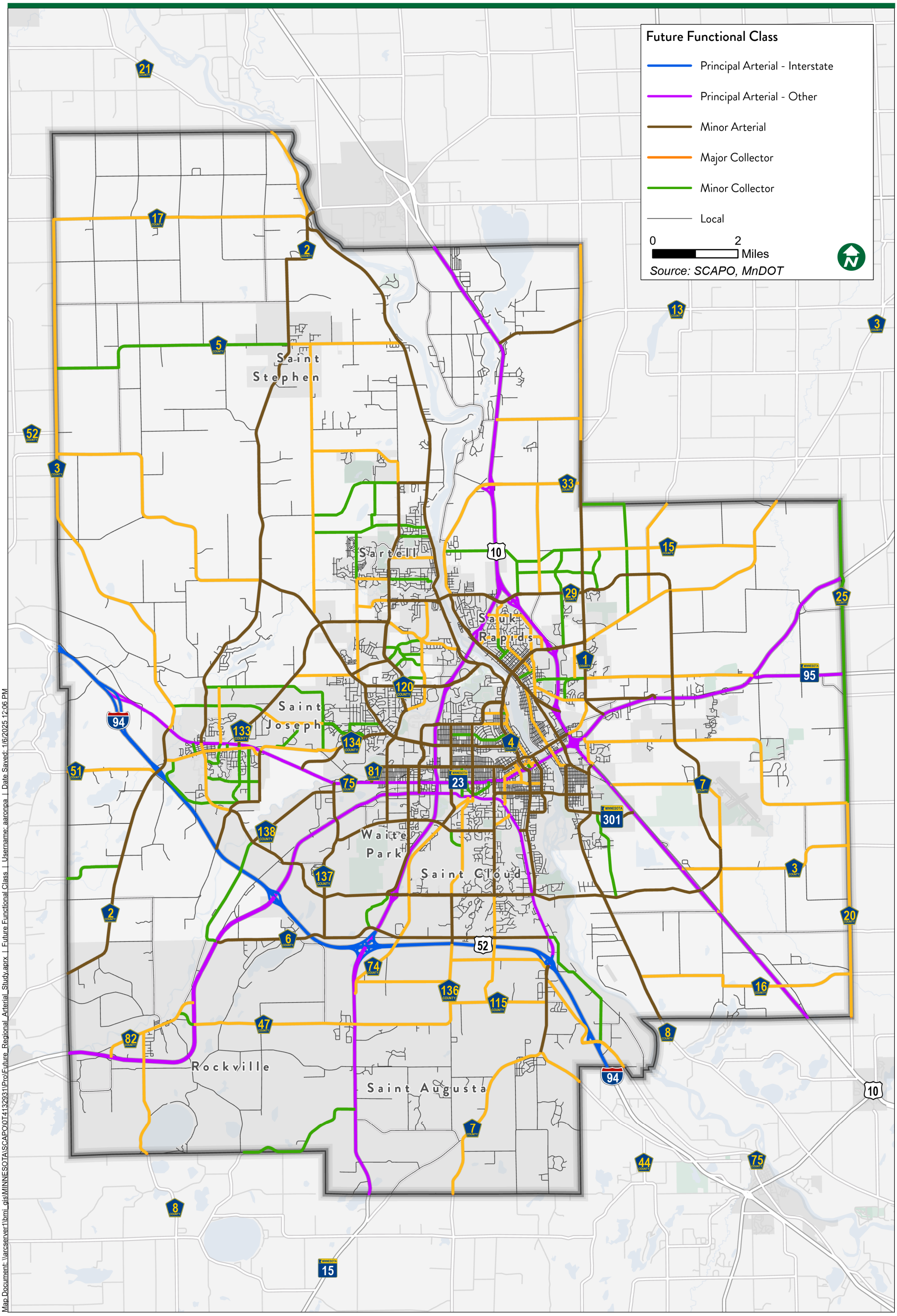
Future Regional Arterials and Collectors Study

St. Cloud Area Planning Organization

Future Functional Class

January 2025



TECHNICAL MEMORANDUM

Date: August 1, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Regional Arterials and Collectors Study Team

Subject: Task 3.1 Functional Class Summary

I. Introduction

This memorandum is intended to provide an overview of roadway functional classifications and their status within the boundaries of the Saint Cloud Area Planning Organization (APO). It covers fundamental concepts in understanding functional classification, a description of the Federal Highway Administration's (FHWA) functional classification guidelines, an analysis of existing functional classification with the Saint Cloud APO, and a look at state level processes to adjust a roadway's functional classification.

The characteristics of roads differ greatly across the system and the characteristics of a roadway can reveal its intended travel objectives. Travel objectives range from serving long-distance passenger and freight needs to serving short trips between residential neighborhoods and nearby essential services. Planners and engineers have developed the functional classification hierarchy to define the role that a specific roadway plays in serving the flow of trips through an area or region.

Assigning functional classifications to roadways defines the role each element of the roadway system plays. Developing a functional classification hierarchy requires coordination between many overlapping and adjacent stakeholders including cities, counties and MnDOT. Functional classification can play an important role in the administration of federal and state transportation programs, where certain funding sources are reserved for roadways above a certain classification.

II. Overview

Functional classifications are determined by a variety of characteristics, but largely depend on the degree to which a roadway provides mobility or serves direct access to locations. Roadways serving high degrees of mobility are called "Arterials" and those serving direct land access with low mobility are "Local Roads." Between these two ends of the spectrum lies a hierarchy of roadway classifications. Below is a breakdown of the functional classifications and the needs they serve in the transportation system.

The following is a high-level overview of the main functional classifications. The Federal Highway Administration (FWHA) use these and additional considerations to describe roadway function. Although many roads provide both property access and travel mobility, their primary purpose determines functional classification. Beyond mobility and access, it is also important to consider livability and whether the classification is appropriate for the surrounding context. Distinctions between access-controlled and full access roadways, and the surrounding urban or rural development pattern also determine the specific roadway classification.

Principal Arterial Interstate

Interstates are the highest classification of roadway and are designed with mobility and long-distance travel in mind. Interstates connect major urban centers at high speeds with complete access control. As such, there is no ambiguity in the classification of these roadways. All routes that comprise of the Dwight D Eisenhower National Interstate system are automatically classified as Principal Arterial Interstate by the FHWA. Interstate-94 is the only Principal Arterial interstate within APO boundaries.

State Highway 23 interchange over I-94, a Principal Arterial Interstate

Other Principal Arterial Expressways

Other Principal Arterial Expressways connect major metropolitan centers, offer significant mobility, and provide access to rural areas. They serve high traffic corridors and meet long trip demands. These roadways serve demand for intra-area travel, frequently connecting central business districts to outlying residential areas. However, they differ from interstates in that they lack total access control. They occasionally provide direct access to parcels and feature at-grade intersections with other roadways. US Highway 10 is an example of an Other Principal Arterial Expressway within APO boundaries.

State Highway 10 is an Other Principal Arterial Expressway

Minor Arterial

Minor Arterials support medium-length trips, cover smaller geographic areas than principal arterials, and connect to the main arterial network. In urban settings, they enhance the main arterial system, ensure local community connectivity, and may accommodate local bus routes. They feature higher speeds with more access than Principal Arterials, but they do not penetrate identifiable neighborhoods like collectors and local roads. Benton Drive in Sauk Rapids is an example of a Minor Arterial roadway.

Benton Drive in Sauk Rapids is a Minor Arterial

Major Collector

Major Collectors are similar in characteristics and function as Minor Collectors, but have higher average daily traffic counts, higher speeds, and more signalization. They serve land access and short trips in denser residential and commercial areas. They distribute traffic between local roads and the arterial system over longer distances than Minor Collectors (greater than .75 miles). 4th Ave S is an example of a Major Collector.

4th Ave. S, adjacent to Saint Cloud State University shown on the left side of this photo is a Major Collector

Minor Collector

Collectors gather traffic from local roads and distribute it to the arterial system. Collectors fall at the midpoint of the mobility-access continuum and serve mixed roles. Minor Collectors typically serve lower density residential areas. In urban settings, Minor Collectors distribute traffic between Local Roads and Arterials over short distances (less than .75 miles). Minor Collectors usually have lower speed limits and fewer signalized intersections than Major Collectors. Centennial Drive (10th St N) in the City of St. Cloud is an example of a minor collector.

Centennial Drive is a Minor Collector

Local Roads

Often located in residential areas, local roads comprise the majority of roadway mileage. Local roads serve traveling needs typically at the beginning or end of a trip. They prioritize access to abutting land and are often designed to discourage through traffic. Local roads make up the entire roadway system that is not otherwise classified.

Continuity

The concept of continuity is important to understanding the functional classification hierarchy. Simply put, a roadway of higher classification should not connect to an individual roadway of a lower classification. Arterials should only connect to other arterials and so on. However, there are some exceptions to this rule, in the case of an arterial terminating at a very large traffic generator, for example.

III. Existing Functional Classifications

The Federal Highway Administration's (FHWA) *2023 Highway Functional Classification Concepts, Criteria and Procedures* provides guidance to planners and engineers to utilize when evaluating a roadway network (see Guidelines by Functional Classifications below). For the purposes of recommendations, the FHWA defines states as either urban or rural states. Rural states are those where 75 percent or less of the population resides in urban areas. FHWA research has determined this to be a reasonable breakpoint to capture the geographical differences between states. According to the MN State Demographer, about 73% of Minnesota's population lives in an urban setting. Therefore, Minnesota's regional planning organizations should utilize rural state guidelines.

Table 3-5: VMT and Mileage Guidelines by Functional Classifications - Arterials

Arterials:	Interstate	Other Freeways & Expressway	Other Principal Arterial	Minor Arterial
Typical Characteristics				
Lane Width	12 feet	11 - 12 feet	11 - 12 feet	10 feet - 12 feet
Inside Shoulder Width	4 feet - 12 feet	0 feet - 6 feet	0 feet	0 feet
Outside Shoulder Width	10 feet - 12 feet	8 feet - 12 feet	8 feet - 12 feet	4 feet - 8 feet
AADT[1] (Rural)	12,000 - 34,000	4,000 - 18,500[2]	2,000 - 8,500[2]	1,500 - 6,000
AADT[1] (Urban)	35,000 - 129,000	13,000 - 55,000[2]	7,000 – 27,000[2]	3,000 - 14,000
Divided/Undivided	Divided	Undivided/Divided	Undivided/Divided	Undivided
Access	Fully Controlled	Partially/Fully Controlled	Partially/Uncontrolled	Uncontrolled
Mileage/VMT Extent (Percentage Ranges)[1]				
Rural System				
Mileage Extent for Rural States[2]	1% - 3%	0% - 2%	2% - 6%	2% - 6%
Mileage Extent for Urban States	1% - 2%	0% - 2%	2% - 5%	3% - 7%
Mileage Extent for All States	1% - 2%	0% - 2%	2% - 6%	3% - 7%
VMT Extent for Rural States[2]	18% - 38%	0% - 7%	15% - 31%	9% - 20%
VMT Extent for Urban States	18% - 34%	0% - 8%	12% - 29%	12% - 19%
VMT Extent for All States	20% - 38%	0% - 8%	14% - 30%	11% - 20%
Urban System				
Mileage Extent for Rural States[2]	1% - 3%	0% - 2%	4% - 9%	7% - 14%
Mileage Extent for Urban States	1% - 2%	0% - 2%	4% - 5%	7% - 12%
Mileage Extent for All States	1% - 3%	0% - 2%	4% - 5%	7% - 114%
VMT Extent for Rural States[2]	17% - 31%	0% - 12%	16% - 33%	14% - 27%
VMT Extent for Urban States	17% - 30%	3% - 18%	17% - 29%	15% - 22%
VMT Extent for All States	17% - 31%	0% - 17%	16% - 31%	14% - 25%

Table 3-6: VMT and Mileage Guidelines by Functional Classifications – Collectors and Locals

Collectors:	Major Collector[2]	Minor Collector[2]	Local
Typical Characteristics			
Lane Width	10 feet - 12 feet	10 - 11 feet	8 feet - 10 feet
Inside Shoulder Width	0 feet	0 feet	0 feet
Outside Shoulder Width	1 foot - 6 feet	1 foot - 4 feet	0 feet - 2 feet
AADT[1] (Rural)	300 - 2,600	150 - 1,110	15 - 400
AADT[1] (Urban)	1,100 - 6,300[2]	1,100 - 6,300[2]	80 - 700
Divided/Undivided	Undivided	Undivided	Undivided
Access	Uncontrolled	Uncontrolled	Uncontrolled
Mileage/VMT Extent (Percentage Ranges)[1]			
Rural System			
Mileage Extent for Rural States[3]	8% - 19%	3% - 15%	62% - 74%
Mileage Extent for Urban States	10% - 17%	5% - 13%	66% - 74%
Mileage Extent for All States	9% - 19%	4% - 15%	64% - 75%
VMT Extent for Rural States[3]	10% - 23%	1% - 8%	8% - 23%
VMT Extent for Urban States	12% - 24%	3% - 10%	7% - 20%
VMT Extent for All States	12% - 23%	2% - 9%	8% - 23%
Urban System			
Mileage Extent for Rural States[3]	3% - 16%	3% - 16%[2]	62% - 74%
Mileage Extent for Urban States	7% - 13%	7% - 13%[2]	67% - 76%
Mileage Extent for All States	7% - 15%	7% - 15%[2]	63% - 75%
VMT Extent for Rural States[3]	2% - 13%	2% - 12%[2]	9% - 25%
VMT Extent for Urban States	7% - 13%	7% - 13%[2]	6% - 24%
VMT Extent for All States	5% - 13%	5% - 13%[2]	6% - 25%

Table 1 - St. Cloud APO Planning Area Existing Functional Classification Overview

DESCRIPTION	Mileage	Percentage	FHWA GUIDELINES: Rural State/Urban System*	Within FHWA Guidelines?
Local Roads	939.13	62.3%	62%-74%	**Yes**
Minor Collector	60.16	4.0%	3%-16%	**Yes**
Major Collector	169.50	11.2%	3%-16%	**Yes**
Minor Arterial	139.19	9.2%	7%-14%	**Yes**
Principal Arterial - Other	152.97	10.1%	4%-9%	**No**
Principal Arterial - Interstate	46.58	3.1%	1%-3%	**No**

**Urban System Mileage Extent for Rural Statesfrom Highway Functional Classification, Criteria and Procedures 2023 Edition*

Table 1 above shows the distribution of functional classifications within the Saint Cloud APO Planning Area and how the distribution of roadways aligns with FHWA guidelines. The Principal Arterial system mileage exceeds FHWA Guidelines for Principal Arterial – Other and Principal Arterial – Interstate. All other classifications are within the FHWA guided range for a rural state.

Saint Cloud Area Planning Organization's Existing Guidelines

The Saint Cloud APO most recently addressed Functional Classification guidelines in the 2050 Metropolitan Transportation Plan (MTP). In this plan, maintaining functional classifications that are consistent with FHWA guidelines was an identified objective to achieve an integrated and connected multimodal system. Federal regulations require that roadways must be functionally classified to receive federal funding. Within the Saint Cloud APO urbanized area, Major and Minor Collectors and above are

eligible for federal Surface Transportation Block Grant (STBG) funding; Rural Minor Collectors are not eligible for STBG funding[1].

IV. MnDOT Functional Classification Guidelines & Policies

Federal law requires that: "*The state transportation agency shall have the primary responsibility for developing and updating a statewide highway functional classification in rural and urban areas to determine functional usage of the existing roads and streets. . . . The State shall cooperate with responsible local officials, or appropriate Federal agency in the case of areas under Federal jurisdiction, in developing and updating the functional classification.*"

Therefore, the FHWA has delegated authority for functional classification approval to MnDOT. This law applies to all 139,000 miles of public road in Minnesota. This law also requires significant effort on MnDOT's part to collaborate with the State's MPOs, Counties, and local governments to effectively classify the entire roadway system.

Changes to Functional Classification

MnDOT has an organized process for adjusting functional classifications and assigning classifications to new roadways. Requests to adjust or assign Functional Classification are accepted throughout the year and MnDOT's Office of Transportation System Management administers this process. Changes to local non-state aid roadways require the approval of the MnDOT District's Planner, and changes to state-aid roadways require the approval of the district's state-aid engineer. The outlier in this process are changes to principal arterials, which require FHWA approval to be reclassified.

