REGIONAL FREIGHT PLAN

2035

Final draft plan

March 2010

Metro | *Joint Policy Advisory Committee on Transportation*

Metro is the federally mandated metropolitan planning organization designated by the governor to develop an overall transportation plan and to allocate federal funds for the region.

The Joint Policy Advisory Committee on Transportation (JPACT) is a 17-member committee that provides a forum for elected officials and representatives of agencies involved in transportation to evaluate transportation needs in the region and to make recommendations to the Metro Council.

The established decision-making process assures a well-balanced regional transportation system and involves local elected officials directly in decisions that help the Metro Council develop regional transportation policies, including allocating transportation funds.

Project web site: www.oregonmetro.gov/freight

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EXECUTIVE SUMMARY

Investment in efficient freight transportation improves mobility and creates jobs

Our region is a great place to live, work and play, and we've worked hard to keep it that way. But whether we are harvesting the fruits of sustainable economic growth, or facing tough times together, it's important to understand that much of our prosperity is directly tied to the investments we make in our regional freight infrastructure, by making consumer goods readily available to us, providing multimodal systems that help our businesses efficiently reach global and domestic marketplaces and developing high-quality regional jobs. This Regional Freight Plan defines goals, strategies and actions designed to guide the stewardship of our critical multimodal regional freight infrastructure and industrial land supply, to support a sustainable, balanced and prosperous tomorrow.

Our natural and built resources – and our people – also make the Portland-Vancouver region a globally competitive international gateway and domestic hub for commerce. Since 1994, every study that has examined the Portland-Vancouver area (and the Oregon and Washington economies in general) has found a much higher-than-average link between economic health, creation and retention of family wage jobs, and infrastructure that helps goods move more quickly to destinations through our multimodal freight

Trade-dependent economies

Oregon is ninth and Washington is first in the United States*

Exports: 2007 Oregon exports totaled $16.5 billion; 2007 Portland/Vancouver exports totaled $15.8 billion.

Businesses: Thousands of Oregon companies depend on Portland's marine, rail, air and road facilities for access to resources and markets: onions, apples, hazelnuts, grass seed, seafood, wood products, Les Schwab, Fred Meyer, Intel, Nike, Columbia Sportswear, etc.

Jobs: One of five statewide jobs relies on effective transportation network for operations**.** In 2008, 14,800 direct jobs and $530 million in direct income were tied to marine and air terminals at Port of Portland. Sharing the same regional and national transportation network, the Port of Vancouver (2005) generated nearly 2,300 direct marine and industrial jobs. Thousands more indirect jobs were also created in the region, along with associated millions of dollars in income.

Local revenue: $182 million in local/state taxes generated by the Port of Portland (2008) help make this greatest place.

Sources: U.S. Department of Commerce industry trade data and analysis; EDRG white paper (2008); Port of Portland (2009); Port of Vancouver (2009); Martin & Associates (2006, 2009).
* "Trade-dependency" rankings are based on value of state exports as a percentage of gross state product.

network.[1] Increased transportation capacity, efficiency, flexibility and travel time reliability reduce transportation costs for firms (improving access to markets and inputs) and individuals (reducing travel costs and time). A multimodal system, with connections between modes, also means more competitive shipping rates for our local businesses. By increasing productivity, our investments increase this region's ability to compete in the global marketplace. That advantage facilitates retention or expansion of existing businesses, supports homegrown startups and attracts new businesses to the region. Regional benefits of the resulting increase or retention of employment include direct, indirect and induced jobs, income, taxes and spending; in fact, one in ten regional jobs are associated with transportation, distribution or the logistics industry.

The Regional Freight Plan positions us for the economic rebound

This Regional Freight Plan is an element of the RTP update and has been guided by the Metro Council-appointed 33-member private-public sector Regional Freight and Goods Movement (RFGM) Task Force and a technical advisory committee. The plan is built on a foundation of technical work, including research on the region's freight transportation systems and facilities, needs and issues.

It may seem counterintuitive to focus on freight and goods movement issues during the depths of a severe global recession.[2] Why should the region focus attention on freight planning when volumes are down, wholesale and consumer demand is stagnant, shippers aren't shipping, and rail cars are mothballed? Because we know from experience that our challenging global and regional economic downturn is only a temporary retreat from a generally upward trend line. Recovery – even this one, which is likely to include significant structural changes – will again put pressure on the functional capacity of the intermodal freight system and its ability to deliver local goods and services, link regional suppliers and producers to domestic and global trading partners, and provide efficient access to industrial lands and employment areas. This downturn is an opportunity to catch our collective breath and collect data, implement needed projects as funding and other priorities permit. And it's an opportunity to sharpen our planning and analysis methods, to better define

Logistics supplies family wage jobs

Logistics provides living wage jobs and a career path for workers without a college education, picking up the slack as manufacturing jobs continue to decline. The mean annual income for logistics jobs (2006) was about $47,000 which is $5,000 per year higher than construction jobs.

Source: Portland/Vancouver international and domestic trade capacity analysis, executive summary, page 6.

[1] Studies include the *Portland/Vancouver International and Domestic Trade Capacity Analysis* (Port of Portland, 2006); *Profile of the Regional Freight Transportation System* (Metro, 2007); *The Cost of Congestion to the Economy of the Portland Region* (2005);*Comprehensive Economic Development Strategy for the Portland-Vancouver Metropolitan Region* (ECONorthwest, June 2005); *The Cost of Highway Limitations and Traffic Delay to Oregon's Economy* (EDR Group, March 2007); *Use of Freight and Business Impact Criteria for Evaluating Transportation Investments* (EDR Group, 2008); *Freight Moves the Economy* (ODOT, 1999).

[2] Oregon Department of Transportation is updating the state's commodity flow forecast through 2035, taking into account the effects of the recent economic downturn. This work, which can be disaggregated to identify county level impacts and trends, will be available in late 2009.

future projects that we'll need to manage post-recovery growth.

The region's goods movement system must improve and adapt if the region is to maintain its economic competiveness in the global economy and its status as an international freight gateway. Immediate action is required to meet the economic opportunities of the 21st century. This Regional Freight Plan highlights the key issues for the regional freight transportation system and suggests policies and investments to address them.

The Importance of a regional plan for freight and goods movement

> "Regions – not states or cities – are the essential geography for economic development and competition… Leaders in both the public and private sectors realize they must work together to keep the region competitive."
>
> Source: *Portland-Vancouver Region Comprehensive Economic Development Strategy* (2005), page i.

Currently, the Oregon Department of Transportation (ODOT) is examining all freight modes (highway, rail, port, airport, pipeline and intermodal) to create a comprehensive freight plan at the state level. And within the Metro region, the City of Portland has recently completed a Freight Master Plan for the City of Portland (adopted 2006). The Southwest Washington Regional Transportation Council in Clark County, Wash. is preparing its own regional freight transportation plan, to be completed by spring 2010. Between the statewide scale of issues, concerns and solutions and those associated with the scale of the City of Portland and Clark County lies the metro region. A freight plan at the regional level is important because the movement of freight and goods transcends local jurisdictional boundaries, and includes multiple modes, employment and industrial centers, economic clusters and major regional access points. A region has a larger scope of reference and more resources to direct appropriate attention and funding to tackle these problems than a city, and its focus on interstate and inter-regional movements is more refined than are the view taken from the statewide level. This region also functions as the trade and transportation gateway for Oregon and provides market access for many southwest Washington businesses. In that regard, the Metro region can take Clark County dynamics, trip patterns and commodity flows into consideration in a way that the state cannot. Finally, through federally established metropolitan planning organization functions, prioritizing among competing modes and subregions is also an important function to be handled regionally.

Freight goals reinforce other important regional goals

The freight and goods movement community shares some common goals with advocates of other transportation modes. Our desired outcomes are not so very different. Under business as usual, we are all impacted by traffic congestion. Just as individuals need to get places in a reasonable time at a reasonable cost, so too do our regional employers need to service electric lines, meet airline schedules and receive and ship goods on a reliable multimodal network. Shippers often have fewer good travel choices than do passengers – especially in the Portland area where good alternatives to the automobile abound. Again, a multimodal approach to freight mobility means shippers will have a choice of cost-effective shipping options, which reduces their reliance on any single mode of transport. By more closely matching each trip purpose to the optimal mode, we can reduce freight's environmental and community footprints as well.

What is the "traded sector"?

As defined in ORS 285A.010, (8), "traded sector" means industries in which member firms sell their goods or services into markets for which national or international competition exists. As a result of their exchange earnings, these industries increase spending power within their regional or state economies.

Preservation of urban, rural and industrial lands, protection of public investment in infrastructure for its intended purpose, innovation in reducing waste, energy use, pollutants and greenhouse gases – all these are important to businesses and communities alike. The "traded sector" aids in realizing this common vision by bringing in money from outside the region through robust exports with our domestic and international trading partners.

Regional freight goals and outcome-driven action

The RFGM Task Force described six goals or outcomes, concerns and needs associated with the desired outcomes listed below:

- We must use a systems approach to plan and manage our multimodal freight transportation infrastructure, recognizing and coordinating both regional and local decisions to maintain seamless flow and access for freight movement that benefits all of us.
- We must adequately fund and sustain investment in our multimodal freight transportation system to ensure that the region and its businesses stay economically competitive.
- We must create first-rate multimodal freight networks that reduce delay, increase reliability, improve safety and provide choices.
- We must integrate freight mobility and access needs in land use decisions to ensure the efficient use of prime industrial lands, protection of critical freight corridors and access for commercial delivery activities.
- We must ensure that our multimodal freight transportation system supports the health of the economy and the environment.

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- We must enlighten our region's citizens and decision-makers about the importance of freight movement on our daily lives and economic well-being.

In addition, the RFGM Task Force has highlighted the need for better emergency planning to consider the freight component associated with natural or manmade disasters. Another issue that is costly to overlook is the need to preserve access routes for occasional, but critical, oversize and overweight loads for a variety of public and private construction and maintenance purposes as well as for disaster response.

A set of specific actions designed to move the region closer to these outcomes is described in Section 10 of this document.

RFGM Task Force targets top freight focus areas

In line with sound regional planning practice in the area, the task force believes that a systems approach must be taken in order to produce important outcomes such as reduced delay, better travel time reliability, safer travel across all modes and trip types, and broader shipping choices and better customer service to help area businesses remain competitive. Such an approach must also consider the economic context in which projects are built, using measures such as return on investment to link transportation investment decisions to the local, regional and national economy. The task force targeted the following top issues:

Metro's RFGM Task Force calls for comprehensive data collection, robust analysis and modeling

"Despite the wealth of information on transportation's contribution to the economy, debate continues on the linkages between transportation improvements and economic performance and the relative strength of these links… Decision-makers need detailed information and analytical tools to prioritize projects and determine spending levels."

Source: *Freight Transportation Improvements and the Economy* (FHWA, 2004), page iii.

- congestion and hotspots – chronic road and rail network bottlenecks that impede regional freight/goods movement
- reliability – as distinct from congestion, unpredictable travel time due to crashes, construction, special events and weather (often exacerbated by capacity constraints)
- capacity constraints due to physical and operational issues as well as lack of capacity in critical corridors
- network barriers – safety concerns and out of direction travel resulting from weight-limited bridges, low bridge clearances, steep grades, at-grade rail crossings and poorly designed turns or intersections
- land use – system capacity and land for industrial uses that is being lost to other activities
- environmental and other impacts – managing adverse impacts including diesel emissions, greenhouse gas emissions, water quality, noise and land use conflicts.

Invest now to boost the triple bottom line: People, planet, profit

With nearly 1.2 million more people[3] expected in the Portland metro region by 2035, family wage job creation is going to be of paramount importance. If the Portland metro region is to fairly share expanded economic opportunities across a broad spectrum of the population, and maintain the economic engine that sustains the health of our communities and environment, it must fully utilize its unique location and transportation infrastructure that keeps the traded sector competitive. In addition to smaller scale, phased system management and operational fixes, this will require medium and larger-scale strategic investment in the multimodal regional freight and goods movement system. Regional infrastructure investment discussions should consider impacts to the local, regional and national economy, in addition to looking for cost-effective solutions. Identified benefits—including those accruing to freight—must be conserved over time through regional policy and system management and monitoring.

The cost of doing nothing

"Failure to invest adequately in transportation improvements will result in a potential loss valued at $844 million annually by 2025 –that's $882 per household—and 6,500 jobs [emphasis original]."

Source: The Cost of Congestion to the Economy of the Portland Region, Executive Summary (2005), page 1.

To maximize the return on public investment, these freight-oriented preservation, management and investment priorities should focus on:

- more carefully evaluating what, where and when the freight problems occur (noting, for example, that they do not always coincide with the commute peaks)
- addressing core throughway system bottlenecks with substantial freight impacts, to improve truck mobility in and through the region. Examples include the Columbia River Crossing influence area, the I-5/I-405 loop with connection to US 26, 99W through Tigard, and the I-5 corridor south to Wilsonville
- improving and protecting the throughway interchanges that provide access to major industrial areas, particularly: I-5/Marine Drive and I-5/Columbia Blvd serving the Columbia Corridor and Rivergate industrial areas, I-205/Hwy 212 serving the Clackamas and Milwaukie industrial areas, and I-205/Airport Way serving Portland International Airport and east Columbia Corridor industrial areas
- improving arterial connections to current and emerging industrial areas. Examples include Sunrise Corridor phased improvements and last mile local industry connectors, e.g., Columbia/Cascade River District projects, including the I-84/257th Avenue Troutdale interchange and SW 124th from Tualatin-Sherwood Road to the I-5/North Stafford interchange

[3] *Draft 2035 Regional Transportation Plan (September 2009, Table 1.6: Forecasted Population Growth by County) shows a population increase for the four-county metro area from 1,961,104 in 2005 to 3,097,402 in 2035--a 58% increase. Counties include Multnomah, Clackamas, Washington and Clark County in Washington State.*

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- ensuring safe transport of hazardous loads with a regional routing strategy
- looking beyond the roadway network to address critical marine and freight rail transportation needs such as completing the Columbia River channel deepening and upgrading main line and rail yard infrastructure

Going forward: from freight goals to implementation

Section 9 of this Regional Freight Plan includes a "tool kit" of freight strategies designed to address the broad range of needs and issues clustered around the six goals articulated by the RFGM Task Force. Section 10 constitutes the action plan, with specific improvements and, in some cases, general timeframes for implementation and responsibilities identified. Between September and December 2009, as the region refines and finalizes the RTP project list (including projects important to freight and economic development stakeholders) the large list of possible actions identified in Section 10 will be prioritized, with some selected for refinement and inclusion in a work program for the 2010 to 2013 time period.

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1 INTRODUCTION

1.1 Trade, transportation and economic health

Portland and Vancouver were founded and grew on the basis of vibrant and profitable statewide, regional and international trade. Access to the Pacific Ocean via the Columbia River from the inland empire to the east created the region's original economic engine. The Willamette River delivered the wealth of the various river valleys south and west of the Portland metro region in much the same way. It was through this trade that the Portland metro region established itself as a trade hub and prospered.

In 2005 *The Cost of Congestion to the Economy of the Portland Region* reported that the region has a higher than average dependency on traded sector industries, particularly computer and electronic products, wholesale distribution services, metals, forestry, wood and paper products, and publishing. These business sectors serve broader regional, national and international markets and bring outside dollars into the region's economy. These industries depend on a well-integrated and well-functioning international and domestic transportation system to stay competitive in a global economy.

What is the "traded sector"?

As defined in ORS 285A.010, (8), "traded sector" means industries in which member firms sell their goods or services into markets for which national or international competition exists. As a result of their exchange earnings, these industries increase spending power within their regional or state economies.

As an international gateway and domestic freight hub, the region is particularly influenced by the dynamic trends affecting distribution and logistics. The 2002 commodity flow survey projected an overall doubling of freight tonnage moved in the region by 2030. The region's forecasted population and job growth – an additional 1.13 million residents and 767,000 jobs by 2035[4] – along with the associated boost in the consumption of goods and services are significant drivers of projected increases in local freight volume. Much of the projected doubling of freight tonnage passing through the Portland metropolitan region doesn't terminate here but instead moves well beyond the region's boundaries to the rest of the country.

Today, notwithstanding the current downturn, the Portland-Vancouver area boasts an underlying foundation for a strong and diverse regional economy that will continue to support an enviable quality of life. The local economy is still very dependent upon an efficient, reliable and safe freight transportation system that recognizes the region's role as an international gateway and key domestic freight hub.

[4] 2035 Regional Transportation Plan (January 2008, Chapter 2, Tables 2.2 and 2.3).Population and employment forecasts include Multnomah, Clackamas, Washington counties in Oregon, and Clark County in southwest Washington. The percentage increases from 2005 are 58% (population) and 74% (employment).

1.2 Jobs and infrastructure

One critical element of sustaining the region's high quality of life is ensuring that residents have access to family wage employment. As the region grows, the health of residents and communities will depend on decision-makers who appreciate the interdependence of economic, transportation and land use goals.

The logistics and (freight) transportation sectors provide 46,000 jobs to the region by facilitating the transport or trans-shipment of goods entering the region via various modes and routes to intermediate or end users. These firms also perform the vital task of distributing the myriad goods that Oregonians consider essential to the maintenance of our households, businesses and communities. Transportation system and service owners and operators have a responsibility to provide a goods movement system that functions effectively.

1.3 Regional competitiveness requires regional cooperation across jurisdictions and sectors

The Portland-Vancouver area is a globally competitive international gateway and domestic hub for commerce. While Portland's status as Oregon's economic crossroads permits the region to have a vibrant, diverse and flourishing economy, it also carries certain responsibilities. The multimodal freight transportation system is a foundation for economic activities and we must strategically maintain, operate and expand it in a timely manner to ensure a vital and healthy economy.

This Regional Freight Plan identifies mode-specific issues, policies, strategies and investments designed to meet those responsibilities and support a truly multimodal, sustainable freight network within the Portland metro region. A systems approach to planning and managing our multimodal freight transportation infrastructure must recognize and coordinate both regional and local transportation and land use decisions to maintain seamless freight and goods flow and access that benefit us all.

The recommended actions will necessarily require collaboration between public and private sectors, the coordination of freight modes that are often competitors, and the reconciliation of institutional, jurisdictional and political perspectives. Yet stakeholders have shown a strong interest in and commitment to improving freight mobility and access and reducing freight's impacts on the communities it serves. In a volatile economy that demands a thoughtful and dynamic response, that level of engagement will be needed to move strategic projects along the path to implementation.[5]

[5] Freight volumes are down—temporarily, but substantially, since the draft *Regional Freight Plan* was completed in the early fall of 2008. Although most observers expect a turnaround to result in an increase in those volumes, the timeline and robustness of the recovery is not known. The downturn does offer the region an opportunity to plan and implement vital freight projects in time for the eventual transition to a healthier economy over the long term.

1.4 Portland is a global gateway

The ports of Portland and Vancouver processed over 20 million U.S. tons of cargo in 2007. Another 8 to 10 million tons of inland barge cargo also moves through these facilities. In addition to being the leading grain and mineral bulk harbor on the West Coast, the ports processed nearly 500,000 automobiles in 2007. In total, $12 billion in foreign trade moved through Portland Harbor in 2007. Most of this cargo is transported beyond the Portland metro region, generally by truck and rail. There is also a huge support industry located in Portland associated with moving this freight.

- The Port of Portland also operates the largest international airport in Oregon. Portland International Airport acts as the air freight hub for much of Oregon and Southwest Washington. Approximately 288,000 tons of domestic and international air freight shipped through Portland International during 2005.
- The 2002 commodity flow survey projects an overall doubling of freight tonnage moved in the region by 2030. Currently one in 10 jobs in Oregon is transportation related. Though the Port of Portland is sufficiently diversified to bear this downturn better than some, there are many hard-hit employers, large and small, who make up the Port of Portland's customer base.
- Mounting congestion and capacity issues on several freight modes could impede the region's ability to compete globally. Regional congestion and capacity issues already impact several national goods movement corridors traversing the region, including freight rail and trucking corridors.

