Transportation System Plan Guidelines Best Practices and Emerging Topics

In 1995, the State of Oregon created and published the original Transportation System Plan Guidelines (TSP Guidelines). These guidelines were subsequently updated in 2001 and 2008. The TSP Guidelines were created to assist local jurisdictions in the preparation and update of city and county Transportation System Plans (TSPs) and Regional Transportation System Plans (RTSPs). Consistent with the original intent, the guidelines have helped jurisdictions (cities, counties, and metropolitan planning organizations) develop plans that meet local needs and comply with state regulation and policy direction, including applicable elements of the Oregon Administrative Rule 660-012-000, otherwise known as the Transportation Planning Rule (TPR), as well as the Oregon Transportation Plan (OTP) and associated mode and topic plans. Since 2008, changes to federal requirements, the state regulatory framework, statewide planning and policy direction, and an evolution in focus of local planning efforts have established a need to once again update the TSP Guidelines.

The following white paper is one of a series being produced to help inform the overall direction of the TSP Guidelines Update. The intent of this white paper is twofold:

1. Recognize those emerging mobility topics that could potentially influence how TSPs are prepared in the future. These topics are in their infancy, do not have best practices, and it is currently unclear as to the extent to their potential influence.
2. Identify and summarize the best practices currently being used to develop TSPs, both in the State of Oregon and nationally.

Emerging Mobility Topics

There are several emerging mobility topics that may influence how cities, counties and metropolitan areas address long-range transportation system planning. Some of these emerging topics are a reflection of traveler preference or broader economic/social/environmental factors; and others are associated with technological advancements that bring new levels of automation and technology into the transportation network. Since 2008, the following mobility topics have emerged within the transportation industry that have the potential to dramatically affect local planning, policy and investment decision-making; however, the extent of their influence is still to be determined. There are few best practices related to these concepts in TSPs or RTSPs, because they are evolving rapidly and have not yet been captured by long-term trends.

These topics are either just beginning to influence the transportation planning process or are expected to in the future. The following sections document these emerging topics and their potential impacts on transportation planning throughout Oregon.

Vehicle Ownership Reduction and Delay of Driver's Licenses

Millennials and other younger demographics have lower vehicle ownership rates, and fewer are seeking driver's licenses at younger ages than previous generations. Reasons for the decline may range from continued economic-related fallout of the great recession to an increased preference for biking/walking/public transportation, a need/desire to travel less for work/life due to the connectivity benefits of technology, and/or acceptance of a more urban lifestyle where alternative transportation options are more accessible. There is also a growing portion of the population that is unable to own or drive a vehicle. This group includes those that are ineligible to drive for reasons such as age, disability, DUIs, immigrant status, etc.

If these indicators persist, cities, counties and metropolitan areas may need to advance and expand the multimodal transportation system (transit, walking and biking), reflect these trends in long-range planning and analysis (i.e. travel demand model parameters), and address community needs through the prioritization of system infrastructure investments.

General Reasons for Declining Vehicle Ownership/Driving

- Acceptance of a more urban lifestyle where public transportation and active transportation infrastructure is more prevalent
- Increased acceptance for biking/walking/public transportation modes
- Continued expansion of on-line connectivity (shopping, on-line universities, telecommuting)
- Aging population

Shared Use Mobility

Models of shared use mobility such as carsharing, bikesharing, dynamic ridesharing, and ridesourcing have gained prominence in recent years and continue to expand and evolve. From a transportation planning perspective, issues of shared use mobility may necessitate policy and infrastructure considerations such as:

- Most mobility sharing services originate in the private sector. Local jurisdictions may need to partner with the private sector to take advantage of these changing dynamics. Rural jurisdictions may find scaled benefits with private sector partnerships to accommodate underserved areas.
- Local jurisdictions may need to formally recognize and define the various forms of shared-use mobility in their TSPs and development codes to better accommodate infrastructure and design standards.

Common Shared Use Mobility Definitions

- **Carsharing –** A car rental model where members rent vehicles for short periods of time.
- **Bikesharing –** A bike rental model where bicycles are made available for member use on a very short-term basis.
- **Dynamic ridesharing –** A real-time system that facilitates one-time ride-matching between drivers and passengers who have common origins and destinations.
- **Ridesourcing –** An on-demand electronic platform that connects paying passengers with area drivers for transportation using the driver's non-commercial vehicle (also referred to as Transportation Network Companies (TNCs)).

- Local jurisdictions may need to integrate shared-use transportation modes into their infrastructure network. This can be achieved by formally allocating space for carsharing services and other ridesharing services within the transportation network or through reciprocal agreements with public and private institutions.
    - Some carsharing services require use of public and private on-street and/or off-street parking facilities where users can access the vehicles. Often the carsharing service will enter into an agreement where they pay for the use and ongoing maintenance of the space.
    - Some bikesharing services require dock-based systems where users can pick up and return bikes. These facilities need space within the urban environment, many times on sidewalks within or near high traffic destinations. Less common are dockless systems where bikes can simply be parked anywhere it is convenient and legal.

        - Some ridesharing services also require on-street parking facilities for pick-up and drop activities. In some jurisdictions this may occur in truck loading zones, taxi zones, or zones designated for short-term time-stays.
    - Local jurisdictions may need to rethink the notion and design of traditional transit hubs to be more inclusive of other alternate forms of transportation. Mobility hubs provide a more robust array of options for transit riders such as sheltered layover waiting areas, bike share stations, car share facilities, taxi/ride-sourcing pick-up/drop-off zones, bike storage, repair, and retail space.
    - Local jurisdictions may need to define desired car/bikesharing service areas within the larger city based on density and connectivity.

Several decision-making guides have been developed for jurisdictions to ensure they can plan for and enjoy the benefits of shared use mobility. These informational guides are documented in the Shared-use Mobility Guide, developed by the Shared-use Mobility Center. https://www.ssti.us/2016/01/shared-use-mobility-reference-guide-shared-use-mobility-center-2016/.

Automated and Semi-Automated Driving Capabilities

Automated vehicle technology (and the closely related topic of Connected Vehicles), while still in its infancy, has the potential to change travel behavior, enhance safety, reduce travel times, increase mobility choices for people who cannot drive, make travel time more productive, and improve the movement of freight within the trucking industry. While it is too soon to tell how much this technology will impact regional travel demand, it will be critical for local jurisdictions to plan for the potential growth of this mode. The most significant near-term planning need being the enactment of legislation and regulatory actions that govern their use. The following links provide additional information of the subject of automated and semi-automated technologies from a planning perspective.

Legislative database of current state and local actions that have been taken on the subject of automated vehicles.
https://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx

NACTO Policy Statement on Automated Vehicles.
https://nacto.org/wp-content/uploads/2016/06/NACTO-Policy-Automated-Vehicles-201606.pdf

Federal Automated Vehicles Policy (currently under review--- could change significantly)
https://www.transportation.gov/sites/dot.gov/files/docs/AV%20policy%20guidance%20PDF.pdf

Connected Vehicles

Connected vehicles (CV) use a number of different communication technologies to communicate with the driver, other cars on the road (vehicle-to-vehicle [V2V]), roadside infrastructure (vehicle-to-

infrastructure [V2I]), and the "Cloud." Vehicle manufacturers are increasingly building in connected vehicle technologies that deliver real-time traffic and other system information to help drivers and others adjust to changing travel conditions. This technology can help reduce driver inattention, improve safety and traffic flow on the urban network, and potentially result in changes in roadway infrastructure and/or intelligent transportation system (ITS) investments (e.g., new radar and GPS positioning connected vehicle technologies may make rumble strips unnecessary).

In the near-term, the biggest issue on CVs is ensuring that the federal government moves forward with the Vehicle-to-Vehicle Communications proposed rule. Without mandatory inclusion of CV capabilities on new vehicles, CVs will comprise too low a percentage of the fleet to achieve the safety benefits that they could have when widely deployed.

From a longer-term perspective, local jurisdictions will need to begin to think about the integration of the public infrastructure needed to support CV technology. The following link provides a comprehensive overview of CV technology.

http://autocaat.org/Technologies/Automated_and_Connected_Vehicles/

Hybrid and Electric Vehicles

Investments and innovation in battery technology may continue to improve efficiency and economy of hybrid and electric vehicles; potentially making them a more attractive and widely used means of transportation. Local jurisdictions may need to begin to formally address this potential as it could have the following mobility and planning implications:

- Vehicle Miles Traveled (VMT) could be influenced. Technologies may make hybrid and electric vehicle travel more economical, thereby influencing demand on the roadway network.
- Driving patterns could be influenced. Improvements in technology and expansion of the charging station network and infrastructure may enable hybrid and electric vehicles to travel further distances and increase their use for daily mobility needs. These considerations could influence long-term decisions such as home location and auto purchases.
- Hybrid and electric technologies may be leveraged with transit fleets in increased quantities.
- Hybrid and electric vehicles may impact system planning funding and implementation as broader use of these technologies may trigger a need for innovative funding resources.
- As battery technology is refined, there may be implications for the expansion of other electric modes such as bicycles and personal mobility devices.

The local planning processes will need to identify infrastructure needs (i.e. expansion of publicly accessible charging stations) and explore the potential for increased partnerships with utilities and the private sector to effectively manage network infrastructure.

Access to Traveler Information

Technological advances are creating more efficient multimodal networks, with potential to support walking, biking, public transit, and motor vehicle trips. Mobile applications enable dynamic trip planning based on real-time traveler information. As this data becomes more integrated with carshare, bikeshare, and others personal mobility services, technology will continue to change how we choose to travel and how we connect throughout the system.

New routing apps for driving in congested conditions (e.g., Waze) often route drivers onto local streets which are not meant for regional commuting and through trips. More widespread use may necessitate new regulations that limit or discourage trips through neighborhoods, new traffic calming treatments/plans, and new traffic control features.

