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“Guiding the future of transportation and
planning for the Twin Ports area.”

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Executive Summary

The Duluth Thoroughfare Plan is one element of the City of Duluth Comprehensive Plan. The information contained in this plan will aid the City of Duluth in setting priorities for their street projects, developing a maintenance schedule, managing access to new and developing businesses, and planning for the expansion of the roadway network. This plan was developed with input from City of Duluth Planning and Engineering, Saint Louis County, and the Minnesota Department of Transportation (MnDOT) District One.

The primary result of this study was the formulation of a functional classification system for the City of Duluth. Functional classification is the grouping of roads, streets and highways into integrated systems, each marked by its importance to the general welfare, the motorist, and the land use structure. A seven-class system was developed to aid in analyzing the Duluth street network. This system includes the classifications of interstate highway/other limited access freeway, principal arterial, major arterial, minor arterial, major collector, minor collector, and local roadway. Although the official MnDOT functional classification system will remain in place, the City of Duluth will utilize this plan to customize a unique functional class system for planning purposes.

Analysis of the various thoroughfares was performed at the planning district level. These ten districts were developed to aid the City of Duluth in their comprehensive planning process. The thoroughfares are described according to average daily traffic, their function, connectivity to other parts of the city, the metropolitan area, and the region, and the type of land use they each serve.

In addition to the functional classification of roadways, the Duluth Thoroughfare Plan examines the existing and future capacity of the roadway network. Capacity analysis addresses subjects such as the quality of service provided by a roadway during peak periods, future improvements necessary if traffic increases, and the timeline of roadway upgrades. The primary purpose of this section is to identify the roadway segments that have capacity deficiencies in the present and will have deficiencies in 2015. This analysis can be used by the City of Duluth as one factor in prioritizing their roadway system.

The Duluth Thoroughfare Plan also reviews the designated truck route system in the City of Duluth. The general purpose of the designated truck route system is to encourage truck drivers to use roads that were deemed safer to use and were considered to provide the most direct routes to and through the metropolitan area. This system is made up of limited access roadways that not only function to move truck traffic efficiently, but are also constructed to handle the excess weight and capacity trucks often introduce to the roadway.

As a final element of the Duluth Thoroughfare Plan, five possible future roadways are discussed. The first is the Martin Road Connector. This roadway could be used as a bypass around Duluth connecting Trunk Highway 53, Midway Road, and the north and west parts of Duluth to Trunk Highway 61 in the northeast. The second potential roadway is the 46th Avenue West Connector. This connector would allow for increased access and connectivity to Haines Road and the Miller Hill Corridor. The third potential roadway discussed is the Trinity Road Extension. Previously known as Joshua Avenue, this proposed roadway would function as an arterial that would connect Arrowhead Road to the north, with Trunk Highway 53/Central Entrance/Trinity Road to the south. The Kenwood Connector is the fourth possible future roadway. It would provide a direct connection from the Kenwood-East Hillside neighborhood areas to downtown via 6th Avenue East. The final possible roadway is the East Duluth Arterial. This roadway would run parallel to London Road and Superior Street, functioning as a throughway for traffic to and from the North Shore.

CHAPTER 1

INTRODUCTION

The Duluth Thoroughfare Plan is one element of the City of Duluth Comprehensive Plan. The information contained in this plan will aid the City of Duluth in setting priorities for their street projects, developing a maintenance schedule, managing access to new and developing businesses, and planning for the expansion of the roadway network. This plan was developed with input from City of Duluth Planning and Engineering, Saint Louis County, and the Minnesota Department of Transportation (MnDOT) District One.

The principal purpose of the Duluth Thoroughfare Plan is to review the street and highway system to determine the actual functions of these roadways. Although the MnDOT functional classification system will remain in place, the City of Duluth will utilize this plan to customize a unique functional class system for planning purposes. In addition to functional classification analysis, this plan will examine where roadway capacity deficiencies exist and where future capacity problems will be located. This will be done by comparing the volume that is on the roadway to the capacity of that roadway. Information on truck routes and their location on the Duluth roadway system will also be discussed. Finally, future roadways for the City of Duluth will be explored. Three possible roadways will be discussed and how their addition would aid the Duluth thoroughfare system.

CHAPTER 2

METHODOLOGY

Data Collection

The development of the Duluth Thoroughfare Plan required data collection from numerous sources. A database was assembled using information from the 1996 Duluth Street Inventory. An electronic copy of this database was obtained from the City of Duluth Public Works Department. This inventory contains a segment by segment listing of all the streets within the city limits of Duluth and contains the following information on each street segment:

- beginning and ending point
- city maintenance district
- jurisdiction or class
- segment number
- construction information
- length in feet and miles
- traffic count (Average Daily Traffic)
- surface and roadway edge type
- roadway and right-of-way width

In addition to the information collected from the Duluth Street Inventory, other data was collected and attached to this database. The additional information was collected for roadways with present MnDOT functional classification of collector or higher and local roadways with a high ADT or nonresidential land use. The following is a brief description of the additional data collected:

- zoning adjacent to each segment
- abutting land use
- bus routes
- truck routes
- bike routes
- accidents

All of the collected data was attached to a base map of Duluth utilizing the Geographic Information System (GIS) software Arcview. All data collected as part of this study is available for use in future projects.

A list of all the thoroughfares, their terminus, jurisdiction, functional classification, segment length in miles, and average daily traffic counts can be found in the appendix of this document. The entire database with all the above characteristics is available on a 3.5" floppy disk.

Analysis

In order to get an accurate picture of how the Duluth roadway network was actually functioning, a functional classification analysis was performed. A functional classification system utilized by MnDOT is already in place, but limits are placed on how many miles of roadway are allowed in each class. This official functional classification system is used to allocate state and federal funding to the City of Duluth and other jurisdictions for roadway maintenance. The functional class system developed in this study is designed to be used for planning and prioritizing of roadway projects by the City of Duluth. No limits were placed on the amount of mileage in each class.

The first step in analyzing the roadway network was to develop a set of criteria to classify the street network. From research of literature on functional classification, urban thoroughfares, and street design, criteria were developed to divide the streets into a functional class system. This system includes seven classes: interstate highway/other limited access freeways, principal arterials, major arterials, minor arterials, major collectors, minor collectors, and local roadways.

Using Arcview GIS software, queries were performed on the database applying the developed criteria to determine which classification each roadway would fall into. Maps, charts, and tables were produced to assist in this analysis. After the initial analysis, each roadway was examined individually to confirm the proper classification.

Finally, all roadways were examined to determine how they fit into the city's roadway network. Connectivity, spacing, and location in relation to population centers were examined. The results of this analysis are a functional classification system that accurately portrays Duluth's roadway network.

CHAPTER 3

THE CONCEPT OF FUNCTIONAL CLASSIFICATION

Functional classification is the grouping of roads, streets and highways into integrated systems, each ranked by its importance to the general welfare, the motorist, and the land use structure. The functional classification process is a practical technique for determining the travel corridors that should best serve through and local traffic in an urban area. The process determines the importance of all urban streets and highways in relation to one another and to urban development.

In developing this thoroughfare plan, all streets and highways were examined and grouped into functional classes, which were ranked by their importance. The objective was to define appropriate relative purposes of highways and streets in providing traffic service and influencing urban development, and to establish the most economic yet beneficial systems to meet both present and future transportation needs.

Basic to this process is the recognition that individual roads and streets do not serve travel independently. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

Allied to this idea of traffic channelization is the dual role the highway network plays in providing 1) access to property, and 2) travel mobility. Access is a fixed requirement, necessary at both ends of any trip. Mobility, along the path of such trips, can be provided at varying levels, usually referred to as “level of service.” It can incorporate a wide range of elements, but the most basic is operating speed or trip travel time.

In the state of Minnesota and elsewhere, functional classification of roadways is typically carried out at the state level in cooperation with regional and local officials through the regional development commissions (RDCs) and metropolitan planning organizations (MPOs). These classifications aid state, county, and city jurisdictions in setting priorities for the various roadways. These priorities can be set for such things as reconstruction, maintenance, and even snow plowing. The Minnesota Department of Transportation (MnDOT) updated the functional classifications for the City of Duluth in 1993. These classifications include interstate highways, other freeways and expressways, principal arterials, minor arterials, major collectors, and minor collectors.

CHAPTER 4

FUNCTIONAL CLASS CRITERIA FOR THE DULUTH THOROUGHFARE SYSTEM

The Arterial System

The Arterial System, for purposes of this plan, includes the freeway and interstate system, principal arterials, major arterials, and minor arterials. This system generally carries large traffic volumes within and through urban areas. The traffic includes trips entering and leaving urban areas, through movements bypassing the central city and intra-area travel between central business districts (CBDs) and outlying residential areas, major inner-city communities, and major suburban centers. This type of system normally accommodates about 65 to 80 percent of traffic volumes and makes up 15 to 25 percent of the street network.

Interstate Highway/Other Limited Access Freeways

The interstate highway/other limited access freeways are characterized as roadways that provide for high levels of safety and efficiency in the movement of high volumes of traffic at high speeds. Essential elements for this type of system include medians, grade separations, ramp connections for entering and exiting traffic, and in some cases, frontage roads. There also is full control of access to abutting land uses. For the purpose of this plan, roadways in this classification should be part of the United States Interstate System.

Principal Arterial

Principal arterials accommodate about 40 to 65 percent of the region's travel when combined with the Interstate System, while making up 5 to 10 percent of the street and highway network. The major function of the principal arterial is mobility of traffic with limited or restricted access to local development. Distance between these roadways is generally three miles outside of the CBD and about one mile within the CBD. The principal arterial tends to have a design speed of 30 to 55 mph, serves truck traffic, and connects to other principal arterials and interstates. For the purposes of the Thoroughfare Plan, principal arterials have an average daily traffic (ADT) greater than 10,000.

Major Arterial

The major arterial system's design is set up to interconnect and augment the principal arterial system by primarily serving through traffic. These roadways are high volume corridors that are not classified as principal arterials. They usually accommodate moderate trip lengths, are spaced 1 to 2 miles apart, have widths greater than 40 feet, and for the purposes of the plan, have ADTs greater than 5,000. The major arterial generally has a design speed of 30 to 45 mph, and is part of the designated truck and bus route systems.

Minor Arterial

The minor arterial system generally functions more in relation to land access than do the other arterial classifications by offering a lower level of traffic mobility. Traffic volumes are usually over 3,000 ADT, trip lengths range from a 1/2 to 1 mile, spacing between roadways is generally between 1/2 to 1 1/2 miles, and widths are often greater than 36 feet. Design speed on minor arterials is about 30 to 40 mph and it is also part of the designated truck and bus route systems.

The Collector System

The collector system in the Thoroughfare Plan includes both major and minor collector functional classifications. In general, collectors provide land access service and traffic circulation within neighborhoods, commercial, and industrial areas. Their main purpose is to funnel traffic between local streets where land access is dominant, and the arterial system, where service to through traffic is of primary importance. Collectors may penetrate residential neighborhoods, distributing trips from the arterials, through the area to a local street or final destination. The system should carry about 5 to 10 percent of the traffic volume and make up about 5 to 10 percent of the roadway network. Spacing between all collectors is 1/8 to 1/2 mile in the CBD, 1/2 mile in fully developed areas, and 1 to 3 miles in suburban fringe areas.

Major Collector

The major collector classification serves primarily to funnel traffic between local streets. The CBD and other similar downtown areas may utilize a grid pattern of major collectors to accommodate traffic movement. The major collector should also penetrate residential neighborhoods, but it may also serve elementary and middle schools, small industrial plants, and neighborhood shopping centers. This type of roadway generally carries traffic volumes over 1,500 ADT, has pavement widths between 28 to 40 feet, which may contain additional width for parking, and a design speed of 30 mph. The system may also be part of the bus route system.

Minor Collector

The minor collector channels traffic from local roadways within residential areas and distributes it to roadways with higher functional classifications. It also functions as a distributor of traffic to local roadways and travel destinations. Pavement widths usually are greater than 24 feet, with additional room for parking. Minor collectors are limited to 30 mph, have ADTs from about 500 to 1,500, and may handle some minor bus routes.

The Local System

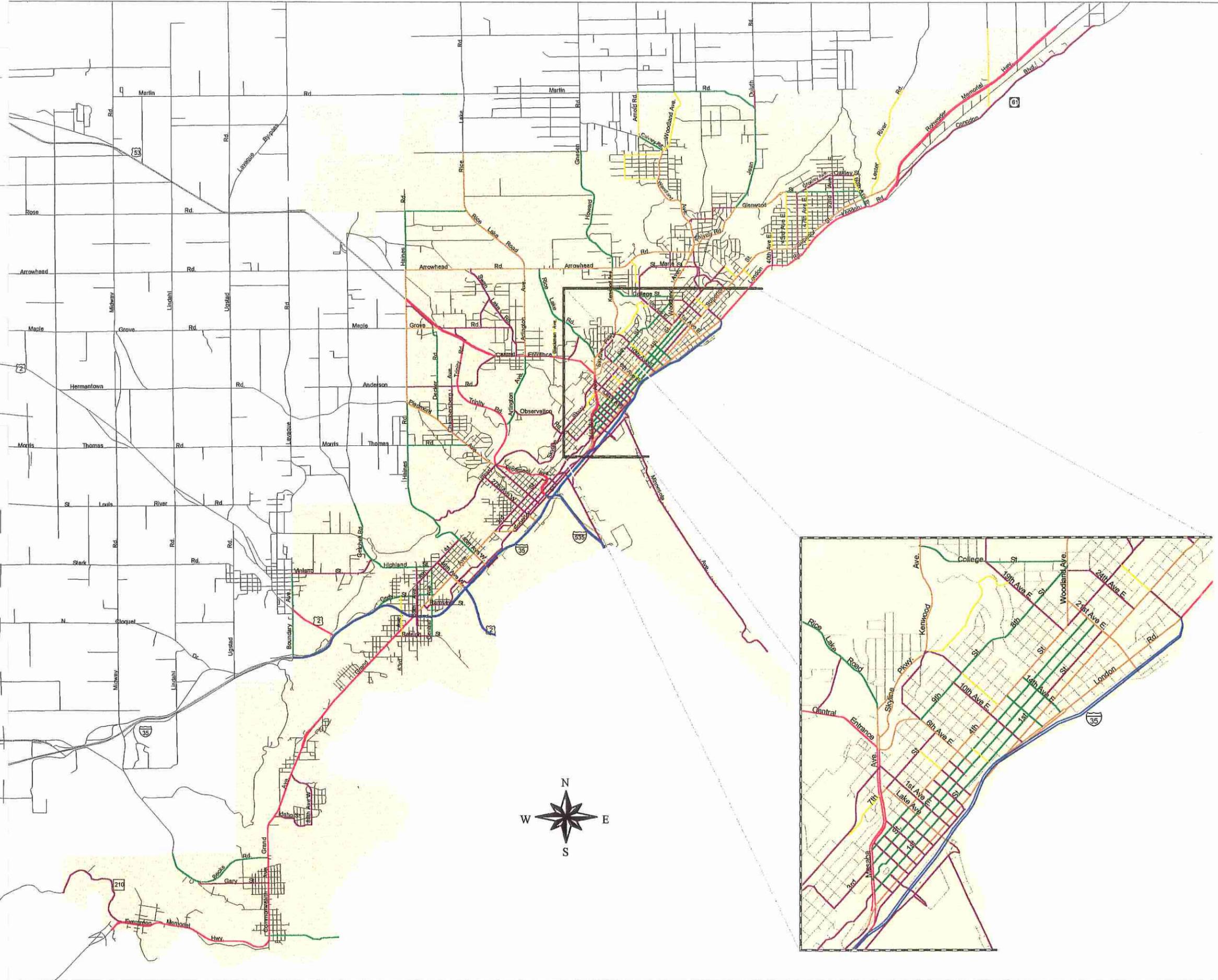
The Local Street System permits direct access to abutting lands and makes connections to higher functionally classed roadways. It offers the lowest level of mobility and also attempts to foster a safe and pleasant environment for both the driver and pedestrian. The local system makes up 60 to 65 percent of the roadway network mileage and carries about 10 to 30 percent of the vehicular traffic. Pavement width ranges from about 22 to 36 feet, while design speeds remain at 30 mph. Typically, no bus routes are carried on local roadways.

