

Addressing Marine Container Terminals in Seattle's Comprehensive Plan

Introduction

In 2007, Governor Chris Gregoire formed a Container Ports and Land Use Work Group, as part of a Container Ports Initiative, to study the importance of container marine ports in the state of Washington. The Work Group's study resulted in legislation (ESHB 1959) that established the requirement for a Container Marine Terminal element in Seattle's and Tacoma's Comprehensive Plans.

Among other findings, the Work Group's 2008 report identified the Port of Seattle as the fastest growing port in the United States in 2004 and 2005. With a total of almost 150,000 statewide related jobs, an average annual wage of over \$50,000 for workers in directly related jobs, and \$212 million in annual state and local taxes generated by the combined cargo activity of the Seattle and Tacoma ports in 2005, these are clearly important economic drivers for the state and local economy.

The Work Group made specific recommendations about how Container Marine Terminal issues could be addressed in Seattle's and Tacoma's comprehensive plans. Based on their research and deliberations, Work Group members found that existing policies in local comprehensive plans do not specifically address container port marine terminals, although there are more general provisions related to the protection of industrial uses.

Understanding that comprehensive plans can guide more specific land use and permitting regulations, as well as other City actions, such as capital programming and maintenance, the legislation that resulted from the Work Group's recommendations required Seattle and Tacoma to adopt specific comprehensive plan policy provisions relating to container marine terminals. By requiring a new element addressing marine container terminals in comprehensive plans, the Work Group sought to establish policy commitments that protect the marine sector from further negative impacts to its competitive status relative to ports outside the state. Accounting for thousands of jobs, millions of dollars in state and local tax revenues, and billions of dollars in business revenue and personal income, the Work Group determined that this economic sector merits special protection in the City's Comprehensive Plan as well as continuing attention in all the City-related policies and programs.

Ports in the Region's Economy

The Puget Sound region's deepwater ports are key regional economic drivers and provide vital international trade links among Washington, the nation and the world. The Port of Seattle's cargo trade moves 70 to 75% of imports by rail to midwestern destinations and beyond. The remaining 25 to 30% stay in the Pacific Northwest, typically transported by truck. These imports strengthen the economy by supporting trucking, warehousing, distribution, wholesale and retail related jobs.

In 2006, Puget Sound ports moved approximately **70 billion dollars** worth of goods. The quantities from that year, which is typical of recent years, were made up primarily of imports -- valued at \$54.8 billion-- but with a significant amount of exports -- valued at \$13.5 billion. More than 54 million tons of cargo moved in one year through the Duwamish industrial area.

The volume and dollar value of goods are shown in the following tables.

**Container Trade
Volumes in TEUs¹
Year to date November 2010**

Port	Inbound	Outbound	Total
Los Angeles	3,766,271	3,452,980	7,219,251
Long Beach			5,740,188
Port Metro Vancouver	1,193,999	1,112,496	2,306,495
Oakland	929,081	1,213,168	2,142,249
Seattle	1,074,773	902,129	1,976,903
Tacoma			1,325,135

**Container Trade
Millions of US Dollars
Year to date November 2010**

Port	Inbound	Outbound	Total
Los Angeles	\$164,292.07	23,468.80	187,760.87
Long Beach	\$44,380.61	22,065.11	66,445.72
Seattle	29,226.62	5,914.58	35,141.20
Oakland	21,353.07	11,089.27	32,442.34
Tacoma	17,332.74	3,035.24	20,367.98

The Governor's Work Group report found that exports through the Ports of Seattle and Tacoma are largely made up of products either grown or manufactured in Washington State. Measuring exports by weight, 70 to 80% of total exports are from Washington; when measured by value, 35 to 50% of exports are created in Washington State. Typical exports include eastern Washington agricultural products, food products, machinery, petroleum products, scrap, transportation equipment and forestry products, including paper. The value of exports from Washington State through the combined Ports has risen every year since 2003.

The importance of the marine cargo sector is underscored in the Puget Sound Regional Council's (PSRC) recently adopted Regional Freight Strategy (2010):

¹ TEU stands for the twenty-foot equivalent unit. This is a unit of cargo capacity often used to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot-long (6.1 m) intermodal container, a standard-sized metal box which can be easily transferred between different modes of transportation, such as ships, trains and trucks. One TEU represents the cargo capacity of a standard intermodal container, 20 feet (6.1 m) long and 8 feet (2.4 m) wide.

“The Puget Sound region serves as a vital international gateway that supports the national economy. The region’s deepwater ports and air cargo facilities support international and national trade movements that connect international markets to the region and throughout the U.S. Together, the marine and air ports of the central Puget Sound region provide direct and indirect statewide employment to over 200,000 people, contribute almost \$1 billion dollars in state and local tax revenues, and generate billions of dollars of revenues through their real estate activities and tenants.”

As vital as the marine cargo economic sector is, it is also vulnerable – to continuing pressures from nearby land uses, traffic infrastructure and congestion, and larger funding and economic development conditions. The demand for freight infrastructure capacity related to marine cargo is growing rapidly.

The Regional Freight Strategy outlines the factors underlying this increased demand. These demand factors include:

“...globalization, changing logistics patterns, and international trade growth. The region’s deepwater marine ports and airports will contribute greatly to this demand - the combined seaports of Port of Seattle and Port of Tacoma alone are projecting cargo growth from 3.6 million TEU (in 2008) to 9.7 million TEU by 2040, all of which will have to be absorbed by the regional freight system for part of its journey. *[A TEU is the equivalent of a 20-foot long shipping container.]*

[T]he variety of growing demand factors means that increasing pressure will be placed on the region’s freight transportation system -- on the roads, rail lines, and intermodal connectors that provide vital mobility to personal and freight transportation alike. Unless action is taken, this growing pressure will threaten the efficiency and reliability of the region’s transportation system, as well as contribute to negative environmental and community impacts.”

The Port of Seattle

The Port of Seattle’s marine cargo terminals -- the “Seaport” -- occupies approximately 1, 500 acres of waterfront land and nearby properties in Seattle, largely in the Duwamish Manufacturing/Industrial Center. (See map of Port-owned facilities and related businesses at Appendix A). The uses on these properties include container terminals, general purpose marine terminals, refrigerated cargo storage, break-bulk cargo operations and a recently expanded Foreign Trade Zone. Nearly 800 acres of the Port’s seaport is dedicated to container terminal operations and cargo handling. Most of the freight is shipped through the Port by intermodal containers that are transferred to or from railcars or trucks on the dock. Some of the containers are shuttled by truck between the Burlington Northern Santa Fe and Union Pacific intermodal rail yards.

The proximity between the marine cargo terminals and rail yards in the Duwamish provides a distinct advantage for the operation of this sector. Typically, export products, like bulk grain, timber and steel, are more dependent on proximity to rail than imports are. Because the cost of moving cargo is related to the speed at which the commodity can be switched between modes, Seattle has a particular geographical advantage in having marine cargo terminals and railroads located near each other in the Duwamish.

