited to clearly provide WSDOT workshop participant input.

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Process Evaluation	Is there community-wide consensus on the identified local, regional plans or policies that will be used to support context definition during Planning?		What are the barriers to community consensus on context?	
Process Evaluation	Do the local community plans consider the impacts that their plans and decisions have on mobility, development and natural resources throughout the region and state?		How do your plans analyze & address impacts to adjacent communities?	How many plans have mobility, resource protection, or development impact assessments?
Process Evaluation	Are community plans integrated so that they reflect a consistent understanding of community values?		Are there any inconsistencies in planning documents you are working on?	Was there engagement? # of inconsistencies. Magnitude of inconsistencies.
Process Evaluation	What specific mechanisms or elements have been incorporated into collaborative stakeholder involvement process to address inconsistencies in local plans and/or gaps in understanding of community quality of life values?		What is your collaborative stakeholder involvement process?	Were plans modified based on engagement activities?

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Built Environment & Land Use	Is the land use context primarily auto dependent or is it currently multi-modal?	Does the community provide infrastructure for non-auto modes (transit, sidewalks, and bike paths)?; Do the majority of residents have non-auto alternatives to access employment, shopping and recreation opportunities?; Does the current development and infrastructure pattern accommodate or encourage walking/bicycling?; Does the current development and street pattern encourage and support transit use?; Does the community have a Complete Streets policy?	Is the existing and planned transportation land use context primarily auto dependent or multi-modal?	% of roadways with sidewalk; % of roadways with bike routes; % of coverage by transit; Intersection density
Built Environment & Land Use	Is the land use context primarily auto dependent or is it currently multi-modal?		Is the existing and planned transportation land use context primarily auto dependent or multi-modal?	How many and which modes can be found operating in the area/corridor
Built Environment & Land Use	Is the community currently investing in operational improvements to address access and mobility problems?		Are investments in operational and low-cost improvements to address access and mobility problems underway?	Dollars spent on operational and low cost improvements. Number of operational and low cost projects completed
Built Environment & Land Use	Is the community planning to change the current land use context between now and the project design year?	To Urban core Infill?; To Suburban Corridor?; Retrofit Suburban Corridor to walkable village?; To Suburban Center?; New Town Center?; Redevelopment of an industrial area?; Added: New land use (regional support)?		Evaluate level of land use change

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Built Environment & Land Use	What level of assurance does the Engineer of Record have that these land use changes will occur?	Subarea plans with broad support?; Proposed zoning or code changes?; Approved zoning or code changes?; Redevelopment imminent?; Future land use context appears unobtainable from existing?	What level of assurance does the Regional Planner and/or the Engineer of Record have that these land use changes will occur? Subarea plans with broad support; Proposed zoning or code changes; Approved zoning or code changes; Redevelopment imminent; Future land use context appears unobtainable from existing; Added: Discipline Report; Added: What are the indicators?; Constrained funding; Incremental implementation	
Built Environment & Land Use	Does the transportation network support the land use currently in place and is it scalable to meet future needs?			Number of conflicts or performance deficiencies in the area/corridor that can be attributed to land uses.
Built Environment & Land Use	Is local road network and access appropriate for adjacent land use?			Intersection density; Driveway/access density; % local versus % non-local traffic volume
Built Environment & Land Use	Are there opportunities to enhance access (all modes) to adjacent land use?			Accessibility to opportunity. For example, how many jobs within 15 minutes of a parcel for all modes?
Natural Environment and Resources	What are the recreational areas or land uses?	What is their level of use? Parks? Recreation?		# of users per day (current and future)

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Natural Environment and Resources	Do natural features contribute to the character and aesthetics of the community? Is the scale of the transportation system in keeping with the surrounding natural features of the areas through which they pass? Are there significant protected natural resources within the planning area? Is there a protected or aesthetically valuable vista or view shed in the planning area?	Are there public assets at risk in the event of a natural disaster? Do the local plans consider a resilient system?		Implement disaster scenarios through probability studies (earthquakes < 7.5 seiz, Godzilla monster floods, volcanoes) Is there a large amount of in-commuting or out-commuting in the community? Are there locations within the area that are already targeted or good candidates for redevelopment into employment centers? How does the transportation system support or hinder job creation and retention for the area overall? For sub-areas?
Natural Environment and Resources	What are the air quality issues?			Sampling pollutant
Economy	Where are the primary employment locations in the area?	Where do the potential workers live in relationship to these employment centers?; Is there a large amount of in-commuting or out-commuting in the community?; Are there locations within the area that are already targeted or good candidates for redevelopment into employment centers?; How does the transportation system support or hinder job creation and retention for the area overall? For sub-areas?; Added: What strategies does the community have for reducing trip length?; Added: For disadvantaged populations?		Quantify travel sheds around employment locations (bike, PED, etc.)

