

# 9

## Freight Element



This chapter summarizes strategies to address the future needs of Milwaukie's freight system. The Freight Plan is intended to outline all freight needs over the next ~~20~~ 22 years, develop projects to address those needs and identify costs for those projects.

The quality of the local freight network, i.e., those transportation facilities necessary for the movement of bulk goods and materials, is essential to the economic health of the city. While all cities have some need for local delivery of goods, a majority of Milwaukie's employment is in the heavy manufacturing, warehousing, and distribution sectors. These employment sectors are dependent on the efficient movement of large quantities of both raw materials and products. A well-functioning and reliable system for the movement of freight into and out of Milwaukie contributes significantly to the City's ability to attract and retain industrial investment—and the jobs and tax proceeds that come with that investment.

### TSP GOAL AND POLICY FRAMEWORK

Milwaukie has developed a set of goals to guide the development of its transportation system (see Chapter 2). Several of these TSP Goals guide Milwaukie's policies on freight access and connectivity, specifically the following:

- **Goal 1 Livability** guides the City to protect residential neighborhoods from excessive noise and pollutants associated with freight transportation.
- **Goal 4 Quality Design** calls for street designs that to support the streets' intended uses, including truck turning movements, as applicable.
- **Goal 5 Reliability and Mobility** calls for maintaining traffic flow and mobility on arterial and collector roadways.
- **Goal 6 Compatibility** directs the City to coordinate with ODOT to address improvements to the commercial railroad system and the State highway system within Milwaukie.
- **Goal 9 Economic Vitality** calls for a safe and efficient freight system that facilitates the movement of goods.

## NEEDS

This section outlines the basic needs for freight in Milwaukie, based on existing deficiencies and future forecasting.

### Accessibility

In Milwaukie the land uses that are most associated with freight movement are located north of downtown along Hwy 99E (McLoughlin Blvd) and in southeast Milwaukie along Hwy 224. The function of these highways in these areas is critical to serving the movement of freight and goods. Both of these industrial areas are accessible by truck and rail. While rail access tends to function well (despite limitations due to Union Pacific's scheduling priorities), truck access is constrained and is projected to become more problematic as traffic volumes increase in the future (see Chapter 8). A third industrial area in the city along Johnson Creek Blvd, though smaller than the others, is also highly constrained by the transportation system.

The north Milwaukie industrial area (defined as the area south of city limits, west of the Union Pacific Railroad, east of 17<sup>th</sup> Ave and north of Hwy 224) has limited access to and from Hwy 99E. The eastern half of the area is particularly difficult to access: automobiles can only enter via the signalized intersections of Ochoco St/Hwy 99E and Milport Rd/Hwy 99E. Left turns from Hwy 99E at both of these locations are prohibited and right turns are allowed only at Ochoco St. Together these restrictions force trucks to use the frontage roads of Main St (on the east side of Hwy 99E) and Frontage Rd (to the west of Hwy 99E). Although restricted turn movements from Hwy 99E in this area improve through-vehicle performance and reduces delay on Hwy 99E, it forces freight vehicles to attempt difficult turning maneuvers and to travel out of their intended direction.

The intersection configurations at and near the Hwy 99E/Milport Rd intersection limit the utility of the intersection. The two frontage roads are very close to Hwy 99E. The stacking distance on Milport Rd between Hwy 99E and Frontage Rd is approximately 70 feet; the distance between Main St and Hwy 99E is just fifty feet, barely enough room to store one large trailer semi-truck. In addition, the alignment of the all-way stop control intersection of Main St/Milport Rd makes it particularly difficult for trucks to turn from Main St onto Hwy 99E.

The International Way industrial area is north of Hwy 224, between 37<sup>th</sup> Ave to the west, Lake Rd to the east, and Railroad Ave to the north. Access to and from the area is via three intersections: the signalized intersection of International Way, 37<sup>th</sup> Ave and Hwy 224; a signalized intersection at Freeman Way and Hwy 224; and a signalized intersection of International Way and Lake Rd, which is approximately 300 feet from the interchange of Lake Rd with Hwy 224. As discussed in Chapter 8, the intersection at 37<sup>th</sup> Ave and Hwy 224 is not well configured. The two intersections on 37<sup>th</sup> Ave are approximately 70 feet apart, making it difficult for trucks to access Hwy 224 because there is only space for one truck to wait for the signal to turn green and allow access to Hwy 224. A second concern is the curvature of the approach to Harmony Rd and Lake Rd at the eastern end of International Way, which is difficult for trucks to maneuver.

