

# Transportation Committee

**Business Item**

Item 2008-88

**Meeting date: March 24, 2008**

**Council meeting: April 9, 2008**

## **ADVISORY INFORMATION**

<b>Date:</b>	March 19, 2008
<b>Subject:</b>	Lowry Avenue Intermodal Freight Connector
<b>District(s), Member(s):</b>	Annette Meeks, District 7 Lynnette Wittsack, District 8
<b>Policy/Legal Reference:</b>	TAB Referral
<b>Staff Prepared/Presented:</b>	Arlene McCarthy, Director MTS (651-602-1754) Amy Vennewitz, Dep. Dir. Finance & Planning MTS (651-602-1058) Carl Ohrn, Planning Analyst MTS (651-602-1719)
<b>Division/Department:</b>	Metropolitan Transportation Services

### **Proposed Action**

That the Council concur with the Transportation Advisory Board (TAB) action to support adding a new route to the FRWA Official National Highway System (NHS) Listing of Intermodal (Freight) Connector Routes in Minnesota. The proposed route would link the Canadian Pacific CP/Shoreham Intermodal Rail Yard and Port of Minneapolis to Interstate 94. That the route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Avenue NE, Trunk Highway 47 (University Avenue), CSAH-153 (Lowry Avenue), 2<sup>nd</sup> Street North and Dowling Avenue; and

That Service to the CP/Shoreham Intermodal Yard is part of the Regional Commercial Freight System as shown on Fig. 2-16 of the Metropolitan Council's 2030 Transportation Policy Plan (TPP) and recognized in the Metropolitan Council 2030 Framework and the 2030 Transportation Policy Plan; and

That support for this addition to the NHS Intermodal (Freight) Connector Route Listing is for the pursuit of additional federal funding for the Lowry Avenue Bridge outside of Minnesota's normal formula federal funds (either existing or future); and

That MnDOT and Metro Council be encouraged to complete a comprehensive study that will set regional priorities for freight connectors (including this route). Future regional support for funding and NHS connector designation will be based on the prioritized list resulting from that study.

### **Background**

Hennepin County is requesting support for adding a new route to the Official FHWA listing of intermodal Freight Connector Routes in Minnesota. The addition of the route would allow the use of appropriate federal funds to assist in upgrading this proposed connector route by replacing the structurally deficient and fracture critical Lowry Avenue Bridge over the Mississippi River.

## **Rationale**

Hennepin County desires the MPO support its request for MnDOT to add Lowry Avenue to the Intermodal Freight Connector Listing for the state. The members of Congress representing Minneapolis felt this would increase the likelihood earmarked funds would be designated for the reconstruction of the Lowry Avenue Bridge over the Mississippi River, since this would add the route to the National Highway System.

## **Funding**

The designation is intended to help obtain earmarked funds for the reconstruction of the bridge. The Transportation Advisory Board (TAB) has included language to ensure such designation would not reduce existing or future formula funds that will come to MnDOT.

The TAB also encourages MnDOT and the Council to complete a study to establish priorities for freight connectors.

## **Known Support / Opposition**

Hennepin County supports the action.

**Metropolitan Council TAC  
Discussion of Proposed Action**

**National Highway System (NHS) Intermodal Freight Connector Route Designation  
Canadian Pacific (CP) Rail / Shoreham Intermodal Yard to Interstate 94  
Minneapolis, Minnesota**

**Request for Addition to the  
Official FHWA National Highway System (NHS) Intermodal Freight Connector Listing**

This request is for Metropolitan Council support for adding a new route to the National Highway System (NHS) Official FHWA Listing of Intermodal Freight Connector Routes in Minnesota. The proposed route would link the Canadian Pacific CP / Shoreham Intermodal Rail Yard and Port of Minneapolis to Interstate 94. The route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Avenue NE, Trunk Highway 47 (University Avenue), CSAH-153 (Lowry Avenue), 2<sup>nd</sup> Street North and Port of Minneapolis Drive / Dowling Avenue.

The desired TAC action would be a recommendation that the Transportation Advisory Board adopt a resolution of support for the inclusion of the CP / Shoreham Intermodal Freight Route to the Official FHWA NHS Intermodal Freight Connector Listing for the State of Minnesota.

Hennepin County and Mn/DOT are proposing to submit the application to FHWA. As part of this submittal, FHWA has asked for a resolution of support from the Metropolitan Council showing that the action was developed in consultation with local and regional officials.

***Background***

The importance of the CP/ Shoreham Intermodal Rail Yard is emphasized in a number of regional and local plans. Policy 2 of the 2030 Regional Development Framework states: “*Plan and invest in multimodal transportation choices, based on the full range of costs and benefits, to slow the growth of congestion and serve the region’s economic needs*”. The 2030 Transportation Policy Plan specifically addresses freight issues and identifies the CP / Shoreham Intermodal Rail Yard and the Port of Minneapolis as two of the major freight trans-load facilities in the metropolitan area, and the CP / Shoreham Yard as one of only two intermodal freight terminals in the Twin Cities.

In October 2006, the Minnesota Department of Transportation (Mn/DOT) identified a potential NHS Connector Route between the CP / Shoreham Intermodal Rail Yards and I-94. The route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Avenue NE, Trunk Highway 47 (University Avenue), CSAH-153 (Lowry Avenue), 2<sup>nd</sup> Street North and Port of Minneapolis Drive / Dowling Avenue. Hennepin County and Minneapolis believe that the addition of this route will support emphasizing safe and efficient movement of goods which is the goal of connector routes.

The route addition to the NHS Intermodal Connector Listing would allow the use of appropriate federal funds to assist in upgrading this proposed connector route. The first step in improving the route would be to replace the structurally deficient and fracture critical Lowry Avenue Bridge over the Mississippi River. Hennepin County has programmed \$4.5 million in funds toward the replacement of the Lowry Avenue Bridge in 2008-2012 Capital Improvements Program.

The draft application package is attached.

**National Highway System (NHS) Intermodal Connector Route Designation  
Canadian Pacific (CP) Rail / Shoreham Intermodal Yard to Interstate 94  
Minneapolis, Minnesota**

**Application Request for Addition to the  
Official FHWA National Highway System (NHS) Intermodal Connector Listing**

**Submitted to the Federal Highway Administration (FHWA)  
by  
Minnesota Department of Transportation (Mn/DOT)  
And Hennepin County, Minnesota**



*Draft*

**March 2008**

**National Highway System (NHS) Intermodal Connector Route Designation  
Canadian Pacific (CP) Rail / Shoreham Intermodal Yard to Interstate 94  
Minneapolis, Minnesota**

**Request for Addition to the  
Official FHWA National Highway System (NHS) Intermodal Connector Listing**

**Introduction**

Intermodal freight transport involves the transportation of freight in a container using multiple modes of transportation (rail, ship, and truck). Intermodal Connectors are defined by FHWA as roadways that tie together elements of an intermodal freight transportation system. Connectors link major freight activity nodes to the arterial highway system. The NHS System provides for the designation of Intermodal Connectors and gives guidance for their designation as part of 23 CFR 470A Federal-Aid Highway Systems. Appendix D to Subpart A, "Guidance Criteria for Evaluating Requests for Modifications to the NHS" contains the items needed for the evaluation of potential NHS Intermodal Connectors. This document provides the information necessary to address the Guidance Criteria.

**Background**

The importance of the CP/ Shoreham Intermodal Rail Yard is emphasized in a number of regional and local plans. Policy 2 of the 2030 Regional Development Framework states: "*Plan and invest in multimodal transportation choices, based on the full range of costs and benefits, to slow the growth of congestion and serve the region's economic needs*". The 2030 Transportation Policy Plan specifically addresses freight issues and identifies the CP / Shoreham Intermodal Rail Yard and the Port of Minneapolis as two of the major freight trans-load facilities in the metropolitan area, and the CP / Shoreham Yard as one of only two intermodal freight terminals in the Twin Cities.

In October 2006, the Minnesota Department of Transportation (Mn/DOT) identified a potential NHS Connector Route between the CP / Shoreham Intermodal Rail Yards and I-94. The route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Avenue NE, Trunk Highway 47 (University Avenue), CSAH-153 (Lowry Avenue), 2<sup>nd</sup> Street North and Port of Minneapolis Drive / Dowling Avenue. Hennepin County and Minneapolis believe that the addition of this route will support emphasizing safe and efficient movement of goods which is the goal of connector routes.

