
1.0 SUMMARY

1.1 PROJECT LOCATION AND DESCRIPTION

The proposed project is construction of a light rail transit system (LRT) in Hennepin County, Minnesota. The LRT system would include 33.9 to 35.55 track miles, and a total of 41 to 44 potential station stops, serving the Cities of Minneapolis, Bloomington, Brooklyn Park, Crystal, Golden Valley, Hopkins, Robbinsdale, and Saint Louis Park. The range in total route miles and station stops reflects the alignment alternatives considered in the Central Area. Figure 1.1 illustrates the LRT System alignments and study area.

Description

The Hennepin County Regional Railroad Authority (HCRRA) proposes to build a light rail transit (LRT) system for Hennepin County. The proposed LRT system includes four corridors, each of which radiates from downtown Minneapolis. Each corridor, in conjunction with a downtown distributor system and maintenance facility, could operate independently.

- X o University Corridor: Downtown Minneapolis to Oak Street/Washington Avenue
- ✓ o Hiawatha Corridor: Downtown Minneapolis through the Minneapolis - Saint Paul International Airport, to the Mall of America site at 24th Avenue and 81st Street in Bloomington
- o Southwest Corridor: Downtown Minneapolis to 5th Avenue in Hopkins
- o Northwest Corridor: Downtown Minneapolis to 85th Avenue in Brooklyn Park

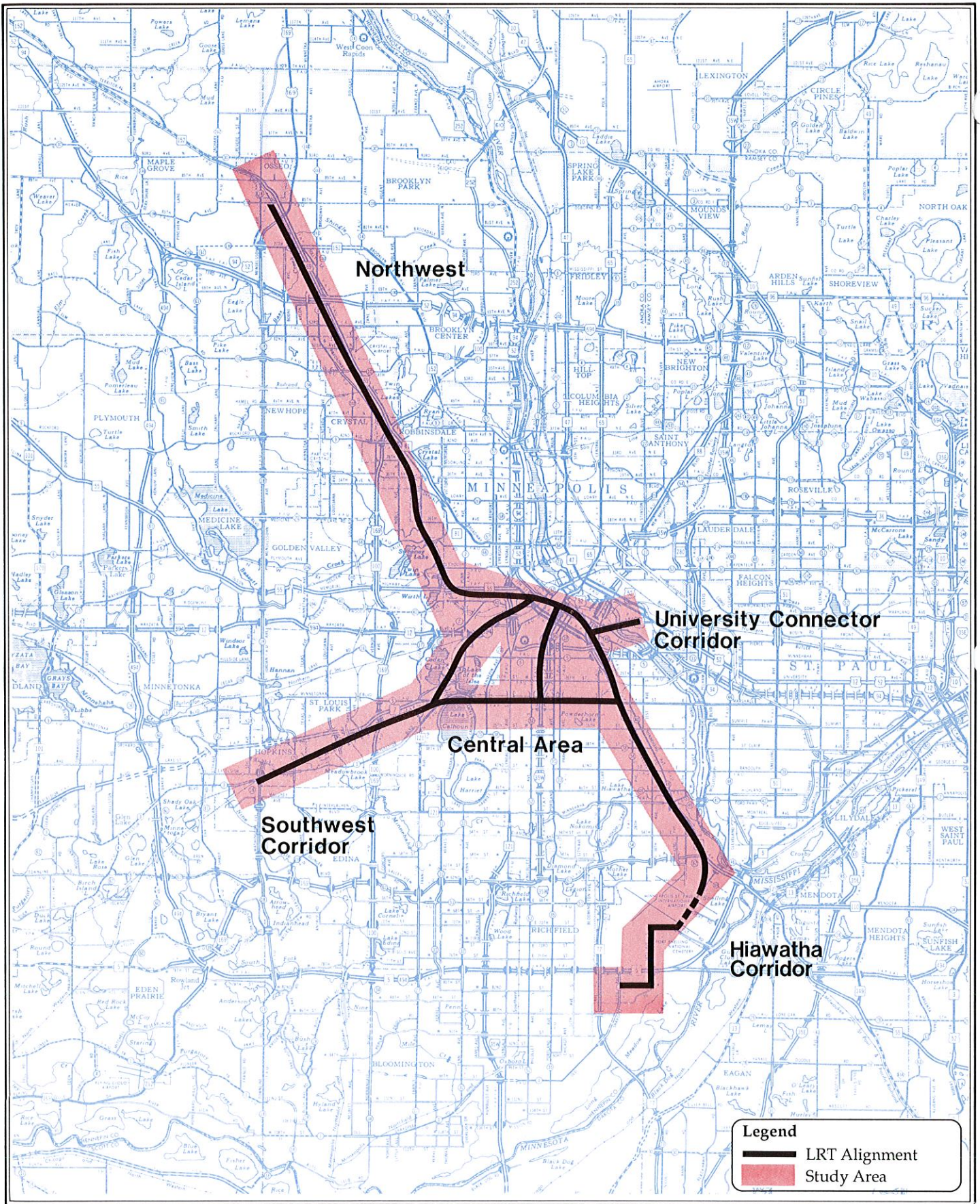


Figure 1.1

There are three alignment options in the Central Area:

o Tunnel Option:

Portals located at First Avenue North and West River Road, and on the 29th Street/Soo Line Corridor at approximately Portland Avenue South (Figure 1.2).

o Option A: Nicollet At-Grade (Figure 1.3)

The Southwest and Hiawatha lines would be on the 29th Street Corridor to Nicollet Avenue, where the lines would converge and travel north. The Northwest connection to the north/south alignment options would be via the Burlington Northern right-of-way to Second Street North. The University connection would follow the existing Soo Line tracks to Second Street South, and connect with Second Avenue and Marquette Avenue.

o Option B: HCRRA Alignment Through Kenwood (Figure 1.4)

The Southwest line would be located on the HCRRA right-of-way (formerly C&NW). The Northwest line would connect with 12th Street at Glenwood Avenue. The Hiawatha line would proceed north (from Lake Street) in existing Soo Line right-of-way. The University and Hiawatha lines would converge and enter the Central Area in the vicinity of the Metrodome, where it would follow the Soo Line tracks to Second Street. The LRT line would proceed west on Second Street to the north/south connection on Second Avenue and Marquette Avenue.