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The remainder of this white paper identifies transportation system planning topic areas and the best practices currently being deployed by jurisdictions and planning professionals. Topic areas include public involvement, technical approaches, documentation, and policy implementation.

Public Involvement – Emerging topics and Best Practices

This section identifies emerging topics and/or best practices in public involvement. Public agencies are developing more collaborative approaches to public involvement with a particular focus on historically underrepresented communities. Title VI and Environmental Justice (EJ) populations are a significant focus of most public involvement strategies. Also, with more and more day-to-day interactions moving online, community engagement has done the same. Trends include integrating more interactive tools such as virtual open houses, gamified apps/sites and discussion forums, online surveys, streaming video of meetings or other presentations, and multilingual content. With these trends is a need to continue to balance the added costs of these activities against available budgets.

Stakeholder Engagement

The need to effectively collaborate with the general public, local businesses, property owners, and key constituents remains a critical component of the modern transportation planning practice. There will be a continued need to target outreach efforts to specific user groups (businesses, elected and appointed officials, community leaders, persons with disabilities, school kids, elderly/transportation disadvantaged, etc.), expand stakeholder engagement opportunities using new social media platforms, and involve mobility partners such as transit operators, private ridesharing services, and others.

Targeted and effective public involvement strategies should be developed by determining the demographic makeup of the community – specifically protected and vulnerable populations – early in the process. Also, it is important to determine what level of input is appropriate from local stakeholders at different points in the process, and tailor outreach to address those needs. See https://c.ymcdn.com/sites/www.iap2.org/resource/resmgr/foundations_course/IAP2_P2_Spectrum_FINAL.pdf for additional information.

Stakeholder Engagement Best Practices

- Define goals and objectives for stakeholder engagement that are agreed upon ahead of time and communicated throughout the planning process
- Develop evaluation criteria to determine stakeholder engagement effectiveness and make changes as needed throughout the update
- Develop procedures and strategies for stakeholder engagement and periodically review their effectiveness to ensure a full and open participation process
- Determine what role the jurisdiction will play in stakeholder engagement (lead/support, marketing/outreach, mailing/advertising, hosting project webpages/open houses, securing venues, etc.)
- Inform, engage, and report back
    - Provide information ahead of time so that they can be prepared to participate

        - Include questions on agendas to guide their review and ensure they will be engaged
        - Show people how their input has been used to inform the planning process
    - Use visualization techniques and tactile exercises to strengthen participation in the planning process and specifically to aid the public in understanding proposed plans
    - Having child care available to make attendance more feasible for lower income residents and create a comfortable environment for families and youth to attend
    - Have interpreter services available, translated materials, or simultaneous interpretation for presentations

Advisory Committees

Advisory committees will continue to be a critical and valuable feedback tool in the transportation planning process. As the transportation network becomes more complex and multimodal, it is becoming more critical to broaden the membership of advisory committees to include ITS technology experts, private sector transportation providers, transit representatives, public health officials, safety experts, and liaisons to appointed/elected governing bodies.

Advisory Committee Best Practices

- Develop advisory committees to help guide the technical and non-technical elements of the planning process. The most common types of advisory committees are Technical Advisory Committees (TACs) and Stakeholder Advisory Committees (SACs).
    - **Technical Advisory Committees (TACs)** typically include local agency staff, such as planning directors, public works directors, city/county traffic engineers and other technical staff such as transportation analysts or modelers. Other members might include representatives from the state department of transportation, emergency services providers, public health, transportation providers (both public and private), utilities, schools, and liaisons from the planning commission or council. TACs tend to focus on the technical application of tools and methodologies and ensure that long-term plans are consistent between and within jurisdictions.
    - **Stakeholder Advisory Committees (SAC)** typically include members of the general public: residents, property owners, business owners, representatives from underserved communities, civic institutions, community centers, and senior centers. As with TACs, it can also be helpful to include a liaison from the planning commission or council. SACs tend to focus on policies and outcomes of the technical analyses and provide valuable insight into the community.

- **Combined TACs and SACs** can be effective in small communities and in cases where each group understanding the perspectives of the other is beneficial to achieving consensus. However, there are several challenges to combining these groups: TAC members are typically available during day while SAC members are available at night; some TAC members may not be comfortable speaking openly in front of some SAC members on potentially sensitive issues and vice versa; and, some SAC members may not be comfortable with the technical nature of the discussions.

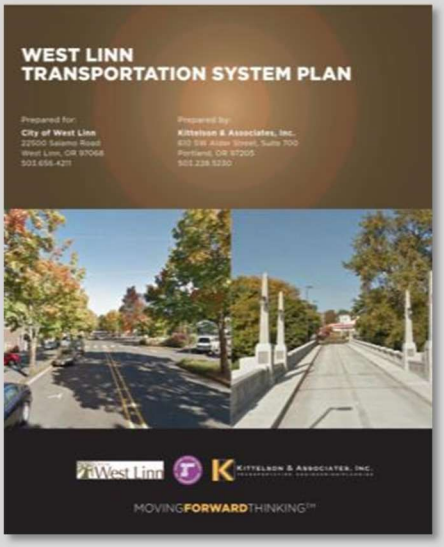
- Ensure advisory committee members have a clear understanding of their roles and responsibilities as committee members.
- Develop a project-specific charter that formally identifies roles, responsibilities, expectations, and procedures for attending meetings and providing feedback
- Ensure advisory committee meetings occur at strategic times throughout the planning process (i.e. existing conditions and future needs, alternative development and screening, financially-constrained project list, draft TSP)
- Structure advisory committee meetings to ensure members have the opportunity to provide feedback on project materials

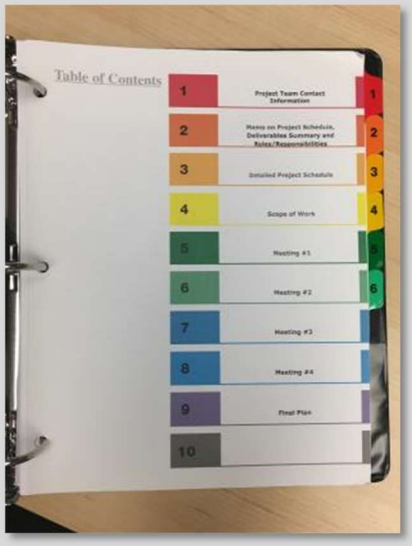
All TSPs developed in recent years with funding from ODOT have included, at a minimum, Technical Advisory Committees (TACs) and Citizen Advisory Committees (CACs).

KEEPING STAKEHOLDERS ON THE SAME PAGE

West Linn, Oregon Transportation System Plan (TSP) Update

A project overview memo was provided at the beginning of the West Linn TSP and includes a summary of upcoming meetings and deliverables, a tentative meeting schedule, and a description of the roles and responsibilities of advisory committee members as well as City of West Linn and ODOT staff and consultants. The memo was included in a project binder that people could use throughout the project to store meeting materials, including agendas, presentations, and technical memoranda. The tabs used in the binders for West Linn were organized around the advisory committee meetings; however, other binders have been organized by tasks, deliverables, and major milestones of the project.





Title VI and Environmental Justice

Title VI and Environmental Justice (EJ) populations are a special focus in transportation planning and project development. Specific reporting requirements exist related to these federally recognized populations. Title VI and EJ regulations are intended to make participation in transportation planning and project development more inclusive of diverse communities in planning and project areas, and to make the analysis conducted for transportation planning and project development more inclusive of the needs of the groups and individuals that live in these communities. ODOTs *Guidelines for Addressing Title VI and Environmental Justice Populations in Transportation Planning* offers a process for how to identify, engage, and address the needs of protected populations in transportation planning. See https://www.oregon.gov/ODOT/Planning/Documents/TitleVI-EJ_Guidance.pdf for additional information.

Title VI Best Practices

- Identify Title VI and EJ populations within the community (low income, elderly, disabled, transportation disadvantaged, non-English speaking, etc.)
    - Per ODOT guidelines, steps to identify Title VI and EJ populations should be taken early in the planning process, so demographic information can help inform the public involvement plan.
    - The local jurisdiction will often have insight into the Title VI and EJ populations; however, census data can be used to understand the different populations and within the community. Census data can also be mapped to illustrate the location and concentration of Title VI and EJ populations within the community. See the Regional Equity Atlas for an example of how to map and use interactive mapping tools to identify various equity-based measures. http://regionalequityatlas.org/
- Determine how to engage Title VI and EJ populations in the planning process. One approach is to engage existing community organizations such as local churches or advocacy groups that already work with or serve these populations.
- Evaluate the effectiveness of the Title VI and EJ engagement and make changes as needed throughout the update
- Partnering with non-profits and established community groups to conduct outreach, in particular those that provide assistance to minorities (speak the language, are trusted spokes people, etc.). See Centro Cultural https://www.centrocultural.org/chehalem-ridge-nature-park.html for an example of a non-profit in these communities.
- Solicit participation on advisory committees from Title VI and EJ populations
- Advertise upcoming meetings in locations where Title VI and EJ populations live and work
    - Outreach and educational materials, as well as the methods in which they are distributed, can be tailored to members of the identified transportation disadvantaged groups.
    - Ensure advertisements are translated appropriately and indicate how people can participate
- Host public meetings in locations where Title VI and EJ populations will feel comfortable entering and participating
- Offer to present at regularly scheduled meetings of Title VI and EJ populations
- Provide interpreters at public meetings, translated materials, and simultaneous interpretation for presentations (if available)
- Having child care available to make attendance more feasible for lower income residents and create a comfortable environment for families and youth to attend

- Ensure the planning process does not result in projects that have a disproportionate negative impact on Title VI and EJ populations, such as displacing Title VI and EJ populations or create barriers between Title VI and EJ populations and the rest of the community.