Ingress and egress to the third industrial area in Milwaukie, in the northeast corner of the city, is provided via Johnson Creek Blvd. Johnson Creek Blvd however, is limited to two axle-vehicles to the west of 45<sup>th</sup> Ave, effectively prohibiting heavy truck access to the west. The result is that trucks traveling to and from this area with origins or destinations in that direction must travel south via Linwood Ave, adding several miles of out-of-direction travel.

## **Connectivity**

Several significant regional facilities that provide for regional movement of freight are located, in part, within Milwaukie. These are most notably the Union Pacific Railroad's (UPRR) Brooklyn Sub mainline and the Hwy 99E, and Hwy 224 mobility corridor. Access to these facilities allows Milwaukie businesses to connect to the national transportation network via Brooklyn Yard and I-205. Informal surveys of industrial businesses have confirmed that most out-bound and in-bound heavy truck trips use I-205. While these regional facilities do provide mobility for local users, they are operated by ODOT and UPRR primarily for the benefit of regional through-movements.

There is a need to minimize delay in accessing regional freight facilities. Milwaukie should acknowledge the need to serve those through-movements, while also striving to preserve and expand access for trips originating or terminating within the city. This is a primary concern for the north industrial area due to the out-of-direction travel required to access the area and the delays associated with leaving the area.

In addition, local and regional freight system users would benefit from improvements in the connections between these regional routes. Currently Hwy 99E and Hwy 224 connect with a partial interchange that facilitates direct access between southbound Hwy 99E to eastbound Hwy 224, and westbound Hwy 224 to northbound Hwy 99E. Other movements are not directly accommodated and require vehicles to utilize city streets such as 17<sup>th</sup> Ave (Hwy 224 westbound to Hwy 99E southbound) and Harrison St (Hwy 99E northbound to Hwy 224 eastbound).

## **Rail Crossings**

The majority of the at-grade rail crossings in Milwaukie are constructed of asphalt. This surface material becomes uneven and deteriorates more quickly than concrete or rubberized materials that are more commonly used at railroad crossings. Elderly and disabled citizens, as well as adults with baby strollers, are experiencing difficulties walking across the asphalt railroad crossings. Bicyclists may also have difficulty crossing the railroad tracks at these locations. These are of primary concern on arterials and collectors, where vehicle traffic is the heaviest and the asphalt material deteriorates at a faster rate.

As discussed in Chapter 8, all at-grade rail crossings, regardless of materials, cause interruptions to the transportation network. These are particularly acute at crossings such as the UPRR crossing of Harrison St and the UPRR crossing of Harmony Rd, where frequent train crossings interrupt important auto circulation routes and impact emergency services.

## **Truck Maneuverability**

Truck turning movements are difficult due to intersection alignments and/or geometries at several locations, including the Main St and Omark Dr intersections with Mailwell Dr.

## **Neighborhood Livability**

Heavy vehicles and trains frequently create real and perceived neighborhood impacts. The impacts include noise, vibration, safety, aesthetics, and air quality. They are particularly noticeable when trains or trucks pass through or near residential neighborhoods.

# RECOMMENDATIONS

## Strategies

To address the needs described above, the City will pursue the following strategies.

### Accessibility

Several alternatives for improving truck access and local circulation in the North Milwaukie industrial area were examined during the preparation of ~~this~~ the 2007 TSP update. The purpose of this detailed analysis was to develop and analyze various alternatives to improve access and circulation for freight to and from this area. The work was conducted with an awareness of the potential impacts that the Portland-Milwaukie Light Rail (PMLR) project could have on access to the area. To help develop alternatives that would meet the access and circulation needs of this area, a separate sub-group of the Freight Working Group was established to help develop a problem statement, goal statement, and evaluation criteria to help guide the development and analysis of the various alternatives.

The preferred alternative among the participants of the sub-group was the construction of an overpass of Hwy 99E at Ochoco St with alternative access to Hwy 99E via on/off lanes, and restricting access at Milport Rd to right-out movements, in concert with a "Tillamook" branch alignment of light rail. The detailed analysis for this process can be found in ~~the Technical Appendix D of this TSP~~. Because this access issue sits within the larger question of the best design of the Hwy 99E/Hwy 224 corridor, the Freight Working Group recommended forwarding these findings to a future Hwy 99E/Hwy 224 Corridor Refinement Plan, rather than including a specific improvement or set of improvements in the ~~TSP~~ Freight Master Plan.

