To:	Freight Access Working Group Members and Interested Parties
From:	Alex Campbell, Freight Access Working Group Liaison
Date:	June 5, 2007
Subject:	June 13, 2007, Freight Access Working Group Meeting

I hope you will be able to join the City for the third of four meetings on the freight system in Milwaukie on **June 13, 2007, at 9:30 a.m.** The meeting will be held in the conference room on the 2nd floor of Milwaukie City Hall (10722 SE Main Street).

This meeting will also concentrate exclusively on Task 8 of the TSP update, which is studying possible freight access improvements for the North Industrial area.

The specific goals for this meeting are to:

- Solicit feedback on a technical memo on background information.
- Review a revised Problem Statement and Goal Statement.
- Discuss proposed Evaluation Criteria.
- Solicit input and ideas on the first draft of Alternatives.

Thanks for your time and attention.

Alex Campbell
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Enclosures for Workshop #1:

1. Agenda
2. Freight Traffic Analysis Technical Memorandum
3. Problem/Goal Statement & Evaluation Criteria (Draft)

AGENDA

TSP Freight Access Working Group Mtg. #3

June 13, 2007, 9:30-11:30 a.m.
City Hall Conference Room
10722 Main Street, Milwaukie

PURPOSE

- Review
  - Traffic Analysis
  - Problem & Goal Statements
  - Evaluation Criteria
- Discuss preliminary alternatives

SCHEDULE

9:30	Welcome—Purpose of Meeting	Alex Campbell, City
9:35	Freight Traffic Analysis Technical Memorandum	Alan Snook, DKS
9:45	Problem Statement	Alex
10:00	Goal Statement	Alex
10:15	Evaluation Criteria	Alan
10:45	Alternative Sketches	Alan
11:15	Next Steps	Alex

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TRANSPORTATION SOLUTIONS

DRAFT TECHNICAL MEMORANDUM

DATE: June 5, 2007

TO: Alex Campbell, City of Milwaukie
Katie Mangle, City of Milwaukie
Gail Curtis, Oregon Department of Transportation

FROM: Alan Snook, AICP

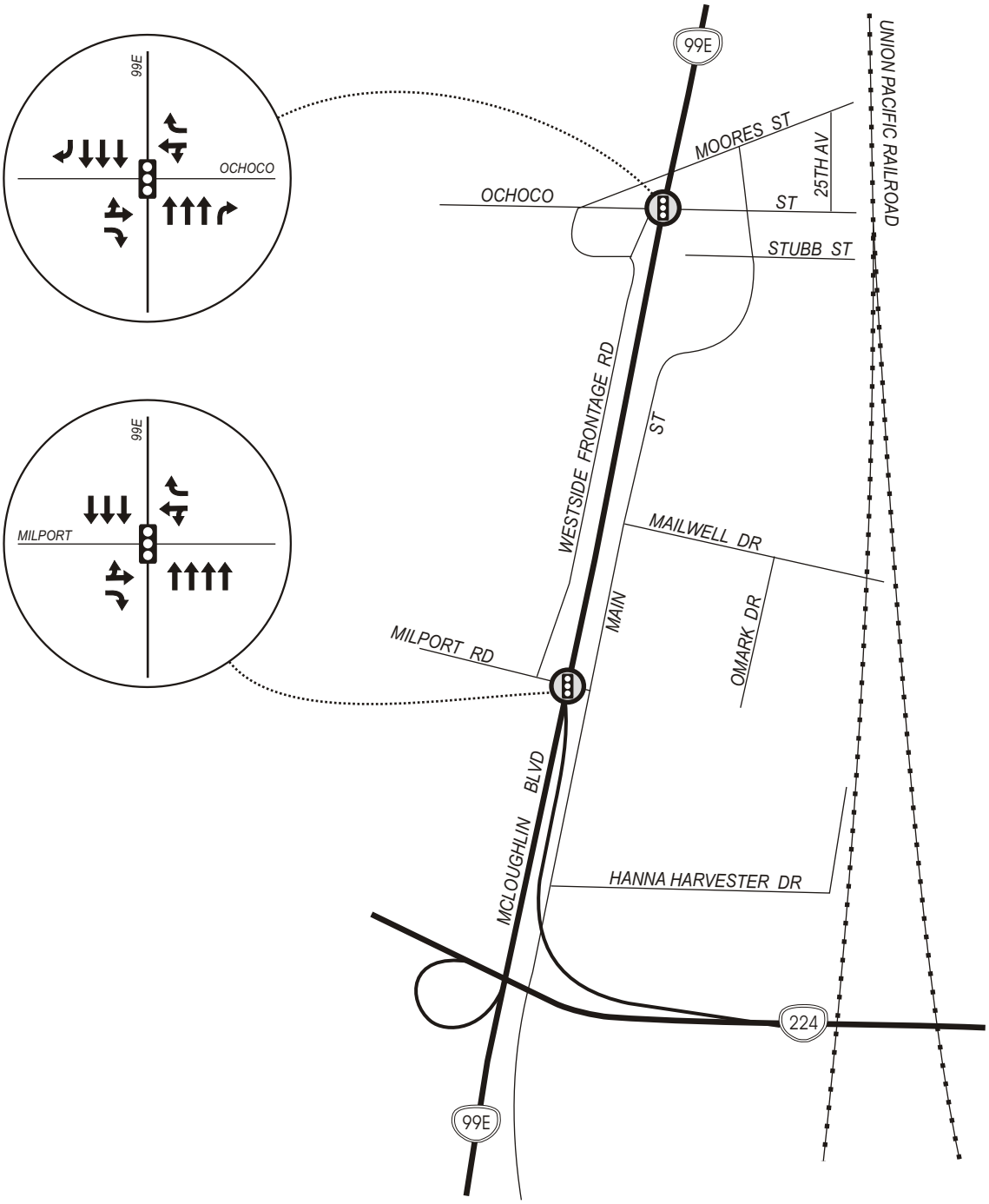
SUBJECT: **Milwaukie Transportation System Plan Update**
North Industrial Access Improvement
Task 8.1 – Freight Traffic Analysis Technical Memorandum P06097-008