Made in Oregon: the ninth most trade-dependent state

The Portland metro region is home to several traded sector industries that help drive the regional economy by serving as an economic pump, bringing in money from outside the region. Traded sector businesses in our region include Nike, Adidas, Columbia Sportswear, Intel, Lattice Semiconductor, FLIR, Genentech, Precision Cast Parts, Boeing, Oregon Steel Mills and Boise Cascade.

If the region is to maintain its status as an international freight gateway, immediate steps must be taken to ensure that a flexible, adaptable, efficient and reliable goods movement system is in place. Cooperation with agencies and stakeholders across the state border with Washington is critical to make sure that freight throughways and access to primary hubs are seamless and that needed improvements are coordinated.

Deliveries of daily necessities increase with population and jobs

Modern urban life would be impossible without local goods movement. Nearly all the foodstuffs, clothing, housing materials, medical supplies, etc. that residents rely on daily come from outside the region.

The region is forecast to have an additional 1.13 million residents (a 58 percent increase) and 767,000 jobs (up 74 percent) by 2035, which should drive a proportional increase in local freight volumes.

Local suppliers and retailers require good connections to regional, national and international goods movement systems. They also need reasonably sized lane widths, curve and curb radii and loading zones.

Roadway congestion and deteriorated system reliability within the region heavily impact the productivity of local parcel, store and fuel delivery firms. This leads to decreases in equipment productivity, inefficient use of fuel, increased pollution and higher operating costs.

Shippers and distributors also operate in a more time sensitive production environment, with each operating under a unique set of parameters. System failure costs these firms significant sums of money and can also result in a loss of customers over time. This can drive these firms to reevaluate their choice of location.

1.5 Congestion's costs

Traded sector industries require well-integrated and highly efficient international and domestic transportation connections to stay competitive in the global economy. These firms have historically located in the region to take advantage of the pipeline, rail, marine, aviation and highway connections it offers.

Increased roadway congestion and decreased system reliability have adversely impacted the productivity of traded sector firms throughout the region. This has led to decreases in equipment productivity, increased labor costs and inefficient use of fuel, leading to increased pollution for combined air cargo, trucking, pipeline, marine and rail carriers. Each of these modes relies on the regional road system for some portion of their operations, and all are impacted by congestion.

Manufacturers, shippers and distributors in the region operate in a time sensitive production environment, with each operating under a unique set of parameters. Missing critical connections due to transportation system failure costs these firms significant sums of money and can also result in a loss of customers over time. This can drive companies to consider relocating outside the region or prevent companies from starting up operations in the region.

1.6 Land supply

Preserving essential industrial lands in the Portland metro region has proven difficult over time. The region's industrial areas are also experiencing diminished access to rail infrastructure and deteriorating performance on freight route connections. Road and rail freight corridors, and the industrial lands they serve, need buffers from residential land uses surrounding them. Further, the types of industries being accommodated in industrial areas are changing. Many new industries are better characterized as light industrial or distribution operations, with very different operational requirements than their heavy industrial predecessors. Redevelopment of existing industrial lands for modern industrial uses should be studied and supported.

Additionally, in order to be fully utilized, industrial land must be correctly located. For shipping access, this often means competing with residential, commercial, tourist, recreational and environmental users for highly sought and environmentally sensitive waterfront acreage.

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1.7 Freight trends

The global economy is in the midst of a profound change. Twenty-first century innovations in trade policy, communications and transportation have altered the sourcing, production and marketing of products on a global scale. Some of the most important trends are identified below:

- Due to open trade policies, more freight than ever before is moving across international boundaries.
- The rise of worldwide communications networks allow for the inexpensive and instantaneous transfer of information around the globe. These networks have allowed businesses to expand operations and markets and have given rise to new business models like e-commerce, leading to a higher volume of smaller, demand-responsive shipments.
- Access to good transportation services has allowed businesses to develop increasingly complex supply chains that are longer and far more specialized, yet increasingly fragile.

As a result of these global trends, U.S. international and domestic trade volumes are expected to grow at an accelerated rate. Trade volumes in Portland are expected to double by 2035, to 600 million tons annually.[6] This is expected to have a profound effect on shippers and the infrastructure they depend upon.

West Coast ports have been struggling to keep pace with the increasing volumes of marine and air cargo coming from Pacific Rim trading partners like Japan, China, South Korea and Taiwan. While 2008 and 2009 witnessed a temporary slowing of this trend nationally, Portland Harbor still posted an overall increase in volumes for 2008 and will likely return to the longer-term trend of growth in freight volumes as the economic recovery proceeds. In addition, the ports of Portland and Vancouver are not as constrained by dockside capacity as a number of other West Coast ports, so additional growth here can be handled at the ports.

In total, Pacific Rim trade amounted to $359.2 billion in 2002. Much of the Pacific Rim freight processed by West Coast ports is destined for the rest of the country. However, the financial burden of maintaining and expanding the publicly owned transportation system serving this national need falls to local West Coast trade gateway jurisdictions.

The North America Free Trade Agreement has also generated large volumes of trade between the U.S., Canada and Mexico on the West Coast, amounting to $73.4 billion in 2002 and growing annually. Trade between major West Coast cities within the U.S. amounted to $182 billion in 2002, for a total of approximately $255 billion in north-south coastal trade. This number has continued to expand rapidly since 2002.

The goods movement industry has responded to this capacity crunch by employing larger trucks, rail cars, ships and planes. This trend places new demands on the goods movement

[6] Metro, ODOT, PDC, Port of Portland, Port of Vancouver, *Portland and Vancouver International and Domestic Trade Capacity Analysis*, 2006.

infrastructure and reinforces the need to reconsider our approach to providing goods movement infrastructure. Government and industry must also work together to address increasingly stringent safety and security requirements being placed on the goods movement system.

Against this backdrop of sustained expansion in global trade the region must prepare to compete globally. The viability of the regional and state economy, and the ability to attract and sustain business investment in both, depend on it. Industry needs tangible and continuous improvements in the operating efficiency, capacity, modal redundancy and reliability of the regional goods movement system to remain competitive globally. Government must do its best to work with private sector stakeholders to accomplish this in a sustainable, environmentally sensitive and cost effective manner. Recent fluctuations in fuel prices have merely underscored the importance to industry of having an efficient, reliable and redundant regional goods movement system.

The regional goods movement system is failing certain large shippers: several traded sector firms in the region must truck loads to San Francisco or Seattle/Tacoma to achieve satisfactory international aviation or marine connections. Other resource based industries in, or served by, the Portland metropolitan region's goods movement system are very sensitive to transportation costs and can easily lose global market share with shipping cost increases measured in pennies per pound. Still other area manufacturers have had to repeatedly adjust production schedules to compensate for congestion on the region's runways, roads and rail lines, leading to increased production costs and reduced productivity.

As shippers' supply chain logistics evolve, the definition of "state of the art" warehousing and distribution centers continues to change dramatically. Larger, increasingly truck-biased cross dock facilities are becoming the new standard. Higher fuel costs could lead to decentralization of regional distribution centers nationally, in an effort to reduce the distance trucks need to move to their final destinations. The Portland metro region is well positioned to take advantage of this opportunity.

The local component of the goods movement system is also critically important to the economy and daily life. The local movement of goods and services is focused primarily on trucks. The ability to maneuver on local streets and to park to unload freight is vital for those trying to deliver goods and services to local communities.

The region's goods movement infrastructure and unique geographic location are competitive advantages that have created transportation sector jobs for more than a century. These jobs, in turn, serve the industrial and local freight needs of the Portland metro region, the state, the Pacific Northwest, the West Coast and the nation.

1.8 Ready for the rebound

It is true that the world economy is currently strained. However, current and future economic stimulus package components, including funds to reduce the backlog of long-deferred infrastructure maintenance, are coming on line. And though the reauthorization of the surface

transportation act may be delayed for 18 months, early indications are that key freight corridors and infrastructure will be targeted for special consideration. It is in this context that the region's freight plan will operate and for which regional partners must prepare.

In the post-recovery world economy, strong growth in international, national and regional trade will once again drive the need for a flexible, adaptable, high performance multimodal freight transportation system. Efforts must consider these new stresses on marine, air, road, rail and pipeline networks and facilities. The region's goods movement system will need to absorb a doubling of freight volumes by 2035, with approximately 75 percent of that dependent on trucks to link producers and consumers, or to reach intermodal nodes for import and export.

Many local manufacturing firms that trade internationally, and who could locate globally, have chosen to make the greater Portland-Vancouver area their home because of its connections as an international transportation hub. These firms require a smoothly functioning goods movement system to operate efficiently and maintain profitability. In the absence of such a system, they will consider relocating to an area that meets these requirements.

And as the global economy recovers and grows, the Portland metro region will be called upon to address vastly expanded regional, national and international shipping needs reliably, safely, efficiently and sustainably. We have a responsibility to the region, the state and the nation to maintain an efficient and flexible goods movement system of sufficient capacity to meet future needs.

1.9 Invest now to boost the triple bottom line: People, planet, profit

The Portland-Vancouver area is a globally competitive international gateway and domestic hub for commerce. The multimodal freight transportation system is a foundation for economic activities and we must strategically maintain, operate and expand it in a timely manner to ensure a vital and healthy economy. And with so many new residents expected in the Portland metro region by 2035, family wage job creation is going to be of paramount importance. Policies and programs designed to take advantage of the opportunities hidden in the downturn should begin to be refined and implemented, to ensure that the Portland metro region is flexibly and securely positioned for the future of freight and goods movement.

However, in addition to regional policy and program development and implementation, concrete freight-related projects must be built to ensure that the goals of the Regional Freight Plan are met. Maintaining the Portland region's historic preeminence as a goods movement and industrial hub must remain a regional priority; our economic future depends on it. Regional infrastructure investment discussions should consider impacts to the local, regional and national economy, in addition to looking for cost-effective solutions. Identified benefits—including those accruing to freight—must be conserved over time through regional policy and system management and monitoring. Investment in smart, strategic and green freight system improvements now can help Portland secure not only its economic future by increasing its share of family wage jobs but also support development of a green economy that is the Portland area's trademark.

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1.10 Regional Freight and Goods Movement Task Force Members

Engaging stakeholders to develop a regional freight plan

The center point for the engagement of stakeholders was the Metro Council appointed Regional Freight and Goods Movement Task Force. The 33-member task force included representatives from the multimodal freight industry, community and government agencies. The group was charged with guiding the formation of policy and strategy recommendations for the region's multimodal freight transportation system. Metro Councilor Rod Park served as chairperson for the task force. The list of members included:

Steve Akre
OIA Global Logistics

Grant Armbruster
Columbia Sportswear

Steve Bates
Redmond Heavy Haul

Scott Bricker
Bicycle Transportation Alliance

Katy Brooks
Port of Vancouver

Gary Cardwell
NW Container Service

Terry Cleaver
Columbia Grain

Lynda David
Southwest Washington RTC

Tom Dechenne
Norris, Beggs & Simpson

John Drew
Far West Fibers

Ann Gardner
Schnitzer Steel Industries

Pete George
PW George Consulting

Cam Gilmour
Clackamas County

Van Hooper
Sysco Foods

Tom Hughes
City of Hillsboro

Monica Isbell
Starboard Alliance

Susie Lahsene
Port of Portland

Brian McMullen
WSDOT

Jeanne Morgan
Xerox

James Nave
Union Pacific RR

Rod Park
Metro

Michael Powell
Powell's Books

Warren Rosenfeld
Calbag Metals

Robert Russell
Oregon Trucking Association

Paul Smith
City of Portland

John Speight
Portland & Western RR

Paul Thalhofer
City of Troutdale

Jason Tell
ODOT

Elizabeth Wainwright
Merchants Exchange

Tracy Ann Whalen
ESCO Corporation

Rick Williams
Lloyd District TMA

The RFGM Task Force met 11 times between July 2006 and October 2007. Additionally, the task force worked in ad hoc subcommittees to tackle specific issues, such as a regional vision for freight, freight-related RTP goals and objectives, and project prioritization criteria, and brought back recommendations to the full task force. Task Force members also participated in a combined Metropolitan Policy Advisory Committee and Joint Policy Advisory Committee on Transportation meeting held in October 2007.

The long-standing Metro committee on regional freight coordination, the Regional Freight Advisory Committee, served as the technical advisory committee on this plan, providing data, input on analysis, and review of memorandums and reports. The committee is loosely comprised of transportation agencies in the region with an interest in freight issues. Active participants include:

Oregon Department of Transportation
Washington Department of Transportation
Metro
Southwest Washington Regional Transportation Council
Port of Portland
Port of Vancouver
FHWA
Clackamas County
Washington County
Multnomah County
City of Gresham
City of Milwaukie
City of Portland
City of Tualatin
City of Wilsonville

The Regional Freight Advisory Committee met monthly during the course of the planning effort. Some members participated in RFGM Task Force subcommittee meetings, as well. Targeted stakeholder workshops and presentations were conducted within the 2035 Regional Transportation Plan outreach process. A series of targeted workshops were held in Fall 2006 with various stakeholder groups, including one specifically targeted to the business community, to gather needs and issues. The role of freight in the transportation system was address in each of these targeted workshops. Additionally, several Metro Councilors and key Metro staff were enlisted to talk with business groups in the region about the role of transportation in Portland's economy. Metro spoke with 29 business and advisory groups over the course of the project. Collectively, these outreach efforts and strategies have educated stakeholders and informed the technical and policy development work on community values, desired outcomes and transportation needs, investment priorities and implementation strategies.

2 REGIONAL FREIGHT POLICY FRAMEWORK

2.1 Freight goals within a regional policy framework

Informing the regional framework for freight policy is the understanding that the Portland-Vancouver region is a globally competitive international gateway and domestic hub for commerce. The multimodal freight transportation system is a foundation for economic activities and we must strategically maintain, operate and expand it in a timely manner to ensure a vital and healthy economy. After much deliberation, the RGFM Task Force developed the following goal statement to elaborate a policy framework that would protect and improve the cost-effective functioning of the critical regional freight network:

- We must use a systems approach to plan and manage our multimodal freight transportation infrastructure, recognizing and coordinating both regional and local decisions to maintain seamless flow and access for freight movement that benefits all of us.
- We must adequately fund and sustain investment in our multimodal freight transportation system to ensure that the region and its businesses stay economically competitive.
- We must create first-rate multimodal freight networks that reduce delay, increase reliability, improve safety and provide choices.
- We must integrate freight mobility and access needs in land use decisions to ensure the efficient use of prime industrial lands, protection of critical freight corridors and access for commercial delivery activities.
- We must ensure that our multimodal freight transportation system supports the health of the economy and the environment.
- We must enlighten our region's citizens and decision makers about the importance of freight movement on our daily lives and economic well-being.

2.2 Integration with the Metro planning process

The Regional Freight Plan is being developed along with broader Metro initiatives evaluating implementation of the regional growth concept (a set of activities under the umbrella of "Making the Greatest Place," was developed earlier under the name "New Look") and the update of the region's overall transportation system plan (2035 Regional Transportation Plan Update). This project has coordinated both its technical analysis and public participation elements with these other efforts to ensure a consistent and integrated planning approach.

The work program included a New Look (Making the Greatest Place)/RTP coordinated public involvement process that established desired outcomes specific to the regional freight transportation system. It has provided a common base of knowledge about the different elements of the system and has identified issues, needs and deficiencies within the system. The project has also refined existing regional freight policies and updated the multimodal freight

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network map. Infrastructure improvements for freight have been called out and prioritized. Implementation strategies for addressing environmental and community impacts, system management, economic development and financing have been reviewed and recommended. The project will also put forth recommendations for better incorporating truck movement into Metro's creating livable streets design guide.

2035 Regional Transportation Plan

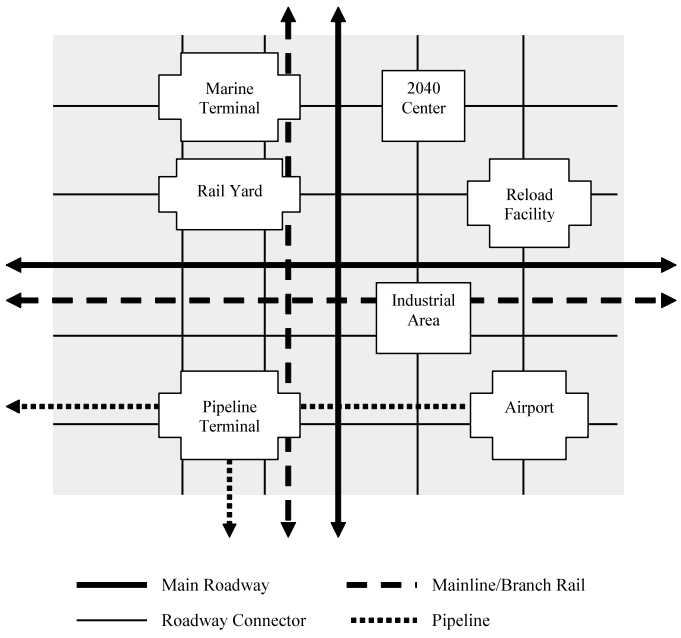
Metro periodically reviews and updates the Regional Transportation Plan (RTP) to keep it current with transportation challenges facing the region, and to incorporate new information, technologies and strategies. The updated plan provides a blueprint for building a sustainable transportation future that allows the region to compete in the global economy and preserve the unique qualities and natural beauty that define our region. An overarching aim of the RTP is to move the region closer to the vision of the region's long-range strategy for managing growth, the 2040 Growth Concept. Fundamentally, the RTP defines a framework for making choices about the future of the region – choices about where to allocate limited transportation resources and choices about the future residents wish to see for our region and, by extension, the state of Oregon. The Regional Freight Plan for the Portland metro region is an element of the RTP. While the plan targets needs and issues specific to the freight transportation system, key policies and actions are incorporated into the comprehensive RTP.

2.3 RTP freight transportation system

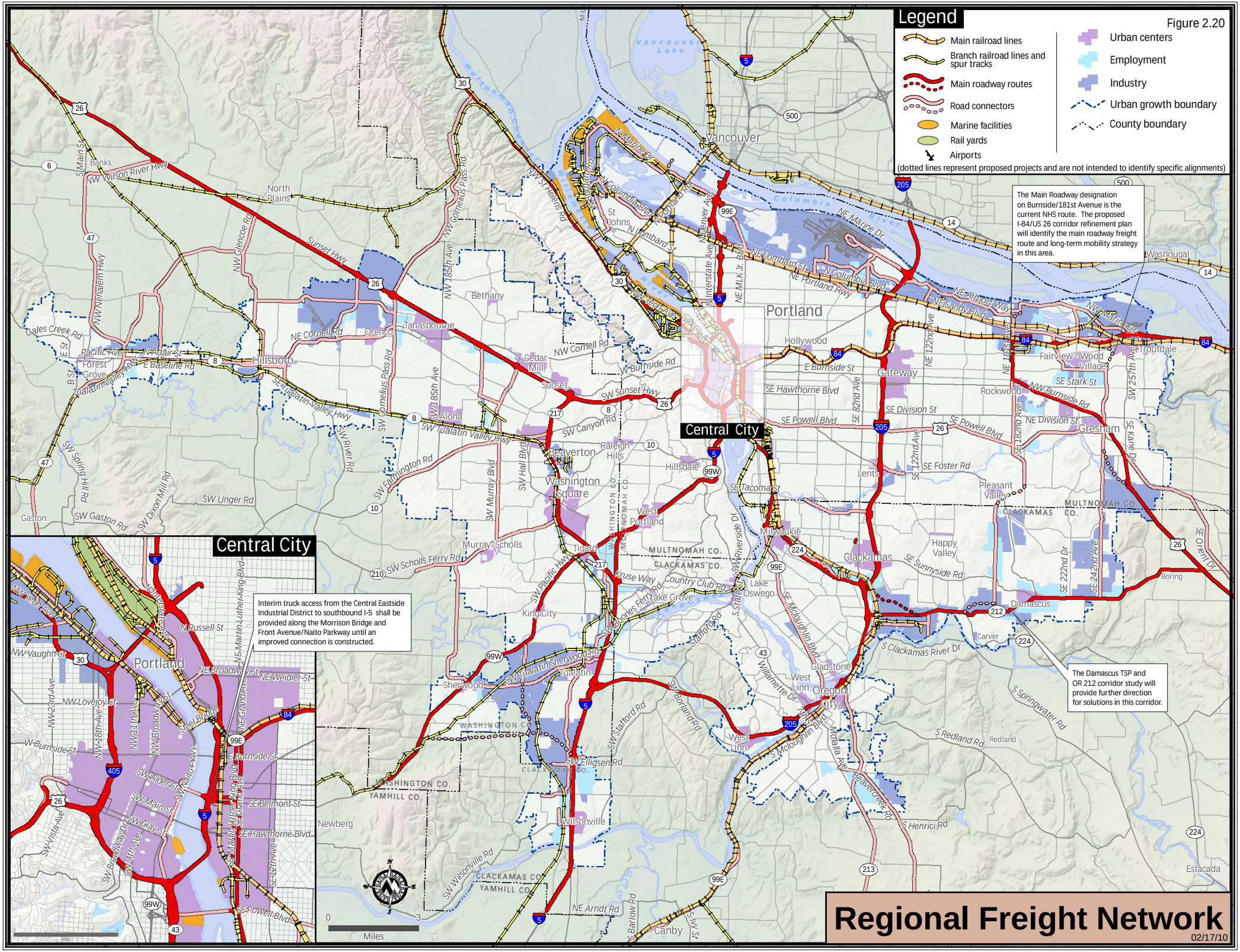
The transport and distribution of freight occurs via the regional freight system, a combination of interconnected publicly and privately owned networks and terminal facilities. The concept in Figure 1 shows the components of the regional freight system and their relationships.