Imported products, such as toys, sporting goods and electronics, are more likely to be trucked to distribution centers in the Green River Valley, where they are shipped by truck or rail to eastern U.S. destinations, such as Chicago. Separating these imports from the export activities that are more common near the marine container terminals provides a benefit to the export side because it lessens the amount of congestion immediately around the marine cargo terminals, allowing for quicker handling of exports.

Maintaining both import and export trade is vital to the continued health of marine container terminals because shipping companies, such as those that lease terminals from the Port of Seattle, need full containers in order to derive revenue from both legs of the trips their ships make. Without a robust import trade, shipping companies would reduce the containers they bring to Seattle's terminals. With fewer containers, Washington State's exports of agricultural, steel and timber commodities would suffer because the relative cost of transporting those commodities would increase. This balanced and robust import/export trade is necessary to the Seattle, Puget Sound and Washington State economy.

The importance – and vulnerability – of this sector should be considered in two broader contexts. The first is the larger scope of all the Port of Seattle's operations. If the marine container sector is affected, other Port lines of business, including the airport, fishing and tourism, could also be affected, thus making an even greater proportion of Seattle's economy vulnerable.

The Port's operations are also affected by global and international trade. The Asian economy has an enormous positive impact on Washington State's economy, and the marine container trade is highly responsive to the Asian economy. As the Governor's Work Group found:

“Despite the global economic slowdown, the US economy will remain the largest in the world for decades to come. According to a 2003 Transportation Research Board report, as the nation's total output of goods and services increases, international container traffic is expected to more than double by 2020, at the same time as highway travel and domestic freight traffic are increasing. Washington's continued ability to compete in today's global economy depends on the efficient movement of freight through our state. **Washington's container seaports represent a major economic asset that the state has an imperative need to protect and foster.**” (emphasis added)

This protection can be accomplished in part by appropriate City land use policies in the Comprehensive Plan. These policies can set a framework for more specific programs that maintain the conditions supporting the marine container trade and Washington State's export-dependent economy. These conditions include a healthy supply of land that supports the marine container trade supply chain, infrastructure and maintenance investments to promote freight mobility and access, and prudent economic development policies that set the table for effective infrastructure funding. Thus, what may appear to be purely local decisions, such as rezoning industrially zoned parcels or programs addressing increased congestion on truck routes, actually have consequences on a global level.

This relationship of the Port of Seattle to the global economy emphasizes three other important issues. -First, China, -and Asia generally, are playing an increasingly important role on the world's economic stage. Seattle's fortunes depend in part on the complex web of our trade relationships with Asia.

The second issue, and a corollary to the first, is that competition will sharpen between west coast U.S. and Canadian ports to maintain or increase their respective share of the Asian export market. This export market is particularly important for Washington State, with the most trade-dependent economy of all the states. Washington's dependence on trade is a "pocket-book" issue for workers in and around Seattle, because the marine container trade generates a significant number of family-wage jobs.

As evidence of this, the Martin Report (2009) identifies the jobs created by marine cargo terminal operations.² Direct, induced and indirect jobs total 33,291 for that calendar year. Direct jobs were calculated at 12,428. Induced jobs numbered 16,639, and there were 4,224 indirect jobs identified.³ Although all types of jobs are important, the direct jobs are particularly significant in that they paid an average salary of over \$51,000 per year. These relatively high levels of wages provide key family-wage jobs and have a concomitant benefit to the Washington State economy. The Martin Report also estimates that an additional \$3.00 is created and spent in Washington State for each \$1.00 earned in these jobs.

In addition to the direct, indirect and induced jobs, the Martin Report identified 135,000 jobs made possible by international and Alaskan cargo trade, although these are less directly related to seaport operations. Besides the economic impact of jobs, the Martin Report identified that seaport operations in 2007 created \$2.5 billion of business revenue and approximately \$460 million in state and local taxes.

A third global issue that will take on increased urgency in the next few years is the widening of the Panama Canal. When the Canal's enlargement is completed in 2014, its ship-size capacity will triple. New ships are expected to be built to the specifications that allow transport through the Canal. Since using the Canal will give Asian shippers quicker access to ports on the east coast of the U.S., Seattle's competitive advantage will be lessened, a condition that could be mitigated by faster movement of goods through Seattle. The speed that goods are moved depends on maintaining optimal background conditions in land use, transportation, and economic development.

As the Governor's Work Group noted, Washington and Seattle's economies and job base are increasingly linked to an international market. Seattle's naturally deep harbor and proximity to Asia provides some comparative advantages to other cities, including west coast cities. However, from the perspective of the companies that ship goods to the United States, the tie-breaking factor is logistics: the time and transaction costs paid for goods to reach target markets. Although the contributing factors are complex, the consequences are simple: if Vancouver, B.C. moves goods faster than Seattle, Vancouver's gain in cargo trade will be Seattle's loss.

² The Port of Seattle retained Martin Associates to evaluate the economic impacts generated by the Seattle seaport, Seattle-Tacoma International Airport and the Port's non-maritime and non-aviation tenants, based on business activity data collected in 2007-2008. The firm has conducted similar studies at more than 250 seaports and most major airports in North America. Martin Associates also conducted economic impact studies of the Port of Seattle in 1987, 1993, 1999 and 2005.

³ *Direct jobs* are defined in the report as jobs specifically connected to seaport activity, including jobs with railroads and trucking companies, longshoremen, steamship agents, freight forwarders, and stevedores. *Indirect jobs* are those jobs created in the State of Washington due to purchases of goods and services by firms associated with Seaport activity. *Induced jobs* are jobs created in the local economy because individuals with "direct jobs" spend their wages locally on goods and services such as food, housing and clothing.