An LRT maintenance facility with an area of approximately thirteen acres would be constructed at the Coach Yard site between I-94 and Franklin Avenue. This facility will provide space for maintenance and repairs, storage of vehicles, and administrative functions. The Coach Yard site will be constructed under all Central Area Build options.

1.2 OTHER GOVERNMENTAL ACTIONS

The Twenty-Year LRT System Plan made reference to LRT Corridor extensions outside Hennepin County. A brief overview of studies completed to date by other Metropolitan Area Regional Railroad Authorities follows.

The Anoka County Regional Railroad Authority (ACRRA) approved the Comprehensive LRT System Plan for Anoka County, in February 1989. Because the southern portion of the Northeast Corridor falls in the jurisdiction of the HCRRA, ongoing coordination between the two railroad authorities is required. The ACRRA and HCRRA are currently in the process of preparing a Draft EIS for the Northeast Corridor.

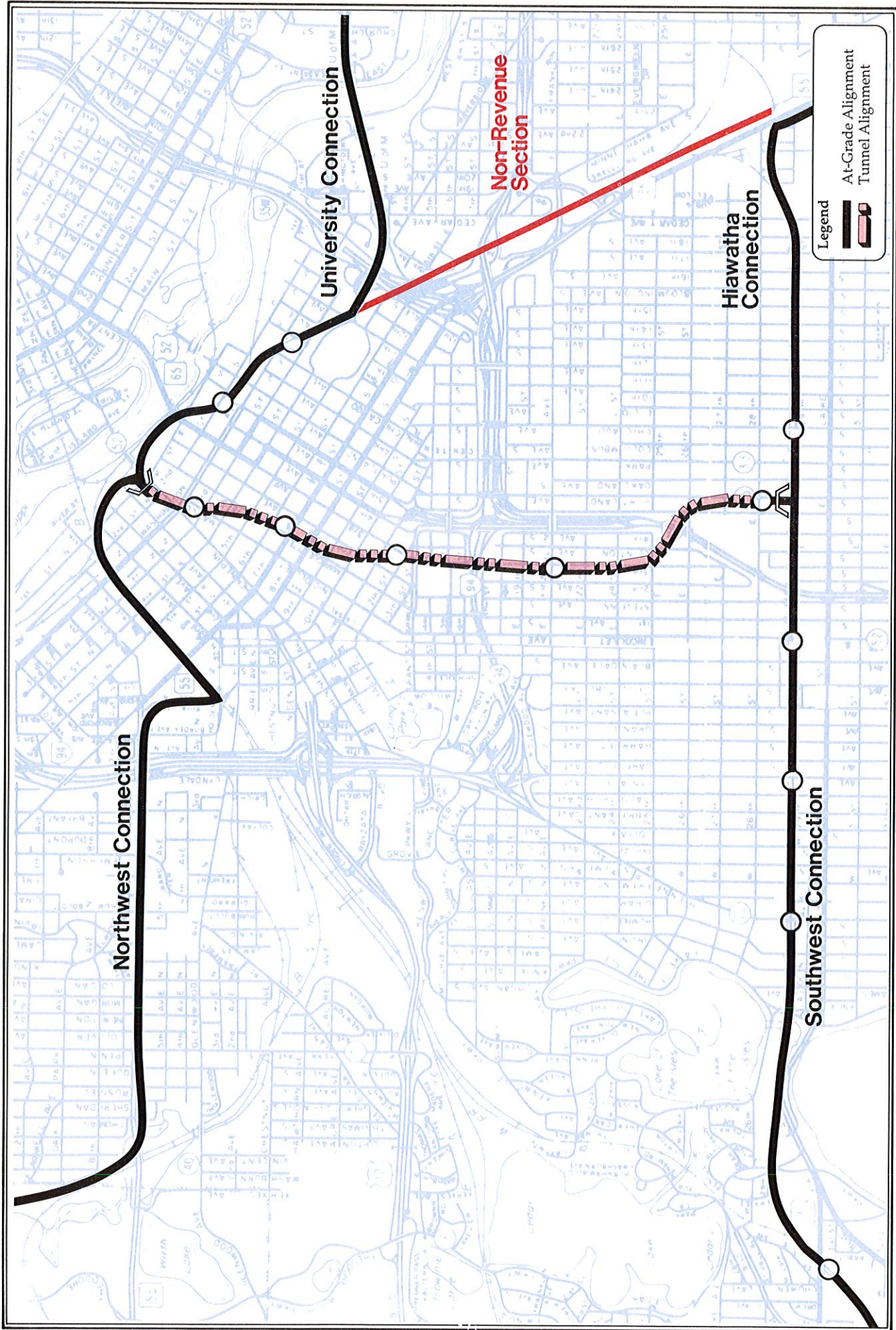


Figure 1.2
Central Area

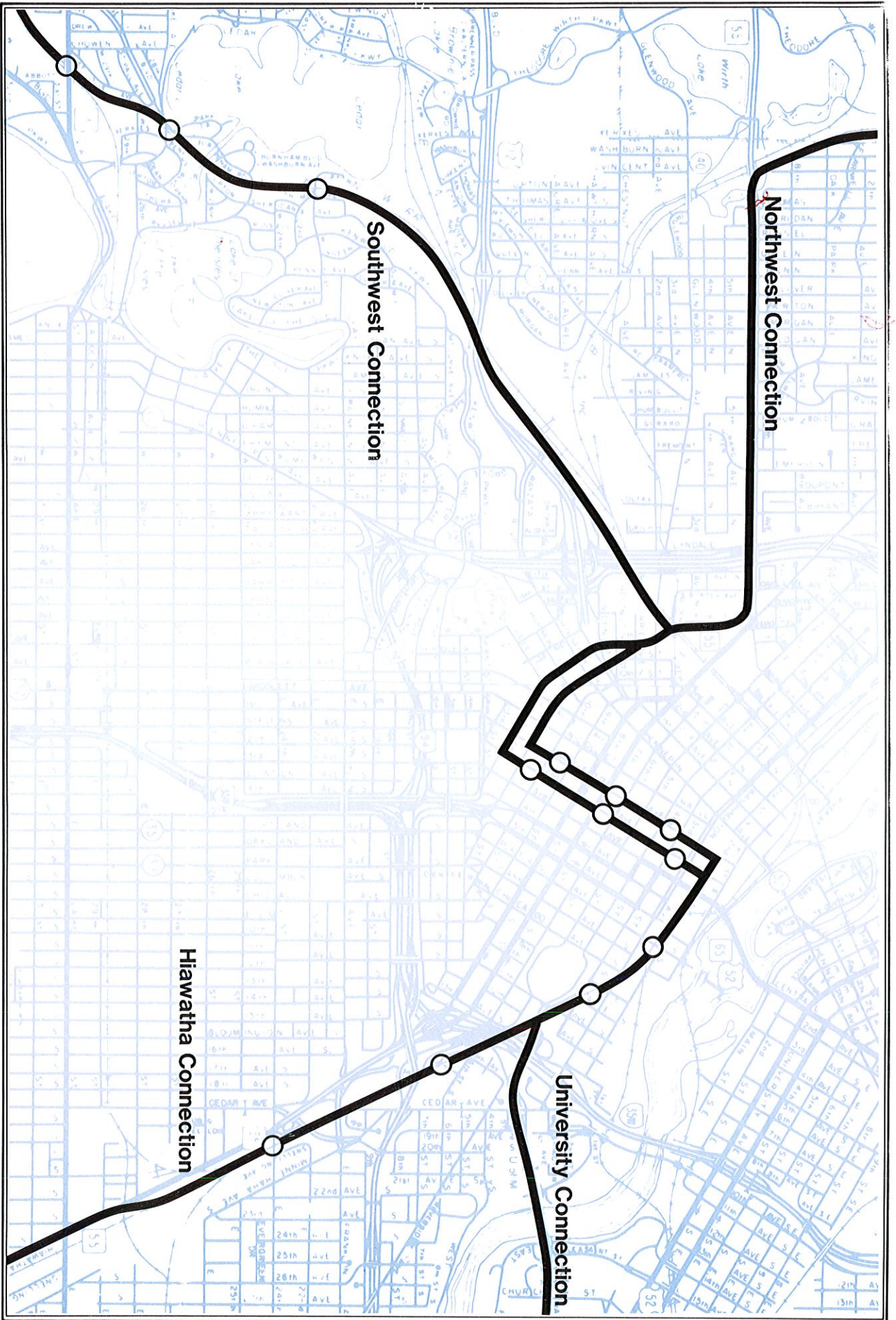


Tunnel Option C with At-Grade Connections



Figure 1.4
Central Area

**At-Grade
Option B**



LRT System

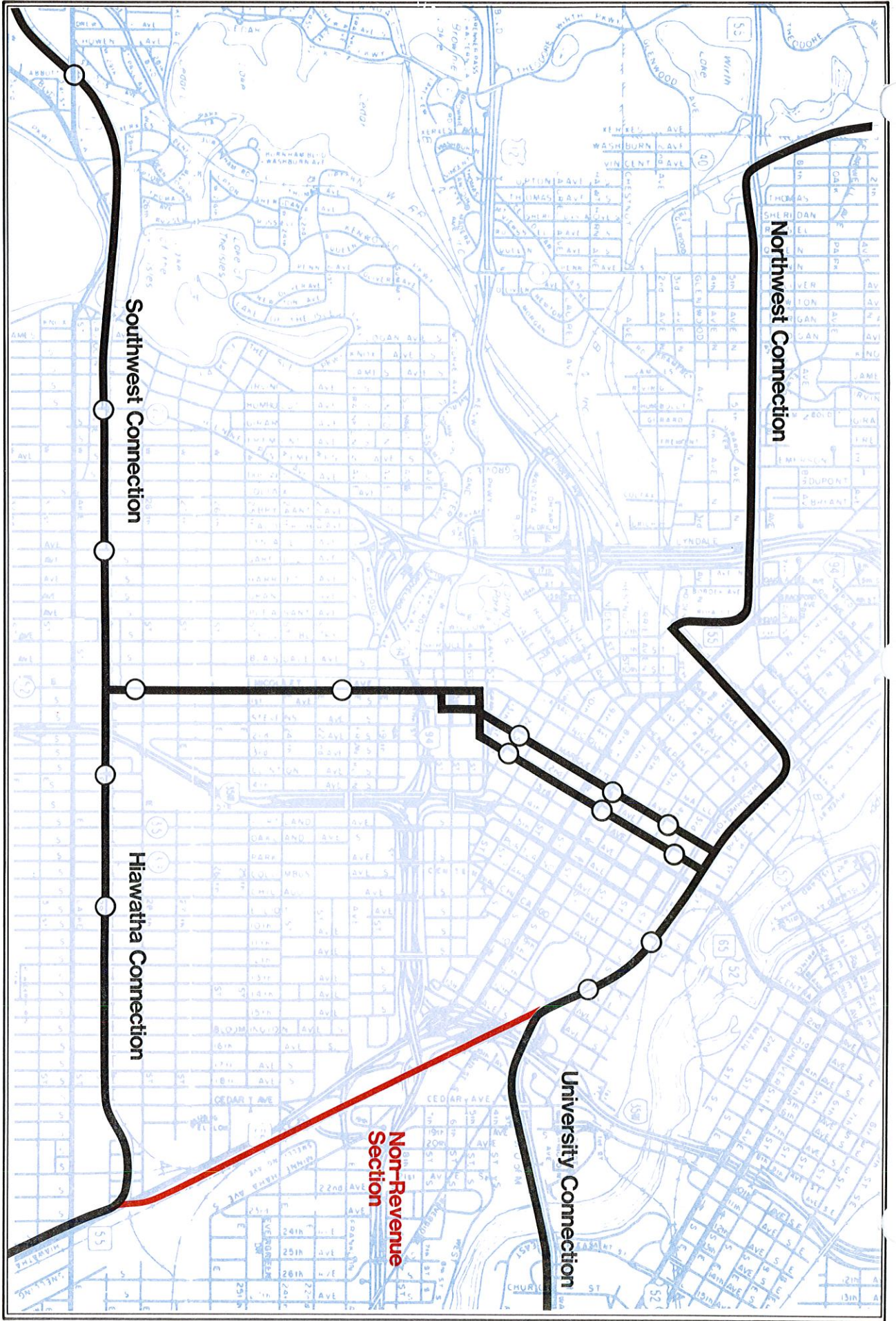


Figure 1.3
Central Area

At-Grade Option A

In July 1989, the Ramsey County Regional Railroad Authority (RCRRA) distributed a draft Comprehensive LRT System Plan for Ramsey County. The plan studies six corridors in Ramsey County: Midway, the Northeast, Northwest, East, South, and Southwest. A separate LRT Transit Planning Analysis for the Midway Corridor was completed in October 1988. The RCRRA is currently preparing a Draft EIS for the Midway Corridor.

