5.0 ECONOMIC IMPACT ANALYSIS

This chapter analyzes the effect of the University Avenue Light Rail Transit (LRT) and bus rapid transit (BRT) Alternatives under consideration, on the economic vitality of the Central Corridor. The first section, 5.1 Economic Conditions, describes the current economic activities, including developments, forecasted socioeconomic information, and expected regional economic effects, in the Twin Cities and specifically the Central Corridor. Section 5.2 Station Area Impact Assessment, describes the development and design considerations of each proposed station site. Section 5.3 Environmental Justice, analyzes possible disproportionate economic impacts related to the Central Corridor alternatives.

Graphics for Chapter 5.0 are included together at the end of the chapter.

5.1 ECONOMIC CONDITIONS

This section summarizes the economic character and development trends in the Twin Cities Metropolitan Area and more specifically in the Central Corridor.

5.1.1 Existing Economic Activities and Developments

REGIONAL

The Twin Cities Metropolitan Area has a diverse economy, with a strong mix of industries and employers. According to the Minnesota Department of Economic Security, over forty companies headquartered in the metropolitan area have annual revenues in excess of $1 billion, which is extraordinary for the population size of the Twin Cities. The complexion of existing employment is diverse with a mix of the following largest industries: Services (29.8 percent), Trade (23.3 percent), Retail (17.4 percent), Manufacturing (16.1 percent), and Government (13.4 percent). Fourteen of the *Fortune 500* companies are headquartered in the Twin Cities, as shown in Table 5.1-1: Twin Cities Fortune 500 Firms Ranked by 1999 Revenues.

Table 5.1-1: Twin Cities Fortune 500 Firms Ranked by 1999 Revenues

Company	Type of Business	Rank by 1999 Revenue
Target	General Merchandiser	32
United Health Group	Health Care	86
Supervalu	Wholesalers	99
3M	Scientific, Photo & Control Equipment	110
Northwest Airlines	Airlines	165
Best Buy	Specialist Retailers	169
St. Paul Cos.	Insurance (Stock)	204
U.S. Bancorp	Commercial Banks	212
Cenex Harvest States	Agriculture	267
General Mills	Food	279
Medtronic	Medical Devices	381
Nash Finch	Wholesalers	383
Hormel Foods	Food	458
Reliastar Financial	Finance	500

Source: Fortune, April 17, 2000

The Twin Cities have a higher proportion of executive/management, professional, and technical jobs than most metropolitan areas. In general, the percentages of professionals in skilled or technical occupations are proportionately higher than most cities, and there are only a fraction of skilled and unskilled production/labor/goods movement jobs.

CENTRAL CORRIDOR

The Central Corridor is the core of the Twin Cities and is host to three major activity centers. The primary activity centers in the corridor are the Central Business District (CBDs) of Minneapolis and St. Paul, and the University of Minnesota campus. Secondary activity centers in the corridor include the Westgate District, Midway area, State Capitol District, and the Regions Hospital.

There are a considerable number of development projects occurring in the Central Corridor, including both infill developments and redevelopment of existing uses. Some of the current developments include:

- Minneapolis Public Library
- Block E Entertainment District
- Downtown Minneapolis Riverfront Developments (residential, cultural, and commercial)
- Medium to high-density residential projects between Emerald Avenue and Curfew Streets near University Avenue
- Raymond Avenue Area Urban Village
- Goodwill Industries Corporate Offices
- Episcopal Health and Housing Services
- East Metro Transit Garage
- Pan Asian Urban Village
- Wabasha Court redevelopment
- Residential developments in St. Paul, including condominiums and apartments

Other developments are being considered throughout the corridor, including light industrial, commercial, and residential developments. Many of the potential developments include residential housing units, because living in the core cities has become more attractive in recent years. In addition, land is available in pockets throughout the corridor and some underutilized land uses could be redeveloped for more fit uses to create more economic vitality.

5.1.2 Population, Housing and Employment

Between 1990 and 2020, the Twin Cities Metropolitan Area is forecasted to experience significant growth in population, employment, and housing. Hennepin and Ramsey counties are expecting considerable amount of growth. Growth in the Twin Cities has become increasingly sprawled to the outer suburban communities over the last 20 years, and is forecasted to continue into the future. Future growth increases in Hennepin County and Ramsey County will come from infill development or better utilization of existing land uses. This section illustrates the growth in population, housing, and employment for the Twin Cities Metropolitan Area and the Central Corridor.

REGIONAL

Historical population trends over the past two decades have shown substantial increases in population, specifically with an increase in over 350,000 people in the metropolitan area between 1990 and 2000. According to the Twin Cities Metropolitan Council, this population growth was the largest in the region's history. Many of the outer suburban counties have nearly doubled in population since 1980 and many new communities are being developed currently. Overall, the metropolitan area's population has increased by 15 percent over the last 10 years, as shown in Table 5.1-2: Twin Cities Metropolitan Area Historic Population Trends

Table 5.1-2: Twin Cities Metropolitan Area Historic Population Trends

County	Population 1980	Population 1990	Population 2000	Percentage Change		
				1980-1990	1990-2000	1980-2000
Anoka	195,998	243,641	298,084	24	22	52
Carver	37,046	47,915	70,205	29	47	90
Dakota	194,279	275,227	355,904	42	29	83
Hennepin	941,411	1,032,431	1,116,200	10	8	19
Ramsey	459,784	485,765	511,035	6	5	11
Scott	43,784	57,846	89,498	32	55	10
Washington	113,571	145,896	201,130	28	38	77
Total	**1,985,873**	**2,288,721**	**2,642,056**	**15**	**15**	**33**

Source: U.S. Census Bureau and Twin Cities Metropolitan Council, 2002.

Population, housing, and employment are all expected to continue to grow substantially over the next twenty years. Population increases are forecasted in the region between 2000 and 2020, with an increase of approximately 450,000 people. Although Hennepin County and Ramsey County are only projected to have 9 percent and 5 percent growth in population over the next 20-years respectively, this will result in an increase of over 125,000 people. In addition to these population increases, employment is forecasted to increase by 18 percent and housing is projected to increase by 26 percent in the metropolitan area. The results of these projections are shown in Table 5.1-3: Twin Cities Metropolitan Area Population, Employment, and Housing Projections.

Table 5.1-3: Twin Cities Metropolitan Area Population, Employment, and Housing Projections

	Population			Employment			Housing		
	1990	2000	2020	1990	2000	2020	1990	2000	2020
Hennepin County	1,032,431	1,116,200	1,216,480	723,095	836,300	955,350	419,060	452,820	520,110
Ramsey County	485,765	511,035	537,340	286,835	327,170	381,300	190,500	201,570	222,760
Twin Cities Metropolitan Area	**2,288,721**	**2,642,056**	**3,091,390**	**1,273,000**	**1,527,070**	**1,808,670**	**875,504**	**1,011,050**	**1,269,320**

Source: U.S. Census Bureau and Twin Cities Metropolitan Council, 2002.

Employment growth has dispersed throughout the metropolitan area. More than 60 percent of the metropolitan area projected employment growth is expected to occur in the two core counties, especially Hennepin County. Housing is expected to grow by 26 percent between 2000 and 2020, with a high percentage of these new houses located in the suburban communities due to the limited development opportunities within the metropolitan area.

CENTRAL CORRIDOR

The Central Corridor includes three of the highest traffic generators in the metropolitan area: downtown St. Paul, downtown Minneapolis, and the University of Minnesota. Population, employment, and housing are all projected to increase in every sector of the metropolitan area, including the core cities where a high percentage of the land is already developed. The primary occupancy in downtown Minneapolis and downtown St. Paul has historically been offices, but recent new housing projects have been proposed, and the CBD populations are projected to increase 36 percent and 57 percent respectively. The forecasted population, households and employment data are shown in Table 5.1-4: Central Corridor Projected Socioeconomic Data

Table 5.1-4: Central Corridor Projected Socioeconomic Data

	Population			Households			Total Employment		
	2000	2020	Change	2000	2020	Change	2000	2020	Change
Downtown St. Paul	7,136	10,754	51%	2,901	4,407	52%	63,683	74,418	17%
Downtown Minneapolis	17,939	24,418	36%	10,719	14,773	38%	139,769	183,386	31%
University of Minnesota/Westgate	11,177	12,487	12%	3,383	4,103	21%	27,104	29,817	10%
University Avenue Corridor	83,542	98,123	17%	33,760	38,886	15%	84,150	96,014	14%
Total Study Area	**119,794**	**145,782**	**22%**	**50,763**	**62,169**	**22%**	**314,706**	**383,635**	**22%**

Source: SRF Consulting Group using data from Twin Cities Metropolitan Council and City of St. Paul

As shown in Table 5.1-4, growth is expected in the CBDs in all three of the socioeconomic indicators. New residential developments in the CBDs are creating more attractive living areas in the main activity centers, resulting in nearly 6,000 new households. Overall, the corridor is expected to have 11,000 new households by the year 2020.

Employment statistics in the Central Corridor have shown that there is a continued attraction of businesses into the core of the metropolitan area. Approximately 70,000 new employees are projected in the Central Corridor, with nearly 80 percent of this growth occurring in the downtown areas. The University Avenue portion of the corridor is also expecting a progressive increase of 12,000 employees by the year 2020. Many former warehouses and distribution centers in the Central Corridor are being redeveloped into office spaces, along with the continued construction of new medium to high-density office buildings in the core business districts.

5.1.3 Regional Economic Effects

Various economic effects could result from the implementation either of the two build alternatives. There are measurable direct and indirect economic effects related to construction, maintenance and operation of each alternative. In addition, there are negative effects associated with potential property acquisition and reduction in the tax base. Positive economic effects would be related to long term growth in population and employment and the potential for new development and redevelopment. These effects are examined in Section 5.2 Station Area Development. The regional economic effects related to the Central Corridor alternatives are evaluated and described in this section.

INTRODUCTION AND APPROACH

A variety of techniques are commonly used to estimate the regional economic impact related to the implementation of major capitol transit projects. Two basic categories of impacts are used to calculate the direct and indirect economic impact. Direct impacts typically include employment and payroll, expenditures for goods and services, and anticipated outlays for construction contracts, materials and equipment in the local economy. Indirect impacts, which are harder to accurately measure, estimate the indirect impact ripple effect of direct expenditures in the local economy. Typically, this is estimated by applying a series of "multipliers" obtained from the Bureau of Economic Analysis (BEA). This economic analysis model characteristically results in the tabulation of:

- "Output" (total spending of all industries in the county related to transit system construction)
- "Household Earnings" (incremental increases in earnings of county households attributable to transit system construction)
- "Jobs" (employment created as a result of system construction).

A range of possible indirect impacts for the proposed Central Corridor is included in this section. This range of indirect impacts will be refined as the planning process continues into Preliminary Engineering.

ASSUMPTIONS AND METHODOLOGY

Assumptions have been made to account for some of the unknowns in estimating the direct impacts of the proposed transit systems on the regional economy. These assumptions are as follows:

- Labor would constitute 40 percent of the total construction cost budget and materials would constitute 60 percent
- Eighty percent of the labor would be based in the Twin Cities
- Engineering services would be 80 percent based in the Twin Cities
- Project management services would be 90 percent based in the Twin Cities
- Construction materials purchased in the Twin Cities would constitute 25 percent of the total materials budget
- Transit vehicles would be fabricated outside the Twin Cities

The analysis utilized to estimate the direct impact of the proposed alternatives was to estimate the aggregate expenditures for construction and operation in the future. Construction cost estimates for the two build alternatives were based on 2008 dollars. The impact analysis of the proposed alternatives was estimated using the assumptions and techniques described above. In addition, a range of economic "multipliers" is defined in the results of this analysis to estimate the indirect economic effect of the implementation and operation of the alternatives on the regional economy. This range is typically used in similar sized metropolitan areas and will be refined as the planning process continues.

5.1.4 Results of Analysis

The direct impact analysis includes the portion of project spending that would be made in the Twin Cities Metropolitan Area. For example, the transit vehicles are expected to be produced outside of the Twin Cities, so the expenditures used to purchase these vehicles are not expected to directly effect the economics of the metropolitan area. These costs used in this regional economic analysis will vary slightly from the costs outlined in Sections 2.4 Capital Costs and 2.5 Operating and Maintenance Costs, because the design services, project management, and construction management costs were included. In addition, this analysis estimates the effect on the regional economy.