V. Conclusion

The FHWA stresses the importance of regularly reviewing and updating Functional Classification hierarchies based on their guidelines. This Future Regional Arterials and Collectors Study and subsequent memos will provide additional information for existing functional classification towards this effort. In describing the existing functional classification, the roadway's **current** function is what is considered in its classification, rather than its future role in the system. It is important to map and analyze the existing conditions as a starting point for determining future functional classifications. A future step in this study will be to establish future functional classification to assist the region in preserving roadway function and planning for characteristics that are consistent with the future system vision.

[1] Up to 15% of STBG apportionment (DOT) may be used on otherwise STBG-eligible projects or maintenance activities on roads functionally classified as rural minor collectors or local roads, ice roads, or seasonal roads, may be transferred to the Appalachian Highway System Program or the Denali Access System Program [§ 11109(a)(7); 23 U.S.C. 133(k). https://www.fhwa.dot.gov/bipartisan-infrastructure-law/stbg.cfm

TECHNICAL MEMORANDUM

Date: August 1, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Regional Arterials and Collectors Study Team

Subject: Task 3.1 Functional Classification Peer Review

I. Overview

This memorandum reviews existing and future functional classification of three peer Metropolitan Planning Organization (MPO) highway systems.

- Metropolitan Planning Organization of Johnson County Iowa (MPOJC)
- Duluth-Superior Metropolitan Interstate Council (DSMIC)
- Rochester Olmstead Council of Governments (ROCOG)

It analyzes the existing functional classification of these systems compared to the Saint Cloud Area Planning Organization (APO). These peer organizations were selected because they are of similar population size, land area, and population density to the APO. The analysis also quantitatively compares Federal Highway Administration (FHWA) guidance and policy overview.

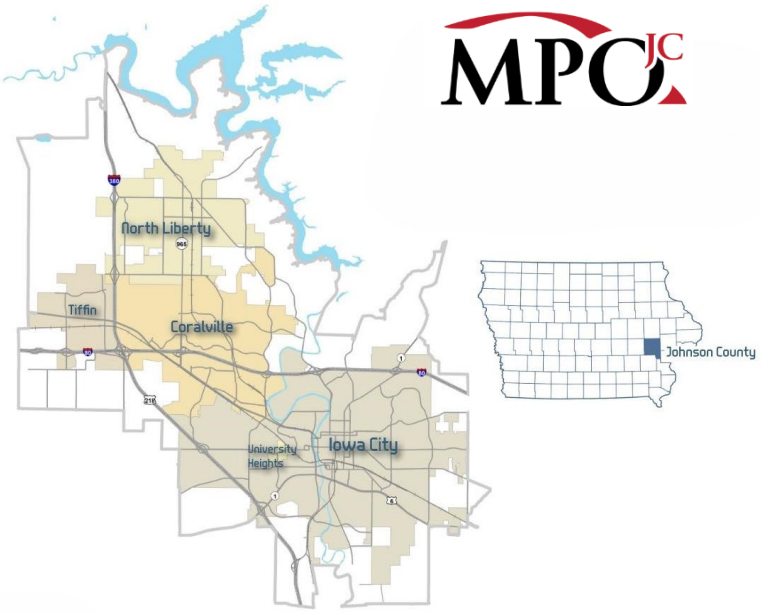
The functional classification hierarchy was developed to help define a specific roadway's role in serving the larger transportation network. The APO is working to achieve consensus among member jurisdictions on designation of future arterials and collectors and provide guidance to help ensure the system's future safe and efficient operations. Reviewing peer organizations and their approach to functional classification provides a broader context for consideration as recommendations are developed during this study.

Functional classification determination considers many characteristics but largely depends on two key things: mobility and access. By properly classifying existing and future roadways, policies and guidelines can guide features that help maintain safe and efficient system operations, such as access management and right-of-way preservation.

II. Existing Functional Classification

A review was completed of relevant transportation planning related documents for the MPOJC, DSMIC, and ROCOG. The following details the findings and comments received from each organization.

MPOJC



The Metropolitan Planning Organization of Johnson County Iowa follows the federal functional classification according to the Iowa Department of Transportation (Iowa DOT) and FHWA. The MPOJC Future Forward 2050 Long-Range Transportation Plan's functional classifications of roads include Interstate, Principal Arterials, Minor Arterials, Collector, and Local.

As found in **Table 1** below, MPOJC functional classification designations fall within the guided FHWA ranges except for minor collector, which is below the suggested range, and for principal arterial-interstate classifications, which is above the suggested range but is also a federally required classification for interstate facilities. According to the data from MPOJC, 3.74% or 29.31 miles of road in their jurisdiction do not have a classification assigned.

Table 1: MPOJC Planning Area Existing Functional Classification Overview

Description	Mileage	Percentage	FHWA Guidelines: Rural State/Urban System*	Within FHWA Guidelines?
No Classification Assigned	29.31	3.74%	--	--
Local Roads	492.98	62.87%	62%-74%	**Yes**
Minor Collector	5.88	0.75%	3%-16%	**No**
Major Collector	61.91	7.89%	3%-16%	**Yes**
Minor Arterial	89.77	11.45%	7%-14%	**Yes**
Principal Arterial - Other	47.03	5.99%	4%-9%	**Yes**
Principal Arterial - Interstate	57.35	7.31%	1%-3%	**No**

**Urban System Mileage Extent for Rural States from Highway Functional Classification, Criteria and Procedures 2023 Edition*

DSMIC

Duluth-Superior Metropolitan Interstate Council uses the FHWA federal functional classifications. According to their Sustainable Choices 2045 Long-Range Transportation Plan, all federal functional classifications of roads are used in the DSMIC boundaries: Principal Arterial - Interstate, Principal Arterial - Other, Minor Arterial, Major Collector, Minor Collector, and Local Roads. As shown in **Table 2**, DSMIC is the peer region that meets FHWA guidelines on the most functional classifications, with only Local Roads not meeting the guideline (1.5% under the recommended range). Principal Arterial – Interstate is at the top of the guideline range (3.0%).

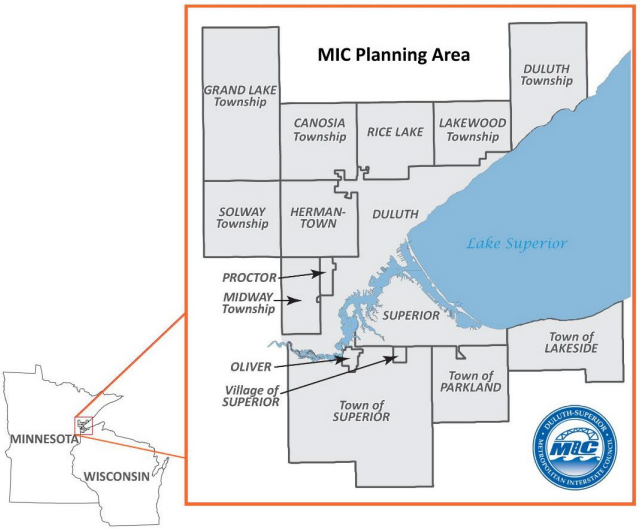
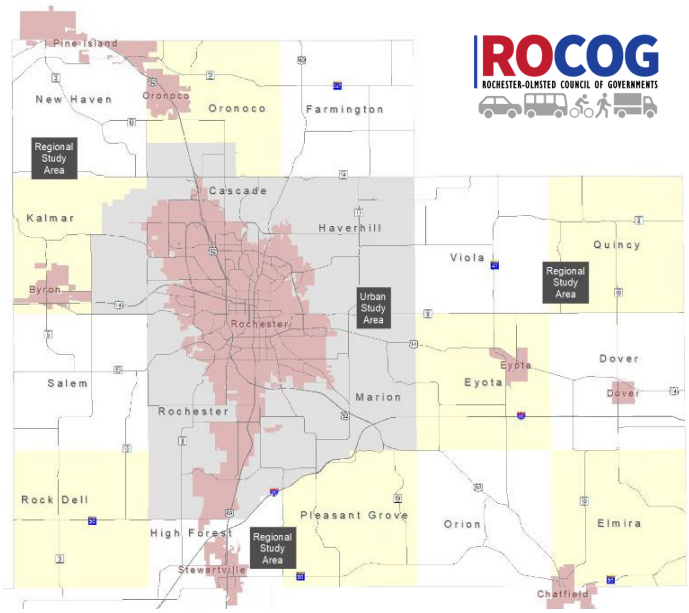


Table 2: DSMIC Planning Area Existing Functional Classification Overview

Description	Mileage	Percentage	FHWA Guidelines: Rural State/Urban System*	Within FHWA Guidelines?
Local Roads	729.5	60.5%	62%-74%	**No**
Minor Collector	79.7	6.6%	3%-16%	**Yes**
Major Collector	150.0	12.4%	3%-16%	**Yes**
Minor Arterial	115.9	9.6%	7%-14%	**Yes**
Principal Arterial - Other	92.0	7.6%	4%-9%	**Yes**
Other Freeways & Expressways	2.0	0.2%	0%-2%	**Yes**
Principal Arterial - Interstate	36.3	3.0%	1%-3%	**Yes**

**Urban System Mileage Extent for Rural States from Highway Functional Classification, Criteria and Procedures 2023 Edition*

ROCOG



Functional Classifications in the Rochester Olmstead Council of Governments boundaries follow federal functional classifications according to the Minnesota Department of Transportation (MnDOT) and FHWA. Classifications include Interstate, Other Freeways and Expressways, Principal Arterial – Other, Minor Arterial, Major Collector, Minor Collector, and Local. **Table 3** details existing functional classification compared to FHWA guidelines. ROCOG does not meet FHWA guidelines for Principal arterial – Other (below), Other Freeways And Expressways (above), and Principal Arterials – Interstate (none). Principal Arterials are subject to FHWA approval, so even though these designations are outside the guidance, critical FHWA review and approval of the Principal Arterial designation would be required.

Table 3: ROCOG Planning Area Existing Functional Classification Overview

Description	Mileage	Percentage	FHWA Guidelines: Rural State/Urban System*	Within FHWA Guidelines?
Local Roads	539.95	63.57%	62%-74%	**Yes**
Minor Collector	41.47	4.88%	3%-16%	**Yes**
Major Collector	104.86	12.35%	3%-16%	**Yes**
Minor Arterial	100.59	11.84%	7%-14%	**Yes**
Principal Arterial - Other	21.52	2.53%	4%-9%	**No**
Other Freeways and Expressways	41.00	4.8%	0%-2%	**No**
Principal Arterial - Interstate	0	0%	1%-3%	**No**

**Urban System Mileage Extent for Rural States from Highway Functional Classification, Criteria and Procedures 2023 Edition*

III. Future Functional Classification

MPOJC

The MPOJC regionally recognizes future functional classifications consistent with what is recognized by the Iowa DOT. The Iowa DOT's policy allows future roads to be assigned a future functional classification based on certain criteria, and only if the roadway is fully funded or programmed in a community's five-year Capital Improvement Plan. Future roadways are screened for functional classification designation the same way an existing road would be, based on criteria such as termini, connectivity to other similar future functional classification routes, and anticipated average daily traffic, to determine a future functional classification. Once a future functional classification is assigned, MPOJC will evaluate the road for funding, just like an existing roadway. According to Kent Ralston, Executive Director and Transportation Planner, as part of the funding process, the road must already have an eligible existing functional classification or a recognized future functional classification. This process is used when a community wants to apply for federal dollars through the MPO to construct a new roadway.

The MPOJC does not have any regional categories or special designations of roads.

DSMIC

According to Richard Sarran, Senior GIS Specialist, and Ron Chicka, Executive Director, the DSMIC does not use future functional classification. The DSMIC area is not growing at a rate where they expect changes to their functional classification. Additionally, they do not have any regional categories or special designations of roads.

ROCOG

The ROCOG planners developed an MPO Functional Designation System (FDS) plan to communicate to the public and stakeholders the current functionality (similar to the federal functional classification) and the highest function anticipated to serve in the next 20-25 years. ROCOG uses FDS instead of future functional classification terminology to avoid confusion with existing functional classification because reclassification requires documentation and approval through the DOT in Minnesota. This approach provides a broader context for understanding functional designation beyond a future functional classification map.

In the FDS, all considerations of the typical factors that affect federal functional classification are used, plus anticipated growth scenario(s) and future land use plans, according to Jarrett Hubbard, Principal Planner for ROCOG. A larger number of categories are used in the FDS to distinguish various cross-section or travel management features, reflecting adjacent land use and primary corridor users. Additionally, the FDS includes an underlying Land Use Context classification to allow for incorporating policies related to corridor designation and land use context pairings. The intention is to integrate land use considerations in the transportation plan more closely. Chapter 10 of the ROCOG's Long-Range Transportation Plan 2045 details this system and describes network development principles. ROCOG has found the FDS to be effective in considering local development patterns.

IV. Summary

The review of these three peer MPO organizations provides the APO and TAC with insight from other regions as part of this project to collaborate and analyze functional classification and develop policy and guideline recommendations. Each organization approaches future functional classification differently and works to balance future and existing functional classifications with impacts on funding. Another key

consideration is using functional classification when communicating with stakeholders while assessing future land use and growth to maintain a safe and efficient transportation network.

Table 4: Peer Review Summary Table

	DSMIC	MPOJC	ROCOG
Recognizes Future Functional Class?	No	Yes, for new alignments	Yes
Regional categories or special designations of roads?	No	No	Yes
Summary	The area is not growing at a rate where changes are expected to the functional classification.	New alignments may be classified, but only if the roadway is fully funded or programmed in a community's 5 Capital Improvement Plan and meet standard criteria. Future roadways are screened the same way an existing road would be to determine a future functional classification to use for evaluation of funding.	ROCOG has a separate regional system called Functional Designation System (FDS). The FDS indicates the highest function a roadway is anticipated to serve in the next 20-25 years. This approach provides a broader context including integration with anticipated growth scenarios and future land use plans.

TECHNICAL MEMORANDUM

Date: August 1, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Regional Arterials and Collectors Study Team

Subject: Task 3.2 Future Functional Classification Inventory

I. Overview

This memo inventories future functional classification designations adopted or planned by St. Cloud Area Planning Organization (APO) agencies. Planned future functional classification for existing or future corridors allows planners to state a vision for the role of transportation infrastructure and how it may change based on the growth trends along a transportation corridor.

TAC members provided plans and documents that allowed the study team to inventory adopted functional classifications and agency policies related to future functional classification, such as any implications of the zoning ordinance. This information will be used in Tasks 6 and 7 to analyze and develop the recommended regional future functional classification system.