The route addition to the NHS Intermodal Connector Listing would allow the use of appropriate federal funds to assist in upgrading this proposed connector route. The first step in improving the route would be to replace the structurally deficient and fracture critical Lowry Avenue Bridge over the Mississippi River. Hennepin County has programmed \$4.5 million in funds toward the replacement of the Lowry Avenue Bridge in 2008-2012 Capital Improvements Program.

The application package addressing the Guidance Criteria is attached.

**Summary of Responses to Guidance Criteria  
for Evaluating National Highway System (NHS) Modification Requests  
(Appendix D of CFR 470A – Federal Aid Highway System)**

1. Proposed additions to the NHS should be included in either an adopted State or metropolitan transportation plan or program.

*Intermodal freight movement and their linkages to the regional roadway system are stated as priorities in a number of regional planning documents and studies from the Twin Cities Metropolitan Council and Minnesota Department of Transportation (Mn/DOT).*

*The Metropolitan Council **2030 Framework** (January 2004) strategy under Policy 2 (Multi-Modal Transportation) emphasizes “Promote the development and preservation of various freight modes and modal connections to adequately serve the movement of freight within the region and provide effective linkages that serve statewide, national and international markets.”. The 2030 Metropolitan Council **Transportation Policy Plan** (December 2004) specifically identifies the CP Shoreham Intermodal yard and the Port of Minneapolis as Major Freight Trans-Load Facilities and notes that “The Council supports improving the efficiency of the region’s commercial motor carriers, railroads, air cargo carriers and barge operators through strategic investments in the freight transportation system.”*

*The **Statewide Freight Plan** (May 2005) prepared by Mn/DOT identifies the CP / Shoreham Yard as one of four intermodal freight terminals in the state that currently meet the FHWA program eligibility requirements for NHS Intermodal Connectors. Mn/DOT later developed the **Twin Cities Metro Area Freight Connectors Study** (October 2006) to assist with the preparation of applications for NHS Connector designation of the intermodal facilities identified in the **Statewide Freight Plan**. A series of Technical Memos accompany the **The Twin Cities Metro Area Freight Connectors Study** which document the evaluation of the CP / Shoreham Connector Route and the determination that several key connector routes in the Northeast Minneapolis / Shoreham freight cluster were eligible for NHS Intermodal Connector status.*

2. Proposed additions should connect at each end with other routes on the NHS or serve a major traffic generator.

*The CP / Shoreham Route consists of segments of the following roadways (see Exhibit 1):*

- *30<sup>th</sup> Avenue NE from the **CP Shoreham Yard** to 4<sup>th</sup> Street NE*
- *4<sup>th</sup> Street NE from 30<sup>th</sup> Avenue NE to 32<sup>nd</sup> Avenue NE*
- *32<sup>nd</sup> Avenue NE from 4<sup>th</sup> Street NE to TH-47 (University Avenue)*
- *TH-47 (University Avenue) from 32<sup>nd</sup> Avenue NE to Lowry Avenue NE (Hennepin County CSAH-153)*
- *Lowry Avenue (CSAH-153) from TH-47 (University Avenue) to 2<sup>nd</sup> Street North*
- *2<sup>nd</sup> Street North from Lowry Avenue (CSAH-153) to North Dowling Avenue / Port of Minneapolis Drive (**Port of Minneapolis** located to the east)*
- *North Dowling Avenue from 2<sup>nd</sup> Street North to I-94 on-ramps (**on the NHS System**)*

*The proposed Connector route would serve two major freight generators, the CP / Shoreham Intermodal Rail Yards, and the Port of Minneapolis.*

3. Proposals should be developed in consultation with local and regional officials.

*Letters of support are included from:*

- *City of Minneapolis (Exhibit 2)*
- *Hennepin County (Exhibit 3)*
- *Canadian Pacific (CP) Rail (Exhibit 4)*

*A resolution of support is included from:*

- *Twin Cities Metropolitan Council – the Metropolitan Planning Organization for the Twin Cities area (Exhibit 5).*

4. Proposals to add routes to the NHS should include information on the type of traffic served by the route, the population centers or major traffic generators served by the route, and how this service compares with existing NHS routes.

*The following 5-1/2 pages describe the characteristics of the Shoreham Yard and Shoreham Area Freight Cluster that includes the Port of Minneapolis. This information was taken from Technical Memo 1 of the Twin Cities Metro Area Freight Connectors Study prepared by Mn/DOT.*

**FREIGHT**  **CONNECTORS**

**DETAILED DATA DESCRIPTIONS OF SELECTED CLUSTER AREAS**

**Shoreham Yard Area - Minneapolis**

The Shoreham Yard Area in Northeast Minneapolis is a prominent industrial area, wrought with history from the railroad era and a once mighty milling town:

*The Shoreham Yards represents one of the last major vestiges of Minneapolis’ prominence as a railroad center. The facility in Northeast Minneapolis served as the primary locomotive repair and maintenance facility for the Soo Line Railroad and its predecessor, the Minneapolis, Sault Ste. Marie and Atlantic Railroad. The railroad was founded in 1883 and was completely financed by Minneapolis interests, primarily flour-milling companies, to provide an alternative-shipping route east that bypassed Chicago. The 48-stall roundhouse was designated a Minneapolis historical landmark in 2000. The facility has been considered as a potential focal point for a commercial development along Central Avenue.<sup>4</sup>*

**Figure 1: Canadian Pacific Shoreham Rail Yard**

Today Shoreham Yards, owned by Canadian Pacific Railway, is a 230-acre train, trucking, and bulk-distribution site extending from Central to University avenues NE and 27th Avenue NE up to St. Anthony Parkway in Northeast Minneapolis. The railroad property is shown in the aerial photo of **Figure 1**. Today, the area has become a focal point of community concerns over the preservation of historic railroad buildings, and the environmental clean-up of industrial toxic waste left behind by various tenets on rail yard properties.



“The site was developed in 1990 on an existing railroad facility and storage yard. The 26 acre site is part of a larger rail facility located adjacent to the CP mainline. It is part of a larger facility that houses a container storage facility and other railroad activities.”<sup>5</sup>

