

CHAPTER 1: INTRODUCTION

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Seattle Freight Master Plan Vision:

“A vibrant city and thriving economy connecting people and products within Seattle and to regional and international markets.”

Every day, products and goods move into, out of, and around Seattle. This is freight – and people, businesses, schools, manufacturers and many others rely on timely delivery of products and goods throughout their day. Goods movement supports economic activity and the quality of people’s lives.

Just about every product purchased by someone reaches its final destination by some combination of truck, plane, train, and ship. The result is a massive network of freight infrastructure, including airports, seaports, rail yards, and distribution centers, connected by a large system of truck routes and rail lines.¹

It is critical to ensure goods are moving to, from, and within Seattle in an efficient, predictable, and sustained manner so businesses and consumers receive deliveries on time to help maintain the economic health and vibrancy of the city. The Seattle Department of Transportation’s (SDOT) top priority is safety. It is crucial that our freight network provide freight facilities that ensure people driving delivery vehicles and trucks, both large and small, can travel safely among people walking, riding bicycles, taking transit, or driving other vehicles. This will also advance other key SDOT values (as discussed in Chapter 3), including having a fully interconnected transportation system.

To achieve the Seattle Freight Master Plan (FMP) vision, we need to design our limited roadway network to effectively connect people and products to their marketplaces. Not only does this plan seek to ensure that goods move efficiently on Seattle’s roadway network, it also considers regional and international destinations and what it means to connect to them by road, railroad, waterways, and air.

HOW GOODS MOVEMENT AND DELIVERIES BENEFIT SEATTLE

Seattle’s diverse economy and trade relations are important elements of the city’s history and cultural identity. Seattle’s economy includes industry sectors, such as aerospace manufacturing, that are primarily connected to national and global economies, as well as regionally oriented sectors like the retail industry, which includes local grocers and restaurants. All of these industry sectors are significant freight generators. Washington State is the most trade-dependent state in the nation, and Seattle is at the center of that trade economy. Currently, 40% of all jobs in Washington are tied to freight-related activity.²

In the most general sense, freight mobility is the term applied to moving goods from one place to another by any mode – vehicle (mainly truck), plane, train, pipeline and/or boat – often with complex moving parts and logistics. It is the process by which the latest gadget you ordered over the internet makes it from the warehouse to your doorstep.

¹California State Department of Transportation, Healthy Communities and Healthy Economies a Toolkit for Goods Movement. March 2009. www.rctc.org/uploads/media_items/healthy-communities-and-healthy-economies-a-toolkit-for-goods-movement.original.pdf.

²Washington State Department of Commerce. www.commerce.wa.gov/Economic-Development/Exports/Pages/default.aspx.

Making the case for investing in freight mobility

Livelihood

By 2035, an additional 120,000 people are expected to call Seattle home. Accommodating the daily needs of people living here today and over the next 20 years will be critical to our quality of life. Seattle is also expected to gain an additional 115,000 jobs, an increase of 25%, over the next 20 years. Additional residents and jobs will require the delivery of more goods to serve their needs. Ensuring our roadways can accommodate these demands is essential to ensuring a thriving city in the future.

Freight transportation makes our economy and quality of life possible.

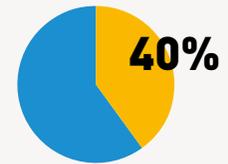
Without freight transportation to get goods where they need to go and when they need to get there, the shelves in our local grocery stores and retail shops would be empty. We would be unable to receive and send mail and packages. Hospitals would be unable to procure highly specialized devices needed for medical procedures. Our cars and other vehicles would sit in driveways or in garages with empty gas tanks. Our homes would be unheated. Freight transportation is critical to allow us to get the goods and services we need, when we need them.

Economy

Washington's transportation industry supports nearly 900,000 jobs in the Puget Sound economy through freight-dependent sectors such as agriculture, forestry, construction and manufacturing – producing an economic impact of \$91.9 billion.³

Freight is vital to the regional economy

WASHINGTON JOBS
tied to freight



PUGET SOUND JOBS
tied to freight



Industry	Jobs
Wholesale & Retail	466,000
Manufacturing	233,000
Construction	131,000
Transportation	47,000
Agriculture/Timber & Wood Products	16,000

Total almost 900,000!