Rivers, mainline rail, pipeline, air routes and arterial streets and throughways connect the region to international and domestic markets and suppliers beyond local boundaries. Inside the region, throughways and arterial streets distribute freight moved by truck to air, marine and pipeline terminal facilities, rail yards, industrial areas and commercial centers. Rail branch lines connect industrial areas, marine terminals and pipeline terminals to rail yards. Pipelines transport petroleum products to and from terminal facilities.

Figure 1. Regional freight concept



The Regional Freight System Map, shown in Figure 2, applies the regional freight concept on the ground to identify the transportation networks and facilities that serve the region and state's freight mobility needs


Legend
Figure 2.20
Main railroad lines
Branch railroad lines and spur tracks
Main roadway routes
Road connectors
Marine facilities
Rail yards
Airports
(dotted lines represent proposed projects and are not intended to identify specific alignments)
Urban centers
Employment
Industry
Urban growth boundary
County boundary
The Main Roadway designation on Burnside/181st Avenue is the current NHS route. The proposed I-84/US 26 corridor refinement plan will identify the main roadway freight route and long-term mobility strategy in this area.
Central City
Interim truck access from the Central Eastside Industrial District to southbound I-5 shall be provided along the Morrison Bridge and Front Avenue/Naito Parkway until an improved connection is constructed.
The Damascus TSP and OR 212 corridor study will provide further direction for solutions in this corridor.
Vancouver
Portland
Gresham
Beaverton
Hillsboro
Tigard
Tualatin
Lake Oswego
West Linn
Oregon City
Wilsonville
Newberg
Sherwood
King City
Tanasbourne
Bethany
North Plains
Banks
Forest Grove
Cornelius
Gaston
Aloha
Raleigh Hills
Hillsdale
Washington Square
West Portland
Multnomah Village
Hollywood
Gateway
Rockwood
Fairview
Wood Village
Troutdale
Washougal
Lents
Pleasant Valley
Happy Valley
Clackamas
Milwaukie
Damascus
Boring
Carver
Gladstone
Redland
Estacada
Canby
Miles
Regional Freight Network
02/17/10

3 KEY ISSUES ON THE REGIONAL FREIGHT TRANSPORTATION SYSTEM

3.2 Top general freight-related issues

In terms of broadly important regional freight issues, the task force identified six problem areas to target: The task force targeted the following top issues from a broad perspective:

- congestion and hotspots – chronic road and rail network bottlenecks that impede regional freight/goods movement
- reliability – unpredictable travel time due to crashes, construction, special events and weather
- capacity constraints due to physical and operational issues as well as lack of capacity in critical corridors
- network barriers – safety concerns and out of direction travel resulting from weight-limited bridges, low bridge clearances, steep grades, at-grade rail crossings and poorly designed turns or intersections
- land use – system capacity and land for industrial uses that is being lost to other activities
- impacts – managing adverse impacts including diesel emissions, greenhouse gas emissions, water quality, noise and land use conflicts

In line with sound regional planning practice in the area, the task force believes that a systems approach must be taken in order to produce important outcomes such as reduced delay, better travel time reliability, safer travel across all modes and trip types, and broader shipping choices and better customer service to help area businesses remain competitive. Such an approach must also consider the economic context in which projects are built, using measures such as return on investment to link transportation investment decisions to the local, regional and national economy.

3.1 Specific issue identification

Between April 2006 and February 2007, Metro staff interviewed nearly two dozen individuals and facilitated discussions at more than 35 meetings with regional stakeholders and analysts.[7] The result was more than 225 discrete comments reflecting desires and concerns regarding the state of the region's freight transportation system. With input from the Regional Freight and Goods Movement Task Force, the collection of comments was refined into a list of key issues that the plan should begin to address.

[7] Ibid.

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Table 3.1, below, provides a categorized list of the key issues and needs. Appendix A summarizes the comments from those interviewed.

Table 3.1. Priority issues for freight

Issue category	Key issues
Mobility and accessibility	Road congestion on regional truck routes
	Travel time reliability on regional truck routes
	Accessibility between intermodal terminals, industrial areas, centers and interstate system
	Class 1/short line rail – throughput and velocity, capacity constraints in rail yards, sidings
	Improved rail access and service for regional shippers
	Barriers: weight/vertical clearance issues on bridges; gaps in connectivity (new roads/bridges)
	Safe barge navigation in I-5/BNSF bridges area
	At-grade rail crossings – grade separation
	River channel deepening
System management	Preservation and efficient use of existing capacity
	Intelligent Transportation System tools (signal timing, cameras)
	Access management
	Increase in truck crash rate
	Faster response to roadway incidents (crashes)
	Truck parking: hours of service limitations
	Efficient loading/unloading operations in commercial centers
	Advances in traveler information (road conditions, directional signage)
	Workforce access to industrial and employment areas
	Maintenance dredging and lock repair
	Rail system management (directional running, grade crossing info)
	Modal redundancy
Land use	General population growth and impacts to transportation system
	Competition between industrial and other uses for interchange capacity
	Adequate supply of industrial land served by transportation system (i.e., marine accessible)
	Incompatible land uses along rail lines and major truck corridors
	Accommodation of truck delivery in pedestrian-friendly areas and corridors (street design trade-offs)
Environment	Air quality impacts from diesel engine emissions
	Residential noise impacts from truck, rail and air cargo operations
	Water quality

Issue category	Key issues
Investment strategies	Link transportation investment decisions to regional, state and national economy. Expand types and amounts of funding for infrastructure and programs (i.e., gas tax indexing, user pays cost responsibility). Use public-private partnerships to fund improvements. Create a role for the public sector in funding private operations. Use a building block approach to fix corridors (i.e., ITS first, then graduate to other solutions). Incorporate lifecycle cost (maintenance) into project.
Coordination	Create better coordination between freight system stakeholders in the region. Educate decision makers and public about importance of region's freight transportation system. Consider rail service needs for regional shippers. Consider freight/goods movement needs in project development.
Research and data	Freight system performance over time Ongoing truck count program Economic impact assessments of investments

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4 FREIGHT GENERATION IN THE REGION

4.1 Manufacturing, warehousing and distribution

The Portland metro region is home to a number of traded sector firms engaged in a broad array of activities. These firms bring wealth from outside the local economy into the region, helping communities to prosper. All of these enterprises have unique goods movement needs, some local, others national or international.

Unlike many areas of the country which have witnessed a substantial decline in manufacturing/industrial employment, the region has experienced growth in the manufacturing sector of the economy during the last two decades. This has created a need to efficiently deliver the materials needed for production (domestically and internationally) and to cost effectively ship finished products. Manufacturers in the region assemble products from components delivered from around the globe and ship components for assembly internationally. The mobility needed to support commerce in the region is as diverse as the commerce itself.

Manufacturers and shippers from throughout Oregon and Southwest Washington depend on the Portland metro region's warehousing, distribution, logistics, customs and multimodal goods movement infrastructure to move raw materials, semi-finished and finished products. These activities create substantial quantities of regional jobs. Warehousing, distribution services and related activities, are major employers within the Portland metro region, with at least 46,000 local jobs attributed to this sector.

These activities are spread throughout the region, with concentrations in the Rivergate, Columbia Corridor, Sunset Corridor, Swan Island, Clackamas-Milwaukee, Springwater-Damascus, inner Eastside, North Wilsonville-Tualatin-Sherwood, Beaverton-Tigard, Beavercreek and Northwest Portland industrial areas.

4.2 Port activities

The ports of Portland and Vancouver host more than 1,000 ocean-going ships each year. These vessels transport 18 to 20 million short tons of cargo annually to and from public and private facilities located in the Portland-Vancouver Harbor. Another 8 to 10 million tons of inland barge cargo also moves through these facilities. In total, $12 billion in foreign trade moved through Portland Harbor in 2007. Much of this cargo is transported beyond the Portland metropolitan area, through key truck and rail corridors.

In addition, the Port of Portland operates the largest international airport in Oregon. It is the hub for the vast majority of air freight activity in the Portland metro region, western Oregon and Southwest Washington. Approximately 288,000 tons of domestic and international air freight shipped through Portland International during 2005.

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5 REGIONAL GOODS MOVEMENT

5.1 Highway

Trucks will remain the predominant mode of freight transport for the foreseeable future, due to their flexibility, speed, adaptability and availability. West Coast truck traffic is expected to increase 200 percent by 2035[8], placing increasing pressure on the interstate highway system and local freight corridors. And though more than 90 percent of total regional truck trips begin and/or end within our region, as much as 52 percent of the total truck traffic entering the region via the interstate system is through traffic.[9] This reflects the importance of our stewardship role for maintaining the through-put efficiency of the interstate freeway system for national freight movement, but also provides a basis for requesting national assistance.

Maintaining access to, and adequate capacity on, designated freight corridors, the National Network and the National Highway System within the region will remain critical to efficient goods movement. Performance of NN and NHS roads within the region varies, but there are locations with regularly recurring chokepoints. It is not unusual for these chokepoint locations to experience frequent failures, particularly during peak weekday travel times, greatly reducing overall system efficiency and reliability.

Below are some key examples of recurring highway system chokepoint locations within the region identified by the RFGM Task Force as having broad impacts to goods movement.

- I-5/CRC (Columbia River Crossing) and Delta Park: North Marine Drive to Columbia Boulevard operates near or over capacity during all peaks.
- I-5/I-84 Interchange: Operates at or over capacity during the a.m., p.m. and mid-day peaks.
- I-5/I-405/US 26 Loop: Is congested through the central city area.
- I-5 Corridor, south of I-217 interchange: the South Metro I-5 Corridor and Boone Bridge is reaching capacity and carries a larger percentage of trucks than the CRC.
- I-205/OR 224 Interchange: Operates near capacity during the mid-day and p.m. peak hour.
- I-205: I-84 to Northeast Marine Drive: Several interchanges connecting to and sections of I-84 and I-205 within these limits operate near or over capacity during the p.m. peak hour.
- I-205: OR 212 to I-5: I-205, particularly south of the Oregon City I-205 bridge has long had capacity issues; enhanced merge lanes to I-205 are also needed.
- OR 217: Inadequate interchange spacing leads to merge/weave congestion chokepoints as well as accidents in the area of the Southwest Beaverton-Hillsdale Highway, Allen Boulevard and Denney Road interchanges.

[8] *Portland/Vancouver International and Domestic Trade Capacity Analysis, Port of Portland, 2006*

[9] Figures obtained from 4,159 roadside intercept surveys reported as *Task 10, Portland Freight Data Collection Phase II, Final Summary Report* (March 2007) prepared for the Portland Freight Data Collection Team.

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- I-205/Airport Way: Eastbound to northbound on-ramp is a bottleneck to providing access to and from Portland International Airport
- Non-continuous or awkward parallel arterials and connections: Improving arterial connections to current and emerging industrial areas (e.g., Sunrise Corridor phased connectors, I-5/Hwy 99W connector area) are needed.
- Last-mile chokepoints: Various locations experience congested last-mile local industry connectors (e.g., Columbia/Cascade River District Projects, including the I-84/257th Avenue Troutdale interchange and SW 124th from Tualatin-Sherwood Road to the I-5/North Stafford interchange)

Several of these highway segments and interchanges have also been identified as projects of statewide significance due, in part, to their negative impact on the statewide or national goods movement systems.

5.2 Rail

Class 1 rail lines[10] operating in the Portland metropolitan area (BNSF Railway and Union Pacific Railroad) have been capacity-constrained due to several long-standing and well documented historical factors. These constraints will worsen as freight volumes at the region's ports and intermodal facilities increase. Capacity chokepoints for the Class 1 railroads in the Portland metropolitan area have primarily centered on the Portland Triangle, located in the industrial/port areas of North Portland and Southwest Vancouver.

Issues in the Portland Triangle area include inadequate siding lengths (Class 1 railroads are now fielding up to 8,000 foot long unit trains), rail bridges with inadequate capacity and lowered sufficiency ratings, at-grade rail crossings, sidings and mainline track sections that are over capacity. Other Class 1 capacity constraints within the region include switch control at the Steel Bridge and inadequate rail and intermodal yard capacity for current and future needs. Outside the region, railcar clearances and increasing weights will need to be addressed, as the Class 1 railroads look to longer trains and heavier carloads to increase their operating efficiency and revenues.

Short line rail operators have taken over many of the local and regional rail functions formerly performed by the Class 1 railroads. Rail car weights are a critical issue for short line railroads. The Class 1 railroads are now considering rail car weights above 286,000 pounds, which will exceed the carrying capacity of many short line tracks in the region. Assisting regional short line railroads with track upgrades could reduce the risk of derailments, a potential public safety issue and certainly a productivity issue for the railroads. It also keeps trucks off the road. The short lines are also having to make-up more trains in their yards, which have limited capacity, before delivering them to the Class 1 rail yards. Assisting short line railroads requires

[10] Railroads are classified according to their revenue; following decades of decline and mergers, there are now seven Class 1 railroads—constituting largest companies--currently operating in the United States. Class II railroads are also known as regional railroads; Class III includes the short line railroads.

government to show a clear public benefit, since these facilities are privately owned and operated.

Government and the railroads have historically cooperated to implement rail crossing safety improvements. The Class 1 and short line railroads have multiple at-grade crossings of their lines in the region, limiting train speeds and increasing the risk of conflicts between trains, vehicles, pedestrians and bicycles. Improving, eliminating, or grade separating at-grade crossings improves safety as the number and size of trains increase. Crossing improvements increase rail and road system productivity by helping longer trains clear crossings more quickly. Crossing improvements are the first step in applying for quiet zone status with the Federal Railroad Administration.

5.3 Aviation

Combined air cargo providers generally operate on a hub-and-spoke system, where freight is picked up at airports throughout the country in the early evening, flown back to a central destination to be sorted and then reloaded and flown to its final destination in the early hours of the morning for next day delivery. In order for this system to work, schedules must be maintained. This generally places air freight carriers' trucks on the road during evening peak hour traffic.

While traffic flows on the roadways immediately adjacent to Portland International have improved within the last decade, trucks carrying air freight to the airport during the evening peak hour face increasing congestion on several area highways leading to the airport. I-205, I-84, I-5, I-405 and U.S. 26 all serve locations feeding generating air freight but have failing evening peak hour level of service.

Several traded sector manufacturers within the region are heavy users of air freight. Frequent roadway congestion forces many of these users to move shipping deadlines up, causing firms to lose valuable production time and increasing their production costs. Many shippers in the region were disappointed when direct air freight connections to Asia were lost. They now have to truck their shipments to Sea-Tac or San Francisco International airports to make their desired connections.

In May 2009, Portland International Airport began to implement a project to extend its north runway, as well as a complete overhaul of its south runway. With these improvements runway and taxiway capacity at the airport should be adequate to meet the needs of air freight carriers through the next decade, based on recent statements by the Port of Portland.

5.4 Marine

Modern commercial navigation of the Columbia River began in 1877, when Congress approved dredging a navigation channel between the Portland-Vancouver area and the mouth of the river in Astoria. Currently, more than 1,000 ocean-going vessels call on the Portland-Vancouver Harbor each year. Navigation channel depth on the Columbia River continues to be the limiting factor on the size, and therefore the number, of ships that call on the Portland-Vancouver

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Harbor. Channel deepening has been pursued for several decades, balanced by the need to protect various fish stocks migrating on the river.

The ports of Portland and Vancouver, as well as the other ports located along the lower Columbia River, lead the nation in the shipment of grain. They also ship large quantities of other bulk agricultural commodities from Oregon, Idaho and Washington to the rest of the world. The region's ports will still manage to grow by moving a wide range of marine cargoes, such as energy and transportation project related materials, manufactured goods, automobiles, agricultural and mining related products and fuel. The ability of the ports of Portland and Vancouver to serve as major ports will be hampered by the size of ships that can traverse the Columbia River channel, since ocean carriers try to reduce per slot vessel (docking) cost by using larger ships.

The ports generate significant volumes of truck and rail traffic in the West Vancouver and Rivergate areas. Congestion during peak commute hours adversely impacts these truck movements. Intermittent congestion also impacts the Class 1 and shortline railroads serving the area.

Barge operators on the Columbia/Snake River system use equipment specifically constructed to operate in the locks on those rivers, adding significantly to their capital costs. In 2004, these barge operators moved 16,262 TEU's[11] and 9,779,000 tons of containers, bulk (wet and dry) and break bulk cargoes on the Columbia/Snake River system. Barges are also used to transport grain, fuel, steel and aggregate related products on the lower Willamette River. It should be noted, however, that most import and export shippers prefer to use truck and rail for any higher value products moving through the ports.

The primary limiting factors to barge movement in the region are the BNSF rail and I-5 bridges crossing the Columbia River and the maintenance of navigable locks on the Columbia and Snake rivers.

5.5 Pipelines

The Olympic Pipe Line transports 65 percent of the petroleum products that Oregon uses. The pipeline delivers the equivalent of 750 tanker trucks of fuel between the Puget Sound and the Portland tank farm located in the Northwest Portland industrial area every day. The product in the petroleum pipeline generally moves at approximately 4 to 5 miles per hour. The pipeline is privately owned and is regulated by the federal government. [12]

Regional distribution occurs from the tank farm through a Chevron owned pipeline to Portland International Airport and through the Kinder-Morgan pipelines to users and distributors throughout the region. Maintaining good quality access to the tank farm facility is critical, particularly in light of a recent at-grade rail crossing closure on an access road to the tank farm.

[11] Standard container measurements, known as twenty-foot equivalent units.

[12] www.phmsa.dot.gov/index.html

The Williams Northwest Pipeline transports natural gas products to northwestern Oregon and Southwest Washington. Northwest Natural Gas operates a private natural gas network that connects to the Williams Northwest Pipeline and radiates through and beyond the Portland metro region. This pipeline network delivers gas directly to end users within and beyond the Portland metropolitan area.

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6 GOODS MOVEMENT AND LAND USE

While the success of the region's economy is directly tied to its ability to efficiently move freight, it is true that freight movement and operations can potentially produce adverse impacts on local communities in the form of:

- increased emissions, noise and vibration, lighting and safety concerns
- impacts to land uses, community access and bicycle and pedestrian movements
- competition for highway and parking capacity
- a perceived (though less often real) reduction in land values
- impediments to visual quality and redevelopment efforts

These concerns are likely to increase over time as freight volumes increase. Many of the typical complaints voiced regarding truck and rail operations could be minimized or avoided with thoughtful and appropriate land use planning, which, like a good fence, makes better neighbors. It's important to note that these types of impacts are not the exclusive domain of freight operations – highways, transit and other transportation systems and services, even hospitals and schools – can engender comparable concerns over impacts to nearby residents.