In addition to the direct impacts, some qualitative impacts may be expected due to the implementation of the LRT or BRT Alternatives. At this time, no quantitative analysis has been assigned to these benefits, though it would be reflected in the indirect economic effect range of results. The economic rate of return expected from investment in the LRT or BRT Alternatives in the Central Corridor may be expected from the following benefits:

- Reduced future congestion
- Energy conservation
- Improved air quality
- Costs avoided for future parking facilities
- Travel time savings
- Reduced operating expenses
- Safety improvements
- Enhanced economic vitality
- Improved land use patterns and developments

Overall, the economic rate of return may be expected to be in the range of 150 percent to 300 percent. As indicated by the BEA this is typical for these types of transit alternatives in an urban environment, such as the Central Corridor. In other words, for every dollar invested in the implementation of either of the alternatives, it can be expected to be circulated through the economy between 1.5 times and three times.

Baseline Alternative

No direct or indirect economic impact is expected in the Baseline Alternative. The projected demand for transit service beyond the capacity may inhibit the growth of economic activity.

University Avenue LRT Alternative

It is estimated that nearly a $412 million direct economic impact may be expected during the construction and design of the University Avenue LRT Alternative into the Twin Cities regional economy. This direct expenditure into the regional economy reflects 49 percent of the total estimated project cost of approximately $840 million ($2008). The indirect economic impacts due to the implementation of the University Avenue LRT Alternative can be expected to result in between $620 million and $1.24 billion put into the regional economy over the life of the LRT system. As noted in the BRT results, purchasing requirements of materials and equipment could keep a high proportion of expenditures within the Twin Cities. The direct expenditure for income is estimated to be approximately $295 million for regional employees involved in the implementation of the University Avenue LRT Alternative.

University Avenue Busway/BRT Alternative

The implementation of the University Avenue Busway/BRT Alternative is estimated to directly impact the regional economics with an approximate additional $120 million during the design and construction of the system. The direct expenditure into the regional economy reflects a proportion of the total estimated project cost of approximately $240 million ($2008) as indicated in Chapter 2.0 Alternatives Considered. Of course, requirements for purchasing equipment and supplies within the Twin Cities could retain a higher proportion of materials and services obtained in the Twin Cities. The indirect economic impacts of this alternative are estimated to range between $180 million and $360 million that would be input into the regional economy over the life of the system. The expenditures spent to design and construct the University Avenue Busway/BRT Alternative would directly result in approximately $95 million dollars in income for regional employees. This includes the engineering, project management, administration, construction management, and contractors, among other professional services involved in this major capitol investment.

5.2 STATION AREA IMPACT ASSESSMENT

This section describes impacts related to stations as proposed for the two build alternatives. The evaluation begins with a discussion of the station location selection process and lists proposed station locations for both the University Avenue LRT Alternative and University Avenue Busway/BRT Alternative. An evaluation is provided of the existing development patterns in the vicinity of proposed stations and the potential for new transit-oriented development, which would be facilitated by implementation of either of the build alternatives. The evaluation discusses the physical impacts at proposed station sites, including platform configuration, displacement of parking spaces, impacts to drive lanes, impacts to sidewalks, and impacts to visual resources. The section concludes with a discussion of possible mitigation measures for proposed station sites and their vicinity.

5.2.1 Station Location Selection

The proposed station locations are where the proposed transit systems would interact with development patterns to serve populations at trip origins and destinations. Developed land would, in turn, generate transit patrons. The Central Corridor currently provides a base for the highest transit ridership in the metropolitan area, specifically on the 16 bus route operating on University Avenue. This ridership is generated by the overall land use pattern in the corridor, including the two downtown employment centers and the University of Minnesota Minneapolis campus, and by community nodes found at major intersections along University Avenue. Therefore, station site selection for transit improvements in the Central Corridor considers locations in the two downtowns, on the University of Minnesota campus, and at major intersections within the Central Corridor. Central Corridor LRT vehicles would utilize Hiawatha LRT stations currently under construction in downtown Minneapolis, with the Downtown East Station the first joint station.

The process of station site selection derived initial input from previous studies for transit improvement in the Central Corridor, and was further developed during the Central Transit Study tiered screening process. Alternatives evaluated during the screening process varied primarily in the station spacing, which varied from one-half mile to one-mile, and number of stops proposed. At the end of the screening process a decision was made to seek a hybrid solution that spaced proposed stations one-mile apart for the majority of the corridor, but closer together where land use patterns suggest a good base of potential riders.

PROPOSED LRT STATION LOCATIONS

Hiawatha LRT stations common to the Central Corridor proposed University Avenue LRT Alternative

- Minneapolis Multimodal Station
- Warehouse District
- Nicollet Mall
- Government Center
- Downtown East/Metrodome

Proposed Central Corridor LRT stations

- West Bank
- East Bank
- Stadium Village
- 29th Avenue SE
- Westgate
- Raymond Avenue
- Fairview Avenue
- Snelling Avenue
- Lexington Parkway
- Dale Street
- Rice Street
- Capitol East
- 10th Street
- 6th Street
- 4th Street
- Union Depot

The first three new stations proposed for the Central Corridor would serve the University of Minnesota campus. The West Bank Station and the East Bank Station would link the campus across the Mississippi River via the Washington Avenue Bridge. The Stadium Village Station would serve the eastern part of the campus including large arenas and an important campus commercial node.

Along University Avenue, the primary station selection criteria is to place proposed stations at major intersections where community nodes are present and where access for pedestrians and feeder bus service is most easily afforded. The one exception to placing proposed stations at major intersections is at the Westgate Station. The Westgate area is a business park located just west of Highway 280, and the proposed station would serve mainly work trips. Provision of a proposed station at Raymond Avenue is in response to the presence of a strong community node and recognizes that Highway 280 is a barrier to pedestrian movement, which would be bridged by the placement of proposed stations at Westgate Drive and near Raymond Avenue.

The Midway Industrial District between Raymond and Fairview Avenues includes heavy and light industrial plants, railroad spurs, heavy truck traffic, and few residential units. Given this development pattern, no station is proposed in the district, which would allow vehicles to pick-up speed and time in this section of the corridor. Like the proposed station at Raymond Avenue, a proposed station at Fairview Avenue would serve the edges of the Midway Industrial District and a land use pattern that includes residential and commercial uses. Proposed stations at Snelling Avenue, Lexington Parkway, and Dale Street would serve community nodes at each of these intersections with University Avenue and follow a one-mile spacing pattern. A proposed station

at Rice Street is one mile east of Dale Street and would serve part of the State Capitol area. The proposed Capitol East Station on Columbus Avenue would provide access to a major medical complex, and to state office buildings located in the eastern half of the State Capitol area. Four proposed LRT stations would serve downtown St. Paul along the Cedar Street to 4th Street alignment. The office core is centered on Cedar Street, and the line terminates at the Union Depot on 4th Street. The historic depot may be the proposed site of a downtown multimodal rail hub.

PROPOSED BUSWAY/BRT STATION LOCATIONS

Station locations for the University Avenue Busway/BRT Alternative would be the same as the University Avenue LRT Alternative except in the two downtowns.

In downtown Minneapolis and downtown St. Paul there are no provisions for full stations with platforms and canopies, rather fare vending machines and new bus shelters would be provided on existing sidewalks. The proposed University Avenue Busway/BRT Alternative station locations along University Avenue from Westgate to Rice Street are the same as those proposed for the University Avenue LRT Alternative.

Proposed stations for the University Avenue Busway/BRT Alternative

- Fifth Street Garage
- Warehouse District
- Nicollet Mall
- Downtown East/Metrodome
- Cedar Avenue
- West Bank
- East Bank
- Stadium Village
- 27th Avenue SE
- Westgate
- Raymond Avenue
- Fairview Avenue
- Snelling Avenue
- Lexington Parkway
- Dale Street
- Rice Street
- Constitution Avenue
- 10th Street (Cedar/Minnesota)
- 7th Street (Cedar/Minnesota)
- 6th Street (Cedar/Minnesota)
- 5th Street (Cedar/Minnesota)
- River Park Plaza

5.2.2 Transit-Oriented Development (TOD) Analysis

This section considers the existing land use pattern and urban environment in the area of the proposed stations. An indication of the potential ridership at each proposed station and an evaluation of the existing opportunities for new development that may intensify land use near the proposed stations are provided. A land use pattern that creates opportunities for transit trip generation, and an urban form that provides a quality pedestrian environment focused on the transit station, is referenced as "transit-oriented development".

The following evaluation considers each of the proposed station areas for indicators of transit-oriented development, or "TOD." It should be remembered that University Avenue originally developed as a streetcar corridor and remnants of that development pattern are still present. The current conventional bus service continues to bring many transit patrons to stops along the avenue, thereby adding to the potential market for retailers, and increasing accessibility for other land uses.

The station area TOD analysis focuses on the immediate area around each proposed station defined by a five-minute walk radius, approximately one-quarter mile. It is within this radius that a transit station concentrates pedestrian activity, and therefore increases the accessibility to land and market for certain types of development, specifically favoring higher density residential, office, and retail development.

Each proposed station is evaluated in regard to the following criteria:

- Land use pattern
- Urban form
- Infill potential
- Redevelopment potential
- Planned development
- Potential major trip generators
- Overall TOD rating

The rating measures used for the evaluation are subjective and ordinal: "Low", "Moderate", "High", and "Very High" are assigned regarding infill and redevelopment potential; and "Poor", "Fair", "Good", "Very Good", and "Excellent" are assigned for the overall TOD rating.

The overall rating is a composite of factors that gives more weight to the existing pattern of development.

Accompanying the analysis is an aerial photo of each proposed station site that highlights the area within a five-minute walk radius. Within each proposed station radius, planned and potential infill and redevelopment sites are identified. Ground level photographs are also inserted to provide a better understanding of the development pattern and urban environment around each proposed station site.

A combined analysis for the western four of the five Hiawatha LRT stations is given because they are existing stations in the intensely developed CBD of downtown Minneapolis. Central Corridor land use improvements will increase ridership and land access at these stations, however, the impact is likely to be greatest around the Downtown East Station where the two lines will first meet and there is a large area of underdeveloped land. Therefore the Downtown East Station is analyzed separately.

This TOD analysis considers the existing development pattern and potential for new development related to the University Avenue LRT Alternative and the University Avenue Busway/BRT Alternative. The accompanying graphics show only the proposed University Avenue LRT Alternative station sites, because station areas for the University Avenue Busway/BRT Alternative are either at the same locations or within the area analyzed. The potential for new TOD is likely to be greater for the University Avenue LRT Alternative than the University Avenue Busway/BRT Alternative, because of the higher quality service and higher capacity of the LRT. Because of the emerging state of BRT application in the United States (U.S.) there is a scarcity of research and published reports on the potential for BRT to act as a catalyst for new development. Most people feel LRT attracts different rider demographics and more development. However, the potential infill, redevelopment, and planned development areas identified in this analysis are assumed to be the same for either the University Avenue LRT or Busway/BRT Alternatives, where the BRT is operating in an exclusive guideway.

HIAWATHA LRT STATIONS

An aerial photograph of the Hiawatha LRT Stations is shown on Figure 5.2-1: Downtown Minneapolis Hiawatha LRT Stations, and is included at the end of the chapter.

This section provides a transit-oriented development analysis, in accordance with the previously described TOD criteria, for four proposed station locations common to the Hiawatha LRT project: Minneapolis Multimodal Station, Warehouse District, Nicollet Mall and Government Center. Based on the analysis, an overall TOD rating for the proposed station locations is determined.

Land Use Pattern

The CBD in downtown Minneapolis is a very intense core of office towers. The office core is centered between Hennepin Avenue and Fourth Avenue, surrounded by a ring of surface and structured parking. To the west of the core is the historic Warehouse District and Hennepin Avenue, which serves as the downtown's main entertainment area consisting of the Target Center Arena, theaters, restaurants, live music venues, and taverns. Nicollet Mall is the focus of retailing in downtown. A corridor of government buildings is located between Third and Fourth Avenue, including the federal courthouse, City Hall, and county offices.