ECONOMIC IMPACT
of freight in Puget Sound

\$91.9 Billion

in regional
domestic product

³Washington State Freight Mobility Plan. 2014. p. 7. www.wsdot.wa.gov/NR/rdonlyres/4AB1DCDE-5C29-4F08-B5E7-697F432C34D7/0/2014WashingtonStateFreightMobilityPlan.pdf

Our economy has prospered and grown in part due to thriving seaport and maritime commerce. In fact, the Port of Seattle is the fifth largest port in the United States and recently created a Seaport Alliance with the Port of Tacoma (more information in Chapter 2).⁴ The majority of our port facilities are located within the Duwamish Manufacturing/Industrial Center (MIC), one of two MICs in the City of Seattle.

The Duwamish MIC and the Ballard-Interbay-Northend MIC (BINMIC) account for more than 64,000 jobs, which is 15% of all jobs in Seattle. A network of marine terminals, railroads and rail spurs, roadways, and airports serve the MICs. Having a diverse economy—that is, one based on a wide range of profitable sectors, not just a few—has long been thought to play a key role in a sustainable economy. There is a link between how a diverse and sustainable economy promotes long-term economic health.⁵

Monetary and Societal Costs

Trucks often have limited times when deliveries can be made. When roads are congested or poorly maintained deliveries may be delayed. This increases costs that are passed on to consumers (regardless of income), and decreases business viability. In some cases, trucks may divert to alternative routes, which can affect mobility in residential areas or cause conflicts with other transportation modes.

Environmental Impacts and Benefits

While goods movement can create environmental impacts throughout the city, investments in freight mobility improvements can help mitigate these negative impacts.

Goods movement can increase air, water, and noise impacts in areas with high freight volumes. Each of these markers influences quality of life, and can be quantifiable, although citywide data is not currently available. Truck emissions contribute to air pollution and global climate change; unpaved streets, or streets with inadequate storm water facilities contribute to poor water quality; and goods delivery by truck can produce higher noise levels than other freight modes.⁶

Investing in freight mobility improvements can help mitigate adverse impacts. Eliminating bottlenecks helps reduce congestion, vehicular idling and greenhouse gas emissions (GHG). Noise and water quality impacts can be mitigated using several of the strategies and actions identified in Chapter 5.

A freight plan that provides for adequate wayfinding, uses intelligent transportation systems (ITS), and has a well thought-out and integrated freight network will be instrumental in our efforts to meet citywide, state, and federal GHG reduction goals.

Reliability

A reliable transportation network for movement and delivery of goods is vital to ensure on-time deliveries for consumers, to maintain the confidence of existing business and industry sectors, to encourage businesses to locate in Seattle, and to generate additional jobs, businesses and tax revenue. Operational improvements are an essential, cost-effective way to improve freight transportation reliability and enhance mobility, safety, and environmental conditions in communities affected by truck movements.

⁴The Northwest Seaport Alliance. www.nwseaportalliance.com/#/maps/overview.

⁵Booz and Co. 2008, The road to economic diversification, Rabih, Abouchakra, Chadi N. Moujaes, Mazen Ramsay Najjar, Richard Shediak,

⁶Organization for Economic Cooperation and Development, 1997, The Environmental effects of freight.