Port-Related Land Uses

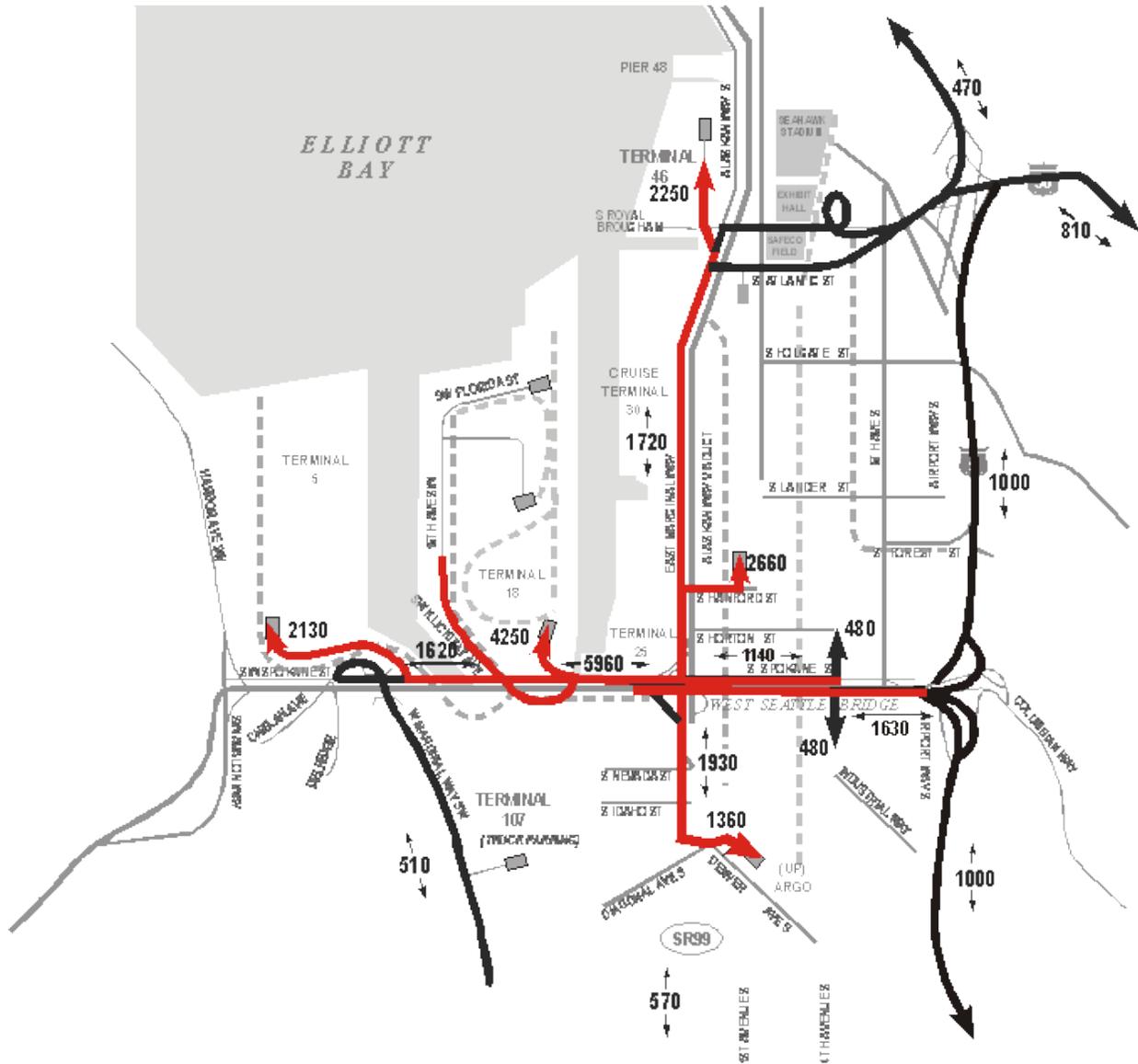
ESHB 1959 also recognizes that marine ports, and the freight corridors that support them, are essential public facilities and calls for strategic policies to ensure that container ports continue to function effectively. The legislation identifies potential approaches to this end, including creating a “port overlay” district to maintain container port uses, industrial land banking, applying land use buffers or transition zones between Port facilities and incompatible uses, and limiting the location or size of nonindustrial uses in the core and surrounding areas. The “core area” for the Port of Seattle’s marine container terminals is roughly coterminous with the Duwamish Manufacturing/Industrial Center.

The map in Appendix A identifies Port of Seattle facilities and related businesses in the Duwamish M/IC. The top twenty Port-related businesses (such as distribution centers and transloaders, who transfer commodities from one mode of transportation to another) occupy over 140 acres in the Duwamish. When counting all Duwamish-area businesses that are engaged in importing/exporting, container marine terminal, railroad and trucking and distribution, the number of parcels and acreage is even more significant, as the following table reflects:

Marine Container-Related Facilities in the Duwamish M/IC

Type of Business	Number of Parcels	Number of Acres
Import / Export	116	280
Marine Terminals	108	974
Services to Terminal Operations	70	330

Additional evidence of the importance of this core area can be seen in distribution of truck trips as shown on the following diagram. The highest frequency trips occur near the cargo marine terminals and the Burlington Northern railyard; these trips cycle between the terminals and the rail yards, as well as to freeway portals. This distribution (from a 2003 Container Terminal Access Study) underscores the continuing importance of good intermodal connections and well-managed transportation access in the core area around the terminals.



By calling for the designation of core areas and buffers from incompatible uses, the Work Group was recognizing the threat that the proximity of certain uses can have on Port and port-related activities. Generally, uses that bring large numbers of people or large amounts of vehicle traffic

constitute incompatible uses. Such uses are very limited in the Duwamish Manufacturing/Industrial Center where the Port's container terminals and most related activities are located. However, the relatively low land prices in this area continue to attract real estate speculation that could lead to conversion of existing uses.

Recognizing that many factors can result in conversion of industrial land to non-industrial uses, the Governor's Work Group identified a need for strong comprehensive plan policies to deter that conversion and protect the operations of container facilities. The underlying rationale is simple and clear: port-related and industrial uses create family-wage jobs, provide diversity in the local and state economy, and generate revenue that support a wide variety of public and private activities.

Three key strategies to prevent incompatible uses are: 1) buffering the geographical area around marine cargo terminals from incompatible uses, 2) protecting the supply of industrial land for terminal and related uses, 3) addressing the effect of high-trip-generation uses on freight routes. These same strategies also help optimize the movement of freight through the area.

This policy direction is clearly supported in the Work Group's findings:

“Our state's fundamental land use planning goals include important concepts such as promoting growth where support infrastructure already exists, promoting density in order to prevent expensive sprawl, and keeping industrial water-dependent uses in proximity to harbor areas. Decades of planning, as well as public and private investment, have supported these policies. Despite these goals and plans, economic pressures persist that push warehousing and freight-support services to areas distant from the container ports. Traditional industrial areas face pressure to gentrify into retail and residential uses....

[T]he same redevelopment pressures can result [in] conversion of the “buffer” areas around key industrial areas and key freight transportation corridors into retail, commercial or residential uses. Maintaining buffers around these industrial areas and freight corridors is important for the long-term expansion of our water-dependent trade sectors. **Conversion essentially prohibits industrial expansion, because once land is converted out of industrial or maritime use, experience shows us that those uses are gone forever. The collective effect of these trends is gradual, persistent and difficult to withstand, and has the potential to erode both the current and future benefits of our industrial areas. Without additional attention and concerted effort, our land-use planning efforts will not provide effective and long-term protection of these critical areas.**” (emphasis added)

More specifically, the Work Group found the Duwamish Manufacturing/Industrial Center to be a major employment hub providing 68,000 jobs, with 45% of Port-related truck traffic carried on the South Spokane Street Corridor alone. This report thus puts special emphasis on Duwamish land uses that are related to the marine container sector. These include uses such as transloaders (companies that load and unload containers for export or distribution), distribution centers, railroads, trucking companies, tug and barge companies, marine fuel, chandlery and lubricant companies and marine construction.