All TSPs developed in recent years with funding from ODOT include provisions for Title VI and EJ populations.

INCLUSIVE OUTREACH

Fairbanks, Alaska Metropolitan Transportation Plan (MTP)

The City of Fairbanks, Alaska has a large indigenous population. While this population has been the target of many Title VI efforts, few have been successful in engaging with the community. Therefore, during a recent update of the Fairbanks MTP, the Fairbanks Metropolitan Planning Organization (FMPO) held a series of open houses in local community centers, libraries, and shopping malls in order to engage the community. The indigenous population relies on local community centers as gathering places for social events; therefore, the MPO was able to engage with many community members. At the local library, the MPO was also able to engage with many community members and used an on-line interactive mapping tool to help them identify issues on public computers. Although this public engagement activity was done by an MPO for a large regional population, similar activities could be performed for smaller local TSPs.

Workshops and Community Meetings

Workshops and community meetings invite the general public to participate in the planning process. They provide people with an opportunity to learn about the TSP update, ask questions of project planners and engineers, review project materials and progress to date, and provide feedback. Turnout at workshops and community meetings for planning is generally low; however, they continue to play an important role in many public involvement plans. This is due, in part, to the importance of providing participants with the opportunity to meet face to face with project planners and engineers. However, greater emphasis on advertising the workshops and meetings, hosting them where people are rather

than in government buildings, and creating an engaging environment can improve attendance and the participation at the workshops and meetings.

Workshops and Open Houses Best Practices

- Hold workshops and community meetings at strategic times throughout the planning process (i.e. existing conditions and future needs, transportation system solutions, financially constrained project list, draft TSP). Due to the presence of TSP websites and other on-line forums, workshops and meetings should be planned accordingly and potential in conjunction with other activities (e.g., planning commission hearings, city council workshops, etc.)
- Advertise workshops and community meetings well in advance so people can plan to attend. Effective advertising methods used in practice include:
    - Placing ads in local newsletters, newspapers, or other news media sources
    - Creating posters to hang in civic buildings, local businesses, and on community bulletin boards
    - Creating flyers to pass out at local events
    - Creating display boards and put them in vacant storefronts
    - Encouraging TAC and CAC members to participate in workshops and community meetings and help advertise the events to friends and neighbors
    - Using social media to advertise meetings and engagement opportunities
- Identify locations for workshops and open houses that are sufficient to meet the needs of the community. Effective workshop locations used in practice include:
    - Locations where people feel comfortable (churches, senior centers, schools, banquet facilities, etc.)
    - Well-lit and visible locations with adequate access
    - Popular locations (parks, outside high school football games, etc.)
    - Booths at local farmers markets, street fairs, or other events
    - Workshops and open house locations away from government buildings to attract populations that are sensitive/suspicious of government programs/regulations. Consider partnering with local organizations to host public events in tandem with established meetings of local groups / committees.
- Ensure that workshops and community meetings are structured to solicit feedback from participants. Effective meeting structures used in practice include:

        - Providing a rolling power point presentation that people can watch independently to get acclimated to the project
        - Creating stations that focus on different travel modes or elements of the TSP
        - Providing participants with specific direction on the type of feedback you are looking for prior to and at the meeting
        - Providing appropriate staff to answer questions and provide clarification
        - Encouraging dialogue and discussion with staff
        - Providing opportunities for people to provide feedback on maps, flip charts, comments cards, and other media
        - Incorporating a survey
        - Providing a place for people sit down and fill out comment cards
- Create opportunities for people to participate online – see *Virtual/Online Engagement* for additional information
- Ensure that workshops and open houses have a friendly environment that encourages participation. Effective methods used in practice include:
        - Bringing snacks
        - Holding a drawing for a prize to encourage participation
        - Providing supervised activities for children so parents can focus on the open house.

GOING WHERE THE PEOPLE ARE

North Boise, Idaho Bicycle and Pedestrian Plan

The North Boise Bicycle and Pedestrian Plan team took to the streets to engage neighbors regarding planned bicycle and pedestrian improvements. These pop-up open houses took place along the roads where improvements were planned and allowed residents to have some ice cream and discuss with officials and their neighbors what they did and did not want to see on their streets. The feedback received at these meetings was critical to the development of planned improvements for the North Boise neighborhood.

Design Charrettes

While typically seen as a project implementation or design tool, the use of design charrettes can be a valuable inclusionary feedback tool when dealing with transportation planning projects that have complex land use, environmental, spatial, topographic, and equity-based challenges. Charrettes can occur on a single day or over multiple days and can address a single issue or multiple ones.

Design Charrette Best Practices

- Charrettes should include a facilitator that leads and coordinates the work of the group.
- Charrettes should be hands-on events where participants are encouraged to provide input on a variety of materials.
- Materials should be displayed so they are visible to the entire group, and as work progresses, so should the displays, so people can visualize things moving forward.
- Prepare a schedule for the charrette and communicate it to all participants prior to the event.

- Prepare a timeline for each day of the charrette that identifies how much time will be spent on each activity.
- Separate participants into multiple groups to address different issues or aspects of an issue
    - Encourage participants to focus on one area throughout the charrette
- Have breakout sessions where participants discuss the issue or aspects of an issue, develop solutions, and report back to the larger group
- Ensure that a professional planner/engineer leads the breakout sessions to help people understand potential trade-offs.
- Use an online system, such as Poll Everywhere, that allows participants to vote on an issue by sending a text message or using Twitter. The results will update in real time and can be displayed in a presentation on the agency's website.

GATHERING DIVERSE VIEWPOINTS

Kuna, Idaho Downtown Corridor Plan

The Kuna, Idaho Downtown Corridor Plan used a design charrette format where community members, transportation planners, city officials and others collaborated on a vision for the downtown. During the two day charrette, local community members, business owners and city officials worked directly with the project team and engineers to identify project goals and objectives, develop evaluation criteria, and identify possible projects and improvements. Participants then worked with the project team to apply the evaluation criteria to the proposed projects. They were able to provide real time direct feedback to the project team while evaluating these alternatives. At the end of the charrette the group had developed an agreed upon list of implementable improvements for Downtown Kuna. Several of these projects have now been built, including Kuna's first roundabout.

Virtual/Online Engagement

Virtual and online engagement is no longer seen as an emerging form of public engagement. In most communities, it is now a widely accepted and expected form of engagement that accommodates busy families and social media-focused generations.

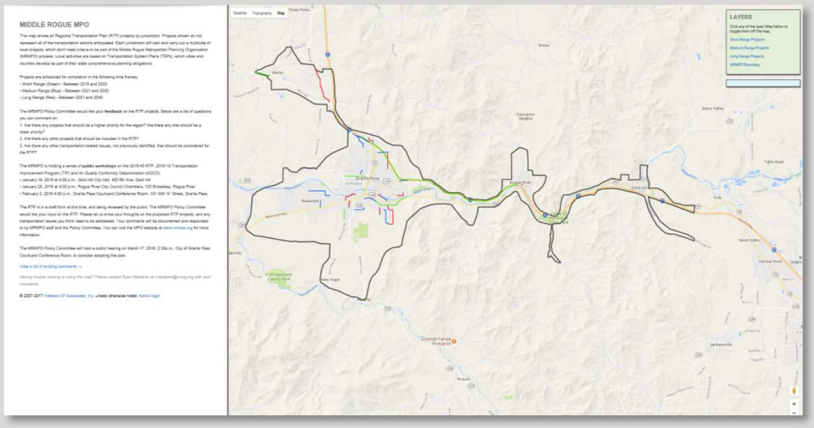
Virtual/Online Engagement Best Practices

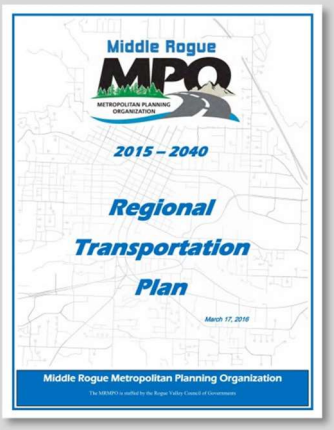
- Customized project websites can be used to facilitate public engagement by providing a one-stop location for:
    - Latest news (project updates, meeting announcements, etc.)
    - Meetings and meeting materials (agendas, presentations, etc.)
    - Project documents (tech memos, reference materials, etc.)
    - Project schedules
    - Project team contact information
    - Surveys
- Customized project websites can also be used to document the planning process and solicit feedback through interactive project maps and virtual open houses
- Interactive project maps can be used to solicit feedback on transportation related issues and potential solutions within the study area
- Virtual open houses can be used in conjunction with actual open houses. They can provide participants with the same opportunities to provide feedback on meeting materials
    - Virtual open houses are particularly effective in larger communities where there is a dispersed population (i.e. rural communities)
- FTP sites, Dropbox, Google Docs, BaseCamp, Group, and other file sharing services can be used to collaborate and share materials that are too big to email with project team members and other – different services offer different capabilities
- Some websites, such as Facebook, can be used to live stream meetings and presentations and allow participants to ask questions or presenters live

COLLECTING FEEDBACK ONLINE

Rogue Valley MPO Regional Transportation Plan (RTP)

The Rogue Valley Metropolitan Planning Organization (RVMPO) used an interactive map to collect feedback on potential transportation improvements identified in the draft RVMPO RTP update. The map illustrates the location of each improvement within the MPO boundary. When a user selects one of the improvements, the map provides a short description, the schedule for completion, and the name of the jurisdiction responsible for implementing the improvements over time. RVMPO used a similar map while developing the RTP for the newly-formed Middle Rogue Metropolitan Planning Organization (MRMPO).





Technical Approaches

This section identifies emerging topics and best practices in the areas of performance measurement and data analysis.