Supply chain

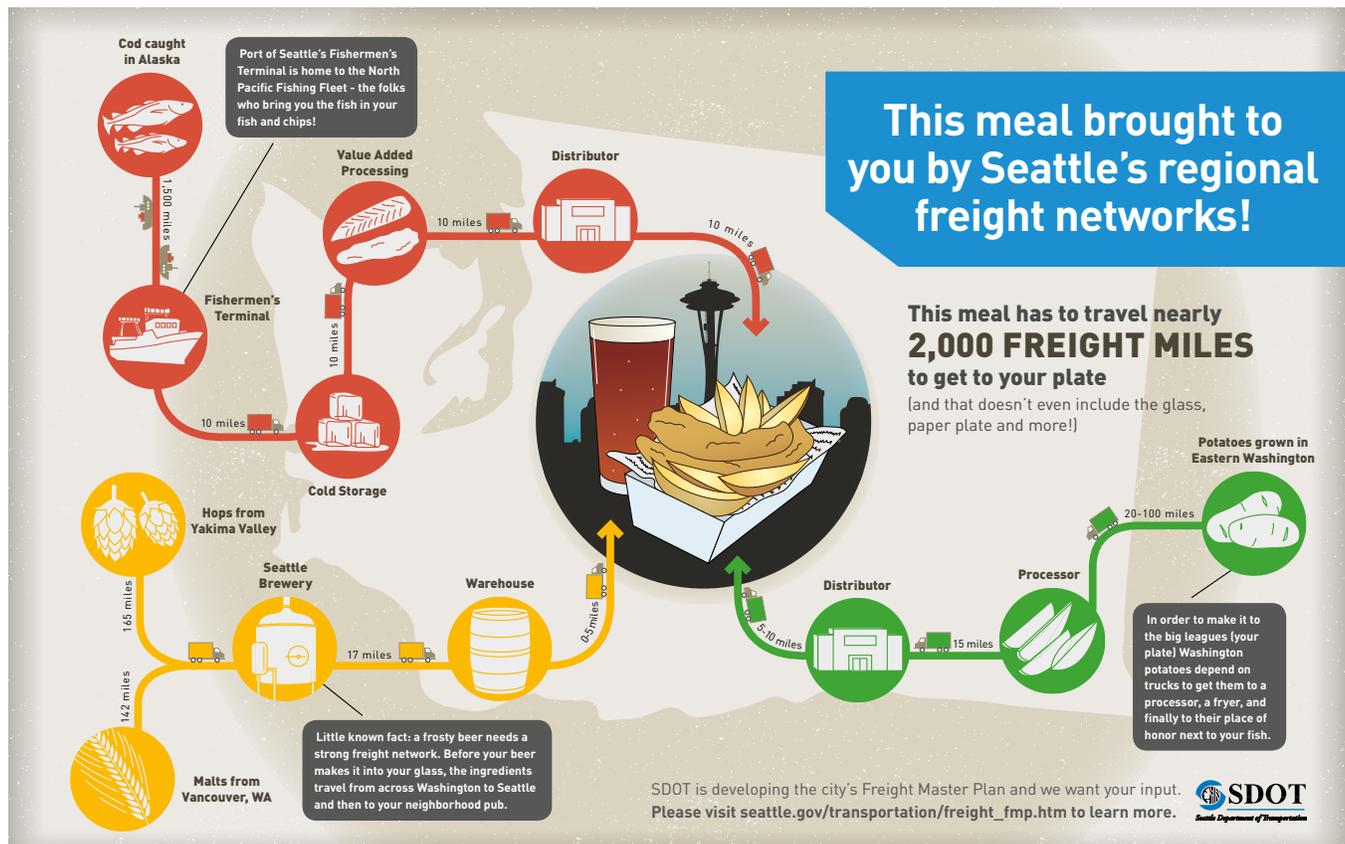
A supply chain consists of the people and facilities involved in manufacturing, distribution and retail. They are linked by information and transportation in a seamless, integrated network to supply goods or services from the source of production to the point of consumption. Speed to market is one of the most important factors in supply chain design and execution. It influences whether a product moves by truck, rail, ship, or air at a particular stage.

One way to better understand supply chains is to look at the many steps and long distances required to get food from farm to table. The infographic in

Figure 1-1 shows the nearly 2,000 miles it takes to deliver products that result in a pint of beer and a plate of fish and chips on the table of a local pub.

If any part of the supply chain breaks down, costs will be reflected in the price of your beer and plate of fish and chips, as demonstrated in Figure 1-1, or your milk, bread, and eggs at the grocery store. If trucks carrying goods are delayed due to congestion, or if businesses are not open to accept deliveries, or if truck drivers receive parking tickets due to lack of allocated curbside space or loading docks, the costs of gas and additional time are passed to the consumer and raise the cost of living and doing business in the city.

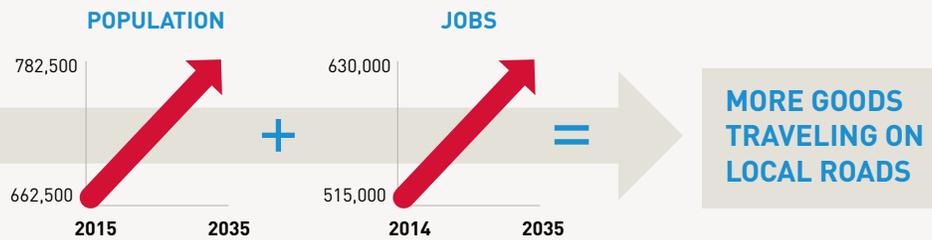
FIGURE 1-1: SEATTLE SUPPLY CHAIN



Freight trucks deliver goods you depend on



Our city is growing, increasing demand for local freight



WHY DOES SEATTLE NEED A FREIGHT PLAN?