The City of Seattle has conducted extensive analysis of the land uses and policies in the city's industrial areas. As recently as 2007, the City Council amended the Land Use Code to lower the

maximum allowed size of office and retail uses in the predominant industrial zones. Existing land use policies in the Comprehensive Plan supporting these changes can be found in Appendix B.

This action by the City continued the trend of increasingly strong protection for industrial uses and responded to the same issues that the Governor's Work Group raised. The conversion of Duwamish industrial land to non-supportive uses, such as large retail and office uses, reduces the amount of land available for healthy marine container terminal activity. These same non-industrial uses can also impinge on freight mobility and the access needed for cost-effective logistics. As the Work Group notes, once these critical background conditions are altered the change may be irrevocable.

Conversion of industrial land to non-industrial uses is a continuing and potentially expanding threat. As an example of the scale of this threat, in 2007 the City of Seattle received permit applications totaling over 795,000 square feet of retail and office uses in Seattle's two manufacturing/industrial centers. In 2006, permit applications totaled only 238,000 square feet for similar uses in these same areas.

Among the factors that can create pressure to convert industrial land are state tax policies, conversions of adjacent parcels, and unrestricted or unclear zoning codes. Equally important, conversion creates a feedback loop that, once initiated, can engulf an entire industrial area. If land for supportive industrial uses is scarce, then the absence of those uses can factor into a business decision by a land owner to convert his land to a commercial use -- thus further weakening the mutually supportive and self-sustaining industrial environment.

For example, if ten parcels of industrial land are converted to office and retail use, this may induce similar behavior by adjacent property owners who seek commensurate benefit or who are motivated to seek rezones because of the congestion and conflicts created by their neighbors' initial conversion. A parallel example is when retail and office uses begin to dominate an area causing the assessed value of nearby land to increase. Rising rents give owners of nearby parcels an incentive to increase rents commensurately to match their neighbors. This is an example of a feedback loop where an initial conversion of a small set of parcels can generate a domino effect where more parcels are converted to uses incompatible with marine cargo terminals.

The damaging effects of conversion are not confined to land use but can also create transportation conflicts. Office and retail uses typically generate more vehicle trips than industrial uses. When new retail and office uses locate near more traditional industrial uses, the vehicle trips they generate and the patterns of those new trips can create congestion and conflicts. Added vehicle traffic and congestion can interfere with truck deliveries of cargo and increase hazards to non-truck users. These multi-pronged consequences can make industrial businesses harder to maintain -- further encouraging conversion and contributing to the feedback loop.

Transportation

The Governor's Work Group recommended that transportation policies be included in a new comprehensive plan element that addresses marine container terminals. The Work Group's report identified several concerns that should shape freight-related transportation policies. One concern is the need to keep freight traffic away from residential areas, both to ensure safety and promote efficient freight movement. Equally important is the recognition that different road design standards are needed for freight corridors. For example, the weight of cargo trucks requires

different pavement construction standards than for typical streets. Heavier classes of freight vehicles, such as those that carry cargo containers, have a much greater relative impact on pavement with each truck trip, compared to the smaller impact of car trips.

A third concern is to ensure efficient “through-put” of freight traffic. It is important to maintain levels of service for freight access wherever possible. With Seattle’s ongoing and expected growth and limited land area for new development, there is increasing traffic congestion from residential, office, retail and other uses. In addition to causing delays that can affect the cost and reliability of cargo movement, inefficient freight movement can also provoke or exacerbate the conversion-related problems discussed above.

The issue of traffic congestion in industrial areas merits closer analysis. There are particular truck-related logistical and design issues that affect truck movement, such as intersection geometry, turning radii and the “envelope” of space that each truck needs. Congestion issues also arise due to Seattle’s geography and its resulting north-south orientation and finite street capacity. To some degree, urban congestion is unavoidable. Comprehensive Plan policies recognize this and seek to balance the needs of different users and modes as best as possible. Some existing Comprehensive Plan transportation policies relevant to this balance are set forth at Appendix C.

Because the marine cargo terminals, other Port properties and supportive uses are all located just south of downtown and near the two professional sports stadiums, the congestion created by incompatible modes becomes sharply focused in this critical geographic area. This congestion, in turn, can create more congestion; for instance, when trucking companies are faced with roadway congestion, they may put additional trucks on the road to accomplish the same number of deliveries and ensure that their shipments will arrive on time.

There are also Seattle-specific geographic issues that play a role in freight. Trucks that leave the Port terminals south of downtown must travel east on either State Route 519 or Spokane Street to access freeways and rail yards. Access to and from marine cargo terminals depends on a resilient truck route system with additional back-up routes between the container terminals and the other ends of these trips. While the current network is functional, it is subject to unpredictable delays caused by bridge openings, rail crossings and special events.

The Work Group recommendations and ESHB 1959 reference key freight corridors and call on the State to designate these as “facilities of statewide significance.” Seattle has designated truck routes and freight corridors in the existing Comprehensive Plan transportation element and also in the City’s adopted Transportation Strategic Plan (TSP). The State of Washington’s Transportation Plan also designates freight corridors by tonnage, and the corridors in the area near the Port of Seattle are largely maintained to a standard for the highest tonnage trucks, categorized as “T1” and “T2” trucks. See maps in Appendix D.

Economic Development

Economic development is closely related to land use and transportation issues discussed above. Typical policy and programmatic approaches to economic development include job training, business recruitment and funding for specialized infrastructure. Existing economic development policies in the Comprehensive Plan (see Appendix E) confirm the City’s commitment to activities that attract and maintain businesses and provide a well-trained work force.

For example, Economic Development policy ED16.5 contemplates the type of jobs that are typically created in marine cargo operations:

Support key sectors of Seattle's economy to create jobs that pay wages that can support a family, provide necessary benefits, and contribute to the vitality of the city including, but not limited to, the industrial, manufacturing, service, hospitality and retail sectors.

Other existing policies highlight the importance of international trade and how the City can contribute to a positive business environment. These policies include:

ED30: Recognize the importance of the business climate in efforts to encourage the expansion of international trade in Seattle and the region. Consider support of programs to expand export opportunities for goods and services through the city. Also, consider support of programs to improve and maintain international cooperation. Examples of programs include industry-specific international trade fairs, export trade linkages for home-grown businesses, and Sister Cities programs.

and

ED27 Foster a positive entrepreneurial environment for business start-up and expansion and support the retention of Seattle's existing business and major institution base.

Another aspect of economic development specifically relevant to marine cargo is funding for freight infrastructure. Although not an issue that can be addressed solely at the local level, it is important for City plans to recognize the specialized capital and maintenance needs of freight infrastructure. Even in the best economic times, there are complexities to funding due to the matching requirements between public agencies and as part of public/private partnerships. State constitutional limits require that a Port contribution, for example, to a freight corridor outside the Port's physical boundaries must show a tangible benefit to Port operations.

