Meeting Agenda

Washington County
Transportation Futures Study
Exploring options • Informing choices

Combined Planners Group – Meeting #3

Thursday, July 30, 2015
3:30 p.m. – 5:00 p.m.
Beaverton Library Cathy Stanton Conference Room
12375 SW 5th Street, Beaverton

Agenda Items

3:30pm	Welcome and Study Updates	Chris Deffebach, Washington County
3:35pm	Drivers and Land Use Scenarios Review and discuss two land use scenarios: one reflecting existing trends and one that reflects plausible drivers of change that could affect the way the county grows.	Erin Wardell, Washington County
4:15pm	Transportation Investment Packages Review approach for developing transportation investment packages, and begin discussion on ideas for transportation projects to include in the packages.	Dyami Valentine, Washington County
4:55pm	Next Steps	Chris Deffebach, Washington County

Meeting Packet:

- Agenda
- Scenarios Development Memo
- Approach to Transportation Investment Packages

Cover Memorandum

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To: Combined Planners

From: Erin Wardell, Senior Planner

Date: July 23, 2015

Subject: Scenario Development

In your first two meetings you were introduced to the concept of drivers of change and the process of developing land use scenarios for this study. At your next meeting, you'll have the opportunity to provide comments on draft scenario descriptions and review the technical work that has been conducted to develop the scenarios. This memo provides information about the methodology and serves as a basis for discussion at the next meeting. More extensive descriptions of the scenarios prepared by ECONorthwest are included as an attachment to this memo.

Background

The Transportation Futures Study will combine drivers of change to form two plausible future land use scenarios, each with different population and employment characteristics and resulting transportation patterns in the region, with a focus on Washington County. Based on drivers, the scenarios can differ in many ways, such as:

- Total amount of growth
- Allocation within the county and adjacent counties
- Demand for different types of housing
- Demand for different employment type and locations (service v manufacturing)
- Demand for mixed use/higher density and lower density development
- Income or age differences.

Local adopted land use plans and best available plans for urban reserve areas form the basis of both scenarios. Both scenarios assume the UGB is still regulated by state law and that the existing Urban Reserves/Rural Reserve boundaries are in place and that the Urban Reserves will develop consistent with state law. A 'Place Palette Land Use Typology Map' illustrating future development in the county under current plans will be available at the meeting. The map was created using information collected from the jurisdictions.

Question: Does the Place Palette map accurately reflect your jurisdiction's land use and future plans?

Technical Review

A desired outcome of the meeting is to have Combined Planners provide input on the definitions of two scenarios that the study team can use to allocate housing and job growth over the long term. Draft descriptions of the scenarios were developed using the drivers selected through the previous meetings with Combined Planners, the Study Advisory Committee, and other stakeholders.

Some of the drivers that emerged from previous discussions (such as new technology, pricing and other transportation related changes) can be considered as potential transportation investment options, and did not influence the scenario descriptions. Stakeholders will have the opportunity to discuss those when developing the investment options.

Scenario 1

Scenario 1 is intended as the 'trend' scenario. It is based on a continuation of current trends of key drivers, such as aging and other demographics, job types and resulting incomes, preferences for multi-family/single-family homes and more. The specific trend information integral to this scenario will be presented at the meeting.

Question: Are there any trends that you feel will have a strong influence on land use that we have not included? Do you feel that the trend assumptions are moving in the correct direction going into the future?

Scenario 2

The attached memo from ECONorthwest lays out three possible combinations of drivers for a second scenario. The purpose of Scenario 2 is to create an alternative land use pattern or intensity that tests the resiliency of the transportation investments. All three scenarios assume increased growth compared to the trend scenario, but for different reasons and possibly with different magnitudes. The drivers were grouped in order to make cohesive reasons for changes in the land use patterns and are intended to generate discussion. They are:

- Scenario 2a: reflecting increased climate change, climate change refugees, and related regulations
- Scenario 2b: reflecting increased economic growth in general
- Scenario 2c: reflecting an increased technological focus of society, which results in increased job growth in the high tech sector and changes in freight delivery patterns

Question: Do the scenario descriptions make sense and accurately reflect your understanding of the drivers of change? Should the drivers be grouped differently? Are there other drivers that will strongly influence land use patterns that are not included?

Next Steps

After finalizing the scenarios, the study team will use a regional transportation model to forecast travel demand, mode use and transportation conditions, as well as utilizing an operations-level analysis tools to answer more detailed questions about transportation performance. The Combined Planners will have the opportunity to review the results of the land use scenarios at the September meeting.

