

Analysis of future transportation needs on St. Paul and Minneapolis industrial areas under proposed development scenarios

Background on the industrial areas

The industrial areas situated just east of the University of Minnesota's Minneapolis campus and extending mostly north of University Avenue eastward to Prior Avenue in Saint Paul are the subject of two separate planning documents that envision bold redevelopment of these industrial lands.

Land use within this area is characterized by a preponderance of large, aging, industrial buildings and poor roadway access to adjacent communities. The two planning documents – one focusing on the Saint Paul Industrial Midway Area¹ and the other on the Southeast Minneapolis Industrial (SEMI) area² - conclude that these areas are ripe for new, more intensive development in the coming years, and propose relatively specific redevelopment plans involving mixed use development, housing, green space, and necessary improvements to existing road and bridge infrastructure in order to meet future demands under the proposed development scenarios.

A substantial amount of industrial space in the study area is currently vacant, and the area is seeing declining manufacturing and wholesale trade activity. These trends are largely responsible for the area's weakening tax base, and are the impetus behind efforts to reinvigorate the area through land use and transportation redevelopment strategies.

Some of the redevelopment has already taken place. For example, new market rate town homes and higher density housing has been built and is occupied along University Avenue. These uses, along with the potential for development of commercial office space, will provide an opportunity to add land value and tax base to the area.

Transportation impacts of proposed redevelopment in the industrial areas

Obviously, more intensive land use development in the future will result in greater capacity and access demands on the road and bridge infrastructure throughout the area, so it is essential that future road, bridge, and transit improvements be designed with current and anticipated redevelopment in mind. In general, more intensive, higher density uses such as residential and office space that are anticipated in future development plans will generate more traffic than lower density activities such as manufacturing and industrial uses, which – as described briefly above – are declining in the area.

The methodology used in this analysis to estimate the impact on the area's future road and bridge needs is based on ongoing trip generation research conducted by the Institute of Traffic Engineers (ITE). ITE estimates trip generation estimates for various land use classes based on actual traffic counts at different types of land use classifications, ranging from the lowest traffic generators (e.g. low density residential, industrial) to the highest

¹ Petrik, Dan. St. Paul Industrial Midway Framework Plan. Prepared for University UNITED. June 2004.

² Cunningham Group. Southeast Minneapolis Industrial (SEMI) / Bridal Veil Refined Master Plan. Prepared for the City of Minneapolis Community Development Agency. May 2001.

traffic generators (certain commercial uses). To derive these trip generation estimates, the ITE studies literally thousands of actual developments of all land use classifications, and records the amount of traffic generated by each property. Using statistical tools, the ITE determines the “typical” traffic that is generated for each specific use.

According to the ITE findings, trip generation estimates within certain classifications, such as residential, office, institutional and industrial properties do not vary significantly by property type or land use. Trip generation estimates among different types of retail property, however, do vary substantially by property type and land use. In other words, a grocery store and an auto parts store both fit within the retail land use classification, but the grocery store generates significantly more trips than does the auto parts store. In this analysis, we assign a very conservative (low) estimate of the trips generated by any new development classified as commercial or retail, so as not to overstate the additional demands on the system.

The table at right shows the “rule of thumb” trip generation figures assumed in this analysis.

Trip Generation Assumptions for New Development Scenarios in Midway and SEMI Industrial Areas		
Land Use Classification	Variable	Weekday Trips Generated
Single Family Residential	Housing units	10
Medium density residential	Housing units	7
Commercial	1,000 sq. ft.	20
Heavy Industrial	1,000 sq. ft.	1.5
Light Industry	1,000 sq. ft.	7
Bio-tech Lab / Office	1,000 sq. ft.	8
Warehousing	1,000 sq. ft.	5
Greenspace	acres	2

The following section presents a projection comparing trip generation estimates under the current, predominantly industrial, land use characteristics in the Southeast Minneapolis Industrial (SEMI) area and the Saint Paul Midway Industrial area versus an estimate of the trips generated under the future development scenarios proposed in the two planning documents cited above.