Performance Measurement

System planning is transitioning away from isolated roadway and automobile performance (e.g., level of service, volume-to-capacity ratio, etc.) and into complete multimodal performance measures covering both the operational and safety characteristics of the entire transportation system. There are many documented performance measures in use. The following are more widely used due to the desires of local agencies to comply with FAST Act-related performance measurement requirements. Some measures work well across multiple settings, while others are only suitable in certain applications.

Performance measure applications include:

- Develop or establish a standard or threshold
- Setting a long-term benchmark to monitor progress based on observed travel behavior
- Identifying if a standard or threshold has been met
- Comparing alternatives or conditions (before/after, with/without improvement)
- Prioritizing projects (which provides more benefit?)

The Washington County Multimodal Performance Measures and Standards report identifies the following performance measures as most applicable to TSPs.

- Mode Share
- Sidewalk Completeness
- Crossing Completeness
- Bicycle Facility Completeness
- Intersection Completeness
- Crash Frequency
- Transit Accessibility
- Bicycle Level of Traffic Stress
- Travel Time Reliability – Buffer Index
- Accessibility to Destinations
- Vehicle hours of delay per capita
- Vehicle miles traveled per capita
- Average Travel Time

Performance Measurement Best Practices

Performance measures enable the TSP to support performance-based or outcomes-based planning. Best practices include:

- Performance measures that reflect the goals, objectives, and evaluation criteria developed for the TSP
- Local jurisdictions that reevaluate their performance standards to ensure that they are not limited to traditional performance metrics, such as level of service, and volume-to-capacity
    - Not doing so could result in unrealistic expectations for the long-term development of the transportation system
- Identifying objectives for the transportation system that are measurable
- Recognizing that different performance measures can be used at the system, corridor, and intersection or site specific level of analysis
- Determining which measures will be used to track progress towards TSP goals and which will be used to help define or prioritize TSP projects
    - Keep in mind that what you measure is what you get. If you measure miles of sidewalk you get miles of sidewalk. If you measure sidewalk connectivity to essential destinations, such as schools, you get improved accessibility
- Using performance measures to assess how existing and planned networks for each mode are performing against desired outcomes and define needed improvements
- Using performance measures to assess how well each proposed project performs against the TSP goals and objectives
- Using performance measures to track progress over time towards achieving the goals and objectives of the transportation system
- Looking for opportunities to apply performance-based planning (such as Mosaic or Regional Strategic Planning Model) to assess the outcomes of policy choices, including enhanced TDM and TO activities, to bolster the selection of such transportation solutions

In California, the Office of Planning and Research (OPR) is in the process of developing performance measures to measure the environmental impacts related to transportation. The following provides a summary of performance measures under consideration.

- Vehicle Miles Traveled
- Automobile Trips Generated
- Multimodal level of Service
- Fuel Use
- Motor vehicle hours traveled
- Proximity

- Look for opportunities to apply the **Transportation Cost Index** which measures multi-modal accessibility.

Data Analysis Methods (Multimodal and Transit Level of Service)

Most jurisdictions have begun to incorporate the use of multimodal analysis procedures for bicycle, pedestrian, and transit planning. The following sections document the most common analysis tools that are currently being used in transportation system planning.

Data Analysis Methods Best Practices

- ***Highway Capacity Manual (HCM)*** **Multimodal level-of-service (MMLOS) analysis methodologies** provide methods for evaluating utility (from the point of view of non-auto modes) for bicycles, pedestrians, and transit riders on urban streets.
    - Bicycle and pedestrian levels of service are measures of perceived comfort for the bicyclist and pedestrian. They generally favor greater separation between motor vehicle traffic and the non-auto modes, and lower speeds for motor-vehicle traffic
    - Transit levels of service take into account pedestrian access to transit stops, and frequency and average speed of transit service on the street

  Chapter 14 of the *ODOT Analysis Procedures Manual (APM)* recommends simplified qualitative variations of the HCM MMLOS methodologies are more appropriate for transportation system plans.
- **Qualitative Multimodal Assessment (QMA)** generally follows the principles identified in the *HCM* for MMLOS; however, it allows for a more objective review of the transportation system. This methodology uses roadway characteristics and applies a context-based subjective "Excellent/Good/Fair/Poor" rating. This method is best applied when comparing different alternatives side by side, but can also be used with a single scenario to compare the proposed improvement to existing conditions and to applicable standards.
- **Bicycle Level of Traffic Stress (BLTS)** is a methodology that classifies four levels of traffic stress that a bicyclist can experience on the roadway, ranging from BLTS 1 (little traffic stress) to BLTS 4 (high traffic stress). A road segment that is rated BLTS 1 generally has low traffic volumes and travel speeds and is suitable for all cyclists, including children. A road segment that is rated BLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most adults. Per the APM, BLTS 2 is considered a reasonable target for bicycle facilities due to its acceptability to the majority of people.
- **Pedestrian Level of Traffic Stress (PLTS)** is a methodology that classifies four levels of traffic stress that a pedestrian can experience on the roadway, ranging from PLTS 1 (little traffic

stress) to PLTS 4 (high traffic stress). A road segment that is rated PLTS 1 generally has low traffic volumes and travel speeds and has a sidewalk that is separated from vehicular traffic. These segments are generally suitable for all users, including children. A road segment that is rated PLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most adults. Road segments rated PLTS 4 also include those with no sidewalks or other pedestrian facilities. Per the APM, PLTS 2 is considered a reasonable target for most pedestrian facilities due to its acceptability with the majority of people.

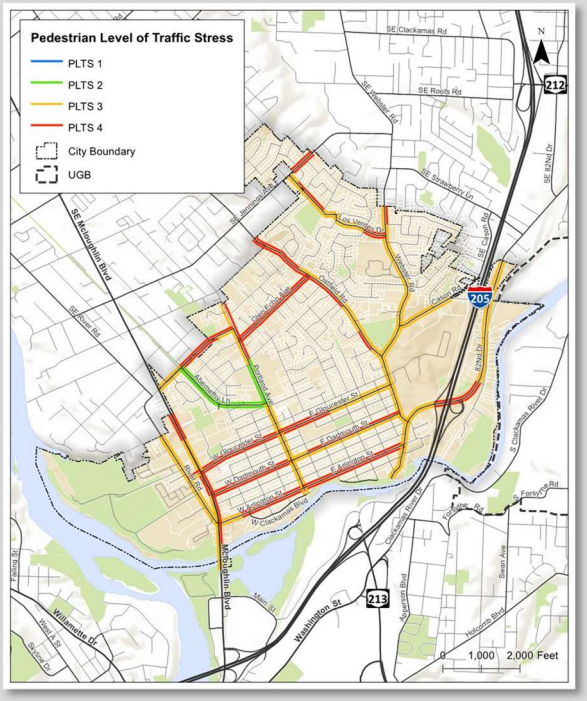
- **Transit Level of Service** refers to a methodology found in the *Transit Capacity and Quality of Service Manual (TCQSM)*. Chapter 3 of the *TCQSM* provides an extended discussion on quality of service, which is the evaluation of transit service from the passenger's point of view. The *TCQSM* uses six measures to quantify service quality. Each of these measures is assigned a letter value, where LOS A represents the best service from the passenger perspective and LOS F represents the worst. The transit LOS approach mirrors the system commonly used for streets and highways, and allows a speedy comparison of service performance to transit passenger desires. Of the six available measures, three are the most relevant to a long-range planning effort: service frequency, hours of service, and service coverage.

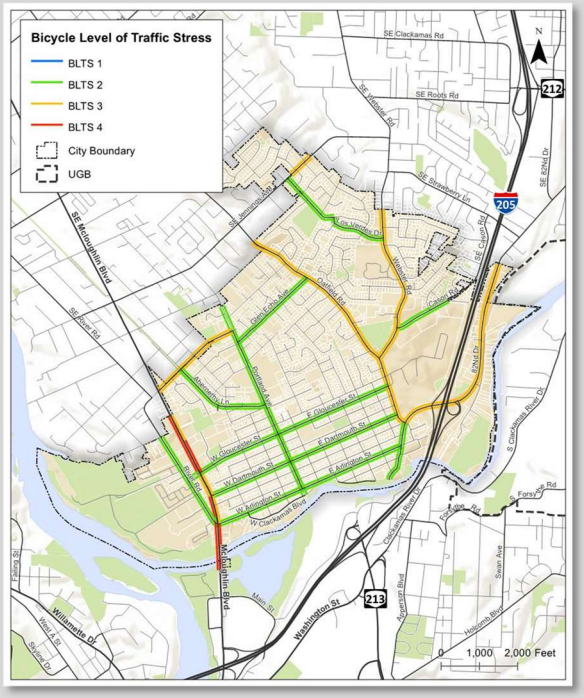
  Chapter 14 of the ODOT APM recommends using a streamlined version of the Transit LOS methodology that uses transit schedule speed, instead of calculating a transit travel speed, to consolidate the first three steps of the full MMLOS process.

- ***The Highway Safety Manual (HSM)*** provides science-based methods, procedures, and measures that integrate quantitative estimates of crash frequency and severity into roadway planning, evaluation, and project development. Prior to the *HSM*, crash analysis for planning and project development was typically limited to simple evaluations of crash data and somewhat subjective analysis. Evaluations of future safety performance were primarily limited to meeting design standards, with few options for comparing alternatives. By contrast, the tools in the *HSM* allow safety to become a meaningful performance measure that can be implemented at any stage of the transportation decision-making process. Chapter 4 of the ODOT APM identifies recommended crash analysis types appropriate for various forms of planning applications.