Map 1 on the following page displays the functional classifications that were developed from the above criteria for the Duluth Thoroughfare Plan

Map #1 Duluth Thoroughfares

Functional Classes

-  Interstate highways/
Limited Access
Freeways
-  Principal Arterial
-  Major Arterials
-  Minor Arterials
-  Major Collectors
-  Minor Collector
-  Local Roads
-  City of Duluth



**Duluth
Thoroughfare
Plan**



CHAPTER 5

ANALYSIS OF DULUTH THOROUGHFARES BY PLANNING DISTRICT

The purpose of this chapter is to analyze the Duluth Thoroughfares and how they function within each city planning district. The functional classification analysis was done with consideration of the entire city, however it is easier to show the results in smaller sections. This street by street breakdown will also examine how the major thoroughfares connect to other planning districts, townships, and cities, in the region. Each planning district discussion involves the major thoroughfares in the district, their function, connectivity to other parts of the city and/or metropolitan area, and what types of land use each thoroughfare serves.

Planning Districts

The City of Duluth created a system of ten Planning Districts to aid in the development of a comprehensive planning process. These ten districts contain the 29 neighborhoods of the Duluth area. The community developed the Planning Districts with representatives from neighborhood and community groups, businesses, and other interested groups. Map 2 on the following page exhibits the location of each of the ten planning districts in the city. A brief discussion of selected thoroughfares in each planning district follows. Maps of each district and their respective roadways follow each analysis. Average Daily Traffic (ADT) counts are in parentheses next to each segment. Each ADT is the highest count for the entire thoroughfare.

Map #2 Planning Districts in the City of Duluth

 Duluth
Thoroughfares

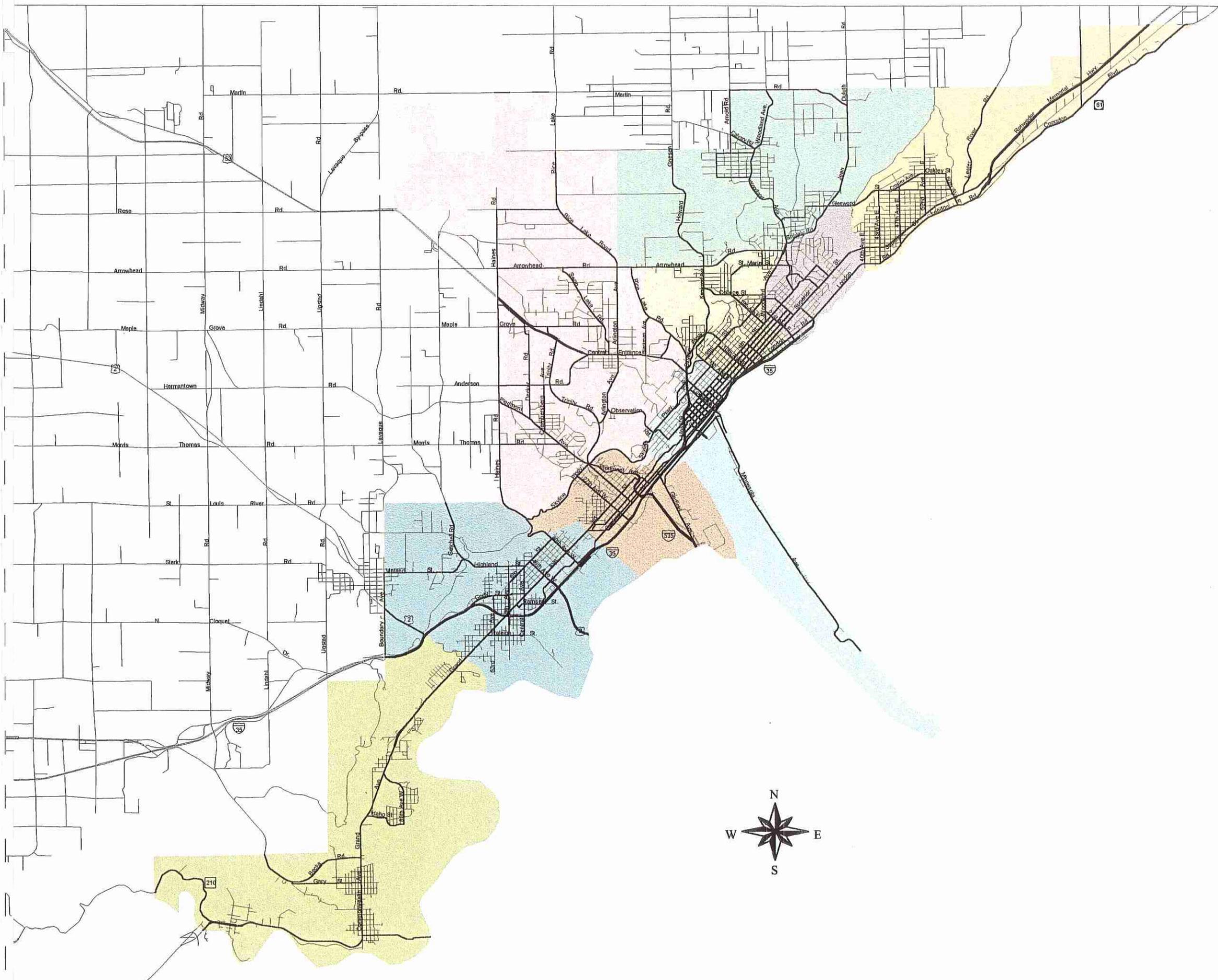
 Local
Roadways

Planning Districts

-  9
-  8
-  7
-  6
-  5
-  4
-  3
-  2
-  1



**Duluth
Thoroughfare
Plan**



Planning District 1

Planning District 1 is located on the extreme southwest side of the City of Duluth. This district includes the neighborhoods of Fond Du Lac, Gary-New Duluth, Morgan Park, Smithville, and Riverside. Combined, these neighborhoods have a 1990 population of 6,870. District 1 is unique in that its neighborhoods are clustered in a linear fashion along Commonwealth Avenue/Grand Avenue/Trunk Highway 23. Below is a list of some of the important thoroughfares in District 1. Map 3 displays District 1 and its thoroughfares.

Commonwealth Avenue/Grand Avenue/Trunk Highway 23 (ADT 9,800)

- classified as a principal arterial
- dissects district and acts as a throughway to I-35 access
- goes through primarily residential areas
- provides connection to I-35

Becks Road (ADT 1,300)

- classified as a minor arterial
- segment acts as a connector from Interstate 35 to Trunk Highway 23
- connects Gary-New Duluth neighborhood to Midway Road and I-35

McCuen Street (ADT 1,200)

- classified as a minor arterial
- provides connection from Trunk Highway 23 to Wisconsin at the Oliver Bridge

Gary Street (ADT 2,650)

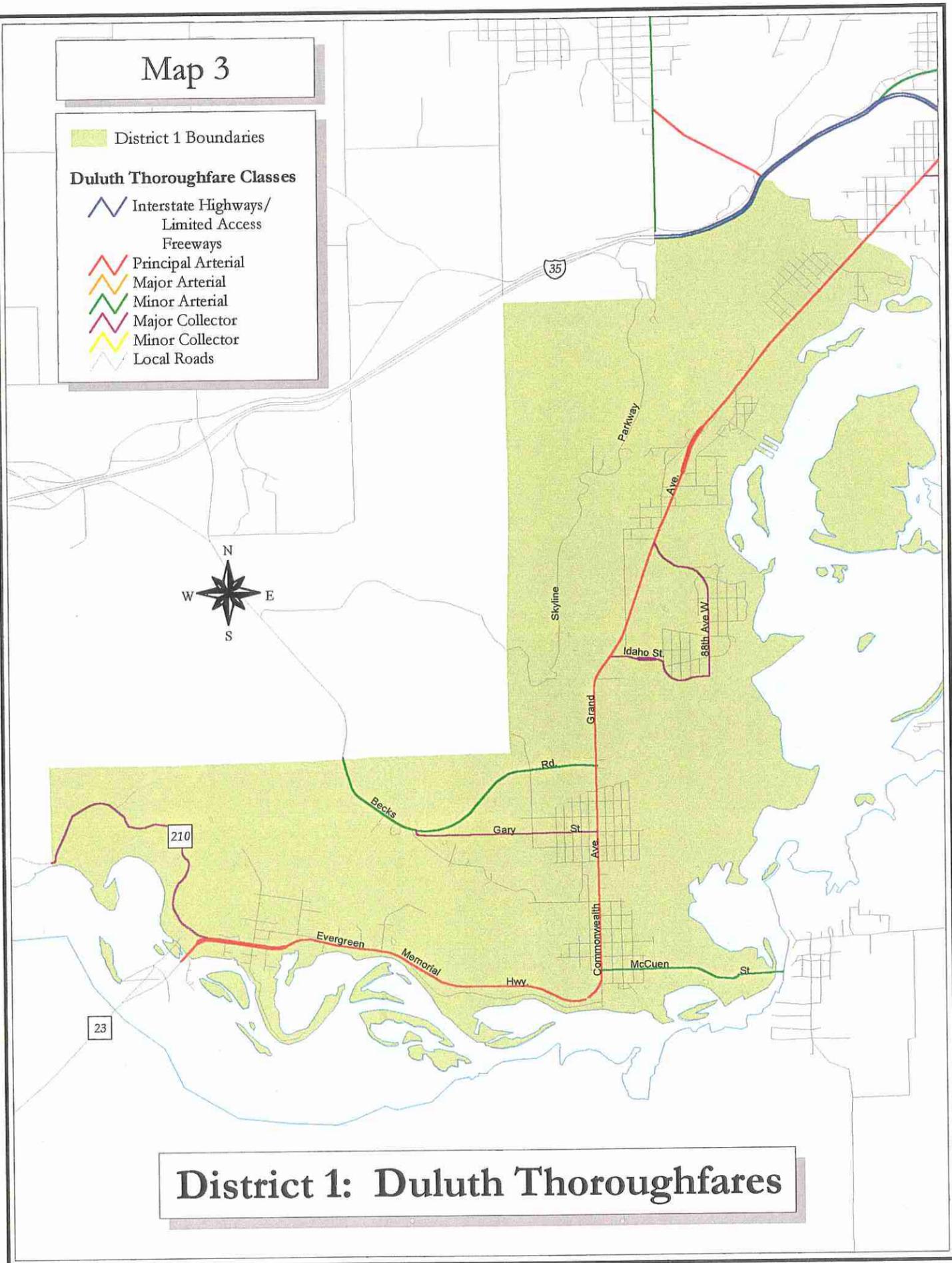
- classified as a major collector
- serves as a connector between Becks Road and Commonwealth Avenue
- channels traffic to local roadways in the Gary neighborhood and to Becks Road and Commonwealth Avenue/Grand Avenue

Idaho Street/88th Avenue West (ADT 2,640)

- both classified as a major collector
- loop through Morgan Park to provide access to local land uses and residences
- connects Morgan Park neighborhood to Commonwealth Avenue/Grand Avenue

Map 3

- District 1 Boundaries
- Duluth Thoroughfare Classes**
 - Interstate Highways/
Limited Access
Freeways
 - Principal Arterial
 - Major Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local Roads



District 1: Duluth Thoroughfares

Planning District 2

Planning District 2 is to the immediate north of District 1. It contains the neighborhoods of Norton Park, Bayview Heights, Fairmont, Irving, Cody, Spirit Valley, Denfeld, and Oneota. The total 1990 Census Population of this district is 11,034. This district is rural in the northwest section, but has a business/retail area in the southeast. Below is a list of some of the important thoroughfares in District 2. Map 4 shows District 2 and its thoroughfares.

Interstate 35 (ADT 40,000)

- classified as an interstate highway/other limited access freeway
- serves as the main thoroughfare for District 2
- I-35 runs through this mix of residential, commercial, and industrial land uses
- ramp access at Boundary Avenue, Cody Street, Trunk Highway 2, Grand Avenue, Central Avenue, and 46th and 40th Avenues West

Grand Avenue (ADT 16,250)

- classified as a principal arterial from I-35 southwest to Planning District 1 and a major arterial from I-35 east to Carlton Street
- connects and provides access to various commercial land uses

Trunk Highway 2 (ADT 14,800)

- classified as a principal arterial
- connector from I-35 to City of Proctor and Boundary Avenue
- follows I-35 to the Bong Bridge connecting to Wisconsin

40th Avenue West (ADT 7,077)

- classified as a major arterial from I-35 to Grand Avenue and a minor arterial from Grand Avenue to Skyline Parkway
- connector from I-35 to Grand Avenue
- connection to Haines Road and Miller Hill Mall area
- serves both commercial and residential land uses

46th Avenue West (ADT 4,350)

- classified as a major arterial from Grand Avenue to connection with Bong Bridge/I-35 and a major collector from Grand Avenue to 8th Street
- serves as a connection from I-35/Trunk Highway 2 to Grand Avenue
- collects traffic from Grand Avenue and distributes it to residential areas

Central Avenue (ADT 8,180)

- classified as a minor arterial
- serves retail and commercial areas in the Spirit Valley area
- connects neighborhoods south of I-35 to neighborhoods north of Grand Avenue
- connects I-35 to industrial areas to the south

Highland Street/Getchell Road (ADT 3,912)

- both classified as minor arterials
- serves as a connection to City of Hermantown and surrounding residential and rural areas

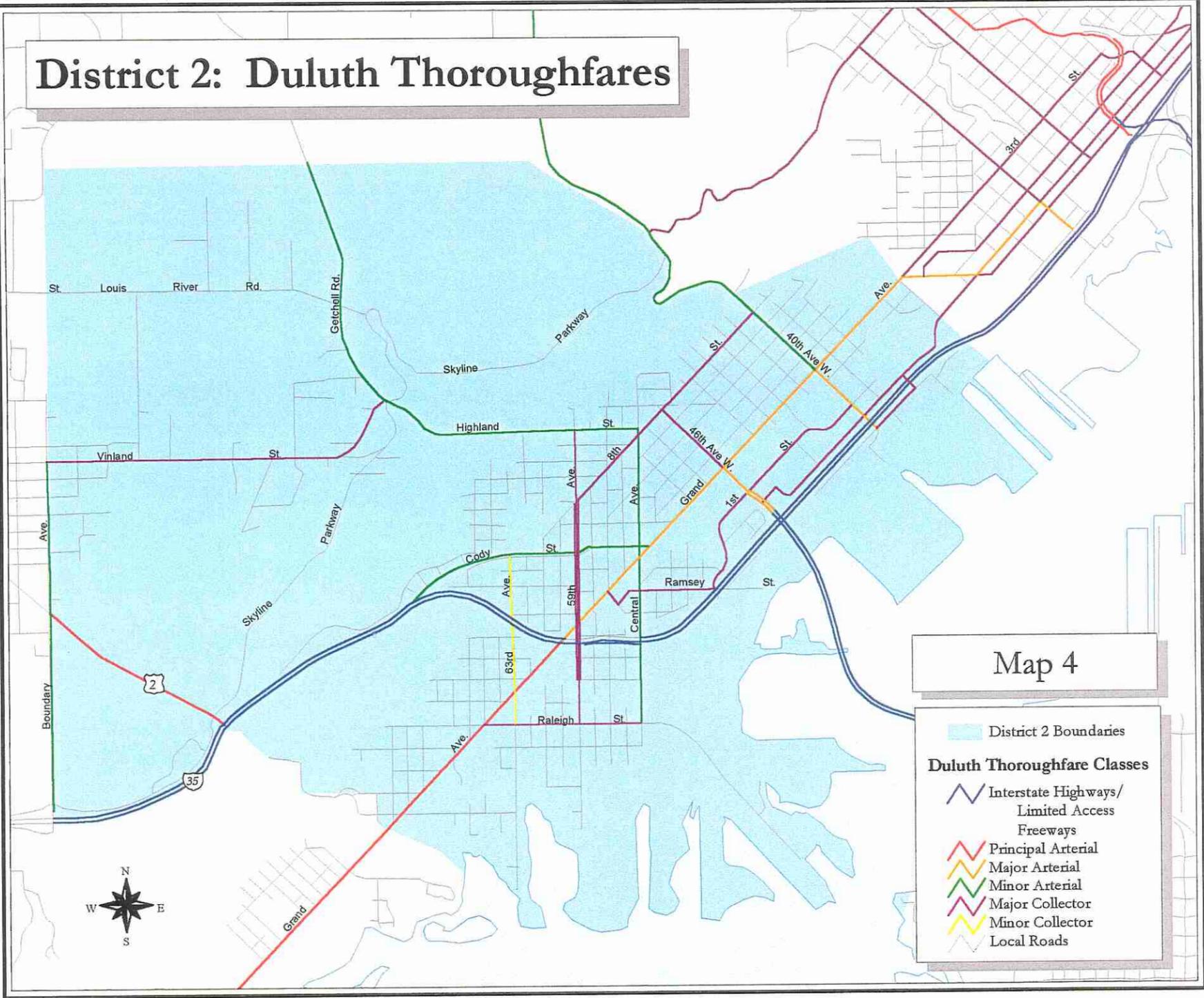
59th Avenue West (*ADT 3,300*)

- classified as a major collector
- connector between Highland Street and Raleigh Street
- distributor of traffic to the Spirit Valley commercial area and to the Norton Park and Fairmont neighborhoods

District 2: Duluth Thoroughfares

Map 4

- District 2 Boundaries
- Duluth Thoroughfare Classes**
- Interstate Highways/
Limited Access
Freeways
- Principal Arterial
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Roads



Planning District 3

Planning District 3 is located to the northeast of District 2. This area contains the neighborhood of Lincoln Park, which has a 1990 population count of 6,976. District 3 contains numerous land uses. Between I-35 and the harbor, numerous industrial areas exist, while commercial and residential land uses are located north of the freeway. Map 5 displays District 3 and its thoroughfares.