On the other side, freight carriers and shippers can themselves be impacted when communities seek to restrict access by trucks on certain streets, limit night-time operations[13], reduce the number of truck loading zones, increase water recreation activities and public access within working waterfront areas, or when communities seek to use a freight railroad's track for passenger rail service. As shippers' supply chain logistics continue to evolve, the definition of "state of the art" warehousing and distribution centers changes as well. Larger, increasingly truck-biased facilities are becoming the new standard. In addition, higher fuel costs could lead to decentralization of regional distribution centers nationally, with the Portland metro region well positioned to take advantage of this opportunity.[14]

Certain key regional intermodal rail to truck transfer facilities are quickly reaching their capacity and are constrained by the physical dimensions of their facilities. A regional discussion regarding retaining or restoring rail access into industrial areas should occur among the warehousing, manufacturing and distribution sectors, local governments and the short line rail operators.

There has been a demand, at times, for conversion of industrial property to mixed-use residential. This is often incompatible with surrounding industrial operations and freight movement. Appropriate models of residential and commercial development should be planned for truck and rail corridors and areas adjacent to industrial sanctuaries to preserve the

[13] The cost of congestion within a spreading peak period has pushed some shippers and businesses toward night-time operations, which often elicits its own push back from neighbors objecting to nocturnal disturbances.

[14] *CSCMP Explores, Vol. 5, Spring 2008

effectiveness of truck and rail corridors for industrial and freight use. From the viewpoint of freight carriers and shippers, allowing new, incompatible land uses into industrial areas impedes business operations and access, resulting in higher operating costs, reduced safety and efficiency.

There is often fierce competition for land, a finite resource. Siting, protecting and redeveloping industrial areas for industrial uses is in keeping with the goal of creating and preserving industrial sanctuaries in the 2040 Growth Concept, but managing and balancing competing land uses will continue to be difficult as the region grows. Maintaining reliable multi-modal transport options to our industrial areas is critical, particularly truck and rail connections. Providing rail service is becoming particularly difficult as rail operating practices continue to change rapidly.

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7 TECHNOLOGY AND PLANNING FOR SUSTAINABLE FREIGHT TRANSPORT

7.1 Going green

There are at least two variables that every commercial carrier must come to grips with: fuel cost and fuel use. The former frequently dictates the lengths to which a carrier will go to conserve fuel, while the later directly impacts the production of greenhouse gases and PM 2.5[15] emissions. The goods movement industry is responding to the prospect of sustained higher fuel costs and tightening emissions standards. Tools being used to improve powertrain operating efficiency and reduce stationary idling of truck diesel engines include:

- clean diesel technologies, more efficient powertrains and improved aerodynamics
- low sulfur and bio-diesel fuels
- on board auxiliary power units
- parking area power and HVAC hook-ups for trucks
- ongoing and innovative operational changes that reduce the carbon footprint of freight

Every operator of commercial vehicles, be they aircraft, marine, rail or truck, has grown increasingly sophisticated at load, route, operator and vehicle optimization in an effort to minimize equipment downtime and maximize profit. Recent increases in the cost of fuel have only intensified efforts to increase operational efficiencies. Still, there is little evidence of a shift to alternative modes due to fuel costs.

The public sector needs to complement these efforts by optimizing its own facilities and strategies to gain maximum through-put capacity and efficiency where it matters most. This effort needs to include multi-jurisdictional coordination and ongoing participation from the private sector goods movement community. The challenge of increasing the capacity of the goods movement system while remaining environmentally sustainable will require close coordination and cooperation between the private and public sectors.

7.2 Transportation system management

Several tools are available for transportation system management on the corridor level. These tools include variable message signs, traveler information systems, incident management and response, traffic signal progression, ramp metering and demand (traffic volume) responsive signal timing. Truck signal priority might also be considered in certain situations.

The public sector would benefit by managing its roadway infrastructure with the understanding that roadway capacity is valuable and costly to expand. For example, managing roadway

[15] Particulate matter smaller than 2.5 microns have been shown to affect human health.

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performance through congestion pricing can include electronically charging road users a fee for using a road that might vary depending on changing real-time demand for roadway capacity throughout the day, with higher prices charged at periods of peak travel demand. Market-based road user fees, if properly implemented, can free up scarce road capacity for both passenger and freight needs, and provide revenue for alternative transportation and/or improvements to existing facilities.

Weigh-in-motion scales have been in use for several years, allowing trucks to bypass conventional truck scales, saving time, fuel and wear. Weigh-in-motion systems could be improved through the use of a single, common transponder system for commercial vehicles operating throughout several western states.

Some industrial areas within the Portland metro region have freed up roadway capacity by forming transportation management associations. These associations can facilitate and promote enhanced pedestrian, transit, carpooling and bicycle alternatives to the daily commute. These associations also work with employees to tailor transit services to their work shifts and with employers to facilitate staggered shifts, compressed work weeks and work-from-home programs. These efforts can reduce single occupant vehicle travel within industrial areas during critical peak travel times.

7.3 Freight data collection and analysis

Portland State University's Intelligent Transportation Systems Laboratory has begun a project to produce truck travel time estimates using the transponder information from ODOT's Green Light weigh-in-motion system. The system can supplement Tripcheck's traveler information system as well as help calculate key freight measurements by linking the other data collected by the weigh stations to the travel time estimates. The ITS lab at PSU houses and maintains the Portland Oregon Regional Transportation Archive Listing. PORTAL collects data from all of the in-bed loop detection sensors in the Portland area as well as free floating dynamic sensors that can be placed in TriMet buses or other vehicles. The archive also collects weather and incident reports, all of which can be accessed in a variety of methods to help monitor and evaluate traffic improvements and patterns.

7.4 Planning, coordination and education

The RFGM Task Force requested that freight coordination continue at the regional level. Metro staff would like to honor the task force's efforts and contributions but recommends sunsetting this particular advisory group. However, in recognition of the importance to maintain and improve Metro's relationship with the commerce, freight and goods movement community, staff recommends that an *ad hoc* bench, with an expanded membership, be established (see Section 10 of this report.) In addition, a wide variety of ongoing coordination, planning and data collection efforts would allow Metro to be more responsive to requests from the goods movement community.

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The RFGM Task Force also recommended that efforts to educate the public on the importance of goods movement, and the critical role it plays in the economy, continue on an ongoing basis.

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8 REGIONAL FREIGHT PLAN FINDINGS

The following findings were developed or compiled by Metro staff but are based on RFGM Task Force input as well as data collected as part of this project.

8.1 Trade and the Portland economy

- Trade volumes in the Portland/Vancouver region will double by 2035.
- Continued trade growth will create economic opportunities for the region and state that are dependent on adequate transportation infrastructure.
- The goods movement needs of the Portland-Vancouver region, and the markets it serves, require access to a broad range of modal options and service providers.
- The ability to transport goods into, out of, through and within the region in an efficient, timely and reliable manner is critically important to the economic health of the region and the state as well as West Coast trade.
- Maintaining an efficient, accessible, multimodal goods movement system is essential to attracting and retaining traded sector companies. These firms require access to the global marketplace comparable or superior to any firm they might compete against.

8.2 Industrial land supply

- There will be an increased need for industrial waterfront lands to support growth in maritime trade. Industrial land uses are frequently incompatible with, and pressured by, residential development. Extra care must also be taken when placing industrial land uses in close proximity to recreational or environmental resources.
- Industrial sanctuaries should continue to be considered a unique and protected land use. Preserving the region's existing industrial sanctuaries is essential to maintaining economic growth. As industrial land in the region becomes increasingly scarce, active protection of the region's industrial sanctuaries will become critical.
- Protection of industrial sanctuaries should include modernization of existing sites as needed, as long as the industrial nature of the land use is maintained.
- Industrial land users consider residential development incompatible with their operations, while residential property owners take issue with aspects of industrial development. Appropriate models of residential and commercial development should be planned for truck and rail corridors and areas adjacent to industrial sanctuaries to preserve the effectiveness of truck and rail corridors for industrial and freight use.
- Maintaining and improving multimodal freight access to the 2040 industrial sanctuaries is critically important to ensuring long-term viability of industry in the region.

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8.3 Freight rail

- Rail service characteristics are changing. Class 1 railroads, and even certain short line railroads, are moving towards a "hook (up) and haul" business model, where the railroad focuses on pulling assembled trains long distances between cities.
- Class 1 railroads are currently struggling to meet existing freight demand. They are facing shortages in rolling stock and siding, yard and track capacity. They are attempting to address these deficiencies in a timely manner but are struggling to do so.
- In response to projected increases in rail freight volumes, Class 1 railroads intend to haul heavier per car loads and employ longer trains. The former will require upgrading tracks throughout their systems, and the later will likely increase the need to grade separate more intersections over time.
- The current Class 1 railroad business model focuses on delivering service to railheads with intermodal yards or directly to port facilities. The Class 1 railroad intermodal yards in the region are operating near capacity now, and they will need to be expanded. These intermodal yards are predominantly dependent on trucks to move freight to and from their facilities. This may require use of scarce lands within certain Industrial Sanctuaries.
- Short line railroads have generally taken over the role of distributing rail cars throughout the region on their rail networks to end users requiring direct local rail service. Lack of space in Class 1 rail yards means short line railroads need additional marshalling yards on their own properties to make up trains. Identifying locations for these yards is challenging, as it often requires the acquisition of scarce lands within certain industrial sanctuaries.
- Short line railroads and certain private operators are also operating intermodal facilities, frequently offering additional logistics services to shippers. Maintaining and improving both truck and rail access to these satellite intermodal locations is critical.

8.4 Trucking

- Trucks will continue to be the dominant mode of transport in the freight transportation system, with West Coast truck volumes expected to increase over 250 percent by 2035. Even though the use of other modes will expand, trucks will maintain their preeminent status as the first and last links in delivering goods to the end user due to their flexibility.
- A trend toward lighter weight, higher value, increasingly time sensitive, producer to retailer shipments is expected to continue, again reinforcing the role of trucking in the freight transportation system hierarchy.

Did you know?

- Trucks are the primary movers of freight and goods
- Trucks carried 67 percent of the total tonnage in 2000 and are expected to move 75 percent of the tonnage by 2035

Source: 2035 RTP p. 2-21

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- Truck access between port facilities, industrial sanctuaries and the National Highway System is critically important to shippers, carriers and distributors of freight. These connections are commonly referred to as "first mile/last mile" connections.
- Motor carriers identified correcting regional bottlenecks on the principal NHS roads as their first priority. Motor carriers are also supportive of active Transportation System Management, to include incident management.
- Transportation service providers identified the Columbia River Crossing, I-5 through Delta Park, the I-84/I-5 interchange area, I-205 from OR 224 to I-5 and the Sunrise Corridor projects as well as improved access to the North Wilsonville-Tualatin-Sherwood and Clackamas industrial areas as their highest regional road improvement priorities.

8.5 Air cargo

Air cargo continues to require efficient access for perishable and high-value goods and production-critical components. However, area industries producing goods shipped via air freight have had to adjust their production schedules repeatedly due to roadway congestion in order to meet air freight departure deadlines. This has led, in turn, to higher production costs and reduced productivity.

8.6 General concerns and observations

- The rail, truck, marine, pipeline and air cargo carriers all invest in their own equipment and infrastructure and are privately owned for-profit businesses. This complicates public sector investment in safety, access, reliability or capacity improvements for these modes.
- Every privately owned carrier, of whatever mode, relies on publicly owned infrastructure for at least a portion of their activities.
- Firms relying on the goods movement system monitor the efficiency, reliability and speed of the existing transportation system and use these measures to evaluate system performance. The vast majority of this information is considered proprietary and is used by shippers to gain an advantage over competitors. Much of this data is also derived from proprietary systems that generate unique data outputs focused on parameters specific to that firm. This can make even anonymous data sharing very difficult.
- The goods movement industry provides over 46,000 family wage jobs within the region.
- Maintaining the Portland metro region's historic preeminence as a goods movement and industrial hub should remain a regional priority.
- Long-term under investment in transportation infrastructure within the region, for both maintenance and capacity improvements, has led to congestion, weight limits and frequent system breakdown.
- Transportation revenues to fund maintenance and capacity enhancements are at an historical low on the federal, state and local levels.

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- An ongoing regional freight data collection effort needs to be undertaken and sustained over time. One of the better efforts to date is PORTAL, operated by PSU, but several other efforts under development also show promise.
- A component of regional freight data collection efforts needs to include interviewing shippers directly on ongoing basis, to capture current supply chain dynamics.
- The importance of freight transportation to the regional economy needs to be reinforced through an ongoing public education effort.

8.7 The transportation funding challenge

Funding background

Change is needed: Federal and state fuel tax revenues have been in decline for several years. Funding for transportation projects has historically come from several federal, state, regional and local funding sources, as reflected in the following lists. There are several programs funded under the current federal transportation act, the Safe, Accountable, Flexible, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), that can be directed towards freight. The next federal transportation act is expected to specifically address freight movement. Funding for transportation was taken up by the Oregon Legislature during its recently concluded session.

The consequences of long-stagnant state transportation funding

Public sector funding for transportation infrastructure, particularly targeting freight movement, has diminished over time. Even with recent federal recovery efforts and state legislation, competition for available funds will increase, and most (road) funds are likely to be funneled into critical safety projects. The region's funding dilemma is real: until the July 2009 HB 2001 hikes, the state of Oregon hadn't had a gas tax increase since 1993[16] and the federal Highway Trust Fund is teetering on insolvency. For most of the first decade of this century, the cost of construction materials has risen significantly on the global market, greatly increasing the cost to construct infrastructure improvements. Simply put, costs to construct improvements having been trending upward rapidly, while available revenues to pay for them have been declining. Deferred maintenance and delayed projects have cost individuals and businesses in terms of lost time and opportunities, increased vehicle wear and tear and threatened or lost jobs. This lack of investment in the US transportation infrastructure is weakening our ability to compete globally against China, India and the European Union, all of which are investing heavily in transportation. The successful implementation of any programs or projects in these times requires coordination at all levels of government with the business community to address the immediate and long term freight transportation funding needs.

HB 2001 provides new state transportation resources

On July 30, 2009, Oregon Governor Ted Kulongoski signed House Bill 2001 (HB 2001) into law. The bill provides for a gas tax increase of 6 cents, from 24 cents per gallon to 30 cents per

[16] However, Oregon's Weight-Mile Tax levied on trucks over 26,000 pounds (GCW) has increased since that date.

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gallon, as well as increasing vehicle license plates from $54 to $86 every two years. Vehicle title fees will rise from $23 to $78. All told, the changes will make approximately $300 million per year available for transportation projects, of which $136 million will be directed into the state highway program. Counties will receive $82 million; cities will receive $55 million. The remaining $24 million will fund non-road alternative transportation projects. Among the projects funded through this bill that will benefit freight and goods movement in the Portland area are Hwy 26 widening from 185th Ave to Cornell Rd. ($20 million), the Hwy. 26/Shute Rd. interchange ($45 million), and Hwy. 26/Glencoe Rd. interchange ($32 million).

Uncertainty at the federal level

Nationally, funding for transportation projects has become scarce. The need to replace aging transportation infrastructure and expand facilities in areas of the country experiencing growth has exploded. This need comes at a time when infrastructure project costs have increased significantly during the last several years. Federal reauthorization of the multi-year omnibus transportation bill is now expected to be delayed 18 months past the expiration of the current bill, SAFETEA-LU, in September 2009. The private sector portion of the goods movement community has been making great strides in adopting sustainable technologies and wringing efficiencies out of their respective portions of the goods movement system. The public sector must also effectively weigh policies, programs and investments to achieve the maximum benefit for the goods movement system, particularly during a time of uncertain funding for transportation.

Funding sources

The following funding sources are currently available to the region.

Federal funding sources or programs (FHWA programs, unless otherwise noted):

- Modernization (freight chokepoints, capacity enhancements, dimensional issues on NN/NHS freight routes)
- Preservation (road and bridge maintenance)
- Surface Transportation Program
- National Corridor Infrastructure Improvement Program
- Congestion Management and Air Quality Improvement Program
- Transportation Infrastructure Finance and Innovation Act of 1998 – allowed the creation of state infrastructure banks through a federal credit, generally fund state infrastructure banks (Funds are expected to be repaid.)
- Truck Parking Facilities
- Freight Intermodal Distribution Pilot Grant Program
- Transportation, Community and System Preservation Program
- Elimination of Hazards and Installation of Protective Devices at Rail-Highway Crossing

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- High Risk Rural Roads (e.g., Cornelius Pass)
- Intelligent Transportation Systems Research
- FTA dollars for TDM measures on truck corridors and in industrial areas
- MARAD: provides funding for harbor and channel maintenance
- FAA: various programs for providing airside, landside and runway protection zone funding

State funding sources:

The following list of funding sources is generally administered through ODOT:

- Oregon Gas Tax/Vehicle Registration Fees: With passage of HB 2001, an additional $300 million annually we be raised for transportation purposes, statewide.
- Oregon Weight Mile Tax: Charged to trucks weighing over 26,000 pounds, the tax is the primary source of tax revenue raised by trucks in the state. Weight Mile Tax receipts are primarily directed at roadway maintenance and system preservation efforts throughout Oregon, with a smaller amount allocated to administering the program.
- Oregon Energy Income Tax Credit: The Oregon Department of Energy offers a tax credit for businesses that invest in reducing energy consumption. Under this program transportation projects that reduce the number of single-occupancy vehicle trips are eligible for the credit. The credit covers up to 35 percent of eligible project costs.
- Connect Oregon I & II: Funded through lottery proceeds, this effort has focused on projects that enhance intermodal connections and improve freight mobility for several modes, to include aviation, marine and freight rail. It was allocated a total of $200 million for both phases.
- OTIA: The various OTIA funding programs relied on bond proceeds to raise funding for critical statewide infrastructure needs. While this program was a success, these bonds now need to be paid off.

The Connect Oregon and OTIA programs have shown that government and the private sector can collaborate successfully. These programs have delivered tangible benefits to freight movement within the Portland metro region and the state. The Connect Oregon program should be continued. The program has proven particularly useful in funding much needed projects for off-highway modes. Dedicating the loan revenues from the Connect Oregon program into a revolving fund could help the program be more self sustaining.

Regional funding sources:

- Congestion pricing/use-based toll: Set up a regional congestion pricing program, starting with CRC (both bridges). Enforce through WMT transponders or cell phones. Dedicate revenues generated by trucks to truck oriented projects.
- Vehicle registration fee: Apply a uniform vehicle registration fee to all vehicles.

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- Regional funding initiative: Regional transportation improvement districts have experienced success in the Northwest. These packages use increments of vehicle registration fees, fuel taxes and/or property taxes to fund a specific list of infrastructure improvements. A regional transportation improvement fee is under development for consideration.
- Value capture: Certain transportation projects generate greater tax revenues for a community during their construction and throughout their active lifespan. Projecting this value and using it to help bond the project is another way to help fund certain capital projects, such as shortline railroad intermodal facilities.
- Freight innovation initiative: A fund for innovative, freight-oriented technological and operational efforts using commercial vehicle congestion pricing tolls. Revenues could fund freight-oriented TSM, ITS, fuel consumption reduction or alternative fuel efforts and technology proof of concepts, trials and demonstration projects. A small percentage of these funds could also support a regional freight database and associated freight movement research.

Local transportation funding efforts in other regions and states have illustrated that the public is willing to pay for infrastructure under certain conditions. The public needs to see a demonstrable need for the project and how the proposed project will meet that need; it has to feel confident in the cost estimate and projected schedule and also in the constructing agency's ability to deliver a project within that cost and schedule.

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9 DEVELOPING A FREIGHT STRATEGY TOOL KIT

9.1 Linking freight plan goals and issues to targeted solutions

The RFGM Task Force identified specific issues associated with the RTP goals for freight movement. These issues, summarized in the table below, require an ongoing, creative and collaborative approach to problems that are sometimes systemic, sometimes localized and usually complex. The task force recognized that freight problems occur on a multimodal system and that even when problems appear to be localized bottlenecks or network barriers, there are often multiple underlying causes that extend far beyond the apparent problem. The interdependent nature of our transportation system, economy and environment all demand that a rigorous analysis of potential solutions be performed, in order to avoid downstream impacts or unintended consequences.