Gladstone, Oregon Transportation System Plan

The Gladstone Transportation System Plan evaluated BLTS and PLTS on all arterial and collector streets within the city as well as several local streets that provide access to essential destinations (e.g. schools, parks, churches, etc.). The BLTS and PLTS analysis results helped identify gaps and deficiencies in the bicycle and pedestrian systems and potential solutions to improve the perception of safety and comfort along city streets. See www.gladstonetsp.com for additional information.





Data Availability/Partnerships

Due to the expanding presence of private sector companies, platforms for collecting bike, pedestrian, transit, and shared-use mobility data are increasing and becoming more widely available. It will be critical for the State, local MPOs, and local jurisdictions to find opportunities to partner with these private sector companies to leverage the use of this data.

Data Availability/Partnerships Best Practices

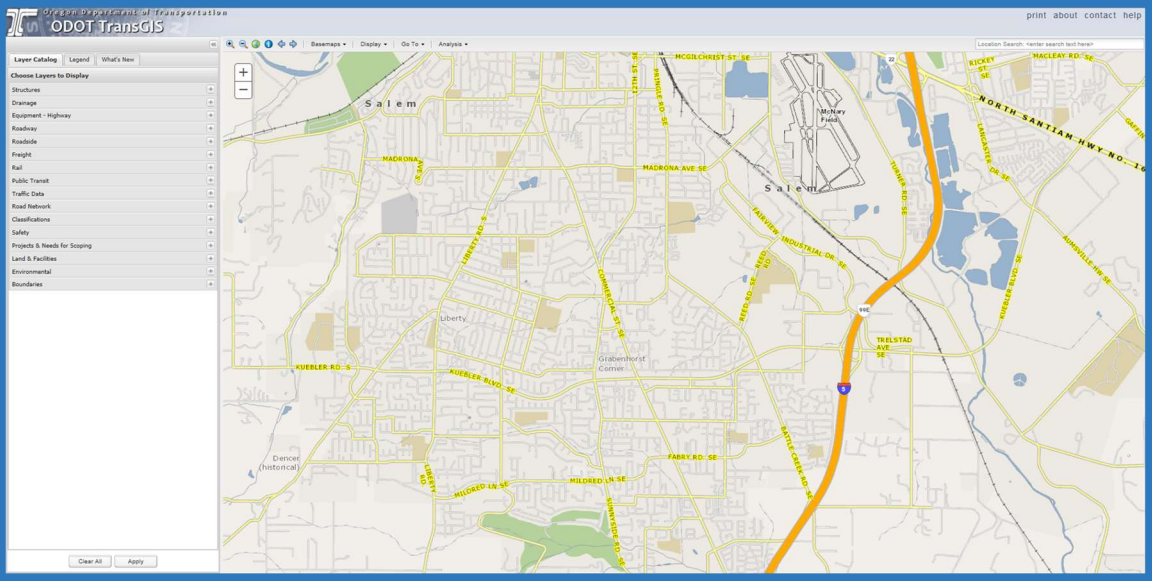
The following is a list emerging data sources that could potentially provide useful information for the development of local and regional TSPs in the future.

- Identify data-leverage opportunities. Collect data in a manner than can satisfy different needs/uses; i.e. traffic counts should be a minimum of 24 hours if at all possible so that data could inform more than the typical "Peak Hour" counts that are incorporated into a TSP. Chapter 3 of the APM contains detailed guidance for collecting traffic counts
- **Transit service providers** generally track transit ridership by route and in some instances by stop. Transit ridership data can help transit agencies make decisions about investments in service routes, stops, and stop amenities. Transit ridership data can also be used by local agencies to understand how people are using transit within their communities, which could lead to investment partnerships between local agencies and transit service providers.
- Special Transportation Fund (STF) agencies (counties, transit districts, Indian Tribes, etc. that receive STF funds) are required to prepare locally developed coordinated public transit-human services plans.
- **Uber, Lyft, Wings and other carshare companies** track usage, often by pickup and drop-off location. Data from these companies are not readily available at this time. Eventually, it may become possible to use the data for planning purposes and better understand how carshare services are impacting travel patterns.
- Private data sources are making some volume and speed data available for purchase. This will be an important and emerging source for useful system-wide transportation data.
- **Bikeshare companies** also track usage by pickup and drop-off locations. However, data from these companies are not readily available at this time.
- **Metro's Data Resource Center and Regional Land Information System** provides geospatial data for land use, zoning, multimodal transportation, administrative/census boundaries, environmental and aerial imagery for Portland's three metropolitan counties: Multnomah, Washington, and Clackamas. Full access requires a $480 annual subscription (not including high resolution aerial imagery) http://rlisdiscovery.oregonmetro.gov/. Other COGs such as LCOG are providing similar land use and transportation data packages.

- **ODOT's Crash Data System** publishes the location, type, and severity of all reported crashes that have occurred on state highways and local roadways throughout Oregon. The data also include information on the general characteristics of the crashes. Access to the data is free and can be requested from ODOT or obtained from their website. https://tvc.odot.state.or.us/tvc/
- **Census Data** can be obtained and converted into spatial data from the *American Fact Finder* advanced search page. The information includes all demographic information obtained through the Census and is organized by census track, census block, or census block group depending on the nature of the data. https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t
- ***OnTheMap*** provides origin-destination data from households to places of employment based on information obtained through the Census. https://onthemap.ces.census.gov/
- The **Population and Research Center** at Portland State University (PSU) provides population data, information, research, and analysis for Oregon and its communities. The Center engages in a variety of demographic activities, including the Oregon State Data Center, the

ODOT TransGIS

ODOT's TransGIS site provides geospatial data for state highways as well as major city and county roadways. Data include the location of pedestrian facilities, bicycle facilities, bridges, rail crossings, traffic signals, and general characteristics of roadways statewide. Access to the data is free.



Oregon Population Estimates Program, and a variety of commissioned population projects. https://www.pdx.edu/prc/home

Toolbox Approach

Some jurisdictions are incorporating "toolbox" techniques into their TSPs, identifying a range of options that can potentially be incorporated/implemented when warranted or when funding is available. The toolbox provides a brief description of each individual treatment along with technical information, typical application, peer communities actively using the treatment and documents that can provide additional guidance. Facility costs can vary significantly by jurisdiction due to differences in ROW, materials and labor costs and other contributing factors. These toolboxes can focus on the topics of traffic calming, transit supportive land use, sidewalk and bicycle lane treatments, pedestrian crossing treatments, access management treatments, roadway cross section treatments, roadway safety treatments, freight accommodation, transportation demand management, and others.

Toolbox Best Practices

- Tools and strategies can be included to address specific issues with the transportation system or to set the stage for the design exception process
- Toolboxes should include sufficient information on the tools and strategies to help the public agency with implementation. Information should include:
    - Descriptions of the tools and strategies
    - Lists of potential benefits and constraints
    - Typical applications
    - Design considerations
    - Additional guidance (i.e. reference materials)
- Where applicable, the tools and strategies should be organized so that those providing the greatest benefit are identified first.
- Toolboxes that can be developed to help public agencies include:

  Pedestrian and bicycle – Most pedestrian and bicycle related projects will be defined by the TSP; however, some projects will be less defined, such as separated bikeways and enhanced pedestrian crossings. Pedestrian and bicycle toolboxes can include a variety of potential treatments that can be used by public agencies to address these less defined projects.

  Safety – Most safety related projects will be defined by the TSP; however, these are typically at specific intersections or corridors. Safety toolboxes can include potential treatments that can be used by the public agency to address systemic issues that occur throughout the jurisdiction. Here is a link to FHWA's safety countermeasures webpage. https://safety.fhwa.dot.gov/provencountermeasures/

Transportation System Management and Operations (TSMO) – These toolboxes typically include a range of transportation system management and Operations (TSMO) tools and strategies that can be implemented by public agencies. While most TSPs include TSMO projects, the toolkit can provide more definition to the projects as well as alternatives that could be implemented over time.

Transportation Options (TO) / Transportation Demand Management (TDM) – Transportation options strategies, programs, and investments enhance traveler opportunities and choices to bike, walk, take transit, share rides, and telecommute (see https://www.oregon.gov/ODOT/Programs/Pages/TO-Program.aspx for more information).

Parking – Parking issues are addressed in a small number of TSPs; therefore, parking toolkits can be used by public agencies to understand and develop strategies to address parking issues. See Parking Made Easy https://www.oregon.gov/LCD/TGM/docs/parkingprimerfinal71213.pdf for additional information.

Traffic Calming Toolkits – Few TSPs identify specific traffic calming projects; therefore, a majority of TSPs include potential treatments public agencies can implement to address traffic calming needs throughout the jurisdiction.

Oregon Place Types - Place Types could be used to share/visualize/identify opportunity areas (ie. for channeling growth or design designations/location f alt mode infrastructure, intersection treatments/design guidelines). Could be scaled to work with land use tools, as TSP conditions warrant.

https://www.oregon.gov/LCD/CLIMATECHANGE/Pages/Place_Types.aspx

City of Banks Bicycle & Pedestrian Plan

The Banks Bicycle and Pedestrian Plan includes a pedestrian and bicycle toolbox that identifies several potential treatments for addressing pedestrian and bicycle needs within the city. The treatments are organized into five categories: Bicycle Facilities, Pedestrian Facilities, General Crossing Treatments, Railroad Crossing Treatments, Bicycle Intersection Treatments, Pedestrian/Bicycle Amenities, and Traffic Calming Treatments. Where applicable, the treatments are organized from the highest to the lowest level of protection.

Solutions Toolbox

Bicycle Facilities

ONE-WAY SEPARATED BIKE LANE (CYCLE TRACK)

Cost: $$$$-$$$$$

A one-way separated bike lane (SBL), also known as a cycle track or protected bike lane, is a bicycle facility within the street right-of-way separated from motor vehicle traffic by a buffer and a physical barrier, such as planters, flexible posts, parked cars, or a mountable curb. On two-way streets, a one-way SBL would be found on each side of the street, like a standard bike lane.