Urban Form

The urban design of downtown Minneapolis is based on a compact core of office towers and separation of other uses into functional districts for entertainment, shopping, and parking. The basic pattern is a grid of short, square street blocks. The office core has a highly developed system of walkways at the second floor level, known as skyways, where the bulk of support services for office employees is located. These services include restaurants, delis, coffee shops, convenience stores, travel agencies, print shops, and many other support businesses. The skyways create a type of megastructure, which allows downtown employees to avoid frequent harsh weather conditions, however they also tend to detract from the vitality at the street level. High levels of pedestrian activity are found on Nicollet Mall, which is designed as a pedestrian mall and transitway. Construction of the Hiawatha LRT stations on Fifth Street is likely to create new opportunities for street level activity to increase.

Infill Potential

Sites suitable for infill development are available within walking distance of the new Hiawatha LRT stations, especially to the west and north of the office core. The infill potential in the vicinity of these stations is considered to be moderate.

Redevelopment Potential

The investment in the downtown office towers, due to a substantial surge in construction in the late 1990s, may limit redevelopment pressure for the near future. However, some sites with surface parking lots or aging commercial structures, especially near the Warehouse District Station, may become redevelopment opportunities with the proposed new transit service. The redevelopment potential in the vicinity of these stations is considered to be moderate.

Planned Development

The biggest new project currently planned for downtown Minneapolis is design and construction of a new public library. This library will be located one block north of both the Warehouse District and Nicollet Mall Stations. Directly north of the Nicollet Mall Station, a mixed-use office, retail, and residential project is in the initial planning stage. Construction of the Block E entertainment and hotel project is underway directly east of the Target Center Arena.

Potential Major Trip Generators

The potential major trip generators include the Minneapolis CBD, Nicollet Mall, Target Center and the Warehouse District.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the four Hiawatha LRT stations; Minneapolis Multimodal, Warehouse District, Nicollet Mall and Government Center is considered to be excellent.

HIAWATHA DOWNTOWN EAST/METRODOME LRT STATION

An aerial photograph of the Hiawatha Downtown East/Metrodome LRT Station is shown on Figure 5.2-2: Downtown East/Metrodome Station, and is included at the end of the chapter.

Land Use Pattern

The Hubert H. Humphery Metrodome Stadium and parking lots dominate land use in the Downtown East Station area. Surface parking serves the downtown office core as well as sporting events. The Hennepin County Medical Center is located to the south of Sixth Street. This is a major regional medical complex spanning four blocks. Other uses include the Star Tribune editorial offices, Hennepin County facilities, and offices, restaurants, and warehousing located in older industrial structures scattered among the surface parking.

Urban Form

Fourth and Fifth Street bend around the Metrodome Stadium and north/south streets are interrupted, otherwise the area is organized on the downtown street grid. The vast amount of land devoted to surface and structured parking results in partially developed blocks without a cohesive urban form. The Hiawatha LRT line currently under construction on Fifth Street will add a new element and make the Downtown East Station a new focal point.

Infill Potential

Immediately adjacent to downtown Minneapolis, the area is in position to be developed as other land around downtown is filled in. The construction of the Hiawatha LRT would provide excellent access from the airport to Downtown East, which should create new opportunities for development. The potential conjunction of two LRT lines at the Downtown East Station increases the market for new development. The infill potential in the vicinity of the Downtown East Station is considered to be very high.

Redevelopment Potential

The future of the aging Metrodome is the subject of much discussion and planning. Proposals have been published to move major league baseball to the Warehouse District, or sites in St. Paul, and professional and college football to the University of Minnesota campus. The Metrodome site may become a redevelopment opportunity in the near future. The redevelopment potential in the vicinity of the Downtown East Station is considered to be high.

Planned Development

The City of Minneapolis is currently engaged in a master planning process for the Downtown East area. This plan will provide a framework for developing the area and analyze the real estate market. Plans have already been approved for a new housing development north of Washington Avenue. Further north on the riverfront, the Guthrie Theater is proposing to construct a new complex with three stages for live productions. Construction is underway on an underground

parking structure below the new Hiawatha LRT station, which is being funded by the Minneapolis Community Development Agency to spur development of the station block.

Potential Major Trip Generators

The potential major trip generators include the Metrodome Stadium and Hennepin County Medical Center.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the Downtown East Station is considered to be good, given the large number of trips generated by the major trip generators, particularly the Metrodome Stadium, but is not rated higher due to the urban form.

WEST BANK STATION

An aerial photograph of the proposed West Bank Station area is shown on Figure 5.2-3: West Bank Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The West Bank area includes the University of Minnesota campus and commercial nodes at Seven Corners and along Cedar and Riverside Avenues. The campus is an intense conglomeration of classrooms, laboratories, libraries, and dormitories. Seven Corners, located at the intersection of Washington and Cedar Avenues, is a commercial node of restaurants, taverns, shops, theaters, and dwelling units. The Holiday Inn Metrodome is the largest structure at Seven Corners. The Cedar-Riverside area includes very high-density residential towers west of Cedar Avenue and a node of commercial storefronts, restaurants, and taverns.

Urban Form

The West Bank campus is organized in the Modernist style around pedestrian plazas and walkways and older commercial nodes. The upper deck of the Washington Avenue Bridge, built for the exclusive use of pedestrians and bicyclists, meets the plaza level of the campus. Drive lanes at the Washington Avenue bridgehead are below the grade of the campus plaza, where a major transit hub is now located. Stairways connect from the plaza level to the transit hub. Connections through the Seven Corners area to Cedar-Riverside are convoluted due to the separation of the bridge lanes and connections to the major freeway interchange to the west. Riverside Avenue dead ends in the Cedar-Riverside project, a group of high-rise residential structures. The Riverview Condominium tower and townhouse public housing units are in an isolated location north of Second Street and east of Tenth Avenue. New open space along West River Parkway lacks connections to the campus level and areas to the west. The Interstate 35W (I-35W) freeway and downtown interchanges are obstacles to community interaction with adjacent neighborhoods.

Infill Potential

The University of Minnesota campus continues to expand on the West Bank. Additions were recently completed to the Law School and to an underground library archive created north of the Washington Avenue Bridge. Open space currently used for intramural athletics is available for continued development of the campus to the north. The infill potential in the vicinity of the West Bank Station is considered to be high.

Redevelopment Potential

A major project to construct new apartment units between Cedar and Tenth Avenues at Seven Corners was completed in 2001. Additional redevelopment is unlikely in the near future and the redevelopment potential in the vicinity of the West Bank Station is considered to be low.

Planned Development
The University of Minnesota will continue to expand facilities on their West Bank campus for the foreseeable future.

Potential Major Trip Generators
The potential major trip generators include the University of Minnesota West Bank campus, Seven Corners, Cedar-Riverside commercial node and Cedar-Riverside Towers.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the West Bank Station is considered to be excellent.

EAST BANK STATION

An aerial photograph of the proposed East Bank Station area is shown on Figure 5.2-4: East Bank Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The land use pattern surrounding the East Bank Station is a very intense campus of university buildings, including classrooms, offices, laboratories, libraries, and dormitories. The Fairview-University Medical Center is a major facility located south of Washington Avenue and east of Church Street.

Urban Form
The East Bank of the campus sits on the bluffs of the Mississippi River where the river makes a dramatic turn to the east. The main part of the campus is south of University Avenue and bisected by Washington Avenue. The Northrup Mall, located along Washington Avenue, is the focal point of the urban design, with Northrup Auditorium located at the north end and Coffman Memorial Union located at the south end. While the campus design is oriented to pedestrian movement, the division into the West Bank and East Bank Campus and four-lanes of traffic on Washington Avenue reduces overall campus cohesiveness. A system of tunnels and building connections allows indoor movement during harsh winter conditions.

Infill Potential
Nearly all the land on the East Bank is developed for high density land uses, leaving little to no area available for additional infill development.

Redevelopment Potential
Current redevelopment projects include expansion of the biological sciences campus and construction of new dormitories along East River Road. Constraints in the East Bank area have caused redevelopment and expansion plans to focus on the Stadium Village area and areas located to the north of University Avenue. The redevelopment potential in the vicinity of the East Bank Station is considered to be moderate.

Planned Development
The University of Minnesota campus will continue to expand with construction of new structures in the Stadium Village area, including portions of the area served by the proposed East Bank Station.

Potential Major Trip Generators
The potential major trip generators include the University of Minnesota East Bank campus and Fairview-University Medical Center.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the East Bank Station is considered to be excellent.

STADIUM VILLAGE STATION

An aerial photograph of the proposed Stadium Village Station area is shown on Figure 5.2-5: Stadium Village Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The intense development near the East Bank Station extends to the area in the vicinity of the Stadium Village Station. The five-minute walk radius for the Stadium Village and East Bank Stations overlap by one block including the medical campus. The Radisson Hotel is located on the northeast corner of Washington Avenue and Harvard Street. This area, once the site of Memorial Stadium, is a focus of campus redevelopment, with a natatorium, campus visitor center, and parking structure already completed. Along University Avenue between Harvard Street and Huron Boulevard is a commercial node with storefront restaurants, taverns, and shops serving the student population. An area of student housing is located south of Delaware Street. Surface lots to the northeast provide parking for the large number of commuter students and for sporting events held in Williams Arena and Mariucci Arena located north of University Avenue.

Urban Form
Structures in the vicinity of the proposed Stadium Village Station are a mix of large university facilities and smaller, older storefronts. The Stadium Village node centered at University Avenue and Oak Street plays an important role in campus life where private businesses serve the campus population.

Infill Potential
A number of open parcels are available for continued expansion of the campus on properties where the stadium once stood. In addition, surface parking lots north of Fourth Street have potential for infill development. The infill potential for the area surrounding the proposed Stadium Village Station is considered to be high.

Redevelopment Potential
Recent housing redevelopment on the southeast edge of campus may continue. The redevelopment potential in the vicinity of the Stadium Village Station is considered to be moderate.

Planned Development
The University of Minnesota will continue to construct new structures in the area surrounding the Stadium Village Station. The university has also expressed an interest in working with the Minnesota Vikings football team to construct a football stadium in the East Bank area of the campus. The proposed location is north of University Avenue and directly east of the university's basketball and hockey arenas on Oak Street and the Fourth Street SE right-of-way. If constructed, this stadium would become a major trip generator for the Stadium Village Station.

Potential Major Trip Generators
The potential major trip generators include the University of Minnesota East Bank campus, Fairview-University Medical center, Stadium Village commercial node, Williams Arena, Mariucci Arena and student housing.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the Stadium Village Station is considered to be excellent.

29TH AVENUE SE STATION

An aerial photograph of the proposed 29th Avenue SE Station area is shown on Figure 5.2-6: 29th Avenue Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

Four areas with distinct land use patterns come together to form a highly mixed commercial, industrial and residential land use pattern within the five-minute walk radius for the 29th Avenue SE Station. To the north is the Southeast Minneapolis Industrial area (SEMI) built around a major railroad yard serving grain elevators and other industries. Between the University of Minnesota Transitway and University Avenue is an area of industry, offices (including the nine-story University Park Plaza office building), and retail establishments. The recently constructed University Village is a mixed-use facility, including first floor retail shops with apartments above. Between Huron Boulevard and 27th Avenue SE is an area of mixed commercial uses, including a small hotel. East of 27th Avenue SE and south of University Avenue is a large area of multi-family and single-family dwelling units in the Prospect Park neighborhood.

Urban Form

Due to the confluence of the University of Minnesota campus, the SEMI area, and Prospect Park in the 29th Avenue SE area the overall street pattern is joined in a number of strained alignments. Odd shaped parcels are created along Huron Boulevard, as a former railroad right-of-way is incorporated into the urban pattern. Because of the curvilinear streets in the residential area of Prospect Park, 27th Avenue SE provides the only direct route south to Franklin Avenue. The design form for new retail shops with apartments along University Avenue is a balance between the desire for street frontage and parking through a minimum setback.

Infill Potential

A number of large parking lots serving the University of Minnesota campus northwest of the immediate Study Area have some infill potential, as does vacant land in the SEMI area. The infill potential for the area surrounding the proposed 29th Avenue SE Station is considered to be moderate.

Redevelopment Potential

The main redevelopment opportunity is in the SEMI area north of 4th Street, portions of which are within the five-minute walk radius of 29th Avenue SE Station. The redevelopment potential in the vicinity of the 29th Avenue SE Station is considered to be moderate.

Planned Development

The SEMI master plan completed by the Minneapolis Community Development Agency in 2000 outlines a major redevelopment project to create a new light industrial and business park out of underutilized and vacant railroad land. If constructed, this business park would become a major trip generator for the 29th Avenue SE Station.