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Economy	Where is commercial activity located/desired?	What is the character of primary commercial areas (for example, town center, neighborhood commercial, strip commercial, mall/shopping center)?; How does the transportation system support or hinder commercial activity for each primary commercial location?; Added: What is the return on investment for public infrastructure?		B&O taxes/sales taxes per acre – mega-mall less than downtown; Permits pulled for development
Economy	Is tourism a major factor of the area economy?	If yes, why are visitors attracted to the area? Does the transportation system enhance or detract from the attractiveness of these characteristics?; Added: What does the local/regional plan say?; Added: Has there been an economic feasibility study?		Effectiveness of guidance signage for tourism? Measure through a survey? Public feedback from tourist attractions.
Economy	What infrastructure is needed for freight?			Life cycle of pavement for T-1 and T-2 corridors (loads, free-throughs, etc.)
Economy	What are the freight dependent land uses?			Number of warehouse and distribution facilities
Economy	Where do people go now to shop?			Number of retail establishments in the area

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Housing and Education	Where are the primary residential locations in the area?	How close are these locations to the daily commercial services? Can residents walk or bike to these frequently needed commercial services?; Do residents of each of these areas have reasonable auto access to employment centers? Do they have transit or other non-auto access?		Local planning agencies – housing data; Survey residents; Utilize modeling or GIS; Utilize social media
Housing and Education	What sub-areas have been identified or targeted for new residential development?	Does the transportation system support or hinder provision of a broad range of transportation choices to new residential development?; Is the area actively seeking or implementing in-fill development? Are multi-modal options available or planned for these potential in-fill development sites?		Local agencies could use master planned communities, planned action EIS, etc., to identify residential development.
Housing and Education	Are there sub-areas where housing prices and/or property tax values are impacted by the location, character or type of transportation infrastructure or services available?			Percent change in property values in area pre and post transportation changes.
Housing and Education	What percentage of children can walk or bike to school?			Percentage of children who walk or bike to school by number of school age children in the area.

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Housing and Education	Do transportation agencies have an on-going relationship with school boards or administration staff determining future school sites?		What are your plans to strengthen relationships with school boards or administration staff determining future school sites?	Number of regular meetings between transportation and School officials.
Housing and Education	Are roads and streets adjacent to schools safe for walking and biking?			Survey of neighborhoods adjacent to schools.
Housing and Education	Do roads and streets adjacent to schools provide safe access for cars?			Reduction in crashes for all modes
Housing and Education	If there are post-high school schools in the area, are there multi-modal options available?		Measure transit ridership in vicinity of the schools; Survey students for mode of transportation use.	Percentage of teens who use other modes of transportation other than Single occupant vehicles. Carpools should be considered.
Housing and Education	Are there multi-modal options available for students?			Survey students for mode of transportation use
Housing and Education	What schools are currently in the area? (type)			Count schools
Housing and Education	What is the current and planned residential density in the area?			Local planning agencies – housing data
Housing and Education	Will the character or type of transportation infrastructure of services impact housing prices and/or property tax values of any specific population?			County assessor data
Housing and Education	What school facilities are planned?			Local jurisdiction would use their Comprehensive Plan for # acres needed based upon population
Housing and Education	What percentage of children can walk or bike to school?			School walk routes could be used to calculate %

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Housing and Education	What are the city's plan for redevelopment?			
Housing and Education	What are the assumptions the regional transportation network will provide?			
Social and Cultural	Are there regional or community events, arts, music and/or other cultural opportunities that engage residents and attract visitors to the area?	Does the transportation system support or hinder access to these opportunities?; Are there multi-modal options available to access these opportunities?		# of multi-modal options available; % of total trips that are community events related; Event ticket sales; Hotel bookings/monthly visitors
Social and Cultural	Are there ethnic, cultural or religious groups within the community who have special needs that should be addressed or considered during transportation planning?		Are there vulnerable, cultural and/or economic groups within the community who have unique transportation needs?	# of vulnerable, cultural or economic groups impacted
Social and Cultural	Are there cultural or historic resources identified in the community?	If yes, is the scale and type of adjacent transportation system in keeping with the character of these resources?		Impact (yes/no); Impact to resource
Social and Cultural	Are transportation access and mobility equitably provided throughout the area?		Should there be multi-modal equality throughout the area? (Multi-modal: Bike, PED/ADA, Transit, Trails, Rail, HOV, Auto)	Are unique transportation needs met?; # of jobs within 15 minutes for disadvantaged populations
Social and Cultural	Does the area have formal or adopted aesthetic guidelines or regulations?			Does project meet formal/adopted guidelines or regulations?
Social and Cultural	Added question: Is sustainable transportation access and mobility provided throughout the corridor?			# of sustainable trans. access & mobility resources provided