The purpose of this memorandum is to collect, review and analyze traffic count and accident data in the Milwaukie North Industrial Area. This information is useful to help build an understanding of the operating conditions and safety within the study area.

STUDY AREA

The study area within the Milwaukie North Industrial Area has been defined as the area between SE Moores Street to the north, Hwy 224 to the south, 17th Ave. to the west and the Union Pacific Railroad to the east. Figure 1 shows the study area.

The study is serviced regionally by two facilities: Hwy 99E and Hwy 224. Direct access is provided to the industrial area by Hwy 99E, while Hwy 224 provides additional access to the area (to the south) via Hwy 99E. The access from Hwy 99E is provided by one signalized (SE Ochoco) and one unsignalized (SE Moores) intersection, neither of which allow left turns from Hwy 99E into the Milwaukie North Industrial Area Side street egress from the area at SE Ochoco Street and SE Milport Road allows all moves. Therefore, southbound access to the eastside of the study area is either: via a right turn at SE Ochoco Street to the frontage road on the west side of Hwy 99E down to SE Milport Road where a vehicle can take a left turn and access SE Milport Road to cross Hwy 99E; or via a jug handle turn to SE Ochoco eastbound. Conversely, northbound access to the area west of Hwy 99E is either: gained via a small access road off Hwy 99E to SE Main Street, where the vehicle heads north on SE Main Street to take a left turn onto SE Milport Road to cross Hwy 99E or via 17th Avenue However, northbound access from Hwy 224 is made only via a right onto Moores, a right onto Main, and a right onto westbound Ochoco, then crossing 99E.



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LEGEND

- Signalized Intersection
- Signalized Intersection Geometry

N

MAP NOT TO SCALE

Information Sources: DKS Associates

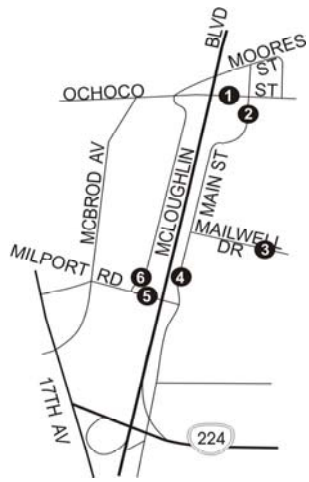
STUDY AREA

FIGURE 1

HISTORIC DATA

The north Milwaukie Industrial Area has been part of various studies over the past 5-7 years. Studies include the Southgate Park-and-Ride Facility (2001), South Corridor Draft Environmental Impact Statement (2002), and North Industrial Land Use Study (2003). All of these reports collected and analyzed turn movement counts at these intersections that contained freight (or heavy) vehicle activity during the PM peak, and sometimes the AM peak periods. It is useful to look at this historic data to determine any potential trends in users and/or level of activity on the roadway. Figure 2 summarizes the historic traffic count data at three key locations within the study area.