The Dakota County Regional Railroad Authority is currently in the process of completing its Comprehensive LRT System Plan. Alignments under study could include a connection to the Hiawatha line in Hennepin County.

Washington County is currently evaluating four potential alignments to connect with the Ramsey County LRT System.

The adopted Comprehensive LRT System Plan for Hennepin County, June 1988, identified the following corridors as part of the Stage I System Plan: Hiawatha, Southwest, Northwest, the University Connector, and the I-35W South Corridor. The I-35W South Corridor is being studied by the Minnesota Department of Transportation and Metropolitan Council of the Twin Cities, under a separate Federal Highway Administration EIS.

The Minnesota Department of Transportation and the Metropolitan Council of the Twin Cities are currently in the process of preparing a Draft EIS for the I-494 Reconstruction Project from the Minnesota River to I-394.

The Metropolitan Council of the Twin Cities and the Metropolitan Airport Commission are jointly studying the need for relocating the Minneapolis-St. Paul International Airport and potential relocation sites. A report regarding their findings to the Minnesota State Legislature is due by January 1996.

The City of Minneapolis is planning to begin construction of the Motley Bypass in 1990-1991. The bypass would run in a north-south direction between the Dartmouth interchange and University Avenue/4th Street Southeast, in existing Soo Line right-of-way.

The City of Minneapolis is also currently studying the feasibility of constructing a Dinkytown Bypass which would be located in existing Burlington Northern right-of-way (to the north of the University Campus). The proposed Dinkytown Bypass would connect with the Motley Bypass at Oak Street and 4th Street.

