

## TECHNICAL MEMORANDUM

### Clackamas County TSP

White Paper #5.3 - DRAFT

State of the Practice of Modal Transportation Plans in Oregon and the US

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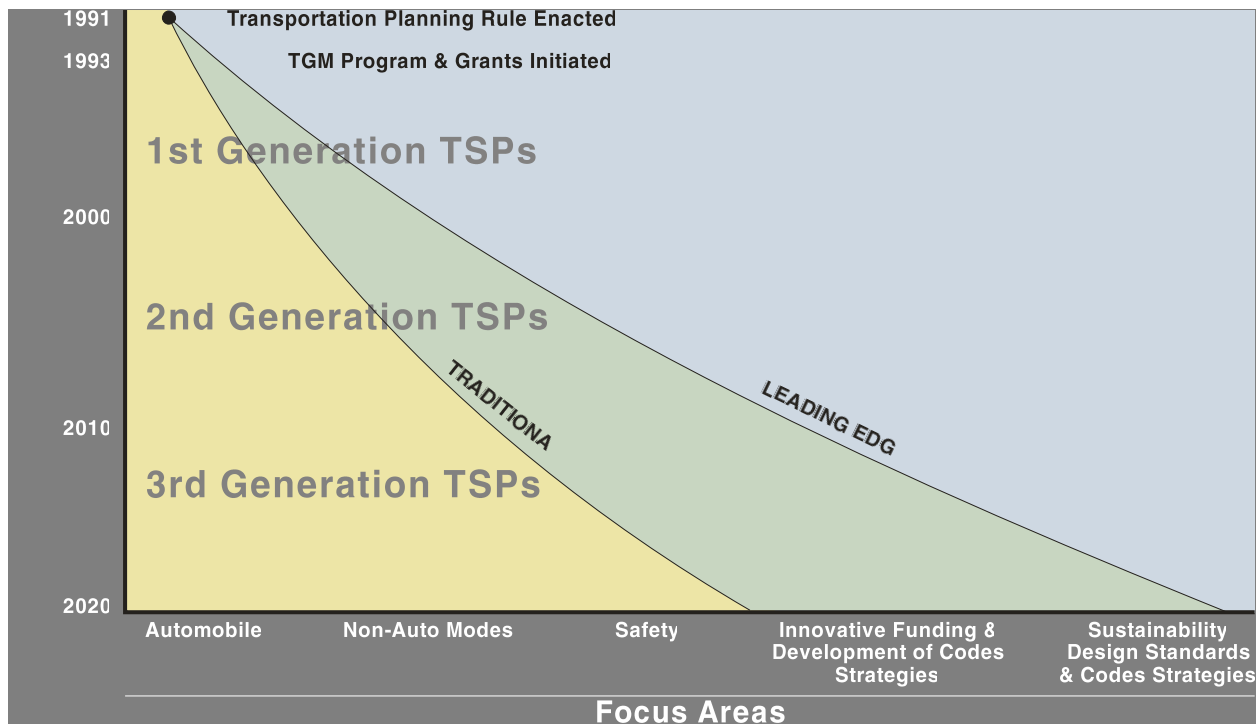
This memorandum provides an overview of the state of the practice in modal transportation plans in Oregon and in the United States. Six case studies that illustrate the state of the practice are included in the memorandum. Recommendations for Clackamas County's consideration are included in this memorandum as the County finalizes the vision, goals, and objectives for its Transportation System Plan (TSP) update.

### Background

Since adoption of the Transportation Planning Rule in 1991 (requiring coordinated land use and transportation planning) many local agencies have completed one or more updates since adopting their first TSP in the 1990s. Over the past twenty years TSPs have been evolving as agencies have done their updates. The first TSPs after the adoption of the Transportation Planning Rule are considered to be "1<sup>st</sup> Generation". **Exhibit 1** shows a history of how TSPs have been evolving in Oregon and how they have evolved to "3<sup>rd</sup> Generation" TSPs. While "1<sup>st</sup> Generation" TSPs were very automobile focused (laying out the future roadway network and identifying link and intersection capacity constraints and mitigations), "2<sup>nd</sup> Generation" TSPs began to identify future pedestrian, bicycle, and transit systems and documented existing safety issues. Now most TSP updates are incorporating elements considered to be "3<sup>rd</sup> Generation" by are looking at all modes as a combined

transportation system rather than separate modal systems and incorporating innovative funding and code strategies. The leading edge of “3<sup>rd</sup> Generation” TSPs based on the current state of the practice includes incorporating sustainability (environmental, fiscal, economic and/or social) into the planning process as well as putting greater emphasis on system performance measurement. The following provides recommendations for Clackamas County to ensure that the current update to the TSP will provide the County a “3<sup>rd</sup> Generation” TSP and put them on the leading edge with the state of the practice.