Benefits

- Provides physical separation from motor vehicle traffic, which can attract users of all levels.
- Buffer can provide opportunities for landscaping.
- Reduced risk of "dooring" when parked cars are present.

Constraints

- Requires additional right-of-way over standard bike lane.
- Construction may be more expensive than standard bike lane.

Typical Applications

- Roadway segments with sufficient right-of-way or where a "road diet" (vehicle lane reduction) can be implemented.
- Key segments of the bicycle network where more protection is desirable, such as areas with higher traffic volumes or speeds, or routes to common destinations, like schools.
- Roadways with infrequent driveways and side street accesses.

Design Considerations

- Intersections must be designed to ensure visibility of bicyclists using the facility. Treatments include separate signal phases for bicyclists and high visibility pavement markings.
- Buffer type can vary depending on context, presence of parking, and available right-of-way.
- Green pavement markings or striping can add visibility and awareness in "conflict areas" or intersections where bicycle and vehicle travel paths cross.

Additional Guidance

- NACTO Urban Bikeway Design Guide
- CROW Design Manual for Bicycle Traffic.
- ODOT Highway Design Manual.
- ODOT Bicycle and Pedestrian Design Guide.
- FHWA Separated Bike Lane Planning and Design Guide

BF-2

Solutions Toolbox

Bicycle Facilities

TWO-WAY SEPARATED BIKE LANE (CYCLE TRACK)

Cost: $$$$

A two-way separated bike lane (SBL), also known as a two-way cycle track or protected bike lane, is a facility within the street right-of-way separated from motor vehicle traffic by a buffer and a physical barrier, such as planters, flexible posts, parked cars, or a mountable curb. Two-way SBLs serve bi-directional bicycle travel within the facility on one side of the street.

Benefits

- Requires less right-of-way than a one-way SBL, due to the need for only one buffer.
- Provides physical separation from motor vehicle traffic, which can attract users of all levels.
- Reduced risk of "dooring" when parked cars are present.

Constraints

- May be less intuitive for drivers and bicyclists due to apparent "wrong-way" travel on one side of street.
- May be unsafe in areas with frequent crossings or driveways.
- Construction may be more expensive than standard bike lane.

Typical Applications

- On-street connections between off-street multi-use paths.
- Roadways with infrequent driveways and side street accesses.
- Key segments of the bicycle network where more protection is desirable, such as areas with higher traffic volumes or speeds or routes to common destinations, like schools.
- On one-way streets where two-way bicycle travel is desirable.

Design Considerations

- Intersections must be designed to ensure visibility of bicyclists using the facility. Treatments include separate signal phases for bicyclists and high visibility pavement markings.
- Buffer type can vary depending on context, presence of parking, and available right-of-way.
- Green pavement markings or striping can add visibility and awareness in "conflict areas" or intersections where bicycle and vehicle travel paths cross.

Additional Guidance

- NACTO Urban Bikeway Design Guide
- CROW Design Manual for Bicycle Traffic
- FHWA Separated Bike Lane Planning and Design Guide

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Environmental Review and Analysis

The Federal Highway Administration (FHWA) created the Planning and Environmental Linkages (PEL) program to encourage transportation decision-makers to incorporate environmental, community, and economic goals early in the transportation planning process. Decision-makers can use and rely on planning analysis, studies, decisions, or other information developed during planning for the project development and environmental review processes of transportation projects. PEL aims to create a more unified decision-making process, reducing duplication of efforts and fostering more informed project-level decisions. ODOT provides guidance for linking planning and environmental processes in *ODOT Planning and Environmental Linkages Guidance.* See https://www.oregon.gov/ODOT/Planning/Documents/Planning-EnvironmentalLinkagesGuidance.pdf for additional information.

Environmental Review and Analysis Best Practices

- Compare transportation plans to natural and cultural resources inventories, maps or plans, including plans from federal, state, tribal, and local agencies as appropriate
- Explore potential environmental mitigation opportunities and potential areas to carry out those activities in coordination with federal, state, tribal, and local agencies as appropriate
- Conduct multimodal, systems-level corridor and subarea studies as part of the overall study
- Carry planning decisions that feature components that use NEPA principles and methods through into project development, creating a link between planning and NEPA
- Develop context-sensitive solutions that incorporate principles, approaches, guidelines, standards, or flexibility options to be used in designing transportation facilities
- The level of environmental review and analysis should be consistent with the depth and expectations of a high level planning exercise.

Definition of TSP Scope and Adoption Approaches

The Scope of Work (SOW) is the area of an agreement where the work to be performed is described. The SOW should contain any meetings, milestones, deliverables, and end products the performing party will be expected to provide. The SOW should also contain a timeline for all deliverables.

TSP Scope and Adoption Best Practices

- Successful SOWs typically include the following components:
    - A problem statement describing the issue the project will address
    - A description of project goals and objectives

        - A description of tasks necessary to meet project goals and objectives
        - A description of deliverables associated with each task
        - A timeline for completing each task and deliverable
    - The SOW should also include a description of the Public Involvement Plan (PIP)
    - The SOW should define how transportation facilities and local land use agency transportation system plans and design standards are developed and ultimately adopted

Transportation Improvement and Finance Program

A transportation improvement program is a package of projects involving facilities/services that implements the TSP. A transportation finance program explains how the projects identified in the transportation improvement program will be funded. Because availability of funding will inform and influence the evaluation of transportation system alternatives, the jurisdiction should begin formulating its finance program prior to the development of system alternatives.

Transportation Improvement and Finance Best Practices

- Develop an understanding of transportation financing early in the planning process to provide context for the TSP update
- Work with the public agency to identify historical revenue sources that have funded the transportation system within the study area, including:
    - Oregon Highway Revenue Apportionment
    - System Development Charges, if applicable
    - Grants
- Work with the public agency to identify historical expenditures that have supported the transportation system within the study area, including:
    - Maintenance
    - Capital improvements
    - Personnel
- Use the historical revenue and expenditure information (assuming it is stable) to identify potential funds for implementing projects in the TSP, assuming that historical funding is stable
- Identify potential future funding sources to address gaps in potential funds for implementing the TSP
    - Given the number of potential future funding sources available, financing should not constrain project development

- Consult potential funds, including those from potential future funding sources, to help prioritize projects and develop a financially constrained project list of the TSP
    - Project prioritization should reflect the goals and objectives of the TSP update
- Consider the issue of preservation and maintenance of the existing transportation network when preparing projected revenue amounts.

Documentation

This section identifies emerging trends and best practices in the documentation and presentation of transportation system plans.

TSP Documentation and Visualization

The TSP document is the culmination of all prior technical documents that identifies the policies, plans, programs, and projects that will shape the transportation system over the next 20 years. It will be used by agency staff and others while making land use decisions and defining the needs of projects. It should be clear, concise, and easy to follow. Some jurisdictions are moving away from print ready TSPs and developing online versions that include interactive project maps that provide real-time updates on projects. The online versions are easier to monitor and update after implementation. However, there are many jurisdictions that continue to rely on printed versions of TSPs for day-to-day use.

TSP Documentation and Visualization Best Practices

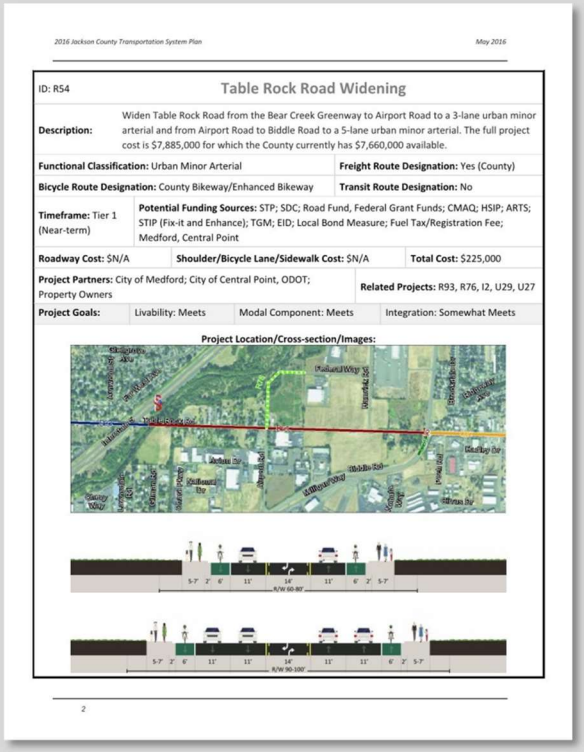
- The TSP document should be formatted to be easily viewed and navigable as an electronic document, but also be formatted so it can be easily downloaded and printed.
- The TSP document should speak the balance between non-technical narrative and intuitive graphics that explain the narrative.
- Given the increase in the use of graphics to convey complex concepts and the use of maps to illustrate elements of the plan, black and white compatible TSPs are no longer desirable.
- TSPs should provide flexibility to respond to the changing needs of the community and be organized so that it is easy to update.
- The TSP document could be divided into modal sections that focus on the plans, policies, and projects that relate to the travel mode. Dividing the TSP include modal sections would allow jurisdictions to update sections independently or as part of a package of updates.
- The TSP document may include grant-ready project descriptions for those projects that are likely to require/need outside funding for implementation. Project prospectus sheets can be particularly helpful and effective for inclusion in potential grant applications for project funding.

- Enhanced visualization tools/graphics should be used to describe complex concepts discussed in the TSP.
- Roadway cross section drawings should be enhanced graphically to show perspective views using Google Sketchup or other 3D software tools.
- Supporting technical findings and should be documented in a separate, supporting document.