Potential Major Trip Generators

The potential major trip generators include University Park Plaza, Prospect Park residential neighborhood and the new SEMI area development.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the 29th Avenue SE Station is considered to be fair.

WESTGATE STATION

An aerial photograph of the proposed Westgate Station area is shown on Figure 5.2-7: Westgate Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The Westgate area is immediately east of the border of Minneapolis with St. Paul and west of Highway 280. The Westgate business park is located north of University Avenue, with land use consisting of light industry, showrooms, and offices. The Hubbard Broadcasting facility is also a major employer and located next to the business park. To the south of University Avenue, the border between the two cities is clearly marked by the residential uses on the west side and the industrial land uses on the east side. The Court International and Court West buildings in the area south of University Avenue are mixed-use office buildings.

Urban Form
The Westgate development is in the form of a suburban business park, but does create some street frontage along University Avenue through limited setback. The grid of streets is broken in the Westgate Station area, leaving disjointed through streets, especially in the north/south direction. The Highway 280 interchange is a significant physical element somewhat isolating Westgate Station from the adjacent Raymond Avenue Station area.

Infill Potential
There are few vacant parcels in the immediate vicinity of the proposed the Westgate Station. However, most of the development for the vicinity is anticipated further north, at the Westgate business park. The infill potential for the area surrounding the proposed Westgate Station is considered to be low.

Redevelopment Potential
Older structures south of University Avenue, including industrial buildings and some housing units, have potential for redevelopment, and projects are being proposed. The redevelopment potential in the vicinity of the Westgate Station is considered to be high.

Planned Development
The City of St. Paul is working with a developer to finalize plans to redevelop the site located between Emerald and Curfew Streets as a medium- to high-density residential project, with approximately 350-units. This residential project could lead to additional redevelopment in the vicinity of Westgate Station.

Potential Major Trip Generators
The potential major trip generators include the Westgate business park, Court International and Court West, Prospect Park residential neighborhood and a new housing development.

Overall TOD Rating
Based on the above analysis, and primarily due to work trips to the business park and offices, the overall TOD rating for the Westgate Station is considered to be good.

RAYMOND AVENUE STATION

An aerial photograph of the proposed Raymond Station area is shown on Figure 5.2-8: Raymond Avenue Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The land use pattern within the five-minute walk radius of the proposed Raymond Avenue Station is highly mixed and complex. A strong neighborhood commercial retail node with two coffee shops, a diner, sit-down restaurant, hardware store, art gallery, bank, and liquor store are located within one block of the proposed station site. A mix of residential facilities north of Territorial Road includes the 14-story Seal High Rise, home to many seniors and college students, medium-density townhomes and duplexes within the five-minute walk radius, and urban single-family areas just north of the proposed station site. A mix of commercial showrooms, wholesalers, retail shops, offices, and small industries are located long University Avenue. More than 40 artist studios are located in the area, and an African marketplace provides space for 80 small businesses. To the south and west of the proposed station intersection, light and heavy industries predominate.

Urban Form

The complex mix of land uses combined with quality brick commercial buildings at the Raymond Avenue intersection form an interesting urban node. The vibrant storefronts along University and Raymond Avenues provide a consistent facade to the pedestrian zone.

Infill Potential

The development pattern within the five-minute walk radius of Raymond Avenue Station is fairly intense, leaving few open parcels for potential use as infill sites. In some places, industrial uses pose a constraint to infill potential. The infill potential for the area surrounding the proposed Raymond Avenue Station is considered to be low.

Redevelopment Potential

The Raymond Avenue area has seen substantial revitalization over the last decade. Older brick warehouses have been refurbished as office space and storefronts have been reoccupied. The redevelopment potential in the vicinity of the Raymond Avenue Station is considered to be moderate.

Planned Development

The City of St. Paul has designated the surrounding area as the "Raymond Avenue Urban Village" and continues to provide planning assistance to various projects. A new parking area for the Specialty Building located at the southeast corner of the Raymond and University Avenue intersection allows reuse of 28,000 square feet of office space in a former warehouse. The City is also pursuing options for redeveloping the northeast corner of the intersection and an area to the east, newly named as the Midway Commerce Center, which is being redeveloped to a mix of uses.

Potential Major Trip Generators

Potential major trip generators include the Saint Anthony Park residential areas, including Seal High Rise; Raymond Avenue commercial node, as well as other offices and industries.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the Raymond Avenue Station area is considered to be good.

FAIRVIEW AVENUE STATION

An aerial photograph of the proposed Fairview Avenue Station area is shown on Figure 5.2-9: Fairview Avenue Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The intersection of Fairview and University Avenues is where the eastern portion of the Midway Industrial District ends and a pattern of commercial areas backed by residential areas begins, resulting in a complex land use mix of industrial, commercial and residential use. Residential land use is predominant at Fairview Avenue from south of University Avenue to Interstate 94 (I-94). Episcopal Health and Housing Services is currently adding 70 additional units of senior housing to their senior campus on the southwest corner of the Fairview Avenue and University Avenue intersection. Industrial plants and related parking lots, vacant land, commercial and institutional land uses occur north of University Avenue. On the northeast corner of the Fairview Avenue and University Avenue intersection is a former industrial plant converted to a mixed-use facility with offices and retail shops. The southeast corner of the intersection is the site of fast-food restaurants. Approximately 650,000 square feet of office space is also located in various buildings within the five-minute walk radius of the proposed Fairview Avenue Station.

Urban Form

Industrial buildings are sited on large parcels north of University Avenue, which interrupt the regular street grid. The quadrant southeast of the Fairview Avenue intersection is mainly residential, but the grid is set with the long side of blocks oriented along the north/south axis, which is unusual in St. Paul. The southwest quadrant has a curvilinear pattern of streets designed as an early suburb around Iris Park. The intersection at Fairview Avenue is where the alignment of University Avenue curves from its northwest orientation to an alignment oriented directly to the west and east.

Infill Potential

A number of parcels within the five-minute walk radius of the proposed Fairview Avenue Station are vacant or underutilized. The infill potential for the area surrounding the proposed Fairview Avenue Station is considered to be high.

Redevelopment Potential

Vacant and underutilized parcels in the northwest corner of the Fairview Avenue and University Avenue intersection are being assembled into a project area for redevelopment. The redevelopment potential in the vicinity of the Fairview Avenue Station is considered to be high.

Planned Development

The City of St. Paul is working with Goodwill Industries to construct a corporate office, warehouse, job-training center, and retail outlet on the northwest corner of Charles Avenue and Fairview Avenue. This project may involve a second phase of additional space between Charles Avenue and University Avenue, which may include a housing component. A new YMCA facility is also being planned for the site of the existing YMCA, which would include a child care and community recreation center.

Potential Major Trip Generators

Potential major trip generators include the existing and planned senior housing, commercial and industrial businesses and residential neighborhoods.

Overall TOD Rating:

Based on the above analysis, the overall TOD rating for the Fairview Avenue Station area is considered to be good.

SNELLING AVENUE STATION

An aerial photograph of the proposed Snelling Avenue Station area is shown on Figure 5.2-10: Snelling Avenue Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The land use at the Snelling Avenue and University Avenue intersection is mixed commercial and residential. This pattern originated at the intersection of two streetcar lines roughly halfway between the two downtowns. The intersection has been an important community node since its formation. The southeast corner was the site of a major streetcar maintenance and storage facility, and still is the site of a Metro Transit bus barn. The northern half of the old streetcar facility has been redeveloped as the Midway Shopping Center, a major regional shopping center that has half of its site devoted to parking. The southwest quadrant of the intersection between University Avenue and I-94 is a mix of office, institutional, and residential land uses. The Spruce Tree Centre is a mixed-used building with meeting rooms, professional offices, and a restaurant. HealthEast Midway campus occupies a sliver of land between residential streets. Commercial land uses, backed by a dense area of housing, line Snelling Avenue to the north of the University Avenue intersection. Apartment buildings, townhouses, duplexes, and flats are all found within the five-minute walk radius.

Urban Form

The Snelling Avenue intersection with University Avenue displays a variety of urban types from successive eras of interaction between transport technologies and built form. The area is a mix of older storefronts and big box retail stores. The north side of the block between Snelling Avenue and Pascal Street is a remnant from the streetcar era: an unbroken line of small storefronts set right up on the sidewalk, with on-street parking. Located across the street on the south side of University Avenue is an example of contemporary retailing with large footprint buildings, or "big box," and a parking area taking half of the site. Fast-food restaurants with drive-through lanes and parking are located next to the sidewalk. This type of site plan necessitates longer walks for pedestrians using transit to reach the retailing areas, yet the Midway Shopping Center is a major transit stop served by a number of bus routes. The concentration of walk-up apartment buildings coupled with a variety of stores and services creates a community node at the pedestrian scale.

Infill Potential

Although the level of development is fairly intense, there are a few underutilized parcels facing the University Avenue and Snelling Avenue intersection that could be developed. In addition, the large amount of land currently used for parking at Midway Shopping Center might be reduced through a reconfiguration of the overall site plan that maximizes shared parking potential, thereby allowing the development of more street frontage. The land at the corner of Pascal Street and Saint Anthony Avenue (I-94 frontage road) is vacant and this large site will be included in the Bus Barn project detailed below. The infill potential for the area surrounding the proposed Snelling Avenue Station is considered to be moderate.

Redevelopment Potential

The Metro Transit Bus Barn at the corner of Snelling Avenue and Saint Anthony Avenue, combined with the vacant land at the corner of Pascal Street and Saint Anthony Avenue, offers a large redevelopment site. The bus maintenance facility was downsized in 2001 and a transit hub

is scheduled to be created. Opportunities for higher-density office, institutional, or residential projects would develop, especially if a transit station is present. The redevelopment potential in the vicinity of the Snelling Avenue Station is considered to be high.

Planned Development

Metro Transit is preparing a request for proposals to developers regarding the development of their bus barn maintenance facility location at the corner of Snelling and Saint Anthony Avenues.

Potential Major Trip Generators

Potential major trip generators include the Midway Shopping Center, medium- to high-density residential areas, HealthEast Midway and Spruce Tree Centre.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the Snelling Avenue Station area is considered to be very good.

LEXINGTON PARKWAY STATION

An aerial photograph of the proposed Lexington Parkway Station area is shown on Figure 5.2-11: Lexington Parkway Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The land use pattern north of University Avenue at Lexington Parkway is fairly simple: a half block of vacant commercial buildings backed by many blocks of single-family homes, duplexes, and flats. The pattern is basically the same south of University Avenue and east of Lexington Parkway, with residential uses predominate from University Avenue to I-94. Retail, residential, and institutional uses are found in the southwest quadrant of the intersection to I-94. The Skyline Towers residential high-rise, concentrating a large number of low-income housing units, is located just outside the five-minute walk radius for the proposed station. The Central Medical clinic and professional offices, and associated surface parking and parking structure, is located at the southwest limit of the five-minute radius. A rough mix of uses is found between Griggs Street and Lexington Parkway south of University Avenue, including automotive parts, a fitness center, and strip mall retailing. A partial block of housing is also located west of the corner of Lexington Parkway and Saint Anthony Avenues. The actual intersection of Lexington Parkway and University Avenue has fast food restaurants on the southwest and northeast corners, a vacant service station on the northwest corner, and a single building divided into smaller storefronts on the southeast corner.

Urban Form

The overall urban form at the Lexington Parkway intersection north of University Avenue is typical of the corridor residential areas: single-family dwellings built in the early decades of the previous century on blocks oriented east-west. However, the development of Lexington Parkway was somewhat unique for the area, comprised of single-family houses facing a wide parkway with landscaped medians. This parkway streetscape was reconstructed during the 1990s. The half block of commercial land facing the north side of University Avenue is evidence of the surplus of commercial land in the corridor, resulting in vacant and underutilized parcels. The southwest quadrant is a confusing jumble of parking lots, low-rise structures and low-quality structures. Skyline Towers is isolated next to the freeway corridor and is surrounded by parking lots.

Infill Potential
The half block facing the north side of University Avenue east of Lexington Parkway is vacant land, with the exception of a fast food restaurant and a new auto parts store. The northwest corner of the intersection currently has a vacant service station on it. The southwest quadrant also has a large proportion of vacant or underutilized properties that could be developed. The infill potential for the area surrounding the proposed Lexington Parkway Station is considered to be high.