In 2009, the Work Group found that the Freight Mobility Strategic Investment Board, the designated state agency for freight funding, had only a \$12 million annual budget with which to address a list of 71 statewide projects totaling 3.3 billion dollars. City policies that make clear commitments to economic development and infrastructure maintenance can lend weight to discussion of these matters. Decisive City policies in economic development matters that emphasize strong land use and transportation policies, can help guide effective intergovernmental cooperation and public/private partnerships, such as the Prosperity Partnership, that will ultimately be needed to fund freight infrastructure.

Natural Environment

The Port of Seattle and many of the marine cargo industries in the Duwamish affect the natural environment in many ways. Operating the Port and redeveloping new marine cargo terminals can produce impacts on air and water quality and energy use. Air impacts include equipment exhaust and dust from cement and bulk material plants during construction and vehicle and ship exhaust during operation. Impacts to water quality include storm water runoff, particularly when it flows directly into the Duwamish River or Elliott Bay. Construction projects can create temporary elevations of suspended sediments in nearby waters. Energy consumption in marine cargo facilities

typically relies on electricity for equipment and natural gas for heating buildings. Dredging the harbor to maintain access for cargo container ships can have environmental impacts, particularly on marine habitat.

Some of the lands around the marine cargo terminals were contaminated by previous tenants. When the Port acquires these lands, it must follow environmental laws that require cleanup of toxic soil and sediment. The Port's environmental actions also include effective waste management and recycling programs.

The Port's expansion of terminals often involves concomitant public benefits. For example, when the Port constructed 90 acres of new marine cargo facilities at Terminal 18, it built new public bike and pedestrian paths and provided shoreline access. As part of the re-development of Terminal 115, the Port provided 13 acres of new public shoreline access and cleaned up 60 acres of federal superfund sites.

The Port's "Lower Duwamish River Habitat Restoration Plan," completed in June 2009, is aimed at creating a long-range framework for environmental investments along 4.6 miles of the Duwamish shoreline. The set of 31 restoration project sites inventoried in the plan represent a total of approximately 70 acres of river shoreline.

The Ports of Seattle, Tacoma and Metro Vancouver, British Columbia implemented the first international clean air program in 2008. A parallel effort is the Northwest Ports Clean Air Strategy, a comprehensive air quality program to address emissions from diesel trucks, ocean-going vessels, cargo handling equipment, rail, tugs and other harbor vessels.

The Port sponsors a "clean truck program" that sets mandatory benchmarks for truck emissions. Trucks not meeting these tighter emission standards will not have access to Port cargo terminals. Because some truckers will need to upgrade their trucks to meet the new standards, the Port has created a financial incentive program to help individual truckers finance that upgrade.

The Port's "At Berth Clean Fuels" program, which provides low-sulfur diesel fuel for container and cruise ships while docked, has successfully reduced 96 metric tons of emissions for the 60 vessels that participate in that program. On-dock electric power to ships could be part of future expansion plans and would reduce emissions from ships during the time they are docked at Port facilities.

Conclusion

The directives of ESHB 1959 point to an important – and potentially overlooked – planning issue. To address the needs and impacts of marine cargo terminals in Seattle, Puget Sound and Washington State, land use, transportation and economic policies need to be aligned. As the Washington Transportation Plan found:

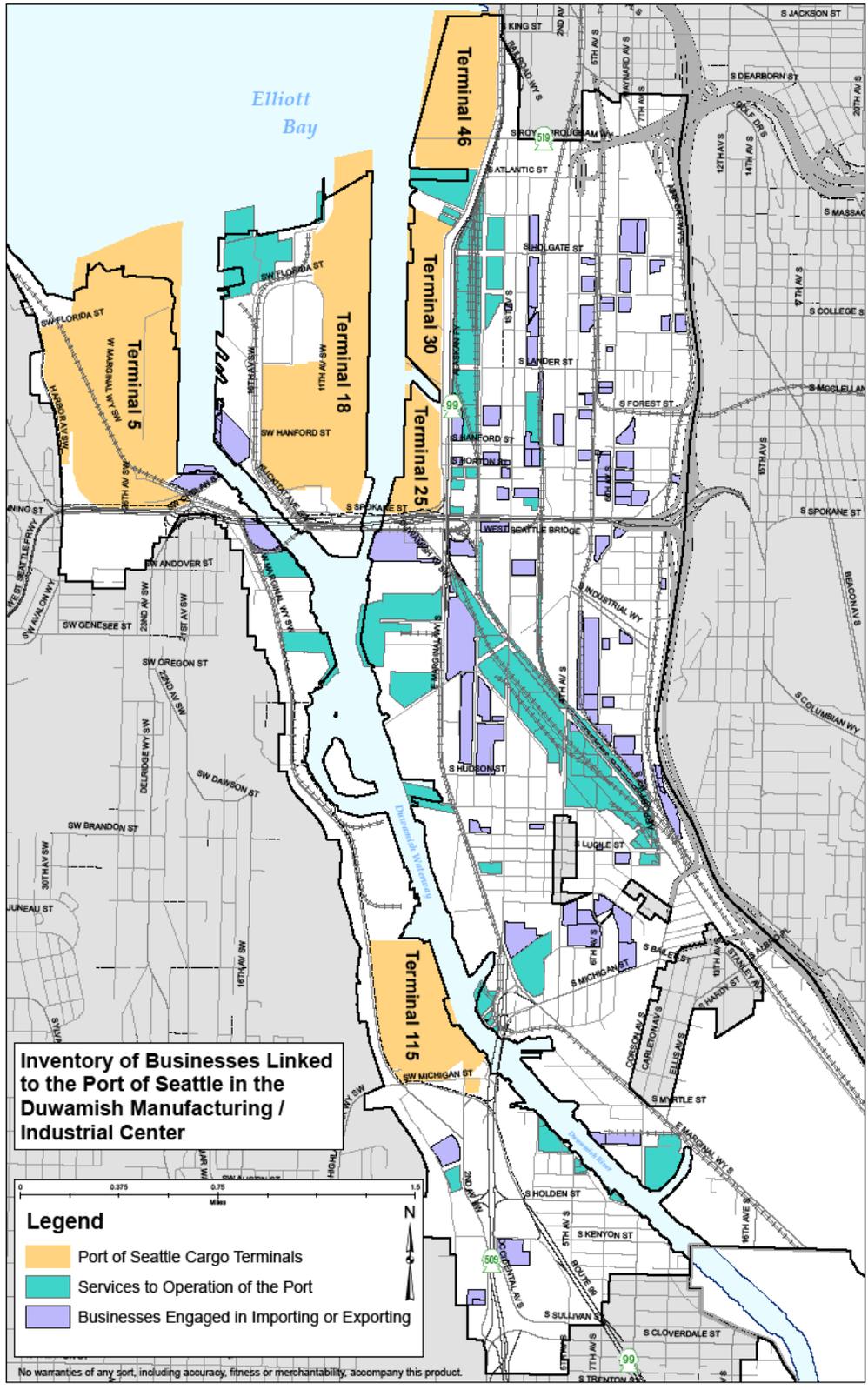
“Significant structural forces are reshaping worldwide political and economic relationships. Washington State is a part of those changes and is impacted by the changes. Global competitiveness is being redefined as the economic trends in China and India shift. Transportation is inextricably tied to the economic future of the United States as the consumer appetite for global goods and services continues to grow. These changes continue to impact Washington State in many ways. Washington has two of the largest international

trade ports in the United States. The large volume of containers transported through these ports is projected to triple, at a minimum, over the next 20 years.