Exhibit 1: Oregon TSP History



## Recommendations for Clackamas County

Several trends representing the state of the practice in transportation planning emerged from a review of transportation plans in the United States and Oregon. Based on these trends, the following recommendations are made with regard to the TSP Update process that Clackamas County is undertaking:

- **Performance based objectives should be used to assess the effectiveness of the updated plan:** multiple and quantifiable performance measures are important for developing, helping prioritize projects, and measuring progress overtime.

- **The TSP Update should employ a multi-modal mindset in all aspects of goal-setting, analysis, evaluation, and recommendations:** transportation plans are shifting away from their earlier focus on vehicle-centric, capacity-based performance measures (e.g., level of service and volume-to-capacity ratio) toward broader metrics that consider multiple modes of transportation, safety, and the environment. Some plans have moved away from discussing each mode separately and toward developing the plan around multimodal corridors so that the interaction between different transportation modes can be addressed and “Complete Streets” that provide mobility for all users can be developed.
- **Public Health and Equity should be part of the transportation/land use equation and integrated into the transportation planning process.** The linkage and benefits between transportation, land use and public health is well documented; however, proactively planning, funding, and implementing projects and programs is not at the level necessary to achieve these potential and lasting benefits.
- **Public involvement should receive special attention and take advantage of new presentation, education, and participation techniques:** Extensive public involvement has traditionally been an important part of the planning process in Oregon, but it continues to evolve and be refined in ways that coax more effective input and public education out of the process. In more recent public involvement processes, the public helps in significant ways to shape transportation goals and priorities. Additionally, interactive websites, visualization techniques, and public workshops are being used to help engage the public and gather meaningful input.
- **There should be a strong environmental focus throughout the TSP Update process:** transportation plans increasingly include an environmental element in their vision, goals, and objectives.
- **System performance measures that also support economic goals should be identified:** goals and objectives related to the economy are increasingly being used to help prioritize projects and support economic sustainability.
- **The Plan should be bold in exploring, proposing, and developing new and innovative funding sources:** faced with a challenging transportation funding environment, metropolitan regions and counties are looking to new, innovative sources of transportation funding, such as public-private partnerships and user fees. Oregon is currently among the national leaders in this important emerging area, but the field is still

in its infancy and needs to go beyond conversation about concepts and opportunities to actual testing and implementation.

These trends should be considered as Clackamas County finalizes the vision, goals, and objectives for its TSP update.

## State of the Practice in Modal Plans

The following six case studies present a variety of transportation plans that illustrate the state of the practice in modal plans in Oregon and the United States. The plans are diverse, covering a range of geographic areas and levels of effort. As discussed in the recommendations above, certain trends appear in the plans, including a focus on multi-modalism, an emphasis on developing Measures of Effectiveness (MOE), and identifying new sources of transportation funding.

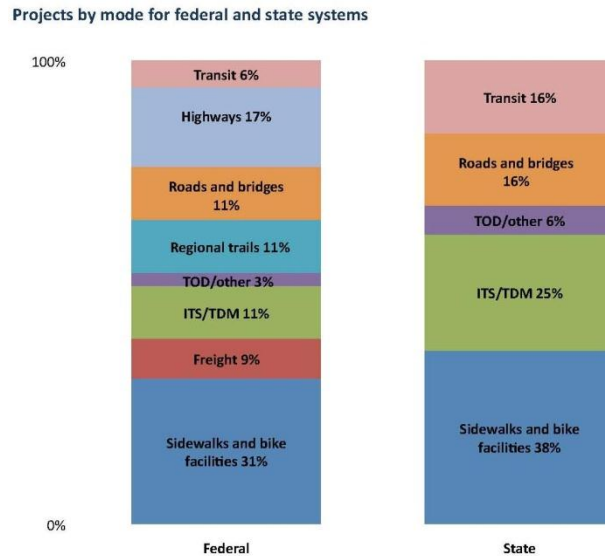
### CASE STUDY #1: 2035 REGIONAL TRANSPORTATION PLAN (RTP) – PORTLAND, OR