Interstate 35 (*ADT 55,500*)

- classified as an interstate highway/other limited access freeway
- main route through the center of District 3
- serves as the connection to Wisconsin through Interstate 535
- ramp access at 27th and 21st Avenues West

Interstate 535 (*ADT 28,000*)

- classified as an interstate highway/other limited access freeway
- serves as a connection to Wisconsin
- provides access to port terminal area
- ramp access at Garfield Avenue

Piedmont Avenue/Trunk Highway 53 (*ADT 7,600*)

- classified as a principal arterial
- serves as a major link for freight and automobiles traveling to and through the Miller Hill Corridor from I-35 and I-535
- low operating speeds, sharp curves, and steep grade hinder efficient travel along this roadway
- limited access to abutting land uses on lower Trunk Highway 53; greater access to land uses along Piedmont Avenue

27th Avenue West (*ADT 17,950*)

- classified as major arterial from I-35 to Superior Street and a major collector from Superior Street to Skyline Parkway
- connects Superior Street to I-35
- serves as a connection to residential areas north of 3rd Street

Superior Street (*ADT 8,066*)

- classified as major arterial from Carlton Street to 27th Avenue West and a major collector from 27th Avenue West to Planning District 5
- connects Grand Avenue to 27th Avenue West for interstate access
- collects traffic from local roadways and distributes to other collector streets in the Lincoln Park business district

Carlton Street (*ADT 5,300*)

- classified as a minor arterial
- connection between Grand Avenue and Superior Street
- serves the truck center area

3rd Street (*ADT 7,308*)

- classified as a major collector
- a continuation of Grand Avenue to the southwest; serves mostly residential areas along with some commercial uses

24th Avenue West (*ADT 7,000*)

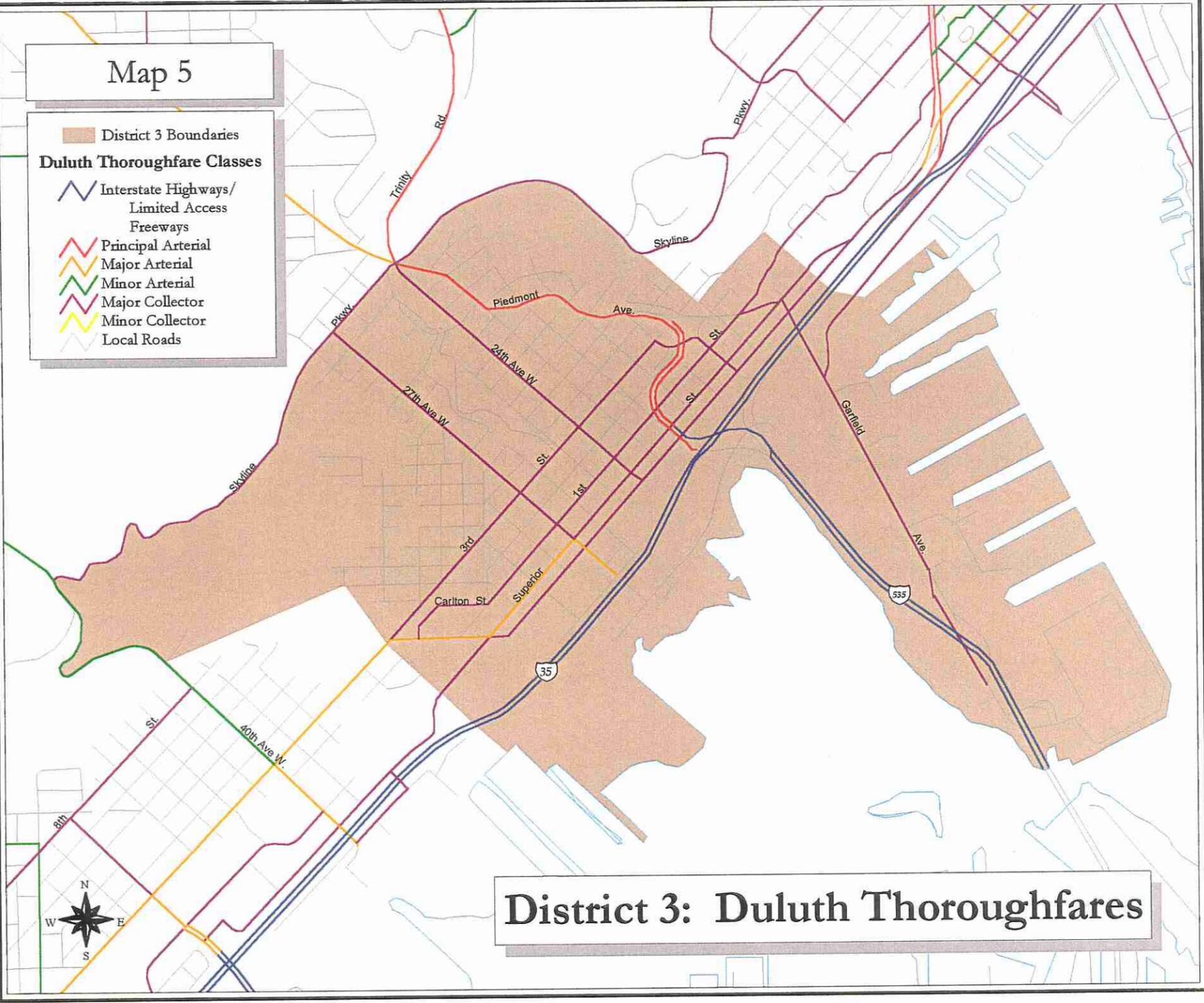
- classified as a major collector
- connects six corners intersection (Skyline Parkway/Piedmont Avenue/Trinity Road) to west end of Lincoln Park business district

1st Street (*ADT 4,543*)

- classified as a major collector
- distributes traffic to local businesses and retail areas in the Lincoln Park business area

Map 5

- District 3 Boundaries
- Duluth Thoroughfare Classes**
 - Interstate Highways/
Limited Access
Freeways
 - Principal Arterial
 - Major Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local Roads



District 3: Duluth Thoroughfares

Planning District 4

Planning District 4, which contains the neighborhoods of Piedmont Heights and Duluth Heights, is the largest geographic district in the City of Duluth. The total population for this mixed residential and commercial area is 9,575. District 4 contains the highest density of commercial development in the City of Duluth along Central Entrance; however it also has the most widespread low density residential development in the city. Map 6 exhibits District 4 and its thoroughfares.

Miller Trunk Highway/Trunk Highway 53 (ADT 24,700)

- classified as a principal arterial
- designated section from Haines Road (city limits) to Trinity Road
- serves as a connection to the Miller Hill Mall area
- link to the Iron Range communities

Central Entrance/Trunk Highway 194 (ADT 21,900)

- classified as a principal arterial
- designated section from Trinity Road to Mesaba Avenue
- connection for traffic destined for the City of Hermantown or the Iron Range communities
- provides access to commercial and shopping areas along the corridor
- establishes connectivity to other arterials such as Arlington Avenue, Trinity Road, and Decker Road

Trinity Road/Trunk Highway 53 (ADT 10,600)

- classified as a principal arterial
- serves as a connector from Piedmont Avenue to Central Entrance

Piedmont Avenue (Northwest of 6 Corners) (ADT 8,900)

- classified as a major arterial
- link from Haines Road to the six corners intersection and Trunk Highway 53
- connection to Morris Thomas Road, Decker Road, and Chambersberg Avenue to facilitate moving traffic to local streets
- carries high volume of City of Hermantown traffic to Trunk Highway 53

Arrowhead Road (ADT 14,295)

- classified as a major arterial
- primarily functions as one thoroughfare for traffic en route to the Miller Hill area from the eastern neighborhoods of Duluth
- connects to Haines Road, Arlington Avenue, Rice Lake Road, and Swan Lake Road

Haines Road (ADT 9,575)

- classified as a minor arterial from 40th Avenue West to Piedmont Avenue and a major arterial from Piedmont Avenue to Arrowhead Road
- provides connection from Planning District 2 and I-35 to Central Entrance and the Miller Hill area
- aids access to local roads with connection to Morris Thomas Road and Anderson Road
- serves both the cities of Duluth and Hermantown
- major connection to the Duluth Airport

Maple Grove Road (ADT 8,950)

- classified as a major arterial from Haines Road to Miller Trunk Highway and a major collector from Miller Trunk Highway to Swan Lake Road
- serves as a connection to the City of Hermantown and the commercial areas along the corridor
- provides a connection to neighborhoods in upper Duluth Heights

Rice Lake Road (ADT 8,100)

- classified as a minor arterial from Mesaba Avenue to Arrowhead Road and a major arterial from Arrowhead Road to the city limits
- link between Arrowhead Road and Martin Road
- serves as an access to Rice Lake Township and other townships to the north
- beginning of primary connection to eastern Iron Range communities

Arlington Avenue (ADT 7,200)

- classified as minor arterial from Trinity Road to Central Entrance and a major arterial from Central Entrance to Arrowhead Road
- serves as a connection for residential areas from Trinity Road to Central Entrance and from Central Entrance to Arrowhead and Rice Lake Roads
- provides connectivity to Observation Road and Swan Lake Road

Decker Road (ADT 6,078)

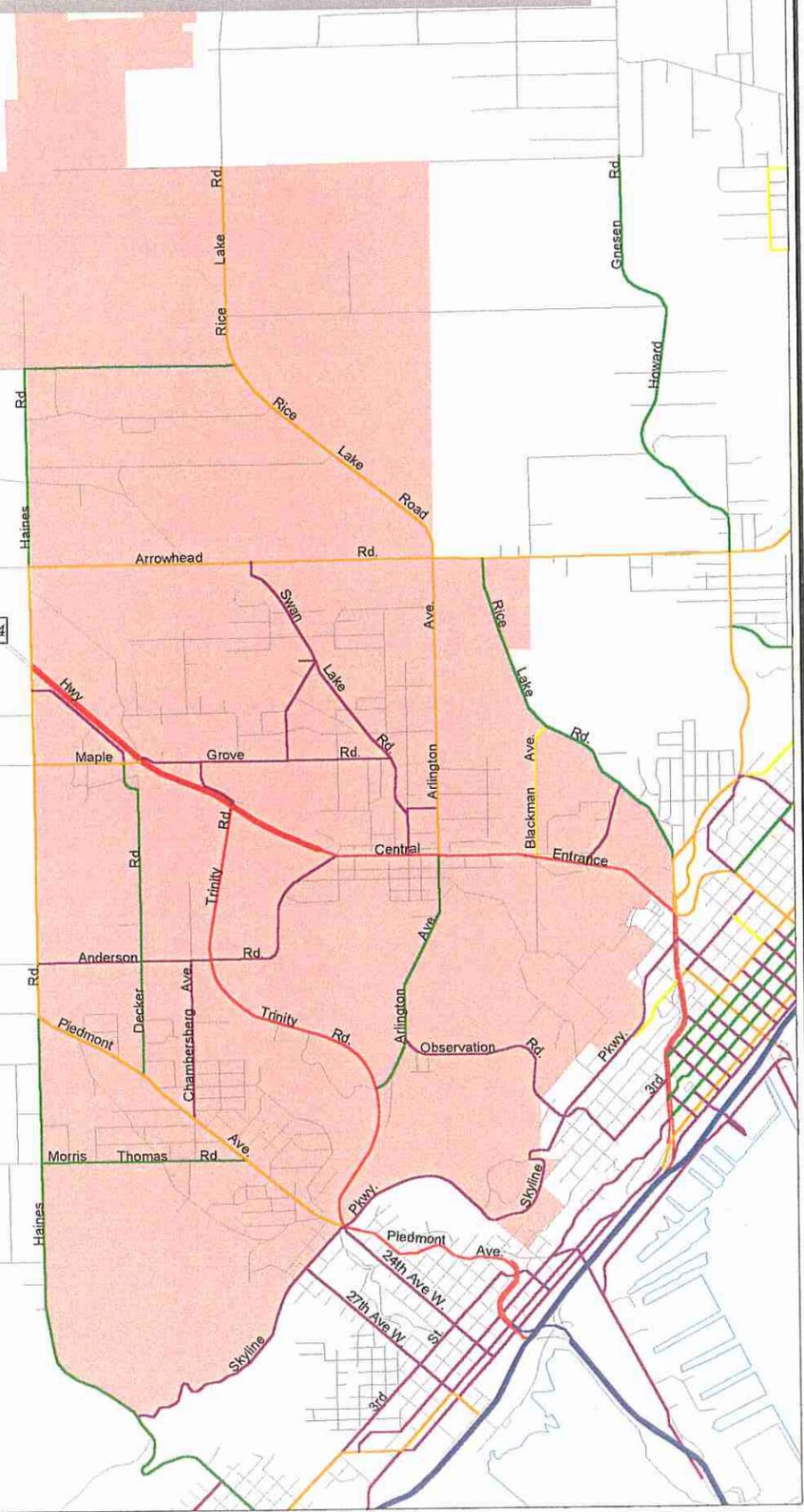
- classified as a minor arterial
- connects Piedmont Avenue to Miller Hill Mall area

District 4: Duluth Thoroughfares



Map 6

- District 4 Boundaries
- Duluth Thoroughfare Classes**
- Interstate Highways/
Limited Access
Freeways
- Principal Arterial
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Roads



Planning District 5

Planning District 5 is a major part of the Central Business District (CBD) of Duluth. It also includes the neighborhoods of Central Hillside and Park Point. The total 1990 population for this area is 8,548. This district has primarily commercial and retail land uses in the CBD; tourist, recreational and residential land uses in the Park Point area; and some commercial and generally more residential areas in the Central Hillside neighborhood. The CBD area grid system has a classification of major collector because of its function as a distributor of traffic to local businesses. Map 7 displays District 5 and its thoroughfares.