The tables are structured around the Regional Freight Plan goals developed by the task force and found in Section 2 of this document. Two critical goals are for the related, yet distinct categories of congestion reduction and improvement of travel-time reliability. These and other freight goals have been addressed in the following categories:

System planning for efficient freight mobility and access. This category of issues and solutions speaks to Metro's mission as the Metropolitan Planning Organization for the Portland metro area. It seeks to provide better freight and goods movement data, to analyze that date with freight considerations in mind and to implement a multimodal plan that facilitates freight movements required for a vibrant regional and state economy.

System management to increase network efficiency. This category comprises the "first step" to improved freight and goods movement operations on the existing system and includes preservation, maintenance and operations-focused projects and associated planning and coordinating activities.

Public understanding of freight issues. To gain public support for projects and funding of freight initiatives, and to help the public and elected officials make wiser land use decisions, a program of public education is required.

Sustainable freight transportation system. This category of issues and solutions deals with traditional nuisance and hot spot issues associated with "smokestack and tailpipe" problems, but it also recognizes the many current contributions and new opportunities for the evolving green freight community to be part of the larger environmental and economic solution set required in these times, including greenhouse gas curtailments.

Freight-sensitive land use planning. This category targets land use planning and design issues that can affect the ability of freight, goods movement and industrial uses to live harmoniously with their neighbors. Freight-sensitive land use planning includes everything from long-range aspirations for freight and industrial lands to short-term and smaller scale design and access issues.

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Strategic transportation investments. This category of solutions focuses on planning and building capital projects and developing the funding sources, partnerships and coordination to implement them. It includes the list of regional freight project priorities attached as Appendix B to this report, identifying a wide range of projects from preservation and maintenance to major facility construction.

To maximize the return on public investment, these freight-oriented preservation, management and investment priorities should focus on:

- more carefully evaluating what, where and when the freight problems occur (noting, for example, that they do not always coincide with the commute peaks)
- addressing core throughway system bottlenecks with substantial freight impacts, to improve truck mobility in and through the region. Examples include the Columbia River Crossing influence area, the I-5/I-405 with connection toUS 26, 99W through Tigard, and the I-5 corridor south to Wilsonville
- improving and protecting the throughway interchanges that provide access to major industrial areas, particularly: I-5/Marine Drive and I-5/Columbia Blvd serving the Columbia Corridor and Rivergate industrial areas, I-205/Hwy 212 serving the Clackamas and Milwaukie industrial areas, and I-205/Airport Way serving Portland International Airport and east Columbia Corridor industrial areas
- improving arterial connections to current and emerging industrial areas. Examples include Sunrise Corridor phased improvements and last mile local industry connectors, e.g., Columbia/Cascade River District projects, including the I-84/257th Avenue Troutdale interchange and SW 124th from Tualatin-Sherwood Road to the I-5/North Stafford interchange
- ensuring safe transport of hazardous loads with a regional routing strategy
- looking beyond the roadway network to address critical marine and freight rail transportation needs such as completing the Columbia River channel deepening and upgrading main line and rail yard infrastructure.

Several issues raised by the stakeholders are difficult to resolve, primarily because the improvements suggested involve infrastructure that is under private ownership. In these instances, identified public benefits must be rigorously quantified to demonstrate net benefits associated with public investment. In addition, qualitative benefits must be logically articulated and assessed.

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Freight plan goal	Key issues identified by stakeholders	Potential solutions/strategies
System planning for efficient freight mobility and access We must use a systems approach to plan and manage our multimodal freight transportation infrastructure, recognizing and coordinating both regional and local decisions to maintain seamless flow and access for freight movement that benefits all of us.	Inability to track freight system performance over time Inability to measure economic impact of investments Inability to account for land use needs generated by non-truck (rail, air, pipeline) commodity flows Accessibility between intermodal terminals, industrial areas, commercial centers and the interstate system Improved rail access and service for regional shippers Consideration of freight and goods movement needs in project development Protection of modal redundancy Through-truck travel in neighborhoods Need to maintain freight route and mode choice	**Data, research, modeling and analysis** • Improve Metro's truck module within the regional travel forecast model • Explore methods of linking non-highway commodity flows and land use needs • Investigate predictive risk analysis, economic models and/or manual estimates of monetary benefits based on predicted travel time savings, incident clearance, enforcement, etc. • Submit proposals for relevant regional, state and national freight-related research or pilot project opportunities (e.g., Transportation Research Board projects) • Continue and expand work with Portland State University faculty and research staff to improve tools for freight analysis (e.g., truck counts) **Planning and coordination** • Maintain Regional Freight Technical Advisory Committee meetings (monthly) and hold twice-yearly Task Force meetings (or as needed to provide timely input) • Periodic development, refinement and ongoing advocacy for RTP freight projects list • Coordinate with and through Portland Freight Committee, ODOT, Oregon Freight Advisory Committee (OFAC) and Southwest Washington Regional Transportation Council/Clark County/WSDOT on statewide and regional freight, port and rail planning to ensure regional issues are addressed • Monitor freight innovations across the country and globally to mine for Portland metro application • Ensure that freight needs are included in all Metro planning efforts, such as corridor refinement plans, transit and land use planning

Freight plan goal	Key issues identified by stakeholders	Potential solutions/strategies
System management to increase network efficiency RFGM Task Force: We must use a systems approach to plan and manage our multimodal freight transportation infrastructure, recognizing and coordinating both regional and local decisions to maintain seamless flow and access for freight movement that benefits all of us.	Travel time reliability on regional truck routes Efficient use of existing capacity Continuing to reduce state and regional truck crash rate Need for faster response to roadway incidents Improved traveler information – road conditions, directional signage Maintenance dredging and lock repair	**Data collection, analysis and planning** • Regional Transportation System Management Plan • Monitor/comment on ODOT statewide freight planning studies (Statewide Freight Plan, related studies for ports and rail at the state level) • Continued support for use and expansion of tools such as the PORTAL program of real-time traffic delay, etc. • Periodic surveys/interviews with shippers about the services provided by the region's carriers in the multimodal system **Projects (operations, build options)** • Access management • Improved incident management • VMS/GPS active (in cab) truck route management • Truck-only lanes, ramp meter bypass lanes, next generation ITS infrastructure for commercial vehicles • Road pricing, congestion pricing, managed lanes studies, pilots or deployment if appropriate • Rail track/yard improvements • At-grade rail/highway projects to eliminate rail/highway conflicts and increase rail functional capacity • Facilitate multiple shippers' combined shipments to meet railroad's operating plans • Increase enforcement of traffic/carrier regulations • Expand rest areas/better utilization of rest areas for extended truck rest areas, including smart truck parking • To improve workforce access to jobs, support Regional Transportation Options program, Transportation Management Associations, expanded transit service/vanpools, bicycle and pedestrian facility improvements in industrial/employment areas

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Freight plan goal	Key issues identified by stakeholders	Potential solutions/strategies
Better public understanding of freight issues RFGM Task Force: We must enlighten our region's citizens and decision-makers about the importance of freight movement on our daily lives and economic well-being.	Better coordination between freight system stakeholders in region Education of decision makers and public about importance of region's freight transportation system, including the economic relationship between freight and community sustainability	**Education and coordination** • Improve information exchange between public and private stakeholders via existing state, regional and local freight advisory groups • Improve analysis and communication of freight impacts on regional economy • Quarterly regional freight transportation system stakeholder roundtable • Annual state of regional freight report • Help local freight initiatives through providing strategic and technical assistance
Sustainable freight transportation system RFGM Task Force: We must ensure that our multimodal freight transportation system supports the health of the economy and the environment.	Regional and local air quality impacts from diesel emissions, which, if not addressed, will grow as freight volumes increase Marine freight movement impact on water quality and habitat (e.g., invasive species introduced through ballast water)	**Air quality** Promotion of existing programs such as diesel retrofit technologies, idle reduction regulations, transportation system management tools **Water quality** Support of regulations that address environmental quality in riparian areas **Other environmental** • Aggressively implement clean, green and smart best practices, as appropriate • Legislation to regulate and enforce ballast water release • Reduction of light sources and/or filtering or redirecting lighting • Proactive public outreach strategies • Performance monitoring and review following public and regulatory processes such as environmental justice mitigation, where appropriate

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Freight plan goal	Key issues identified by stakeholders	Potential solutions/strategies
Freight-sensitive land use planning RFGM Task Force: We must integrate freight mobility and access needs in land use decisions to ensure the efficient use of prime industrial lands, protection of critical freight corridors and access for commercial delivery activities.	Inadequate supply of industrial land well served by transportation infrastructure Incompatible land uses along rail lines and major truck corridors Incompatible land uses often adjacent to one another resulting in complaints about, and adverse impacts to, freight movement Inadequate areas for trucks to conduct off and on-street loading and unloading Competition between industrial and other uses for system capacity Truck deliveries to local commercial and neighborhood districts that are difficult due to narrow lanes/turning radii Growing noise impacts from truck, rail and air cargo operations in residential areas Limited truck parking to meet needs of drivers (hours of service limitations) Workforce access to industrial areas	**Planning and coordination** • Coordinate with land use planning efforts to ensure that current and future freight/industrial needs are addressed • Expand regional Brownfields programs to allow return of industrial land to industrial uses • Take advantage of Regional Freight Task Force experts to inform Metro planning activities, e.g., in creating better linkages between commodity flow data and employment projections in determining long-term land use and freight routes • Consider revising "regionally significant industrial land" designation to protect high value industrial areas • Use interchange management plans to protect capacity at key industrial areas • Support affordable housing with access to employment/industrial centers • Support enforcement of required full disclosure to property buyers adjacent to freight/industrial uses • Explore strategies where businesses co-locate in order to share resources (e.g. the local "resourceful use pilot") to conserve resources and use transportation system efficiently **Design and projects** • Prioritize infrastructure investment to support existing industrial areas • Develop neighborhood agreements between facilities and residential neighborhoods that balance freight and community needs • Create "quiet zones" for rail corridors. • Updating livable streets design guide to better incorporate truck movement and operations • Appropriate models of residential and commercial development should be planned for truck and rail corridors and areas adjacent to industrial sanctuaries to preserve the effectiveness of truck and rail corridors for industrial and freight use

Freight plan goal	Key issues identified by stakeholders	Potential solutions/strategies
Strategic transportation investments RFGM Task Force: We must create first-rate multimodal freight networks that reduce delay, increase reliability, improve safety and provide choices. RFGM Task Force: We must adequately fund and sustain investment in our multimodal freight transportation system to ensure that its businesses stay economically competitive.	Network barrier deficiencies such as weight and vertical clearance issues on bridges, at-grade rail crossings Existing capacity constraints in rail yards and sidings Road congestion on regional truck routes Main line rail congestion Expand types and amounts of funding for freight transportation infrastructure and programs Role of public sector in funding private operations Need for public-private partnerships to fund improvements Transportation investment decisions linked to economy Concerns about safe barge navigation in I-5/BNSF bridge area	**Project development and implementation (not all-inclusive)** • Implement RTP freight projects with focus on identified Task Force priorities, (see Appendix B) • Fill in gaps in truck route alternatives to interstate (e.g., parallel arterials for emergency detours) **Funding policy and partnering** • Expanded use of public-private partnerships to fund transportation system expansion • Expanded ability to invest public dollars in private facilities when improvements in those facilities result in public benefits • When funds aren't available for major system improvements, make incremental improvements to those facilities through Intelligent Transportation System and traffic demand strategies, access management and less-costly strategies • Common ground and linkages in the needs of different funding sources and the opportunities presented by them • Expanded types of programs and amounts of funding for freight transportation infrastructure (e.g., MTIP, STIP, gas tax indexing, user fee strategies) • Appropriate coordination with planning, political and advocacy groups, including Oregon delegation, OFAC, West Coast Corridor Coalition, etc., to ensure adequate funding for freight priorities • Regional Freight TAC/RFGM Task Force participation in any regional road pricing pilots or planning studies • Support regional ConnectOregon freight and goods movement projects

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10 THE FREIGHT ACTION PLAN – FROM GOALS TO IMPLEMENTATION

Section 9 of this Regional Freight Plan includes a "tool kit" of freight strategies that respond to a broad range of needs and issues clustered around the six goals articulated by the RFGM Task Force. Section 10 constitutes the regional freight action plan. Its elements have primarily been pulled from the tool kit and elaborated.

The action items described below are the result of review with the Regional Freight and Goods Movement Task Force and the Regional Freight Technical Advisory Committee. Many of the actions described are foundational activities that constitute the glue holding the regional freight action plan together – planning, coordinating, research and policy making that take place on both an ongoing and cyclic basis. Some of the action items below are quite well developed; others will require elaboration during fall 2009, for inclusion in the spring 2010 RTP adoption process. The list of efforts will need to find staff, time and funding resources, whether that includes Metro, members of the freight, goods movement and economic development community, or other agencies or organizations.

In 2008, the RFGM Task Force developed a long list of prioritized freight projects submitted for consideration as part of the July/August 2009 RTP project solicitation process. These are included in an appendix to this plan and are also included by reference as part of Action F1.

In addition, a handful of important, achievable near-term items are included and recommended for implementation within this RTP cycle of 2009-2013, to support the approved regional freight and goods movement goals. Although circumstances and regional priorities may shift, the task force believes that a four year period is short enough to be relevant to the freight community, yet long enough for activities to be programmed, refined and deployed, as described in this section.

Between September and December 2009, this section will be winnowed into a smaller selection of important, achievable near-term actions. It will be refined to identify who does what and detailed to include a timeframe for implementation, and necessary staffing and funding amounts and sources for selected efforts.

The nearest-term actions that eventually are adopted by the task force and Metro Council and which also fall within Metro's purview will be incorporated, as appropriate, into Metro's unified planning work program for FY 2010-2011.

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Goal A. Multimodal system planning for efficient freight mobility and access

This goal, as well as its related actions, speaks to Metro's mission as the metropolitan planning organization for the Portland metro area. Actions described below will give us better freight and goods movement data and will guide planning efforts to ensure that freight considerations in mind and to implement a multimodal plan that facilitates freight movements required for a vibrant regional and state economy.

A1: Maintain private sector cooperation with Metro planning by forming a sustainable freight, jobs and economic development bench

The current Regional Freight and Goods Movement Task Force has been a great asset in preparing the Regional Freight Plan. Its mission now accomplished, the task force will sunset.

However, Task Force members find that continued private sector input in some form to Metro would be valuable and recommend that Metro hold periodic meetings to maintain engagement with private sector representatives. They also believe that, going forward, the group could be broadened across a more diverse regional cross section that would include multimodal carriers, shippers, producers and business, members of the economic development community and facility operators. Metro freight staff suggests that subsets of members drawn from the "bench" could be formed based on changing circumstances and regional issues, on an *ad hoc* or a more formal basis as needed, to focus on specific projects, corridors or topics that involve freight within the region. The bench may be thought of more broadly as a think tank, a speakers' bureau, a listening post and a sounding board. In short, this wider group of stakeholders constitutes a deep bench of regional freight and business acumen that will serve Metro well to keep handy. The bench would necessarily overlap with other regional groups such as the Portland Freight Committee, and Metro staff would work to coordinate freight initiatives of common interest.

Areas where members of the proposed bench could provide value to Metro include:

Implementation of the Regional Freight Plan

- Review, assist, comment, contribute and/or lead various elements of the action plan
- Contribute to future freight plan refinements and updates

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Regional planning efforts

- System planning, modeling and analysis
- Freight access/industrial land aspects of land use planning
- Input into selecting and carrying out regional corridor refinement plans
- Metropolitan Transportation Improvement Program (MTIP) funding and project selection processes
- Provide input into ConnectOregon criteria and selection
- Development of analytical tools, data bases, performance measures and policies
- Prioritization of investments and projects with a freight and economic development perspective
- Assisting localities with transportation system plan (TSP) freight components

Freight and goods movement, jobs and economic development

- Develop policy and business support for transportation funding initiatives, including possible fees or pricing strategies
- Define economic development context and goals for freight and goods movement policies and investments
- Support for broad regional prosperity and environmental justice with an economic development strategy

Sustainability

- Greening freight and industry while promoting sustainable jobs and economic growth
- Greenhouse gas and other environmental impact reduction strategy development

Public education and stakeholder engagement

- Participate in a Speakers' Bureau on freight, goods movement and economic development for use by local and regional groups

A2: Continue baseline freight and goods movement policy and technical coordination

In addition to maintaining Metro's monthly meetings with the Regional Freight Advisory Committee, Metro's freight program staff will participate on effective local, state and national freight-relevant organizations, such as the Portland Freight Committee, the Columbia Corridor Association, the Columbia River Crossing freight working group, ODOT's statewide freight planning committees, the Oregon Freight Advisory Committee, the West Coast Corridor Coalition and the Bi-State Coordinating Committee.

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A3: Continue baseline freight and goods movement data collection and reporting activities

Keeping current in an environment that is volatile, in an era which is increasingly unpredictable, is as challenging as it is essential. This recommended action ensures needed support for ongoing data collection and necessary or desired expansions to existing efforts, such as PORTAL, ensuring updates to the commodity flow matrix, continuing to seek more detailed freight and goods movement flow data at the regional level, etc. Freight and business stakeholder interviews should be held periodically, to provide updates to the "cost of congestion" data and to provide early detection of problems and opportunities affecting the flow of goods and our regional economy. Collecting data sufficient to support other tasks, including Action C3, will mean the region will be able to assess a wide variety of outcomes, including jobs creation, value/tons moved, economic impacts, cost of delays, emissions, energy use, neighborhood impacts and others associated with freight movement. In addition, new goals and programs for greenhouse gas reduction, and possibly a regional congestion pricing pilot program, may add to or change regional data needs.

A4: Ensure that freight needs are included in local and regional planning efforts

Metro freight staff and the Bench members will be responsible to deliver the freight and goods movement and economic sustainability perspective during development and refinement of corridor plans, transit and land use planning, etc. This effort could include development of a comprehensive freight "check-off" list for use in planning or project development.

A5: Develop and conduct freight and goods movement research program

In general, freight is a less well understood component of the regional transportation system; many regions are struggling to improve and integrate such tools as basic freight data, performance measures and analytic and modeling tools. The Regional Freight Plan distinguishes between the specialized needs for moving industrial/agricultural commodities through and beyond the region and the day-to-day needs of urban goods movement within and between 2040 centers. Yet this distinction requires the use of analytical tools which can shed light on those two categories of goods movement within our region. It also requires close coordination between Metro and ODOT to ensure that the statewide model addresses regional needs.

In order to develop and/or refine freight-relevant analytical tools that can help Metro and its partners better predict, manage and invest for freight and goods movement, the task force recommends that Metro develop and nominate a program of applied research. To accomplish that, Metro will coordinate a research agenda between in-house research/modeling units and OTREC, PSU or other appropriate research institutions and Metro's freight partners. Possible elements of a research program could include:

- convening a Regional Freight Analysis Improvement Symposium to share best freight modeling practices and ideas for improving Metro's model at a reasonable cost, with the least intensive data requirements

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- continuing to develop the regional truck model
- developing explicit linkages between improvements to freight components of Metro's regional model and the Oregon statewide model, focusing on taking intercity flows to enhance the regional distribution component
- more fully incorporating freight trip time reliability performance measures into Metro's transportation and land use planning and project prioritization criteria, no later than for the 2013 RTP cycle
- pursuing Transportation Research Board research programs, such as C15: Integrating Freight Considerations into Collaborative Decision Making for Additions to Highway Capacity
- investigating predictive risk analysis, economic models and/or manual estimates of monetary benefits based on predicted travel time savings, incident clearance, enforcement, etc.
- finding and evaluating solutions for reliability and economic impacts for next RTP
- seeking funding for desired elements of a research program through existing and new programs, as appropriate

A6: Coordinate research, modeling and planning with Oregon Department of Transportation (ODOT)

Coordination with ODOT is sufficiently important to be called out specifically. All efforts in recommendation A4 should include ODOT as a partner. Metro staff will work with ODOT's freight mobility manager to consult and coordinate with respect to the statewide freight plan as well as regionally recommended changes to the National Highway System/National Network freight designations.

Goal B. System management to increase network efficiency

This category comprises the first step to improved freight and goods movement operations on the existing system and includes preservation, maintenance and operations-focused projects and associated planning and coordinating activities. It focuses on using the system we have more effectively.