In May 2011, Metro adopted the 2035 RTP for the Portland metropolitan area. The planning document is organized in an intuitive manner and seeks to present information effectively. Each chapter begins with a statement or question, such as, “Chapter 3 Investment Strategy: What is our strategy for achieving our vision?” The first part of the plan establishes why a new transportation strategy is necessary. It then describes Metro’s vision for the future, develops a strategy for achieving that vision, provides performance measures for evaluating progress, and finally creates an implementation plan. Rather than discussing each transportation mode in isolation, the plan divides the Portland metropolitan area into mobility corridors. Each mobility corridor represents a sub-area of the region and includes all regional transportation facilities within the sub-area as well as the land uses served by the regional transportation system. This framework “emphasizes the integration of land use and transportation” [1] and recognizes how different modes of transportation can work together to create mobility.

Multi-modalism is a common theme throughout the RTP. It evaluates a variety of transportation modes and suggests streets should be evaluated on standards that go beyond the ones that only apply to motorized vehicles. When evaluating transportation needs, the RTP looks at transit, bike and pedestrian facilities, regional trails, throughways, arterials, rail crossings, regional bridges, safety, and regional freight. The RTP advocates creating “Complete Streets” that are designed with all users in mind. Elements of “Complete Streets” such as pedestrian crossings, landscaped buffers, lighting, and facilities for the hearing- and sight-impaired can help improve the performance of streets. The plan

includes data on the number of bike trips in the city of Portland to quantify the increasing rates of bicycling. Sidewalks are evaluated by using metrics that determine the percentage of bus stops or light rail platforms that are connected by sidewalks. As indicated by the project breakdown shown in **Exhibit 2** (for mobility corridor #1 between the Portland Central City and Vancouver, Washington), multi-modalism is a high priority in the RTP.

**Exhibit 2: Projects by mode for federal and state systems [1]**



Portland’s RTP takes a new look at funding, suggesting innovative strategies for funding transportation projects. It suggests that “enhanced public and private collaborations and stronger public support for seeking new revenue sources must be developed to maintain existing transportation assets as well as to pay for major system investments” [1]. However, the plan does not specifically outline these alternative sources, as they will be the topic of additional policy discussions during the fall of 2011.

**CASE STUDY #2: TRANSPORTATION 2040 – PUGET SOUND REGIONAL COUNCIL**

In 2010 the Puget Sound Regional Council (PSRC) adopted *Transportation 2040*, the long range transportation plan for the four-county central Puget Sound region of Washington State. The Puget Sound region encompasses approximately 6300 square miles, includes 82 cities, and is the largest metropolitan region in the Pacific Northwest.

**Exhibit 3: Transportation 2040 Plan Framework [2]**

**FIGURE 10. Transportation 2040 Plan Framework**



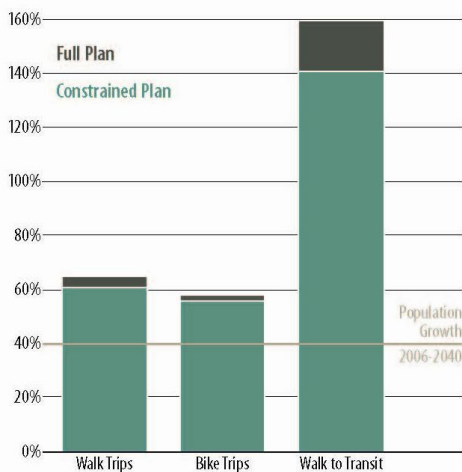
*Transportation 2040* focuses on three key strategies: 1) improving mobility; 2) protecting and enhancing the environment; and 3) identifying sustainable funding sources. A diagram depicting the plan’s framework can be seen in **Exhibit 3**.