Redevelopment Potential
The presence of many vacant parcels, underutilized land, and outdated structures presents an opportunity for redevelopment projects. The area southwest of the Lexington Parkway intersection, from University Avenue to I-94, is especially in need of redesign, new investment, and redevelopment. The north side of University Avenue to both the east and west of Lexington Parkway also has many parcels that are vacant and underutilized, with obsolete structures and low value land uses. The redevelopment potential in the vicinity of the Lexington Parkway Station is considered to be high.

Planned Development
Developers have looked seriously at the southwest corner of Lexington Parkway and University Avenue for redevelopment as new big box retail stores or housing units. Planning is in process as the City continues to work to achieve significant redevelopment on this site. A new library is planned for the southeast corner of the intersection.

Potential Major Trip Generators
Potential major trip generators include the Central Medical clinic, Skyline Tower and residential areas.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the Lexington Parkway Station area is considered to be poor due to vacant and underutilized land and automobile-oriented urban form and businesses, but with potential for major redevelopment oriented toward transit service.

DALE STREET STATION

An aerial photograph of the proposed Dale Street Station area is shown on Figure 5.2-12: Dale Street Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The proposed Dale Street Station area displays a simple land use pattern of commercial establishments along and facing University Avenue and residential uses on blocks to the north and south.

Urban Form
The majority of the area is developed on the regular grid of streets in St. Paul with single-family houses lining streets aligned on an east-west axis. The development pattern along University Avenue includes older groupings of storefronts interrupted by parking lots. The exception to the regular street grid is southeast of the intersection of Dale Street and University Avenue in an area developed with internal landscaped courtyards and dwelling units grouped around roadway circles. The Unidale Mall at the southeast corner of Dale Street and University Avenue has a typical suburban strip mall site plan with a large parking area along University Avenue with the mall structure set well back from the street. The southwest corner of the intersection has an urban market with stalls for produce displays and adjacent vacant parcels.

Infill Potential
Vacant land is available on the southwest corner of Dale Street and University Avenue. Other vacant or underutilized parcels are located along University Avenue and scattered through the residential areas included within the five-minute walk radius for the proposed Dale Street Station. The infill potential for the area surrounding the proposed station is considered to be moderate.

Redevelopment Potential
An influx of immigrants into the area known as Frogtown over the last two decades has brought investment and revitalization. Given its proximity to downtown St. Paul, the neighborhoods within the five-minute walk radius of the proposed Dale Street Station have become more attractive due to the strong Twin Cities housing market. As noted below, development projects are being explored for the area and the redevelopment potential in the vicinity of the Dale Street Station is considered to be high.

Planned Development
The City of St. Paul submitted a grant application to the Metropolitan Livable Communities Demonstration Account 2000 outlining redevelopment projects for all four corners at the intersection of Dale Street and University Avenue. The largest project is a plan to redevelop the Unidale Mall as the Pan Asian Urban Village. The project concept is to create new storefronts for Asian businesses and include at least 50-units of senior housing on the site. The southwest corner is suggested as the new site of the Penumbra Theatre, and redevelopment of the northeast corner is envisioned as first floor commercial and second floor apartments. A main feature of the overall project is a new transit plaza on the northwest corner of the intersection serving patrons of the existing conventional bus routes. These projects are in various stages of development, and indicate the strong interest of the City and community leaders in redevelopment at this intersection.

Potential Major Trip Generators
Potential major trip generators include residential areas and Unidale Mall.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the Dale Street Station area is considered to be fair to good, but with potential for improvement related to planned development.

RICE STREET STATION

An aerial photograph of the proposed Rice Street Station area is shown on Figure 5.2-13: Rice Street Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The land use at the proposed Rice Street Station includes institutional and commercial uses. The quadrant southeast of the Rice Street and University Avenue intersection is the heart of the Minnesota State Capitol campus. This includes the State Capitol and headquarters offices for the Department of Transportation (DOT), Supreme Court, and other agencies. In addition, the campus includes a generous amount of landscaped open space centered on the capitol mall, which is used for political rallies and civic events. A Sears department store, the Kelly Inn hotel, and associated parking lots are located in the southwest quadrant. Bethesda Hospital is located north of the State Capitol, in an area that also contains more state offices.

Urban Form
The State Capitol sits at the crest of a hill that descends to downtown St. Paul and the Mississippi River bluff. Its landscaped mall is the central feature of the government agency campus and a major civic space. The urban form associated with the State Capitol is degraded somewhat in the area between Rice Street and Marion Street due to the large amount of land used for surface parking. Consistent frontage along University Avenue is lacking.

Infill Potential
Surface parking currently occupies a large amount of land within the proposed Rice Street Station five-minute walk radius, and this provides an opportunity for new infill development. The infill potential for the area surrounding the proposed station is considered to be high.

Redevelopment Potential
The southwest quadrant, currently occupied by a Sears store, has potential as a major redevelopment site. The redevelopment potential in the vicinity of the Rice Street Station is considered to be high.

Planned Development
The State of Minnesota is assembling a site at the southwest corner of Rice Street and University Avenue for the construction of a new state office building. The Capitol Area Architectural and Planning Board also has engaged Sears in discussions about future redevelopment of the Sears site and adjacent land.

Potential Major Trip Generators
Potential major trip generators include existing and planned State Capitol and State Agency destinations.

Overall TOD Rating
Based on the above analysis, the overall TOD rating for the Rice Street Station area is considered to be very good, primarily due to the proximity of the State Capitol campus.

CAPITOL EAST STATION

An aerial photograph of the proposed Capitol East Station area is shown on Figure 5.2-14: Capitol East Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern
The Regions Hospital medical complex occupies the parcel of land east of Jackson Street and south of University Avenue. The complex is a high-density concentration of medical laboratories, hospital rooms, offices, and parking ramps. State office buildings are located to the west of Jackson Street, including the Department of Revenue and State Supreme Court. Surface parking and a large parking ramp occupy roughly a third of the land adjacent to the state offices. The I-94 and I-35E corridor is a major land use within the five-minute walk radius for the proposed station. South of the freeway, land uses include a hotel, public safety building, offices, and surface parking lots.

Urban Form
The dominant urban form feature is the I-94 and I-35E freeway corridor, which separates the State Capitol campus from downtown St. Paul. The eastern portion of the State Capitol campus has a disjointed pattern of streets, with 12th Street providing the only direct connection from Cedar Street to Jackson Street. Bridges are provided over the freeway for all streets on the

regular block grid. Three distinct districts are adjacent to the proposed Capitol East Station location: the State Capitol campus, the Regions Hospital complex and downtown St. Paul. Although these districts are adjacent they are functionally separate.

Infill Potential

The *Comprehensive Plan for the Minnesota State Capitol Area* identifies the eastern part of the State Capitol campus as having the highest potential for new development of state office buildings. On this basis, the infill potential for the area surrounding the proposed station is considered to be high.

Redevelopment Potential

All three districts around the proposed station: the State Capitol campus, the Regions Hospital complex and downtown St. Paul are likely to continue intensification of development. Regions Hospital is in the process of expanding, with continued growth likely. The redevelopment potential in the vicinity of the proposed Capitol East Station is considered to be high.

Planned Development

The general plans for new state office construction identify the eastern portion of the State Capitol campus as a likely site.

Potential Major Trip Generators

Potential major trip generators include Regions Hospital, the State Department of Revenue and the State Supreme Court.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the proposed Capitol East Station area is considered to be excellent, primarily due to the potential for transit patrons employed at the hospital.

10TH STREET STATION

An aerial photograph of the proposed 10th Street Station area is shown on Figure 5.2-15: 10th Street Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The I-94 and I-35E freeway corridor occupies a full block of land between 12th Street and 11th Street. The land use pattern north of the freeway is controlled to provide for development of the State Capitol campus. State office buildings are arranged around landscaped office spaces and surface parking lots. South of the I-94 and I-35E corridor to 7th Street is a mixed-use area of downtown St. Paul. Institutional land uses in this area include churches, HealthEast Saint Joseph Hospital, City of St. Paul Public Safety Building, and Ramsey County Services. Residential land uses are found at older buildings with shops on the ground floor and in high-rise towers. A fair amount of land is used for surface parking south of the freeway and east of Cedar Street. A strong demarcation is found between the office core south of 7th Street and the relatively undefined pattern to the north.

Urban Form

The proposed 10th Street Station is centered on the transition area located between the State Capitol campus and the downtown office core. The most prominent feature is the I-94 and I-35E freeway corridor, which divides the two districts. The street grid is irregular and Cedar Street has a steep slope from 10th Street to 7th Street.

Infill Potential

An entire block directly east of the proposed station site, between Cedar and Minnesota Streets, is vacant. The State of Minnesota recently razed an office building it owned on the block and converted the block to surface parking. There is potential for infill development on this block, positioned in the transition area between the State Capitol campus and office core, which is attracting new development and reuse projects focused on institutional uses. In addition, development plans for the North Quadrant east of Jackson Street identify the area as the site of a new mixed-use urban village. Of the nearly 700 housing units planned for the village, 1500-units were built in 2001 and an additional 200 rental and owner-occupied units will be completed in 2002. On this basis, the infill potential for the area surrounding the proposed station site is considered to be moderate.

Redevelopment Potential

The focus of recent public and private efforts has been in other areas of downtown St. Paul. However, development of new state office buildings on blocks immediately east of the proposed station is likely to occur in the near future. The concept of decking over the freeway to create new development sites and connections is also being discussed. Minnesota Public Radio is planning to expand to the north into the existing public housing authority office building. A business academy is now located in the old Science Museum building and the public housing authority will construct a new headquarters one block west of the proposed 10th Street Station site. The redevelopment potential in the vicinity of the proposed 10th Street Station is considered to be moderate.

Planned Development

The State of Minnesota is looking at sites in the area for expansion of state offices. Construction of the Northeast Quadrant urban village is in the first phase with additional residential and commercial space to be added.

Potential Major Trip Generators

Potential major trip generators for the proposed 10th Street Station include HealthEast St. Joseph's Hospital, high-rise residential towers, state and local agency offices and North Quadrant urban village housing.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the proposed 10th Street Station area is considered to be good, primarily due to presence of the hospital but somewhat hampered by the I-94 and I-35E freeway corridor.

6TH STREET STATION

An aerial photograph of the proposed 6th Street Station area is shown on Figure 5.2-16: 6th Street Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The CBD office core in downtown St. Paul is centered on Cedar Street between 5th and 6th Streets. The land use pattern around the proposed station is characterized as a high-density office core, with the tallest buildings in downtown located immediately to the east and west of Cedar at 7th Street. A network of second-level skyways connects most buildings in the area. The Marshall Fields department store at Cedar Street and 6th Street is the only large retail land use in downtown St. Paul. Small shops and restaurants are found at both the skyway level and street

level of some office buildings, with the strongest concentration located on St. Peter Street and Wabasha Street. Institutional uses are found north of 7th Street, including the Health East Saint Joseph Hospital located between 10th Street and Exchange Street, churches located on Cedar and 10th Streets, and Ramsey County Services at 7th Street and St. Peter Street. Residential high-rises are also found north of 7th Street on Minnesota and Wabasha Streets. A burgeoning entertainment district is located to the west of the office core just outside the proposed station five-minute walk radius. Major destinations include the Xcel Energy Center arena, the Ordway Theater, the River Centre convention center, and the Science Museum of Minnesota.

Urban Form

The overall urban form is a compact core of office towers connected via an extensive skyway system and arranged on a grid of square blocks aligned to the northwest direction. However, streets and parcels to the west of Saint Peter Street are not aligned to the rest of the grid, and larger structures are located on superblocks, eliminating intermediate streets. Many of the larger buildings in the office core were developed as single projects that occupy whole blocks. The blocks facing Cedar Street south of 7th Street present unbroken facade walls to the sidewalk and lack street amenities. The introduction of the Norwest Center parking garage over Cedar Street at 6th Street is an imposition into the streetscape, blocking light and a view to the open sky over the Mississippi River. Wabasha and St. Peter Streets to the west of Cedar Street are much livelier, with an assortment of shops and a new streetscape. The wedge-shaped blocks between Washington and Market Streets are especially satisfying in their urban form, with the Landmark Center and Central Library highlighting the shape of their parcels in their relationship to Rice Park. Seventh Place between St. Peter and Wabasha Streets is a pedestrian mall leading directly into the skyway system at the World Trade Center. The skyway system is extensive and useful given the extreme climate; however, the retail aspects of the skyway have not been as successful as in Minneapolis, and some shops are being converted to office space. Many of the streets in this portion of downtown St. Paul are one-way pairs.