Attachment:

Scenario Descriptions from ECONorthwest

The following information was prepared by ECONorthwest to illustrate in both tabular and narrative form how the drivers are grouped into land use scenarios.

Scenarios Defined: the Drivers

	Scenario 1 Current and Expected Trends	Scenario 2a Changing Climate	Scenario 2b Rising Economic Tide	Scenario 2c Circuits and Sensors
Land Use Plans	• Local land use plans as adopted by cities and counties will be the same for both scenarios. • Urban reserve areas will be brought into the UGB within the study horizon. • Buildable lands inventory reflects recent updates.			
Demographics	An aging population, decreased household size, and decreased autos per household over time. Increased percentage of in-migration (compared to natural population growth) over time.	Higher population forecast as a result of in-migration of retirees and well-educated, mobile families. Modest adjustments to housing density to account for transportation preferences among Millennials	Much faster broad-based population growth as a result of in-migration. Increasing income inequality. Decreased autos per household over time	Higher population forecast as a result of job-related in-migration.
Economy	Increased average household income, although this is due to an increase in very high earners. Rate of increase in average income is lower than past forecast. Higher split of multi-family units than in the past.	Higher rate of job growth in service and tech industries.	Much faster broad-based economic growth, particularly in export-oriented regional industries.	Increases in technology-based employment and transportation and warehousing. Decreases in retail employment
Environment and Energy	Environmental protections limit development in floodplains, wetlands and other riparian habitat areas. Energy costs continue steady increase for transportation and utilities.	Modest adjustments to housing density to represent higher cost of transportation	No significant changes relative to Scenario 1	No significant changes relative to Scenario 1
Government and Regulation	Urban growth boundary is assumed to expand to include the Urban Reserves within study horizon. Capacity in satellite cities also increases over time to reflect expansions.	Climate change regulation makes living in a walkable, mixed use areas more attractive	No significant changes relative to Scenario 1	No significant changes relative to Scenario 1
Technology	Many impacts of technological advances are captured in other drivers categories or will be addressed in the Investment Packages and the transportation modeling.			

Scenarios Defined: the Narratives

As is common in scenario planning, the narrative that follow are written as if one were in the future and describing it in the present tense what one observes and otherwise has knowledge of, and describing in the past tense events that led to the situation in the future. These scenarios include elements that will be reflected in the transportation models, so they do not just describe land-use scenarios.

Scenario 1: Current and Expected Trends

Overall, the region largely resembles how all the Cities foresaw it decades ago through land use plans.

In 2050, the region hasn't lost its character or its edge in technology, and many parts of the region have caught up to the downtown Portland core as centers of livability. Population and employment growth slowed from the boom years of the late 20th and early 21st century. Immigration and fertility rates fell slightly in the US and also in the Portland region, but over time, in-migration became a larger source of population growth than it had been in the past. Increasing life expectancy has led to more and more older residents. Meanwhile, average household size has fallen, and with it, average car ownership per household.

Overall US economic performance neither plummeted nor rocketed, and the entire economy continued a shift to services, particularly healthcare and government. The Portland region fared slightly better than the nation as a whole, however, and by 2040 the entire region had grown. The Portland region's manufacturing sector grew, buoyed by demand from overseas for many products, but its growth was slower than growth in the services and government sector. Average income rose, driven heavily by growth in very high income earners, but middle income workers lagged behind.

Scenario 2

Potential narratives for Scenario 2 follow. These represent plausible futures, given feedback from national experts and regional stakeholders. These are just examples. The Combined Planners Group and the Study Advisory Committee will help define a single scenario narrative, which could be a combination of these three scenarios.

Scenario 2a: Changing Climate, Changing Region

Starting around 2020, the climate began changing rapidly. Weather anomalies in the early 21st century (including droughts across the West and severe winter storms across the East) became the new normal. As climate change remade weather maps across the United States, governments passed increasingly aggressive climate change regulations aimed at curbing CO_2 emissions. Many policy packages targeted transportation and land use, effectively increasing the cost of transportation for gasoline-powered vehicles. Road pricing, which had been slowly gaining support as a congestion-mitigation and revenue-raising tool, got a boost because of its ability to include carbon costs in prices and, in raising prices, further reduce carbon-producing travel.

These events influenced attitudes toward transportation. Millennials had helped make cycling and transit 'cool' modes of transportation; they later led the way in mainstreaming the car-lite family

lifestyle. Their children, who grew up in the face of an increasingly chaotic climate, came to view carbon reduction as basic social policy and behavior.