*Transportation 2040* emphasizes measuring the outcomes of transportation investments. Each chapter of the plan includes an “Outcome” section that estimates the qualitative and quantitative results of the

plan in a specific area. For example, **Exhibit 4** shows the expected increase in biking and walking

### Exhibit 4: Bike and Walk Activity [2]

FIGURE 19. Bike and Walk Activity



trips that would result from provisions in the plan that focus on encouraging physical activity. For other performance metrics, graphs showing vehicle miles traveled, freeway delay hours, and trips by travel mode are included in the plan.

PSRC uses Sustainable, Multimodal, Accessible, Reliable, Technology (SMART) corridors to monitor transportation system performance and mobility. Regional planners in Puget Sound are working to develop SMART corridors in 12 regional subareas. Data collected along these corridors includes land use and demographic data, travel information, transit congestion, and identification of priority freight routes. Regular SMART Corridor Reports are created to help monitor

progress and identify transportation improvements.

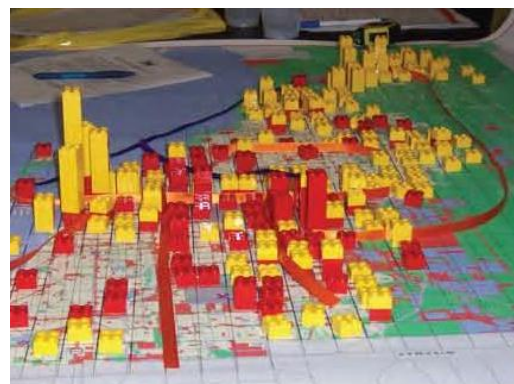
*Transportation 2040's* approach to transportation funding is notable. The plan reflects the need to move towards a new, more stable funding structure based on user fees. PSRC created a Transportation Pricing Task Force in 1995 to contribute to public dialogue about transportation financing. The Task Force concluded that variable roadway charging is critical to financing transportation projects. *Transportation 2040* lays out a general funding scenario to phase in tolls and other user fees, and creates a "New Revenue General Scenario" incorporating highway system tolls.

### CASE STUDY #3: 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) – MIAMI-DADE, FL

The Miami-Dade 2035 LRTP was adopted in 2009 by the MPO for the Miami Urbanized Area. Two particular strengths of the plan are its emphasis on public involvement and Measures of Effectiveness (MOE).

A Public Involvement Program (PIP) was created for the LRTP to identify interested individuals and groups and involve them in the planning process. The MPO made every effort to make environmental justice part of its mission by producing publications in English, Spanish, and Creole, and to reach out to not-for-profit organizations that represent underserved populations. Miami-Dade held two public workshops, each with six sessions. Several innovative visualization techniques were used to engage the public. A block

Exhibit 5: Block and Ribbon Exercise [3]



and ribbon exercise, shown in **Exhibit 5**, was conducted at six public workshops to help participants visualize population and employment growth. Participants used Legos®, ribbons, and a future land use map to identify corridors needing improvement. Miami-Dade implemented an audience response system at public workshops to ask questions relating to mobility issues and challenges. Participants used a remote control keypad to answer questions; their answers were immediately displayed to the audience in graphical form. This allowed data about public sentiment to be efficiently captured and viewed by the MPO and public. In addition, Miami-Dade created an interactive website to keep the public informed and to provide further public input. A project mapping element on the site allowed users to view Cost Feasible Plan projects and search for projects by proximity to a location or path, or by project type.

The LRTP stresses the importance of MOEs to assess the plan’s performance on a system wide basis. The plan includes eight goals, each with specific objectives. Each objective has a least one measure of effectiveness that may be qualitative or quantitative. A table then lists the plan assessment by MOE and how/where the MOE is addressed. This helps to provide alignment between the LRTP’s goals and projects. **Exhibit 6** is an excerpt from Table 4-5 in the plan that addresses MOEs.