In the downtown area, the United States Post Office is currently expanding their parking ramp facility. Also in the downtown area, as a part of the I-394 project, the Third Avenue Distributor will be constructed to provide direct eastbound access from I-394 to downtown and newly constructed 3rd Avenue parking facilities.

1.3 MAJOR ALTERNATIVES CONSIDERED

Alternative 1: Build LRT

Build an LRT System based on the adopted Comprehensive LRT System Plan for Hennepin County for the Hiawatha, University, Northwest and Southwest Corridors.

After environmental analysis of both Alternative 1 and Alternative 2, the HCRRA will select a preferred alternative. If the Build Alternative is chosen, the proposed Hennepin County LRT System may be composed of a combination of system links as identified in the alignment options.

Each LRT corridor in the Hennepin County LRT System could operate independently, including the Central Area and maintenance facility, or as part of an integrated system. The Central Area connection boundaries, where each of the LRT corridors approach and enter downtown, are identified for study purposes only, and therefore should not be considered exact alignment divisions.

Alternative 2: No-Build

The LRT System in Hennepin County would not be built. Transit service in Hennepin County would continue to be provided by the regular route bus system and paratransit services. Improvements to the existing transit system would be implemented as appropriate.

1.4 ANTICIPATED ENVIRONMENTAL IMPACTS

The implementation of the proposed Hennepin County LRT System has the potential to result in Environmental Impacts.

Tables 1.1 and 1.2 summarize the potential environmental impacts associated with the proposed LRT Corridors and the Central Area, respectively. The following section identifies system-wide impacts and briefly discusses potentially significant impact areas.