### Rail Crossings

Improving the quality of the materials at at-grade crossings and pursuing the grade separation of key crossings, such as the UPRR and Harrison St, and the UPRR and Harmony Rd crossings, are included in the master plan. The City should not support the introduction of any new at-grade heavy rail crossings in the city.

### Truck Maneuverability

Intersections that are part of the local freight network or provide access to regional facilities ought be designed to fully accommodate truck turning maneuvers. As part of new design guidelines, the City should adopt clear standards for adequate turning radii, lane widths and other geometric requirements of heavy vehicles for those streets that are local preferred freight routes or internal circulation routes within industrial areas. The master plan includes a project to correct two Mailwell Dr intersections that are currently problematic for truck maneuvers.

### Neighborhood Livability

In support of minimizing residential impacts, the City actively encourages all heavy vehicles to use, to the extent practical, the identified local freight routes. Potential strategies to reduce freight traffic on local streets not identified as freight routes, such as traffic calming and diversion treatments, can be found in Chapter 11 Neighborhood Traffic Management. The rail crossing improvements described above also address livability issues. The rail crossing safety improvements, which could allow the creation of a "Quiet Zone," included in the ~~Auto~~ Street Network Master Plan would also reduce the negative impacts of freight facilities on residential areas.

## Master Plan

A list of potential freight projects was developed to meet the identified needs for freight. These projects form the basis for the Freight Master Plan. The master plan shown in Figure 9-1 and summarized in Table 9-1 is an overall plan and summarizes the "wish list" of freight related projects in Milwaukie. The projects on the master plan were then used to create a Freight Action Plan. The action plan consists of projects that the community identified as higher priority projects and that the City could reasonably expect to fund. As development occurs, streets are rebuilt and as other opportunities (grant programs) arise, other projects on the master plan will be pursued.

The planning level cost estimates provided for each project are based on general unit costs for transportation improvements, but do not reflect the unique project elements that can significantly add to the estimated project costs. Each of these project costs will need further refinement to detail right-of-way requirements and costs associated with specific design details as projects are pursued.

No major changes  
Minor data updates



# Transportation System Plan

FIGURE 9-1

EXISTING (2007)  
**FREIGHT MASTER PLAN**  
December 2007

## LEGEND

### Existing Freight Routes

- Major Regional
- Minor Preferred (Local)
- Weight Restricted Minor Preferred (Local)

### Proposed Improvements

- Intersection Improvement
- Intersection Material Upgrade
- Corridor Refinement Plan
- Minor Preferred Freight Route (Local)\*

- Major Roads
- Streets
- Railroad
- Springwater Trail
- Kellogg Creek Trail
- County Line
- Parks
- Water
- City Limits

\*Upon adoption of this document, the functional classification for SE International Way will be upgraded to Minor Preferred Freight Route (Local).

## PROPOSED PROJECTS

### Improve Corridor

- A** Conduct Refinement Plan for HWY 99E/HWY 224 focused on motor vehicle and freight mobility.
  - HWY 99E Project Limits: Tacoma St to 17th Ave
  - HWY 224 Project Limits: HWY 99E to Lake Rd Interchange

### Improve Intersection

- B** **17th Ave/HWY 224**  
Upgrade intersection turning radii to better accommodate freight movements
- C** **Main St/Mailwell Dr**  
Upgrade intersection turning radii to better accommodate freight movements
- D** **Mailwell Dr/Omark Dr**  
Upgrade intersection turning radii to better accommodate freight movements
- E** **Harrison St/Union Pacific Railroad Crossing**  
Upgrade crossing to grade separated facility (outcome of crossing dependant upon 99E/224 Refinement Plan findings)
- F** **HWY 224/37th Ave**  
Consolidate two northern legs of 37th Ave and Industrial Way into one leg at HWY 224.
- G** **Harmony Rd/Union Pacific Railroad Crossing**  
Upgrade crossing to grade separated facility (outcome of crossing dependant upon Harmony Rd Project findings)
- H** **At-grade Railroad Crossing Material Upgrades**  
Upgrade crossing paving material to concrete or rubberized material for longevity of paving at: Harrison St, Monroe St, Washington St, Adams St, Oak St, and 37th Ave