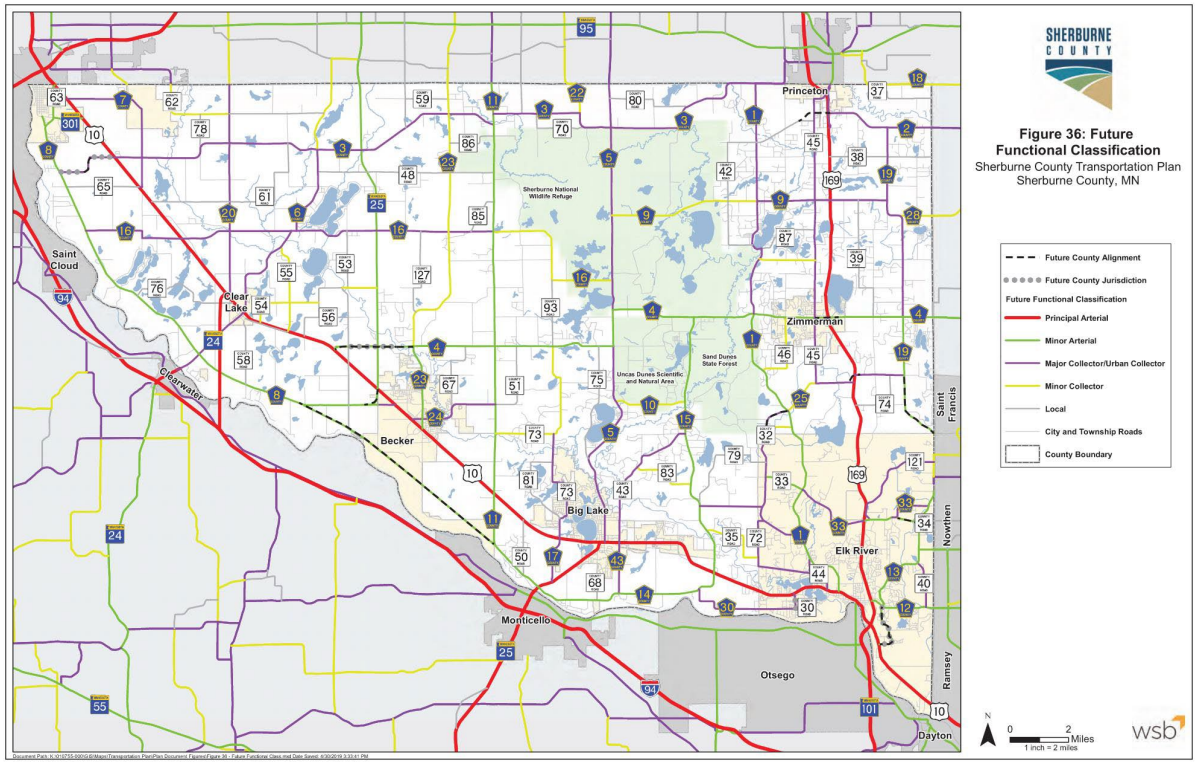
II. Analysis

Staff reviewed relevant land use plans, zoning, and transportation-related documents for Benton, Sherburne, and Stearns Counties, as well as the Cities of Sartell, Sauk Rapids, St. Cloud, St. Joseph, and Waite Park.

The following counties and cities do include references to future functional classification, as described below:

Sherburne County

- Sherburne County adopted its current Comprehensive Plan in 2023, which includes a future land use map and indicates areas of future growth.
- The county adopted a Transportation Plan in 2019. Chapter 4 (Roadway System Plan) of this plan includes a future functional classification system.
- The Future Functional Classification Map and the Proposed Future Functional Classifications Changes Table are featured on this page. The map and table are both found in the 2019 Transportation Plan.



Stearns County

- Stearns County adopted a Comprehensive Plan in 2020, that includes a future land use plan. During the Comprehensive Planning process, it was determined that past future land use plans were too prescriptive, so the future land use plan provides a degree of flexibility that is achieved through a series of "Future Land Use Factors" found in the 2020 Comprehensive Plan.
- The county adopted a Transportation Plan in 2015 that includes a future functional classification system in Chapter 5, Future Multi-Modal System Analysis, Plan, and Projects. Tables and map in the Future Functional Classification Plan are shown below.

FIGURE 5-1: STEARNS COUNTY FUTURE FUNCTIONAL CLASSIFICATION (2040)

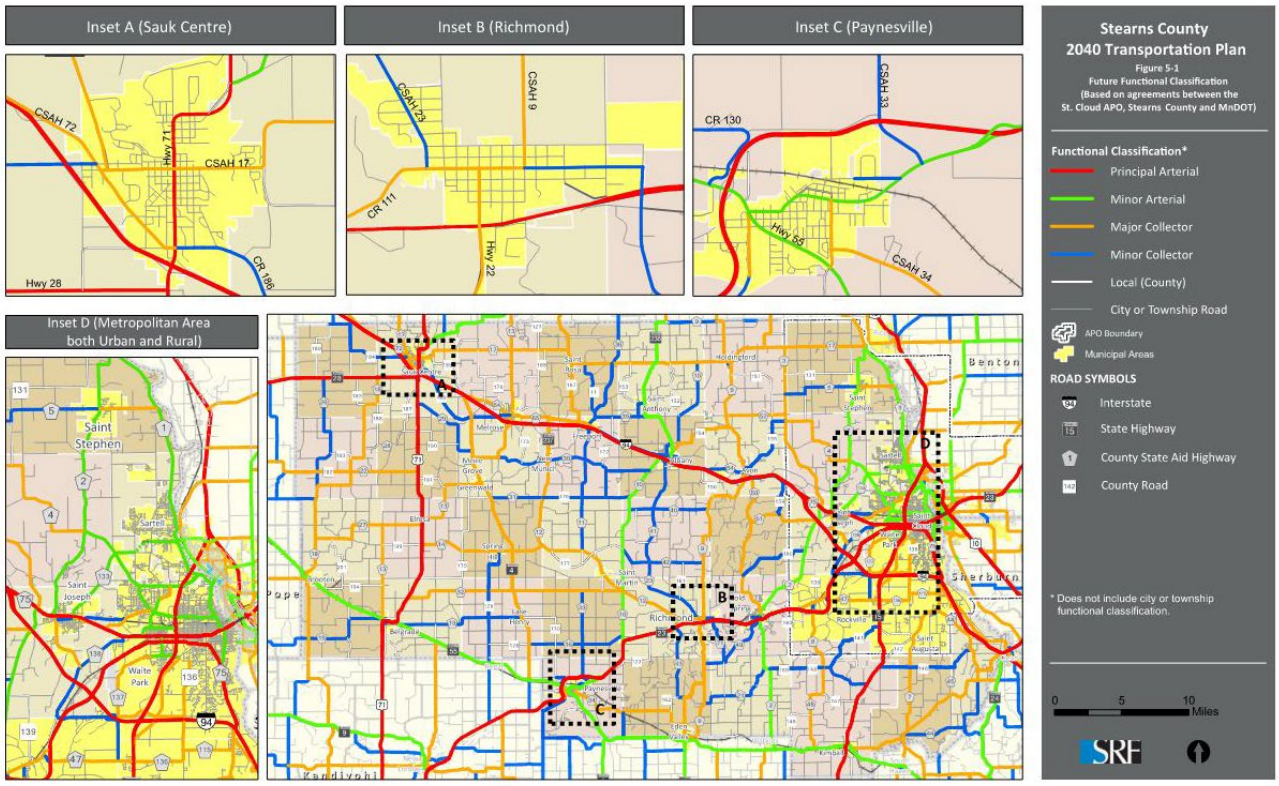


Table 13: Proposed Functional Classification Changes

Existing Route Number	From	To	Existing Functional Class	Future Functional Class	Rationale
CSAH 16	CSAH 8	TH 10	Minor Collector	Major Collector	CSAH 16 provides an important east/west route in the center of the county
37th Street	CSAH 8	east end 37th Street	Local	Major Collector	Provides a more direct east/west route and continuation of major collector route between CSAH 8 and CSAH 3
New Segment (CSAH 3)	east end 37th Street	west end 32nd Street	-	Major Collector	Provides a more direct east/west route and continuation of major collector route between CSAH 8 and CSAH 3
32nd Street	west end 32nd Street	CSAH 3	Local	Major Collector	Provides a more direct east/west route and continuation of major collector route between CSAH 8 and CSAH 3
New Segment (TH 24)	70th Avenue/TH 10	west county line	-	Principal Arterial	Proposed new TH 24 alignment will serve the principal arterial function
TH 24	TH 10	west county line	Principal Arterial	Major Collector	Proposed new TH 24 alignment will serve the principal arterial function
CR 55	TH 10	90th Avenue	Local	Minor Collector	Provides a north/south route between CSAH 6 and TH 10
CR 54	TH 10	CR 53	Local	Minor Collector	Provides an east/west route between TH 10 and TH 25
77th Street	CR 53	TH 25	Local	Minor Collector	Provides continuation of CR 54 functional classification between CR 53 and TH 25
CR 53	CR 54	77th Street	Local	Minor Collector	Provides continuous east-west minor collector between Clear Lake and TH 25
New Segment (CR 53)	TH 10/CR53	97th Street	-	Minor Arterial	Provides continuation of CSAH 4 functional classification to TH 10
97th Street	0.7 miles west of TH 25	0.4 miles east of TH 25	Local	Minor Arterial	Provides continuation of CSAH 4 functional classification to TH 10
New Segment (CSAH 4)	0.4 miles east of TH 25	CSAH 4	-	Minor Arterial	Provides continuation of CSAH 4 functional classification to TH 10
277th Avenue	CSAH 1	CR 45	Local	Minor Collector	Provides an important east/west route across US 169 between CSAH 9 and CSAH 4
CSAH 8	0.2 mi west of Becker city limits	TH 10	Minor Arterial	Urban Collector	Proposed new CSAH 8 alignment will serve the minor arterial function
New Segment (CSAH 8)	0.2 mi west of Becker city limits	TH 10	-	Minor Arterial	Provides continuation of CSAH 8 functional classification to TH 10 and TH 25
185th Avenue SE	CSAH 4	CR 73	Local	Minor Collector	Provides continuation of minor collector route designation between CR 73 and CR 93
CSAH 11	TH 10	north county line	Major Collector	Minor Arterial	CSAH 11 provides an important north/south route between the north county line and TH 10
CR 43	TH 10	CSAH 15	Minor Arterial	Urban Collector	CSAH 15 will serve the north/south arterial role in this area
209th Avenue	CSAH 15	CR 32	Local	Major Collector	Provides an east/west connection between Elk River and Big Lake
CR 79	CSAH 15	CR 32	Minor Collector	Local	209th Avenue provides a more direct collector route function between CSAH 15 and Elk River
CSAH 1	CSAH 4	north Elk River city limits	Major Collector	Minor Arterial	CSAH 1 provides an important north/south route west of TH 169
CSAH 19	CSAH 4	245th Avenue/104th Street	Major Collector	Minor Arterial	Provides an important north/south route east of TH 169
104th Street	245th Avenue	south end of 104th Street	Local	Minor Arterial	Provides an important north/south route east of TH 169
New Segment (CSAH 19)	south end of 104th Street	CR 70 (Anoka)	-	Minor Arterial	Provides an important north/south route east of TH 169
CR 121	CSAH 33	east county line/Anoka CR 70	Local	Urban Collector	Provides a collector route in the northern portion of Elk River (population greater than 5,000*)
CR 33	CR 32	CSAH 1	Minor Collector	Minor Arterial	Provides an important east/west route through Elk River
CSAH 33	TH 169	Smith Street	Major Collector	Minor Arterial	Provides an important east/west route through Elk River
New Segment (CSAH 33)	Smith Street	CSAH 13	-	Minor Arterial	New CSAH 33 alignment will serve the minor arterial function
New Segment (CR 32)	north Elk River city limits	CSAH 1 (north junction)/CSAH 25	-	Major Collector	Provides an important north/south route west of CSAH 1, connects to CSAH 25
Joplin Street	CR 30	TH 10	Local	Major Collector	Provides a connection from CR 30 to TH 10, serves county fairgrounds
CR 30	Joplin Street	Orono Parkway/Main Street	Major Collector	Local	Joplin Street alignment will serve the major collector function
Twin Lakes Road	CSAH 12	TH 10	Major Collector	Minor Arterial	Provides a continuation of CSAH 13 and connects to TH 10
CR 72	CR 35	CR 32	Local	Urban Collector	Provides a north/south collector route west of CSAH 1
New Segment (CSAH 8/11)	CSAH 8 near 100th Avenue	CSAH 11 near 166th Street	-	Minor Arterial	Provides a parallel reliever route south of TH 10

** Future functional classification of major and minor collectors are designated as urban collectors within or upon entering municipalities with population greater than 5,000.*

Table 5-1: Stearns County Rural Functional Classification Plan

Functional Classification System		Proposed Miles	Proposed Percent	FHWA System Mileage Guidelines (%)		Deviation
Principal Arterial	Interstate	40	2%	1 - 3 %	3 - 11 %	Within Range
	Other Freeways & Express-ways	68	3%	0 - 2 %		
	Other Principal Arterials	0	0%	2 - 6 %		
Minor Arterial		79	3%	2 - 6 %		Within Range
Major Collector		325	13%	8 - 19 %	11 - 34 %	Within Range
Minor Collector		250	10%	3 - 15 %		
Local		1,679	69%	62 - 74 %		Within Range
Total		2,441	100%			

Table 5-2: Stearns County Metropolitan Area (Rural Portion) Functional Classification Plan

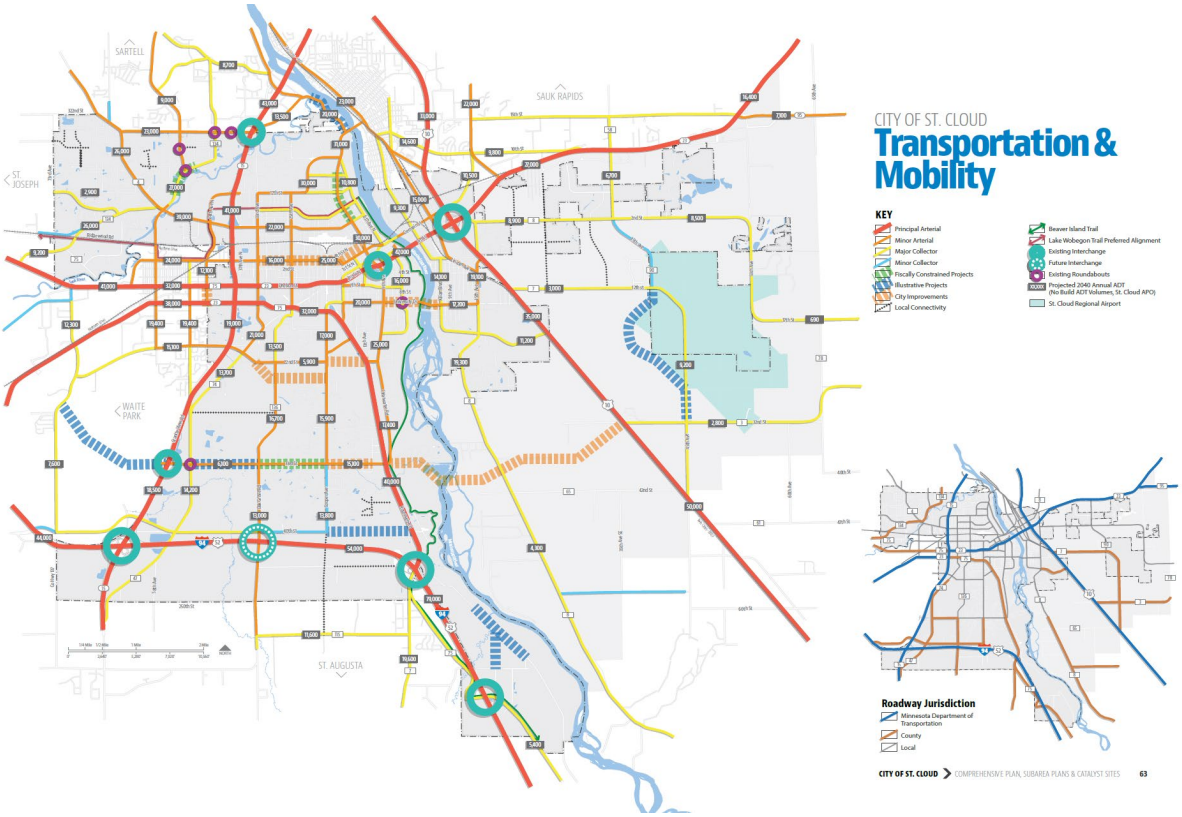
Functional Classification System		Proposed Miles	Proposed Percent	FHWA System Mileage Guidelines (%)		Deviation
Principal Arterial	Interstate	15	4%	1 - 3 %	3 - 11 %	Within Range
	Other Freeways & Express-ways	14	4%	0 - 2 %		
	Other Principal Arterials	2	0%	2 - 6 %		
Minor Arterial		27	7%	2 - 6 %		Slightly Higher Than Range
Major Collector		54	14%	8 - 19 %	11 - 34 %	Within Range
Minor Collector		23	6%	3 - 15 %		
Local		260	66%	62 - 74 %		Within Range
Total		**394**	**100%**			

Table 5-3: Stearns County Metropolitan Area (Urban Portion) Functional Classification Plan