TABLE 1.1
SUMMARY OF ENVIRONMENTAL CONSEQUENCES

	HIAWATHA	SOUTHWEST	NORTHWEST	UNIVERSITY
Community and Neighborhood Character (e.g., impacts to neighborhood boundaries, access to community facilities)	<ul style="list-style-type: none"> - no adverse impact - increased transit accessibility to transit dependent individuals (5.4.1) 	<ul style="list-style-type: none"> - no adverse impacts - increased transit accessibility to transit dependent individuals (5.5.1) 	<ul style="list-style-type: none"> - no adverse impact - increased transit accessibility to transit dependent individuals (5.6.1) 	<ul style="list-style-type: none"> - no adverse impacts - increased transit accessibility to transit dependent individuals - improved emergency vehicle accessibility with transit mall (5.7.1)
Relocation/Displacement	<ul style="list-style-type: none"> - no impact: (identified in Draft EIS, TH 55, pgs. 5.30-5.34, 1982), to 50th Street - approximately 100 parking spaces at Control Data lot (5.4.2) 	<ul style="list-style-type: none"> - approximately six industrial/commercial use buildings - acquisition of Soo Line right-of-way (5.5.2) 	<ul style="list-style-type: none"> - approximately ten commercial/industrial properties and four residential properties - acquisition of a portion of Burlington Northern Railroad right-of-way (Osseo Line) (5.6.2) 	<ul style="list-style-type: none"> - no relocation required (5.7.2)
Railroad Spur Access	<ul style="list-style-type: none"> - no impact 	<ul style="list-style-type: none"> - access impact to four local businesses on Soo Line (5.5.3) 	<ul style="list-style-type: none"> - no impact 	<ul style="list-style-type: none"> - no impact
Economic Development	<ul style="list-style-type: none"> - four stations with development potential (5.5.4) 	<ul style="list-style-type: none"> - five stations with development potential (5.5.4) 	<ul style="list-style-type: none"> - four stations with development potential (5.6.3) 	<ul style="list-style-type: none"> - non-University development potential at Oak Street station (minimal) (5.7.3)
Traffic Impacts	<ul style="list-style-type: none"> - no significant traffic capacity impacts at stations (5.4.4) 	<ul style="list-style-type: none"> - no significant change in traffic capacity at stations (5.5.5) 	<ul style="list-style-type: none"> - signalization could be required at 77th Avenue, and 36th Avenue stations. CR 81 and 63rd Avenue intersection would operate over capacity (5.6.4) 	<ul style="list-style-type: none"> - closure of Washington Avenue (from Cedar Avenue to Church Street) to general traffic would impact the level of service at several intersections (5.7.4)
Transit Service	<ul style="list-style-type: none"> - improved travel time, transit accessibility (5.4.5) 	<ul style="list-style-type: none"> - improved travel time, accessibility (5.5.6) 	<ul style="list-style-type: none"> - improved travel time, accessibility (5.6.5) 	<ul style="list-style-type: none"> - improved travel time, transit accessibility (5.7.5)
Air Quality	<ul style="list-style-type: none"> - no significant impact 	<ul style="list-style-type: none"> - no significant impact 	<ul style="list-style-type: none"> - no significant impact 	<ul style="list-style-type: none"> - diversion of traffic from Washington Avenue would increase CO concentrations along the Motley Bypass - CO concentrations would decrease on Washington Avenue between Church Street and Cedar Avenue (5.7.6)

TABLE 1.1
SUMMARY OF ENVIRONMENTAL CONSEQUENCES
(CONTINUED)

	HIAMATHA	SOUTHWEST	NORTHWEST	UNIVERSITY
Noise ^{2/}	- up to 34 residential dwelling units could experience noise levels exceeding APTA guidelines (5.4.6)	- 39 residential dwelling units, and up to 3.21 acres of parklands could experience noise levels exceeding APTA guidelines (5.5.7)	- up to 642 residential dwellings, two institutional, thirteen commercial/industrial and 58.41 acres of parkland could experience noise levels exceeding APTA guidelines (5.6.6)	- up to ten institutional uses could experience noise levels exceeding APTA guidelines (5.7.7)
Vibration ^{4/}	--	--	--	--
Wetlands/Vegetation/ Wildlife	- no wetland impacts - no significant impacts to prairie vegetation (5.4.7)	- impact to approximately .65 acres of wetland (non-DNR protected) - impact to prairie vegetation adjacent to railroad right-of-way (5.5.8)	- impact to approximately .2 acres of DNR protected wetland 644W (5.6.7) - impact to prairie vegetation located adjacent to railroad right-of-way (5.6.7)	- no impact
Water Resources	- minimal impacts to Minnehaha Creek Floodplain and Shoreland Zoning District - minimal impacts to groundwater in Airport Tunnel area (5.4.8)	- minimal impacts to the Minnehaha Creek and DNR Wetland 661W floodplains (5.5.9)	- minimal impact to five floodplains in corridor - Bassett Creek Shoreland Zoning Permit required for construction - groundwater appropriation required adjacent to Bassett Creek (5.6.8)	- consistent with University of Minnesota Critical Area plan - no impact to Mississippi River floodplain - Mississippi River Shoreland Zoning Permit required for construction (5.7.8)
Soil Contamination ^{5/}	- nineteen potential soil contaminated sites identified in study area (4.4.13 and 8.3)	- eighteen potential soil contaminated sites identified in the Southwest Corridor area (4.5.12 and 8.3)	- sixteen potential soil contamination sites identified in Northwest Corridor (4.6.12 and 8.3)	- nine potential soil contaminated sites identified in the University Corridor (4.8.12 and 8.3)
Geological Conditions	--	--	--	--
Utilities	- at-grade impacts primarily at cross-streets - no significant utility impacts in airport tunnel area (5.4.10)	- no significant impacts	- relocation of NSP poles - at-grade utility impacts at cross-streets (5.6.9)	- shallow utilities will be re-located and adjusted (5.7.9)

TABLE 1.1
SUMMARY OF ENVIRONMENTAL CONSEQUENCES
(CONTINUED)

	HIAWATHA	SOUTHWEST	NORTHWEST	UNIVERSITY
Steep Slopes	- no impact	- no impact	- retaining walls required near Plymouth Avenue and Grimes Avenue pond (if embankment constructed) (5.6.10)	- no impact to steep slopes along Mississippi River (5.7.10)
Parklands	- impacts to Minnehaha Park system identified in Draft and Final EIS for TH 55 - no significant impacts to other parks in corridor (5.4.12)	- visual impacts to two parks (5.5.11). Noise impacts to parks addressed in 5.5.7	- visual impacts to seventeen parks. Noise impacts to parks identified in 5.6.6 (5.6.11)	- no impact (5.7.11)
Visual and Aesthetics	- impact to Minnehaha Park (5.4.13)	- no adverse impacts, potentially beneficial impacts to rail corridor setting (5.5.12)	- potential visual impact to seventeen area parks; visual impact to residential units located adjacent to LRT line (5.6.12)	- scale related impact in congested area (5.7.12)
Historic and Cultural Resources	- impact to properties in Minnehaha Falls Historic District ^{1/} - potential impacts to U.S. Army Department of Dakota building remains near airport tunnel (5.4.14)	- no known historic properties or prehistoric sites exist in Southwest Corridor (5.5.13)	- two historic sites could be subject to secondary effects - potential relocation of Floyd B. Olson statue (5.6.13)	- to be determined ^{3/} (5.7.13)

^{1/} Adverse impacts to the historic properties within the Minnehaha Falls District are documented in the Memorandum of Agreement reached between the FHWA, the Minnesota State Historic Preservation Office, and the Advisory Council on Historic Preservation (Appendix).