Figure 2: Historic PM Peak Total Traffic Data at Specific Study Area Locations



Total Vehicle Traffic

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6
2001				123	293	
2002	236		69			
2003	250	183		173		228
2004						
2005				192	311	
2006	255				278	

Heavy Vehicle/Truck Traffic

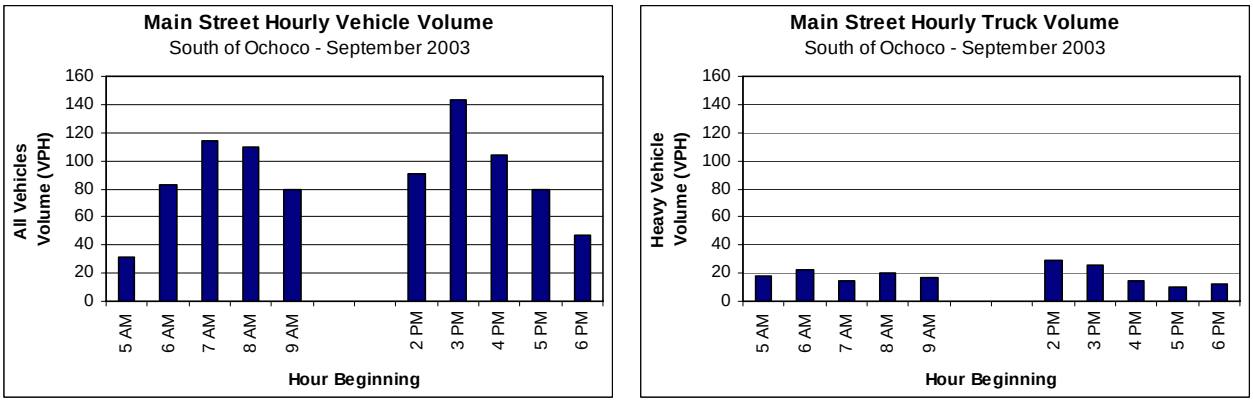
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6
2001				2	10	
2002	26		24			
2003	24	19		11		15
2004						
2005				30	51	
2006	82				14	

SOURCE: ***DKS** Associates*

While the data is limited for analysis purposes, three locations (#1, #4 and #5) have had data taken during the PM peak period multiple times over the past 7 years. All locations indicate a trend of variability in levels of activity, especially for truck activity. The variability is within a reasonable number of vehicles at each location, meaning traffic volumes are low enough that a variability can be accommodated.

It is also important to examine the historic data for the AM peak period, and how it compares to the PM peak period. Figure 3 summarizes historic data collected in 2003 at the location on SE Main Street just south of SE Ochoco Street.