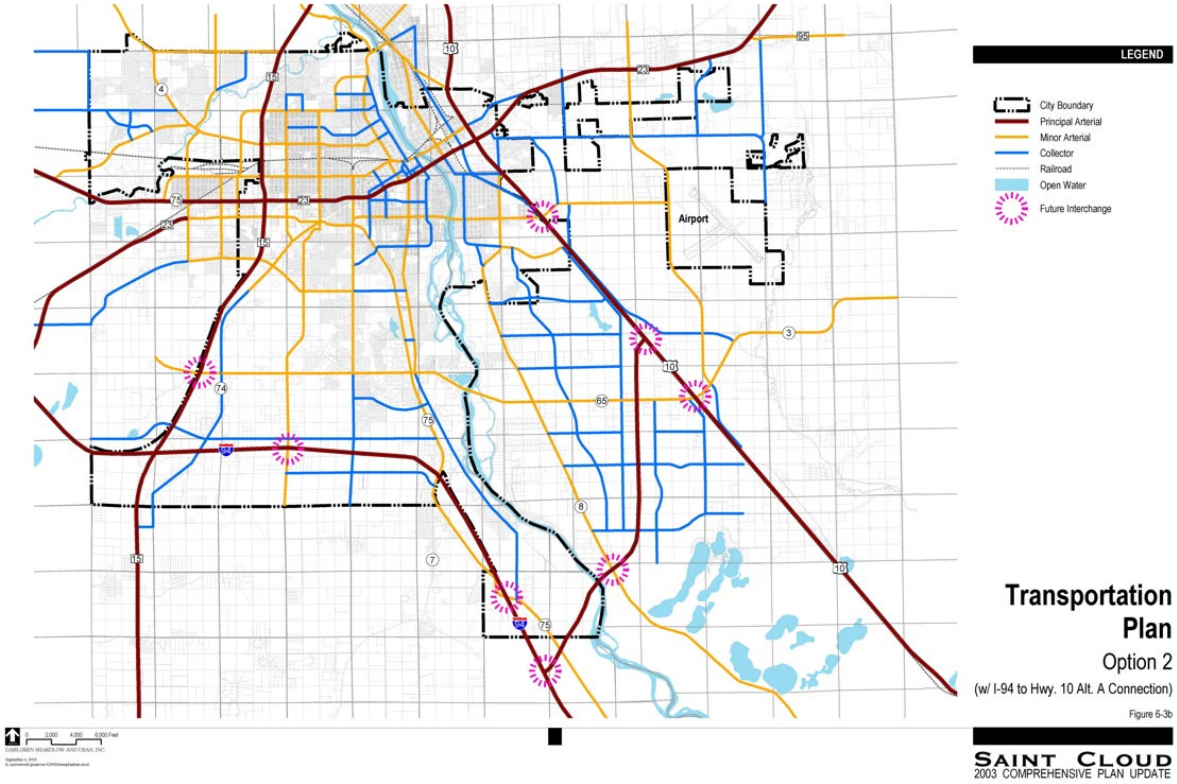
Functional Classification System		Proposed Miles	Proposed Percent	FHWA System Mileage Guidelines (%)		Deviation
Principal Arterial	Interstate	6	1%	1 - 3 %	5 - 14 %	Within Range
	Other Freeways & Expressways	14	3%	0 - 2 %		
	Other Principal Arterials	13	3%	4 - 9 %		
Minor Arterial		63	12%	7 - 14 %		Within Range
Major Collector		47	9%	3 - 16 %	6 - 32 %	Within Range
Minor Collector		11	2%	3 - 16 %		
Local		366	70%	62 - 74 %		Within Range
Total		**519**	**100%**			

City of St. Cloud

- The City of St. Cloud completed its Comprehensive Plan in 2015, which has a section dedicated to transportation goals and policies and a future land use plan that indicates areas of primary and secondary growth.
- The city's Comprehensive Plan (Chapter 7: Transportation and Mobility) indicates future roadway connections including Illustrative Projects and City Improvements. The future functional classification of these segments can be traced to the 2003 Comprehensive Plan, which identifies future alignments as Minor Arterial or Collector. The 2015 Comprehensive Plan Transportation Mobility Map and 2003 Comprehensive Plan Transportation Plan map are included below.

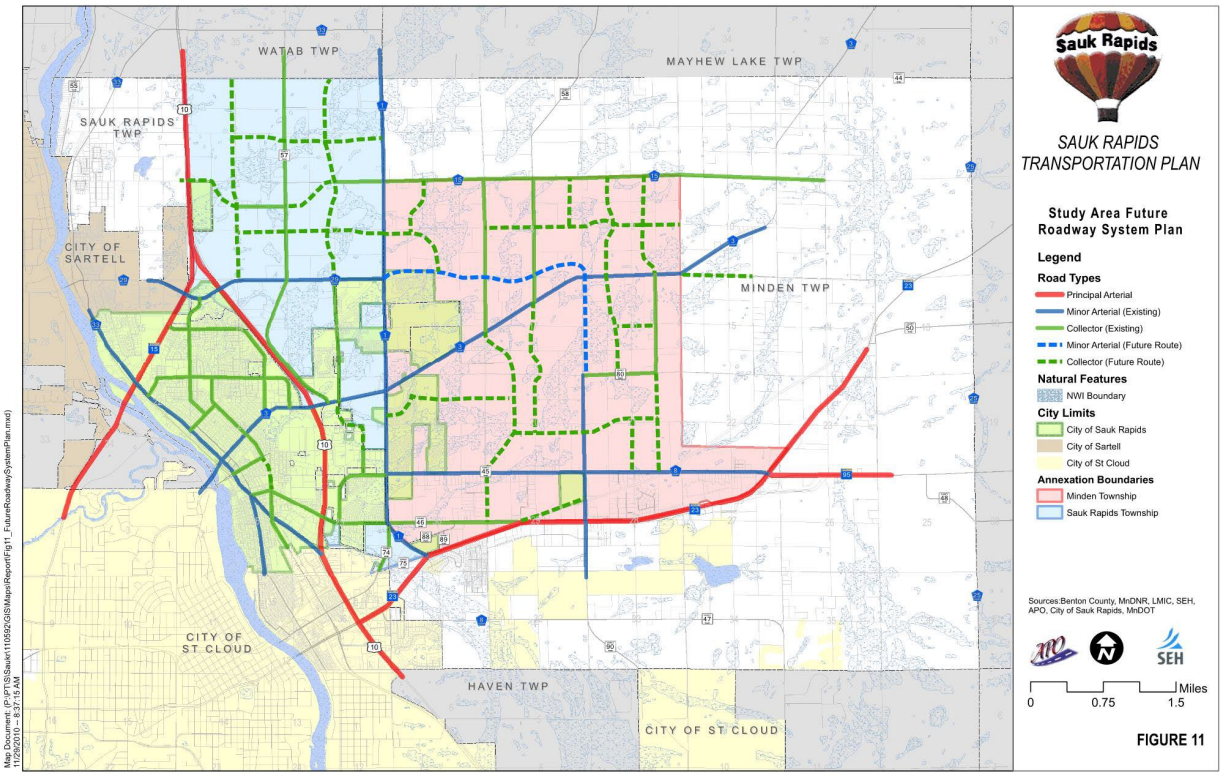


- Specific transportation corridor studies have identified future functional classification for specific roads, such as 40th Street South and 9th Avenue North. Additional studies are catalogued and most recently the Mississippi River Bridge Planning Study, Opportunity Drive Study, and TH 15 Corridor Study.



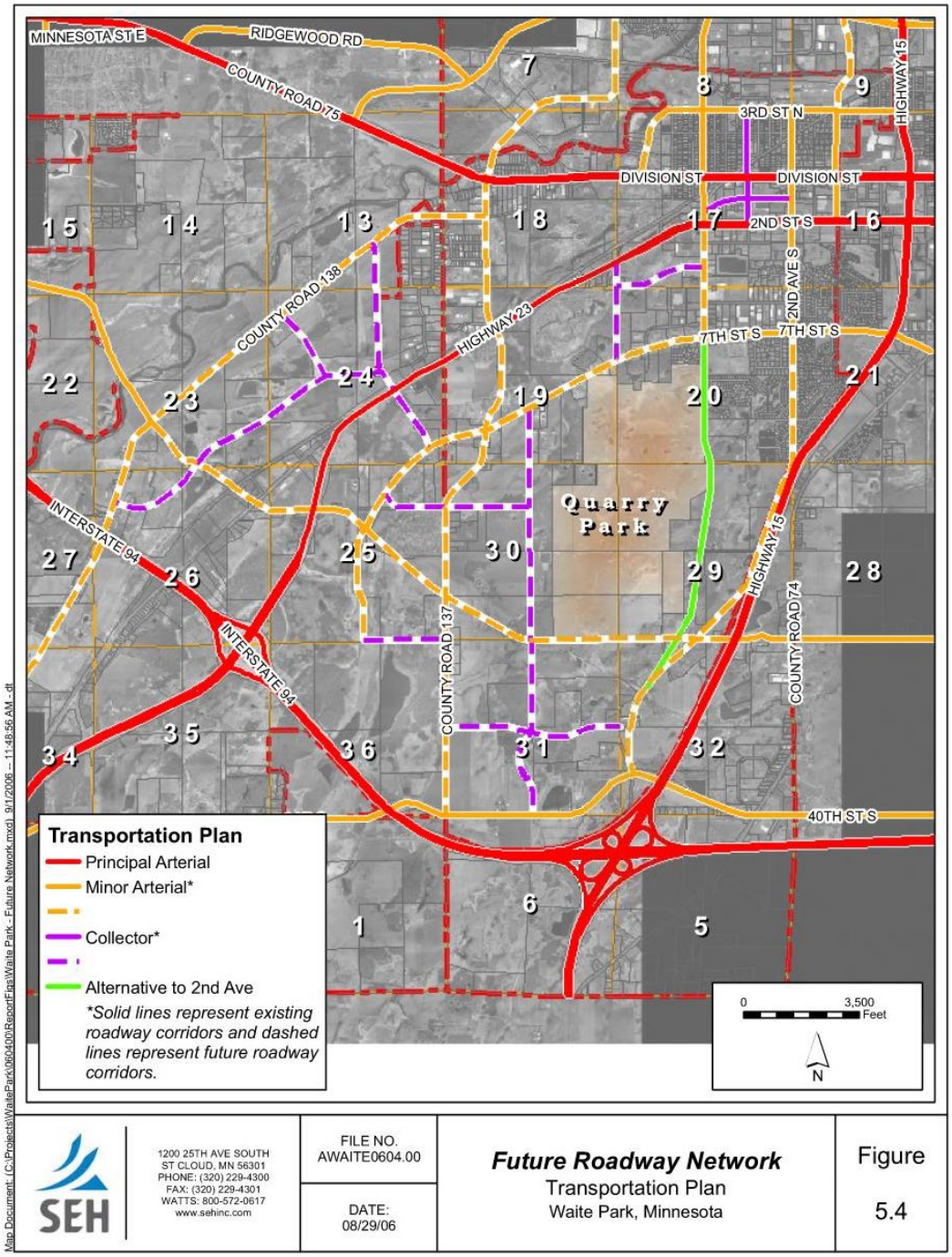
City of Sauk Rapids

- Adopted in 2024, the City of Sauk Rapids' 2050 Comprehensive Plan details the future land use plan along with a map that indicates "long term growth" areas.
- The City adopted a Transportation Plan in 2011 that includes a future functional classification system that focuses on a 2035 visioning period. The plan does not identify the functional classification of any existing arterials or collectors changing between 2011 and 2035 but indicates that functional classifications should continue to be monitored, especially in rural/undeveloped areas where growth is anticipated.



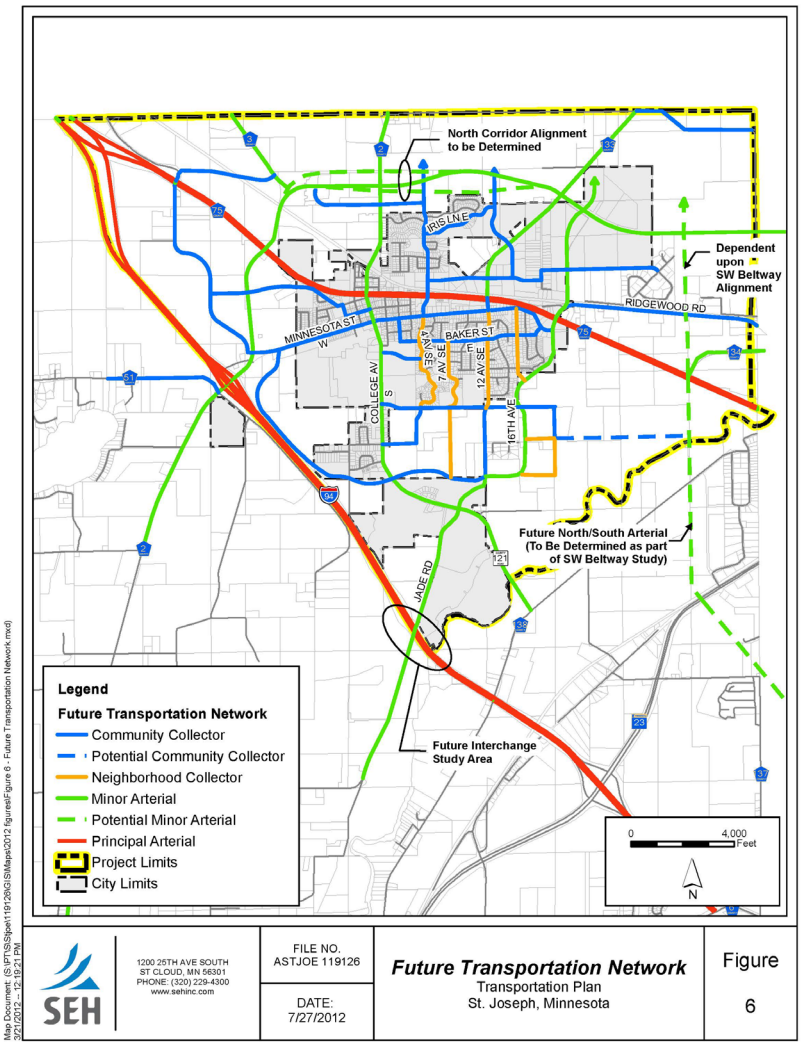
City of Waite Park

- The City of Waite Park completed its Comprehensive Plan in 2023, which includes a section dedicated to future land use and indicates areas of growth potential.
- The City adopted a Transportation Plan in 2007 which includes a "Future Build Out Traffic Forecasts" section that led to a "Future Roadway Network" map. This identifies Future Functional Classification for planned new roadway alignments.



City of St. Joseph

- The City of St. Joseph completed its Comprehensive Plan in 2018 that includes a section dedicated to transportation goals and policies and a future land use map.
- The city has a Transportation Plan that was completed in 2012. Figure 6: Future Transportation Network shows potential new road alignments with future functional classification.