Globalization, competitive industry trends, and new technologies are increasing freight volumes twice as fast as Washington's overall population and traffic growth. Competition for road and rail capacity are undermining our transportation efficiency and affecting our economic viability.”

Adopting the Marine Container Terminal Element into the City's Comprehensive Plan provides appropriate recognition of the importance of marine container trade to Seattle and the region, and is a productive way to address the needs of this vital economic sector in a coherent and consistent manner. Adding a new element to the City's Comprehensive Plan could also emphasize that Seattle is committed to maintaining cargo trade through cost-effective logistics and well-considered policies.

Appendix A



Appendix B: Existing Comprehensive Plan Land Use Goals and Policies relating to Industrial Areas

goals

- LUG22** Provide opportunities for industrial activity to thrive in Seattle.
- LUG23** Accommodate the expansion of existing businesses within Seattle, thereby stabilizing the city's existing industrial areas. Promote opportunities for new businesses that are supportive of the goals for industrial areas.
- LUG24** Preserve industrial land for industrial uses and protect viable marine and rail-related industries from competing with non-industrial uses for scarce industrial land. Give special attention to preserving industrial land adjacent to rail or water-dependent transportation facilities.
- LUG25** Promote high-value-added economic development by supporting growth in the industrial and manufacturing employment base.
- LUG26** Give adequate attention to the needs of industrial activity while reducing major land use conflicts between industrial development and abutting residential or pedestrian-oriented commercial areas, and avoid placing unnecessary restrictions on manufacturing uses.
- LUG27** Restrict or prohibit uses that may negatively affect the availability of land for industrial activity, or that conflict with the character and function of industrial areas.
- LUG28** Prevent incompatible activities from locating in close proximity to each other.
- LUG29** Accommodate a mix of diverse, yet compatible, employment activities in Seattle's industrial areas.

policy

- LU140** Designate industrial areas where:
 1. The primary functions are industrial activity and industrial-related commercial functions.
 2. The basic infrastructure needed to support industrial uses already exists.

3. Areas are large enough to allow the full range of industrial activities to function successfully.
4. There is either sufficient separation or special conditions that reduce the potential for conflicts with development in adjacent, less-intensive areas.

uses policies

- LU141** Consider manufacturing uses, advanced technology industries and a wide range of industrial-related commercial functions, such as warehouse and distribution activities, appropriate for industrial areas.
- LU142** Consider high value-added, living wage industrial activities to be a high priority.
- LU143** Permit commercial uses in industrial areas to the extent that they reinforce the industrial character, and limit specified non-industrial uses, including office and retail development, in order to preserve these areas for industrial development.
- LU144** Subject to regulations for nonconforming uses, allow existing businesses to expand, in order to stabilize existing industrial areas, and encourage the siting of new businesses which are supportive of the goals for industrial areas.
- LU145** Prohibit new residential uses in industrial zones, except for special types of dwellings that are related to the industrial area and that would not restrict or disrupt industrial activity.
- LU146** Restrict to appropriate locations within industrial areas those industrial uses which, by the nature of materials involved or processes employed, have a potential of being dangerous or very noxious.
- LU147** Prohibit park and pool lots within 3,000 feet of a downtown zone in order to prevent the use of industrial land for commuter parking for downtown workers.
- LU147.1** IG zones are most appropriately located in the designated manufacturing/industrial centers, where impacts from the types of industrial uses these zones permit are less likely to affect residential or commercial uses. Outside of manufacturing/industrial centers, IG zones may be appropriate along waterways in order to provide land for maritime uses.
- LU147.2** Industrial zones are generally not appropriate within urban centers or urban villages, since these are places where the City encourages concentrations of residential uses. However, in locations where a center or village abuts a manufacturing/industrial center, the IC zone

within the center or village may provide an appropriate transition to help separate residential uses from heavier industrial activities.

development standards policies

Density

- LU148** Limit the density of development through a floor area ratio (FAR) to ensure a level of activity compatible with industrial activity. The FAR is also intended to ensure that new development can be accommodated without major redevelopment of transportation and utility systems, and without creating other substantial negative impacts.
- LU149** Restrict the density or floor area of commercial uses not directly related to industrial activity to preserve industrial shorelines for industrial marine activity and to preserve access to major rail corridors. Vary the restrictions by industrial zone.

general industrial zones policies

- LU156** Use the General Industrial zones to promote the full range of industrial activities and related support uses. Distinguish among general industrial zones based on the density permitted for commercial uses not related to industrial activity. Include among the General Industrial zones:
- Zones that protect marine and rail-related industrial areas from an inappropriate level of unrelated commercial uses and limit those unrelated uses through density or size limits lower than that allowed for industrial uses; and
 - Zones that allow a broader range of uses, where the industrial function of the area is less established, and where additional commercial activity could improve employment opportunities and the physical condition of the area.
- LU157** Include under the General Industrial designation those areas most suited to industrial activity, where the separation from residential and pedestrian-oriented commercial areas is sufficient to mitigate the impacts associated with industrial uses.
- LU158** Seek to protect industrial activity by differentiating among General Industrial zones according to permitted densities for commercial uses not directly related to industrial activity and by limiting the size of certain permitted uses.

Uses

- LU159** Require conditional use review for certain uses to ensure compatibility with the primary industrial function of the zone. Require mitigation of any impacts on industrial activity, the immediate surroundings, and the environment in general. Because of the nature of

industrial uses, classify certain non-industrial uses as conditional uses in order to protect public safety and welfare on non-industrial sites.

- LU160** Prohibit certain uses to preserve land for industrial activity or to minimize conflicts that may occur between the use and industrial activity because the use attracts large numbers of people to the area for non-industrial purposes, or because the use would be incompatible with typical industrial area impacts (noise, truck movement, etc.).

Appendix C: Existing Comprehensive Plan Goals and Policies relating to Transportation in Industrial Areas

- T4 Provide sufficient transportation facilities and services to promote and accommodate the growth this Plan anticipates in urban centers, urban villages, and manufacturing/industrial centers while reducing reliance on single occupancy vehicles.