Figure 3: Total Vehicle and Heavy Vehicle Comparison for AM and PM Peak Periods



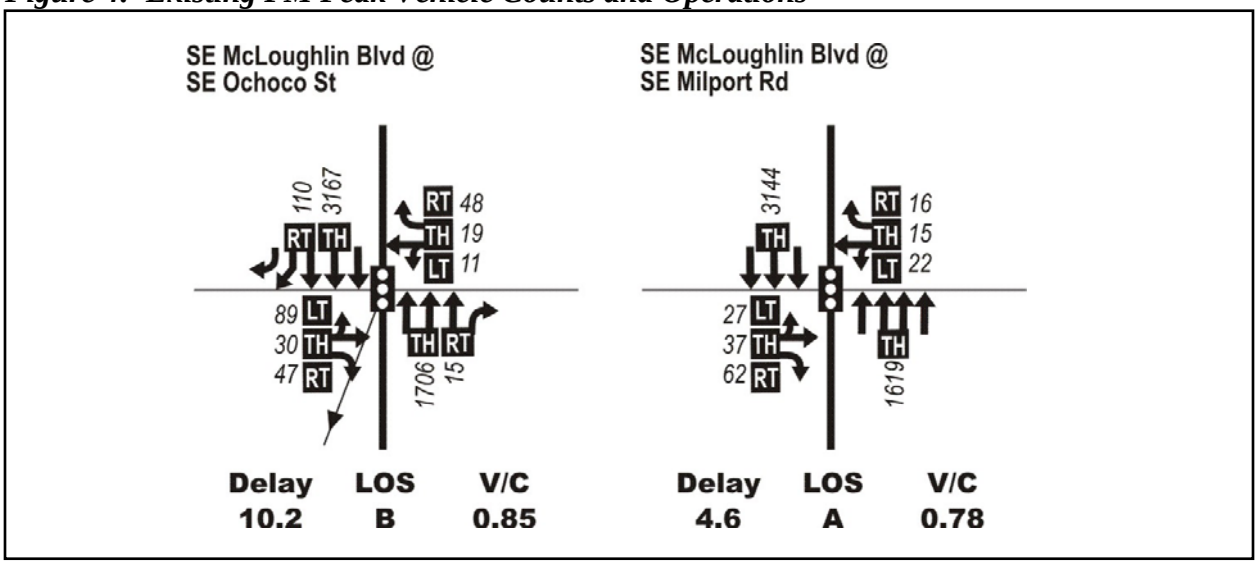
As can be seen in Figure 3, the AM peak period has a peak hour for total vehicle traffic at approximately 7AM to 8AM while the PM peak has a peak hour at approximately 3PM to 4PM. Compared to the truck volumes at the same location, the number of trucks represents approximately 13-18% of the total vehicle traffic during those time periods.

EXISTING DATA

Typically the PM peak hour is used for analysis because it represents the worst case for traffic on the roadway (highest volumes). As shown in the historical analysis this is also the case in the study area.

Historical data was supplemented with existing data that was collected for the Milwaukie Transportation System Plan Update. The existing PM peak data was collected from 3PM to 6PM to capture the peak conditions of traffic. This data was analyzed for traffic operations at the two signalized intersections in the study area. Figure 4 summarizes the existing count data as well as the intersection operations.

Figure 4: Existing PM Peak Vehicle Counts and Operations

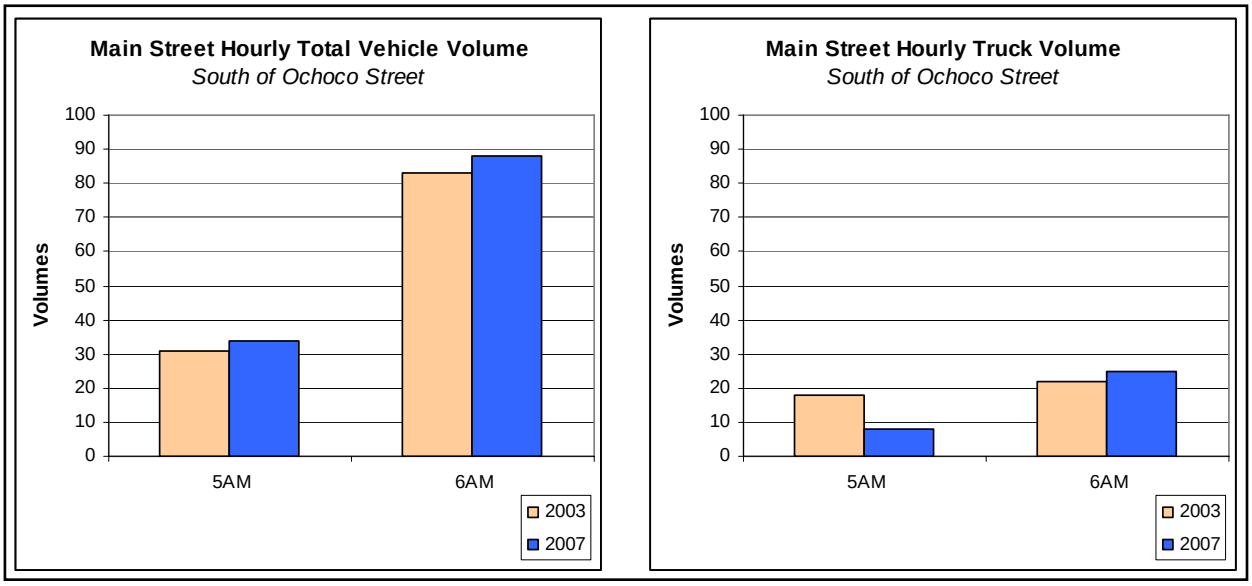


SOURCE: ***DKS*** *Associates*

The average delay is minimal at these intersections due to the large traffic volumes on Hwy 99E experiencing minimal delay. That does not mean that the side streets (streets that service egress for the north Milwaukie industrial area) do not experience higher levels of delay. Analysis indicates that while the main street (Hwy 99E) may experience average delay of 10 seconds or less, the side streets of SE Ochoco Street and SE Milport Road experience average delays of 50 to 60 seconds.