Infill Potential

Nearly all of the property within the five-minute walk radius of the proposed 6th Street Station is intensely developed. Some open land is available on the northeast edge of the office core. On this basis, the infill potential for the area surrounding the proposed station site is considered to be low.

Redevelopment Potential

The area north of Seventh Street has some older structures that might be redeveloped. However, the office core has experienced major new construction and investment over the last decade, and most structures and uses seem set at this time. The redevelopment potential in the vicinity of the proposed 6th Street Station is considered to be moderate.

Planned Development

A private developer is working with the City of St. Paul to redevelop the Wabasha Court building, and the razing of the building has been approved. Planning for a new extended-stay hotel and other uses on the site at the corner of Wabasha Street and 6th Street is currently underway.

Potential Major Trip Generators

Potential major trip generators for the proposed 6th Street Station include the St. Paul CBD office core, Xcel Energy Center Area and other entertainment venues, and high-rise residential towers.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the proposed 6th Street Station area is considered to be excellent.

4TH STREET STATION

An aerial photograph of the proposed 4th Street Station area is shown on Figure 5.2-17: 4th Street Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

Nearly all the land within the five-minute walk radius of the proposed 4th Street Station is high-density office land use. The exceptions are the Marshall Fields department store at Cedar Street and 6th Street, two Radisson hotels, and the residential Galtier Plaza high-rise condominium building. There are also stand-alone parking ramps as well as parking garages built as part of office structures. Small shops and restaurants are found at the skyway level and street level of some office buildings, with the highest concentration on St. Peter and Wabasha Streets. A burgeoning entertainment district is located to the west of the office core just outside the five-minute walk radius of the proposed station. Major destinations include the Xcel Energy Center arena, the Ordway Theater, the River Centre convention center and the Science Museum of Minnesota. Kellogg Mall Park provides a scenic overlook from the downtown bluff to the Mississippi River.

Urban Form

The overall urban form is a compact core of office towers connected via a skyway system arranged on a grid of square blocks aligned to the northwest. However, streets and parcels to the west of St. Peter Street are not aligned to the rest of the grid. The juncture of the two street alignments creates an interesting block-end visual enclosure, especially on 4th Street. Many of the larger buildings in the office core were developed as single projects that occupy whole blocks. While 6th and 5th Streets play a specialized role as heavy-traffic, one-way pairs that connect to freeway ramps, 4th Street is narrower and leads to "T" intersections at both the west and east ends. The newer buildings in the office core are complemented by the older, historic structures east of Jackson Street in Lowertown.

Infill Potential

Nearly all of the property within the five-minute walk radius of the proposed 4th Street Station is intensely developed and the infill potential for the area surrounding the proposed station site is considered to be low.

Redevelopment Potential

The downtown office core has experienced major new construction and investment over the last decade and most structures and land uses seem set at this time, with the exception of the Wabasha Court building project outlined below. The redevelopment potential in the vicinity of the proposed 4th Street Station is considered to be moderate.

Planned Development

A private developer is working with the City of St. Paul to redevelop the Wabasha Court building at the corner of Wabasha Street and 6th Street, and the razing of the building has been approved. Planning for a new extended stay hotel and other uses are underway.

Potential Major Trip Generators

Potential major trip generators for the proposed 4th Street Station include the St. Paul CBD office core, Xcel Energy Center arena and other entertainment venues, and high-rise residential towers.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the proposed 4th Street Station area is considered to be excellent.

UNION DEPOT STATION

An aerial photograph of the proposed Union Depot Station area is shown on Figure 5.2-18: Union Depot Station – TOD Analysis, and is included at the end of the chapter.

Land Use Pattern

The five-minute walk radius of the proposed Union Depot Station encompasses most of the eastern portion of downtown St. Paul. The land use pattern includes mixed high-density office, residential, and commercial uses. The office towers located west of Jackson Street form the core of the St. Paul CBD. Located east of Jackson Street, the historic Lowertown District surrounds Mears Park with retail and hospitality businesses in the first floor of large office buildings, including several warehouses converted to housing. The St. Paul Union Depot's former railroad yard has been converted to a parking structure. The main post office and Ramsey County offices are located next to the Union Depot site. A farmer's market is located adjacent to a large industrial building on the eastern edge of the Lowertown District. The surface parking lots in the North Quadrant urban village housing above 7th Street are in the process of being redeveloped as a medium-density, mixed-use residential area.

Urban Form

The eastern portion of downtown St. Paul is intensely developed on short, square blocks. Street right-of-way is relatively narrow, and on-street parking is available on most blocks. The key urban feature is Mears Park and the historic brick buildings that surround it. Ground floor retailing and restaurants are found in the Mears Park area. An extensive system of skyways connects many of the buildings at the second-story level. Several buildings in the Lowertown District are not connected by skyways, which creates more pedestrian activity at the street level.

Infill Potential

The existing development leaves little open land except in the North Quadrant, which is experiencing infill development at this time. Conversion of a large warehouse to housing units is also underway, and a small site at Sibley and 4th Street is planned for housing as detailed below. The infill potential for the area surrounding the proposed station site is considered to be moderate.

Redevelopment Potential

The historic structures in the Lowertown District are listed on the National Register of Historic Places (NRHP) and are protected as a local historic district. Recent investment in new office towers in the business core may limit additional redevelopment to some extent. However, if the Union Depot is used as a multimodal facility it may act as a catalyst for some redevelopment in the immediate area. The redevelopment potential in the vicinity of the proposed Union Depot Station is considered to be moderate to good.

Planned Development

A 28 story, 110-unit condominium tower called Sibley House is planned for land at 4th Street and Sibley Street. The historic James J. Hill Warehouse at Kellogg Boulevard and Broadway is in the process of being converted to a 52-unit condominium. The construction of 38 townhouses and a 114-unit apartment building was recently completed in the North Quadrant, with an additional 37 townhouses and 125 apartments now under construction. Amtrak, Minnesota Department of Transportation (Mn/DOT), City officials and planners are working together to bring commuter rail and high-speed passenger rail service back to a multimodal transit hub which could be the Union Depot or in its vicinity.

Potential Major Trip Generators

Potential major trip generators include the St. Paul CBD office core, the Lowertown District, and the multimodal transit hub.

Overall TOD Rating

Based on the above analysis, the overall TOD rating for the proposed Union Depot Station area is considered to be excellent.

5.2.3 Impacts at Station Sites

This section presents the potential physical impacts at proposed station sites, including platform configuration, displacement of parking spaces, impacts to drive lanes, impacts to sidewalks, and impacts to visual resources.

Station site plans for the LRT and BRT Alternatives are characterized by a number of common station design parameters, all of which limit the direct impact of station siting in the highly urbanized corridor between downtown Minneapolis and downtown St. Paul. These proposed design parameters are:

- All proposed stations are to be sited within existing public roadway right-of-way, with the exception of the University Avenue LRT Alternative Stadium Village Station.
- No park and ride facilities are planned.
- All proposed Central Corridor stations are walk-up facilities.
- All proposed stations are at-grade, except the University Avenue LRT Alternative, East Bank and Stadium Village stations on the University of Minnesota campus, which would be below-grade.
- Central Corridor LRT vehicles would use five stations in downtown Minneapolis currently under construction for the Hiawatha LRT line.

Evaluation of proposed station site plans is a subjective process and this assessment rates impacts as "low," "moderate," or "high". The impacts at each proposed station site are evaluated for its unique situation, however, general application of impact criteria are applied as follows. Stations that would only impact on-street parking spaces are considered to have "low" impact. Stations that would close access to property or require special features with visual or other impacts are considered to have "moderate" impact. Stations that would displace private property and require acquisition, or reduce the number of drive lanes are considered to have a "high" impact.

BASELINE ALTERNATIVE

The Baseline Alternative would not have stations and therefore would not have an impact.

UNIVERSITY AVENUE LRT ALTERNATIVE

Three proposed station prototype plans are shown for the University Avenue LRT on Figure 5.2-19: Prototypical LRT Station: Split, Far-Side Platform, Figure 5.2-20: Prototypical LRT Station: Side Platforms, Figure 5.2-21: Prototypical LRT Station: Center Platform. Station dimensions would consist of a 200-foot platform that is 12 to 14-feet in width for single, side platforms or 18 to 20-feet width for center platforms. The operating envelope for proposed LRT stations would be 37.5 to 39.5-feet for single, side platforms and 41 to 43-feet wide for center platforms. Specific impacts are discussed for each proposed station site.

Downtown Minneapolis

Central Corridor vehicles would utilize five stations built in downtown Minneapolis for the Hiawatha LRT. These stations are: Minneapolis Multimodal, Warehouse District, Nicollet Mall, Government Center, Downtown East/Metrodome. No new station site alterations are anticipated at this time for these stations as part of the Central Corridor project. An increase in ridership at these stations would be accommodated with the current station infrastructure. The addition of Central Corridor LRT vehicle traffic at Hiawatha LRT stations would double the number of LRT vehicles using stations in downtown Minneapolis. Stations would serve more than double the number of patrons, given the anticipated higher ridership on Central Corridor vehicles. The increased use of these stations would result in a moderate impact.

UNIVERSITY OF MINNESOTA

West Bank Station

This proposed station would be a center platform station located in the middle of the Washington Avenue Bridge approach and primarily serve the West Bank of the University of Minnesota campus. Patrons would access the station by means of a mezzanine at 19th Street SE and a mezzanine from the plaza level of the West Bank campus. Elevators and stairs would connect the mezzanines to the station platform level. The proposed station would require removing two drive lanes. The station may improve the connections from the plaza level to the lower deck level of Washington Avenue. The proposed station would result in a moderate impact.

East Bank Station

This would be a below-grade center platform station located in the middle of the Washington Avenue right-of-way between Northrup Mall and Coffman Memorial Union. The proposed station would include retaining walls, and introduce a lowered grade in the middle of Washington Avenue, with overhead contact system (OCS) wires and poles in view when observed from the sidewalk level. The station would reduce the number of drive lanes from four to two on Washington Avenue. The proposed station would result in a high impact.

Stadium Village Station

This would be a below-grade center platform station located on a diagonal alignment across the blocks bounded by Oak Street, University Avenue, Ontario Street, and Washington Avenue. The proposed station would displace two commercial structures and Minneapolis Fire Station No. 19. The proposed station would require vacating a short, unnamed street connecting Oak Street and Ontario Street, and vacating the intersection where Ontario Street meets University Avenue. Ontario Street would become a dead end north of Washington, with a new cul-de-sac. A bus drop-off area with bus turn around would parallel the station. Access to the station would be from a mezzanine spanning the excavation. This proposed station would result in a high impact.

UNIVERSITY AVENUE

29th Avenue SE Station

This would be an at-grade, side platform station located in the existing 29th Avenue SE right-of-way. The proposed station would displace the southbound drive lane, restricting access along 29th Avenue SE to northbound travel. Access to the parking garage at 29th Avenue SE and 4th Street SE would be closed from 29th Avenue SE, which would result in a functional displacement of the garage. Reconfiguration of a surface parking lot to the east of the University Park Plaza building would also be required. A new traffic signal would be installed on University Avenue and on 4th Street SE at 29th Avenue SE. The proposed station would result in a high impact.

Westgate Station

This would be an at-grade, split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Westgate Drive and the eastbound platform to the east of Westgate Drive. LRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Raymond Avenue Station

This would be an at-grade, center platform station located in the middle of the University Avenue right-of-way. The proposed station would be located one block east of Raymond Avenue between Carleton Street and LaSalle Street, but would serve the Raymond Avenue commercial node. The station would be located and configured to preserve turning movements from University Avenue onto Franklin Avenue. Access would be at the end of the platform from crosswalks at Carleton Street, which would have a new traffic signal installed to allow crossings of University Avenue. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces along University Avenue. The installation of a new traffic signal and displacement of a number of on-street spaces would produce a somewhat greater impact than at other stations along University Avenue. The proposed station would result in a moderate impact.