The FMP is one of our City's four modal master plans: pedestrian, bicycle, transit, and freight. Move Seattle is Mayor Ed Murray's 10-year strategic vision for all transportation modes, including freight. This vision seeks opportunities to integrate the plans and create a comprehensive multimodal system that safely moves people and goods.⁷

In Seattle, thousands of local jobs and deliveries depend on an efficient, connected freight network. To ensure Seattle is prepared for continued growth, the FMP will serve as the 20-year blueprint to guide freight mobility investments and improvements, increase safety, and address freight-related issues.

Future freight volumes are inextricably linked with economic growth in Seattle and the region, as well as international trade moving through regional air and sea ports. With our anticipated growth in population and jobs over the next 20 years, we anticipate freight volumes to increase by at least 60% because many of these jobs are tied to freight-reliant industries.⁸ As the city grows, more trucks will use our streets to support city and regional needs.

With many of Seattle's streets currently at capacity during peak hours and bottleneck conditions worsening, it is increasingly important to identify key infrastructure investments that will provide the most relief and benefits for truck freight mobility now and into the future.

⁷SDOT. Move Seattle. www.seattle.gov/transportation/citywide_planning.htm.

⁸Washington State Freight Advisory Committee, Washington State Freight Trends & Policy Recommendations for Air Cargo, Freight Rail, Ports & Inland Waterways, & Trucking, May 2014 www.fmsib.wa.gov/fac/20140602-FINALComplete%20Folio_for%20printer5-7-14.pdf

In 2013, Washington exported merchandise worth \$82 billion, and it is estimated that \$37 million of goods move on Washington roadways every hour of every day.

Many different types of travelers depend on Seattle’s roadway network. It is important to ensure trucks can operate efficiently and safely while not inhibiting or obstructing the ability of other travelers and trip purposes. This, in turn, will enhance and ease freight mobility while making our roadway network safer for everyone.

The FMP focuses primarily on urban truck movement to support Seattle’s increasing demand for the delivery of goods and services in a safe and reliable manner. Railroad, marine, air freight, and pipeline, which primarily transports natural gas, are also critical components in the plan. However, because the roadway network is within the City’s purview, the FMP focuses on how truck freight provides access to these other modes. The plan outlines the crucial role that goods movement and deliveries play in meeting our goals for social equity, economic productivity, sustainability, and livable neighborhoods.

Seattle FMP Vision and Goals

The foundation of the Seattle FMP is expressed in its vision:

“A vibrant city and thriving economy connecting people and products within Seattle and to regional and international markets.”

The following 6 goals reflect our current needs and desired outcome of freight infrastructure investments in Seattle. They are described in detail in Chapter 3, Policy Framework.

Economy – Provide a freight network that supports a growing economy for Seattle and the region.

Safety – Improve safety and the predictable movement of goods and people.

Mobility – Reliably connect manufacturing/ industrial centers and business districts with the local, state, and international freight networks.

State of Good Repair – Maintain and improve the freight transportation network to ensure safe and efficient operations.

Equity – Benefit residents and businesses of Seattle through equity in freight investments and improve the health of communities impacted by goods movement.

Environment – Improve freight operations in Seattle and the region by making goods movement more efficient and reducing its environmental footprint.

What will the FMP accomplish?

The FMP was developed to address the unique characteristics, needs, and impacts of freight mobility in Seattle. It identifies why goods movement is so important to the City and the region, examines the challenges of moving goods, and provides solutions to address these challenges. The FMP answers two key questions:

- How can we help build a strong and diverse economy in Seattle by improving our position as a gateway for global trade and increasing family wage jobs in the maritime and manufacturing industries?
- How can we efficiently and sustainably accommodate the need to move goods and people in a fast-growing, densely populated, compact environment?

The FMP is a long-term plan aimed at ensuring that freight needs are met in a safe and sustainable way that supports Seattle’s residents and businesses. The plan:

- Expands the designated freight network
- Proposes strategies, actions, and projects to help goods move more efficiently and reliably while minimizing impacts on people and communities
- Develops truck design guidelines
- Prioritizes projects to implement the plan

THE PLANNING PROCESS

Development of the FMP was formally initiated in 2014. The process included public input through district councils and other public events sponsored by the City, briefings to freight stakeholders, and coordination with City staff and other agencies. Data relating to past freight action plans, the Freight Access Project (FAP), the City’s land use pattern, topography, traffic volumes, and a number of other factors were reviewed. It relies on extensive geographic information systems (GIS) and field analysis of our existing transportation network to identify freight facilities, determine their needs, and identify potential solutions.