Interstate 35 (ADT N/A)

- classified as an interstate highway/other limited access freeway
- serves as the main thoroughfare through District 5
- ramp access at Mesaba Avenue/Superior Street and Lake Avenue

Superior Street (ADT 24,000)

- classified as a principal arterial
- serves the CBD by providing access to the CBD grid system
- provides a connection from Mesaba Avenue and eastward to the London Road corridor

Mesaba Avenue/Trunk Highway 194 (ADT 14,601)

- classified as a principal arterial
- provides connection from I-35 to Central Entrance commercial corridor
- serves downtown area by connecting to streets in the CBD

6th Avenue East (ADT 14,911)

- classified as a major arterial
- connects 2nd, 3rd, and 4th Streets to Central Entrance
- primary carrier of traffic between Central Entrance and 2nd/3rd one-way street system in the CBD
- serves Duluth hospital area

Lake Avenue (ADT 8,654)

- classified as a major arterial
- provides a connection to Mesaba Avenue from the CBD and Canal Park area
- facilitates unlimited access to the CBD grid system

4th Street (ADT 7,108)

- classified as a minor arterial from Mesaba Avenue to Lake Avenue and a major arterial from Lake Avenue to 6th Avenue East
- provides connection between Mesaba Avenue, the CBD grid system, Lake Avenue, and 6th Avenue East

1st, 2nd, and 3rd Streets (ADT 12,333; 14,220; 8,800)

- all have minor arterial classification in the CBD; 1st and 3rd Streets are major collectors west of Mesaba Avenue
- all provide access and connectivity to businesses in the CBD area through the grid system
- 3rd Street west of Mesaba Avenue collects traffic from local streets and channels to Mesaba Avenue and the CBD area

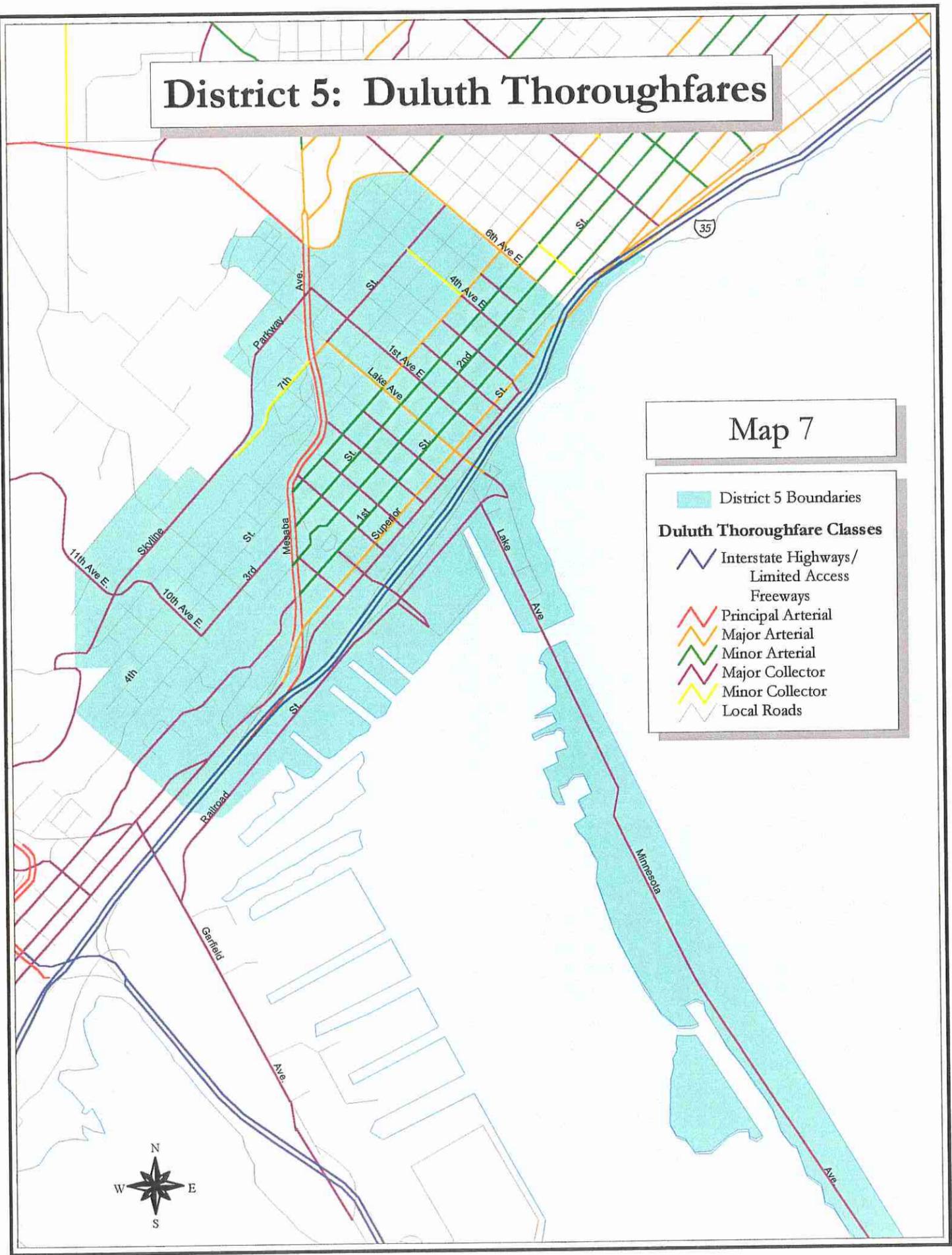
Minnesota Avenue/Lake Avenue South (*ADT 5,640*)

- classified as a major collector
- provides access to commercial areas on Canal Park and to residential and recreational areas in the Park Point neighborhood

District 5: Duluth Thoroughfares

Map 7

- District 5 Boundaries
- Duluth Thoroughfare Classes**
 - Interstate Highways/
Limited Access
Freeways
 - Principal Arterial
 - Major Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local Roads



Planning District 6

Planning District 6 is located directly north of District 5. Kenwood, East Hillside, Endion, and UMD/Chester Park are the neighborhoods located in this district. The 1990 total census population for District 6 is 11,452, the most densely populated district in the city. This district has numerous land uses including residential, commercial, a shopping center, and two colleges. Map 8 displays District 6 and its thoroughfares.

Interstate 35 (ADT 36,000)

- classified as an interstate highway/other limited access freeway
- major throughway for traffic on south side of District 6
- no ramp access to existing streets

Superior Street (ADT 21,410)

- classified as a major arterial
- provides throughway for traffic accessing 21st Avenue East and the Congdon Park neighborhood

London Road (ADT 17,272)

- classified as a major arterial
- parallel roadway to Superior Street that provides access to commercial land uses along its corridor

4th Street (ADT 14,033)

- classified as a major arterial
- serves as a connection between 6th Avenue East, Woodland Avenue, and 21st Avenue East
- provides access to local streets by linking to the collectors of 10th, 11th, 12th, 14th and 19th Avenues East

12th and 14th Avenues East (ADT 8,657; 5,069)

- both classified as minor arterials
- one way streets facilitating a connection between 2nd, 3rd, and 4th Streets to Superior Street and London Road

19th Avenue East (ADT 6,900)

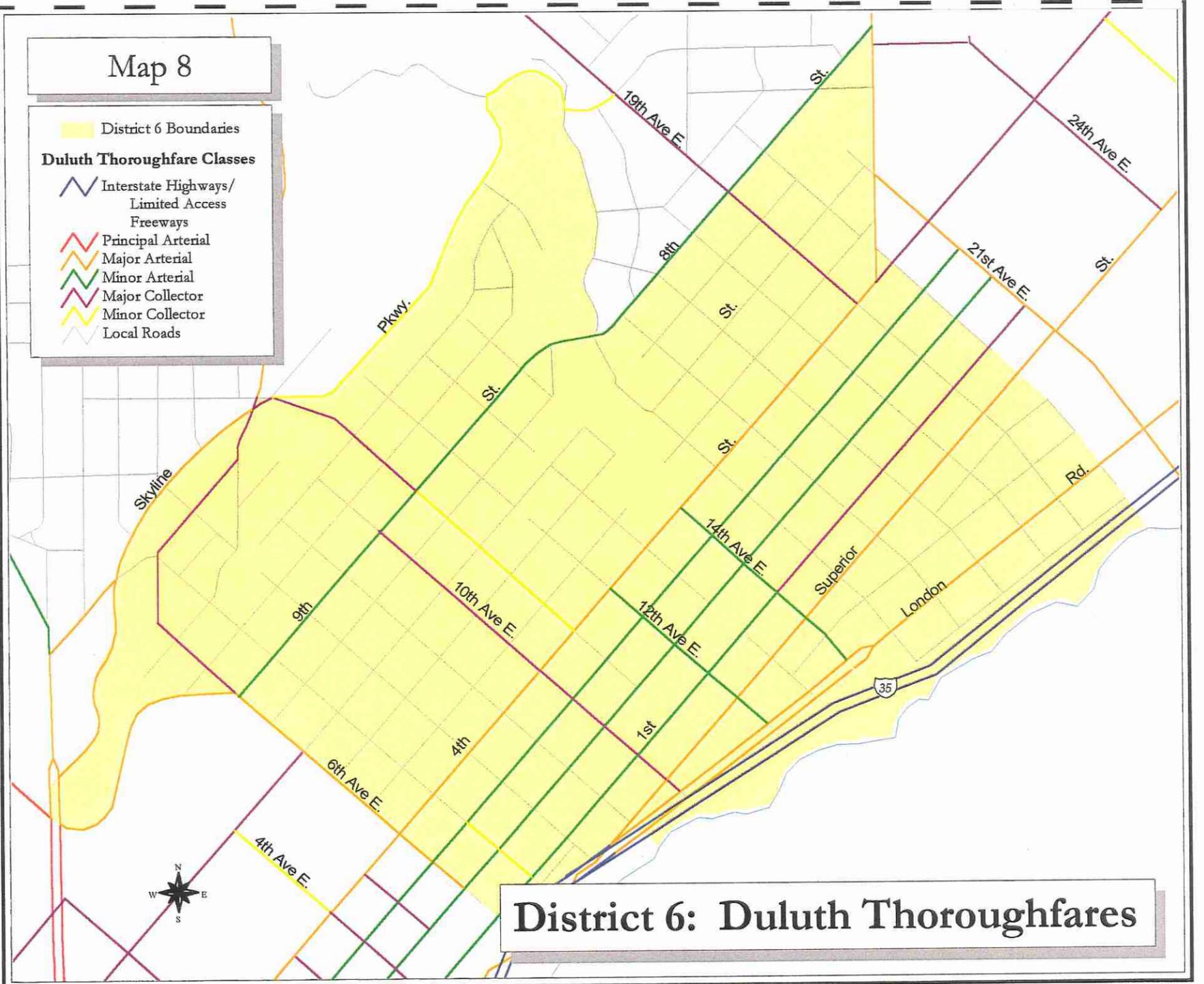
- classified as a major collector
- provides connectivity between 4th Street and College Street
- distributes traffic to local streets in the UMD/Chester Park Area

Map 8

District 6 Boundaries

Duluth Thoroughfare Classes

-  Interstate Highways/
Limited Access
Freeways
-  Principal Arterial
-  Major Arterial
-  Minor Arterial
-  Major Collector
-  Minor Collector
-  Local Roads



District 6: Duluth Thoroughfares

Planning District 7

Planning District 7, which has a 1990 census population of 6,555, is located north and east of District 6. One neighborhood, Congdon Park, is contained within this district. This district is highly residential with commercial areas located along London Road and Superior Street. This district is also the termination area for I-35. Map 9 displays District 7 and its thoroughfares.

Interstate 35 (ADT 36,000)

- classified as an interstate highway/other limited access freeway
- termination point of I-35 at 26th Avenue East
- ramp access to 21st and 26th Avenues East and London Road

Woodland Avenue (ADT 21,000)

- classified as a major arterial
- major throughway to access neighborhoods, businesses in north Duluth, and townships to the north
- connection to the UMD campus
- carries a high volume of traffic

21st Avenue East (ADT 14,850)

- classified as a major arterial
- major route from I-35 to UMD and northern neighborhoods
- serves as a connection to Woodland Avenue, which accesses the Woodland businesses and the UMD campus
- connects to Superior, 1st, 3rd, and 4th Streets, which all function as major or minor arterials

London Road (ADT 12,875)

- classified as major arterial from District 6 to 26th Avenue East and a principal arterial from 26th Avenue East to Planning District 9
- serves as major throughway to the North Shore
- the termination point for traffic coming off of I-35
- serves commercial and residential areas

Superior Street (ADT 8,176)

- classified as a major arterial
- parallel route of London Road that serves as an artery through residential areas
- connector to businesses in the Lakeside and Lester Park neighborhoods

4th Street (ADT 3,120)

- classified as a major collector
- serves as a distributor of traffic to local streets
- provides access to residential areas in the Hidden Valley area
- connection to Duluth East High School

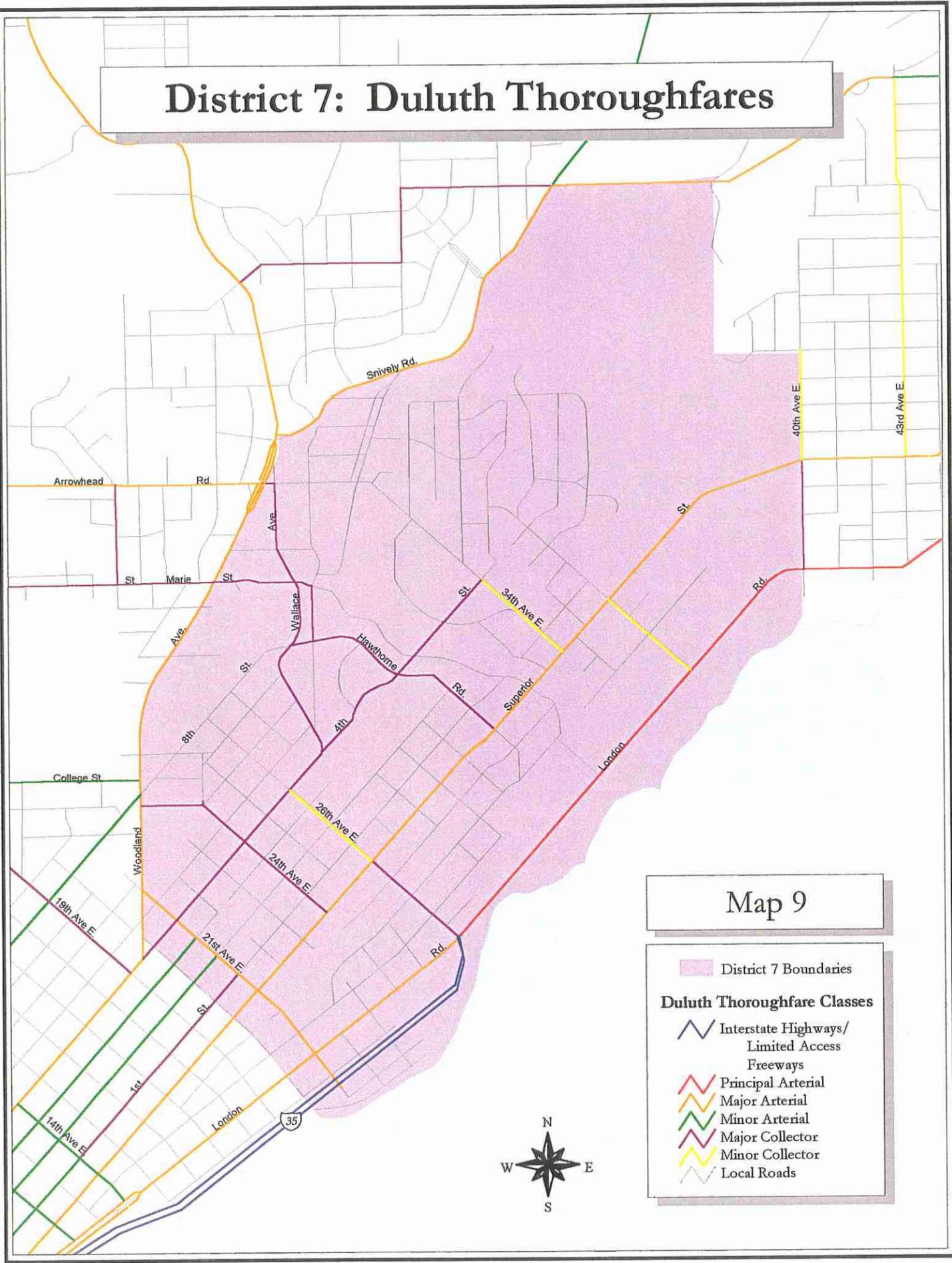
Wallace Avenue (ADT 2,080)

- classified as a major collector
- provides connection between 4th Street and Woodland Avenue
- channels traffic from Woodland Avenue and 4th Street to collectors including St. Marie Street, Vermilion Road, and Hawthorne Road

26th Avenue East (*ADT 1,063*)

- classified as a major collector from London Road to Superior Street and a minor collector from Superior Street to 4th Street
- terminus for traffic off of I-35
- serves as a connector to 4th Street
- collects and distributes traffic in the Congdon Park neighborhood area

District 7: Duluth Thoroughfares



Map 9

- District 7 Boundaries
- Duluth Thoroughfare Classes**
- Interstate Highways/
Limited Access
Freeways
- Principal Arterial
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Roads

Planning District 8

Planning District 8 is located in the extreme north section of the City of Duluth. It contains the neighborhoods of Hunter's Park, Morley Heights/Parkville, Woodland, and parts of Kenwood with a 1990 census population of 8,701. This district is primarily residential and somewhat rural in nature. Map 10 shows District 8 and its thoroughfares.