Fairview Avenue Station

This would be an at-grade, side platform station located in the middle of the University Avenue right-of-way. The proposed station site design uses side platforms because University Avenue curves at Fairview Avenue making it less feasible to propose a split platform or center platform configuration. Curved platforms would not meet Americans with Disabilities Act (ADA) requirements for the allowable gap between the straight edge of the LRT vehicle and a curved platform. Therefore, this proposed station design necessitates increasing the right-of-way into property on the northwest corner of the intersection. The proposed station design would cause a partial displacement and require acquisition of the fronts of three buildings. These are small, storefronts next to vacant lots. Access would be at the end of the platform from crosswalks at Fairview Avenue. It would also be possible to eliminate the station or to move it further west to avoid right-of-way acquisition. This would be closely examined in the next phase of work. The proposed station would result in a high impact.

Snelling Avenue Station

This would be an at-grade, split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Snelling Avenue and the eastbound platform to the east of Snelling Avenue. LRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Lexington Parkway Station

This would be an at-grade, split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Lexington Parkway and the eastbound platform to the east of Lexington Parkway. LRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration

of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Dale Street Station

This would be an at-grade, split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Dale Street and the eastbound platform to the east of Dale Street. LRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

STATE CAPITOL

Rice Street Station

This would be an at-grade, center platform station located in the middle of the University Avenue right-of-way to the west of Rice Street. A center platform design is proposed due to the narrowing of the existing University Avenue right-of-way east of Rice Street. Access would be at the end of the platform from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station, including a separate right-turn lane, would displace on-street parking spaces and a building at the southwest corner of the intersection. The proposed station would result in a high impact.

Capitol East Station

This would be an at-grade, side platform station located in the Columbus Avenue right-of-way. The proposed station would require closing and vacating the north end of Minnesota Street where it meets Columbus Avenue and reduce the number of drive lanes to a single westbound lane. The station would also displace an armory building at the corner of Columbus Avenue and Cedar Street and require its acquisition. The proposed station would result in a high impact.

DOWNTOWN ST. PAUL

10th Street Station

This would be an at-grade, side platform station located in the middle of the Cedar Street right-of-way. Access would be from both ends of the platforms from crosswalks at the controlled intersections at 11th Street and 10th Street. Reconfiguration of the drive lanes to site the proposed station would displace on-street parking spaces and also encroach slightly into the two blocks to the west of Cedar Street, with only minimal impact to the sidewalk area. The proposed station would result in a low impact.

6th Street Station

This would be an at-grade, side platform station located in the Cedar Street right-of-way. The proposed station would displace all on-street parking between 7th Street and 6th Street and reduce the drive lanes from three lanes to a single southbound lane. The station would block an entrance to a parking garage on the east side of Cedar Street. The westbound platform would displace the existing sidewalk on the east side of Cedar Street. Pedestrians would be allowed to traverse the platform as if it was a sidewalk, but some fare vending machines and other equipment would be placed in the area that is now used as a sidewalk. Access to the eastbound platform would be at its south end from the crosswalk at the signalized intersection. Access to the westbound platform would be from the signalized intersection, and from the existing sidewalk leading south from 7th Street. The proposed station would have a high impact.

4th Street Station

This would be an at-grade, side platform station located in the 4th Street right-of-way between Minnesota Street and Robert Street. The proposed station would displace all on-street parking between Minnesota Street and Robert Street and close that block to vehicular traffic. The two platforms would displace the existing sidewalks on the north and south sides of 4th Street. Pedestrians would be allowed to traverse the platforms as if it was a sidewalk, but some fare vending machines and other equipment would be placed in the area that is now used as a sidewalk. Access to the platforms would be from the crosswalks at signalized intersections. The proposed station would have a high impact.

Union Depot Station

This would be an at-grade station located in the 4th Street right-of-way between Sibley and Wacouta Streets and on part of the Union Depot property. The proposed station is configured with a center platform and a side platform could be added to increase future capacity. The station would displace all on-street parking spaces on 4th Street and reduce the number of drive lanes, eliminating the eastbound drive lane. The station would displace the existing circular driveway and landscaping in front of the Union Depot. The site design proposes reconstructing the driveway access to the depot as a straight driveway connecting to Sibley and Wacouta Streets. The station would also impact views to the historic structure. The proposed station would have a high impact.

UNIVERSITY AVENUE BUSWAY/BRT ALTERNATIVE

One proposed BRT station prototype plan is shown for the University Avenue Busway/BRT on Figure 5.2-22: Prototypical BRT Station: Split, Far-Side Platform. BRT station dimensions would consist of a 120-foot platform that is 12 to 14-feet in width for single, side platforms. The operating envelope for proposed BRT stations would be 38-feet. These dimensions are for full proposed stations, which would only occur along University Avenue in St. Paul. Station sites in downtown Minneapolis, on the University of Minnesota Minneapolis campus, and in downtown St. Paul would utilize space on existing sidewalks to install fare vending machines and shelters. All proposed BRT stations would be at-grade, walk-up stations. Specific impacts are discussed for proposed station sites.

Downtown Minneapolis BRT Stations

Stations in downtown Minneapolis would be at the Fifth Street Garage, Warehouse District (Fourth Street at First Avenue), Nicollet Mall at Fourth Street, and Downtown East/Metrodome (Fourth Street at Chicago Avenue). These proposed station sites would be incorporated into existing sidewalks and would not displace any right-of-way from drive lanes on Fourth Street. Fare vending machines would be installed on sidewalks. The proposed BRT stations in downtown Minneapolis would have a low impact.

UNIVERSITY OF MINNESOTA MINNEAPOLIS

Cedar Avenue Station

This proposed station would extend existing bus pullout lanes on ramps leading to and from Washington Avenue, between Cedar Avenue and 19th Avenue SE. Fare vending equipment would be installed on sidewalks. The proposed station would have a low impact.

West Bank Station

This proposed station would install fare vending machines at existing bus hubs serving the West Bank along University Avenue. The proposed station would have a low impact.

East Bank Station
This proposed station would install fare vending machines at existing bus stops serving the East Bank along University Avenue. Sidewalks would be widened to 12-feet and the bus pullout lane lengthened to 220-feet. The proposed station would have a low impact.

Stadium Village Station
This proposed station would install fare vending machines on sidewalks at Oak Street and University Avenue. Sidewalks would be widened to 12-feet and the bus pullout lane lengthened to 220-feet. The proposed station would have a low impact.

27th Avenue SE Station
This proposed station would install fare vending machines on sidewalks at 27th Avenue SE and University Avenue. Sidewalks would be widened to 12-feet. The proposed station would have a low impact.

Westgate Station
This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Westgate Drive and the eastbound platform to the east of Westgate Drive. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Raymond Avenue Station
This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Raymond Avenue and the eastbound platform to the east of Raymond Avenue. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Fairview Avenue Station
This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Fairview Avenue and the eastbound platform to the east of Fairview Avenue. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Snelling Avenue Station
This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Snelling Avenue and the eastbound platform to the east of Snelling Avenue. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Lexington Parkway Station

This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Lexington Parkway and the eastbound platform to the east of Lexington Parkway. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Dale Street Station

This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Dale Street and the eastbound platform to the east of Dale Street. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

STATE CAPITOL

Rice Street Station

This would be a split, far-side platform station located in the middle of the University Avenue right-of-way. The proposed station would have two platforms, with the westbound platform to the west of Rice Street and the eastbound platform to the east of Rice Street. BRT vehicles would stop at the platform after passing through the intersection. Access would be at the end of platforms from crosswalks at the signalized intersection. Reconfiguration of the drive lanes to site the station would displace on-street parking spaces. The proposed station would result in a low impact.

Constitution Avenue Station

This would be a side platform station located along Constitution Avenue at the center point of the State Capitol mall. The proposed station would have two platforms, with the westbound platform to the north side of Constitution Avenue and the eastbound platform to the south of Constitution Avenue. Access would be from existing sidewalks. New shelters may have some visual impact on the Minnesota State Capitol facade and Capitol mall. The proposed station would result in a moderate impact.

DOWNTOWN ST. PAUL

Stations in downtown St. Paul would be in pairs on Cedar Street and Minnesota Street. Southbound locations along Cedar Street would be at 10th Street, 7th Street, 6th Street, and 5th Street. Northbound locations along Minnesota Street would be at 5th Street, Sixth Street, 7th Street, and 10th Street. A proposed bus layover station would be at River Park Plaza in the West Side neighborhood across the Mississippi River from downtown St. Paul. These proposed station sites would be incorporated into existing sidewalks and would not displace any right-of-way from drive lanes. Fare vending machines would be installed on sidewalks. New shelters would be installed as needed. The proposed BRT stations in downtown St. Paul would have a low impact.

5.2.4 Mitigation Measures for Station Areas

The majority of impacts at proposed station sites involve displacement of on-street parking spaces. Some of the proposed stations require a reduction of drive lanes or street closures. Mitigation for these impacts is discussed in Chapter 6.0 Transportation Impact Analysis.

Mitigation at specific proposed LRT station sites where impacts would be high is discussed below.

Impacts of the proposed East Bank Station could be mitigated by placing the drive lanes and the LRT station below-grade and creating a plaza over Washington Avenue that would link Northrup Mall to Coffman Memorial Union. Construction of the below-grade station and tunnel will require excavation of part of the drive lanes, including pedestrian tunnels from both sides of Washington Avenue to the center platform, and complete reconstruction of Washington Avenue and adjacent sidewalks. Possible mitigation would include full excavation of the two drive lanes and creation of station access from a plaza over Washington Avenue.

Mitigation of the loss of two commercial buildings for the Stadium Village Station might include construction of new commercial storefronts on currently vacant land on the northwest corner of Washington Avenue and Oak Street. This would create a more cohesive node with commercial uses on all four corners. A new location for Minneapolis Fire Station No. 19 would need to be found in the area.

The displacement of the parking garage at the proposed 29th Avenue SE Station could include compensation to reconstruct the garage with adequate access from 4th Street SE. Partial displacement of the front facades of three buildings to the north of University Avenue for the Fairview Avenue Station could be mitigated by reconstruction of the front facades, if structurally and financially feasible, or a complete acquisition and removal of the buildings. The displacement of a building at the southwest corner of Rice Street and University Avenue to create a separate right-turn lane could be mitigated by not constructing a separate right-turn lane. Displacement of the armory by the proposed Capitol East Station could be mitigated by consolidating its function to another location.

Impacts at the proposed downtown St. Paul stations at 6th Street and 4th Street could be mitigated by special attention to integrating the proposed station design into a new streetscape for blocks on Cedar Street and 4th Street. Mitigation of the Union Depot Station might include a reconfiguration at the preliminary engineering stage depending on capacity needs.

All proposed station designs should balance the need for system continuity and legibility with a desire for individual design details that express something of their location context. For instance, stations on the University of Minnesota Minneapolis campus might include university logos and banners. Stations along University Avenue might be designed to express unifying details for the avenue, while also distinguishing certain nodes and districts. Designs for the proposed Rice Street and Capitol East stations should consider their proximity to the State Capitol. Likewise, design for the Union Depot Station might express some relationship to the architecture or function of the historic Union Depot.

Both station site impacts and station area development impacts should be addressed in the context of neighborhood and district planning. In fact, current neighborhood planning processes are already including the specific study of transit-oriented development issues at proposed station locations along University Avenue.

5.3 ENVIRONMENTAL JUSTICE

This section explains how Environmental Justice concerns have been addressed in the evaluation of alternatives for the Central Corridor Draft Environmental Impact Statement (EIS). This section also identifies how areas protected under the Environmental Justice Executive Order 12898 were defined and the extent to which areas of minority and low-income populations would be affected by the alternatives under evaluation in this Draft EIS. The issues discussed in this section pertain to the economic factors analyzed in Chapter 5.0 Economic Impact Analysis, including development effects. Additional analysis regarding social, environmental and transportation issues can found in Chapters 3.0 Social and Land Use Impact Analysis, 4.0 Environmental Impact Analysis and 6.0 Transportation Impact Analysis.

The details regarding the legal and regulatory requirements of Environmental Justice and the definitions of minority and low-income populations, were provided in Section 3.9 and are summarized below.

5.3.1 Legal and Regulatory Requirements

Presidential Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) requires that federal agencies consider and address disproportionate adverse environmental effects of proposed federal projects on minority and low-income communities.