^{2/} Reflects worst-case conditions.

^{3/} Impact analysis to historic and cultural resources in the University Corridor is pending completion of the cultural resource survey currently being conducted by SHPO.

^{4/} Specific impacts to be determined following additional geological studies and LRT System Design Specifications.

^{5/} Potential soil contaminated sites were identified through MPCA files and soil boring logs. Sites identified in figures (Chapter 4) are limited to locations with corresponding addresses.

**TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA**

	TUNNEL	AT-GRADE A	AT-GRADE B
Community and Neighborhood (5.8.1)	<ul style="list-style-type: none"> - no significant adverse impacts - improved transit accessibility 	<ul style="list-style-type: none"> - traffic-related impacts to surrounding neighborhoods - Nicollet Avenue traffic could shift to Blaisdell and/or 1st Avenue - improved access to area hospitals - increased transit accessibility 	<ul style="list-style-type: none"> - potential safety impacts to Kenwood area neighborhood - increased transit accessibility
Relocation/Displacement (5.8.2)	<ul style="list-style-type: none"> - two residential buildings (one multi-family) and two warehouse properties within the St. Anthony Falls Historic District - acquisition of Soo Line right-of-way in the 29th Street Corridor - Yard and Shop site: acquisition of four multi-family properties and two businesses - acquisition of Soo Line right-of-way from Lake Street to the Metrodome 	<ul style="list-style-type: none"> - two commercial properties and one historic warehouse (included on the National Register) - acquisition of Soo Line right-of-way in the 29th Street Corridor - Yard and Shop site: acquisition of four multi-family properties and two businesses - acquisition of Soo Line right-of-way from Lake Street to the Metrodome 	<ul style="list-style-type: none"> - acquisition of Soo Line right-of-way from Lake Street to the Metrodome - Yard and Shop site: acquisition of four multi-family properties and two businesses - acquisition of Soo Line right-of-way from Lake Street to Metrodome (revenue line)

TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA
(CONTINUED)

	TUNNEL	AT-GRADE A	AT-GRADE B
Economic Development ^{1/} (5.8.3)	<ul style="list-style-type: none"> - moderate development potential at 29th Street Corridor stations. LRT would enhance existing/planned redevelopment in the area - limited development potential at Nicollet Avenue stations 	<ul style="list-style-type: none"> - moderate development potential at 29th Street Corridor stations. LRT would enhance existing/planned redevelopment in the area - limited development potential at Nicollet Avenue stations 	<ul style="list-style-type: none"> - limited development potential at station sites
Traffic (5.8.4)	<ul style="list-style-type: none"> - potentially significant impacts at the at-grade TH 55/I-94 interchange - short-term tunnel construction traffic impacts - 101 fewer peak hour buses entering downtown 	<ul style="list-style-type: none"> - potentially significant impacts at the at-grade TH 55/I-94 interchange - removal of approximately 270 parking spaces on Nicollet Avenue (29th - 15th Streets) - potential pedestrian flow impacts on 2nd/Marquette - significant impact to side-walk width at stations - 101 fewer peak hour buses entering downtown 	<ul style="list-style-type: none"> - potentially significant impacts at the at-grade TH 55/I-94 interchange - potential pedestrian flow impacts on 2nd/Marquette - significant impact to side-walk width at stations - 92 fewer peak hour buses entering downtown

TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA
(CONTINUED)

	TUNNEL	AT-GRADE A	AT-GRADE B
Transit Service (5.8.5)	<ul style="list-style-type: none"> - tunnel option offers higher average speed than at-grade options - improved through-trip travel times - tunnel stations would protect riders from extreme weather conditions - reduced bus volumes in downtown without a significant change in service coverage 	<ul style="list-style-type: none"> - improved through trip travel times - reduced bus volumes in downtown without a significant change in service coverage 	<ul style="list-style-type: none"> - improved through trip travel times - reduced bus volumes in downtown without a significant change in service coverage
Air Quality (5.8.6)	<ul style="list-style-type: none"> - -- 	<ul style="list-style-type: none"> - no significant impact on downtown microscale quality 	<ul style="list-style-type: none"> - no significant impact on downtown microscale quality
Noise ² / (5.8.7)	<ul style="list-style-type: none"> - 129 dwellings and 7.75 acres of parkland could experience noise levels exceeding APTA guidelines - 1.5 acres of West River Parkway could experience noise levels exceeding APTA guidelines 	<ul style="list-style-type: none"> - 159 dwellings, and 7.75 acres of parkland could experience noise levels exceeding APTA guidelines 	<ul style="list-style-type: none"> - 259 dwellings and 9.40 acres of parkland could experience noise levels exceeding APTA guidelines

TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA
(CONTINUED)

	TUNNEL	AT-GRADE A	AT-GRADE B
Water Resources (5.8.8)	<ul style="list-style-type: none"> - minimal construction-related impacts (primarily on existing bridges) to Lake Calhoun and Lake of the Isles floodplains and Shoreland Zoning District (permit required) - alignment below First Avenue could be considered inconsistent with the Mississippi River Critical Area Plan - dewatering for tunnel construction would be required from approximately 25th Street to 5th Street 	<ul style="list-style-type: none"> - minimal construction-related impacts (primarily on existing bridges) to Lake Calhoun and Shoreland Zoning Districts (permit required) 	<ul style="list-style-type: none"> - minimal construction-related impacts (primarily on existing bridges) to Kenilworth Lagoon floodplain and Shoreland Zoning District (permit required)
Steep Slopes (5.8.9)	<ul style="list-style-type: none"> - not significant 	<ul style="list-style-type: none"> - not significant 	<ul style="list-style-type: none"> - not significant
Geological Conditions (5.8.10)	<ul style="list-style-type: none"> - potential subsidence during construction 	<ul style="list-style-type: none"> - no impact 	<ul style="list-style-type: none"> - no impact

**TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA
(CONTINUED)**

	TUNNEL	AT-GRADE A	AT-GRADE B
Utilities (5.8.11)	<ul style="list-style-type: none"> - existing deep tunnels will require adjustment 	<ul style="list-style-type: none"> - significant impact to shallow utilities in downtown 	<ul style="list-style-type: none"> - significant impact to shallow utilities in downtown
Parklands (5.8.12)	<ul style="list-style-type: none"> - visual/noise impacts to two parks 	<ul style="list-style-type: none"> - visual/noise impacts to Chain of Lakes Regional Park 	<ul style="list-style-type: none"> - visual impacts to four parks, potential noise impacts to Chain of Lakes Regional Park
Visual and Aesthetics (5.8.13)	<ul style="list-style-type: none"> - visually beneficial affects in 29th Street Corridor because of potential upgrading of area - significant visual impact to residential units in close proximity to LRT line - significant visual impacts (scale-related) along West River Parkway 	<ul style="list-style-type: none"> - visually beneficial affects in 29th Street Corridor because of potential up-grading of area - significant visual impacts on 2nd Street between the Towers and Northwestern National Life - significant change in character of 3rd Avenue North upon removal of the Colonial warehouse - significant visual character impacts on Nicollet Avenue between 29th and 15th Street - Visual impacts at stations areas on 2nd/Marquette Avenue 	<ul style="list-style-type: none"> - significant visual impact to residential units in close proximity to LRT line (South-west Connection) - Visual impacts at stations on 2nd/Marquette Avenue

TABLE 1.2
SUMMARY OF ENVIRONMENTAL CONSEQUENCES: CENTRAL AREA
(CONTINUED)

	TUNNEL	AT-GRADE A	AT-GRADE B
Historic and Cultural Resources (5.8.13)	<ul style="list-style-type: none"> - north portal located in St. Anthony Falls Historic District could impact two historic properties: Wisconsin Central Freight Station and the Foster House - Northwest Connection (at-grade) would run under historic Washington Avenue bridge 	<ul style="list-style-type: none"> - potentially impact four historic properties on Nicollet Avenue (29th - 15th Street segment) - significant impact to historic Colonial Warehouse - Northwest Connection would run under historic Washington Avenue bridge 	<ul style="list-style-type: none"> - no adverse impact anticipated

1/ See text for discussion regarding the economic development impacts to downtown Minneapolis.

2/ Reflects worst-case conditions. Dwelling unit category includes individual apartment units.

LRT Ridership

Average weekday ridership for the Hennepin County LRT System--Year 1995--is projected to range from 63,000 to 72,300. Access to the LRT stations will be provided by feeder buses, auto drop-offs, park-and-ride, bicycle, and walk-ons. Section 3.3 provides a breakdown of projected ridership per corridor, station and mode of access.

Energy

The Hennepin County LRT System will be powered by electrical power generated by Northern States Power Company (NSP). NSP has indicated that they are willing and able to accept LRT as a customer (Section 8.3).

The LRT system will generate a relatively constant electrical power demand during the day and will contribute very little to peak electrical demands.

In 1988, NSP generated a total of 31,304.6 million kwh with total energy sales of 34,796 million kwh. The estimated LRT System energy consumption of 45.4 million kwh is just over one-tenth of one percent of NSP's 1988 energy sales.

Employment

Implementing light rail transit service in Hennepin County would have a positive impact on employment. Specifically, total temporary jobs during construction would range from approximately 2,700 to 3,400, net new permanent jobs would range from 60-70. The range reflects the variation between the Central Area options.

Transportation Impacts

- o LRT Ridership - A portion of the people who elect to ride the LRT system would otherwise drive a private vehicle. It is estimated that after two years of LRT operation, approximately 12,500 to 16,400 trips per day will be made on LRT which would otherwise occur by private vehicle. Assuming an average work trip length is 8.11 miles (1982 Travel Behavior Inventory, Metropolitan Council), yields a decrease in regional vehicle miles of travel (VMT) of 101,000 to 133,000 miles per day.
- o The number of buses entering downtown would be reduced by 92 to 101 buses depending on the Central Area option selected. Peak bus fleet requirements (in the corridor areas) would be reduced by approximately fifty buses.

- o By developing an efficient feeder bus system to connect with the light rail lines, the total number of miles traveled by regular route buses in the light rail corridors would decrease by approximately 4,700 miles per weekday. This decrease in bus miles traveled would decrease the operating cost of the bus system.
- o Because the majority of the LRT system proposed for Hennepin County is located in private right-of-way (ROW), the light rail vehicle (LRV) can travel at higher operating speeds than regular route buses which are subject to roadway congestion. This increased speed in turn decreases the travel time for the transit user, and increases the schedule reliability of the system.
- o The light rail system would provide increased access for persons dependent on transit service. The light rail system would be handicapped-accessible at all of the proposed station locations. By providing a totally handicapped-accessible system, LRT could reduce the funds needed to provide special transit service in Hennepin County, which is projected to substantially increase during the 1988-2010 time period.
- o The light rail system would improve accessibility for transit users traveling from the central business district area to suburban employment centers.
- o Potentially significant adverse traffic impacts in the Central Area could occur on Nicollet Avenue from 29th Street to 15th Street. Implementation of two-way LRT service could shift traffic from Nicollet Avenue to First Avenue and/or Blaisdell Avenue. Approximately 270 on-street parking spaces would be removed on Nicollet Avenue.

The second area with potential for significant traffic impact would be at the TH 55/I-94 at-grade interchange. Potentially significant traffic impacts could occur if an at-grade LRT line is built in the area, without the implementation of a signal timing plan which would provide the necessary capacity for vehicle movements.