Understanding the context for goods movement within Seattle and the greater region has been integral to the development of the plan. A number of existing studies, analyses, and reports were written prior to, or during, the FMP process that fed into understanding freight in Seattle. These studies include:

- Freight Mobility Strategic Action Plan⁹
- Industrial Lands Study¹⁰
- Basic Industries Economic Impacts Analysis¹¹
- Seattle Industrial Areas Freight Access Project¹²

Additionally, the City of Seattle commercial vehicle load zone information¹³ and documents from the Port of Seattle and Puget Sound Regional Council (PSRC) were reviewed.

These reports and other applicable studies were supplemented with the development of several key technical memos, all included as appendices to this report:

- Sustainable Freight Opportunities
- Role of Freight in Seattle’s Economy
- FMP Design Guidelines
- Existing and Future Truck Mobility and Access in Seattle
- Neighborhood Case Studies



⁹SDOT, June 2005, www.seattle.gov/transportation/freight.htm#plan.

¹⁰City of Seattle, August 2005, www.seattle.gov/Documents/Departments/economicDevelopment/keyIndustries/industrial_land_study_final_91305.pdf.

¹¹City of Seattle, July 2009 www.seattle.gov/Documents/Departments/economicDevelopment/keyIndustries/CAI-BasicIndustries2009-0803Final.pdf.

¹²SDOT & Port of Seattle, May 2015, www.seattle.gov/transportation/freight_industrialareas.htm.

¹³SDOT, 2016, www.seattle.gov/transportation/parking/parkingload.htm.

This research framed the existing conditions of freight in Seattle and the region, as well as how our economy is linked to the greater Washington state economy. The analyses culminated in an FMP Existing Conditions Report, which identified current locations of congestion, weight and height restrictions, and other needs such as parking and loading. This information is summarized in Chapter 2.

Based on existing conditions, we sought to understand how future growth in Seattle will affect freight mobility and accessibility through the year 2035. The analysis of existing freight trends and likely future needs informed the development of the freight network.

We then identified future key congestion points and safety issues in the freight network to identify possible improvements. We developed a wide range of solutions including:

- Safety education programs
- Traveler information systems
- Signal and intersection improvement
- Major capital investments

Working with our project advisory committee and residents, we prioritized projects and created an implementation strategy.

PUBLIC ENGAGEMENT PROCESS

Understanding the concerns of our residents and freight stakeholders was critical to the FMP. To ensure that many voices were heard, we carried out a robust public engagement process as part of the project. This included the creation of a project advisory committee and three phases of public outreach and engagement. The first phase engaged freight stakeholders and the second two phases focused on both residents and the freight community. Figure 1-2 illustrates the public engagement process for the FMP. SDOT's comprehensive Public Engagement Strategy for the project is attached as Appendix A.

FIGURE 1-2: PUBLIC ENGAGEMENT PROCESS FOR FMP



FMP Advisory Committee

The FMP Advisory Committee was established at project inception to provide freight expertise and community perspectives. The committee comprises a diverse group of external stakeholders, including representatives of trucking companies, railroads, distributors, the Port of Seattle, Seattle's Planning Commission, the City's Freight, Pedestrian and Bicycle Advisory Boards, and residents from neighborhoods located in or adjacent to industrial areas. The committee met during the planning process to provide input on all major products.

Phase 1: Information gathering

Our outreach started by engaging stakeholders to learn more about their freight needs and issues throughout the city. More than 25 individual stakeholder interviews were held.

Stakeholders included:

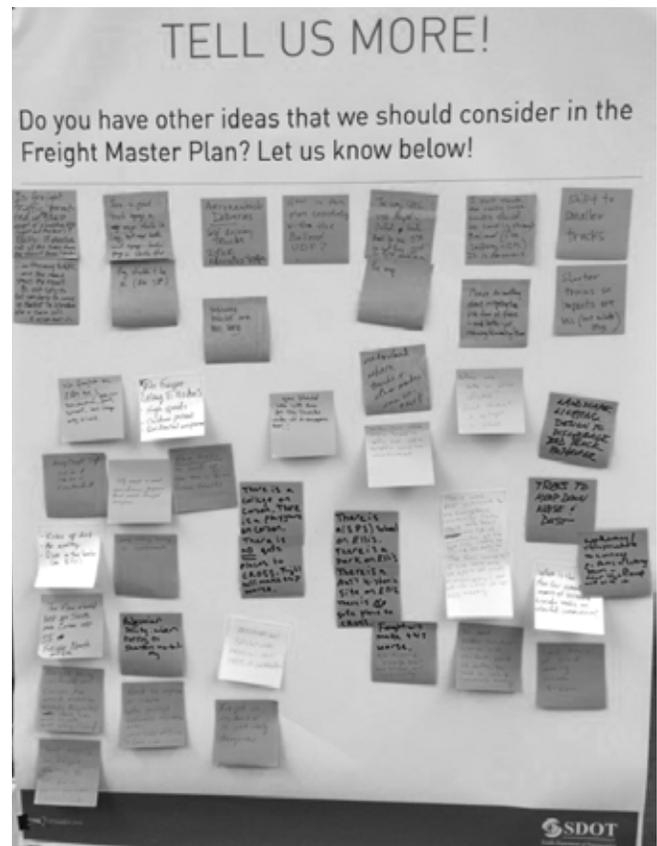
- Freight carriers
- Manufacturers
- Restaurant owners
- Business and industrial organizations
- State and local partners
- District and neighborhood councils
- Community organizations
- City commissions and boards