The intent of the Department of Transportation Final Order on Environmental Justice [DOT Order 5610.2, "Environmental Justice" (April 15, 1997)] is to integrate the goals of Executive Order 12898 into DOT operations.

Between June 1997 and March 1998, the Mn/DOT's Committee on Environmental Justice met and was charged with developing guidance to implement Executive Order 12898. The Committee on Environmental Justice produced *Mn/DOT's Environmental Justice Draft Guidance*, dated August 5, 1998. Methodology outlined in the guidance document was used to evaluate the proposed corridor for environmental justice.

To meet both the requirements of the National Environmental Policy Act (NEPA) and Executive Order 12898, this section addresses the characteristics of the affected communities, potential effects on minority and low-income communities and potential mitigation measures.

5.3.2 Community Characteristics

Race and Ethnic composition and income characteristics within the impact assessment area have been identified in accordance with definitions established by United States Department of Transportation (USDOT) and the United States Environmental Protection Agency (EPA) guidance on Environmental Justice.

MINORITY POPULATIONS

As shown in Figure 3.9-1: Minority Population, census blocks that exceed the thresholds defined in Section 3.9 are shaded light and dark purple. Census blocks within one-half mile radius of the alignments will be evaluated in the environment section for disproportionately high and adverse effects. The largest concentration of minorities, adjacent to the corridor alignment, is located

north and south of University Avenue between Lexington Parkway and Interstate 35E (I-35E) in the Thomas-Dale and Summit-University neighborhoods in St. Paul. Neighborhood boundaries are shown in Figure 3.1-1: Designated Neighborhoods.

LOW-INCOME POPULATIONS

As shown in Figure 3.9-1, census block groups that exceed the thresholds defined in Section 3.9 are shaded light and dark purple. Census block groups within one-half mile radius of the alignments will be evaluated in the environment section for disproportionately high and adverse effects. Populations below the poverty level are adjacent to the corridor alignments for the entire length of the corridor with the exception of the University of Minnesota East Bank campus area.

5.3.3 Environmental Justice Analysis for Economic Factors

Economic development potential on a regional level would benefit the Twin Cities Metropolitan Area as whole. Direct and indirect financial benefits and increase in jobs in the metropolitan area, while a benefit to the entire metropolitan area, cannot be distilled to measure the benefits to minority or low-income neighborhoods within the Central Corridor. Stations in minority or low-income area with good to excellent development potential may have direct positive effects on the neighborhoods in which they are located.

METHODOLOGY

Stations identified in Section 5.2 as having a good to excellent overall transit oriented development rating would be more likely to have a greater influence on the development of a station area than those stations with a poor rating. Stations in commercial areas would be more likely to attract commercial and transit-related developments, while stations in residential areas would be more likely to have an effect on the adjacent residential areas. Stations in minority or low-income residential areas with good to excellent development potential would be considered to have a direct positive effect on the existing minority or low-income neighborhoods.

BASELINE ALTERNATIVE

The Baseline Alternative would not provide opportunities for development or increased job opportunities. The negative impacts of the Baseline Alternative would be the benefits forgone.

UNIVERSITY AVENUE LRT ALTERNATIVE

Five stations out of total of seven stations in minority areas would be considered to have good to excellent transit oriented development potential. These stations are: West Bank, Stadium Village, Fairview Avenue, Snelling Avenue and Rice Street. The Dale Street Station received a fair to good ranking and the Lexington Parkway Station received a poor ranking and also are located in low-income areas. All remaining stations, in low-income and non-low-income areas were considered to have good to excellent transit oriented development potential.

UNIVERSITY AVENUE BUWAY/BRT ALTERNATIVE

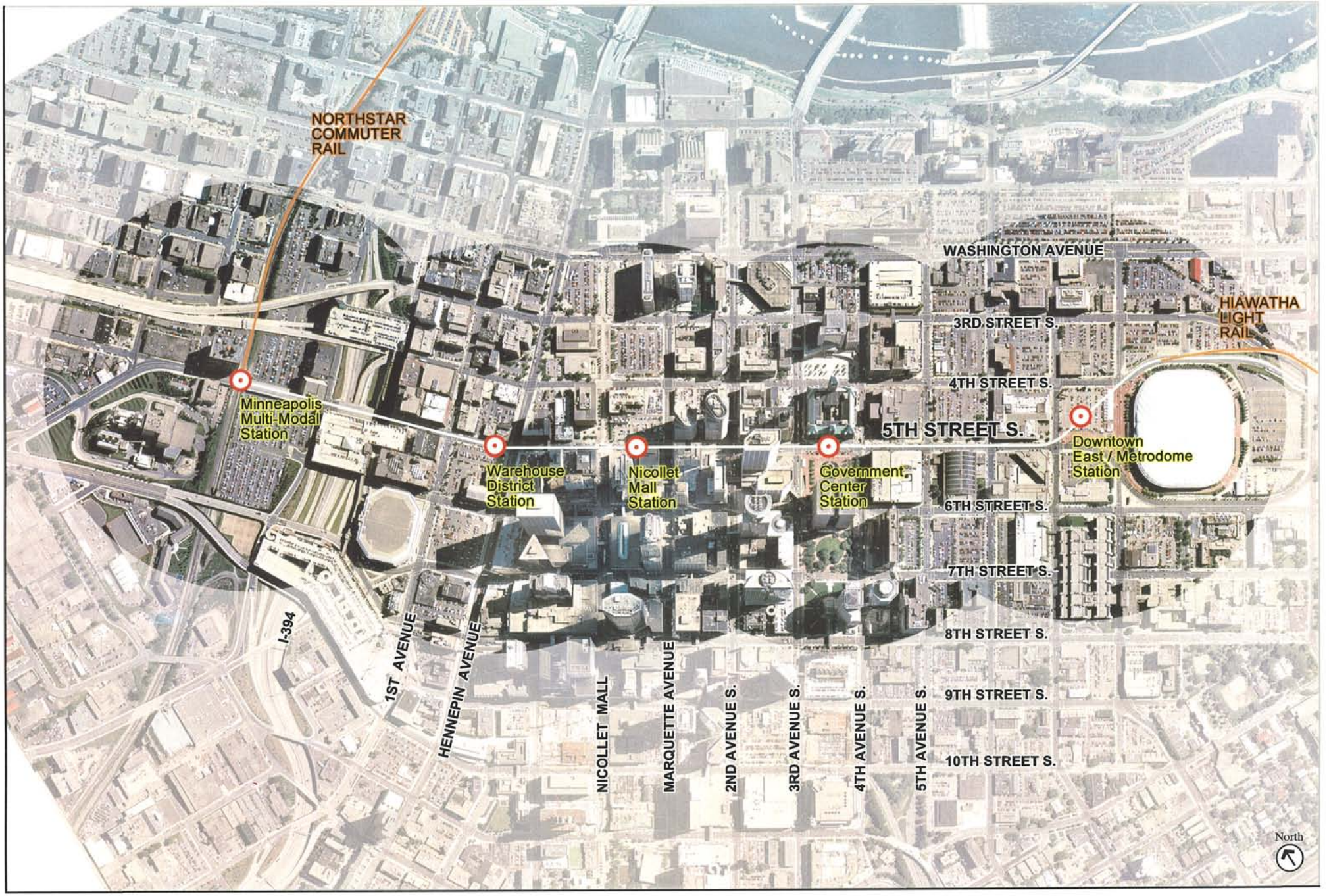
Station locations would be the same as the University Avenue LRT Alternative except in the two downtowns. Five stations out of total of seven stations in minority areas would be considered to have good to excellent transit oriented development potential. These stations are West Bank,

Stadium Village, Fairview Avenue, Snelling Avenue and Rice Street. The Dale Street Station received a fair to good ranking and the Lexington Parkway Station received a poor ranking and also is located in low-income areas. All remaining stations, in low-income and non-low-income areas were considered to have good to excellent transit oriented development potential.

5.3.4 Summary and Potential Mitigation

Benefits of development opportunities would more likely be attracted to stations with good to excellent development potential. Stations in minority or low-income residential areas would have a greater direct effect on those neighborhoods. The benefits and adverse impacts for the minority or low-income areas would be representative of the neighborhoods within and adjacent to the corridor.

The active involvement of all neighborhoods in the corridor would continue to be a goal through design and implementation. Public engagement for all neighborhoods in the corridor would continue through the length of the project and is explained in detail in Chapter 8.0 Public and Agency Involvement Program.

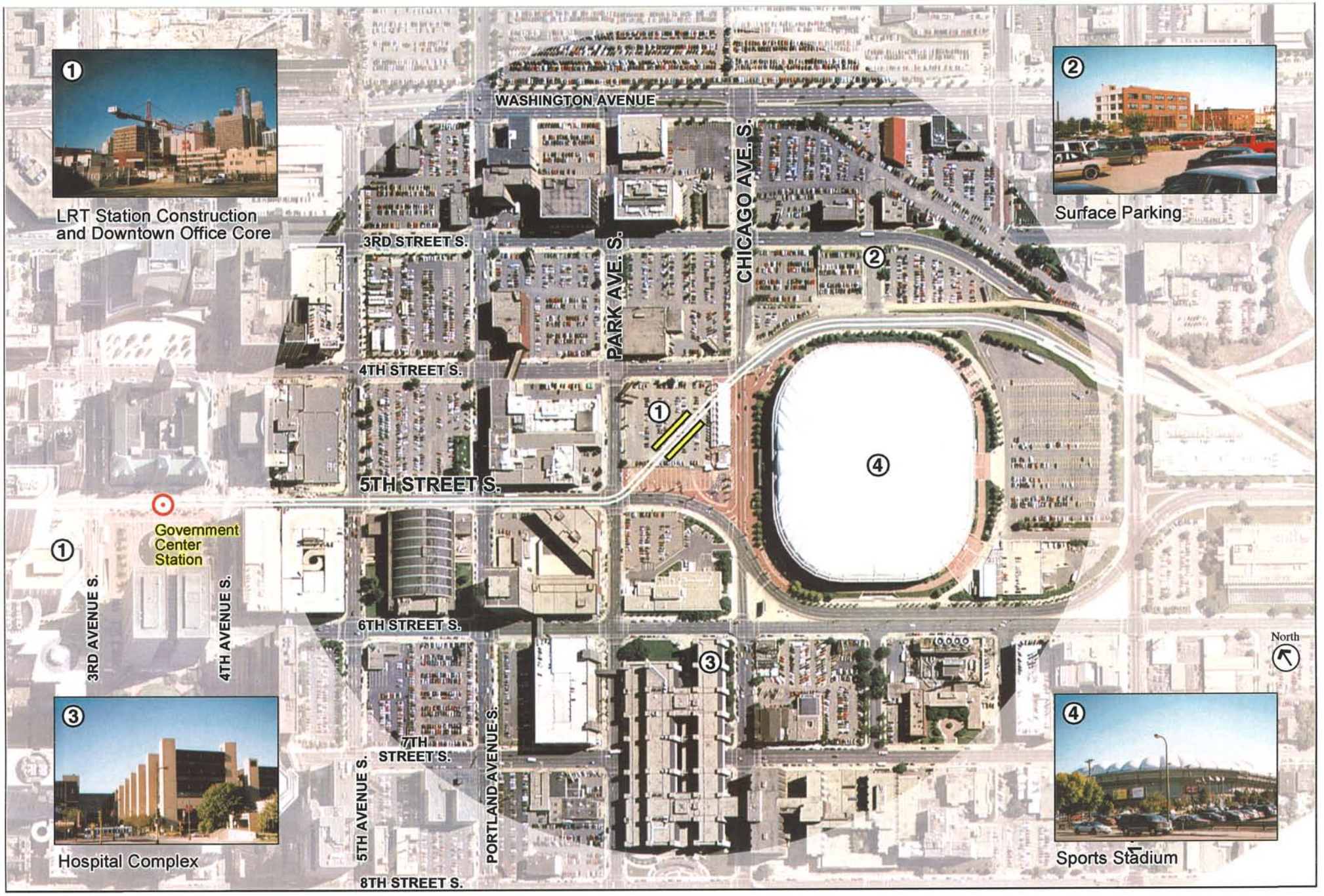


THE CENTRAL CORRIDOR

Downtown Minneapolis Hiawatha LRT Stations

April 2002

Figure 5.2-1



THE CENTRAL CORRIDOR

Downtown East / Metrodome Station

April 2002

Figure 5.2-2