**Table 9-1 Freight Master Plan Projects**

Map ID <sup>1</sup>	Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s <sup>2</sup> )
<b>High Priority Projects</b>							
A	High	C	Hwy 224 & Hwy 99E Refinement Plan	Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.	Hwy 99E Project Limits: Tacoma St to 17 <sup>th</sup> Ave	Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange	\$250 <u>270</u>
E	High	C	Harrison St Railroad Crossing Separation	Upgrade Harrison crossing of Union Pacific Railroad tracks to grade-separated facility. Assess as part of Hwy 224 & Hwy 99E Refinement Plan.	Location-specific	Location-specific	\$28,000 <u>30,700</u>
F	High	C	Hwy 224 Intersection Improvements at 37 <sup>th</sup> Ave	Consolidate the two northern legs of 37 <sup>th</sup> Ave and International Way into one leg at Hwy 224.	Location-specific	Location-specific	\$1,946 <u>2,100</u>
I	High	C	Signage and Intersection Improvements at McLoughlin Blvd and Ochoco St	Establish signage for trucks and improve intersection. (TSAP)	Location-specific	Location-specific	\$1,600
<b>Medium Priority Projects</b>							
C	Med	C	Intersection Improvements at Main St and Mailwell Dr	Upgrade intersection turning radii to better accommodate freight movements.	Location-specific	Location-specific	\$50 <u>60</u>
H	Med	G	Railroad Crossing Improvements at 21 <sup>st</sup> and Adams	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$50
H	Med	G	Railroad Crossing Improvements at Washington	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$50
H	Med	G	Railroad Crossing Improvements at Monroe	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$50
H	Med	G	Railroad Crossing Improvements at Harrison	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$50

<sup>1</sup> See Figure 9-1.

<sup>2</sup> Project costs are order-of-magnitude estimates and are in 20072012 dollars. Future costs may be more due to inflation. ~~Costing details can be found in the Technical Appendix.~~ In the case of operational projects, estimated costs are for the entire 22-year planning period.

Map ID <sup>1</sup>	Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s <sup>2</sup> )
H	Med	G	Railroad Crossing Improvements at Oak	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$50
H	Low	G	Railroad Crossing Improvements at 37 <sup>th</sup>	Upgrade paving materials to concrete or rubberized material to improve longevity and enhance for alternative modes.	Location specific	Location specific	\$500
<b>Low Priority Projects</b>							
B	Low	C	Hwy 224 Intersection Improvements at Hwy 224 and 17 <sup>th</sup> Ave	Upgrade intersection turning radii to better accommodate freight movements.	Location-specific	Location-specific	\$50 <u>60</u>
D	Low	C	Intersection Improvements at Mailwell Dr and Omark Dr	Upgrade intersection turning radii to better accommodate freight movements.	Location-specific	Location-specific	\$50 <u>60</u>
G	Low	G	Harmony Road Grade Separation and Realignment at Linwood Avenue	Grade separate Harmony Road from Union Pacific Railroad and align as a through east-west movement. Outcome of alignment and geometry is dependant upon the Harmony Road Environmental Assessment project (scheduled for completion Fall 2008).	Location specific	Location specific	\$28,000

**Notes:**

C = Capital Project

O = Operational Project

P = Policy Project

High = High priority

Med = Medium priority

Low = Low priority

TSAP = Tacoma Station Area Plan



## Action Plan

The Freight Action Plan (Table 9-2) identifies the highest priority projects that are reasonably expected to be funded with local funds by 2030~~2035~~, which meets the requirements of the ~~updated State's~~ Transportation Planning Rule.<sup>3</sup> The action plan project list is ~~the result of~~ based upon a 2007 citywide project ranking process. In 2007, All of the modal master plan projects were ranked by the TSP Advisory Committee after consideration of the Working Groups' priorities, other public support for the project, and how well each project implements the TSP goals and policies. For the 2013 TSP Update, City staff reassessed the prioritization of all projects, incorporating public comments gathered at and around a public meeting in June 2013. Action plan projects that were completed since 2007 were removed from the action plan and new projects identified as top priorities were added. The highest ranking freight projects that are reasonably expected to be funded (see Chapter 13) with local funds are shown in Table 9-2.

**Table 9-2 Freight Action Plan**

Project Name	Project Description	From	To	Project Cost (\$1,000s)	Direct Funding or Grant Match
Hwy 224 & Hwy 99E Refinement Plan	Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.	Hwy 99E Project Limits: Tacoma St to 17 <sup>th</sup> Ave	Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange	\$270	Match

<sup>3</sup> OAR Chapter 660, Department of Land Conservation and Development, Division 012, Transportation Planning, adopted on March 15, 2005, effective April 2005.