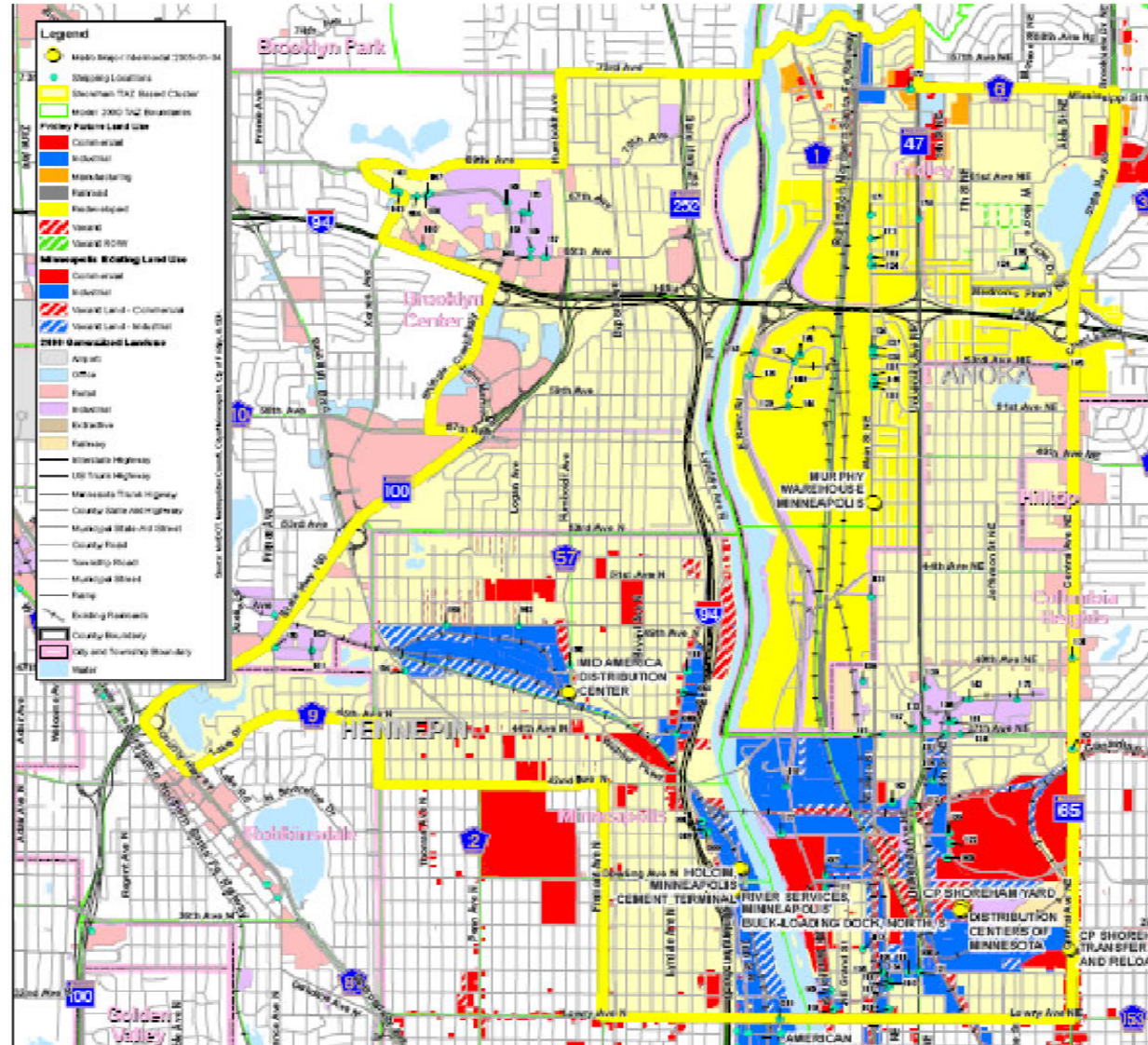
While the focal point of the Shoreham area is the CP Intermodal rail yard, the larger freight cluster area as defined by 24 TAZs and totaling approximately 10, 500 acres (**Figure 2**), is



# FREIGHT CONNECTORS

bounded by Central Avenue (US Highway 65) on the east, Lowry Avenue, 42nd Avenue and County Road 9 on the south, Fremont Avenue, County Highway 81 and Minnesota Highway 100 on the West, and 72nd Avenue and County Road 6 on the North. A large scale map with additional land use information for the Shoreham Cluster can be found in **Appendix B**.

**Figure 2: Shoreham Area Freight Cluster**



# FREIGHT CONNECTORS

The Shoreham Freight Cluster contains seven facilities identified in the Mn/DOT Freight Facilities Database: 1) Murphy Warehouse, 2) Mid-America Distribution Center, 3) Holcim Minneapolis Cement Terminal, 4) River Services Bulk Loading Dock North, 5) CP Shoreham Intermodal Railroad Yard, 6) CP Shoreham Transfer and Reload Railroad Yard, and 7) Distribution Centers of Minnesota. An eighth facility, the American Iron and Supply Company Dock, lies just beyond the southern border of the cluster.

**Figure 3: Shoreham Cluster Commodity Production 2003**

In 2004, Mn/DOT purchased the TRANSEARCH Database of commodity flows for Minnesota from Global Insight (formerly Reebie Associates). The Freight Locator Database is a complementary dataset also distributed by Global Insights.<sup>a</sup> The Freight Locator database identifies 86 warehouse and manufacturing facilities that produced approximately 635,000 tons of freight in 2002. These 86 firms were responsible for over 10,000 jobs in the cluster.

STCC2	Commodity Description	Number of Employees	Est. Tonnage Production
20	Food or Kindred	71	6,308
23	Apparel	155	2,393
24	Lumber or Wood	142	20,565
25	Furniture/Fixtures	20	912
26	Pulp & Paper	355	52,354
27	Printed Matter	455	7,744
28	Chemicals	494	22,257
29	Petroleum or Coal	202	208,492
30	Rubber or Plastics	170	3,804
32	Clay, Concrete, Glass, Stone	255	199,606
33	Primary Metal	135	12,007
34	Fabricated Metal	1639	58,660
35	Machinery	962	10,326
36	Electrical Equip	210	3,591
38	Instruments, Photo Eq	5945	25,887
<b>Total</b>		<b>11,210</b>	<b>634,906</b>

**Figure 4A: Top Producing Companies - Shoreham**

The top commodity groups by tonnage produced in the cluster were a) Petroleum and Coal Products, with over 200,000 tons, and b) Clay, Concrete, Glass and Stone with just under 200,000 tons. To help visualize the relationship between major shipment producers and the highway network in the cluster area, the study team produced maps showing the top ten tonnage producers in the cluster. The companies shown in the table to the right (Figure 4A) produce

	Company Name	Est. Tons
1	MARSHALL CONCRETE PRODUCTS	139,600
2	GAF BUILDING MATERIALS CORP	118,512
3	OWENS-CORNING FIBERGLAS	89,980
4	WALLBOARD INC	35,127
5	SMURFIT-STONE CONTAINER CORP	32,412
6	IFCO SYSTEMS	24,879
7	MEDTRONIC INC	18,657
8	KURT MANUFACTURING	17,025
9	INDUSTRIAL LUMBER & PLYWOOD	11,628
10	KELCO SUPPLY CO	10,056
<b>Total</b>		<b>497,876</b>

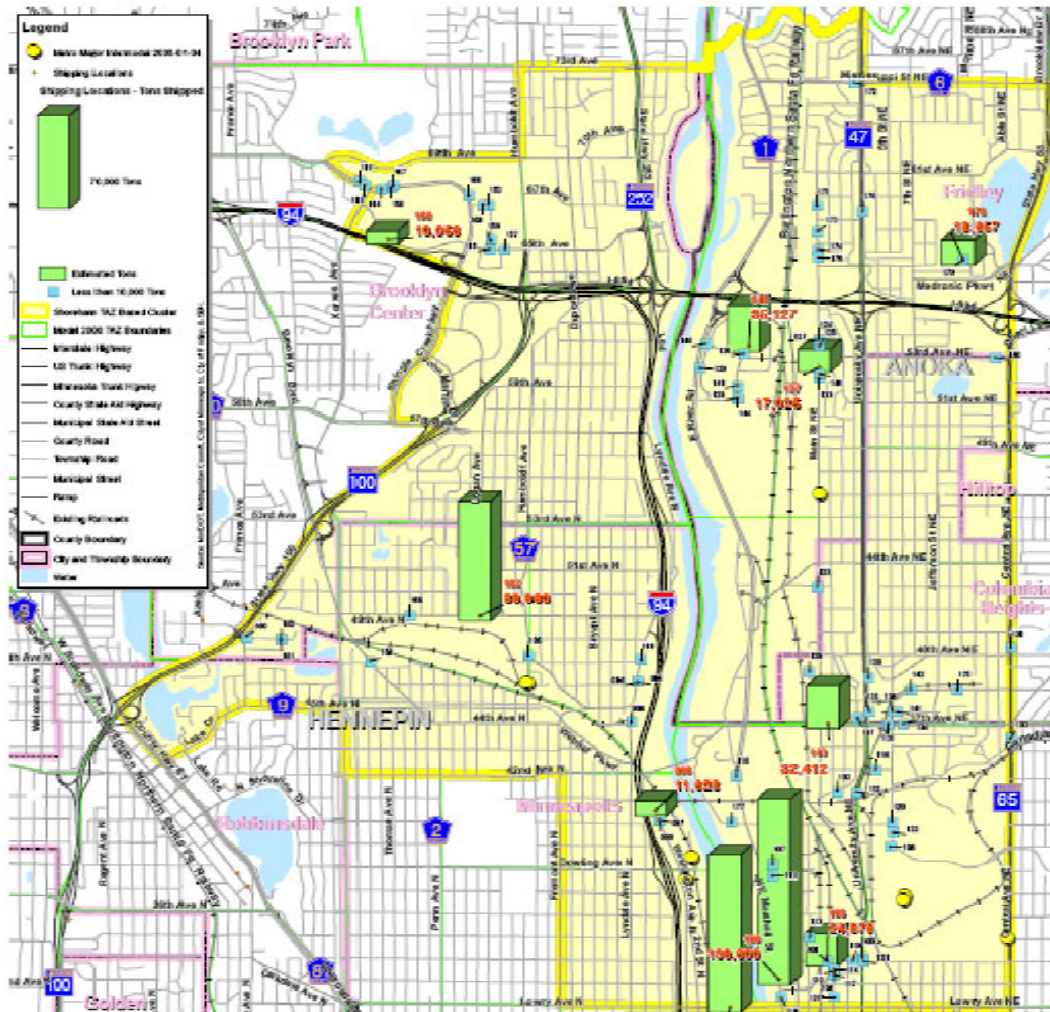
<sup>a</sup> Freight Locator is a data service provided by Global Insights as an adjunct to the TRANSEARCH freight commodity flow database. Freight Locator is based upon information supplied by InfoUSA.