**Exhibit 6: Performance Measurements [3]**

Objective	Measure	Plan Assessment by Measure	How/Where Measure is Addressed
Objective 1.7: Improve transportation facilities’ and services regional connectivity	Number of park-and-ride/multimodal facilities	17	Chapter 4 - Plan Development Process, Tables 4-9 and 4-10
Objective 1.8: Include provisions for non-motorized modes in new projects and in reconstructions	Does the plan consider non-motorized infrastructure in highway and transit improvements?	Yes	Chapter 6 - Intermodal Systems Planning; Bike/Pedestrian set-aside
	Percentage increase in number/mileage of non-motorized facilities	48% (miles)	Chapter 6 - Intermodal Systems Planning; Bike/Pedestrian set-aside

**CASE STUDY #4: MASTER TRANSPORTATION PLAN (MTP) – ARLINGTON COUNTY, VA**

Arlington County adopted the MTP for 2030 in 2007 to create a policy framework to guide development, advance the County’s goals and objectives, and direct public investment. The plan outlines several general goals to provide broad direction for transportation programs. Strategies described in the plan focus the guidance into specific actions, and policies provide the formal statements of action to achieve these strategies. The plan includes strategies for the overall transportation system, as well as specific strategies for individual modes. Each policy is further broken down into implementation actions, each of which is accompanied with performance measures. Although this structure is detailed and multilayered, it helps create concrete MOEs that are related to the plan’s goals. For example, one performance measure in the plan is: “Track the

installation of new bicycle racks available for use by the public. Seek to install 250 new racks (500 parking spaces) over the next 10 years” [4]. This metric relates to the policies of completing the bicycle network and providing high-quality bicycle facilities.

The transportation performance measures in the plan represent a “shift from an emphasis on the traditional vehicle ‘Level of Service’ to an emphasis on multimodal ‘Quality of Service’” [4]. This holistic view of transportation services supports multi-modalism and a balance between travel modes. Instead of focusing on vehicle-related MOEs, the Arlington MTP seeks to create “Complete Streets” that provide for transit, pedestrians, and bicyclists in addition to vehicles. The plan includes sections devoted to alternative modes of transportation and considers advice from a variety of stakeholders. For example, a citizen Pedestrian Advisory Committee (PAC) provides the county staff with advice on pedestrian policy and issues.

**Exhibit 7: Project Performance Criteria [4]**

Project Prioritization Criteria	
1.	Importance to bikeway network connectivity.
2.	Safety needs and implications.
3.	Estimated demand for usage.
4.	Potential to attract new bicyclists.
5.	Community support.
6.	Cost relative to capital budget.
7.	Ease of implementation, including neighborhood, environmental clearance, and need for additional right-of-way.
8.	Availability and quality of existing alternative routes/facilities.
9.	Opportunity to achieve cost savings or easier implementation through combination with another project.

In order to prioritize recommended transportation projects, Arlington County developed a variety of project prioritization criteria. These criteria were developed through a formal process involving stakeholder groups. For example, the bicycling prioritization criteria, shown in **Exhibit 7**, were formulated by a group including the Bicycle Advisory Committee, Bike Arlington staff, and representatives of other agencies. These criteria help develop project priorities and support the county’s transportation goals.

#### CASE STUDY #5: COMMUNITIES IN MOTION (CIM) 2030 PLAN – BOISE, IDAHO

The Community Planning Association of Southwest Idaho (COMPASS) developed Communities in Motion (CIM) as the 2030 plan for Northern Ada County and the Nampa Urbanized Area. Although this region is the most populous in the state, parts of the region are rural and remote, which creates a diverse transportation system. The plan is sensitive to the variety of needs in the region and takes a holistic approach that covers all modes of transportation.

CIM is based on four community goals, which were developed in public workshops, open houses, and other opportunities for input throughout the planning process. The four goals are 1) Connections; 2)



Coordination; 3) Environments; 4) Information. These four goals link to the two key elements of the plan, “Community Choices” and “Regional Corridors.” “Community Choices” refers to an ideal growth scenario developed through input from public workshops, local governments, stakeholders, and elected officials. The scenario intends to create a transportation system that is cost-effective and multi-modal. The plan divides the county into “Regional Corridors” to assess the transportation system as a whole, instead of examining modes independently.

One strength of the plan is its emphasis on creating specific, measurable metrics to assess the success of the plan. Under each of the four goals in the plan are objectives, which provide a more detailed breakdown of specific areas of the goal. Tasks are given for each objective, which identify how the objectives are carried out. The tasks were created to be measurable and help prioritize and identify high priority projects that help achieve the “Community Choice” scenario. For example, the following objective and task are part of the CIM [5]:

**Objective:** Develop and implement transportation alternatives and land use patterns to achieve an average mode split of 5% of all trips.