PROJECT PROSPECTUS SHEETS

Jackson County, Oregon Transportation System Plan (TSP)

Project prospectus sheets were prepared for all Tier 1 projects identified in the Jackson County TSP update. The prospectus sheets include a basic description of the project, known implementation issues, and several distinguishing characteristics of the roadways used in the prioritization process, such as functional classification, and freight, bicycle, and transit route designation. They also include the cost of the project, potential funding sources, teaming partners, and related projects.

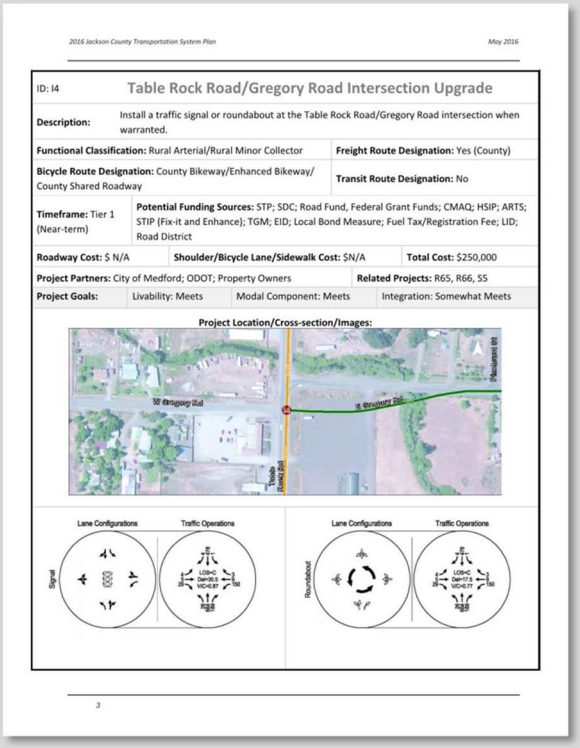


2016 Jackson County Transportation System Plan — May 2016

ID: R54	Table Rock Road Widening		
Description:	Widen Table Rock Road from the Bear Creek Greenway to Airport Road to a 3-lane urban minor arterial and from Airport Road to Biddle Road to a 5-lane urban minor arterial. The full project cost is $7,885,000 for which the County currently has $7,660,000 available.		
Functional Classification: Urban Minor Arterial		**Freight Route Designation:** Yes (County)	
Bicycle Route Designation: County Bikeway/Enhanced Bikeway		**Transit Route Designation:** No	
Timeframe: Tier 1 (Near-term)	**Potential Funding Sources:** STP; SDC; Road Fund, Federal Grant Funds; CMAQ; HSIP; ARTS; STIP (Fix-it and Enhance); TGM; EID; Local Bond Measure; Fuel Tax/Registration Fee; Medford, Central Point		
Roadway Cost: $N/A	**Shoulder/Bicycle Lane/Sidewalk Cost:** $N/A	**Total Cost:** $225,000	
Project Partners: City of Medford; City of Central Point, ODOT; Property Owners		**Related Projects:** R93, R76, I2, U29, U27	
Project Goals:	Livability: Meets	Modal Component: Meets	Integration: Somewhat Meets

Project Location/Cross-section/Images:

2



2016 Jackson County Transportation System Plan — May 2016

ID: I4	Table Rock Road/Gregory Road Intersection Upgrade		
Description:	Install a traffic signal or roundabout at the Table Rock Road/Gregory Road intersection when warranted.		
Functional Classification: Rural Arterial/Rural Minor Collector		**Freight Route Designation:** Yes (County)	
Bicycle Route Designation: County Bikeway/Enhanced Bikeway/ County Shared Roadway		**Transit Route Designation:** No	
Timeframe: Tier 1 (Near-term)	**Potential Funding Sources:** STP; SDC; Road Fund, Federal Grant Funds; CMAQ; HSIP; ARTS; STIP (Fix-it and Enhance); TGM; EID; Local Bond Measure; Fuel Tax/Registration Fee; LID; Road District		
Roadway Cost: $ N/A	**Shoulder/Bicycle Lane/Sidewalk Cost:** $N/A	**Total Cost:** $250,000	
Project Partners: City of Medford; ODOT; Property Owners		**Related Projects:** R65, R66, S5	
Project Goals:	Livability: Meets	Modal Component: Meets	Integration: Somewhat Meets

Project Location/Cross-section/Images:

3

VISUALLY BALANCED TSP

Scappoose, Oregon Transportation System Plan

The Scappoose TSP is a visually organized plan that speaks the balance between non-technical narrative and intuitive graphics. Example pages from this plan are included below. See the following link for the full plan. http://www.ci.scappoose.or.us/planning/page/2016-scappoose-transportation-system-master-plan-vol-1

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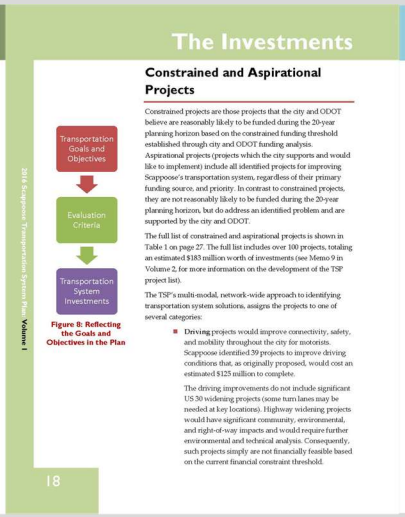


The Investments

Constrained and Aspirational Projects

Constrained projects are those projects that the city and ODOT believe are reasonably likely to be funded during the 20-year planning horizon based on the constrained funding threshold established through city and ODOT funding analysis. Aspirational projects (projects which the city supports and would like to implement) include all identified projects for improving Scappoose's transportation system, regardless of their primary funding source, and priority. In contrast to constrained projects, they are not reasonably likely to be funded during the 20-year planning horizon, but do address an identified problem and are supported by the city and ODOT.

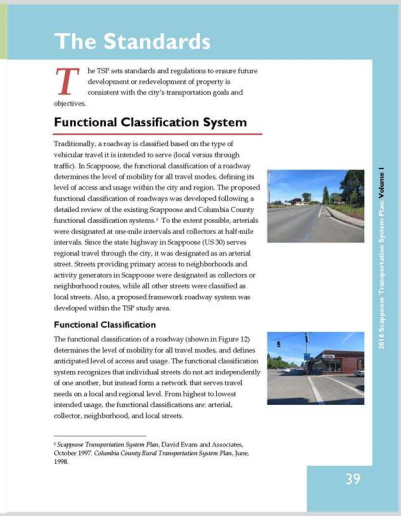
The full list of constrained and aspirational projects is shown in Table 1 on page 27. The full list includes over 100 projects, totaling an estimated $183 million worth of investments (see Memo 9 in Volume 2, for more information on the development of the TSP project list).

The TSP's multi-modal, network-wide approach to identifying transportation system solutions, assigns the projects to one of several categories:

- **Driving** projects would improve connectivity, safety, and mobility throughout the city for motorists. Scappoose identified 39 projects to improve driving conditions that, as originally proposed, would cost an estimated $125 million to complete.

  The driving improvements do not include significant US 30 widening projects (some turn lanes may be needed at key locations). Highway widening projects would have significant community, environmental, and right-of-way impacts and would require further environmental and technical analysis. Consequently, such projects simply are not financially feasible based on the current financial constraint threshold.

Figure 8: Reflecting the Goals and Objectives in the Plan



The Standards

The TSP sets standards and regulations to ensure future development or redevelopment of property is consistent with the city's transportation goals and objectives.

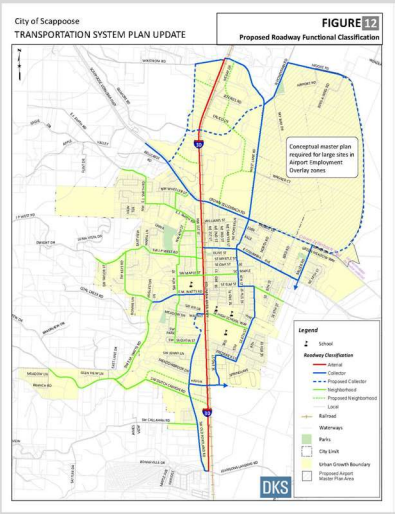
Functional Classification System

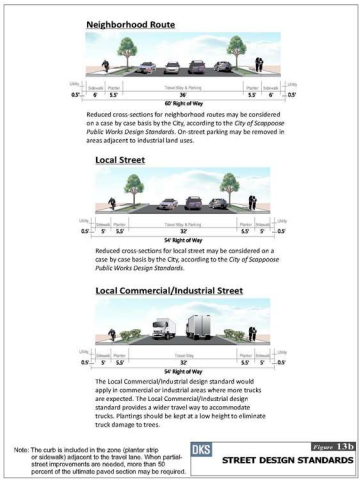
Traditionally, a roadway is classified based on the type of vehicular travel it is intended to serve (local versus through traffic). In Scappoose, the functional classification of a roadway determines the level of mobility for all travel modes, defining its level of access and usage within the city and region. The proposed functional classification of roadways was developed following a detailed review of the existing Scappoose and Columbia County functional classification systems.[1] To the extent possible, arterials were designated at one-mile intervals and collectors at half-mile intervals. Since the state highway in Scappoose (US 30) serves regional travel through the city, it was designated as an arterial street. Streets providing primary access to neighborhoods and activity generators in Scappoose were designated as collectors or neighborhood routes, while all other streets were classified as local streets. Also, a proposed framework roadway system was developed within the TSP study area.