# FREIGHT CONNECTORS

an estimated 78% of the commodity tonnage in the cluster. The locations, and relative commodity production by tonnage for these ten facilities are mapped in **Figure 4B**.

**Figure 4B: Top Tonnage Production Facilities in the Shoreham Cluster (limited to Manufacturing Facilities)**



**Figure 5** displays the surrounding arterial roadway system for the Shoreham Freight Cluster. As shown, a number of arterial roadways pass through the cluster area including Interstate 694, Interstate 94, TH 100, TH 252, TH 47 and TH 65. East River Road (County Road 1) also provides important arterial access through the area.

# FREIGHT CONNECTORS

Figure 5: Shoreham Freight Cluster Roadway Network



The Shoreham Area has been designated by the City of Minneapolis as an “Industrial Business Park Opportunity Area as well as a Potential Growth Center for employment growth in the City’s Comprehensive Plan. These designations mean that the City will support redevelopment of this area for new light industrial businesses that provide high job density, good wages and low impact





on the surrounding community. The site is one of several target areas in the City of Minneapolis' Brownfields Program.<sup>6</sup> During the next phase of the study, individual companies in the cluster will be contacted and interviewed in-person or by phone to update the information about tonnage production, primary commodities and job force. The chart in **Figure 6** on the next page shows the status of current data collection efforts for the Shoreham Freight Cluster.

*Exhibit 6 shows the Average Daily Traffic (ADT) of area roadways. The average daily volume of trucks of all types on the route is estimated to be 845, The component of 5-axle semis (which normally are used to transport intermodal containers) is estimated as 342 trucks. See item #9 below.*

*Mn/DOT noted that typically container drays by truck to a major rail intermodal yard have about a 100-mile draw area maximum. It is estimated that about 90% of the truck trips begin and end in the Twin Cities Metropolitan Area.*

*The portion of this question relating to comparisons with existing NHS routes does not appear to apply to Intermodal Connectors.*

5. Proposals should include information on existing and anticipated needs and any planned improvements to the route.

*The Lowry Avenue (CSAH-153) segment of the proposed NHS Connector Route is part of a larger study by Hennepin County for future upgrading. Phase I of the plan has recently been constructed to the west of I-94. Hennepin County has two projects identified for Lowry Avenue in their current 2008-2012 Capital Improvement Program:*

- *County project CP-0116 for the replacement of the fracture-critical Lowry Avenue Bridge over the Mississippi River. The CIP has \$4.5 million programmed in anticipation of future additional federal aid and state bond funds.*
- *County provisional project CP-0416 for the reconstruction and upgrading of Lowry Avenue from Fremont Avenue to the Mississippi River. This would include the segment of the Intermodal Connector from I-94 to the Mississippi River bridge.*

*The existing and anticipated needs for the Intermodal Connector Route were examined with respect to pavement conditions, geometric radii, railroad crossings, and traffic operations / safety. These items are described in the following 9 pages taken from Technical Memo 2 of the Twin Cities Metro Area Freight Connectors Study prepared by Mn/DOT.*



#### 4.0 FREIGHT CONNECTOR ASSESSMENT

As noted previously, a sample of seven routes across the three freight clusters were identified to be assessed and ranked using the adequacy methodology detailed above. The seven routes are listed by freight cluster below and are illustrated in the exhibits included in Appendix A.

- Shoreham Freight Cluster
  - CP Shoreham Intermodal Yard Route
  - Murphy Warehouse Route #1
  - Murphy Warehouse Route #2
  - Mid American Distribution Centers Route
  - Holcim Cement Route
- Eagan Freight Cluster
  - Aldrin Drive Route
- Rosemount Freight Cluster
  - Bituminous Roadways Route

The remainder of this section presents the evaluation of each of these routes.

##### 4.1 *CP Shoreham Intermodal Yard Route*

###### *Route Description*

A detailed description of the freight connector route by road segments is as follows:

30th Avenue NE	from Yard to 4 <sup>th</sup> Street NE
4 <sup>th</sup> Street NE	from 30 <sup>th</sup> Avenue NE to 32 <sup>nd</sup> Avenue NE
32 <sup>nd</sup> Avenue NE	from 4 <sup>th</sup> Street NE to TH 47, University Avenue
TH 47, University Avenue	from 32th Avenue NE to Lowry Avenue NE
Lowry Avenue NE	from TH 47, University Avenue to 2nd Street North
2nd Street North	from Lowry Avenue NE to North Dowling Avenue
North Dowling Avenue	from 2 <sup>nd</sup> Street North to I-94 on-ramp

The total length of the CP Shoreham Intermodal Yard Route is approximately 5.8 miles (2.9 miles in each direction). The truck volume for this route is approximately 845 trucks per day. Truck volume was derived by averaging the data from the two truck counts conducted along the route.



## Step One

### *Point Features*

#### Roadway Bridge Condition

The three bridges along the CP Shoreham Intermodal Yard Route and corresponding bridge sufficiency ratings and posting restrictions are identified as follows:

- University Avenue NE BNSF Bridge (Sufficiency Rating = 95.7, No Posting);
- Lowry Avenue NE/Mississippi River Bridge (Sufficiency Rating = 41.6, No Posting); and
- Lowry Avenue NE Canadian Pacific Rail Bridge (Sufficiency Rating = 82.7, No Posting).

The adequacy criteria for the Roadway Bridge Condition feature is based on the Bridge Sufficiency Rating system and the National Bridge Inspections Standards that require the posting of load limits for certain applicable bridges; described in greater detail in the methodology section. The Lowry Avenue NE/Mississippi River Bridge is the only bridge along the CP Shoreham Intermodal Yard Route that received a “less than adequate” ranking.

The locations and adequacy rankings of the three bridges along the CP Shoreham Intermodal Yard Route are illustrated in Exhibit 4.

#### Railroad Crossings

There are two at-grade railroad crossings along the CP Shoreham Intermodal Yard Route identified as follows:

- Canadian Pacific Railroad at-grade crossing at 30<sup>th</sup> Avenue NE (USDOT Accident Prediction Value = .0222)
- BNSF Railroad at-grade crossing at Lowry Avenue NE (USDOT Accident Prediction Value = .0115)

Both at-grade railroad crossings received a preferred ranking and exhibit all five characteristics listed below:

- Be close to 90 degrees,
- Have sufficient sight distance (if there is insufficient sight distance, warning gates and/or signals should be present),
- Have good pavement/surface quality,
- Have nearly level approach grades, and
- Have an accident prediction rate of less than .05 (less than one accident every 20 years).







## FREIGHT CONNECTORS

The adjacent photograph shows the Canadian Pacific Railroad at-grade crossing at 30<sup>th</sup> Avenue NE.

The locations and adequacy rankings of the two at-grade railroad crossings along the CP Shoreham Intermodal Yard Route are illustrated in Exhibit 4.

### Turning Radii

Six intersections along the CP Shoreham Intermodal Route were identified as requiring turning movements.

The following intersections and corresponding turning movements were

evaluated based on whether or not the intersection was designed to accommodate tractor semi-trailer combinations with a 67 foot wheelbase or longer. Commercial vehicle turning movements that encroached into other adjacent lanes were considered to be less than adequate.