In addition, 3 group interviews were held and we met with more than 29 other organizations. To supplement the individual and group interviews, an online survey was conducted targeting people who drive trucks, with more than 60 responses provided.

The input we received informed the existing conditions process and provided insight about safety concerns, congestion, bottleneck impacts, and parking and loading needs. The input also yielded information on the impacts to communities experiencing high truck volumes such as air quality, vibrations from heavy vehicles, and safety concerns with large trucks in residential areas.

Phase 2: Input on the proposed network

Results of existing and future conditions analysis and preliminary network proposals were shared with a broader group of stakeholders and residents at open houses in Ballard and Georgetown. In addition, we met with the City's commissions and modal advisory boards, several district and community councils, and industrial associations, among others. In total, 17 outreach meetings were conducted during Phase 2.



Input from the second phase of outreach resulted in modifications to the proposed freight network and informed the development and prioritization of solutions.

Phase 3: Public review of the draft FMP

A third phase of engagement is planned to obtain public input on the draft FMP. Comments received during the public review period will be used to develop a Mayor's Recommended Plan that will go to City Council for review and adoption.

PLANNING CONTEXT

The FMP exists on a foundation of citywide planning policy. The City's primary policy document is the Seattle Comprehensive Plan, *Toward a Sustainable Seattle*. It is a 20-year vision and roadmap for Seattle's future. The plan guides City decisions on where to direct new jobs and

housing, how to improve our transportation system, and where to make capital investments such as utilities or libraries. The FMP is one of several key modal plans, including master plans created to guide the future of walking, bicycling, and riding transit in Seattle. More information on how the FMP relates to other City planning documents and mobility plans is provided in Chapter 3, Policy Framework.

The FMP is, by its nature, a work in progress. Updates to the FMP should occur about every 5 to 7 years. These future updates will be necessary to assess progress, take advantage of emerging opportunities, and re-evaluate priorities.

As areas of the freight network are improved and/or constructed, new technologies are adopted, and Seattle continues to grow in jobs and population, freight demand may increase on particular corridors or between specific locations. Priorities will shift and new opportunities will emerge. These changes will be reflected in regular updates to the implementation plan.

In addition to updating the plan, SDOT and other city departments will be accountable for implementing the plan in a strategic manner that will involve ongoing review by the Seattle Freight Advisory Board and the City Council. This is addressed in Chapter 5, Developing Solutions and Chapter 6, Implementation Strategy.

ORGANIZATION OF THE SEATTLE FMP

The FMP is organized into 6 chapters, including this introductory chapter.

Chapter 2, Seattle Freight Context, describes the existing environment in which freight operates, including land use, population, employment, and economic growth. It also provides an assessment of existing and anticipated future conditions. An overview of how freight operates in 2 Seattle neighborhoods is documented.

Chapter 3, Policy Framework, provides the overall planning and policy context and further explores the vision and goals briefly described in the introduction.

Chapter 4, Seattle's Freight Network, presents the freight network developed through analysis of existing freight trends and likely future needs. This chapter describes how the network was identified and presents the recommended freight network map. In addition, this chapter evaluates the network's ability to handle projected freight needs. It identifies safety and bottlenecks issues based on future freight trends.

Chapter 5, Developing Solutions, assesses the freight network and identifies solutions to ensure it will continue to serve freight users into the future. Solutions include strategies, actions, and capital investments that are needed to keep freight moving.

Chapter 6, Implementation Strategy, lays out the path forward for executing the FMP. Priorities, a funding strategy, and performance measures are described.