Arrowhead Road (ADT 18,208)

- classified as a major arterial
- serves as a connection to the Miller Mall area
- facilitates large volumes of traffic

Woodland Avenue (ADT 17,471)

- classified as a major arterial from Arrowhead Road to Calvary Road and a minor collector from Calvary Road to Martin Road
- provides a link from UMD and the lower businesses to neighborhoods and townships to the north
- access to Woodland neighborhoods particularly to the minor collectors of Redwing and Anoka Streets and Maxwell Avenue
- connection to Calvary Road and Rice Lake Township

Snivley Road (ADT 7,700)

- classified as a major arterial
- provides a connection between Glenwood Street and Woodland Avenue
- serves as a segment of the route to Miller Hill Mall area from the eastern neighborhoods

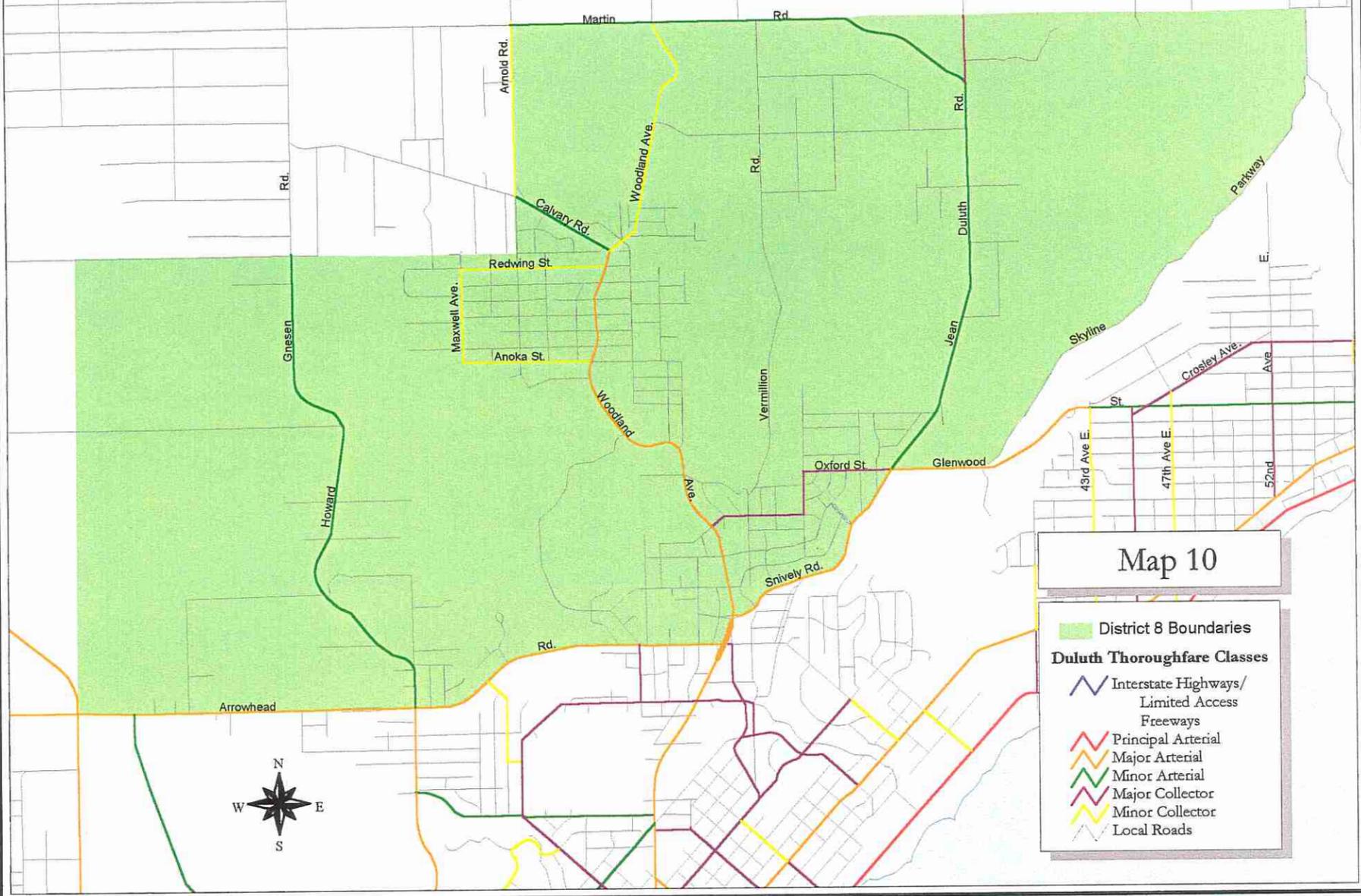
Howard Gnesen Road (ADT 3,611)

- classified as a minor arterial
- serves as the Kenwood Avenue extension to access residential areas in north Duluth and Rice Lake Township

Jean Duluth Road (ADT 3,550)

- classified as a minor arterial
- connection from Duluth to Lakewood and Rice Lake Townships
- distributes traffic to outlying neighborhoods and residences

District 8: Duluth Thoroughfares



Planning District 9

Planning District 9 is located on the extreme northeastern side of Duluth along the North Shore of Lake Superior. District 9 contains the neighborhoods of Lakeside/Lester Park and North Shore, which have a combined 1990 population of 9,086. This district is made up of primarily residential areas with commercial sections dotted along Superior Street. Map 11 displays District 9 and its thoroughfares.

London Road/Trunk Highway 61 (ADT 16,100)

- classified as a principal arterial
- provides throughway to the North Shore and Rohweder Memorial Highway
- connects to collectors along roadway for access to residential areas

Rohweder Memorial Highway/Trunk Highway 61 (ADT 8,100)

- classified as a principal arterial
- limited access thoroughfare to Two Harbors and the North Shore

Glenwood Street (ADT 8,100)

- classified as a major arterial from District 7 and 8 to 43rd Avenue East and a minor arterial from 43rd Avenue East to 60th Avenue East
- serves as the upper connection from Lakeside/Lester Park to Woodland Avenue and the Arrowhead Road corridor

Superior Street (ADT 7,536)

- classified as a major arterial
- provides access to commercial areas along Superior Street
- establishes connections to collectors along the roadway for distribution of traffic into the Lakeside/Lester Park neighborhood
- provides access to Lakeside business district

45th Avenue East (ADT 2,005)

- classified as a major collector
- connector from London Road to Glenwood Street
- distributor of traffic to local streets in Lakeside/Lester Park
- major bus line for the Lakeside/Lester Park area

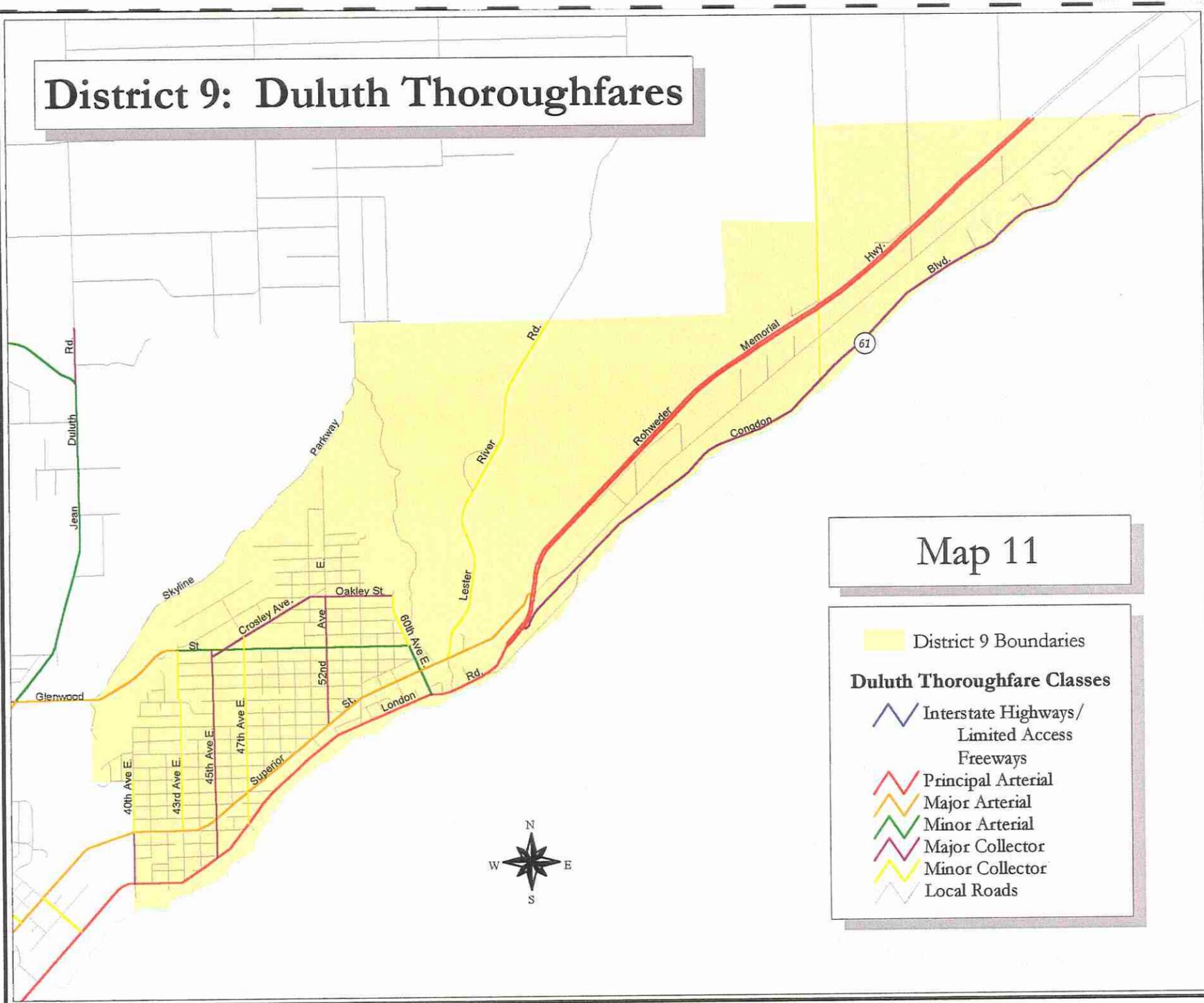
40th Avenue East (ADT 1,300)

- classified as a major collector from London Road to Superior Street and a minor collector from Superior Street to Gladstone Street
- serves as a connection from London Road to Superior Street
- distributes traffic from London Road and Superior Street to local roads in the east Lakeside area

43rd and 47th Avenues East (ADT 1,700; 2,100)

- both classified as minor collectors
- distribute traffic to residential areas in Lakeside/Lester Park
- serve as connections between London Road, Superior Street and Glenwood Street

District 9: Duluth Thoroughfares



Map 11

Duluth Thoroughfare Classes

- Interstate Highways/Limited Access Freeways
- Principal Arterial
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Roads

Planning District 10

Planning District 10 is located directly above Planning District 6. It is bordered by Skyline Parkway, Woodland Avenue, Arrowhead Road, and Rice Lake Road and contains the neighborhoods of Kenwood and UMD/Chester Park. This area also includes large parcels owned by the University of Minnesota-Duluth and the College of Saint Scholastica. The 1990 population of District 10 is 8,187 persons. Map 12 displays District 10 and its thoroughfares.

Arrowhead Road (ADT 18,208)

- classified as a major arterial
- serves as a connection to the Miller Hill area
- facilitates large volumes of traffic

Woodland Avenue (ADT 17,471)

- classified as a major arterial
- provides a link from UMD and the lower businesses to neighborhoods and townships to the north

Kenwood Avenue (ADT 10,393)

- classified as a major arterial
- provides access to residential areas, recreational areas, and the colleges by connecting to College Street, Skyline Parkway, 11th Avenue East, and 13th Street
- serves primarily residential areas along with some commercial zones

College Street (ADT 12,000)

- classified as a minor arterial
- serves a connection between Woodland Avenue and Kenwood Avenue
- provides access to UMD and St. Scholastica and local streets by linking to the major collectors of 19th Avenue East and Junction Avenue

Rice Lake Road (ADT 8,100)

- classified as a minor arterial from Mesaba Avenue to Arrowhead Road
- link between Arrowhead Road and Martin Road
- serves as an access to Rice Lake Township and other townships to the north
- beginning of primary connection to eastern Iron Range communities

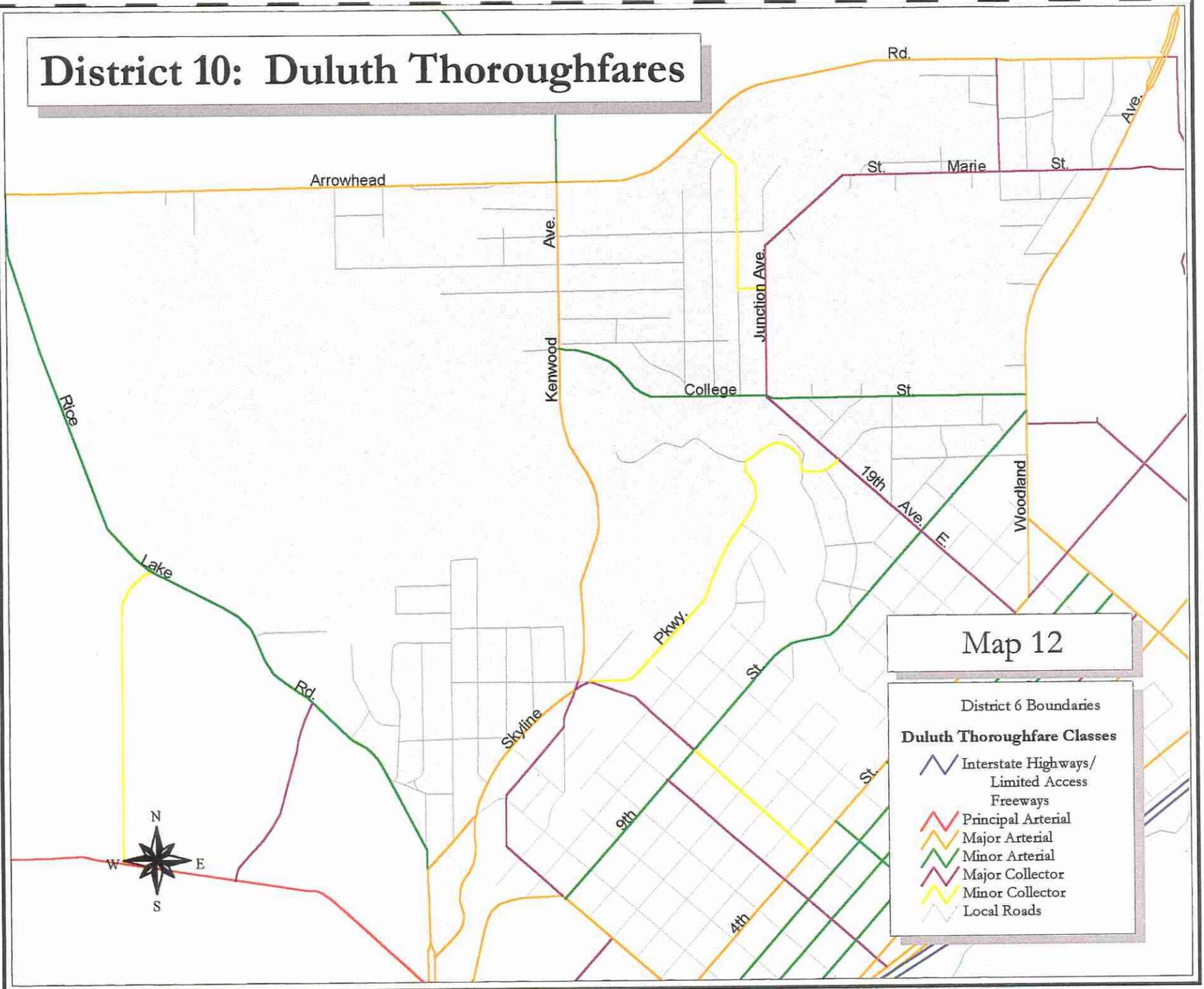
8th and 9th Streets (ADT 6,000)

- both classified as minor arterials
- connection between 6th Avenue East and Woodland Avenue
- serves local streets by providing links to collectors including 10th, 11th, and 19th Avenues East; also direct access to local streets

19th Avenue East (ADT 6,900)

- classified as a major collector
- provides connectivity between 4th Street and College Street
- distributes traffic to local streets in the UMD/Chester Park Area

District 10: Duluth Thoroughfares



CHAPTER 6

CAPACITY ANALYSIS

An important factor in analyzing roadway networks is examining capacity. Capacity analysis addresses subjects such as what quality of service is provided by an existing roadway during peak periods, what future improvements will be needed if traffic increases, and when roadways may need upgrades. Various methods exist to examine roadway capacity and congestion. Two of the more widely used methods are vehicle to capacity ratio and level of service. This chapter includes a description of vehicle to capacity ratio (v/c ratio), level of service (LOS), and capacity deficiencies for the City of Duluth thoroughfares.