*Canadian Pacific Railroad Crossing at 30th*

The adequacy rankings for the six intersections and corresponding turning movements are as follows:

#### *4<sup>th</sup> Street NE & 30th Avenue NE*

- To I-94: Less Than Adequate
- To CP Shoreham Intermodal Yard: Preferred

#### *4<sup>th</sup> Street NE & 32<sup>nd</sup> Avenue NE*

- To I-94: Preferred
- To CP Shoreham Intermodal Yard: Less Than Adequate

#### *TH 47/University Avenue & 32<sup>nd</sup> Avenue NE*

- To I-94: Preferred
- To CP Shoreham Intermodal Yard: Less Than Adequate

#### *TH 47/University Avenue & Lowry Avenue NE*

- To I-94: Less Than Adequate
- To CP Shoreham Intermodal Yard: Less Than Adequate
-



*Lowry Avenue NE & 2nd Street North*

- To I-94: Less Than Adequate
- To CP Shoreham Intermodal Yard: Less Than Adequate

*North Dowling Avenue & 2nd Street North*

- To I-94: Preferred
- To CP Shoreham Intermodal Yard: Less Than Adequate

The adjacent photograph illustrates the intersection of 4<sup>th</sup> Street NE and 30th Avenue NE. Appendix B includes exhibits that illustrate the application of the turning radii adequacy template to the 4<sup>th</sup> Street NE & 30th Avenue NE and TH 47/University Avenue & Lowry Avenue NE intersections.

The locations and adequacy rankings for the six intersections and corresponding turning movements along the CP Shoreham Intermodal Yard Route are illustrated in Exhibit 4.



*4th Street NE and 30th Avenue NE Intersection*

Minimum Vertical Clearance

The Lowry Avenue NE/Mississippi River Bridge is the only bridge along the route with a vertical clearance height restriction. According to the data, the bridge has a minimum clearance height of 17.5 feet. Therefore, the Lowry Avenue NE/Mississippi River Bridge receives a preferred ranking based on the minimum vertical clearance adequacy criteria; described in greater detail in the methodology section.

The location and adequacy ranking of the Lowry Avenue NE/Mississippi River Bridge along the CP Shoreham Intermodal Yard Route is illustrated in Exhibit 4.

*Continuous Features*

Lane Width

Approximately five miles of the CP Shoreham Intermodal Yard Route has lane widths of 12 feet or greater. These sections received a preferred ranking based on the lane width adequacy criteria; described in greater detail in the methodology section. Approximately 0.8 miles of the route has lane widths equal to eleven feet. These sections received an adequate ranking.



The adequacy of the lane width along the CP Shoreham Intermodal Yard Route is illustrated in Exhibit 5.

#### Roadway Weight Capacity

Approximately 2.78 miles of the CP Shoreham Intermodal Yard Route has a roadway weight capacity rating of ten tons or greater. These sections received a preferred ranking based on the roadway weight capacity adequacy criteria; described in greater detail in the methodology section. Approximately 2.46 miles of the route has roadway weight capacity of less than 10 tons. These sections received a less than adequate ranking.

The adequacy of the roadway weight capacity along the CP Shoreham Intermodal Yard Route is illustrated in Exhibit 5.

#### *Interpretive Features*

##### Pavement Condition

Approximately 4.4 miles of the CP Shoreham Intermodal Yard Route has “good” pavement conditions. Good pavement conditions were deemed to provide a first class ride and exhibit few, if any, visible signs of surface deterioration. Approximately 1.4 miles of the route has “fair” pavement conditions. The riding qualities of pavements in this category are noticeably inferior to those of new pavements and may be barely tolerable for high speed traffic.

The pavement condition evaluation along the CP Shoreham Intermodal Yard Route is illustrated in Exhibit 5.

##### Crash History

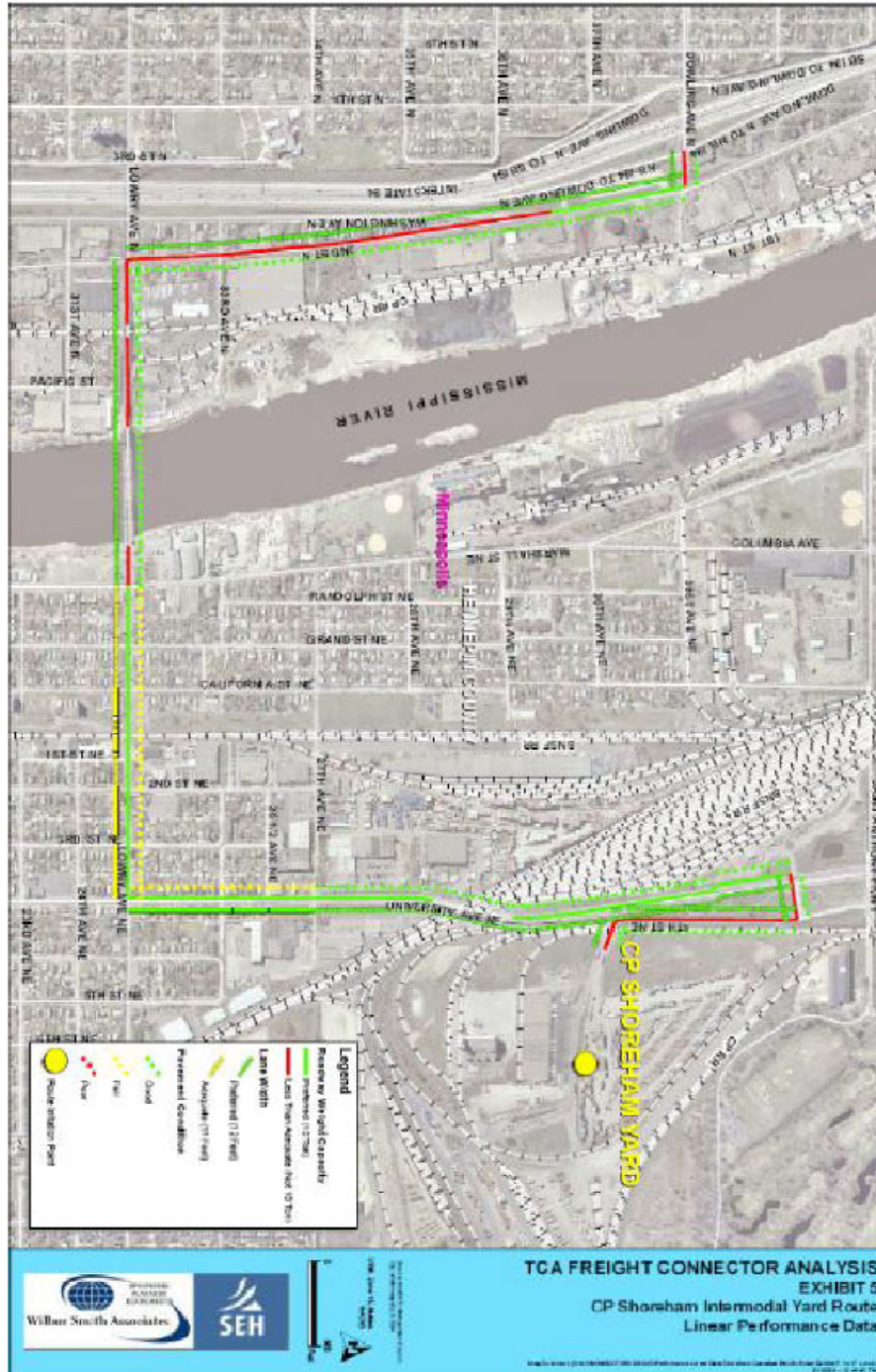
According to Mn/DOT’s Roads & Crash Database, twelve truck-related crashes occurred along the CP Shoreham Intermodal Yard Route in the years 2002, 2003, and 2004.

The locations of the twelve crashes along the route are illustrated in **Exhibit 4**.