The following jurisdictions do not have reference in their planning documents related to future functional classification:

MnDOT

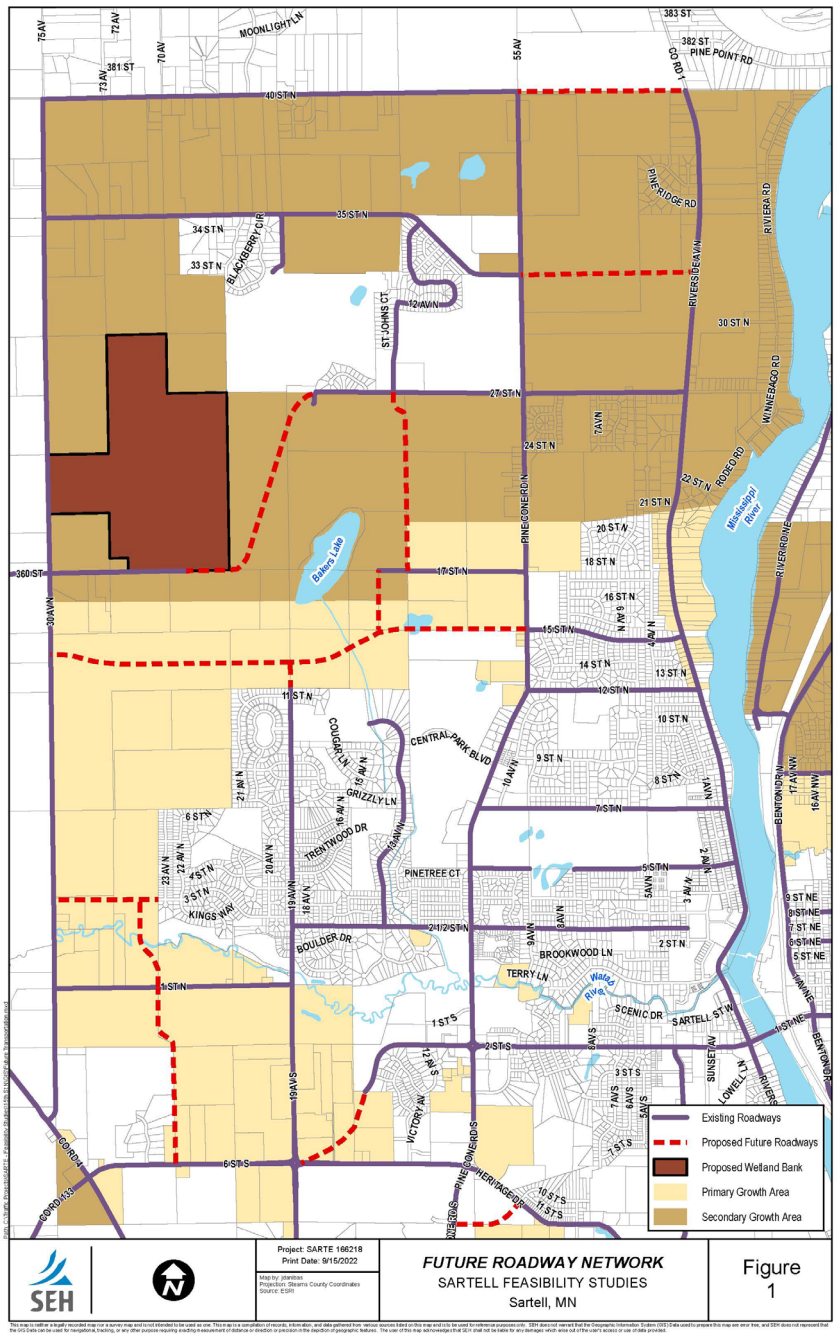
MnDOT does not formally recognize locally adopted future functional classification for trunk highways. MnDOT utilizes FHWA guidance regarding functional classification and focuses on matching existing use with existing functional classification rather than forecasting future use needs.

Benton County

- Benton County completed its Comprehensive Plan in 2019 that has a future land use section, but no future land use map. The text in the "2040 Land Use Plan" section of Chapter 4 provides context for future land use.
- The county does not have future functional classification as part of transportation planning documents. Chapter 7 (Implementation) of the Comprehensive Plan references using the St. Cloud APO Long-Range Transportation Plan (LRTP) when identifying future corridor needs.

City of Sartell

- The City of Sartell completed its Comprehensive Plan in 2018 that has a section dedicated to transportation goals and policies and a future land use map that indicates targeted primary and secondary areas for growth.
- There is a “future roadways” map produced in 2016 and updated in 2022 for the City, but future roadways are not tied to a future functional classification (right).



III. Summary

The purpose of this memo is to document and understand existing future functional classification included in local comprehensive plans, transportation plans, and other policy document of the three counties and five cities in this study area. Stearns and Sherburne counties and the cities of Sauk Rapids, St. Cloud, St. Joseph, and Waite Park have adopted future functional roadway classifications, including future alignments for federal aid roadways within the APO planning area. The plans included future land use plans and identified growth areas, as shown in the table below. This information will be used in identifying future corridors and future functional classification.

Jurisdiction	Has Future Functional Classifications (Y/N)	Has Future Land Use (Y/N)
Benton County	**No**	**Yes (Narrative Only)**
Sherburne County	**Yes**	**Yes**
Stearns County	**Yes**	**Yes**
City of St. Cloud	**Yes**	**Yes**
City of Sauk Rapids	**Yes**	**Yes**
City of Sartell	**No**	**Yes**
City of St. Joseph	**Yes**	**Yes**
City of Waite Park	**Yes**	**Yes**

TECHNICAL MEMORANDUM

Date: December 9, 2024

To: St. Cloud Area Planning Organization (APO) Technical Advisory Committee (TAC)

From: Bolton & Menk Future Functional Class Arterial and Collector Study Team

Subject: Task 4.1 Access Spacing Guidance Inventory

I. Overview

This memo provides information on access spacing guidelines by St. Cloud APO member agencies and professional transportation planning and engineering best practices. In order for arterial or collector roadways to function as intended, it is important to limit how often intersecting traffic is given access to the corridor, thus limiting the frequency of traffic conflicts. These guidelines encourage planners and engineers to permit the appropriate spacing of accesses onto roads based on functional classification and intensity of development.

The study team reviewed APO member agency access spacing guidance, including the Minnesota Department of Transportation (MnDOT), the three counties, and five cities. The goal of this memo is to provide standard definitions and compile existing access guidance to understand local agency approaches to this area. This memo provides a mutual understanding of access spacing practices in the region and a comprehensive overview of access spacing guidance best practices.

II. APO Member Agencies' Access Management

The St. Cloud APO does not currently have access management guidelines in their planning or policy documents. Access management for the region is currently guided by local agency policy with all three counties and five member agency cities addressing access management through local policies, ordinances, or guidance. Staff reviewed relevant land use plans, zoning, and transportation-related documents for Benton, Sherburne, and Stearns counties and the cities of Sartell, Sauk Rapids, St. Cloud, St. Joseph, and Waite Park. The following is a summary of each agency's references to access spacing.

Benton County

- Benton County adopted "Highway Department Access and Right of Way Width Guidelines" in 2009. All new, modified, and/or changed use access(es) onto county roads are subject to these guidelines. Unless noted, these guidelines do not specify area types, such as urban or rural.
- These guidelines detail general requirements, such as alignment of accesses, culverts, and permitting. Additionally, only one access is allowed per property/parcel and will be shared between properties/parcels whenever possible and practical. Additional access spacing requirements are summarized as follows:

Benton County Access Management	Principal Arterial	Minor Arterial; Major Collector (ADT 1000+)	Minor/Local Collector	Local Roadways (Rural Town Sites)
New Access Requirements (Same Side of the Road)	1,280 feet	480 feet	330 feet	100 feet

Additional considerations to the above information include:

- Field access(es) will be spaced in a one access per 40-acre frontage.
- When a development generates more than 400 ADT, minimum access spacing of 480 feet is required.
- Access widths range from 24-40 feet, depending on the land use.

Sherburne County

Sherburne County adopted a Transportation Plan in 2019 which includes access management guidelines in Chapter 7, Implementation Plan. These guidelines have been used to review new developments, proposed roadway connections, and part of reconstruction projects. The 2019 Transportation Plan updated these guidelines to be tied to a roadways posted speeds rather than land use categories of rural, urbanizing, and urban core. The guidance is also tied to the designated proposed future functional classification from the transportation plan.

Roadway Functional Classification	Speed	Intersection Spacing		Signal Spacing	Private Access
		Full Access	Conditional Secondary		
Minor Arterial	50-55 mph	1/2 mile	1/4 mile	1/2 mile	660 feet where feasible or subject to conditions
	40-45 mph	1/4 mile	1/8 mile	1/4 mile	660 feet where feasible or subject to conditions
	< 40 mph	300 – 660 feet depending on block length		1/4 mile	Permitted subject to conditions
Collector	50-55 mph	1/2 mile	1/4 mile	1/2 mile	660 feet where feasible or subject to conditions
	40-45 mph	1/4 mile	1/8 mile	1/4 mile	660 feet where feasible or subject to conditions
	< 40 mph	300’ – 660 feet depending on block length		1/8 mile	Permitted subject to conditions
Local	50-55 mph	1/4 mile		NA	330 feet where feasible
	40-45 mph	1/4 mile		NA	330 feet where feasible
	< 40 mph	300’ – 660 feet depending on block length		As warranted	330 feet where feasible

[1] Proposed road intersections must meet minimum county sight distance requirements.
[2] Residential accesses should meet minimum stop sight distances.
[3] Sherburne County has the authority to require a traffic study (scope determined by the county) for all developments at the developer’s expense.
[4] By policy, the county requires elimination, consolidation, and shared accesses.
[5] Access permits are required. The access permit will control the width, placement, and construction.
[6] Additional access may be permitted as right-in/out or temporary; however, other conditions must be satisfied.
[7] Turn lanes are required under several conditions. See Section 7.7 (2019 Transportation Plan) Development Review Process.
[8] Private access and conditions are defined in separate tables.

Stearns County

The Stearns County 2040 Transportation Plan, adopted in 2016, includes access management guidelines in Chapter 6, Implementation Plan. The plan specifically notes that these standards were developed to reflect those adopted by MnDOT, the St. Cloud APO, and surrounding counties such as Sherburne and Wright Counties. These access spacing guidelines are summarized in the following table.

Facility Type	Area Type	Typical Facility Characteristics/ Conditions	Intersection Design/Control	Intersection Spacing[2]	Driveway Spacing[3]	Minimum Signal Spacing
Principal Arterial	Rural	Interstate/ Freeway	Interchanges Only	1 mile	NA	NA
		Non-Freeways	Interchanges/Traffic Signals	1 mile	1/2 mile	1 mile
	Urbanized	Interstate/ Freeway	Interchanges Only	1 mile	NA	NA
		Non-Freeways	Interchanges/Traffic Signals/Innovative Intersections[1]	1/2 mile	1/4 mile	1/2 mile
	Urban Core	Interstate/ Freeway	Interchanges Only	1 mile	NA	NA
		Non-Freeways	Interchanges/Traffic Signals/Innovative Intersections[1]	1/2 mile	1/4 mile	1/2 mile
Minor Arterial	Rural	4-Lane/2-Lane	Traffic Signals/Stop Sign Control	1/2 mile	1/4 mile	1/2 mile
	Urbanized	4-Lane Divided/ 4-Lane Undivided	Traffic Signals/Stop Sign Control	1/4 mile	660 feet	1/4 mile
	Urban Core	4-Lane Divided/ 4-Land Undivided	Traffic Signals/Stop Sign Control	330 – 660 feet	330 feet	1/4 mile
Collector	Rural	2-Lane	Stop Sign Control	1/2 mile	1/8 – 1/4 mile***	NA
	Urbanized	4-Lane Undivided/ 3-Lane/2-Lane	Traffic Signals/Stop Sign Control	1/4 mile	660 feet	1/4 mile
	Urban Core	4-Lane Undivided/ 3-Lane/2-Lane	Traffic Signals/Stop Sign Control	330 – 660 feet	150 feet	1/8 – 1/4 mile

**All distances are potential minimums. Individual corridors will be handled on a case-by-case basis.*
***When addressing state-owned facilities, refer to MnDOT Access Management Manual.*
****To be determined by the County based on traffic volumes and driveway use.*
[1] Reduce Conflict Intersections (RCI), "Loons," etc.
[2] Primary full movement intersection
[3] Consolidate driveways whenever possible

Sartell

Title 11 of the Sartell City Code, Subdivision Regulations, details design standards for new subdivisions in Chapter 5. As found in 11-5-2(P), "Where a proposed plat fronts or is adjacent to an arterial or collector roadway as designated by the Comprehensive Plan and/or regional transportation plan(s), minimum spacing between access points to such thoroughfares shall be as follows except where impractical or impossible due to existing property divisions or topography:"

Street Type	Distance (Urban Core)	Distance (Urbanizing Area)
Principal Arterial	330 feet	1,760 feet (1/3 mile)
Minor Arterial	330 feet	1,320 feet (1/4 mile)
Collector	330 feet	660 feet (1/8 mile)
Local	330 feet	330 feet

Sauk Rapids

Sauk Rapids 2011 Transportation Plan discusses access management guidelines in Section 3.3. When guidelines cannot be met, it suggests several alternative strategies: shared access points or cross access easements for adjacent properties; consolidate and limit the number of access points for individual properties; new developments to obtain access from an adjacent road; encourage proper lot layout to minimize access points; and median restrictions.

According to Chapter 12 (Subdivision Regulations) of the City of Sauk Rapid's City Code, Section 12.06 Subd.5.D, "Street jogs with center line off-sets shall not be less than one hundred and twenty-five feet (125')." Additionally, Chapter 12.06 Subd. 5.E. states, "Local streets shall be so aligned or regulated that their use by through traffic will be discouraged."

City staff also indicated that the City Engineer also relies on industry guidance such as the Manual on Uniform Traffic Control Devices (MUTCD).

St. Cloud

Access spacing guidelines are included in the St. Cloud Development Code, specifically as it relates to arterial and collector road classifications. According to 16.9.G., commercial or office developments are encouraged to use "a system of joint use driveways and cross-access easements" where feasible. Additionally, 19.2.E states "Street jogs with centerline offsets of less than one-hundred twenty-five (125) feet shall be avoided."

As found in the St. Cloud Land Development Code, minimum driveway separation requirements (excluding farm field approaches) are as follows:

- Rural Residential (RR) District (Article 8): 300 feet on a collector or arterial street
- Agriculture (Ag) District (Article 7): 400 feet on a collector street; 1,250 feet on an arterial street

St. Joseph

St. Joseph adopted a Transportation Plan in 2012 that includes access management guidelines in Section 3.3. While Section 3.3 mentions using the St. Cloud APO access management standards (which have since been rescinded), additional standards were developed to guide the location and frequency of access locations (public or private roads or driveways) along with minor arterial and collector facilities (Table 5, 2012 Transportation Plan). The intent of these standards is that over time, as land is developed

or redeveloped, the access to the different classes of roadways will meet these guidelines. The following table summarizes these standards.

Facility Type	Area Type	Primary Full Movement Intersections	Conditional Secondary Intersection	Private Access
Minor Arterial	Rural	1/2 mile	1/4 mile	Restricted, but permitted subject to conditions
	Urban/Urbanizing	1/4 mile	1/8 mile	Highly restricted
Collector	Rural	1/2 mile	1/4 mile	Permitted subject to conditions
	Urban/Urbanizing	1/8 mile	NA	
	Urban Core	300-660 feet depending on block length		

Waite Park

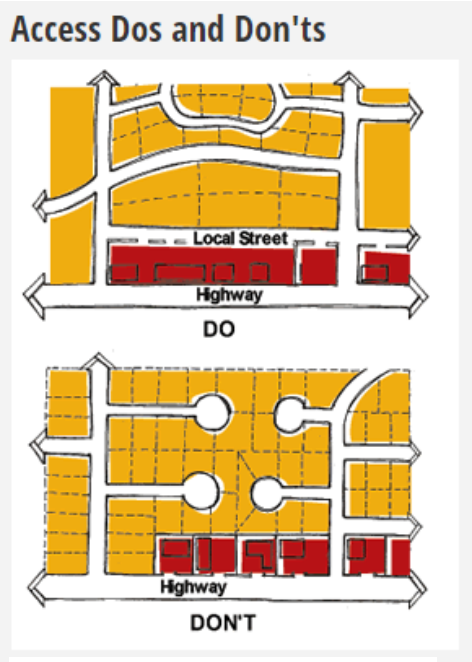
Waite Park's access management guidelines can be found in Ordinance 58, Subdivision Regulations. As found in 58.5 Subd. 2.Q., the following access spacing is required when a proposed plat fronts or is adjected to an arterial or collector roadway. Additionally, Ordinance 58.5 Subd. 2.R. provides access spacing guidelines for local roadways.

Street Type	Distance (Urban Core)	Distance (Urbanizing Area)
Principal Arterial	330 feet (1/16 mile)	2,310 feet (7/16 mile)
Minor Arterial	330 feet (1/16 mile)	1,980 feet (3/8 mile)
Collector	330 feet (1/16 mile)	660 feet (1/8 mile)
Local	330 feet (1/16 mile)	330 feet (1/16 mile)

III. MnDOT Access Management Guidelines and Policies

MnDOT's website defines access management as "the planning, design, and implementation of land use and transportation strategies in an effort to maintain a safe flow of traffic while accommodating the access needs of adjacent development." Effective access management helps reduce congestion and crashes, preserve road capacity, improve travel times and mobility, and supports local economic development. MnDOT suggests ten ways to manage access:

1. Think land use and transportation
2. Identify and plan for growth areas
3. Develop a complete hierarchy of roads
4. Link access regulations to roadway function
5. Avoid strip development – promote commercial nodes
6. Connect local streets between subdivisions
7. Design subdivisions with access onto local streets
8. Practice good site planning principles
9. Correct existing problems as opportunities arise
10. Coordinate local development plans with MnDOT and country road agencies



MnDOT's visualization of access dos and don'ts

Access Category System

MnDOT developed an access category system for the state trunk highway system which includes primary categories and subcategories. There are seven primary categories, based on the roadway's functional classification and importance within the statewide system. There are five subcategories based on the highway facility type and existing and planned land use for the surrounding area. This system reflects the 20-year planning horizon, not existing conditions.