Any deliberation of capacity and congestion should include a discussion of what is an acceptable level of congestion. According to the American Association of State Highway and Transportation Officials (AASHTO), the amount of congestion the motoring public is willing to accept is affected by a number of factors. The length of trip, the cost of facility improvement, the size of the urban area and the type of roadway facility all weigh heavily on acceptable levels of congestion.

Motorists will accept higher levels of congestion for shorter trips rather than long but become dissatisfied when roadways reach capacity. The average roadway user will also accept a moderate amount of congestion when the price of alleviating congestion is expensive. Higher levels of congestion are associated with larger urban areas and motorists expect more congestion there than in rural areas and smaller urban areas. Most roadway users understand that the degree of congestion they must endure is directly related to the availability of funding resources to maintain and expand roadway facilities. The following is a description of vehicle to capacity ratios and level of service.

A **v/c ratio** is the volume of traffic divided by the capacity of the roadway. Volume can be described as the amount of traffic that desires to pass a point or segment of roadway and can be measured by average daily traffic (ADT) or in vehicles per hour. The capacity of a roadway reflects its ability to accommodate a moving stream of vehicles. Capacity is normally defined in terms of level of service (LOS).

Level of Service describes vehicle travel in terms of delay by considering factors such as speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are given letter designations from A to F with LOS A representing the best operating conditions and LOS F the worst. The following is a brief description of Levels of Service A-F.

LOS A - Free flow, low traffic density.

LOS B - Stable flow, delay is not unreasonable.

LOS C - Somewhat stable service with partially limited maneuvering ability. Driving conditions are characterized as slightly congested and motorists may experience tension while driving.

LOS D - High-density flow in which speed and freedom to maneuver are severely restricted and comfort and convenience have declined even though flow has remained stable.

LOS E - Unstable flow at or near physical capacity levels with poor levels of comfort and convenience.

LOS F - Forced flow in which the amount of traffic approaching a point exceeds the amount that can be served. Poor travel times, low comfort and convenience, and increased accident exposure characterize this level.

When planning roadways and traffic controls, a design should target a minimum level of service. For most urban arterials in larger urban areas, a level of service D should be maintained. This will insure that there is a consistent traffic flow and that driver tension is held to a minimum. In smaller urban and suburban areas, a slightly better level of service is desired.

Capacity

The traffic modeling software TRANPLAN was utilized to generate the v/c ratios used in this capacity analysis. For the purposes of this study, LOS C was used to determine v/c ratios. A v/c ratio of 1.0 at LOS C means that the roadway is functioning at LOS C or that there is stable but restricted traffic flow with declining comfort levels. A roadway with a v/c ratio of 1.5 or higher can be described as having high-density flow with speed and freedom to maneuver severely restricted and low levels of comfort and convenience. A v/c ratio of 1.5 means that traffic is 50% over the baseline factor of LOS C. Roadways with a v/c ratio of 1.5 or higher should be of greatest concern for future planning and programming efforts.

Three ranges of v/c ratios are used to examine Duluth's roadway network. The higher the v/c ratio, the higher the congestion level. The ranges and their definitions are:

- 1 - 1.249 Roadway may experience slight congestion or capacity deficiency.
- 1.25 -1.499 Roadway is experiencing slight congestion problems.
- 1.5 + Roadway is experiencing high density traffic flow with moderate congestion problems.

Capacity Deficiencies

A base year of 1998 was generated using traffic indicators such as population, employment, housing, and land use. V/C ratios for the years of 1998 and 2020 were examined to find where the Duluth roadway network has traffic deficiencies and where they will exist in the near future. The analysis looks at roadways on a corridor basis to determine areas of deficiency.

1998 Capacity Analysis

The TRANPLAN model identified a number of deficiencies in the Duluth street network for the base year 1998. All deficiencies identified by the model are based on a Level of Service C. Map 13 displays the v/c ratios for 1998. The following is a brief description of the areas with potential capacity deficiencies:

- **Trunk Highway 53 Corridor between Miller Hill Mall and I-35 (Trinity Road and lower Piedmont Avenue)** - Trinity Road may be experiencing slight congestion problems between Miller Hill Mall and Anderson Road. This section of road is currently two lanes and is a segment of the connection from I-35 to the Mall. Lower Piedmont from Six Corners to I-35 is also experiencing slight congestion problems.
- **Fourth Street from Lake Avenue to Woodland Avenue** – Short segments between 2nd Avenue West and Woodland Avenue may be experiencing slight capacity deficiencies.
- **Superior Street from 10th Avenue East to 52nd Avenue East** – Segments within this corridor may be experiencing slight capacity deficiencies.
- **Superior Street from Mesaba Avenue to 4th Avenue East** – This segment's congestion and capacity problems are due primarily to the change from four lanes to two lanes to accommodate angled parking. Superior Street in this area has evolved from a through street to a destination street with added parking to accommodate downtown businesses.

- **London Road from 26th Avenue East to 47th Avenue East** – The segment from the end of the freeway at 26th Avenue East to 40th Avenue East may be experiencing slight capacity deficiencies. The segment from 40th Avenue East to 45th Avenue East is experiencing high-density traffic flow with moderate congestion problems. This corridor is experiences heavy traffic during peak hour and popular weekend holidays and is the primary route through eastern Duluth for increasing numbers of vehicles destined for the North Shore of Lake Superior. Daily commuters from eastern Duluth neighborhoods and adjacent townships also use this route to commute to downtown Duluth.
- **Arrowhead Road from Kenwood Avenue to Woodland Avenue** – This corridor is a residential two-lane road with many driveway access points. It also serves as the connection from eastern neighborhoods to the Miller Hill Mall. The segment between Brainerd Avenue and Woodhaven Lane has high-density traffic flow with moderate capacity problems.
- **21st Avenue East from Superior Street to Woodland Avenue** – This corridor handles high volumes of traffic from I-35 to the UMD area and northern neighborhoods and townships. The street was converted from four lanes to three lanes, creating capacity problems. These lane reconfigurations were necessary to calm traffic through this residential neighborhood.
- **Woodland Avenue from College Street to Oxford Street** – Segments of this corridor may experience slight capacity problems.
- **Grand Avenue from I-35 to 75th Avenue West** – This roadway may experience slight capacity problems caused primarily by access issues. There are a large number of cross streets that connect at odd angles causing access problems on Grand Avenue.

2020 Capacity Analysis

The TRANPLAN model identified a number of deficiencies in the Duluth street network for the year 2020. All deficiencies identified by the model are based on a Level of Service C. Map 14 displays the v/c ratios for the year 2020. The following is a brief description of the areas identified with capacity deficiencies in the year 2020:

- **Trunk Highway 53 Corridor between Miller Hill Mall and I-35 (Trinity Road and lower Piedmont Avenue)** - Trinity Road will experience high density traffic flow with moderate capacity problems between Miller Hill Mall and Anderson Road. Lower Piedmont Avenue will experience slight capacity problems from Six Corners intersection to I-35.
- **Fourth Street from 2nd Avenue West to Woodland Avenue** – This corridor shows minor capacity deficiencies.
- **Superior Street from 10th Avenue East to Lester River Road** – The corridor will have segments with minor capacity problems.
- **Superior Street from Mesaba Avenue to 4th Avenue East** – This segment will experience high-density traffic flow with moderate congestion problems.
- **London Road from 26th Avenue East to Divided Trunk Highway 61** – The segment from 40th Avenue East to 47th Avenue East will experience high-density traffic flow with moderate capacity problems.
- **Arrowhead Road from Kenwood Avenue to Woodland Avenue** – This entire segment will experience high-density traffic flow.
- **21st Avenue East from Superior Street to Woodland Avenue** –The roadway will continue to experience high-density traffic flow.

- **27th Avenue West from I-35 to Superior Street** – This short segment will experience high-density traffic flow.
- **Rice Lake Road from Arrowhead Road to the city limits** – This corridor will experience slight capacity problems, which reflects the projected growth of adjacent townships.
- **Woodland Avenue from College Street to Oxford Street** – The short segment from Arrowhead Road to Snively Road will experience high-density traffic flow.
- **Haines Road from Highway 53 to Airport Road** – This roadway will experience high-density traffic flow due to projected growth in the Airpark Industrial area.
- **Grand Avenue from I-35 to 75th Avenue West** – This corridor may experience slight capacity problems caused primarily by access issues.

This capacity deficiency analysis provides a tool to analyze future travel demand. The identification of capacity deficiencies helps communities identify roadway segments and corridors in their roadway network in need of capacity expansions and improvements.

Map #13 1998 Volume to Capacity Ratios

Volume to Capacity Ratio

 1 - 1.249
(may be experiencing slight congestion)

 1.25 - 1.499
(may be experiencing mild congestion)

 1.5 +
(may be experiencing moderate congestion)

 Model Roadway Network

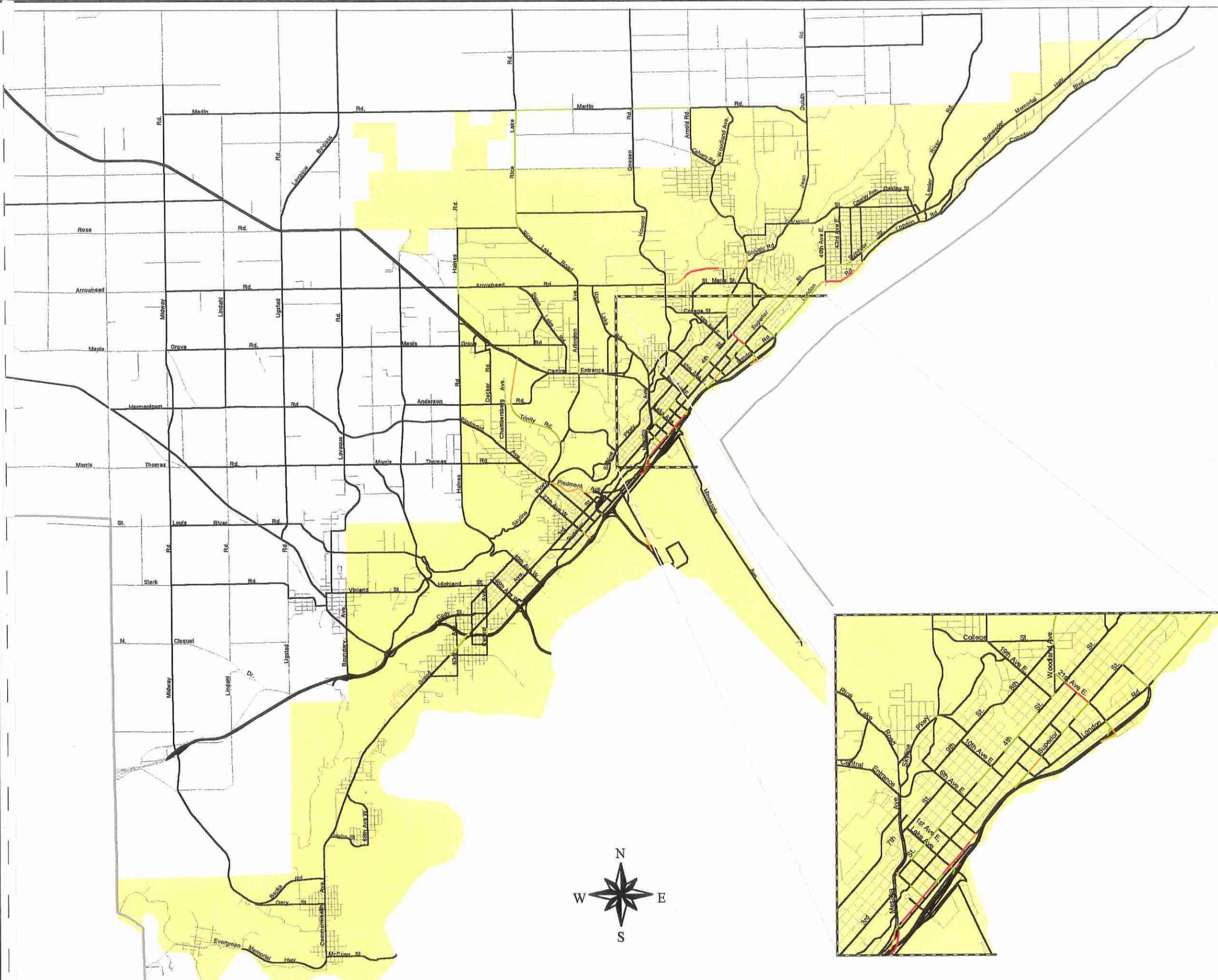
 Non-Modeled Roadway Network

Capacity based on
Level of Service C

Example: Arrowhead Road Segment
(Brainerd Avenue to Woodhaven Lane)

$$v/c = \frac{5724 \text{ volume}}{3800 \text{ roadway capacity}} = 1.51 \text{ volume to capacity ratio}$$

Duluth Thoroughfare Plan



CHAPTER 7

TRUCK ROUTES

Map 15 on the following page displays the existing designated truck routes for the City of Duluth. Truck route information is important in forming the basis for a functional class system. A majority of truck routes are located on interstate highways, other limited access freeways, primary arterials, major arterials, and minor arterials. These types of limited access roadways not only function to move truck traffic efficiently, they are also constructed to handle the excess weight and capacity trucks often introduce to the roadway.

It should also be noted that according to state rules, all routes that receive State Aid funding must be permitted to allow trucks unless weight restrictions exist. However, while all trunk highways, and county- and municipal-state aid routes are technically on the truck route system, certain routes provide safer and more efficient connections for trucks moving around and through the City of Duluth. As a result, a designated truck route system was developed to encourage truck drivers to use roads that were deemed safer to use and were considered to provide the most direct routes to and through the metropolitan area.

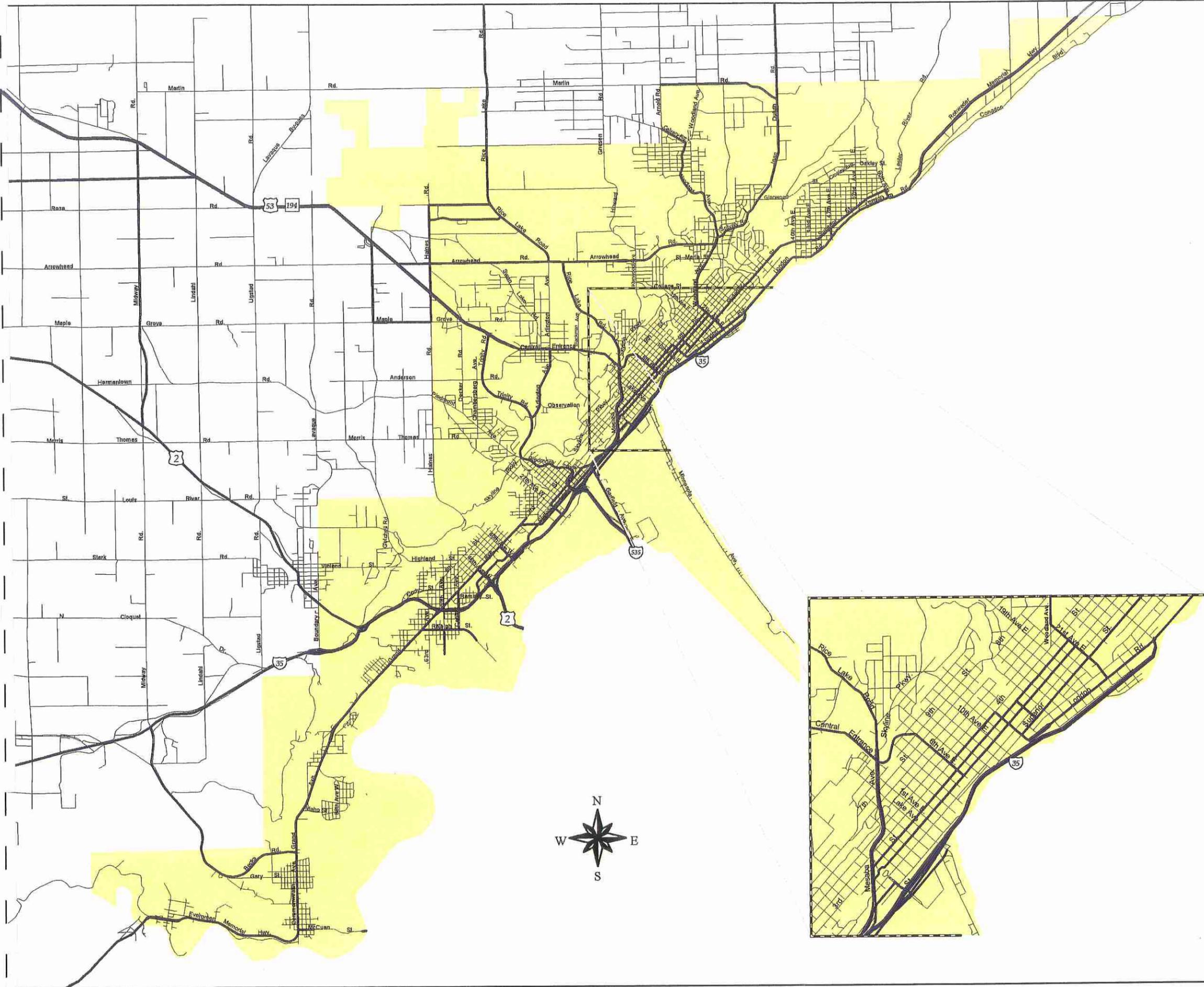
In March of 1997, the Metropolitan Interstate Committee (MIC) reviewed and analyzed the area's designated truck route system as a part of the Duluth-Superior Metropolitan Freight Movement Study. The purpose of the analysis was to evaluate the connectivity of the area's truck routes. In essence, it was an attempt to identify whether trucks can efficiently move through the Duluth-Superior area and can reach their destinations within the area. The study also attempted to identify how many and where the trucks are moving, and what the most direct connections within the area via the local system might be. This information was then utilized to propose changes to the truck route system that would improve the connectivity and efficiency of the route. These proposals have not yet been approved by the appropriate jurisdictions, however a list of deletions and additions to the system is included in the Freight Movement Study.