Southeast Minneapolis Industrial (SEMI) Area

The SEMI area master plan covers the geographical region east of the University of Minnesota, and is bordered by University Avenue on the south, 15th Ave N.E. on the west, Elm Street and the Burlington Northern Santa Fe railyards to the north, and Trunk Highway 280 to the east.

The SEMI area master plan addresses transportation infrastructure needs resulting from the new development by organizing vehicular traffic and circulation throughout the area by proposing to complete a variety of roadway “networks”. The idea of the roadway system development is to put local traffic on the local road system, collector traffic on the collectors, and regional traffic on the regional highway and freeway system. (See page 19-24 of the *SEMI Refined Master Plan: May 2001* for additional details on the development scenarios.)

The master plan identifies three redevelopment scenarios, characterized as “low intensity”, “medium intensity”, and “high intensity”. This analysis focuses on the “high intensity” development scenario, which will feature buildings in the three to five story range (on average) for office and light industrial uses. This scenario is consistent with the prevailing scale of research buildings typical for this area of the city.

The following table presents an estimate of the trips generated for the SEMI area under the high intensity development scenario compared to the existing development. As

indicated by the chart, an estimate of the total number of trips generated for the area is over 78,000; which represents an increase of over 42,000 trips compared to the existing land use.

Summary of Trip Generation Estimate for High Intensity Development Scenario in SEMI Area									
Existing Development: Sq. Ft = 3,692,813 (residential/office/commercial/industrial/ manufacturing/ warehousing/vacant)			“High Intensity” Scenario Development: Sq. Ft = 5,144,950 (commercial/light industrial/ industrial/residential/greenspace)					New Trips Gen- erated	
Development Area	Acres	Estimated Trips Generated	Estimated Trips Generated						
			Com	L.Ind	Ind	Resid	Gr		Total
SEMI	219	36,192	69,555	1,788	1,097	5,957	50	78,447	42,255
Source: Development square footage provided in SEMI master plan; Existing development square footage based on aerial photos and maps of development area; Trip generation estimates prepared by Transportation Policy Institute based on Institute of Transportation Engineers data.									

Industrial Midway Area

The Industrial Midway framework plan covers the geographic region immediately adjacent to the SEMI area; i.e. both areas share state Trunk Highway 280 as a border. The Industrial Midway is bordered to the west by TH 280, I-94 on the south, the Burlington Northern Santa Fe railyards to the north, and Prior Avenue to the east.

Like the SEMI master plan, the Saint Paul Industrial Midway Framework Plan prepared by Dan Petrik for University UNITED in June 2004 also proposes an ambitious redevelopment plan for the Saint Paul Industrial Midway area. The plan proposes to convert and redevelop existing space in one of four land use classifications: urban village, residential, biotech lab/office, and greenspace. The table below shows an estimate of the anticipated trips generated by the proposed redevelopment.

Summary of Trip Generation Estimate for “Green Infrastructure Development Scenario” Proposed the Saint Paul Industrial Midway Framework Plan								
Estimated Existing Development (industrial/ manufacturing/ warehousing)			“Green Infrastructure Development Scenario” (Housing, Commercial, Office, Greenspace)					New Trips Gen- erated
Development Area	Acres	Estimated Trips Generated	Estimated Trips Generated					
			Urban Village	Resid- ential	Bio-tech Lab- Office	Green- space	Total	
St. Paul Industrial Midway	173	15,705	22,742	12,416	40,210	90	75,458	59,753
Source: Development square footage provided in Saint Paul Industrial Midway Framework Plan; Trip generation estimates prepared by Transportation Policy Institute based on Institute of Transportation Engineers data.								

The cumulative effect on the road and bridge needs under these development scenarios for these adjacent industrial areas is estimated to exceed 100,000 daily trips (vehicle, transit, or other means) within and across the Saint Paul Midway and Southeast Minneapolis industrial areas. In order to meet the increasing demands on the area’s road and bridge infrastructure, the two master plans envision a greatly improved road network throughout the area. These improvements will facilitate redevelopment and land use intensification in the area, improve connections within and from outside the area, and provide amenities that will attract people to live, work, and shop within the area.

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