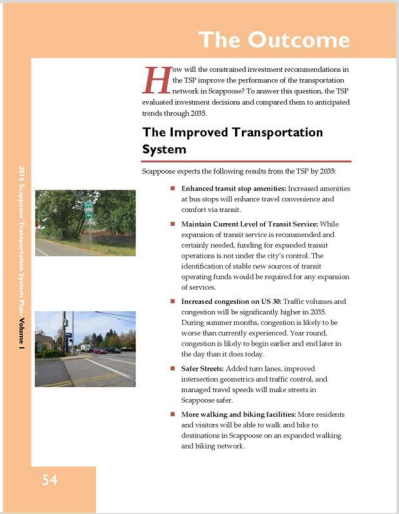
Functional Classification

The functional classification of a roadway (shown in Figure 12) determines the level of mobility for all travel modes, and defines anticipated level of access and usage. The functional classification system recognizes that individual streets do not act independently of one another, but instead form a network that serves travel needs on a local and regional level. From highest to lowest intended usage, the functional classifications are: arterial, collector, neighborhood, and local streets.

[1] *Scappoose Transportation System Plan*, David Evans and Associates, October 1997. *Columbia County Rural Transportation System Plan*, June, 1998.







The Outcome

How will the constrained investment recommendations in the TSP improve the performance of the transportation network in Scappoose? To answer this question, the TSP evaluated investment decisions and compared them to anticipated trends through 2035.

The Improved Transportation System

Scappoose expects the following results from the TSP by 2035:

- **Enhanced transit stop amenities:** Increased amenities at bus stops will enhance travel convenience and comfort via transit.
- **Maintain Current Level of Transit Service:** While expansion of transit service is recommended and certainly needed, funding for expanded transit operations is not under the city's control. The identification of stable new sources of transit operating funds would be required for any expansion of services.
- **Increased congestion on US 30:** Traffic volumes and congestion will be significantly higher in 2035. During summer months, congestion is likely to be worse than currently experienced. Year round, congestion is likely to begin earlier and end later in the day than it does today.
- **Safer Streets:** Added turn lanes, improved intersection geometrics and traffic control, and managed travel speeds will make streets in Scappoose safer.
- **More walking and biking facilities:** More residents and visitors will be able to walk and bike to destinations in Scappoose on an expanded walking and biking network.

Policy Implementation/Miscellaneous Planning Initiatives

Health Planning/Healthy Communities

Until recently, transportation policies, infrastructure programs, and funding sources have given minimal attention to the topic of public health benefits. Now, many jurisdictions are including health goals, initiatives, and formalized health impact assessments in their transportation plans and decision-making criteria.

Health Planning/Healthy Communities Best Practices

Initiatives such as Plan4Health work actively to integrate the planning and public health professions through the formation of local coalitions of planning experts, health professionals, and community leaders. The coalitions focus on building partnerships, helping community leaders identify health-based issues, developing physical and policy-level options for improving community health, developing advocacy plans, and evaluating outcomes. Umatilla County has developed a Plan4Health (http://plan4health.us/) (http://plan4health.us/plan4health-coalitions/umatilla-county-or-umatilla-county-plan4health/) initiative that aims to build a county-based network of partnerships to help initiate changes in policy, systems and the environment in an effort to promote healthier lifestyles for all residents. At the planning level, it is important to tie these regional health-based initiatives and programs to local active transportation planning efforts. An example was completed with the recent update of the Pendleton Transportation System Plan (TSP). Specifically, the Pendleton TSP included a Health Impact Overview that identifies the area's various health-related challenges and how the TSP has been developed to address these challenges from an active transportation perspective. http://www.pendleton.or.us/sites/pendleton.or.us/files/File/community_development/planning_dept/HIA_Pendleton_Draft8_FullColor.pdf

Other planning efforts are beginning to bring health-based performance measurements into the transportation analysis and prioritization process. Clatsop County recently used a Health Impact Assessment to help evaluate a multi-use path between Warrenton and Gearhart. This focused effort identified key health issues that would be impacted by the project and assessed different possible project components based on their relative potential to impact those key health issues.

Safe Routes to Schools

Safe Routes to School Programs have historically been initiated at the school district or by individual schools. Increasingly jurisdictions are beginning to include safe routes to school planning tasks (mainly the infrastructure investments) into the transportation system planning process in recognition that the topic is inherently liked to their connectivity, accessibility, and safety-related objectives. These tasks include the formal incorporation of projects identified in existing safe routes to schools plans, including new safe routes to schools goals and objectives in the guiding principles, and performing city-wide safe

routes to schools assessments in the development of new TSPs. More information on SRTS and School Site can be found at https://www.oregonsaferoutes.org/ and https://www.oregon.gov/LCD/TGM/docs/schoolsitinghandbook.pdf, respectively.

Safety

Traffic safety continues to be an important focus of many long-range planning projects, particularly in areas where real or perceived safety risks may prevent people from using more active modes of transportation, such as walking, biking, and taking transit. The real or perceived safety risks may reflect the crash history of an area or the physical and/or operational characteristics of the roadways (narrow travel lanes, winding curves, steep grades, high traffic volumes, high travel speeds, lots of heavy vehicles, etc.). Several methodologies have been developed to analyze and identify solutions for addressing traffic safety within an area. Many of which are documented in the Highway Safety Manual (http://www.highwaysafetymanual.org/Pages/default.aspx) and Chapter 4 of ODOT's APM.

Safety Best Practices

The following provides a summary of best practices related to traffic safety.

- Include, at a minimum, a review of the five most recent years of crash data available for the study area
- Focus on key intersections and corridors within the study area (hotspots), but also on similar crashes that occur throughout the study area (systemic)
- Focus on severe or fatal injury crashes and any crashes that involve pedestrians and cyclists
- Solicit feedback on perceived safety risks within the study area during advisory committee meetings, open houses
- Implement the appropriate level of evaluation consistent with the methodologies in the HSM and the ODOT APM
- Develop solutions that address safety issues in key locations and toolbox strategies for other locations throughout the study area

Americans with Disabilities Act (ADA)

The American's with Disability Act (ADA) serves to ensure the establishment of an accessible transportation system for people with disabilities; and provides for facilities (buildings, structures, etc.) that are accessible to all. All public entities are subject to the requirements of Title II, 42 U.S.C § 12132, and the implementing regulation, 28 C.F.R. Part 35.

TSPs should include a strategic look at barriers to disabled users, as well as, a plan for how barriers will be removed and facility access be improved in the course of developing and maintaining a well-

integrated transportation system. ADA system improvements can improve the utility of the system for all travelers.

ADA considerations may arise throughout several stages of the TSP process:

- **Needs Assessment:** When determining whether a TSP update is needed, consider the effects of barriers to access as a critical aspect of the functionality of the system. Identify pedestrian needs and priorities and consider safety for all travelers. TSP updates often include a more focused approach to pedestrian and other non-auto modes.
- **Applicable Regulations and Policies:** The ADA may not have been specifically and/or sufficiently addressed in earlier plans. Evaluate TSP policies related to pedestrian facilities and connectivity to ensure ADA considerations are included.
- **System Inventory:** Inventory the local transportation system to identify accessibility needs.
    - Barriers to access, such as, non-existing or non-compliant curb ramps, gaps or obstacles in sidewalks, non-compliant or inaccessible transit stops, and on-street parking.
    - Barriers to connections between modes, such as, connections to sidewalks and parking areas, accessible waiting areas, and loading and unloading areas or facilities.
- **Current and Future Conditions:** Identify deficiencies and needs to be addressed in the TSP update in light of current standards, inventory and compliance methodologies. When describing future conditions, consider ADA standards and requirements for all assets or features included and the contribution of ADA improvements to the desired transportation system.
- **Coordination and Public Involvement Processes:** An inclusive process includes people who need accommodation to safely use the system. Groups representing disabled communities can help find feasible solutions. This includes timely response to requests or informal complaints from members of the public and ongoing coordination.
- **Consensus Goals and Objectives:** A complete, safe and efficient system will have a minimum of barriers to all system users. When updating TSP goals and objectives, consider system level and pedestrian specific goals for opportunities to reinforce the importance of accessibility for the whole system.
- **Planned Transportation Improvement Program:** Once accessibility needs are identified, projects that include an area with accessibility problems need to include remedies for those problems to avoid liability for not addressing ADA requirements.

ODOTs ADA Title II transit Plan seeks to provide safe movement and access to ODOT-managed programs and public rights of way, without discrimination. See https://www.oregon.gov/ODOT/About/Pages/ADA.aspx

Aligning Policy to Federal Planning Regulation

The 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21) made a number of reforms to the statewide and metropolitan transportation planning processes, including incorporating performance goals, measures, and targets into the process of identifying and prioritizing needed transportation improvements. The 2015 Fixing America's Surface Transportation Act (FAST Act) includes provisions to support and enhance these reforms. See https://www.fhwa.dot.gov/fastact/legislation.cfm for additional information.

In an effort to engage all sectors and users of the transportation network, the FAST Act requires that the planning process include public ports and private transportation providers, and further encourages statewide and metropolitan consultation with officials undertaking other types of planning activities, including tourism and natural disaster risk reduction. These requirements will go into effect May 2018.

Resilience Planning for Transportation Networks

In the event of a local or regional natural disaster, the transportation network will be critical for providing emergency response, accessing key support services, and helping restore general mobility to affected areas. Oregon's risk associated with natural disasters, including coastal earthquakes have brought new light to this issue at the state and local levels.

Resilience goals establish a need for expanded transportation planning that includes:

- Identifying alternative emergency routes to key services such as fire and hospital facilities
- Identifying alternative emergency routes for evacuation
- An updated inventory of the local transportation infrastructure's capacity to withstand major earthquakes and other natural disasters
- Identification of hazardous areas or areas of high risk (i.e. landslide, wildfire, tsunami, flood, earthquake, etc.)

ODOTs *Lifeline Selection Summary Report* includes recommendations for designation of a seismic lifeline system for ODOT facilities. See https://www.oregon.gov/ODOT/Bridge/Docs_Seismic/Seismic-Plus-Report_2014.pdf#page=57