**Exhibit 5 - CP Shoreham Intermodal Yard Linear Performance Data**



TCA FREIGHT CONNECTOR ANALYSIS  
 EXHIBIT 5  
 CP Shoreham Intermodal Yard Route  
 Linear Performance Data



## Step Two

### *Problem Truck Points (PTP)*

The Lowry Avenue NE/Mississippi River Bridge is the only bridge along the CP Shoreham Intermodal Yard Route that received a “less than adequate” ranking. As described in the methodology section, each roadway bridge that receives a less than adequate ranking contributes two truck problem points per day for every truck that travels past that point. The Roadway Bridge Condition PTP equation is as follows:

$$\text{Roadway Bridge Condition PTP} = (2) (1) (845)$$

$$\text{Roadway Bridge Condition PTP} = 1,690$$

### Railroad Crossings PTP

Since both at-grade railroad crossings received a preferred ranking, this feature will not contribute to the cumulative total of problem truck points per day.

$$\text{Railroad Crossings PTP} = 0$$

### Turning Radii PTP

There were eight turning movements that received a less than adequate ranking. As described in the methodology section, each turning movement that receives a less than adequate ranking contributes two truck problem points per day for every truck that travels past that point. The turning radii PTP equation is as follows:

$$\text{Turning Radii PTP} = (2) (8) (423)$$

$$\text{Turning Radii PTP} = 6,768$$

### Vertical Clearance PTP

Since the Lowry Avenue NE/Mississippi River Bridge received a preferred ranking, this feature will not contribute to the cumulative total of problem truck points per day.

$$\text{Vertical Clearance PTP} = 0$$

### Total PTP

Total Problem Truck Points for the CP Shoreham Intermodal Yard Route are identified as follows:

- Roadway Bridge Condition PTP = 1,690
- Railroad Crossings PTP = 0
- Turning Radii PTP = 6,768
- Vertical Clearance = 0
- Total PTP = 8,458



### *Problem Truck Miles (PTM)*

#### Lane Width PTM

Approximately 0.8 miles of the route has lane widths equal to eleven feet. As discussed in the methodology, adequate sections will count as one demerit in the Problem Truck Miles equation. The lane width PTM equation is as follows:

- Lane Width PTM = (0.8) (845)
- Lane Width PTM = 676

#### Roadway Weight Capacity PTM

Approximately 2.46 miles of the route has roadway weight capacity of less than 10 tons. As discussed in the methodology, less than adequate sections will count as two demerits in the Problem Truck Miles equation. The roadway weight capacity PTM is as follows:

- Roadway Weight Capacity PTM = (2) (2.46) (845)
- Roadway Weight Capacity PTM = 4,157

#### Total PTM

The Total Problem Truck Miles for the CP Shoreham Intermodal Yard Route is the sum of the PTM from the lane width and roadway weight capacity features. The total problem truck miles for this route are as follows:

- Lane Width PTM = 676
- Roadway Weight Capacity PTM = 4,157
- Total PTM = 4,833

### *Summary*

In Section 4.8, a summary table is listed that includes the total number of problem truck points and problem truck miles for the seven freight connector route evaluations completed for this study. This table is included in the report for illustrative purposes only; a greater number of evaluations need to be completed and added to the database in order to more effectively make comparisons among the various routes. In general, freight connector routes with lower numerical values for both problem truck points and problem truck miles should be considered adequate for commercial vehicle traffic.

6. Proposals should include information concerning the possible effects of adding or deleting a route to or from the NHS might have on other existing NHS routes that are in close proximity.

*This question does not appear to apply to Intermodal Connectors.*

7. Proposals to add routes to the NHS should include an assessment of whether modifications (adjustments or deletions) to existing NHS routes, which provide similar service, may be appropriate.

*There are no other NHS Intermodal Connector routes in the vicinity of this request. The addition of this route is compatible with the existing NHS System, and it serves as a logical freight access route from the CP / Shoreham Intermodal Yard area to the NHS System. Exhibit 7 illustrates the current NHS System in the Twin Cities, and Exhibit 8 lists the current Intermodal Connectors.*

8. Proposed modifications that might affect adjoining states should be developed in cooperation with those states.

*This question is not applicable.*

9. Proposed modification consisting of connections to major intermodal facilities should be developed using the criteria set forth below:

- Truck / Rail Threshold = 100 trucks per day (all types).

*Truck counts were taken on Lowry Avenue (the primary segment of the proposed NHS Connector Route) as part of the Twin Cities Metro Area Freight Connectors Study. The observed truck percentages were then applied to the total ADT tube counts taken from 2000-2004.*

*For the Lowry Avenue segment, the average daily trucks (all types) volumes were estimated as **845** trucks per day. The 5-axle semis (which normally are used to transport intermodal containers) volumes were estimated as **342** semi-trucks per day. Based on discussions with the terminal manager regarding directional distribution of trucks using the yard, it is estimated that about **200** intermodal container trucks utilize the complete route between I-94 and the CP / Shoreham Intermodal Yard.*

- Secondary Criteria: Intermodal terminals that handle more than 20% of passenger or freight volumes by mode within a state.

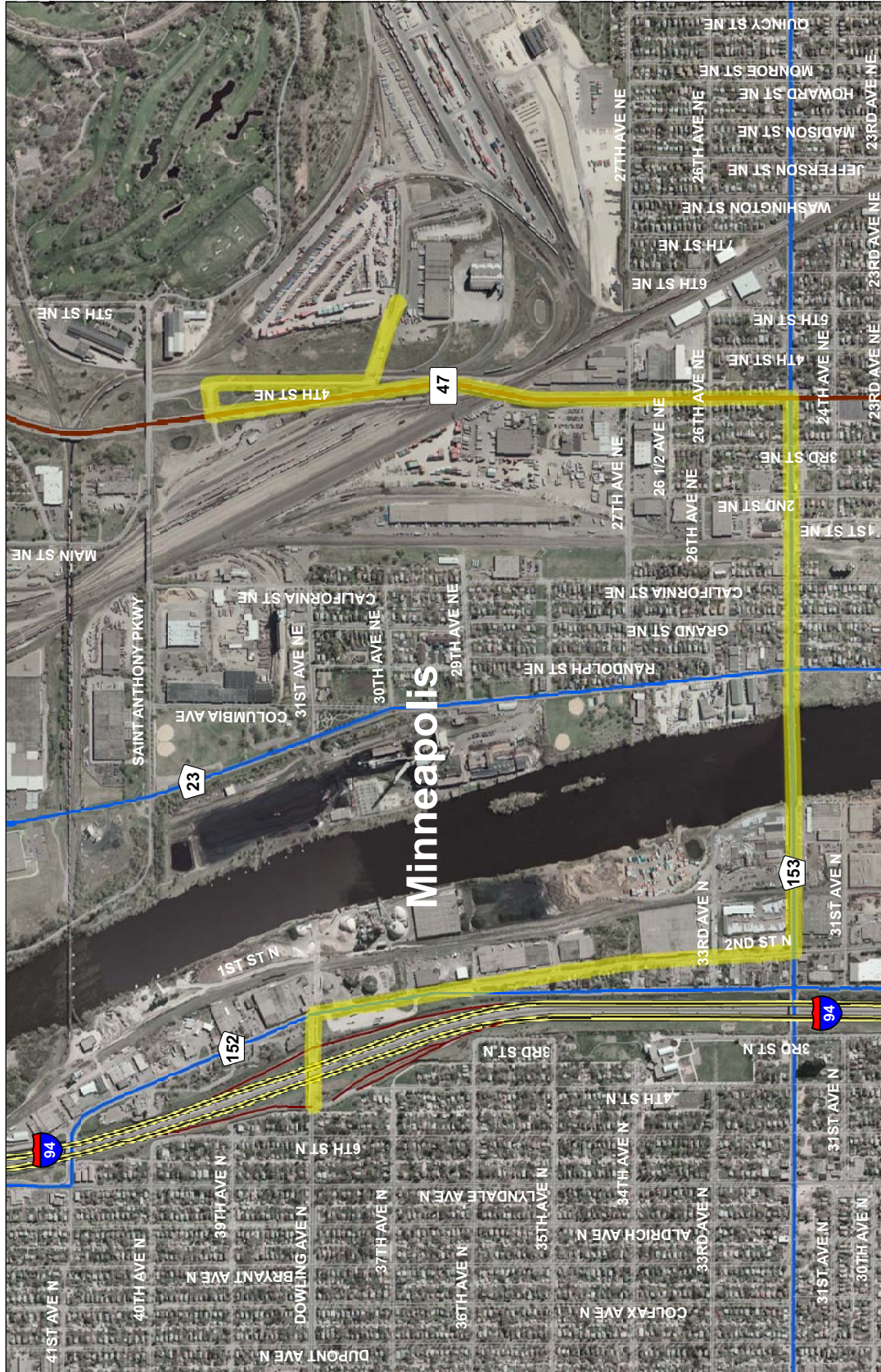
*The CP / Shoreham Intermodal Yard handles about 30% of the state's intermodal freight (i.e. bulk distribution containers). The only other Intermodal Freight Facilities are the BNSF Yard located in St. Paul, Minnesota (about 70% of intermodal freight) and the small yard located in Dilworth, Minnesota (less than 1% of intermodal freight).*