Category	Land-Use or Facility Type	Typical Functional Classification	Typical Posted Speed
1 - High-Priority Interregional Corridors (IRCs)			
1F	Interstate Freeway	Interstate Highways	55 – 75 mph
1AF	Non-Interstate Freeway	Principal Arterials	55 – 65 mph
1A	Rural	Principal Arterials	55 – 65 mph
1B	Urban / Urbanizing	Principal Arterials	40 – 55 mph
1C	Urban Core	Principal Arterials	30 – 40 mph
2 - Medium-Priority Interregional Corridors			
2AF	Non-Interstate Freeway	Principal Arterials	55 – 65 mph
2A	Rural	Principal Arterials	55 – 65 mph
2B	Urban / Urbanizing	Principal Arterials	40 – 55 mph
2C	Urban Core	Principal Arterials	30 – 40 mph
3 - Regional Corridors			
3AF	Non-Interstate Freeway	Principal Arterials	55 – 65 mph
3A	Rural	Principal/Minor Arterials	45 – 65 mph
3B	Urban / Urbanizing	Principal /Minor Arterials	40 – 45 mph
3C	Urban Core	Principal/Minor Arterials	30 – 40 mph
4 - Principal Arterials in the Twin Cities Metropolitan Area and Primary Regional Trade Centers (Non-IRCs)			
4AF	Non-Interstate Freeway	Principal Arterials	55 – 65 mph
4A	Rural	Principal Arterials	45 – 55 mph
4B	Urban / Urbanizing	Principal Arterials	40 – 45 mph
4C	Urban Core	Principal Arterials	30 – 40 mph
5 - Minor Arterials			
5A	Rural	Minor Arterials	45 – 55 mph
5B	Urban / Urbanizing	Minor Arterials	40 – 45 mph
5C	Urban Core	Minor Arterials	30 – 40 mph
6 - Collectors			
6A	Rural	Collectors	45 – 55 mph
6B	Urban / Urbanizing	Collectors	40 – 45 mph
6C	Urban Core	Collectors	30 – 40 mph
7 - Specific Area Access Management Plans			
7	All	All	All

Access Types

MnDOT established four access types that reflect the volume of traffic the access serves and whether the access is a public street intersection or a driveway.

Access Type	Access Description
ACCESS TYPE 1 Single Family or Field Access	Includes driveways that serve up to three single-family homes or provide field access. (Does NOT include agri-business driveways.)
ACCESS TYPE 2 Low-Volume Driveway <100 Trips/Day	Includes driveways that serve small commercial, industrial, public, and institutional developments; small residential complexes and subdivisions; or small agri-business operations. o May be designated as a private street serving ten or fewer lots; o Generates fewer than 100 trips per day.
ACCESS TYPE 3 High-Volume Driveway >100 Trips/Day	Includes driveways that serve large commercial, industrial, public, and institutional developments; shopping centers; industrial and office parks; colleges; large residential complexes and subdivisions, or large agricultural operations. o May be designated as a private street serving more than ten lots; o Generates 100 trips per day or more.
ACCESS TYPE 4 Public Street	All public street or roadway intersections. o Should be part of an integrated network that serves multiple properties.

MnDOT Access Types

*Trip – A one-way movement.
*Typically, 100 trips per day would mean 50 vehicles entering an access and 50 vehicles exiting an access.

Access Management Guidelines

For each of the access categories above, MnDOT developed guidelines for the spacing of public street connections to the state trunk highway system. The recommended street spacing guidelines are broken into two categories and summarized in the following tables:

- Interregional Corridor (IRC) system
- Non-Interregional Corridor (IRC) system

MnDOT's Recommended Street Spacing for IRCs

Category	Area or Facility Type	Typical Functional Class	Public Street Spacing		Signal Spacing
			Primary Full-Movement Intersection	Secondary Intersection	
1	**High-Priority Interregional Corridors & Interstate System (IRCs)**				
1F	Interstate Freeway	Principal Arterials	Interchange Access Only		⊘
1AF	Non-Interstate Freeway		Interchange Access Only (see Section 3.2.7 for interim spacing)		See Section 3.2.5 for Signalization on Interregional Corridors
1A	Rural		1 mile	1/2 mile	
1B	Urban/ Urbanizing		1/2 mile	1/4 mile	
1C	Urban Core		300-660 feet dependent upon block length		
2	**Medium-Priority Interregional Corridors**				
2AF	Non-Interstate Freeway	Principal Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		See Section 3.2.5 for Signalization on Interregional Corridors
2A	Rural		1 mile	1/2 mile	
2B	Urban/ Urbanizing		1/2 mile	1/4 mile	
2C	Urban Core		300-660 feet, dependent upon block length		1/4 mile
3	**Regional Corridors**				
3AF	Non-Interstate Freeway	Principal and Minor Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		Interim
3A	Rural		1 mile	1/2 mile	See Section 3.2.5
3B	Urban/ Urbanizing		1/2 mile	1/4 mile	1/2 mile
3C	Urban Core		300-660 feet, dependent upon block length		1/4 mile

MnDOT's Recommended Street Spacing for Non-IRCs

Category	Area or Facility Type	Typical Functional Class	Public Street Spacing		Signal Spacing
			Primary Full-Movement Intersection	Secondary Intersection	
4	**Principal Arterials in the Twin Cities Metropolitan Area and Primary Regional Trade Centers (Non-IRCs)**				
4AF	Non-Interstate Freeway	Principal Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		Interim
4A	Rural		1 mile	1/2 mile	See Section 3.2.5
4B	Urban/ Urbanizing		1/2 mile	1/4 mile	1/2 mile
4C	Urban Core		300-660 feet, dependent upon block length		1/4 mile
5	**Minor Arterials**				
5A	Rural	Minor Arterials	1/2 mile	1/4 mile	See Section 3.2.5
5B	Urban/ Urbanizing		1/4 mile	1/8 mile	1/4 mile
5C	Urban Core		300-660 feet, dependent upon block length		1/4 mile
6	**Collectors**				
6A	Rural	Collectors	1/2 mile	1/4 mile	See Section 3.2.5
6B	Urban/ Urbanizing		1/8 mile	Not Applicable	1/4 mile
6C	Urban Core		300-660 feet, dependent upon block length		1/8 mile
7	**Specific Area Access Management Plans**				
7	All	All	By adopted plan		

MnDOT's Access Management website (www.dot.state.mn.us/accessmanagement) includes resources and more information. The "Category Assignments" tab includes primary categories and subcategory assignments by MnDOT district. The "Resources" tab includes the Access Management Manual, which includes further details regarding the State's guidelines and policies relating to access management.

Intersection Definitions

MnDOT's Access Management Manual includes definitions of primary intersections, and secondary intersections, which are used in the tables above.

Primary Intersection

Primary intersection refers to full-access intersections that may be considered for signalization if the appropriate signal warrants have been met. These intersections have full access and do not restrict traffic turning movements for either the main line road or side street connection. The spacing of primary intersections is governed by the need to provide uniform spacing for effective signal coordination in urban/urbanizing areas and adequate spacing for left-turn lanes on unsignalized highways in both urban and rural areas.

Secondary Intersection

Secondary intersection spacing refers to intersections that may be accommodated midway between primary intersections if they do not create a high-risk conflict condition. Generally, secondary intersections are limited to right-in/right-out traffic from side street connections, usually limited by the presence of a median or signage control.

IV. MnDOT Access Management Manual Update with Land Use Context Categories

The Minnesota Department of Transportation (MnDOT) is in the process of creating a new access management manual that will replace the current guidelines. This manual is expected to be completed and released in early 2025.

The new MnDOT Access Spacing Manual will define land use context categories. Context categories refer to the land use of a place and provide a higher level of detail than the land use categories in the existing access management manual, which has three land use categories of rural, urban/urbanizing, and urban core. There are nine context categories in the draft manual, ranging from Urban Core to Natural. These categories provide general descriptions of the typical characteristics of such environments and are not intended to cover every scenario. Each context category includes a high/medium/low ranking for its own expected demand for walking, biking, transit, autos, and trucks.

When considering access spacing, the context category that most closely matches the surrounding land use should be used. MnDOT's new access spacing guide, which is scheduled to be published in October 2024, uses these nine context categories to help determine access spacing and placement. The nine context categories are defined below. Descriptions and expected traffic levels for each context category are sourced from the MnDOT Land Use Contexts: Types, Identification, and Use Technical Memo.

Urban Core

Urban Core land use is a compact, highly developed area of mixed uses, often stacked within buildings and structures. Uses include commercial/office, residential, institutional (e.g., hospital), public/civic, and some park and open space and greenway/trail, water access, and special event spaces.

Access and driveways may be limited, and closely spaced; trucks may use truck access/loading areas or docks, or load on-street. Traffic of all types is expected to be medium to high volume. There is often a need to cross (sometimes mid-block) to priority destinations (e.g., bus or rail stop, workplace/business, restaurant, school, park). Roads (non-freeway) are typically a closely spaced and connected street grid; there may also be some shared-use paths.

Urban Commercial

Urban Commercial land use is a medium to large size, highly developed residential area with local shops and parks. Uses in an Urban Commercial area include single- and multi-family residential, commercial, institutional, and parks, open spaces, and trails.

Access and driveway spacing may vary and be closely spaced; truck access and parking may be constrained. Pedestrian, bicycle, bus, and auto traffic is typically medium to high volume, with less truck/freight use. There is often a need to cross to priority destinations (e.g., small grocery, bus stop, school, park, restaurant, home). Roads (non-freeway) are typically a closely connected street grid; there may also be some shared-use paths.

Urban Residential

Urban Residential land use is a medium to large size, highly developed residential area that includes local shops and parks. Generally, uses include single- and multi-family residential, some local commercial and institutional areas, and parks, open space, and trails.

Access and driveway spacing may vary and be closely spaced; truck access and parking may be constrained. Pedestrian, bicycle, bus, and auto traffic is typically medium to high volume, with less truck/freight use. There is often a need to cross to priority destinations (e.g., small grocery, bus stop, school, park, restaurant, home). Roads (non-freeway) are typically a closely connected street grid; there may also be some shared-use paths.

Suburban Commercial

Suburban Commercial land use is a medium to large size, moderately developed area of shops, restaurants, entertainment, office/work, and other activities, typically with medium to large areas of parking lots.

Access and driveways may be limited, and moderately spaced on main/busier roads. Auto and truck traffic is typically medium to high volume, with some bus, and varied non-motorized use with a need to cross mid-block to priority destinations (e.g. grocery, bus stop, home, park, school, and restaurant). Main roads typically connect to medium-spaced streets that form a grid, or shared-use paths.

Suburban Residential

Suburban Residential land use is a medium to large size, lightly to moderately developed residential area, mostly of single-family with some multi-family housing, and occasional neighborhood parks and trails, and lakes and woodlands.

Access and driveways from main roads are typically limited and moderately spaced. Auto, pedestrian, bicycle, bus, and truck traffic are typically low to medium on internal roads and higher on main roads. People use often widely spaced shared-use paths sometimes with grade-separations and roads with occasional sidewalks to access nearby parks, trails, greenways, and lakes, and bus stops on main roads.

Industrial—Warehouse—Port

An Industrial – Warehouse – Port land use is typically a medium to large size, limited, and specific-use developed area. Uses include industrial/manufacturing, warehouse/shipping, commercial, and ports.

Truck access/sized driveways are prominent, direct access may be limited, moderately spaced, and controlled (e.g., by fences/gates). Large truck, and auto traffic is expected; non-motorized use may be low, with a need to cross at (sometimes widely spaced) bus stop and site entrances, intersections, and to access shared-use paths. Main roads typically connect to a medium to widely spaced grid-like internal road system.

Rural Crossroad

Rural Crossroad land use is a small, lightly developed area at the crossing or intersection of two rural roads, typically in an unincorporated or very small community. Uses include residential, commercial, industrial, institutional, agriculture, public/civic, park, trail, and airstrip.

Access and driveways may be closely to moderately spaced. Auto and truck traffic is typically low to medium volume, with higher truck use in freight corridors. Non-motorized (especially pedestrian) use may be medium, with a need to cross at or near/priority destinations (e.g., grocery, home, park, school, restaurant, and maybe bus stop). Slow-moving horse-and-buggy, ATV-snowmobile, and freight-rail,

buses, and trails may be expected. Main roads are typically connected to varied, sometimes sparsely spaced streets

Rural

Rural land use is a medium to large size, occasionally or sparsely settled area of farms and scattered forests. Uses include agriculture, forestry, resource conservation, mining, park, trail, and public/civic.

Access and driveways may be limited and moderately spaced, with some field access. Auto, truck, and farm traffic is typically low to medium volume; bicycle and bus traffic may be low, with people walking and bicycling and crossing at or near priority destinations (e.g., grocery, bus stop, home, park, school, and restaurant) and at intersections. Slow-moving horse-and-buggy, and ATV-snowmobile users may be present. Main/busier roads are typically connected to a varied, sometimes widely spaced paved or gravel road grid, and shared-use paths.

Natural

Natural land use is a sparsely settled area in a natural condition, including places like wetlands, forests, meadows/prairies, lakes, rivers, scenic areas, steep slopes, wilderness, and some historic areas. Uses include resource preservation/conservation, forestry, park, trail, scenic/tourist, resort, water access, and mining.

Access and driveways may be limited and moderate to widely spaced. Traffic is typically low to medium volume, with more bicycling and walking on scenic routes and crossing at developed/service areas, and some trucks hauling logs/gravel, buses, recreational vehicles, and snowmobiles-ATVs. Main and busier roads are often connected to varied, sometimes widely spaced paved or gravel roads or shared-use paths.

The following table summarizes access by context category and transportation mode.

Context category	Walking	Bicycling	Transit	Autos	Trucks
Urban Core	High	High	High	Low	Medium
Urban Commercial	High	Medium	High	Low	Medium
Urban Residential	High	High	Medium	Low	Low
Suburban Commercial	High	High	Medium	Low	Low
Suburban Residential	High	High	Medium	Medium	Low
Industrial	Medium	Low	Low	High	High
Rural Crossroad	High	Medium	Low	High	Low
Rural	Medium	Low	Low	High	High
Natural	High	High	Low	Medium	High

Once finalized and published, the updated MnDOT access spacing guidance will be more comprehensive and provided updated direction for access considerations related to land use context. Once the updated Access Management Manual is complete, this will be a primary guiding resource for regional transportation planning decision-making.

V. Transportation Research Board's Access Management Manual: Components of Access Location and Spacing

The Transportation Research Board (TRB) is part of the National Academies of Sciences, Engineering, and Medicine. Its mission is to provide leadership in transportation improvements and innovation through trusted, timely, impartial, and evidence-based information exchange, research, and advice regarding transportation.

The TRB published the Access Management Manual as a comprehensive manual created that provides a wide variety of information to practitioners, including:

- Access management techniques
- Developing and administering access management programs
- Issues relevant to local, state, and regional practitioners

The manual includes a variety of practical information for many parts of the access management process. The following is a selection of relevant examples from the manual.

Operational Characteristics

The main operational characteristics that influence the location and design of access points are:

- Speed: Stopping distance, intersection sight distance, maneuvering distance (Changing lanes, etc.) all increase rapidly as speed increases, requiring more space between access points.
- Volume and Traffic Flow: Urban areas generally see higher traffic volumes than on comparable roads in rural areas, and rural traffic is generally more consistent in terms of traffic flow. Urban areas have larger peaks in traffic volumes, which slows down traffic. Traffic signals also affect traffic flow, leading to platoons of vehicles traveling together with smaller volumes of sparsely distributed vehicles between platoons.