In addition to the existing PM peak data, intersection turn movement count data was also collected during the pre-AM peak time period from 5AM - 7AM to evaluate the level of freight activity since typically the freight activity is at higher levels in off-peak periods. Figure 5 summarizes the additional data collected and compares the data to prior pre-AM peak period data collected previously.

Figure 5: Pre-AM Peak Volume Data



SOURCE: ***DKS*** *Associates*

As can be seen in Figure 5, the pre-AM data in comparison to prior 2003 data has grown a small amount in total vehicle volumes for both hours, while the truck volumes have decreased in the 5AM period and slightly increased in the 6AM period. Relatively speaking the peak AM volumes are still 25% higher (or more) than the pre-AM volumes.

Existing Crash Data

Collision data was also collected at the access intersections of SE Ochoco Street and SE Milport Road at the intersections with Hwy 99E. ODOT ranks intersections in their Safety Priority Index System (SPIS) based on the most current three years of collision data. The SPIS values range from one to one hundred, with lower values equating to lower collision rates. The score is derived from the number of collisions, the type of collisions, collision severity, and traffic volumes. In addition to SPIS data, intersection safety is also analyzed using intersection

collision rates. Collision rates are measured as the number of collisions per Million Entering Vehicles (MEV). This measure allows comparison of intersections with varying volumes. Table 1 summarizes the collision data collected.

Table 1: Existing Collision Data at Access Intersections

ODOT SPIS Rating	Street	Cross Street	Intersection Collisions (2002-2005)	Fatal	Injury	Corridor Collisions 2002-2005[1]	Collision Rate 2002-2005
46.52	Hwy 99E	SE Milport Road	9	0	4	18	0.17
22.89	Hwy 99E	SE Ochoco Street	5	0	4	8	0.09

SOURCE: *Oregon Department of Transportation*
Notes: [1]Collisions that occurred within 0.05 miles of the intersection.

The collision rates at these access points indicates a value well below 1.0, which would indicate that the number of collisions compared to the vehicle volume that occurs at these locations is within a reasonably expected level. There are also no fatalities that have occurred over the past three years worth of provided data. Part of the reason collision rates could be lower than many other intersections with these volumes is due to the fact that many of the conflict points are missing from the intersections because of the limited (or restricted) turn movements. Alternatives for future access should try and retain a safe environment that does not create additional safety concerns.

KEY FINDINGS

Based on the data analyzed for the study area and the ingress/egress points, there are a few key findings that can be drawn. The following list summarizes those findings:

- Historic data has shown only slight increases in traffic volumes making access and/or egress from the North Milwaukie Industrial Area. Over the past six years traffic growth patterns indicate a growth of approximately 70 vehicles making ingress/egress to the area during the PM peak hour.

- Historic volume data along Hwy 99E had shown a trend for volume increases much greater than ingress/egress for the North Milwaukie Industrial Area. Over the time period from 1995 to 2005 volumes along Hwy 99E between SE Ochoco Street and SE Milport Road have grown approximately 4,600 vehicles.

- Existing ingress is limited to the north Milwaukie industrial area due to left turn restrictions at both SE Ochoco Street and SE Milport Road. In addition, northbound and southbound right turns are prohibited at SE Milport Road. This access circulation pattern requires motor vehicle and freight users to rely on frontage roads such as SE Main Street to access points to cross over Hwy 99E.

- The PM peak period has higher volumes at access intersections, which correlates to the worst case for traffic operations.

- Traffic analysis indicates that while the access intersections operate at LOS B or better, significant delay (50-60 seconds) occurs on the side streets that egress the study area. Since volumes are much lower on the side street (in comparison to the Hwy 99E) the overall average delay (which is what the level of service is based on) does not represent problematic operations. However, the volume-to-capacity ratio does indicate access intersections that with additional traffic volumes added in the future could become saturated.