B1: Better define, preserve and enhance freight function of existing system

In order to fill gaps and preserve functionality of existing freight system, including needed parallel truck routes, the task force recommends that Metro further examine and clarify functions of essential truck route alternatives to the interstate system. In addition to normal access functions, freight route alternatives are needed for emergencies, construction or congestion, and system flexibility and redundancy for future mobility patterns. The role, use and need for parallel arterials must be better understood as part of a wider and more effective system management effort.

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B2: Assess need to develop and fund better incident management and traveler information

Real-time travel information (focused on truckers) to avoid incidents and find detours is increasingly important, particularly to improving reliability performance. Incident clearing resources and regionally coordinated efforts to manage incidents must be sufficiently funded. This action item would direct attention on deficiencies to be addressed, if they exist.

B3: Continue support for use and expansion of ITS system management tools

Begin to address need for 24/7 congestion mapping for the multimodal freight system, among other needs. Support PORTAL's program of real-time traffic delay; provide VMS/GPS active (in cab) truck route management, electronic routing and signage.

B4: Support workforce access to the region's industrial jobs through Metro RTO/TDM programs

The task force recognizes the need for Metro's transportation demand management programs and supports non-auto mobility choices for workers to get to their jobs. If options are limited in certain industrial areas, deficiencies will be highlighted for the region to address. Efforts to improve alternative transportation options for workers will include partnering with TriMet and other service providers to ensure good access to high employment areas.

Goal C. Public understanding of freight and goods movement issues

To gain public support for projects and funding of freight initiatives, and to help the public and elected officials make wiser land use decisions, a program of public education is required.

C1: Establish stakeholder outreach program

Make use of an ongoing relationship with the freight community to provide topical and informative briefings to Metro's various audiences. This could be led by members of the expanded Bench and include a speakers' bureau service to groups within the region.

C2: Provide support for topical fact-based fact sheets, white papers, guest columns and editorials

Apart from any advocacy, Metro's freight staff would coordinate with technical resources within and outside Metro to help improve the analysis and communication of freight impacts on the regional economy and environment. Coherent, logically argued and factually based analysis of freight and goods movement problems, or investments under consideration within the region, are key to gaining public understanding. Creating stories that can carry technical messages to a lay audience is also necessary. The task force recommends using Metro's analytic capability in support of appropriate, balanced responses to news and editorials, in order to clarify and highlight freight, goods movement and economic development issues. A key topic to articulate better is the link between freight and goods movement investments and environmental justice

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(reducing hot spot congestion and pollutants) and economic equity (good, family wage jobs in one of the few sectors that do not always require higher education).

C3: Create "state of freight" report for the region

Metro staff will coordinate with its stakeholders to develop an outcomes-based report that summarizes the most salient freight, goods movement and economic development issues in terms of regionally vetted benchmarks and performance measures. This could be a piece that is updated on a regular basis, which could be used to improve public and policy-maker awareness of regional freight issues. The report would highlight traditional and emerging industries' mobility and access needs during a challenging and volatile economic period.

C4: Coordinate with and include the economic development community

As part of expanding the current Task Force into a broader sustainable freight, jobs and economic development bench, Metro will reach out to the economic development community, including the Portland Business Alliance, Project Greenlight, the Columbia Corridor Association, the East Side Economic Alliance, West Side Economic Alliance and others. Metro staff will work with these partners to support development of an economic development strategy for the region that is coordinated with infrastructure investment.

C5: Host Operation Lifesaver training session

This action involves sponsoring a "train the trainer" session to disseminate Operation Lifesaver's latest information and techniques to teach the public, especially young people, about how to be safe around trains (both freight and passenger).

Goal D. Sustainable freight transportation system

This category of issues and solutions deals with traditional nuisance and hot spot issues associated with "smokestack and tailpipe" problems, but it also recognizes the many current contributions and new opportunities for the evolving green freight community to be part of the larger environmental and economic solution set required in these times, including greenhouse gas curtailments.

D1: Provide useful "green freight" links from Metro's freight program webpage

This would be a simple web resource that could direct our regional stakeholders to useful local, state and national programs and resources.

D2: Establish a regional "green freight, goods and jobs" roundtable series

To help identify what emission and greenhouse gas reductions can be expected from regional freight and goods movement activities, and to improve the effectiveness and reduce business impacts of such reductions, Metro will hold one or more "green freight, goods and jobs" symposia or roundtables. These will be designed to share best practices and discuss funding for effective freight-related environmental programs. Include PDC clusters in our thinking, for example, the electric vehicle cluster. Examine small business strategies for sharing space,

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industrial processes, using waste streams, etc. This venue would also provide a conduit for technology transfer, the sharing of research or practical experience and similar activities.

D3: Pursue greenhouse gas and other pollutant reduction policies and strategies for freight

Coming out of item D2, and drawing from other initiatives within and beyond the Metro region, staff will explore and define potential environmental benefits in the following areas:

- procedures for identifying greenhouse gas impacts of freight and evaluating the net greenhouse gas impact of freight projects
- programs, policies and projects for cost-effective net reduction of greenhouse gas and other pollutants, such as industrial symbiosis (businesses sharing resources and possibly using neighbors' waste products in their processes); and
- leveraging and possibly expanding diesel retrofit programs, promote idle reduction regulations, etc.

Goal E. Freight-sensitive land use planning

Quality of life begins with a job. With that fact in mind, this category targets land use planning and design issues that can affect the ability of freight, goods movement and industrial uses to live harmoniously with their neighbors. Freight-sensitive land use planning includes everything from long-range aspirations for freight and industrial lands to short-term and smaller scale design and access issues.

E1: Develop strategies to protect existing supply of industrial land

Staff will identify lessons learned from previous efforts in the region and look at the most effective ways to protect high-value industrial land and prioritize and protect the value of freight investments to serve such areas. This action will also focus on the economic impacts of failing to preserve and serve industrial lands. It would be tied in with action C4, above.

E2: Examine need for additional industrial land

The region must ensure a continued adequate supply of appropriate industrial land. In addition to internal coordination between Metro planning and land use staff, and coordination with local jurisdictions and industry sectors, an understanding of how the City of Portland succeeded in this area could aid the larger regional effort to meet future industrial land needs.

E3: Provide freight perspective to revision of Metro's livable street design guide

The devil is truly in the details of neighborhood provisioning (delivering to retailers and restaurants), designing for utility and street access for oversize construction equipment and providing needed arterial redundancy for freight and goods movement, all of which can impact local streets and communities. However, all these things are also critical for the very vitality we value in our region. As Metro updates its 2002 edition of Creating livable streets: Street design

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guidelines for 2040, Metro's freight program staff will coordinate with regional stakeholders to ensure that previously recommended freight considerations are kept in mind and incorporated into any revisions. This action will also require coordination with local jurisdictions (especially with the City of Portland's staff and its Freight Master Plan elements such as the Working Harbor study) to integrate finer grained land use and transit stop issues into the regional framework.

This update will begin in fall 2009. Metro freight staff will provide direction on appropriate freight and goods movement representation on the technical advisory committee that will oversee the revision of the guidelines and will develop "lessons learned" based on recent regional case studies.

E4: Explore and develop regional industrial sustainability and co-location strategies

This action item (which also supports Goal D, above) directs Metro staff to assist its freight/goods movement and agency partners in exploring co-location of business to share resources (heat, energy, transportation, infrastructure) and use the transportation system efficiently. Metro could consider partnering with the Zero Waste Alliance and the Pollution Prevention Resource Center to further their existing efforts in this area. Further exploration of "freight villages" could be included. One of the semi-annual bench meetings could be devoted to national and international best practices in this important emerging area.

Goal F. Strategic transportation investments

This category of solutions focuses on planning and building capital projects and developing the funding sources, partnerships and coordination to implement them. It includes the list of regional freight project priorities attached as Appendix B to this report, identifying a wide range of projects from preservation and maintenance to major facility construction.

F1: Work toward implementation of the RTP freight priority projects

Bench members will continue to advocate for the prioritized list of regional freight projects within the approved RTP project list. This will include supporting funding needs and initiatives to build desired projects. In general, consistent with the message presented throughout this action plan, major investments for freight-oriented preservation, management and "build" projects should focus on:

- more carefully evaluating what, where and when the freight problems occur (noting, e.g., that they do not always coincide with the commute peaks)
- addressing core throughway system bottlenecks with substantial freight impacts, to improve truck mobility in and through the region. Examples include the Columbia River Crossing influence area, the I-5/I-405 loop with connection to US 26, 99W through Tigard, and the I-5 corridor south to Wilsonville
- improving and protecting the throughway interchanges that provide access to major industrial areas, particularly: I-5/Marine Drive and I-5/Columbia Blvd serving the

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Columbia Corridor and Rivergate industrial areas, I-205/Hwy 212 serving the Clackamas and Milwaukie industrial areas, and I-205/Airport Way serving Portland International Airport and east Columbia Corridor industrial areas

- improving arterial connections to current and emerging industrial areas. Examples include Sunrise Corridor phased improvements and last mile local industry connectors, e.g., Columbia/Cascade River District projects, including the I-84/257th Avenue Troutdale interchange and SW 124th from Tualatin-Sherwood Road to the I-5/North Stafford interchange
- ensuring safe transport of hazardous loads with a regional routing strategy
- looking beyond the roadway network to address critical marine and freight rail transportation needs such as completing the Columbia River channel deepening and upgrading main line and rail yard infrastructure

F2: Strengthen the tie between project prioritization and the framework for freight performance

Metro recognizes that, while autos and trucks must share the same network, auto trips can more easily be diverted off the highway system via a number of satisfactory existing or planned alternatives, including high capacity transit, a supporting bus network, and regional and corridor bicycle and pedestrian systems in various stages of completeness. Thus, the dependence of trucks and truck-related commerce on the highway system should be recognized as a factor in roadway project prioritization. This action item relies in part on improving the understanding and rigor of freight-related performance measures within Metro's modeling protocols: are we measuring what is relevant to know about freight? In addition, this action depends on technical staff and the freight/jobs/economic development community's ability to articulate fact-based net benefits of strategic goods movement and business-friendly investments and to compete effectively for regional dollars and attention within the decision-making structure of their respective local jurisdictions.

F3: When appropriate, focus regional funds on large capital projects

Based on solid performance measures and other indicators of need and effectiveness fully vetted through regional planning processes, it makes sense in some cases for the region to focus its funding on one large project. In such cases, freight staff and the Bench would work to identify funding sources for identified projects.

F4: Make strategic incremental improvements when large capital projects are unfunded

When funds are not available for major system improvements, make incremental improvements to those facilities through less costly strategies using tools such as intelligent transportation systems, transportation system management and transportation demand management. Also, phase larger improvements, or ensure that projects move along through completing preliminary engineering, right-of-way acquisition or other steps toward construction. Projects need to be in the pipeline should funding become available.

F5: Ensure that unfunded freight projects are on an aspirational or illustrative RTP project list

The region should be prepared to ensure that unfunded projects could at least be considered if unusual, one-time, or new funding sources became available (e.g., American Recovery and Reinvestment Act of 2009)

F6: Develop policy and evaluation tools to guide public investment in private freight infrastructure (notably rail projects)

More clearly define private and public sector roles, including incorporation of the identified state role in freight infrastructure planning and investment that is emerging from the statewide freight planning effort. This planning and analytical effort would answer the question "what are we trying to do with our investments?" And it would yield practical and usable performance measures and investment guidelines for public development of freight assets or services, when they are wholly or partially private. It would also help to correctly phase developments, based on public benefits, and identify equitable funding strategies. Rail/roadway grade separation projects and a shortline investment strategy could be key focus areas for such policy development.

Public investment could be appropriate, for example, when it:

- leverages private investment
- allows progression of a needed project that would otherwise not occur for a relatively modest investment
- involves a facility's yard or terminal but has regional impacts
- pays for intermodal links
- creates new passenger capacity by solving freight bottlenecks
- preserves or creates jobs, generates wealth and taxes
- allows for more competition, modes or choices to shippers, businesses or consumers
- increases overall benefits more than it improves any single mode or facility

Note that private investment in public infrastructure—apart from development fees—should also be part of this policy discussion.

F7: Develop regional freight rail strategy

Many hopes are pinned on the potential for regional freight rail to accommodate a greater share of the future demand for goods movement capacity. However, there is a lack of depth in understanding from an operational or investment perspective how that potential could be realized. For example, the I-5 Trade and Capacity studies indicated that there was adequate capacity for the existing level of passenger train frequency along the north/south corridor. However, that capacity would be at the expense of freight train operations for both UP and

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BNSF region-wide, create hot spot congestion, minimize the possibility of growing freight rail commerce and degrade freight rail service throughout the Pacific Northwest, resulting in more trucks on the region's highways. The Portland metro region is committed to a variety of passenger rail modes and must reckon with the interactions with the freight rail system.

In addition, regional demand and support for pedestrian and bicycle trails frequently puts pressure on existing freight rail capacity and operations. Issues of freight rail capacity, liability, safety, cost and efficiency must be balanced with other regional goals, based on common factual understanding of the underlying issues.

This recommendation contemplates a consultant-assisted technical regional rail study that would provide a foundation for developing the policy framework described in F6, above, and could incorporate that work as part of the study. Development of the strategy could include evaluation of public ownership and control of current or potential future passenger rail routes within the region or state, as part of a regional freight management strategy.

In addition to Metro's local jurisdictional partners, both Class 1 railroads, the regional short line operator, Tri-Met, ODOT Region 1, ODOT Rail Division, the Ports and major shippers/customers would be critical stakeholders.

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11 CONCLUSION

The Portland metro region has a vibrant and flourishing economy that is more diversified than ever before. Industry has historically located in the region to take advantage of regional and global connections via pipeline, rail, marine, aviation and highway infrastructure. Today, the region is both an international gateway for trade and a hub for distribution and warehousing activities.

Policies and programs designed to take advantage of the opportunities hidden in the current economic downturn should begin to be refined and implemented to ensure that the Portland metro region is flexibly and securely positioned for the future of freight and goods movement. However, in addition to regional policy and program development and implementation, concrete freight-related projects ranging from modest system management fixes to multi-year construction projects must be built when they are needed, to ensure that the goals of the Regional Freight Plan are met.

The private sector portion of the goods movement community has been making great strides in adopting sustainable technologies and wringing efficiencies out of its portion of the goods movement system. The public sector must also find ways to determine the effectiveness of a variety of freight-related policies (e.g., river channel policies), programs and investments to achieve the maximum benefit for the goods movement network, particularly during a time of uncertain funding for transportation.

Maintaining the region's historic preeminence as a goods movement and industrial hub must remain a regional priority; our economic future depends on it. Investment in smart, strategic and green freight system improvements now can help the region secure not only its economic future by increasing its share of family wage jobs but also support development of a green economy that is the Portland area's trademark.

The region's goods movement system must improve and adapt if the region is to maintain its economic competiveness in the global economy and its status as an international freight gateway. Immediate action is required to meet the economic opportunities of the 21st century. This Regional Freight Plan highlights the key issues for the regional freight transportation system and suggests policies and investments to address them.

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APPENDIX A: STAKEHOLDER INTERVIEWS – NEEDS AND ISSUES

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Regional Freight and Goods Movement Task Force

Summary of 9/27/06 Issues and Needs Discussion

Industrial-Employment Lands Accessibility
Improve accessibility to major roads
Access to industrial and Port lands from interstate corridors - need to protect the arterial truck routes
Maintenance of good truck corridors between major industrial and commercial centers and between those centers and the primary freight systems (interstates and major regional highways, ocean ports; rail centers for container transload)
Local businesses/constituents need enhanced accessibility to and from the Portland/I-5 multimodal freight infrastructure hub. Limited routes also congested by commuter demand, make freight movement time delays extensive and unpredictable. No or very limited choices of routes
Protect truck corridors connecting industry to interstate system - I-5 & I-205 to Port and Airport
Improve access for trucks to major corridors
I-84/257th interchange - serve freight and industrial districts
99W Bypass
Need better route west to south than Hwy 26 through downtown Portland
Improve access between Port & rail mainline
Enable protection of truck corridors connecting industrial districts
Congestion and Capacity
Today's transportation system does not have the capacity to move freight efficiently or safely. Additional capacity is needed. Without additional capacity, existing shippers will leave (with associated jobs) and growing the industrial job base will be curtailed.
Need infrastructure for growth
Interstate congestion, especially at chokepoints and bottlenecks such as the Interstate Bridge
Relief of congestion on I-5 form Tualatin to Wilsonville, I-205 and Hwy 217
Congestion due to long haul trucking - does it help our region, is there a way to highway congestion through multimodal shipping?
Issue with congestion as it equates to time
Real time delivery of freight to and from facilities - import and international export
Freeway congestion in peak hours
Trucks and Street Design
Access for 28' semi-trailers in urban areas
For local delivery, ensure quality street and pedestrian districts with effective delivery - parking and loading
Main street design
Community Impacts
Where do you put it? How do you balance impacts on communities and environment with economic benefits
Transportation Financing
Increase types and amounts of monies for transportation infrastructure improvements
Steer public/private funding of transportation projects
How to pay for new capacity - wt mile tax has been an issue for 20 years - need different means to finance improvements
Plan needs to be financially constrained - identify elements that can be implemented over time
Who pays for transportation investments needed to move freight - public-private issues
How do you pay for it?
Tax breaks for instructure growth - feds
Policy changes react to market changes in real time = private land use investments mismatched with public infrastructure investments
Balance rail vs. urban housing growth
Promote industrial land use adjacent to the waterways that would encourage distribution centers locating next to waterways - this could help take some traffic off the roadways
Ensure land for heavy industrial use along rail corridors - land use conflict with goals for commuter rail land use
Diversification of private facilities nationally

Marine
Safer navigation through I-5/BNSF bridge area
Maintenance (and rehab) of federal waterway system - maintenance dredging as needed; replacing lock gates before they fail
Operations and Maintenance
Faster responses to incidents and crashes is also needed
System needs to be predictable - congestion is predictable and repeats, incidents cause excess delays, must be cleared quickly to maintain schedules
Increase trucking parking
Principal freight route arterials need to have signals synchronized to minimize stops, thereby decreasing air and noise pollution
Truck loading zones use by construction crews
Balance passenger and freight movements
Truck parking
Better access between the Port and I-5, particularly for trucks, they require sequence signals with length between intersections
Commercial garbage franchising
Rail
Encourage rail carriers to improve expedited rail service
Rail capacity including preservation of short line railroads
Shorten time constraints on intermodal and rail shipments
Improve short and long haul rail delivery - can this potentially effectively reduce (road) congestion?
We need longer tracks in rail yards. Class I railroads have indicated that they prefer to move trains of 100 to 110 cars - however, many of the tracks in the area are only long enough to hold 50 - 60 railcars
Need to move unit trains in and out of the congested metro area promptly and efficiently
Rail capacity issues - yards, short lines, double-track main lines, sidings - who pays and how?
Business Environment
Distributors - direct to customers with e-commerce, seeing 10-15% annual growth
Growing delivery of goods to urban centers and corridors
Need the transportation stakeholders to cooperate with each other
Growth of e-commerce and home delivery changing shipping patterns and increasing truck volumes
We have plenty of freight coming into the region but need more freight to ship out of the region - drives up costs to get loads delivered
Educated employees

APPENDIX B: REGIONAL TRANSPORTATION PLAN FREIGHT PRIORITIES PROJECT LIST

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The following Table represents the 2008 Task Force's freight priority list (Table 4.3 from a report, *Investing in Freight System Infrastructure*, April 2008). Note that the list was developed in 2007-2008, and has not been updated. The list begins with those projects that ranked highest at the time the list was finalized. The left-most column has been added to identify whether the project is in the currently adopted Federal RTP Status (indicated as yes/no).