Sight Distance

Adequate sight distance is a critical part of locating access points and ensures that drivers can cross or enter the road safely. There are three main sight distance types:

- Stopping Sight Distance: The sight distance required for a driver to perceive and react to a discernable hazard and then brake to a stop before reaching the hazard.
- Intersection Sight Distance: The sight distance required for drivers to safely make a left or right turn from an access connection or to cross a roadway or for a driver to safely make a left turn from a roadway into an access connection.
- Decision Sight Distance: The distance required by a driver to ascertain and safely respond to an unexpected, difficult, or unfamiliar situation. Decision sight distance addresses the need to provide drivers, especially unfamiliar drivers, with enough distance to safely turn into the desired location and is an integral part of the access location and design of large traffic generators. A common approach to providing decision sight distance is with advanced signage.

Perception – Reaction Time

Perception reaction time is the amount of time between when a driver sees a roadway hazard and is able to make a corresponding reaction in their vehicle. Perception-reaction times are quicker for drivers who are alert and familiar with their surroundings and traffic conditions. Generally, urban and suburban traffic conditions result in drivers having a higher level of alertness when compared to rural highways. This is shown in the often-used reaction times for urban/suburban compared to rural situations:

- Urban/Suburban: 1.5 seconds perception-reaction time
- Rural: 2.5 seconds perception-reaction time

VI. Access Spacing Consideration

Access spacing guidelines help to define the appropriate distance between access points onto a road, including primary intersections, secondary intersections, and driveways. Ensuring that access points are spaced optimally enhances both safety and mobility for all road users. The following table is advisory access spacing guidance for the St. Cloud APO Region. The purpose of this guidance is to provide consistency when planning access on existing or new roadways to maintain the planned character of the roadway consistent with the future functional classification and vision for the regional transportation system. For the purposes of this table, Primary Access Spacing and Secondary Access Spacing categories refer to intersections as defined in the MnDOT Access Management Guidelines and Policies, referenced above under the sub-heading "Intersection Definitions".

Functional Class / UZA Location	Primary Access Spacing	Secondary Access Spacing
Principal Arterial Urbanized Area	1/2 mile	1/4 mile
Principal Arterial Rural	1 mile	1/2 mile
Minor Arterial Urbanized Area	1/4 mile	1/8 mile
Minor Arterial Rural	1/2 mile	1/4 mile
Major Collector Urbanized Area	1/8 mile	approx. 300 ft
Major Collector Rural	1/2 mile	1/4 mile
Minor Collector Urbanized Area	1/8 mile	approx. 300 ft
Minor Collector Rural	1/2 mile	1/4 mile

In addition to the MnDOT Access Management Manual and the table above, agencies can consider best practices when investigating access spacing and access point placement. The following is a non-comprehensive list of best practices for evaluating access.

- Determination of intersection spacing based on functional classification, future functional classification, land use, and future land use
    - Consideration of land use context in understanding and applying access guidance standards or requirements
- Consideration within the development review process of detailed aspects such as:
    - Balancing safety with property access. Changes of use reviewed for reasonably convenient and suitable access
    - Support of street connectivity
    - Consideration of access control consolidation or purchase on major highways
    - Limiting and/or guiding the number of driveways, location, and treatment based on technical factors such as:
        - Sight distance
        - Spacing between driveways
        - Access within the functional area of an intersection
        - Offset driveways
        - Interim accesses
        - Turn lane warrants
- Special consideration and limitation of intersections and driveway spacing near interchange ramps

- Incorporation of access management improvements related to safety including:
    - Impacts to vulnerable users (bicyclists, pedestrians, transit users)
    - Mitigation for negative impacts
    - Livability factors

VII. Summary

There is a strong correlation between access management, travel delay, and travel safety. Good access management allows for safer travel at higher speeds. For example, a TRB study[1] estimates that doubling access on a corridor from 10 to 20 access points per mile increases crash rates by 40%. Similarly, a Colorado demonstration project revealed that half-mile signal spacing and raised medians on a five-mile roadway segment reduced total hours of vehicle travel by 42% and total hours of delay by 59% as compared to quarter-mile spacing.[2] In general, the purpose of arterial corridors is to provide facilities for longer trips, at higher speeds, for higher volumes of traffic. Therefore, appropriately limiting access points is an important component of protecting the utility and value of the public investment made into these corridors.

A comparison of the inventory of current access management practices presented in this memo shows consistency across the jurisdictions of the APO. Access management for specific corridors also takes into account that each development and access decision exists within unique a context that requires engineering and planning judgement for decision-making.

This memorandum summarizes the access management guidelines in place for member agencies of the St. Cloud APO and provides an overview of MnDOT guidance. All member agencies have guidance specific to their roadway authority and development and land use authority identified in their transportation plans, ordinances, or other documents. Access management guidelines for member agencies vary depending on specific agency land use and policy needs. A majority of agency guidance ties access spacing to land use development type and urban or rural development context.

The information in this memo is a reference and is intended to inform regional transportation system planning as well as be used as a tool for local agencies in furthering local access management guidance.

[1] "Access Spacing and Traffic Safety", by Vassilios Papayannoulis, Jerome S. Gluck, and Kathleen Feeney (https://onlinepubs.trb.org/onlinepubs/circulars/ec019/Ec019_c2.pdf)
[2] "Final Report of the Colorado Access Control Demonstration Projects", Colorado Department of Highways, 1985

TECHNICAL MEMORANDUM

Date: December 9, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Functional Class Arterial and Collector Study Team

Subject: Task 4.2 ROW Preservation Agency Overview and Regional Guidance

I. Overview

This memo summarizes the existing conditions regarding right-of-way (ROW) preservation guidelines and policies by St. Cloud APO member agencies including the Minnesota Department of Transportation (MnDOT), three counties, and five cities. These ROW preservation guidelines allow planners to dedicate and preserve land to serve transportation infrastructure needs in response to growth or land use changes.

Right-of-way preservation needs vary depending on the roadway typical section and land use context in an urban or rural setting. Generally, right-of-way preservation needs increase with the number of travel lanes, and presence of center median. Due to the space required for proper water conveyance and storage in rural ditches, rural sections require more right-of-way than urban sections. Functional classification may influence ROW needs as more space may be required on higher classification roadways, largely due to contributing factors such as travel speeds, sightlines, traffic volumes, and access spacing.

II. Member Agency ROW Preservation Guidelines and Policies

Staff reviewed relevant land use plans, zoning, and transportation-related documents for the St. Cloud APO, Benton, Sherburne, and Stearns counties, the cities of Sartell, Sauk Rapids, St. Cloud, St. Joseph, and Waite Park. The following details ROW preservation for each St. Cloud APO member agency.

St. Cloud APO

The St. Cloud APO currently does not have specific ROW preservation guidelines or policies that direct local agencies. The 2050 Metropolitan Transportation Plan, however, includes typical roadway sections which illustrate associated right of way needed for each type of roadway facility.

Benton County

Benton County adopted “Highway Department Access and Right of Way Width Guidelines” in 2009. Section III.1. indicates that the width of ROW dedication will be based on “functional classification of the adjacent county roadway and the scope/nature of the necessary improvements due to the development itself.” The following table summarizes required ROW widths based on functional classification.

	Urban Roadways		Rural Roadways		Local Roads (100 ADT, including subdivision traffic)	Urban Roadways in Rural Town Sites
	Urban Arterials	Collectors	Principal Arterials	Minor Arterials (and below)		Major/Minor Collector
ROW Exaction from Centerline	60 feet	50 feet	75 feet	60 feet	50 feet	50 feet*

**Where existing encroachments make the 50 foot requirement impractical, a minimum ROW width of 40 feet may be approved.*

Sherburne County

Sherburne County adopted a Transportation Plan in 2019. Chapter 7 (Implementation Plan) includes the following ROW preservation guidelines.

Functional Class	Minimum ROW Widths*	Facility Type
Principal Arterial	120 feet	4-lane divided
	150 feet	5-6 lane divided
Minor Arterial	100 feet	4-lane undivided
	120 feet	4-lane divided urban
	150 feet	4-land divided rural
	100 feet	3-lane urban
	100 feet	2-lane rural
Collector	100 feet	3-lane urban
	100 feet	2-lane rural

***All ROW widths assume no parking on roadway; for separated bike/pedestrian facilities adjacent to roadways, add 10-15 feet to ROW widths.*

Stearns County

The Stearns County 2040 Transportation Plan includes ROW preservation guidelines in Chapter 6 (Implementation Plan).

Functional Class	Minimum ROW Widths*	Facility Type
Principal Arterial	120 feet	2-lane rural
	150 feet	4-lane urban
	300 feet	4-lane rural
Minor Arterial	100 feet	2-lane urban
	100 feet	2-lane rural
	100 feet	3-lane urban
	150 feet	4-lane urban
	220 feet	4-lane rural
Collector (Major or Minor)	80 feet	2-lane urban
	100 feet	2-lane rural
	100 feet	3-lane urban

**All ROW widths assume no parking on roadway. All ROW widths can accommodate adjacent trail facilities on both sides of the roadway.*

Sartell

ROW preservation guidelines can be found in Title 11 (Subdivision Regulations), Chapter 5 (Design Standards) of the City Code. The following table summarizes the minimum standards from 11.5.2.J.

Street Type	Minimum ROW/Easement Width	Minimum Pavement Width	Maximum Grade	Minimum Strength
Minor Arterial	100 feet	44 feet	4%	9 tons
Collector	80 feet	38 feet	6%	9 tons
Local	66 feet	36 feet	6%	7 tons
Frontage	66 feet	36 feet	6%	9 tons
Trail	12 feet	8 feet	ADA Specs	N/A
Sidewalk	12 feet	6 feet	ADA Specs	N/A
Alley Residential	20 feet	15 feet	6%	7 tons
Alley Commercial	24 feet	16 feet	6%	9 tons

The City of Sartell also adopted a Complete Streets Policy in 2018. The implementation section of the Complete Streets Policy notes that greater attention will be paid to projects particularly in the Town Square area and arterial roadways.

Sauk Rapids

The City of Sauk Rapids adopted a Transportation Plan in 2011. Section 3.5 identifies basic approaches for ROW preservation such as land acquisition, landowner agreements, land use regulations, and access management. Chapter 12 (Section 12.06 Subd. 5.B. of the Subdivision Regulations) of the Sauk Rapids City Code also details minimum ROW preservation design standards.

Street Type	ROW Width	Centerline Tangent Reverse Curve	Centerline Radius
Principle Arterial	*	*	*
Minor Arterial	*	*	*
Collector	80 feet	100 feet	375 feet
Local	60 feet	50 feet	200 feet
Access/Service	36 feet	50 feet	75 feet
Alley (Commercial & Industrial Only)	24 feet	50 feet	75 feet
Cul-de-sac	100 feet diameter		

**Special design - by City Engineer*

In addition to the above design standards, Section 12.06 Subd. 8 of the Subdivision Regulations includes the following requirements for bicycle routes or lanes and sidewalks when improvements are being made along certain roadways.

	Urban Collectors and Urban Arterials	Rural Collectors and Rural Arterials	Local Streets
Bicycle Routes/Lanes	5 feet, on both sides	5 feet, on both sides	Consideration given, especially for missing links
Sidewalks/Trails	5 feet sidewalk and 6 feet boulevard (landscaped), on both sides	5 feet or 8-12 feet trails	Consideration given, especially for missing links*

***Sidewalks on interior streets of new subdivisions shall be installed on at least one side of permanently constructed roads, except cul-de-sac streets less than 500 feet in length.*

St. Cloud

St. Cloud's Land Development Code, Article 19.2.B. details ROW preservation guidelines as follows.

Road Type	Minimum Width
Rural Principal Arterial	150 feet
Urban Principal Arterial	120 feet
Rural Minor Arterial	120 feet
Urban Minor Arterial and/or Rural Collector	100 feet
Urban Collector	80 feet
Local Non-Residential	66 feet
Cul-De-Sac or Local Residential	60 feet
Alleys; Residential	16 feet
Alleys; Non-Residential	24 feet
Walkway	10 feet
Pedestrian/Bicycle Trail	20 feet

Throughout the St. Cloud Comprehensive Plan, right-of-way improvement recommendations are made for specific small areas and corridors. Further, St. Cloud adopted a Complete Streets Policy in 2011.

St. Joseph

The City of St. Joseph adopted a Transportation Plan Update in 2012. Section 3.4 (Design Guide) details ROW preservation guidelines as follows.

Functional Class	Minimum ROW Widths*	Facility Type
Minor Arterials	80-150 feet	Up to 4-lane (divided), based on projected ADT
Major Collectors	80-100 feet	Up to 4 lanes (undivided), based on projected ADT
Minor Collectors	66-80 feet	2-lane (undivided) with sidewalk/trail

Section 3.4 in the 2012 Transportation Plan includes diagrams that illustrate sample cross-sections for various Rural and Urban facility types.

Section 5.1 of the 2012 Transportation Plan further details non-motorized facilities as follows:

- Sidewalks: 4-6 feet
- Bicycle Lanes (roadway or shoulder): 3-5 feet
- Trails (shared, bicycle/pedestrian facilities): 8-12 feet

Waite Park

The City of Waite Park adopted a Transportation Plan in 2007. Section 7 (Design Guide) of the plan provides ROW preservation guidance.

Functional Class	Minimum ROW Widths*	Facility Type
Minor Arterials	80-150 feet	Up to 4-lane (divided) with sidewalk/trail on both sides of the road, based on projected ADT
Collectors	80-100 feet	Up to 4 lanes (undivided) with a trail, based on projected ADT
Minor Collectors	66-80 feet	2-lane (undivided) with sidewalk/trail

The diagrams associated with Section 7.0 in the 2007 Transportation Plan detail sample cross-sections for various Rural and Urban facility types.

The Waite Park Ordinance 58 (Subdivision Regulations) further details ROW preservation guidelines in Section 58.5 Subd. 2.K.

Street Type	Minimum ROW/Easement Width	Minimum Pavement Width	Maximum Grade	Minimum Strength
Minor Arterial	100 feet	44 feet	4%	9 tons
Collector	80 feet	38 feet	6%	9 tons
Local	66 feet	36 feet	6%	7 tons
Frontage	66 feet	36 feet	6%	9 tons
Trail	12 feet	8 feet	ADA Specs	N/A
Sidewalk	12 feet	6 feet	ADA Specs	N/A
Alley Residential	20 feet	15 feet	6%	7 tons
Alley Commercial	24 feet	16 feet	6%	9 tons

Section 6.1 of the Transportation Plan also includes ROW preservations guidelines for pedestrian and bike trail facilities as follows:

- Sidewalks: 3-6 feet
- Trails (shared, bicycle/pedestrian facilities): 8-12 feet
- Bicycle Lanes (roadway or shoulder): 3-5 feet

III. Agency Summary

This memorandum summarizes the ROW preservation guidelines in place for member agencies of the St. Cloud APO. All three counties and five cities that are part of this study area have guidelines, policies, or ordinances in their transportation plans or other planning and policy documents. All jurisdictions have unique requirements. Most ROW guidance is based on whether a planned facility is urban (curb and gutter) or rural (ditches), as this greatly impacts the needed right of way width. This inventory of local guidance and policy serves as a foundation to understand potential regional and inter-agency coordination for ROW preservation of regional facilities.

IV. Regional Perspective for Right-of-Way Preservation Guidance

Table 1: Right of Way Preservation Guidance by Facility Type with Feature Assumptions incorporates regional best-practice right of way guidance. This table identifies recommended average right-of-way dimensions that were developed by assuming the desirable typical section element widths per industry standards (12’ travel lanes, 8’ shoulders, 10’ boulevards, etc.). The sum of these dimensions resulted in the typical section widths shown in the table below. These widths may be increased or decreased depending on design preferences and tolerances within design but should be considered a planning level starting point in estimating and planning for right-of-way needs. A breakdown of assumptions by element is provided in order to represent an additive approach to apply based on facility features. Specific dimensions of roadway elements can greatly vary depending on context and needs.