Discussion

The City has a limited amount of street space, and is unlikely to expand this space significantly. To make the best use of existing rights-of-way for moving people and goods, the City must allocate street space carefully among competing uses to further the City's growth management and transportation goals. The Complete Streets principles set out in Ordinance 122386 promote safe and convenient access and travel for all users — pedestrians, bicyclists, transit riders, and people of all abilities, as well as freight and motor vehicle drivers.

As guided below by this Plan, the Transportation Strategic Plan (TSP) will include detailed maps and descriptions of Seattle's street classifications. Street classifications define how a street should function to support movement of people, goods and services versus access to property. Street classifications provide the basis for determining how individual streets should be used and operated. The TSP also designates street types to further define streets by relating them to the adjacent land uses and their function for pedestrians, bicyclists, transit and freight. Street types enhance the citywide street classifications with more site-specific design guidance that balances the functional classification, adjacent land uses, and competing travel needs.

goals

- TG2 Manage the street system safely and efficiently for all modes and users and seek to balance limited street capacity among competing uses.
- TG3 Promote safe and convenient bicycle and pedestrian access throughout the transportation system.
- TG4 Promote adequate capacity on the street system for transit and other designated uses.
- TG5 Preserve and maintain the boulevard network as both a travel and open space system.
- TG6 Promote efficient freight and goods movement.
- TG7 Protect neighborhood streets from through traffic.

policies

- T6 Allocate street space among various uses (e.g., traffic, transit, trucks, carpools, bicycles, parking, and pedestrians) according to Complete Streets principles, set out in Ordinance 122386, to enhance the key function(s) of a street as described in the Transportation Strategic Plan.

T7 Designate, in the Transportation Strategic Plan, a traffic network that defines Interstate Freeways, Regional, Principal, Minor and Collector Arterial streets, Commercial and Residential Access streets and Alleys as follows:

Interstate Freeways: roadways that provide the highest capacity and least impeded traffic flow for longer vehicle trips.

Regional Arterials: roadways that provide for intra-regional travel and carry traffic through the city or serve important traffic generators, such as regional shopping centers, a major university, or sports stadia.

Principal Arterials: roadways that are intended to serve as the primary routes for moving traffic through the city connecting urban centers and urban villages to one another, or to the regional transportation network.

Minor Arterials: roadways that distribute traffic from principal arterials to collector arterials and access streets.

Collector Arterials: roadways that collect and distribute traffic from principal and minor arterials to local access streets or provide direct access to destinations.

Commercial Access Streets: roadways that directly serve commercial and industrial land uses and provide localized traffic circulation.

Residential Access Streets: roadways that provide access to neighborhood land uses and access to higher level traffic streets.

Alleys: travelways that provide access to the rear of residences and businesses that are not intended for the movement of through trips. Where a continuous alley network exists, it is the preferred corridor for utility facilities.

T8 Establish a street system that can accommodate the weight of heavy vehicles and reduce the damage such vehicles can cause.

T9 Designate, in the Transportation Strategic Plan, a transit network to maintain and improve transit mobility and access, compatible with the transportation infrastructure and surrounding land uses. Through the network, focus transit investments and indicate expected bus volumes and transit priority treatments appropriate for the type and condition of the street.

T10 Designate, in the Transportation Strategic Plan, a truck street classification network to accommodate trucks and to preserve and improve commercial transportation mobility and access. Designate as follows:

Major Truck Streets: an arterial street that accommodates significant freight movement through the city, and connects to major freight traffic generators.

T11 Designate, in the Transportation Strategic Plan, a bicycle classification network to accommodate bicycle trips through the City and to major destinations. Designate as follows:

Urban Trails: a network of on- and off-street trails that facilitate walking and bicycling as viable transportation choices, provide recreational opportunities, and link major parks and open spaces with Seattle neighborhoods, as shown on Figure 1.

Streets: an on-street bicycle network that connects neighborhoods and urban centers and villages and serves major inter-modal connections.

T12 Designate, in the Transportation Strategic Plan, a network of boulevards that provides for circulation and access in a manner that enhances the appreciation or use of adjacent major parklands and vistas and preserves the historic character of the boulevards.

T13 Designate, in the Transportation Strategic Plan, a Street Type overlay to define street use and design features that support adjacent land uses, generally, as follows:

Main Street: Main activity center in urban villages for pedestrians and transit. This Street Type encourages and supports pedestrian and bicycle activity as well as transit. Streets in this type may include high capacity transit stops and are distinguished by compact, mixed land uses, and high densities.

Mixed Use Street: Streets within neighborhood commercial areas of the city. This Street Type supports all modes with an emphasis on pedestrian access.

Regional Connector Street: Provide connections between regional centers along principal arterials. This Street Type supports all modes but is primarily designed to provide citywide and regional access for transit, cars and truck trips and may support high and intermediate capacity transit service.

Commercial Connector Street: Provide connections between commercial areas as well as local access within urban villages along minor arterials streets. This Street Type supports all modes with an emphasis on local access.

Local Connector Street: This Street Type supports pedestrian access along Collector Arterials to and from key pedestrian generators and destinations (e.g. schools, community centers, transit stops). May also be non-arterial streets that provide direct connection to high capacity transit stops.

Industrial Access Street: This Street Type supports freight access to manufacturing and industrial land uses.

Green Street: This Street Type on certain downtown streets provides exceptional pedestrian environments and may include wider sidewalks, street trees, landscaping, and appropriate street furniture emphasizing pedestrian movement.

Neighborhood Green Street: May be on any non-arterial street adjacent to residential and commercial land uses. This Street Type supports all modes with an emphasis on pedestrian amenities, street trees and landscaping.

- T14 Use neighborhood traffic control devices and strategies to protect local streets from through traffic, high volumes, high speeds, and pedestrian/vehicle conflicts. Use these devices and strategies on collector arterials where they are compatible with the basic function of collector arterials.
- T15 Increase capacity on roadways only if needed to improve safety, improve connectivity of the transportation network improve isolated connections to regional roadways, or where other measures are impractical to achieve level-of-service standards. The City will manage capacity of principal arterials where and as appropriate and will not attempt to provide street space to meet latent demand for travel by car. The City will not support freeway expansion for the sole purpose of increasing general traffic capacity.
- T16 Recognize the important function of alleys in the transportation network. Consider alleys, especially continuous alleys, a valuable resource for access to abutting properties to load/unload, locate utilities, and dispose of waste.

discussion

The transport of goods and services is critical to Seattle's and the region's economic development. As a major port city, Seattle's businesses and industries rely on rail, water, and truck transport. These policies, and those in the Economic Development and the Neighborhood Planning elements, support existing businesses and industries, and promote Seattle as a place for economic expansion. Major truck streets are an important part of the freight mobility network and are described in Section B – Make the Best Use of the Streets We Have to Move People and Goods, in this element. The Transportation Strategic Plan has more detailed strategies and street classifications that further support freight mobility in the City of Seattle.