**Task:** COMPASS and Valley Regional Transit will plan and implement – when dedicated funding is available – a transit system with travel times on bus routes no more than twice the travel times for comparable automobile travel times.

Although not explicitly outlined in the CIM, COMPASS has also created a variety of criteria to rank projects and measures the implementation of the LRTP (included in a technical document on their website). The primary criteria considered are efficiency and accessibility, followed by land use, economic development, environmental quality, urban amenity and livability, and distribution of impacts. Metrics were developed to measure progress towards achieving the county’s goals and to prioritize projects. For example, some of the metrics for ranking capital projects are:

- Dollars per vehicle mile traveled
- Time savings
- Connections – fills gaps in system, ties to transit spine, or removes barriers
- Regionality – based on classification of roadway according to function

To further assess how the projects in the plan adhere to the community goals, the plan includes provisions to develop annual monitoring reports to summarize and track progress towards achieving the plan’s goals. The reports are intended to link directly to the LRTP and use the goals, objectives,

and tasks in the plan for the monitoring. The emphasis of the monitoring report is on growth patterns, land use and transportation options, and congestion.

**CASE STUDY #6: CHANGE IN MOTION TRANSPORTATION 2035 – SAN FRANCISCO, CA**

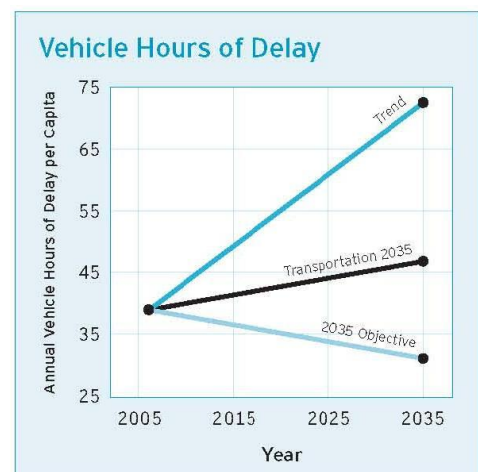
As indicated by its title, the 2035 long range transportation plan for the San Francisco Bay Area focuses on the necessary future changes in transportation systems caused by climate change, volatile oil prices, an aging Bay Area population, and dwindling funding for transportation projects. The plan is guided by three principals known as the Three Es: 1) “Support a prosperous and globally competitive **economy**,” 2) “provide a healthy and safe **environment**,” 3) “produce **equitable** opportunities for all Bay Area residents to share in the benefits of a well-maintained, efficient regional transportation system” [6]. The eight goals of the plan seek to achieve the Three Es. Measurable, time-based performance objectives under each goal help guide investment. The structure of the “E” Principles, Goals, and Performance Objectives is shown in **Exhibit 8**.

**Exhibit 8: Structure of the “E” Principles, Goals and Performance Objectives [6]**

“E” Principle	Goal	Performance Objective
Economy	Maintenance and Safety	Improve Condition of Assets Reduce Collisions and Fatalities
	Reliability	Reduce Delay
	Efficient Freight Travel	
	Security and Emergency Management	Reduce Security Vulnerability Improve Emergency Preparedness
Environment	Clean Air	Reduce Vehicle Travel
	Climate Protection	Reduce Emissions
Equity	Equitable Access	Improve Affordability
	Livable Communities	

The Metropolitan Transportation Commission (MTC) assessed all projects considered in the plan using the stated performance objectives. The two-part assessments measured benefit/cost using the performance objectives and qualitatively assessed whether the projects reflect the plan’s goals and “E” principles. In addition, MTC evaluated three robust, financially unconstrained infrastructure packages to see how close they could get to achieving the regional performance objectives. **Exhibit 9** shows one of a series of graphs the MTC developed to compare the trend, plan, and

**Exhibit 9: Vehicle Hours of Delay [6]**



objective using the performance objectives.

MTC uses a Freeway Performance Initiative (FPI) to address both recurrent congestion from daily peak hour traffic and non-recurrent congestion. This innovative approach uses technology to determine the highway's capacity and identify gaps that need to be filled. The key elements of the FPI include a Traffic Operations System (TOS), ramp metering, routine maintenance, arterial management, and performance monitoring. This is another example of how the plan stresses the importance of quantifying results to ensure transportation strategies are working.

## References

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