- Comparison of the pre-AM peak period of motor vehicle and truck users at the access intersections indicates that the AM peak period (7AM to 9AM) has higher users for motor vehicle traffic, while freight traffic users remain fairly consistent throughout the time period (and much less than the motor vehicle users).

- Collision data analysis did not indicate that the access intersections were problematic, nor did it point to any specific trend in accidents occurring. However, any additional or reconfigured access should not create new safety concerns or problems.

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TRANSPORTATION SOLUTIONS

DRAFT MEMORANDUM

DATE: June 5, 2007

TO: Alex Campbell, City of Milwaukie
Katie Mangle, City of Milwaukie
Gail Curtis, Oregon Department of Transportation

FROM: Alan Snook, AICP

SUBJECT: **Milwaukie Transportation System Plan Update**
North Industrial Access Improvement
Task 8.3 and 8.4 – Problem Statement and Evaluation Criteria P06097-008

The purpose of this memorandum is to define and develop a problem statement related to the Milwaukie North Industrial Area, as well as outline evaluation criteria to be used to assess a variety of sketch alternatives to address the problem. The problem statement utilizes information from previous studies in the area, as well as input from the freight access working group (defined in the Milwaukie Transportation System Plan update process). A goal statement has also been developed to define specifically what the goal of this process/scope of work will accomplish.

PROBLEM STATEMENT

Freight access and circulation to/from the North Milwaukie Industrial Area (particularly the area between SE Moores Street to the north, Hwy 224 to the south, Hwy 99E to the west and the Union Pacific Railroad to the east) is problematic due to restricted access from Hwy 99E: there are no left turns traveling south and north on Hwy 99E at SE Ochoco Street and SE Milport Road; right turns from Hwy 99E are only available at SE Ochoco Street (and SE Moores). The limited turning potential places the burden for access to the area at the intersection of Hwy 99E/SE Ochoco Street. While access from the area is provided via both SE Milport Road and SE Ochoco Street, the short distance between SE Main Street and Hwy 99E on SE Milport Road (within 50 feet) limits egress from SE Milport Road, particularly for larger freight vehicles. These route limitations create a circuitous access pattern for freight movers in and out of the area that does not service the area well; these issues are unlikely to be resolved by signal timing changes and potentially limit the economic vitality of the area.

GOAL STATEMENT

The project and evaluation should develop and select an alternative (or alternatives) that improve access to/from Hwy 99E for the Milwaukie North Industrial Area, and enhance traffic safety on Hwy 99E. The alternative(s) should be flexible enough to account for the future potential land

uses (motor vehicle and freight trips), balance the need for through trips on Hwy 99E and side street trips, and address the potential options for high capacity transit to service the area.

EVALUATION CRITERIA

The following evaluation criteria were developed using both the problem and goal statement and will be used to evaluate and compare the alternative(s) that are developed. Some criteria are evaluated based on a qualitative (value based) assessment, while others are based on a quantitative (numerically based) assessment. The following table summarizes the criteria and defines if they are qualitative or quantitative in nature.

Table 1: Criteria and Measures of Effectiveness for Evaluating Alternative(s)

Criteria	Measure of Effectiveness	Qualitative	Quantitative
Pedestrian connectivity	Ability for pedestrians to cross Hwy 99E and circulate within the North Industrial area.	X	
Bicycle connectivity	Ability for bicycles to cross Hwy 99E, as well as circulate within and through the North Industrial area.	X	
Transit service	Ability for transit to travel through and serve the area.	X	
Freight operations	Ability of heavy trucks to operate efficiently and navigate key intersections	X	
Traffic operations 99E throughput	Intersection operations including delay, level of service and volume to capacity ratio. Includes queuing assessment.		X
Traffic operations local access and crossing movements	Intersection operations including delay, level of service and volume to capacity ratio. Includes queuing assessment.		X
Safety	Number of conflict points.		X
Robust solution	Solution performs well under a variety of future conditions.		X
Resource limitations	Approximate cost to construct and acquire necessary right-of-way.		X

SOURCE: ***DKS*** *Associates*

All of the information in this memorandum will be used (in conjunction with other tasks related to this scope of work) to develop and assess the sketch plan alternatives to be undertaken in later tasks of this scope of work.