Weather patterns also encouraged domestic migration. While the US did not experience the same climate catastrophes faced by many other countries lacking sufficient infrastructure, new weather patterns changed the quality of life in many cities and region. The Pacific Northwest was spared from the worst: the heat waves and water scarcity of the Southwest, the storms of the East Coast, and the winter blizzards of the Midwest. Oregon became a destination for wealthy, mobile retirees and families who could afford to move for quality-of-life purposes—so-called 'climate expats,' a term coined to describe the middle-class who voluntarily relocates for weather reasons. Washington County, with its diverse land patterns, access to the coast, and proximity to the Willamette Valley wine country, displaced Scottsdale, AZ in the popular ranking of retirement regions.

This population stimulus dovetailed with the region's growing strengths in technology and services. The taxes targeting carbon accelerated the shift in the US economy from producing goods (particularly low-value goods) to services, which involve fewer emissions. The region benefited from a strong, existing economic base in technology and services, and an influx of educated workers provided a labor force. Many companies did not expand production capabilities in the Portland Metro, but they doubled down on R&D, design, and sales.

Scenario 2b: A Rising Economic Tide

By 2050, the Portland Metro had enjoyed unexpected economic success. No single factor explained this success: a combination of policy, natural advantages, and a little bit of luck combined to help the region ride economic cycles effectively.

An emerging global middle class caused demand for many middle-class goods to surge: consumer electronics, sports apparel, even wine. This spelled success for many companies located in the Portland region. Employment across industries grew rapidly and, as happens with growing regional economies, people of all occupations flowed in. The increasing popularity of metropolitan living certainly helped. Business practices on telecommuting helped ease peak-time congestion.

There were no industry-defining breakthroughs in transportation technology, but the gradual incorporation of information technology into all aspects of travel allowed some cities across the US to keep congestion from becoming gridlock.

One trend that started in the early 21st century matured: dynamic ridesharing, pioneered by Uber. The concentration of people and the need for more jobs created economic conditions not dissimilar to the San Francisco Bay Area—wealth inequality, high cost of living, and incentives for finding sources of income. These services became increasingly common and cost-competitive, and adoption rose.

These services were most popular among Millennials, who increasingly preferred denser, walkable environments in which ride-sharing services were economical. Transit also became more popular as reliable, widespread consumer broadband opened the digital world to transit and carpooling commuters. Car ownership rates overall fell, though few households went completely car-free.

Scenario 2c: A World of Circuits and Sensors

The Portland Metro fostered a culture of early adoption in next-generation mobility. Smart vehicles became mainstream more quickly than many analysts anticipated in 2015, bringing changes in lifestyle, travel behavior, and traffic levels. In 2050 the transportation system has changed in some fundamental ways. Vehicular travel is now a service, not just a benefit to those who own cars, and many sections of the fleet can communicate wirelessly. New vehicle designs, including vehicles with multiple personalized sections for passengers, create a continuum of vehicle capacities from single-person pod cars to 50-person buses. 'Driving'—or rather, riding in an autonomous vehicle—simply became more fun, and more people do it.

The change wasn't cheap though. The vehicles themselves were costly. Overall, the cost of traveling a mile in a motorized vehicle became higher, but it also is less stressful and offers the ability to enjoy other activities when traveling.

Online shopping became the new norm; autonomous, connected delivery vehicles bring purchased products directly to one's door. Online shopping evolved into on-demand retail. Some retail outlets remain, but they focus primarily on low-cost goods or have branded themselves as a vintage, 20th-century shopping experience.

These waves of innovation also advanced 3D printing, which in 2050 has restructured local economies and logistics networks across the world. Complex technologies and products still need the steady hand of experts, but many basic middle-class goods are 'printed' at local fabrication shops rather than imported and exported between regions and nations. These outfits cropped up in Washington County; given the hardware expertise in the region, they were among the most advanced local fabrication shops in the country.

National shifts to technology- and innovation-based industries has meant economic growth in the Portland metro region and in Washington County. These jobs attracted educated professionals.

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To: Combined Planners Group

From: Dyami Valentine, Washington County

Scott Harmon, David Evans and Associates

Date: July 23, 2015

Subject: Approach to Transportation Investment Packages

We have met with most, but not all, of the cities in Washington County to discuss the Transportation Investment Packages (IPs). The purpose of this memo is to help set the context for thinking about our future needs, beyond 2040. This memo highlights what we know about the region's planned investments and resulting performance of the transportation system; identifies some challenges we know based on modeling and discussions with our partners and stakeholders; and outlines an approach to develop two conceptual transportation investment packages.