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
High Regional Priority				
Yes	10000	Linwood/Harmony Rd./ Lake Rd. Overcrossing/ Intersection	Add NB right turn lane, add EB right turn lane, add WB left turn lane and grade separate UPRR.	$20,000,000
Yes	10357	Channel Deepening	Deepening the Columbia River channel to 43 feet between mouth of Columbia River and Portland/Vancouver Harbor.	$150,573,000
Yes	10865	New I-205 NB on-ramp at I-205/Airport Way interchange based on I-205/Airport Way Study	New I-205 NB on-ramp at I-205/Airport Way interchange based on I-205/Airport Way Study.	$27,200,000
Yes	10866	Improve I-5/Columbia River bridge (Oregon share)	Improve I-5/Columbia River bridge (Oregon share).	$50,000,000
Yes	10867	I-5: Conduct preliminary engineering and environmental work to modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter	Conduct preliminary engineering and environmental work to modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter.	$30,000,000
Yes	10874	I-5: Construct new roadway between Columbia Blvd and Denver Ave near Argyle Street; replace Denver Viaduct; Relocate/reconstruct and signalize Denver/Schmeer Rd intersection	Construct new roadway between Columbia Blvd and Denver Ave near Argyle Street; replace Denver Viaduct; Relocate/reconstruct and signalize Denver/Schmeer Rd intersection.	$46,000,000
Yes	10877	Modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter (Greeley ramp improvements in financially constrained system). I-84/I-5 interchange would include two phases (phase 1 is project #390, phase 2 is #427, and phase 3 is #4	Modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter (Greeley ramp improvements in financially constrained system). I-84/I-5 interchange would include two phases (phase 1 is project #390, phase 2 is #427, and phase 3 is #4.	$521,000,000
No	10883	I-5: Acquire right-of-way	Acquire right-of-way.	$20,000,000
Yes	10884	I-5/I-84 Interchange: Acquire R-O-W	Acquire right-of-way.	$30,000,000
No	10893	Improve I-5/Columbia River bridge (Oregon share)	Improve I-5/Columbia River bridge (Oregon share).	$550,000,000
Yes	11091	Columbia Blvd./I-205 Interchange: SB On-Ramp Improvement	Expand the on-ramp to three lanes, including for truck/HOV	$750,000
Yes	11121	I-5 Delta Park Phase 1	Widen I-5 to 3 lanes, realign ramps	$73,079,000
No	20010	Install High Speed crossovers at North Portland Jct.	Replace existing 10mph crossovers at North Portland Jct. with high speed turnouts. If necessary, construct connection between Peninsula Terminal Co and BNSF A&B yards at Terminal 6 and eliminate interchange	$15,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			connection at North Portland.	
No	20012	Expand Controlled siding at East St. Johns	Reconstruct/extend East Pass at East St. Johns to serve as third main between Willamette Draw and Columbia Slough (8300'). Install eastward crossover at Willamette Draw from main one to main two.	$10,000,000
No	20013	North Portland Junction	Upgrade railroad with revised crossovers, centralized traffic control tie-in and increased turning radius.	$9,160,000
Medium-High Regional Priority				
Yes	10001	Johnson Creek Blvd. Interchange Improvements	Add loop ramp and NB on-ramp; realign SB off-ramp.	$9,800,000
Yes	10002	Johnson Creek Blvd. Improvements	Widen from three to five lanes and widen bridge over Johnson Creek.	$40,790,000
Yes	10020	Clackamas County ITS Plan	Deploy traffic responsive signal timing, ramp metering, traffic management equipment for better routing of traffic during incidents along the three key ODOT corridors - I-205, I-5, and 99E. Install signal controller upgrades and update county ITS plan.	$6,500,000
No	10105	224 Grade Separation	Preferred approach would be burial of 224, with at least one overcrossing (Harrison).	$100,000,000
No	10111	North Industrial Access Improvements (OR 99-E)	Add turn pockets and/or turn lanes. Reconfigure access points. Improve internal circulation to optimize access points.	$10,000,000
No	10115	Sunrise project ROW Preservation	Acquire right-of-way.	$100,000,000
No	10119	Hwy. 213 - Phase 2	Add through lane in both directions.	$25,000,000
No	10139	I-205 Climbing Lanes	I-205 Abernethy Bridge Widening.	$20,000,000
Yes	10154	Wilsonville Rd./I-5 Interchange Improvements - Setback Abutments & Widen Wilsonville Rd.	Provide additional left-turn lanes, setback abutments, improves signal synchronization, fixes sight distance problems, and provides for enhanced bike/pad safety.	$11,000,000
Yes	10213	Airport Way, NE (I-205 to NE 158th Ave.): ITS	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$278,251
Yes	10219	Argyle on the Hill, N Columbia to N Denver Ave.	New N Argyle street connection, west of I-5.	$11,773,032
No	10237	Southern Triangle Circulation Improvements, SE	Improve local street network and regional access routes in the area between the Powell/12th, Willamette River,	$2,887,500

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			railroad mainline and Hawthorne Bridge. Improve freeway access route from CEID to I-5 SB via the Ross Island Bridge.	
No	10239	11th/12th/Railroad Crossing, SE (West of Division): Intersection Improvements	Reconstruct intersection to upgrade traffic signalization and establish bike and ped. routes.	$400,000
Yes	10336	Alderwood/Columbia Blvd/Cully, NE: Intersection Improvements	Reconstruct intersection to provide left turn pockets, enhancing turning radii, and improving circulation for trucks serving expanding air cargo facilities south of Portland.	$1,460,000
No	10346	Marine Dr, N/NE (Portland Rd. to 185th): ITS	CCTV at N Portland Rd. Changeable message signs at Portland Rd, Vancouver, and 185th.	$170,000
Yes	10366	Alderwood Rd. and Cornfoot Intersection Improvements	Add signals and/or improve turn lanes at Alderwood Rd/82nd Ave, Alderwood Rd/Cornfoot Rd, AirTrans Way/Cornfoot Rd.	$2,206,000
Yes	10369	Leadbetter St. Extension/Overcrossing	Complete Leadbetter St. loop to Marine Dr. (Pacific Gateway/T-6 intersection) and construct road bridge over rail line.	$11,203,600
Yes	10375	Cathedral Park Quiet Zone	Address rail switching noise related to the Toyota operations at T-4 by improving multiple public rail crossings in the St. Johns Cathedral Park area.	$5,198,900
Yes	10378	T-6 Internal Overcrossing	Construct an elevated roadway between Marine Dr. and Terminal 6.	$3,649,084
Yes	10379	Marine Dr. Improvement Phase 2	Construct rail overcrossing on Marine Dr.	$13,644,200
Yes	10393	Replace RR Over-crossing on 223rd Ave.	Reconstruct railroad bridge on 223rd Ave, at I-84 to accommodate wider travel lanes, sidewalks and bike lanes.	$7,000,000
Yes	10394	Replace RR Over-crossing on 223rd Ave.	Reconstruct railroad bridge on 223rd Ave, 2000' north of I-84 to accommodate wider travel lanes, sidewalks and bike lanes.	$7,000,000
Yes	10410	Broadway Bridge Rehabilitation	Rehabilitate mechanical system, approach structure, corrosion control, and phase 1 seismic.	$22,700,000
Yes	10414	Sellwood Bridge Rehabilitation/Replacement	Implement results of alternatives analysis.	$25,100,000
Yes	10493	181st Ave. Sandy to I-84	Add southbound aux lane & widen RR overcrossing.	$827,659
Yes	10556	Tualatin-Sherwood/Boones Ferry Intersection	Grade separate Tualatin-Sherwood/Boones Ferry intersection	$25,000,000
No	10588	Grahams Ferry Rd Improvements	Widen Grahams Ferry Rd to 3 lanes, add bike/pedestrian connections to regional trail system, and fix undersized	$28,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			railroad overcrossing.	
No	10598	I-5/99W Connector Related Arterial Improvements	Improve arterial roads to enhance the function of the I-5/99W Connector.	$50,000,000
No	10599	Hwy. 217/72nd Ave. Interchange Improvements	Complete interchange reconstruction with additional ramps and overcrossings.	$19,537,000
Yes	10600	Hwy. 26/Shute Interchange Improvements	Add westbound to southbound loop ramp, additional northbound through lane and relocate Jacobsen intersection.	$29,272,000
Yes	10674	Oregon-Tonquin Intersection & Street Improvements	Intersection improvements (consider roundabout) on Oregon at Tonquin Road; sidewalks and bike access through the intersection.	$1,945,000
No	10675	Adams Ave Signal & Interconnect on T-S Rd.	Install traffic signal at Adams Ave. and interconnect the signals along T-S road between Cipole and Borchers.	$1,875,000
No	10734	I205 SB - I5 SB	Merge lane to I-5 south.	
Yes	10751	Hwy. 217 Overcrossing	Realign Hunziker Road to meet Hampton Street at 72nd Ave. and removes existing 72nd/Hunziker Road intersection.	$9,635,000
Yes	10767	72nd Ave. Intersection Improvements	Southbound right turn lane, northbound right turn overlap at Hwy 99W and 72nd; Southbound or Eastbound right turn lane at 72nd/Hampton/Hunziker.	$2,000,000
Yes	10770	Hwy. 99W Intersection Improvements	Provide increased capacity at priority intersections, including bus queue bypass lanes in some locations, improved sidewalks, priority pedestrian crossings, and an access management plan, while retaining existing 4/5-lane facility from I-5 to Durham Road.	$19,669,000
Yes	10869	Sunrise Project: Construct new highway facility from I-205 to 122nd and interim connection to 122nd Ave as defined by supplemental EIS	Construct improvements as defined by supplemental EIS.	$116,000,000
Yes	10870	I-5/99W Connector Phase 1: Conduct study, complete environmental design work and NEPA for I-5 to OR-99W Connector and acquire ROW	Phase 1: Conduct study, complete environmental design work and NEPA for I-5 to OR-99W Connector and acquire ROW.	$100,500,000
Yes	10872	Add lane: SB I-205 to SB I-5 interchange ramp and extend acceleration lane and add auxiliary lane on SB I-5 to Stafford Road.	Add lane to SB I-205 to SB I-5 interchange ramp and extend acceleration lane and add auxiliary lane on SB I-5 to Stafford Road.	$9,700,000
Yes	10875	OR 217: Braid OR 217 ramps between Beaverton-Hillsdale Hwy. and Allen Blvd. in both directions.	Braid OR 217 ramps between Beaverton-Hillsdale Highway and Allen Boulevard in both directions.	$79,600,000
Yes	10876	I-84: Extend Halsey exit lane to I-205 NB exit	I-84 Lane Extension: Halsey to I-205 NB ramp.	$6,446,790
No	10878	I-5/99W Connector Phase 2: Minimum Operable Segment - construct minimal connection to I-5 and two lane arterial to Tonquin Road/124th extension	Phase 2: Minimum Operable Segment - construct minimal connection to I-5 and two lane arterial to Tonquin Road/124th extension.	$263,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
No	10879	I-5/99W Connector Phase 3: Additions to Minimum Operable Segment - Extend two lanes to OR 99W and construct interchange	Phase 3: Additions to Minimum Operable Segment - Extend two lanes to OR 99W and construct interchange.	$148,000,000
No	10880	I-5/99W Connector Phase 4: Additions to minimum operable segment - Improve I-5 interchange connections and add braids on I-5	Phase 4: Additions to minimum operable segment - Improve I-5 interchange connections and add braids on I-5.	$113,000,000
No	10881	I-5/99W Connector Phase 5: Additions to minimum operable segment - Construct mid-point interchanges	Phase 5: Additions to minimum operable segment - Construct mid-point interchanges.	$56,500,000
No	10882	I-5/99W Connector Phase 6: Additions to minimum operable segment - Widen from two lanes to four lanes in corridor	Phase 6: Additions to minimum operable segment - Widen from two lanes to four lanes in corridor.	$56,500,000
No	10885	Sunrise Project Phase 2 Construction	Construct new highway facility and interchanges SE 122nd Ave with transition to 172nd.	$247,900,000
Yes	10890	Sunrise Project: Acquire right-of-way: I-205 to SE 172nd Ave	Acquire right-of-way: I-205 to SE 172nd Ave.	$129,000,000
No	10891	Sunrise Project Phase 2: Conduct preliminary engineering to construct new highway facility and interchanges.	Conduct preliminary engineering to construct new highway facility and interchanges.	$25,000,000
No	10892	Sunrise Project: Acquire right-of-way for Phase 2: SE 122nd to 172nd	Acquire right-of-way for Phase 2: SE 122nd to Rock Creek Jct.	$74,000,000
Yes	10894	Sunrise Hwy. PE: I-205 to SE 172nd Ave	Preliminary engineering and EIS from I-205 to 172nd.	$25,000,000
No	11058	Construct Hogan Corridor Improvements	Construct new freeway to highway connection.	$ 11,200,000
No	11059	I-205 Corridor Refinement Planning: OR/WA state line to I-5	I-205 refinement planning.	$ 5,000,000
No	11060	I-205/Airport Way Refinement Planning	I-205/Airport Way refinement planning.	$ 1,400,000
No	11062	I-5 South Corridor Refinement Plan - Wilsonville to North Tigard	I-5 South Corridor refinement plan - Wilsonville to North Tigard.	$ 3,000,000
No	11063	North Tigard to I-405 Refinement Plan	North Tigard to I-405 refinement plan.	$ 4,000,000
No	11064	I-205 Widening: Stafford Road to Willamette River (two phases, not including Abernethy Bridge	Widen I-205 by one lane in each direction from Willamette River to Stafford Road.	$ 74,900,000
No	11065	I-205: Abernethy Bridge Widening (Willamette River crossing)	Widen Abernethy Bridge by one lane in each direction.	$106,400,000
No	11066	I-205: Truck climbing lane	Construct southbound truck climbing lane.	$ 56,800,000
No	11068	I-5 Auxiliary Lanes: Stafford Interchange to Wilsonville Road	Add auxiliary lane to I-5 southbound between Wilsonville Rd. and Elligsen Rd. Extend Boeckman Rd. overcrossing bridge on both ends.	$ 8,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
No	11069	I-5/Wilsonville Road Interchange: Phase 2	Reconstruct southbound off-ramp and add southbound auxiliary lane from Wilsonville Rd. to Hubbard cut-off.	$ 13,300,000
No	11070	I-205/OR 213 Interchange: Stage 5 -I-205 Improvements, OR 99E to Gladstone interchange	Auxiliary lanes/braided ramp enhancements and freeway modifications needed to support I-205/OR 213 interchange improvements.	$200,800,000
Yes	11071	I-5/Wilsonville Road Interchange: Phase 1	Reconstruct NB and SB on ramps, and NB off ramp. Add NB auxiliary lane from Hubbard cut-off to Wilsonville Rd.	$ 18,500,000
Yes	11092	Ramsey Rail Yard	Construct up to six yard tracks and one lead track	$ 13,900,000
Yes	11122	OR 217: Sunset Hwy to TV Hwy	Widen Or 217 and structures	$37,676,000
Yes	11124	US 26W Cornell to 185th	Widen US 26 to 6 lanes from Cornell to 185th.	$21,312,000
No	20001	Kenton Rail Line Upgrade	Upgrade existing track to second main track with new double track from N. Portland Jct. to Troutdale and increase track speeds between North Portland Junction and Troutdale on UP's Kenton Line. Part of triangle project with ODOT.	$25,400,000
No	20002	Valley Sub Double Track	Double track mainline to Clackamas (99E/Hwy 224 corridor)	$36,000,000
No	20003	Harbor Siding Extension, approximately 2,255 feet.	Extend Harbor siding on Astoria District to 7,200’ to accommodate staging of unit grain trains to and from Ethanol plant.	$2,000,000
No	20004	Install Power Switch on Astoria Line Wye switch	Replace current electric lock on BNSF main one with power operated turnout at Astoria line Wye near Willamette River draw.	$2,000,000
No	20005	Install Power Switches at Lake Yard	Install one power switch at east entrance to PTRR Lake Yard (MP 1.7). Install up to six power switches on crossovers and entrance switch at west end of PTRR Lake Yard (MP 3.1).	$5,000,000
No	20006	East Portland connection to Graham Line	Build connection from Brooklyn Sub to Portland Sub (Graham Line) to facilitate direct movement.	$15,000,000
No	20007	Increased Track Speeds Between UP Willsburg Junction and UP Albina Yard	Remove the 6 mph restriction along this segment to greatly increase capacity and improve both passenger and freight trail velocity and help to move trains in and out of the Albina Yard more quickly.	$8,800,000
No	20008	Barnes to Terminal 4 Rail	Provide a new track from Barnes Yard to Terminal 4.	$3,000,000
No	20022	Graham Line Siding	Install two controlled sidings, 10,000' siding near Wood Village and a 10,000' siding near Parkrose, between East	$7,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			Portland Jct and Troutdale along UPRR's Graham Mainline.	
No	30000	PDX North Runway Extension	Lengthen north runway to accommodate larger planes during closure of south runway for rehabilitation	$3,500,000
Medium-Low Regional Priority				
Yes	10021	102nd Ave./Industrial Way Improvements	Extend Industrial Way from Mather Road to Lawnfield Road.	$8,570,000
Yes	10022	SE 82nd Dr. Improvements	Widen to five lanes to accommodate truck movement.	$12,350,000
No	10023	SE 82nd Dr. Improvements	Widen to five lanes.	$17,627,801
Yes	10025	Beavercreek Rd. Improvements Phase 2	Widen to 5 lanes with sidewalks and bike lanes.	$5,800,000
Yes	10026	Beavercreek Rd. Improvements Phase 3	Widen to 4 lanes with sidewalks and bike lanes.	$12,920,000
Yes	10042	97th realignment	Realign the existing Lawnfield Rd. Road from 98th to 97th, reduce the grade from 18% to 8%.	$20,650,000
Yes	10052	Mather Rd.	Extend Mather Rd. across railroad to SE 82nd Dr.	$17,250,000
Yes	10066	92nd/Johnson Creek Blvd. intersection	Add turn lanes on 92nd (northbound left at JCB, and northbound right at Idleman).	$1,000,000
Yes	10073	Hwy.-212 intersections	Existing Highway 212 remains two lanes with turn pockets from 162nd Ave. to Anderson Road south of limited access parkway. Design elements to be included are sidewalks, bike lanes, and a landscaped buffer.	$5,970,000
Yes	10078	Hwy. 224	Widen Highway 224 to four lanes with turn pockets at intersections to Carver bridge. The Damascus/Boring Concept Plan identifies Highway 224 as a community bus transit classification.	$12,150,000
No	10106	224 Thruway/Local Access Preservation	Convert some intersections to R in/R out; add turn pockets.	$15,000,000
No	10107	Harrison/UPRR grade separation	Grade separate UP mainline from principal E-W arterial.	$25,000,000
Yes	10132	Boeckman Rd./I-5 Overcrossing Improvements	Widen Boeckman Road bridge over I-5 to 3 lanes. Add bike/pedestrian connections to regional trail system.	$13,600,000
Yes	10134	SW 65th, Elligsen Rd. and Stafford Rd. Intersection Improvements	Currently there are two intersections with a dangerous grade difference and within 100 ft of one another. Combining them into one or the construction of a round-about will help with safety and navigability concerns.	$1,000,000
No	10140	Hwy. 213 - Phase 1	Add one SB and NB through lane, bike lanes, and sidewalks.	$5,000,000
Yes	10141	I-205/Hwy. 213 Interchange Phase 1	Grade separate SB Hwy. 213 at Washington Street and	$22,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			add a northbound lane to Hwy. 213 from just south of Washington Street to the I-205 on-ramp. Reconstruct I-205 SB off-ramp to Hwy. 213 to provide more storage and enhance freeway operations and safety.	
No	10143	Hwy. 213 Intersection Improvements	Intersection improvements.	$10,000,000
Yes	10174	Going, N (Interstate - Greeley): ITS	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$950,024
Yes	10175	Yeon/St. Helens, NW (US 30): ITS	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$885,499
Yes	10208	MLK O-Xing/Turn Lanes (Columbia-Lombard)	Intersection and signalization improvements with right turn lane.	$2,228,909
Yes	10210	47th, NE (Columbia - Cornfoot): Roadway & Intersection Improvements	Widen and reconfigure intersections to better facilitate truck turning movements to the cargo area located within the airport area. Project includes sidewalk and bikeway improvements.	$5,541,678
Yes	10212	Airport Way/122nd, NE: Intersection Improvement	Add northbound left turn lane, modify traffic signal, and reconstruct island.	$1,100,000
Yes	10214	Lombard, N (Rivergate - to T-6): Multi-modal Improvements	Widen N Lombard to include two travel lanes, a non-continuous center turn land, medians, bike lanes, sidewalks and planting strips.	$34,517,517
Yes	10217	Lombard at Columbia Slough, N: Overcrossing	Add sidewalk and bike lanes to strengthened bridge.	$9,767,000
Yes	10218	Burgard-Lombard, N: Street Improvements	From UPRR Bridge to N Columbia Blvd. Widen street to include 2 12-foot travel lanes, continuous left turn lane, bike lanes and sidewalk.	$24,884,000
Yes	10229	Columbia Blvd./Portland Rd., N: Intersection Improvements	Redesign intersection.	$1,214,000
No	10241	Clay/MLK Jr, SE: Intersection Improvements	Geometric, signalization and channelization improvements to allow transit and general traffic access to westbound Clay street from southbound MLK.	$924,000
No	10242	N. Interstate Ave. Ramp	Replacement of the existing N. Interstate to Larrabee flyover ramp with a new structure.	$14,677,225
No	10244	Kittridge, NW (Bridge at Yeon): Seismic Retrofit	Seismic retrofit.	$1,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
No	10269	Lombard/St. Louis/Ivanhoe: Multi-modal Improvements	Restripe, construct curb extensions, realign, and signalize as needed to improve pedestrian-bicyclist amenities while not impeding truck movements.	$1,400,000
No	10302	MLK Jr, N (Columbia Blvd. - CEID): ITS	CCTV at various locations & traffic monitoring stations at Clay and Burnside.	$705,000
No	10331	Columbia Blvd, N (Bridge at Taft): Seismic Retrofit	Seismic retrofit of bridge.	$415,800
No	10342	Columbia Blvd, N/NE(I-205 - Burgard): ITS	Communications infrastructure including closed circuit TV cameras, variable message signs for remote monitoring and control of traffic flow for six signals.	$420,000
Yes	10343	West Hayden Crossing, N	New four-lane bridge between Marine Drive to Hayden Island.	$99,258,000
Yes	10361	Widen Airport Way West of 82nd	Widen Airport Way from terminal to 82nd Ave.	$8,588,400
Yes	10362	82nd Ave./Airport Way Grade Separation	Construct grade-separated overcrossing.	$92,000,000
Yes	10363	SW Quad Access	Provide street access from 33rd Ave. into SW Quad.	$5,917,500
Yes	10367	CS/PIC Access Improvements	Intersection improvements (installation of stop signs, signalization and/or channelization) at Sandy Blvd/105th Ave, Airport Way/Holman St, Alderwood Rd/Holman St, Alderwood Rd/Cascades Pkwy.	$1,217,000
Yes	10371	Airport Way Braided Ramps	Construct braided ramps between the I-205 interchange and Mt. Hood Interchange.	$59,000,000
Yes	10373	Rivergate ITS	Intelligent Transportation System in Rivergate.	$480,000
Yes	10376	Columbia Blvd. Widening	Widen Columbia Blvd. to five lanes between 60th Ave and 82nd Ave.	$14,859,000
Yes	10392	Columbia/Cascade River District Projects	Implement findings of traffic management plan.	$9,200,000
Yes	10395	Replace RR over crossing.	Reconstruct railroad bridge to accommodate wider travel lanes, sidewalks, and bike lanes.	$7,000,000
Yes	10396	Reconstruct Cornelius Pass Rd.	Reconstruct Cornelius Pass Road including passing lane, safety, and shoulder and drainage improvements.	$37,000,000
Yes	10401	Reconstruct Marine Dr.	Reconstruct Marine Drive between Intelachen and the frontage roads in Troutdale.	$14,000,000
Yes	10402	Construct new road north of I-84, Exit 16	Construct new connector between Sandy Blvd. and Marine Dr, linking industrial sites with I-84	$14,500,000
Yes	10406	Reconstruct Stark St. to arterial standards	Reconstruct road to arterial standards with 1 travel lane in each direction, center turn lane/median, sidewalks	$1,810,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			and bicycle lanes.	
Yes	10411	Burnside Bridge Rehabilitation	Rehabilitate mechanical system, approach structure, corrosion control, phase 1and 2 seismic.	$41,600,000
Yes	10412	Morrison Bridge Rehabilitation	Rehabilitate mechanical system, approach structure, corrosion control, phase 1 seismic.	$42,000,000
Yes	10413	Hawthorne Bridge Rehabilitation	Rehabilitate mechanical system, approach structure, corrosion control, phase 1 seismic.	$13,300,000
No	10415	Phase 2 Seismic	Phase 2 seismic on Broadway, Morrison and Hawthorne Bridges.	$82,000,000
No	10416	Hogan Corridor Improvements	Interim capacity improvements and access controls.	$19,140,461
No	10417	Hogan Corridor Improvements	Complete study and construct new principal arterial connection.	$7,507,673
Yes	10430	Orient Dr. Imps.	Upgrades to arterial 4 lane standards.	$9,000,000
No	10435	I-84 to US 26 Study	Study to id access management, freight, alignment.	$1,360,590
Yes	10443	Sandy Blvd. Widening	Widens street to 5 lanes w. sidewalks, bikelanes.	$26,040,578
Yes	10444	181st Ave. Widening	Widens street to three lanes southbound.	$1,797,270
Yes	10445	181st Ave. Intersection Improvement (181st/Glisan)	Improve Intersection.	$1,041,867
Yes	10446	181st Ave. Intersection Improvement (181st/Burnside)	Improve Intersection.	$831,210
Yes	10454	181st Ave. Improvements	Complete boulevard design improvements.	$11,440,061
Yes	10474	Rugg Rd. Ext.	Construction of new roadway that adds e/w capacity in vicinity Rugg Rd and connects Springwater Industrial area to Highway 26.	$30,672,208
Yes	10475	Rugg Rd. Ext.	Construction of new roadway that adds e/w capacity in vicinity Rugg Rd and connects Springwater Industrial area to Highway 26.	$39,329,973
Yes	10478	252nd Ave.	Construction of new street for implementation of Springwater Plan.	$26,162,462
Yes	10479	252nd Ave.	Construction of new street for implementation of Springwater Plan.	$9,808,690
Yes	10480	Springwater Road Section 7	Construction of new street for implementation of Springwater Plan.	$8,008,421
Yes	10490	201st RR Bridge at I-84	Construct new RR bridge to accommodate alternative modes.	$2,359,125
Yes	10495	181st Ave. at Halsey	add 2nd LT lane to N & S legs, add RT lane to EB WB SB.	$1,025,038