This review of the truck route system in the Duluth-Superior Metropolitan Freight Movement Study was used as a guideline for the Duluth Thoroughfare Plan. The analysis done for the Duluth Thoroughfare Plan included locating the truck routes within the city and comparing them to the functionality of the roadway. This truck route information was utilized as one criterion for determining the actual function of the roadways that have routes located on them. The database that was developed notes the segments of roadways that are part of the truck route system.

The results of this analysis indicate that all designated truck routes are located on Duluth's thoroughfares as established in this plan. These roadways provide adequate connectivity, efficient movement, and a direct route through and around the City of Duluth.

Map #15 Designated Truck Routes in the Duluth Area

-  Designated Truck Routes
-  Local Roadways
-  City of Duluth



**Duluth
Thoroughfare
Plan**



CHAPTER 8

FUTURE ROADWAYS

Martin Road Connector

Martin Road is the major east/west arterial running north of the Duluth city limits. This roadway functions as a minor arterial connecting Jean Duluth Road and Woodland Avenue to Trunk Highway 53 and Midway Road. Potentially, the Martin Road Connector could be used as a bypass around Duluth neighborhoods by connecting Trunk Highway 53, Midway Road, and the north and west parts of Duluth to Trunk Highway 61 in the northeast. The Martin Road Connector is identified in the 1998-2020 MIC Long Range Transportation Plan Update as a potential project for further study.

46th Avenue West Connector

Forty-sixth Avenue West is a major link from Trunk Highway 2 and I-35 to Grand Avenue in District #2. It also functions as a collector to the residential areas north of Grand Avenue to 8th Street. The major problem with this roadway is its continuing connectivity to Haines Road and the Miller Hill Corridor. The 46th Avenue West Connector, a St. Louis County proposal, would allow for improved access to these areas. The roadway itself would link 46th Avenue West at 8th Street to the hairpin turn on 40th Avenue West. Realignment of 40th Avenue West has also been considered; however, due to the topography along the roadway, construction is nearly impossible. The 1998-2020 MIC Long Range Transportation Plan Update identifies this project as a potential project for further study.

Trinity Road Extension

The 1986, 1995, and 1998-2020 MIC Long Range Transportation Plans and the 1995 Miller Hill Corridor Study proposed construction of a new arterial or collector street to carry traffic from the east and northeast Duluth neighborhoods to the Miller Hill Mall commercial area. Previously known as Joshua Avenue, the proposed Trinity Road Extension would function as an arterial that would connect Arrowhead Road to the north, with Trunk Highway 53/Central Entrance/Trinity Road to the south. The 1995 Miller Hill Corridor Study identified three reasons to justify the need for this Trinity Road Extension. The first is to reduce the roadway connector deficiency from Central Entrance to Arrowhead Road. The only existing roadway connections are Haines Road and Arlington Avenue. The second reason is to relieve congestion and reduce Vehicle Miles Traveled (VMT). Finally, the third reason is to eliminate cut through traffic in the adjoining neighborhoods.

Kenwood Connector

The 1995 and 1998-2020 MIC Long Range Transportation Plans recognize the Kenwood Connector as a potential project for further study. The Kenwood Connector would provide a direct connection from the Kenwood-East Hillside neighborhood areas to downtown via 6th Avenue East. Currently, the streets of 6th Avenue East and East 13th Street function as this connection. The construction of the connector or improvements made to the existing roadways could potentially increase traffic on 6th Avenue East, thus putting more pressure on that corridor. Both Long Range Plans recommend maintaining ongoing analysis of the proposed corridor's potential and need.

East Duluth Arterial

The East Duluth Arterial would improve safety and capacity deficiencies on London Road and Superior Street by connecting the North Shore with I-35 and downtown Duluth. This corridor would run parallel to both streets, functioning as a throughway for traffic to and from the North Shore. It would divert this traffic from London Road and Superior Street, potentially making these roadways more like residential streets. However, an East Duluth Arterial would have community impacts and would be very costly to construct. The 1995 Long Range Transportation Plan recommends ongoing analysis of the corridor's potential and need.

Appendix

Duluth Thoroughfare Plan

The following pages contain the Duluth Thoroughfare Plan Appendix. Displayed in this section are the roadways that fall into each functional classification that was developed in this plan. Each classification section contains the street name, its beginning and ending point (terminus), the jurisdiction that maintains the roadway, the roadway segment length in miles, and the average daily traffic along the roadway. It should be noted that the same roadway might be listed in two or more functional classes. This occurs because various sections of the particular roadway may have a different functional class.

At the end of the Appendix is a map displaying the functional classifications of each roadway along with Average Daily Traffic (ADT) counts. A majority of these counts originated from the City of Duluth Street Inventory. The remaining ADTs were taken from Minnesota Department of Transportation records. These counts were applied to the Interstate Highway/Other Limited Access Freeways and to the Trunk Highways.

Duluth Thoroughfare Plan

Roadways Classified as Interstates/Other Limited Access Freeways

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
HWY #2	City Limits to I-35	State	1.00	11,172
I-35	Boundary Ave to 26th Ave E	Fed/MNDOT	9.82	15,382
I-535	City Limits to I-35	Fed/MNDOT	1.73	24,250

Map #14 2020 Volume to Capacity Ratios

Volume to Capacity Ratio

 1 - 1.249
(minor congestion)

 1.25 - 1.499
(minor--moderate congestion)

 1.5 +
(moderate--high congestion)

 Model Roadway Network

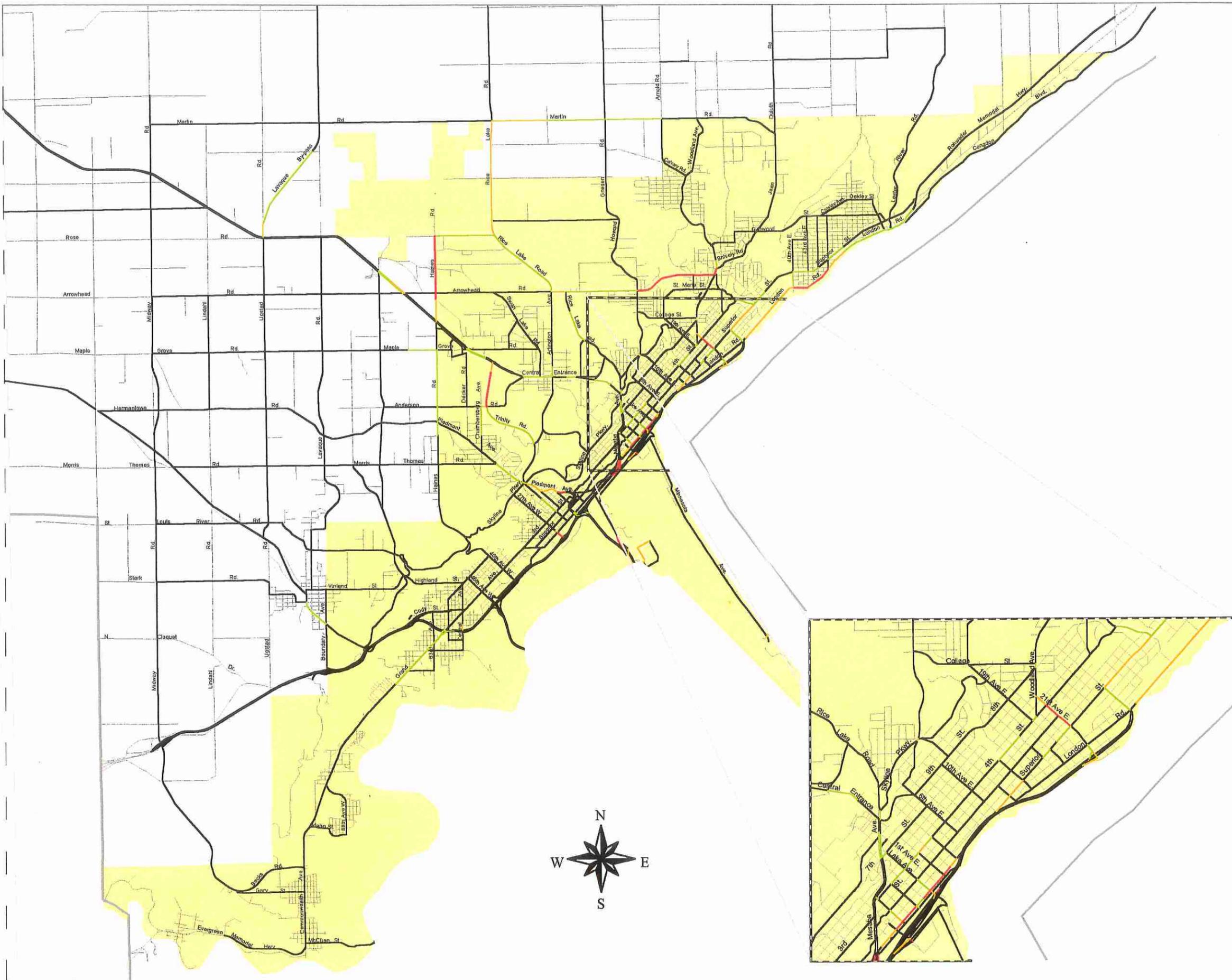
 Non-Modeled Roadway Network

Capacity based on
Level of Service C

Example: Arrowhead Road Segment
(Kenwood Avenue to Woodland Avenue)

$$v/c = \frac{6364 \text{ volume}}{3800 \text{ roadway capacity}} = 1.67 \text{ volume to capacity ratio}$$

Duluth Thoroughfare Plan



Duluth Thoroughfare Plan

Roadways Classified as Principal Arterials

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Central Entrance	Haines Rd to Mesaba Ave	MNDOT	3.71	9,347
Commonwealth Ave	1022' S of Prescott St to Grand Ave	City/MNDOT	2.17	4,278
Congdon Blvd	Bridge Proper to Rohweder Mem Hwy	MNDOT	0.61	6,688
Evergreen Mem Hwy	South End to McCuen St	MNDOT	3.06	1,970
Grand Ave	Commonwealth Ave I-35 Underpass	MNDOT	4.53	11,635
HWY #2	I-35 to Boundary Ave	MNDOT	1.07	11,172
HWY #53	I-35 to Piedmont Ave	MNDOT	0.58	10,178
London Rd	26th Ave to 60th Ave E	MNDOT	3.42	8,869
Mesaba Ave	Michigan St to Central Ent	MNDOT	1.23	7,477
Piedmont Ave	Skyline Pkwy to TH #53 Ramp	MNDOT	0.87	11,484
Rohweder Mem Hwy	Congdon Blvd to City Limits	MNDOT	3.95	5,614
Trinity Rd	Skyline Pkwy to Central Ent	MNDOT	2.71	9,648

Duluth Thoroughfare Plan

Roadways Classified as Major Arterials

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Arlington Ave	Central Ent to Arrowhead Rd	County	1.49	7,000
Arrowhead Rd	Haines Rd to Woodland Ave	County/City	4.99	11,819
Canal Park Dr	Railroad St to Superior St	City	0.16	7,849
Carlton St	Grand Ave to Superior St	City	0.33	5,050
Central Entrance Dr	9th St to Mesaba Ave	City	0.45	14,400
Glenwood St	Snivley Rd to 43rd Ave E	City	0.96	8,100
Grand Ave	I-35 Underpass to Carlton St	City	1.99	10,386
Haines Rd	Piedmont Ave to Arrowhead Rd	County	2.24	7,120
Kenwood Ave	Martha St to Arrowhead Rd	City	1.17	9,297
Lake Ave	Superior St to 7th St	City	0.49	6,917
London Rd	Superior St to 26th Ave E	City	1.45	11,925
Maple Grove Rd	Haines Rd to Central Ent	County	0.57	7,610

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Mesaba Ave	Central Ent to 13th St	County	0.26	7,213
Piedmont Ave	Haines Rd to Skyline Pkwy	County	1.90	5,977
Rice Lake Rd	Arrowhead Rd to City Limits	County	2.48	6,240
Skyline Pkwy	11th St to Kenwood Ave	City	0.64	4,100
Snively Rd	Woodland Ave to Glenwood St	County	1.09	7,529
Superior St	Carlton St to 27th Ave W	City	0.39	4,989
Superior St	Mesaba Ave Overpass to TH #61	City	7.17	11,086
Woodland Ave	4th St to Calvary Rd	City/County	3.39	13,760
4th Street	Lake Ave to Woodland Ave	City/County	1.72	8,626
6th Ave E	2nd St to 9th St	City	0.50	11,249
7th Street	Mesaba Ave to Lake Ave	City	0.07	1,176
11th Street	Mesaba Ave to Skyline Pkwy	City	0.11	3,050
13th Street	Mesaba Ave to Skyline Pkwy	City	0.15	1,664
21st Ave E	I-35 Bridge to Woodland Ave	City	0.73	10,242

Duluth Thoroughfare Plan

Major Arterials

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
27th Ave W	I-35 to Superior St	City	0.17	13,077
40th Ave W	Oneota St to Grand Ave	City	0.33	4,312
46th Ave W	Bong Bridge to Grand Ave	City	0.28	4,350

Duluth Thoroughfare Plan

Roadways Classified as Minor Arterials

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Airport Rd	Haines Rd to Rice Lake Rd	City	1.04	1,151
Arlington Ave	Trinity Rd to Central Ent	County	1.33	4,100
Becks Rd	City Limits to Commonwealth Ave	County	1.93	1,300
Boundary Ave	I-35 Overpass to Vinland St	County	1.48	2,739
Calvary Rd	Arnold Rd to Woodland Ave	County	0.48	4,067
Central Ave	Raleigh St to Highland St	City	1.18	5,437
Cody St	I-35 to Grand Ave	MNDOT/City	1.00	3,873
College St	Kenwood Ave to Woodland Ave	City	1.09	9,650
Decker Rd	Piedmont Ave to Mall Dr	City	1.43	4,637
Getchell Rd	Skyline Pkwy to City Limits	County	1.09	2,350
Glenwood St	43rd Ave E to 60th Ave E	City	1.26	3,900
Haines Rd	Skyline Pkwy to Piedmont Ave	County	2.44	3,409
Haines Rd	Arrowhead Rd to Airport Rd	County	1.00	3,924
Highland St	Skyline Pkwy to 59th Ave W	County	1.07	3,124
Howard Gnesen Rd	Kenwood Ave to City Limits	County	2.23	3,416
Jean Duluth Rd	Glenwood St to Martin Rd	County	1.76	3,178

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Kenwood Ave	Arrowhead Rd to Howard Gnesen	County	0.16	6,048
Mall Dr	Decker Rd to Maple Grove Rd	City	0.19	8,774
Martin Rd	City Limits to Jean Duluth Rd	County	2.57	985
McCuen St	Commonwealth Ave to State Line	MNDOT	1.08	976
Morris Thomas Rd	Haines Rd to Piedmont Ave	County	0.99	1,925
Rice Lake Rd	13th St to Sawyer Ave	County	1.71	5,128
1st Street	Mesaba Ave to 14th Ave E	City	1.89	7,971
2nd Street	Mesaba Ave to 21st Ave E	City	2.43	10,019
3rd Street	Mesaba Ave to 21st Ave E	City	2.36	5,860
4th Street	Mesaba Ave to Lake Ave	City	0.43	3,780
8th Street	Bridge to Woodland Ave	City	0.73	4,833
9th Street	6th Ave E to Chester Pk Bridge	City	0.79	5,587
12th Ave E	London Rd to 4th St	City	0.35	5,202
14th Ave E	London Rd to 4th St	City	0.38	3,760
40th Ave W	Grand Ave to Skyline Pkwy	County	1.05	3,659
60th Ave E	London Rd to Glenwood St	City	0.28	2,207