At the next Combined Planners meeting on July 30 we'd like to focus the discussion on the following:

1. What trends you think are important in describing the future that will best inform the discussion with the Study Advisory Committee (SAC)?
2. What future challenges you think are critical to address through this study?
3. What investment choices and factors are important to consider in developing the IPs?

CURRENT TRENDS

Washington County has grown considerably during the last 40 years, and is expected to continue growth trends in population, employment and travel demand. By the year 2035, the population of Washington County is expected to increase to 758,500, an increase of 42% over 2010. By 2035 the employment in Washington County is expected to increase to about 382,000 jobs. This would be an increase of about 150,000 jobs above the 2010 employment.

The growth envisioned in the 2035 population and employment forecast translates directly into transportation system needs. Washington County contains several regionally significant employment areas, including the high tech Sunset Corridor of Hillsboro and Beaverton, the Tigard Triangle, and the Basalt Creek / Tualatin-Sherwood industrial corridor.

2040 travel patterns, based on traffic modeling, shows increased travel demand for all travel within the county as well as travel between Washington County and adjacent counties. The greatest percentage increase in daily trips is anticipated in areas with the most anticipated growth (South Hillsboro, South Cooper Mountain, River Terrace, and North Hillsboro Industrial Area). These growth areas contribute to increasing north-south travel demand. County wide, East-west travel patterns between Washington County and Multnomah and Clackamas counties continue to be predominant.

The identified transportation needs and projects for a 20- year horizon respond to anticipated future travel demand and help guide future investments. This study is an effort to think beyond the 20 year horizon, and assumes fully implementing current plans. Table 1 highlights some anticipated outcomes of fully implementing the planned investments over the next 20 years.

Table 1 **Investment Category**	**What does the future transportation system look like in 2035?** Current Trends and Adopted Plans
Streets and Highways	Freeway and arterial expansion • 52 lane miles of freeways added region-wide by 2035* • 386 lane miles of arterials added region-wide by 2035 *
	Increased congestion • 131total miles in the PM 2-HR peak severely congested (v/c >=1), equivalent to 1.84% of total miles in network*
	Increased vehicle miles traveled • 40% increase in all-day vehicle miles traveled (VMT)**
	Reduced VMT/capita • 2% decline in VMT/capita**
	Increased mode shift • 56% non-SOV person trips**
Bike and Pedestrian	System completeness • Additional 68 miles of major streets with complete sidewalks in Washington County (70% complete)*** • Additional 75 miles of major streets in Washington County with bi-directional bike facilities (53% complete)***
	Increased mode shift • Regionally over 9% of all trips will be made by walking** • Regionally over 3% of all trips will be made by biking**
Transit	Coverage • 62% of households regionally will be covered by peak service (w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)** • 83% of urban (existing UGB) in Washington County households will be within walking distance of transit*** • 79% of employment will be covered by peak service**
Demand Management	Increased participation in employer commute programs • 30% of workers region-wide**
	Increased car sharing • 2% of region-wide trips are made via car sharing**
Fleet and Technology	Increased market share of alternative fuel vehicles • 8% of autos are electric/plug-in hybrid region-wide** Improved traffic management • 35% delay reduction on arterials and freeways by implementing ITS**

Pricing and Regulation	Total estimated regional investment by 2035 is $36 billion** • $12 billion in street and highway operations and maintenance • $8.8 billion in street and highway capital improvements • $8 billion in transit operations ($2 billion higher than constrained RTP) • $4.4 billion in transit capital improvements ($2.2 billion more than constrained RTP) • $2.2 billion in active transportation improvements • $391 million in ITS/ATMS

*Financially-constrained RTP

** Climate Smart Communities preferred alternative

*** Washington County 2014 TSP

CHALLENGES

Although adopted plans go a long way to addressing future needs, challenges remain including implementing our adopted plans. For example, projected revenue from local, state and federal sources can meet approximately half the nearly $2.5 billion in needed multi-modal improvements identified in Washington County's TSP. The following table (Table 2) describes some of the challenges anticipated over the next 25 years and beyond.