Category	Original Question(s)	Sub-question(s)	Re-write of original question	Metrics
Public Health and Safety	Are transportation facilities safe and accessible to all residents, including for people with disabilities?			Bike/PED accessibility/connectivity; Number of fatal/serious injuries; Compliance with ADA policy and requirements
Public Health and Safety	Are there crime issues associated with any transportation facility or service?		Are transportation facilities and services located such that defensible spaces are provided? (Do not promote crime activity.)	Crime Prevention Through Environmental Design; # facilities with and without defensible spaces
Public Health and Safety	Is the area designated as a non-attainment area?	What transportation strategies are in place or could be implemented to improve air quality?		Emissions (PPM); CO and PM10, pre- and post-project; Is area in designated non-attainment area?
Public Health and Safety	Is there transit service to hospitals and primary health care facilities in the area?			# ADA non-compliant facilities; Are there any stops? And/or routes?; Frequency; Transit shed (area/population served); # of ADA compliant facilities; Travel time transit versus auto

Appendix B

Appendix B presents process improvements generated during the WSDOT working session. The improvements are listed below in order of votes, from highest to lowest.

1. Additional resources for planning, scoping and community engagement. (10 votes)
 - a. Planning: Additional staff and IT resources
 - b. Scoping: Visualization tools and more funding
 - c. Community Engagement: Scenario planning
2. Community engagement: planners need to be involved, initiate. “Be in touch with community” (9 votes)
 - a. Project doesn’t have money or sufficient staffing
3. Increase planning capacity to support project development (5 votes)
4. Fix legislative disconnects (run arounds) (5 votes)
5. Provide generic list of Performance Measures (4 votes)
6. More approvals at region level (4 votes)
7. Allow for legislative intent in project solicitation (2 votes)
8. Reduce paperwork (2 votes)
9. Take the legislature out of the selection process (2 votes)
 - a. Briefings
 - b. Educate legislators (all elected)
10. Major policy changes (e.g., D.M. Nov 15) need to have more emphasis on the planning and organization of training (1 vote)
11. Define better change management process (1 vote)
12. Electronic signatures (1 vote)
13. Clean, overall performance framework needed (1 vote)
14. Minimize inconsistencies between regions (1 vote)
15. Better handoff of info from planning to design (1 vote)
16. Get better, current data (1 vote)
17. Better planning – proactive (1 vote)
18. Revisit required documentation dependent on type or size of project (1 vote)
19. Connecting PEL/Environmental documentation/IJR (1 vote)
20. Devote more resources to scoping (1 vote)
21. Additional regional approval authority (WSDOT regions) (1 vote)
22. Additional region input on programming priorities (1 vote)
23. Expand P1 program to provide for spot safety and other low cost context solutions (1 vote)

The process improvements below were generated during the breakout, but received no votes.

- Educate public on processes
- Separate “Pre-Design” phase
- Early environmental/documentation “phase”
- Trusting/value planning process no checklists
- More influence to prioritize
- Clearly identify who is prioritizing and scoping projects
- Better communication: better planning and design

Appendix C

Appendix C presents the process improvements from Appendix B, aggregated into six overarching issues and desires.

1. Better scope definition and community engagement early in the process

- a. Additional resources for planning, scoping and community engagement (10 votes)
 - a. Planning: Additional staff and IT resources
 - b. Scoping: Visualization tools and more funding
 - c. Community Engagement: Scenario planning
- b. Community engagement: planners need to be involved, initiate Be in touch with community (9 votes)
 - a. Project doesn't have money or sufficient staffing
- c. Increase planning capacity to support project development (5 votes)
- d. Better handoff of info from planning to design (1 vote)
- e. Get better, current data (1 vote)
- f. Better planning – proactive (1 vote)
- g. Connecting PEL/Environmental documentation/IJR (1 vote)
- h. Devote more resources to scoping (1 vote)

2. Better alignment between state legislature involvement with WSDOT projects and the realities of delivering transportation projects

- a. Allow for legislative intent in project solicitation (2 votes)
- b. Fix legislative disconnects (run arounds) (5 votes)
- c. Take the legislature out of the selection process (2 votes)
 - a. Briefings
 - b. Educate legislators (all elected)

3. Consistency from region to region and balance of decision making between headquarters and the regions

- a. More approvals at region level (4 votes)
- b. Minimize inconsistencies between regions (1 vote)
- c. Additional regional approval authority (WSDOT regions) (1 vote)
- d. Additional region input on programming priorities (1 vote)

4. Develop better Performance Metrics and a process for how to use them

- a. Provide generic list of Performance Measures (4 votes)
- b. Clean, overall performance framework needed (1 vote)

5. Facilitating and tracking flow of a project through delivery

- a. Reduce paperwork (2 votes)
- b. Define better change management process (1 vote)
- c. Electronic signatures (1 vote)
- d. Revisit required documentation dependent on type or size of project (1 vote)

6. Ensuring that policy gets into the trenches

- a. Major policy changes (e.g., D.M. Nov 15), need to have more emphasis on the planning and organization of training (1 vote)