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
Yes	10496	181st at I-84	Freight mobility improvements subject to refinement study.	$250,000
Yes	10497	181st at Sandy, at Stark	At Sandy: Northbound right turn, 2nd westbound left turn. Overlap eastbound right turn. At Stark, add 2nd left turn lane on east and west legs.	$1,884,390
Yes	10498	181st (182nd) at Division/Powell Intersections	At Division: add second westbound left turn lane (TIF P1). At Powell, add northbound and southbound double left turn lanes (TIF P2 and TSP8).At Powell add SB and NB lanes.	$1,682,670
Yes	10501	Barnes Rd.: Powell Valley to City Limits: only Orient to So. City Limits	Widen road and add improvements.	$7,135,229
Yes	10503	Burnside at Powell	At Powell: eliminate EB and WB left turn lanes.	$683,517
Yes	10511	Hogan Rd. at Stark St.	Add right turn lanes on all approaches and second northbound and southbound left turns.	$1,908,431
Yes	10512	Hogan: Powell to Burnside boulevard improvements plus three intersection improvements	Improve to boulevard standards, and intersection improvements at Burnside, Division and Powell.	$8,739,328
No	10522	Burnside, Hogan to Powell	Safety improvements and reconstruction.	$8,807,400
No	10552	Cornell/Cornelius Pass Interchange	Grade separate Cornell at Cornelius Pass	$21,200,000
Yes	10560	Farmington Rd. Improvements	Widen roadway from 2/3 lanes to 5 lanes with bike lanes and sidewalks.	$17,676,000
Yes	10568	Tualatin-Sherwood Rd. Improvements	Widen from three to five lanes with bike lanes and sidewalks.	$49,150,000
Yes	10574	Farmington to 198th Improvements	Widen from two to three lanes with bike lanes and sidewalks.	$17,326,000
Yes	10587	Cornelius Pass Rd. Improvements	Widen to five lanes with bike lanes and sidewalks	$59,872,000
Yes	10590	Tonquin Rd. Improvements	Realign and widen to three lanes with bike lanes and sidewalks.	$28,406,000
Yes	10596	Scholls Ferry Rd. Improvements	Widen to seven lanes with bike lanes and sidewalks.	$19,749,000
Yes	10597	Evergreen Rd. Improvements	Widen to 5 lanes with bike lanes and sidewalks.	$11,242,000
Yes	10603	Tualatin-Sherwood Rd. ATMS	Install integrated surveillance and management equipment.	$1,594,000
Yes	10605	Cornell Rd. ATMS	Install integrated surveillance and management equipment.	$2,043,000
Yes	10617	Farmington Rd.: Murray Blvd. to Hocken Ave. Safety, turn lanes, bicycle, and pedestrian improvements	Construct turn lanes and intersection improvements; signalize where warranted; add bike lanes and sidewalks in gaps.	$8,700,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
Yes	10699	Oregon Street	Construct road to 3 lane collector standards.	$6,712,000
No	10708	T-S Road	Construct road to 5 lane collector standard.	$1,900,000
No	10710	Cipole	Signalize intersection & realign railroad crossing.	$5,600,000
Yes	10714	105th Ave/Avery Street	Realign curves, signalize intersection of Avery/105th, sidewalks on 105th from Avery to 108th.	$5,000,000
Yes	10720	Boones Ferry	Widen to 5 lanes from Tualatin-Sherwood to Ibach.	$16,500,000
No	10723	ORE 99W	Widen to 6 lanes from Cipole to the Tualatin River.	$14,400,000
Yes	10755	72nd Ave. Improvements	Widen to 5 lanes with bikeways and sidewalks. Includes bridge replacement.	$50,964,000
No	10758	Dartmouth Street Extension	3 lane extension; new Highway 217 overcrossing.	$58,690,500
Yes	10776	HWY 8/HWY 47 Intersection	Turn Lanes, modify traffic signal.	$3,300,000
No	10787	10th Ave/Cornelius-Schefflin Rd	Improve to urban standard w/in City (sidewalks & bike lanes); widen rural road with shoulder bike lane, reconstruct Council Creek Bridge.	$9,000,000
No	10790	10th Ave	Signalize intersection.	$300,000
Yes	10795	Holladay St Extension	Construct new collector.	$2,500,000
Yes	10796	Holladay St Extension	Construct new collector.	$1,300,000
Yes	10797	Holladay St Extension	Construct new collector.	$1,300,000
Yes	10803	TV Hwy	Interconnect OR 8 signal system in Cornelius.	$450,000
Yes	10814	Evergreen Rd	Widen to 5 lanes with bike lanes and sidewalks.	$4,000,000
Yes	10816	TV Hwy. Signal Coordination	Interconnect traffic signals.	$2,350,000
Yes	10824	Cornell Rd	Improve to 5 lanes with bike lanes and sidewalks.	$9,248,000
Yes	10831	Century Blvd	Extend 2/3 lanes with US 26 Overpass, connect existing segments.	$12,920,000
Yes	10836	Evergreen Rd	Widen to 5 lanes with bike lanes and sidewalks.	$5,440,000
Yes	10846	TV Hwy.	Expand to 7 lanes with bike/sidewalks.	$42,000,000
Yes	10852	95th Ave/Boones Ferry Rd/Commerce Circle Intersection Improvements	Provide dual left-turn and right-turn lanes, improve signal synchronization, access management measures,	$2,500,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
			fix sight-distance problems, and add extra lanes.	
Yes	10853	Kinsman Rd Extension from Ridder Rd to Day St	Extend 3 lanes with sidewalks and bike lanes.	$6,500,000
Yes	10863	Convert Marine Dr. one-way southbound to two-way under I-84 and widen to five lanes.	Convert Marine Drive one-way southbound to two-way under I-84 and widen to five lanes.	$20,400,000
Yes	10864	New interchange on US 26 to serve industrial area.	New interchange on US 26 to serve industrial area.	$29,500,000
No	10868	Grade separate southbound OR 213 at Washington Street and add a northbound lane to OR 213 from just south of Washington Street to the I-205 on-ramp.	Convert existing OR 213 at Washington Street intersection to right-in/right-out only. Realign Clackamas River Drive under OR 213 to intersect with Washington St. New signalized intersection on Clackamas River Drive with OR 213 connector. New stop sign controlled intersection on Washington St at realigned Clackamas River Dr. Extend the bridge over the railroad by 100' to the south over realigned Clackamas River Dr.	*$16,000,000*
Yes	10871	Marine Dr. extension (Backage road), from I-84 EB off-ramp to 257th Dr.	Marine Drive extension (Backage road), from I-84 EB off-ramp to 257th Drive.	$8,200,000
Yes	10873	US 26W: Widen highway to 6 lanes	Widen highway to 6 lanes.	$36,119,034
No	11057	I-84/US 26 Connector R-O-W Preservation	Obtain right-of-way.	$ 20,700,000
No	11061	I-84 to US 26 Corridor Refinement	I-84 to US 26 Corridor refinement.	$ 1,300,000
No	11067	I-205/OR 213 Interchange: Stage 1: Southbound flyover ramp to OR 213	Construct southbound I-205 flyover ramp to OR 213.	$ 49,102,000
No	11072	I-205/OR 213 Interchange: Stage 3 - NB Washington grade separation segment	Build new northbound OR 213 ramp to I-205 starting at Redlands and merging into I-205 northbound. Grade separate new ramp over Washington. Rebuild Washington St. to five lanes with two traffic signals.	$ 26,000,000
No	11073	I-205/OR 213 Interchange: Stage 6 - Redland Road Interchange	Construct interchange on OR 213 at Redland Rd. Widen OR 213 Bridge over Redland Rd. Lengthen Redland.	$ 72,000,000
Yes	11125	US 26E Springwater at grade intersection	Construct at grade intersection connecting Springwater area to US 26	$6,700,000
No	20009	Barnes Yard to Bonneville Yard Trackage	Construct additional unit train trackage (approximately 16,000 linear feet) between Bonneville and Barnes rail yards.	$11.000.000
No	20015	South Rivergate Rail Yard Expansion Phase I	Construct a second lead and two storage tracks in South Rivergate Yard.	$8,800,000
No	20016	St. Johns Lead Expansion	Add two additional tracks within existing ROW	$3,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
No	20017	Terminal 6 A+B Yard	Connect A and B Yard at Terminal 6	$2,900,000
No	20018	West Hayden Island Rail Access	Rail access to support West Hayden Island development.	$3,000,000
No	20019	West Hayden Island Rail Yard	Seven-track rail yard connected to facility trackage.	$9,500,000
No	20021	Cornelius Pass Tunnel	Rehabilitate & improve capacity through this 4103 foot long tunnel by improving clearance	TBD
No	20023	Second Slough Lead	Provides a new rail/highway bridge over the Columbia Slough	TBD
No	20024	T6 Internal Overcrossing	Construct second gate to provide secondary access to T6. Construct an elevated roadway between Marine Drive and T6	$6,000,000
No	30001	PDX South Runway Rehabilitation	Repair pavement and joints on existing runway	$15,000,000
No	30002	PDX North Runway Rehabilitation	Periodic rehabilitation of north runway	$11,200,000
Low Regional Priority				
Yes	10074	New Connection	Rock Creek junction interchange to 172nd Ave through Rock Creek industrial area.	$19,800,000
Yes	10130	Kinsman Rd. Extension from Barber St. to Boeckman Rd.	Extend 3 lanes with sidewalks and bike lanes.	$5,750,000
No	10156	Boeckman Rd. at Boeckman Creek	Widen Boeckman Road to 3 lanes with bike lanes, sidewalks and connections to regional trail system, remove culvert and install bridge.	$5,800,000
Yes	10209	92nd Dr. (Columbia Slough to Alderwood)	Improve NE 92nd Drive from Columbia Slough to Alderwood Rd.	$2,406,547
No	10236	Water Ave., SE (Caruthers - Division Pl): Street Extension Phase II	Provide new roadway connection with sidewalks, bike lanes, landscaping, access to Willamette Greenway, & reconstruction of existing roadway.	$288,750
No	10246	7th/8th Ave., SE: New Street Connection	Construct new street connection from SE 7th to 8th Ave. at Division Street.	$577,500
Yes	10477	Springwater Road Section 4	Construction of new street for implementation of Springwater Plan.	$13,148,679
Yes	10481	Springwater Road Section 8	Construction of new street for implementation of Springwater Plan.	$5,519,551
Yes	10482	Springwater Road Section 9	Construction of new street for implementation of Springwater Plan.	$8,008,421
Yes	10483	Springwater Road Section 10	Construction of new street for implementation of Springwater Plan.	$12,202,421

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
Yes	10484	Springwater Road Section 11	Construction of new street for implementation of Springwater Plan.	$21,031,280
No	10492	162nd RR bridge@I-84	Reconstruct RR bridge to accommodate alternative modes.	$2,621,250
Yes	10499	192nd Ave. Wilkes to Halsey	Improve to collector street standards.	$3,833,031
No	10515	Riverside Dr. ext. to Sandy Blvd	Extend collector from 190th to Sandy to improve industrial access.	$10,975,110
Yes	10516	San Rafael, 181st to 201st	Complete collector and remove frontage road.	$9,990,952
Yes	10518	Wilkes St., 181st to 192nd	Improve Wilkes to collector standards and provide slip ramp connection from Eastbound I-84 on ramp.	$6,781,698
No	10520	184th Ave., Wilkes to San Rafael	Construct new collector street.	$7,353,375
No	10524	Cleveland Ave., Glisan to Stark	Construct new collector street.	$15,277,585
No	10525	Clyde, Glisan to Stark	Construct new collector street.	$16,277,585
No	10557	Murray/TV Hwy. Intersection	Grade-separate the intersections of TV Hwy. and Farmington with Murray Blvd.	$25,000,000
No	10711	Teton	Signalize intersection.	$307,000
No	10713	Leveton	Extension.	$9,070,000
Yes	10715	Herman	Reconstruct and widen to 3 lanes from Teton to Tualatin.	$2,500,000
Yes	10716	Myslony	Reconstruct/widen from 112th to 124th to fill system.	$9,400,000
No	10717	Cipole	Reconstruct/widen to 3 lanes from 99W to Tualatin-Sherwood Road.	$13,000,000
Yes	10718	Herman	Reconstruction from Cipole to 124th.	$4,100,000
No	10719	Leveton Ind. Area	Widen Leveton Drive to 5 lanes, signalize the 108th/Leveton intersection, and signalize 108th/Tualatin intersection.	$10,400,000
Yes	10730	E-W connection	Construct new street.	$18,200,000
Yes	10735	Herman	Widen to 5 lanes from 108th to Teton.	$1,250,000
Yes	10736	124th Ave	Construct new street from Tualatin-Sherwood to Tonquin Rd - 5 lanes.	$82,500,000
Yes	10774	23rd/24th	Construct collector level roadway between Hawthorne Ave. and Quince Street.	$15,000,000
No	10780	Hwy 47 Intersection Improvements	Add traffic signal.	$1,000,000

Fed RTP Status	Metro ID	Project/Program Name	Description	Estimated Cost ($2007)
No	10793	19th Ave	Signalize intersection.	$300,000
Yes	10815	Cornell Rd Signal Coordination	Interconnect Traffic Signals (Extends County ATMS).	$1,000,000
Yes	10821	Huffman	Build 3 lanes with bike lanes and sidewalks.	$9,282,000
Yes	10822	253rd	Build 3 lanes with bike lanes and sidewalks.	$6,162,000
No	20020	Banks Connection	Provides a head-on connection at Wilkesboro (east of Banks) between the Tillamook Branch and the United Railways Line over Cornelius Pass	$4,000,000
Other				
Yes	10377	PSU ITS Expansion, incl. freight data repository	Expand PSU's existing web based ITS "count sensor" program beyond the freeway to some key arterials throughout the region. Create a repository of freight data (primarily truck data) from the region's Freight Data Collection project.	$0

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A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

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