## **Supporting Exhibits**

- Exhibit 1 - Proposed NHS Intermodal Connector Route
- Exhibit 2 - Letter of Support from City of Minneapolis
- Exhibit 3 - Letter of Support from Hennepin County
- Exhibit 4 - Letter of Support from Canadian Pacific (CP) Rail
- Exhibit 5 - Resolution of Support from the Twin Cities Metropolitan Council
- Exhibit 6 - Area Average Daily Traffic Volumes (ADT)
- Exhibit 7 - National Highway System (NHS): Minneapolis – St. Paul, MN
- Exhibit 8 - Official NHS Intermodal Connector Listing





- Legend**
- Interstate
  - HOV Lane
  - US Highway
  - State Highway
  - County Road
  - Municipal Street
  - Ramp/Loop
  - Service Drive
  - Private Road
  - Dormitory Walkway
  - Park Road
  - Restricted Access

**Exhibit 1**  
**Proposed NHS Intermodal Connector Route**  
**CP/Shoreham Intermodal Yard Area**

**Freight Connectors Study**

- CP Shoreham Route

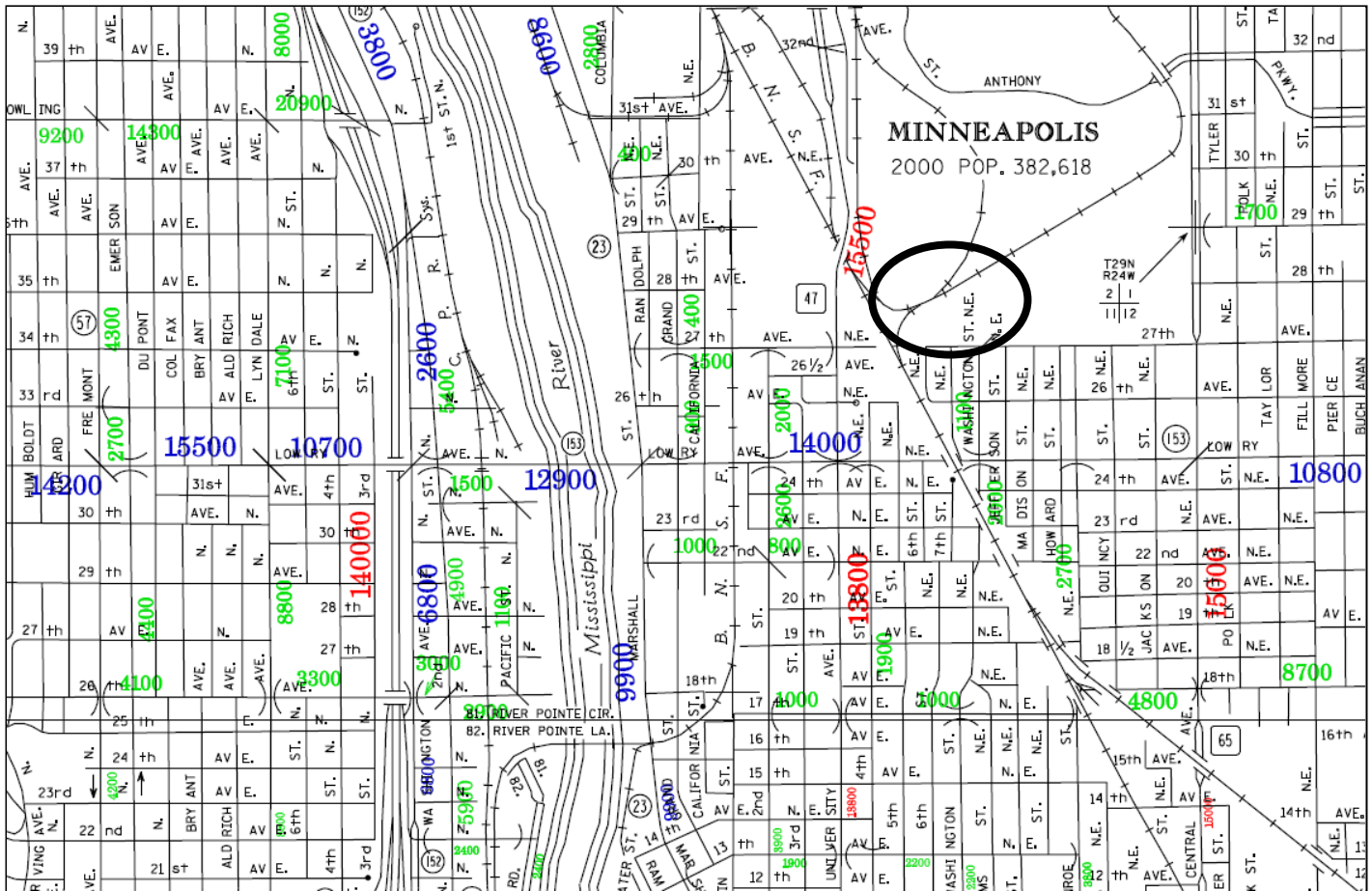
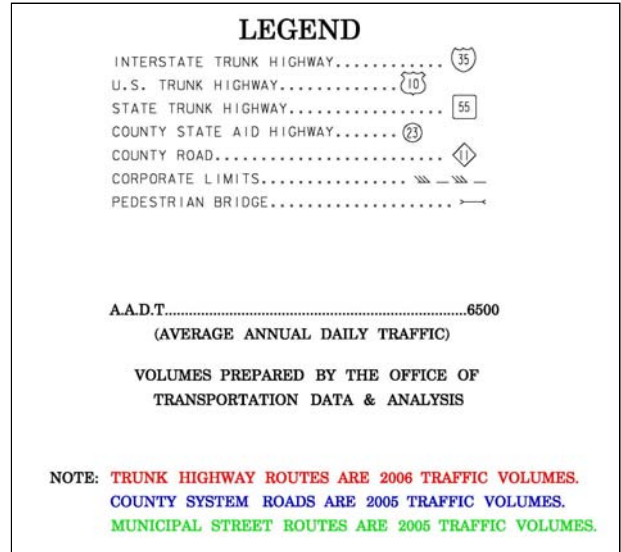