Table 2 **Investment Category**	**Challenges**
Streets and Highways	Accommodating north-south travel demand
	Lack of redundancy in major east-west travel corridors including • Tualatin to Sherwood, and • Forest Grove to Hillsboro
	Major bottlenecks in the system including those identified in the 2013 Corridor Bottleneck Operations Study • Sylvian Tunnel and I-405 ramps, • I-5 between Hwy 217 and Charbonneau/Boone Bridge
	Cost of congestion, freight reliability and access to ports
	Over-reliance on the arterial network impacting community livability
Bike and Pedestrian	Major gaps in biking and walking routes across the county
	Constrained ROW for enhanced/protected biking and walking facilities
	Dedicated funding is limited
Transit	Hub and spoke network provides inefficient transit travel to key destinations • Insufficient network in south county • Serving increased demand from outside the county

	Improving access to transit for pedestrian, bicyclists and drivers • Last mile connections needed to serve employment and industrial areas
	Preserving affordable housing options near transit
	Constrained funding and ROW limiting system expansion in exclusive ROW
Demand Management	Limited travel options is a social equity issue – factors such as families with children, long transit times, night and weekend work shifts not well served by transit
	Increase the efficiency and use of under-utilized capacity in the transportation system
Fleet and Technology	Understanding the implications of technology, like car-sharing, ubiquitous ITS, and autonomous vehicles on the transportation system
	Changing travel behavior and fleet management as a result of new technology
Pricing and Regulation	Trends suggest greater uncertainty in federal and state funding and a greater reliance on local public and private sources of revenue to meet local needs.
	Impact of regulation and pricing (opportunity costs) on implementation of technology
	Changes in driving habits and declining purchasing power of existing funding sources due to inflation and fuel efficiency improvements

THINKING BEYOND 2040

The Washington County Transportation Futures Study is a unique opportunity to imagine potential long-term futures and examine how future transportation investments can best support the county's economic health and quality of life beyond the current 2040 planning horizon. By looking at a horizon year beyond the standard 20-year planning process this study provides a framework to examine how long-term transportation investment choices and tradeoffs support community values in two plausible futures – not forecasts per se but alternative futures that can be influenced by actions taken by the County and its partners. To evaluate transportation choices and tradeoffs, two conceptual transportation investment packages (IPs) will be developed and their resiliency will be tested against the two scenarios.

The development of the IPs starts with identification of projects that are assumed complete within the current Metro planning horizon of 2040. The federal financially constrained Regional Transportation Plan (RTP) serves as the basis for the project list with the addition of the enhanced transit package from the Metro Climate Smart Communities Plan and the development of a basic local grid transportation system in the Urban Reserves. From this common base the unique transportation investments for each of the two IPs will be developed.

The two IPs will be multimodal in nature but diverse in how and where investments are applied. The IPs will consist of a set of projects for modeling purposes but evaluated at a conceptual level with project level results used for illustrative purposes.

As a study the purpose of this project is to highlight long-term transportation investment choices and tradeoffs that are durable to the uncertainty inherent in long-term planning. Additional studies and planning work may follow the WCTFS to identify transportation projects and/or elaborate on study outcomes to incorporate into 20-year transportation plans.

The following table describes some of the investment choices and factors that influence transportation identified through research, experts in the field of transportation, conversations with local planners, and as discussed by the SAC.

Table 3 **Investment Category**	**Potential Investment Choices**
Streets and Highways	• Complete planned network • Freeway lane management • New and/or expanded arterials • Expansion of highway capacity • Optimized roadway performance • Major intersection improvements • Expanded ITS and ATM systems
Bike and Pedestrian	• Complete planned network • Greater separation of modes and new connections • Dedicated regional bikeways • First and last mile connections to transit and major destinations • Increase bike storage and transfer facilities on transit • Expanded bike detection and priority • Expanded mid-block bike and pedestrian facilities
Transit	• Complete planned system • Expanded Transit priority • Expansion of urban and intercity transit • Transit Lane management • Expand frequent bus service • Express bus service • Major employer front door service • Expanded real time arrival • Real time park and ride use information
Demand Management	• Education, marketing, and incentives • Commuter programs

	• Parking management • Stronger integration of land use and business operations in demand management
Fleet and Technology	• Vehicle technology • Alternative fuels • Traffic management • Consumer and communication technology • Car and ride sharing
Pricing and Regulation	• VMT based Fuel Tax • User fees • Declining federal and state transportation funding • Road and congestion pricing • Decreased Transit subsidies • GHG regulations • Increased funding through public-private partnerships

MOVING FORWARD

Discussion about these and other considerations at upcoming meetings with local planners and the SAC will help inform and start to frame how to develop the transportation investment packages. Staff will use this input to draft two transportation investment packages to bring back for review to the Combined Planners meeting in September and finalized in December. The packages will be tested using the Regional Travel Demand Model, which will forecast travel demand, mode share, delay and other performance metrics and costs. The performance of transportation investment packages will be further evaluated using the County's more detailed Westside model and other operations tools will be used. This modeling and other GIS analysis tools will provide data for use in evaluating the trade-offs and how the packages support community values.