goals

- TG19 Preserve and improve mobility and access for the transport of goods and services.
- TG20 Maintain Seattle as the hub for regional goods movement and as a gateway to national and international suppliers and markets.

policies

- T47 Maintain a forum for the freight community to advise the City and other entities on an ongoing basis on topics of land-based freight transportation facility modifications and enhancements. Coordinate the review of potential operational changes, capital projects and regulations that may impact freight movement. Participate and advocate Seattle's interests in regional and state forums.
- T48 Recognize the importance of the freight network to the city's economic health when making decisions that affect Major Truck streets as well as other parts of the region's roadway system. Complete Street improvements supporting freight mobility along with other modes of travel may be considered on Major Truck streets.
- T49 Support efficient and safe movement of goods by rail where appropriate. Promote continued operation of freight rail lines and intermodal yards that serve industrial properties and the transport of goods. Improve the safety and operational conditions for freight rail transport at the rail track crossings within city streets.
- T50 Promote an intermodal freight transportation strategy, including rail, truck, air and water transport and advocate for improved freight and goods movement. Work toward improved multi-modal connections among rail yards, industrial areas, airports, and regional roadways.
- T51 Consider the needs for local delivery and collection of goods at businesses by truck when making street operational decisions and when developing and implementing projects and programs for highways, streets and bridges.

discussion

Without funding, the goals identified in this Element would be difficult to achieve. This section identifies goals and policies related to providing and prioritizing funds for transportation projects, programs and services. It also identifies the types of multi-year investment plans to be developed as part of the Transportation Strategic Plan process.

goals

TG28 Recognize and promote the urban village strategy when making transportation investments.

TG29 Work towards transportation funding levels adequate to maintain and improve the transportation system.

policies

T68 Make strategic transportation investment decisions that are consistent with other policies in this Plan, with the Transportation Strategic Plan, and with funding opportunities that promote the city's transportation investment priorities. These investment decisions will also be made with consideration to future operating and maintenance costs associated with improvements

T69 Support regional and local transit resource allocations, as well as efforts to increase overall transit funding that are consistent with the City's urban village strategy and the regions' urban center policies.

T70 Pursue strategies to finance repair of road damage from heavy vehicles in a way that is equitable for Seattle's taxpayers.

T71 Fund projects, programs and services with a combination of local and non-local funds, including:

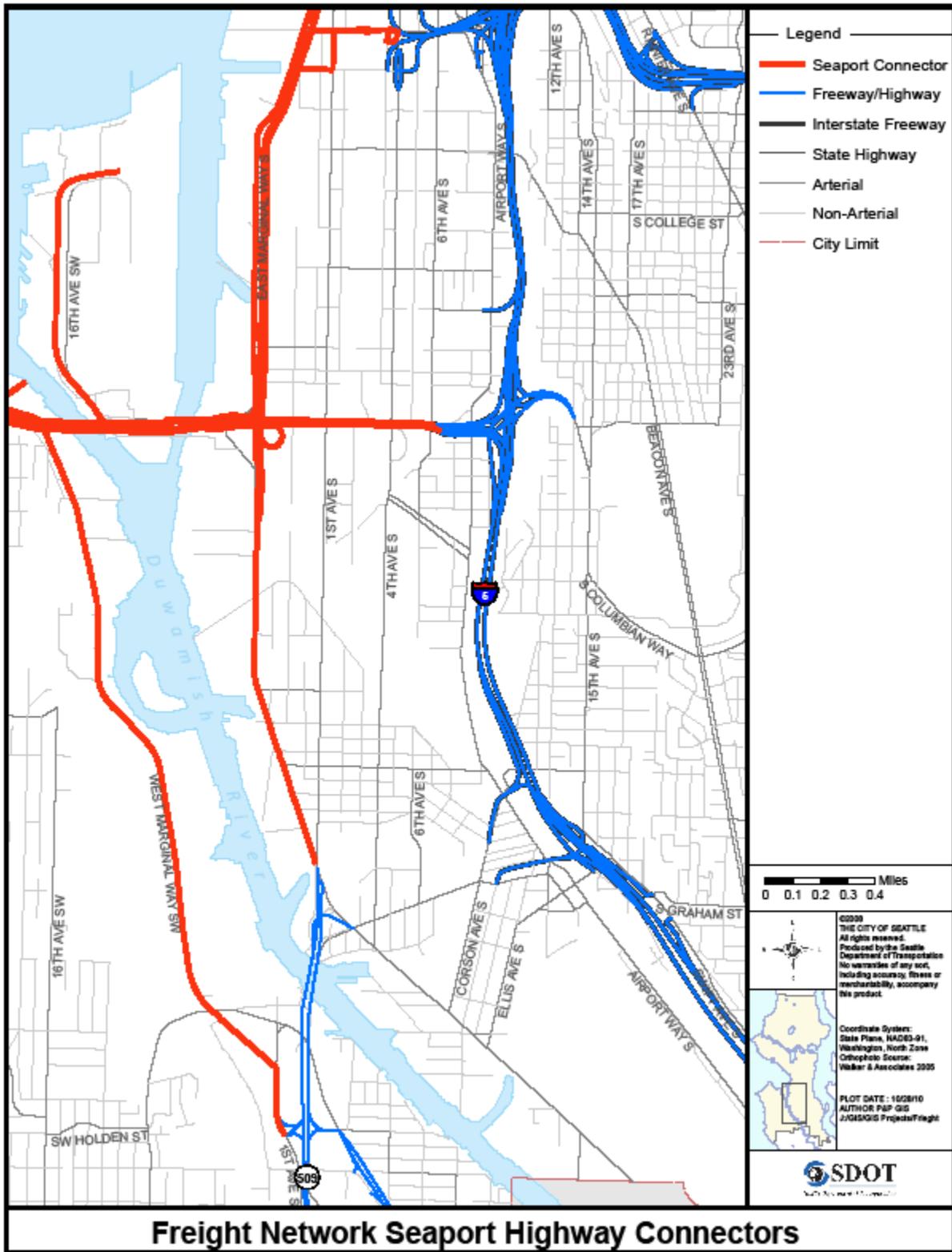
- contributions from other entities that benefit from an investment, such as property owners nearby an investment;
- grants and other investments from local, regional, state, and federal funding sources;
- contributions from the region for investments that serve regionally-designated urban centers and regional facilities.

T72 Consider new funding sources that are flexible, equitable and sustainable, including:

- growth- and development-related revenues, including impact fees, where appropriate and where consistent with economic development policies;
- user-based taxes and fees, including a commercial parking tax; and
- other locally generated revenues.

T73 Support regional, state and federal initiatives to increase transportation funding. Work to encourage new and existing funding sources that recognize Seattle's needs and priorities.

Appendix D



Freight Network Seaport Highway Connectors