Road Alignments based on TLG map Sep 2007



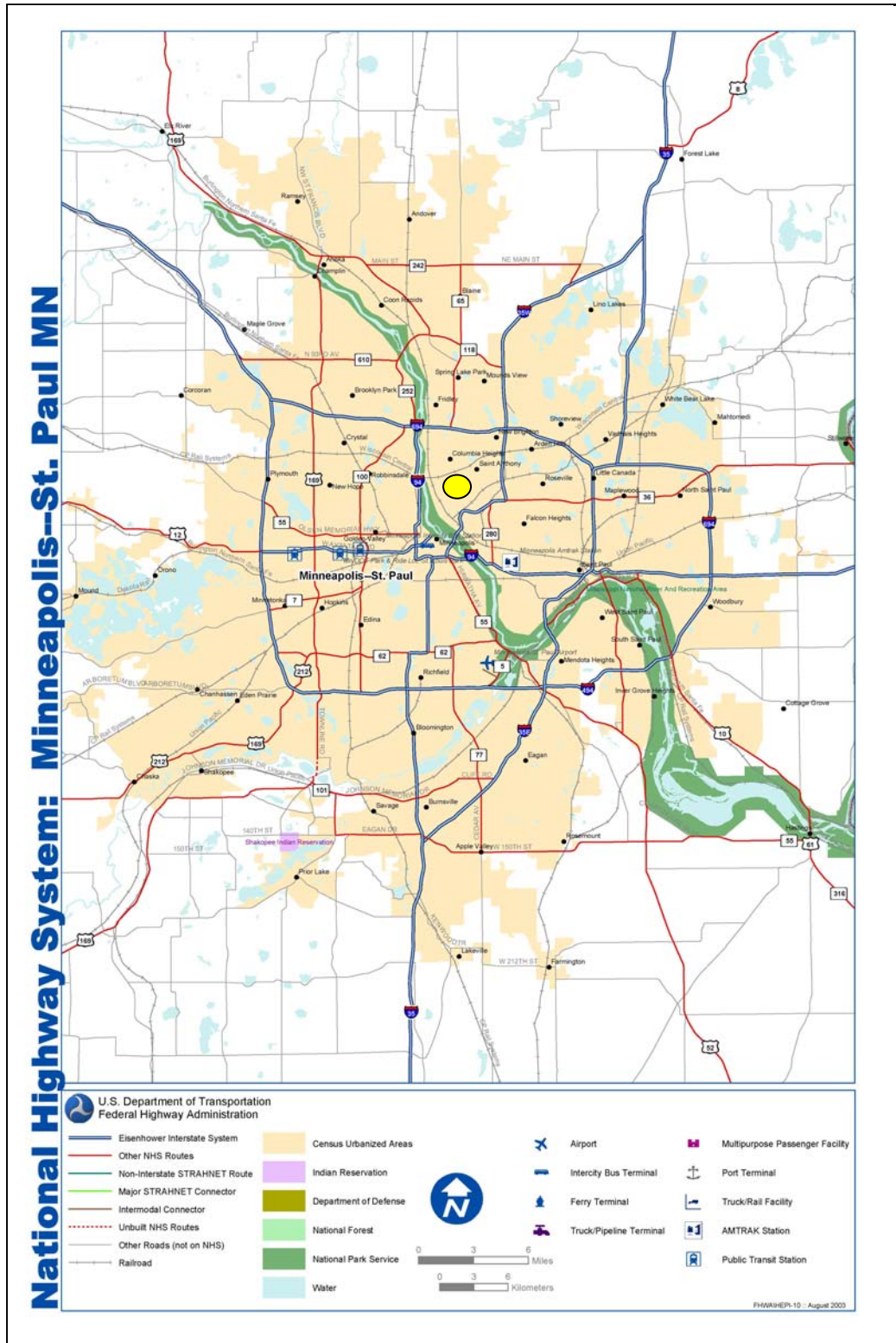
# Exhibit 6 Average Daily Traffic Volumes (ADT) – 2006

Source: Mn/DOT State Website - [www.dot.state.mn.us/traffic/data/html/volumes.html](http://www.dot.state.mn.us/traffic/data/html/volumes.html)



# Exhibit 7 National Highway System (NHS): Minneapolis – St. Paul, MN

Source: FHWA website – [www.fhwa.dot.gov/hep10/nhs](http://www.fhwa.dot.gov/hep10/nhs)



**Exhibit 8**  
**Official NHS Intermodal Connector Listing**  
**Source: FHWA Website at - [www.fhwa.dot.gov/hep10/nhs](http://www.fhwa.dot.gov/hep10/nhs)**

**Official NHS Intermodal Connector Listing**

**Minnesota**

FACILITY	TYPE	CONNECTOR NO.	CONNECTOR DESCRIPTION	CONNECTOR LENGTH	FACILITY ID
Co. Rd. 73 Park & Ride Lot, Minnetonka	Public Transit Station	1	Served by an existing NHS route	0	MN7T
Duluth Airport	Airport	1	From U.S. 53/SR 194; N 0.8 mi on Haines Road (CR 91) to Airport Rd	0.8	MN3A
Duluth Transit Authority Pulse Transit Hub	Intercity Bus Terminal	1	From I-35 via Mesaba Ave - Superior St - Lake Ave to I-35	0.71	MN10B
Louisiana Ave Transit Cntr, St Louis Pk	Public Transit Station	1	Served by an existing NHS route	0	MN8T
Minneapolis Amtrak Station	AMTRAK Station	1	Served by an existing NHS route	0	MN5S
Minneapolis Intercity Bus Station	Intercity Bus Terminal	1	Served by an existing NHS route	0	MN6B
Minneapolis/St. Paul Airport	Airport	1	TH 5 (TH 55 to Post Rd)	0.9	MN1A
MxdOT Park & Ride Lot, St. Louis Park	Public Transit Station	1	Served by an existing NHS route	0	MN9T
Port of Duluth M. Clure Public Terminal	Port Terminal	1	Garfield Ave/Port Terminal Rd (I-535 to the terminal)	0.9	MN4P
Rochester International Airport	Airport	1	Rochester Airport access road from US 63 westerly to Brataas Dr	0.7	MN2A
<b>TOTAL</b>				4.01	

# Transportation Advisory Board

of the Metropolitan Council of the Twin Cities

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Donn R. Wiski  
Chair

March 19, 2008

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Anoka County

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Carver County

Paul Krause  
Dakota County

Linda Koblick  
Hennepin County

Tony Bennett  
Ramsey County

Jon Ulrich  
Scott County

Myra Peterson  
Washington County

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Champlin City Council

James Hovland  
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James Meyers - C

Chuck Haik - D

Bart Ward - E

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Metropolitan Council

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Transit

Glenn Olson  
Transit

Ron Have  
Freight

David Gepner  
Non-motorized

Peter Bell, Chair  
Metropolitan Council  
390 Robert Street No.  
St. Paul, MN 55101

Mr. Bell:

On March 19, 2008, the Transportation Advisory Board (TAB) voted to support adding a new route to the FHWA Official National Highway System (NHS) Listing of Intermodal (Freight) Connector Routes in Minnesota, as requested by Hennepin County.

The TAB also approved three recommendations relating to future study of regional freight facilities and the appropriate source of funding for improvements on this system.

The TAB forwards this recommendation to the Metropolitan Council for action along with additional information described in TAB action transmittal 2008-10.

Sincerely,



Donn Wiski, Chair  
Transportation Advisory Board

kjr/kjr

**ACTION TRANSMITTAL**

No. 2008-10

**DATE:** March 19, 2008  
**TO:** Metropolitan Council  
**FROM:** Transportation Advisory Board  
**SUBJECT:** Addition of Lowry Avenue Bridge to NHS Intermodal Freight Connector Route Listing

**MOTION:** The TAB support adding a new route to the FHWA Official National Highway System (NHS) Listing of Intermodal (Freight) Connector Routes in Minnesota. The proposed route would link the Canadian Pacific CP/Shoreham Intermodal Rail Yard and Port of Minneapolis to Interstate 94. That the route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Avenue NE, Trunk Highway 47 (University Avenue), CSAH-153 (Lowry Avenue), 2<sup>nd</sup> Street North and Dowling Avenue; and

That service to the CP/Shoreham Intermodal Yard is part of the Regional Commercial Freight System as shown on Fig. 2-16 of the Metropolitan Council's 2030 Transportation Policy Plan and recognized in the Metropolitan Council 2030 Framework and the 2030 Transportation Policy Plan; and

That support for this addition to the NHS Intermodal Freight Connector Route Listing is for the pursuit of additional federal funding for the Lowry Avenue Bridge outside of Minnesota's normal formula federal funds (either existing or future); and

That MnDOT and Metro Council be encouraged to complete a comprehensive study that will set regional priorities for freight connectors (including this route). Future regional support for funding and NHS connector designation will be based on the prioritized list resulting from that study.

**BACKGROUND AND PURPOSE OF ACTION:** Hennepin County is requesting support for adding a new route to the Official FHWA listing of intermodal Freight Connector Routes in Minnesota. The addition of the route would allow the use of appropriate federal funds to assist in upgrading this proposed connector route by replacing the structurally deficient and fracture critical Lowry Avenue Bridge over the Mississippi River. The route utilizes 30<sup>th</sup> Avenue NE, 4<sup>th</sup> Street NE, 32<sup>nd</sup> Av. NE, Trunk Highway 47 (university Avenue), CSAH 153 (Lowry Avenue), 2<sup>nd</sup> St N and Port of Minneapolis Drive/Dowling Avenue.

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**ROUTING**

<b>TO</b>	<b>ACTION REQUESTED</b>	<b>DATE COMPLETED</b>
TAC Planning Committee	Reviewed & Discussed	February 14, 2008
Technical Advisory Committee	Review & Recommend	March 5, 2008
TAB Policy Committee	Review & Recommend	March 13, 2008
Transportation Advisory Board	Review & Recommend	March 19, 2008
Metropolitan Council	Review & Approve	