Duluth Thoroughfare Plan

Roadways Classified as Minor Arterials

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Airport Rd	Haines Rd to Rice Lake Rd	City	1.04	1,151
Arlington Ave	Trinity Rd to Central Ent	County	1.33	4,100
Becks Rd	City Limits to Commonwealth Ave	County	1.93	1,300
Boundary Ave	I-35 Overpass to Vinland St	County	1.48	2,739
Calvary Rd	Arnold Rd to Woodland Ave	County	0.48	4,067
Central Ave	Raleigh St to Highland St	City	1.18	5,437
Cody St	I-35 to Grand Ave	MNDOT/City	1.00	3,873
College St	Kenwood Ave to Woodland Ave	City	1.09	9,650
Decker Rd	Piedmont Ave to Mall Dr	City	1.43	4,637
Getchell Rd	Skyline Pkwy to City Limits	County	1.09	2,350
Glenwood St	43rd Ave E to 60th Ave E	City	1.26	3,900
Haines Rd	Skyline Pkwy to Piedmont Ave	County	2.44	3,409
Haines Rd	Arrowhead Rd to Airport Rd	County	1.00	3,924
Highland St	Skyline Pkwy to 59th Ave W	County	1.07	3,124
Howard Gnesen Rd	Kenwood Ave to City Limits	County	2.23	3,416
Jean Duluth Rd	Glenwood St to Martin Rd	County	1.76	3,178

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Kenwood Ave	Arrowhead Rd to Howard Gnesen	County	0.16	6,048
Mall Dr	Decker Rd to Maple Grove Rd	City	0.19	8,774
Martin Rd	City Limits to Jean Duluth Rd	County	2.57	985
McCuen St	Commonwealth Ave to State Line	MNDOT	1.08	976
Morris Thomas Rd	Haines Rd to Piedmont Ave	County	0.99	1,925
Rice Lake Rd	13th St to Sawyer Ave	County	1.71	5,128
1st Street	Mesaba Ave to 14th Ave E	City	1.89	7,971
2nd Street	Mesaba Ave to 21st Ave E	City	2.43	10,019
3rd Street	Mesaba Ave to 21st Ave E	City	2.36	5,860
4th Street	Mesaba Ave to Lake Ave	City	0.43	3,780
8th Street	Bridge to Woodland Ave	City	0.73	4,833
9th Street	6th Ave E to Chester Pk Bridge	City	0.79	5,587
12th Ave E	London Rd to 4th St	City	0.35	5,202
14th Ave E	London Rd to 4th St	City	0.38	3,760
40th Ave W	Grand Ave to Skyline Pkwy	County	1.05	3,659
60th Ave E	London Rd to Glenwood St	City	0.28	2,207

Duluth Thoroughfare Plan

Roadways Classified as Major Collectors

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Anderson Rd	Haines Rd to Central Ent	City	1.83	1,949
Arbor St	Grand Ave to 88th Ave W	City	0.35	3,100
Arrowhead Rd	Woodland Ave to Wallace Ave	County	0.03	3,893
Basswood Ave	Central Ent to Mulberry St	City	0.22	1,800
Bristol St	Grand Ave to Ramsey St	City	0.04	5,800
Buffalo St	Junction Ave to University Cir	City	0.22	1,368
Canal Park Dr	Railroad St to .03 N'LY	City	0.03	7,893
Carlton St	Superior St to Michigan St	City	0.09	1,685
Carver Ave	St. Marie St to Arrowhead Rd	City	0.23	5,100
Chambersburg Ave	Piedmont Ave to Piedmont Ave	City	1.01	2,200
Colalillo Dr	End New Const to 46th Ave W	City	0.49	1,928
Congdon Blvd	Rohweder Mem Hwy to City Limits	City	4.38	2,750
Cottonwood Ave	Central Ent to Maple Grove Rd	City	0.15	3,400
Crosley Ave	45th Ave E to Oakley St	City	0.61	1,467

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<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Eklund Ave	Maple Grove Rd to Swan Lake Rd	City	0.54	1,668
Frontage Rd-Hardees	Cottonwood Ave to Joshua Ave	City	0.17	0
Frontage Rd-North	5th Ave W to 1st Ave E	City	0.54	0
Garfield Ave	N Edge Bridge to Superior St	City	1.26	4,659
Gary St	Becks Rd to Commonwealth Ave	City	1.17	1,811
Glenwood St	Livingston Ave to Snivley Rd	City	0.38	1,500
Hawthorne Rd	Superior St to Wallace Ave	City	0.61	1,663
Idaho St	Grand Ave to 88th Ave W	City	0.72	506
Jean Duluth Rd	Martin Rd to City Limits	County	0.28	2,805
Jenswold St	Michigan St to Superior St	City	0.07	1,140
Junction Ave	College St to Buffalo St	City	0.37	4,800
Kent Rd	Woodland Ave to 24th Ave E	City	0.16	2,219
Kenwood Ave	13th St to Martha St	City	0.12	0
Lake Ave	12th St Diagonal to Railroad St	City	0.76	7,127
Livingston Ave	Oxford St to Glenwood St	City	0.18	1,700
Mall Dr	Maple Grove Rd to Haines Rd	City	0.62	0

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Maple Grove Rd	Central Ent to Swan Lake Rd	City	1.26	1,410
Michigan St	46th Ave W Conn to 3rd Ave E	City	3.83	4,142
Minnesota Ave	Sky Harbor to 13th St S	City	3.89	3,696
Mulberry St	Basswood Ave to Arlington Ave	City	0.15	1,100
Oakley St	Crosley Ave to 58th Ave E	City	0.46	650
Observation Rd	Arlington Ave to Skyline Pkwy	City	1.09	0
Oldenburg Pkwy	City Limits to TH #23	MNDOT	2.09	255
Oneota St	40th Ave W to 37th 1/2 Ave W	City	0.12	1,350
Oxford St	Woodland Ave to Livingston Ave	City	0.43	2,100
Pecan Ave	Central Ent to Rice Lake Rd	City	0.45	1,700
Piedmont Ave	1st St to Superior St	City	0.14	1,707
Railroad St	Garfield Ave to Canal Pk Dr	City	1.60	3,602
Raleigh St	Grand Ave to Central Ave	City	0.64	1,967
Ramsey St	Bristol St to Colalillo Dr	City	0.39	2,213
Skyline Pkwy	Haines Rd to 9th St	City	4.23	1,649
St. Marie St	University Cir to Vermillion Rd	City	0.85	6,436

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Superior St	1st St to Carlton St	City	0.46	1,140
Superior St	27th Ave W to Michigan St	City	1.25	4,980
Swan Lake Rd	Basswood Ave to Arrowhead Rd	City	1.66	1,014
Truck Center Dr	Carlton St to 30 1/2 Ave W	City	0.25	0
Vermilion Rd	Hawthorne Rd to St. Marie St	City	0.15	0
Vinland St	Boundary Ave to Getchell Rd	City	1.52	1,649
Wallace Ave	4th St to Arrowhead Rd	County	0.76	1,960
1st Street	46th Ave W to Mesaba Ave	City	2.46	1,873
1st Street	14th Ave E to 21st Ave E	City	0.62	2,700
1st Ave E	Michigan St to 9th St	City	0.66	2,117
1st Ave W	Michigan St to 4th St	City	0.31	1,908
2nd Ave E	Michigan St to 4th St	City	0.31	1,730
2nd Ave W	Michigan St to 4th St Ramp	City	0.38	2,467
3rd Street	Carlton St to Mesaba Ave	City	1.63	4,417
3rd Ave E	Michigan St to 4th St	City	0.31	1,843
3rd Ave W	N Frontage Rd to 4th St	City	0.36	1,958

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
4th Street	Woodland Ave to 34th Ave E	County/City	1.31	2,239
4th Ave E	Superior St to 4th St	City	0.28	1,471
4th Ave W	Michigan St to Mesaba Ave	City	0.37	4,096
5th Ave E	2nd St to 4th St	MNDOT/City	0.14	0
5th Ave W	Harbor Drive to 1st St	City	0.43	4,685
6th Ave E	Central Ent to 13th St	City	0.29	2,693
6th Ave W	Michigan St to 2nd St	City	0.18	3,341
7th Street	Lake Ave to 6th Ave E	City	0.53	1,503
8th Street	59th Ave W to 40th Ave W	City	1.06	1,707
9th Street	Skyline Pkwy to Mesaba Ave	City	0.28	0
10th Ave E	London Rd to 9th St	City	0.67	3,071
10th Ave W	3rd St to Skyline Pkwy	City	0.33	1,916
11th Ave E	9th St to Skyline Pkwy	City	0.28	1,260
12th Street S Diag	Minnesota Ave to Lake Ave S	City	0.10	3,518
13th Street	7th Ave E to Kenwood Ave	City	0.20	2,164
19th Ave E	Superior St to College St	City	1.02	3,543

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
19th Ave W	Michigan St to 1st St	City	0.11	1,900
19th Ave W Conn	1st St to 3rd St	City	0.18	0
20th Ave W	Michigan St to 1st St	City	0.11	1,659
21st Ave W	Michigan St to 3rd St	City	0.25	3,685
24th Ave E	Superior St to 6th St	City	0.42	2,522
24th Ave W	Michigan St to Skyline Pkwy	City	1.01	3,295
26th Ave E	London Rd to Superior St	City	0.30	1,063
27th Ave W	Superior St to Skyline Pkwy	City	0.97	3,025
37th 1/2 Ave W	Oneota St to Michigan St	City	0.07	1,403
40th Ave E	London Rd to Superior St	City	0.27	1,300
45th Ave E	London Rd to Glenwood St	City	1.13	1,490
46th Ave W	Grand Ave to 8th St	City	0.34	4,500
52nd Ave E	Superior St to Oakley St	City	0.69	1,300
59th Ave E	Raleigh St to Highland St	City	1.19	2,360
88th Ave W	Idaho St to Arbor St	City	0.68	2,640

Duluth Thoroughfare Plan

Roadways Classified as Minor Collectors

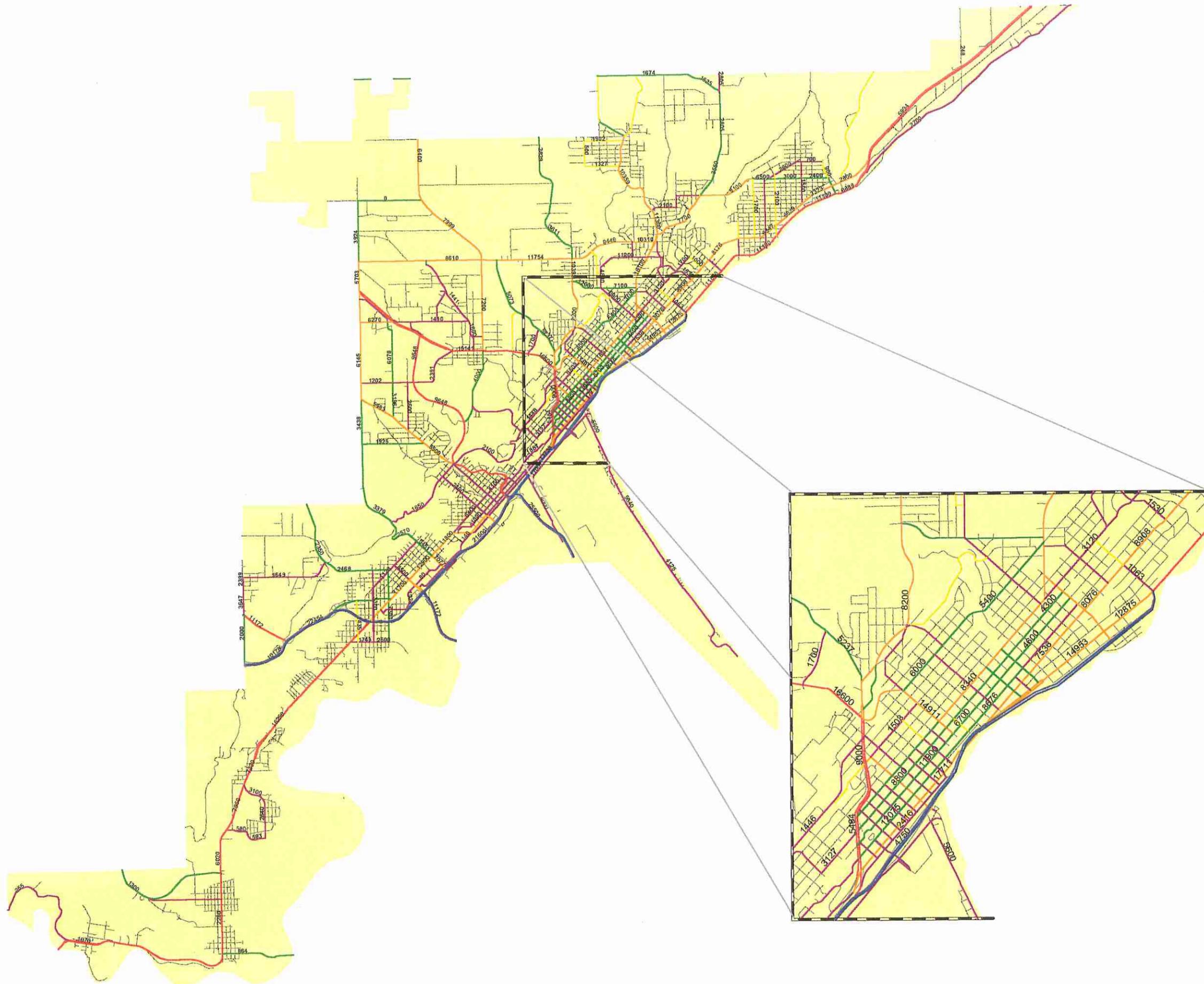
<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
Anoka St	Maxwell Ave to Woodland Ave	City	0.56	1,327
Arnold Rd	Calvary Rd to Martin Rd	County	0.77	1,500
Blackman Ave	Central Ent to Rice Lake Rd	City	0.68	823
Brainerd Ave	West Griggs Pl to Arrowhead Rd	City	0.52	756
Kent Rd	Chester Park Dr to 19th Ave E	City	0.09	1,700
Lakewood Rd	Congdon Blvd to City Limits	City	1.38	248
Lester River Rd	Superior St to City Limits	County	2.01	1,145
Maxwell Ave	Anoka St to Redwing St	City	0.42	500
Redwing St	Maxwell Ave to Woodland Ave	City	0.64	1,902
Skyline Pkwy	Kenwood Ave to Chester Pk Dr	City	0.88	915
W Griggs Pl	Brainerd Ave to Junction Ave	City	0.11	0
Woodland Ave	Calvary Rd to Hubbell St	City	1.13	1,881
4th Ave E	4th St to 7th St	City	0.21	1,304
7th Street	Skyline Pkwy to Mesaba Ave	City	0.39	500

<i>STREETNAME</i>	<i>TERMINUS</i>	<i>JURISDICTION</i>	<i>SEGMENT LENGTH (MILES)</i>	<i>AVERAGE DAILY TRAFFIC</i>
7th Ave E	1st St to 3rd St	City	0.21	0
11th Ave E	4th St to 9th St	City	0.35	926
26th Ave E	Superior St to 4th St	City	0.28	318
34th Ave E	Superior St to 4th St	City	0.28	1,000
36th Ave E	London Rd to Superior St	City	0.28	650
40th Ave E	Superior St to Gladstone St	City	0.29	965
43rd Ave E	Superior St to Glenwood St	City	0.97	1,700
47th Ave E	London Rd to Crosley Ave	City	1.00	1,350
58th Ave E	60th Ave E to Oakley St	City	0.08	800
60th Ave E	Glenwood St to 58th Ave E	City	0.21	820
63rd Ave W	Raleigh St to Cody St	City	0.68	1,296

Map A Average Daily Traffic (ADT) Counts

Functional Classes

-  Interstate highways/
Limited Access
Freeways
-  Principal Arterial
-  Major Arterials
-  Minor Arterials
-  Major Collectors
-  Minor Collector
-  Local Roads
-  City of Duluth



**Duluth
Thoroughfare
Plan**