- o Washington Avenue Bridge - The University Connector would displace traffic from Washington Avenue. Traffic which would otherwise use the Washington Avenue bridge will be diverted to alternative routes including I-94, I-35W, University Avenue, and Fourth Street. The change in VMT resulting from this traffic diversion has been estimated by assigning the Washington Avenue trips

to alternative routes and calculating the change in trip length. This analysis indicated that construction of LRT on Washington Avenue would result in a net increase in regional travel of approximately 15,000 vehicle miles per day.

Relocation Impacts

The proposed Hennepin County LRT System would require the acquisition of Soo Line right-of-way in the Southwest Corridor, and in the 29th Street Corridor (Central Area) if the tunnel option or At-Grade Option A are selected. In the Northwest Corridor, acquisition of Burlington Northern railroad right-of-way would also be required.

In the LRT Corridors, approximately sixteen commercial/industrial businesses and four residential properties would require relocation.

The proposed Yard and Shop site would require the acquisition/relocation of four multi-family properties and two businesses. Access to the Yard and Shop would also require acquisition of Soo Line right-of-way.

Relocation impacts for each of the Central Area options are identified in Table 1.2.

Economic Development

The light rail transit system would support and stimulate higher density development in the downtown area, without increasing the demand for parking and the congestion levels on highways and arterials serving the downtown.

The impact of the Hennepin County LRT System on the Central Area has been quantified in terms of general-occupancy office space. Based on economic development analysis completed to date, it is estimated that LRT would cause between twenty to twenty-five percent additional net gain in general-occupancy office space demand between 1995 and 2010 (Section 5.8.3).

Wetlands

The Northwest Corridor alignment could adversely impact DNR Protected Wetland 644W (Grimes Pond). Under worst-case conditions, .2 acres of wetland would be permanently filled, to accommodate the LRT alignment as it crosses Grimes Pond.

A DNR Wetland Permit would be required for any work done within this wetland.

The Southwest Corridor could impact approximately .65 acres of a riparian community between Minnehaha Creek and the existing railroad right-of-way.

Historic and Cultural Resources

Impacts to known historic properties in the Central Area would be significant.

The north tunnel portal (tunnel option) could require the removal of two properties which are included in the National Register of Historic Places. The historic structures are located at 100 North 1st Street (Foster House) and 10 North Hennepin (Wisconsin Central Freight Station).

At-Grade Option A would require the removal of the Colonial Warehouse (Second Street North and Third Avenue). The Colonial Warehouse is listed in the city-designated Historic Warehouse District and the proposed National Register Minneapolis Warehouse District.

Potential impacts to historic properties will require review by the State Historic Preservation Office and the Minneapolis Heritage Preservation Commission.

1.5 PROJECT COST

Based on studies completed to date, the estimated capital cost for the Hennepin County LRT System will range from \$478.00 million to \$615.7 million (Table 1.3).

**TABLE 1.3
CAPITAL COST ESTIMATES**

OPTION	Guideway	Stations	Vehicles	Park-and-Ride	Total
Tunnel Option	\$434.8	\$100.9	\$72.6	\$7.4	\$615.7
At-Grade Option A	379.1	36.7	75.0	7.4	498.2
At-Grade Option B	364.4	35.2	71.0	7.4	478.0

1.6 REQUIRED GOVERNMENTAL ACTIONS

A number of permits will be required as part the LRT project approval process. These permits include or may include the following:

<u>LEVEL OF GOVERNMENT</u>	<u>TYPE OF APPLICATION</u>	<u>STATUS</u>
FEDERAL:		
U.S. Army Corps of Engineers	Section 404 Permit for dredge and fill activities within wetlands	To be determined
STATE:		
Minnesota Pollution Control Agency	NPDES Permit	To be determined
Minnesota Public Service Commission	Permit to Operate a Transit System	To be determined
MN Department of Transportation	Permit to Use/Access a Trunk Highway	To be determined
MN Department of Natural Resources	Permit to Work in Protected Waters or Wetlands	To be applied for
	Water Appropriations Permit	To be determined
REGIONAL:		
Regional Transit Board	Preliminary Design Plans Review/Comment/Recommend Modifications	To be submitted
	Final Design Plans Approval	To be submitted
Hennepin County Regional Railroad Authority	Preliminary Engineering Approval	To be submitted
	Final Design Approval	To be submitted

<u>LEVEL OF GOVERNMENT</u>	<u>TYPE OF APPLICATION</u>	<u>STATUS</u>
REGIONAL (con't.):		
Hennepin County Board of Commissioners	Preliminary Engineering Approval	To be submitted
	Final Design Approval	To be submitted
OTHER:		
Burlington Northern Railroad	Operating Agreement	To be negotiated
Chicago & North-western Railroad	Operating Agreement	To be negotiated
Soo Line Railroad	Operating Agreement	To be negotiated
Richfield-Bloomington Watershed District	Varies	To be determined
Bassett Creek Watershed District	Varies	To be determined
Shingle Creek Watershed District	Varies	To be determined
Minnehaha Creek Watershed District	Varies	To be determined
Mississippi River Watershed District	Varies	To be determined

LOCAL:

Preliminary Engineering plan approval and final design plan approval will be required from the following cities:

Minneapolis	Hopkins
Brooklyn Park	Robbinsdale
Crystal	St. Louis Park
Golden Valley	

- o Any and all permits associated with zoning (including Shoreland Zoning), platting, subdivision, site plan, and building processes where and if applicable.

LEVEL
OF GOVERNMENT

TYPE OF APPLICATION

STATUS

LOCAL (con't.):

- o Review by the Minneapolis Park Board for approval of any land acquisition/land replacement request.
- o Review by the Robbinsdale Park Board for approval of any land acquisition request.

The required information for these permits will be collected at appropriate times during project development. Appropriate permit application forms will be filed as required.