The following table includes right of way guidance based on potential facility type for ROW planning and preservation purposes. This guidance should be considered along with planning and engineering development of typical sections. This illustrative guidance is directed at regional roadway facilities as

well as federally functionally classified roadways and is dependent upon member agency and roadway authority adopted guidance, policies, and ordinances when implementing right-of-way preservation. Roadway features such as shoulder width, median width, and boulevard width may be adjusted depending on planned roadway speed and volume which is typically represented by the planned future functional classification and is also dependent on community land use and development context. Adjusted right of way widths would typically only be considered for roadways planned as Collectors. Table 2: Right of Way Preservation Guidance Context Adjustments illustrates adjustments that may be considered as part of functional classification and land use context consideration.

The illustration below shows a 10-foot utility buffer option and up to a 20-foot trail right-of-way option depending on the typical section type. Additional width considerations are recommended as part of the planning and engineering project design process to provide flexibility in three-dimensional design to minimize grading impacts outside of the right-of-way, and accommodate additional features such as screening, landscaping, sound barriers, etc. Additional width may also be required at intersections to accommodate turn lanes or along horizontal curvature.

Table 1: Right of Way Preservation Guidance by Facility Type with Feature Assumptions

Typical Section Type	Typical Functional Classification	Standard Preferred Right of Way Width by Facility Type (no trails)	Total Utility Zone Assumption	Total Lane Width Assumption	Total Shoulder Width Assumption	Median Assumption	Blvds/ Rural Ditch Assumption	Trail per Side (not included in standard width)
2-Lane Undivided, Rural	Minor Collector, Major Collector, Minor Arterial	110	8	24	18	0	60	20
2-Lane Undivided, Urban	Minor Collector, Major Collector, Minor Arterial	90	24	24	22	0	20	10
2-Lane Divided, Rural	Major Collector, Minor Arterial	130	8	28	16	18	60	20
2-Lane Divided, Urban	Major Collector, Minor Arterial	110	24	28	20	18	20	10
3-Lane, Rural	Minor Collector, Major Collector, Minor Arterial	120	6	38	16	0	60	20
3-Lane, Urban	Minor Collector, Major Collector, Minor Arterial	100	20	40	20	0	20	10
4-Lane Divided, Rural	Minor Arterial, Principal Arterial	180	8	48	24	40	60	20
4-Lane Divided, Urban	Minor Arterial, Principal Arterial	130	20	52	20	18	20	10
4-Lane Undivided, Rural	Minor Arterial, Principal Arterial	140	8	48	24	0	60	20
4-Lane Undivided, Urban	Minor Arterial, Principal Arterial	110	20	52	18	0	20	10

Table 2: Right of Way Preservation Guidance Context Adjustments

Typical Section Type	Typical Functional Classification	Standard Preferred Right of Way Width by Facility Type (no trails)	Context Adusted Illustrative Right of Way Width	Land Use Context and Functional Class Notes on Illustrative Adjustments
2-Lane Undivided, Rural	Minor Collector, Major Collector, Minor Arterial	110	100	Decrease shoulder width to 8 ft total
2-Lane Undivided, Urban	Minor Collector, Major Collector, Minor Arterial	90	70	Decrease shoulder width to 12 ft total, decrease blvd. width to 10 ft total
2-Lane Divided, Rural	Major Collector, Minor Arterial	130	N/A	No recommended adjustments
2-Lane Divided, Urban	Major Collector, Minor Arterial	110	100	Decrease blvd. width to 10 ft total
3-Lane, Rural	Minor Collector, Major Collector, Minor Arterial	120	110	Decrease shoulder width to 8 ft total, decrease total lane width to 36 ft
3-Lane, Urban	Minor Collector, Major Collector, Minor Arterial	100	80	Decrease shoulder width to 10 ft total, decrease blvd. width to 10 ft total
4-Lane Divided, Rural	Minor Arterial, Principal Arterial	180	170	Decrease shoulder width to 14 ft total
4-Lane Divided, Urban	Minor Arterial, Principal Arterial	130	110	Decrease shoulder width to 10 ft total, decrease blvd. width to 10 ft total
4-Lane Undivided, Rural	Minor Arterial, Principal Arterial	140	130	Decrease shoulder width to 14 ft total
4-Lane Undivided, Urban	Minor Arterial, Principal Arterial	110	90	Decrease shoulder width to 8 ft total, decrease blvd. width to 10 ft total

TECHNICAL MEMORANDUM

Date: December 9, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Regional Arterials and Collectors Study Team

Subject: Task 5 – Roadway Segment Existing Functional Classification Screening Documentation

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I. Introduction

This memorandum provides an overview of the methodology used to evaluate the existing functional classification and potential future functional classification of roadway segments within the APO's planning area. This evaluation was used to identify roadway segments that have physical or operating characteristics outside of typical ranges for the functional classification they are currently assigned, in order to identify segments to be investigated further in the context analysis and evaluation phase.

II. Methodology Overview

For all criteria considered, a typical range for each functional classification was identified. In some cases, different typical ranges were identified for different area types (urban vs. rural, etc.). In general, range values were based on guidance from the Federal Highway Administration (FHWA) or from the Minnesota Department of Transportation (MnDOT). All FHWA guidance is sourced from the document *Highway Functional Classification Concepts, Criteria and Procedures, 2023 Edition.* The sections below describe each criterion and provide the value ranges and sources used for each.

Each segment was evaluated against each criterion and assigned a rating.

- The segment was assigned a rating of "Within" if the value for the segment was found to be within the typical range for segments with the segment's current or proposed functional classification and area type.
- The segment was assigned a rating of "Above" if the segment's value suggested a functional classification above its current or proposed rating ("Above" meaning more regional/mobility-focused in nature, i.e. a Principal Arterial – Interstate is the "highest" functional classification in this system).
- Segments were assigned a rating of "Below" the segment's value suggested a functional classification lower than its current or proposed rating ("Below' meaning more local/access-focused in nature, i.e. a Local roadway is the "lowest" functional classification in this system).

If a segment received a rating of either Above or Below, it was assigned a flag. The total number of flags each segment received was then calculated based upon these ratings, which were multiplied by each ratings respective weight.

III. Criteria Ranges

Average Annual Daily Traffic (AADT)

This criterion compares a roadway's daily traffic volume to ranges identified by FHWA. Existing AADTs were taken from MnDOT's Online Traffic Volume Mapping tool. Due to the importance of this criterion, *results were given double weighting (2 points)*.

Rural Areas:

- Principal Arterial – Other: 2,000-8,500 vehicles per day (vpd)
- Minor Arterial: 1,500-8,500 vpd
- Major Collector: 300-2,600 vpd
- Minor Collector: 150-1,100 vpd

Urban Areas:

- Principal Arterial – Other: 7,000-27,000 vpd
- Minor Arterial: 3,000-14,000 vpd
- Major Collector: 1,100-6,300 vpd
- Minor Collector: 1,100-6,300 vpd

Speed Limit

Typical speed limit ranges for each functional classification were also taken from FHWA guidance. The ranges used in this evaluation are as follows:

- Principal Arterial – Other: 30-55 mph
- Minor Arterial: 25-55 mph
- Major Collector: 25-55 mph
- Minor Collector: 25-35 mph

Median Condition

Median condition was also taken from FHWA guidance. *This criterion was given half weight (0.5 points)*. The presence or absence of a median was used in the evaluation as follows:

- Principal Arterial – Other: Either Divided or Undivided (All segments assigned "Within")
- All Others: Undivided (All Divided Segments assigned "Above")

Trip Length

StreetLight Data was used to collect information about the types of trips being made on each roadway. For this metric, average trip length was collected for an average day (including all days of the year). Cutoff values were based off of FHWA guidance. Due to the importance of this criterion, *results were given double weighting (2 points)*.

- Principal Arterial – Other: 15-35 miles
- Minor Arterial: 7-25 miles
- Major Collector: 5-10 miles
- Minor Collector: Less than 7 miles (no segments assigned "Below")

Access Spacing

MnDOT gives access spacing guidance in two pieces: primary intersection spacing and secondary intersection spacing. **Tables 1 and 2** below show MnDOT's recommended value for each, and the cutoff values used in this evaluation. *Each of these was given half the weight of other metrics* (i.e., 0.5 points was assigned to primary intersection spacing, 0.5 points was assigned to secondary intersection spacing for a total of up to 1 point assigned for overall access spacing).

Table 1: Primary Intersection Recommended Spacing and Cutoff Values

Area Type	Functional Classification	MnDOT Recommended (access per mile)	Cutoff Range (access per mile)
Rural	Principal Arterials, Major Arterial	1	0.5-2.0
	Minor Arterials, Major Collectors, and Minor Collectors	2	1.5-2.5
Urban/Urbanizing	Principal Arterials, Major Arterial	2	1.5-2.5
	Minor Arterials, Major Collectors, and Minor Collectors	8	6-10
Urban Core	Principal Arterials, Major Arterial	8-16	6-16
	Minor Arterials, Major Collectors, and Minor Collectors	8-16	6-16

Table 2: Secondary Intersection Recommended Spacing and Cutoff Values

Area Type	Functional Classification	MnDOT Recommended (access per mile)	Cutoff Range (access per mile)
Rural	Principal Arterials, Major Arterial	2	1.5-2.5
	Minor Arterials, Major Collectors, and Minor Collectors	4	3-5
Urban/Urbanizing	Principal Arterials, Major Arterial	4	3-5
	Minor Arterials, Major Collectors, and Minor Collectors	8	6-10
Urban Core	Principal Arterials, Major Arterial	8-16	6-16
	Minor Arterials, Major Collectors, and Minor Collectors	8-16	6-16

Future AADT

Future traffic volumes were considered as a marker for future change. The APO's 2050 travel demand model was used to understand projected volume growth on existing segments. For existing segments, future volumes were estimated as *(2050 scenario model volume – base year model volume) + Most Recent AADT from MnDOT*. The same volume thresholds presented in the AADT section above were used to assign flag values.

Growth Areas

Roads that connect areas where significant growth is expected may experience a change in their operations or need future investment to maintain safe and efficient operations. The socioeconomic (SE) data used for the APO's travel demand model was used to identify future growth areas.

Due to the unique nature of this characteristic, flags were assigned to any area expected to have a density increase of more than 10 households per acre or 10 jobs per acre. This rating was denoted as a "flag."

IV. Existing Functional Classification Data Profile Segment Screening

Table 3 shows the total number of flags for each segment, sorted from the highest number to the lowest. The table also shows whether the segments fall below, within, or above the typical range for each criterion, as well as the current functional classification of each segment. In total, 34 segments compiled 3.5 or more total flags. These segments were studied in further detail to understand potential future functional classification needs. The following sections include more details about each category.

Annual Average Daily Traffic (AADT)

Most of the segments with 3.5 or more flags received two points from the AADT category. Of the 34 segments identified for further review, as 31 were flagged for AADT outside of the typical range for their current and/or future functional classification based upon FHWA guidance – 18 segments were identified as above the typical range and 13 segments were identified below. **Figure 1** illustrates the AADT Segment Rating Compared to FHWA Guidelines for all segments.

Trip Length

Half of the segments identified for future review were found to be outside of the typical range for trip length as outlined by FHWA guidance. These 17 segments were all found to be above the trip length range for their functional classification. It should be noted that Minor Collectors did not have a below category, due to the average range starting at 0. **Figure 2** illustrates the Average Trip Length Segment Rating Compared to FHWA Guidelines for all segments.

Speed Limit

Fourteen out of the 34 identified segments experienced speed limits above the recommended range for the existing functional class. Of these 14 segments, 12 involved roadways currently classified as Minor Collectors. **Figure 3** illustrates the Speed Limit Segment Rating Compared to FHWA Guidelines for all segments.

Primary and Secondary Access Spacing

In terms of access spacing, 32 out of the 34 flagged segments were identified to have primary access point spacing above the recommended range outlined by FHWA guidance. The remaining two segments were within guidance for primary access spacing.

For secondary access spacing, 31 segments had spacing outside of the recommended range – 22 above the FHWA guidance and nine below guidance. Overall, 29 segments were outside of the recommended range for both primary and secondary access spacing. **Figure 4** illustrates the Primary Intersection Access Spacing Segment Rating Compared to FHWA Guidelines for all segments. **Figure 5** shows the Secondary Intersection Access Spacing Segment Rating Compared to FHWA Guidelines for all segments.

Median

Eight segments from the subset were above the range, meaning a median was present on a non-Principal Arterial. **Figure 6** shows the Divided Roads Segment Rating Compared to FHWA Guidelines for all segments.

Table 3: Total Flags by Segment

Seg. ID	Name	Current Functional Classification	AADT (two points)	Trip Length (two points)	Speed Limit (one point)	Primary Access Spacing (half point)	Secondary Access Spacing (half point)	Median (half point)	Total Flags
S-15	County Road 7 From County Road 44 to I-94	Major Collector	Above	Above	Within	Above	Above	Above	**5.5**
S-125	10th Street NE From Mayhew Lake Road NE to Highway 23	Major Collector	Below	Above	Within	Above	Above	Within	**5**
S-157	County Road 4 From County Road 2 to County Road 133 / 6th Street S	Major Collector	Above	Above	Within	Above	Above	Within	**5**
S-179	Little Rock Road NE From Highway 10 to 15th Avenue NE	Major Collector	Below	Above	Within	Above	Above	Within	**5**
S-180	125th St NW / County Road 1 / Great River Road From 27th Street N to County Boundary	Minor Arterial	Below	Above	Within	Above	Above	Within	**5**
S-28	40th Street S From County Road 74 to Cooper Avenue S	Major Collector	Below	Above	Within	Above	Above	Within	**5**
S-51	28th Avenue S From County Road 137 to Division Street	Major Collector	Above	Above	Within	Above	Above	Within	**5**
S-54	16th Street S From 9th Avenue S to 2nd Street S	Major Collector	Below	Above	Within	Above	Below	Within	**5**
S-9	State Highway 23 From APO Boundary to I-94	Principal Arterial - Other	Above	Above	Within	Above	Above	Within	**5**
S-106	Ridgewood Road From County Road 134 to County Road 4	Major Collector	Above	Above	Within	Above	Within	Within	**4.5**
S-93	11th Avenue N From W Saint Germain Street to 2nd Street N	Major Collector	Above	Above	Within	Above	Below	Within	**5**
S-150	Heritage Drive / 4th Avenue S From Heritage Drive to 2nd Street S	Minor Collector	Below	Within	Above	Above	Above	Above	**4.5**
S-172	27th Street N From Pine Cone Road to Riverside Avenue N	Major Collector	Below	Above	Within	Above	Within	Within	**4.5**
S-94	8th Avenue N / Courthouse Square From W Saint Germain Street to 7th Avenue N	Major Collector	Below	Above	Within	Within	Below	Within	**4.5**
S-10	Broadway Street W From Highway 23 to 235th Steet	Minor Collector	Above	Within	Above	Above	Below	Within	**4**
S-107	Ridgewood Road From County Road 75 to County Road 134	Minor Collector	Above	Within	Above	Above	Above	Within	**4**
S-177	30th Avenue N From County Road 4 to Main Street	Minor Collector	Below	Within	Above	Above	Above	Within	**4**
S-29	County Road 6 From State Highway 23 to I-94	Minor Collector	Below	Within	Above	Above	Above	Within	**4**
S-30	County Road 6 From I-94 to County Road 74	Minor Collector	Below	Within	Above	Above	Above	Within	**4**
S-37	Granite View Road / 2nd Avenue S From 33rd Street S to 7th Street S	Minor Collector	Above	Within	Above	Above	Above	Within	**4**
S-41	32nd Street SE / 27th Street SE From Highway 10 to 75th Avenue SE	Minor Collector	Above	Within	Above	Above	Above	Within	**4**
S-45	County Road 138 From I-94 to 28th Avenue S	Minor Collector	Above	Within	Above	Above	Above	Within	**4**
S-8	County Road 8 From Highway 23 to Broadway Street	Minor Collector	Below	Within	Above	Above	Below	Within	**4**
S-81	10th Avenue SE From 12th Street SE to 2nd Street SE	Minor Collector	Below	Within	Above	Above	Above	Within	**4**
S-1	State Highway 15 From APO Boundary to I-94	Principal Arterial - Other	Within	Above	Above	Above	Above	Within	**4**
S-133	Highway 95 NE From Highway 23 to 75th Avenue NE	Minor Arterial	Within	Above	Above	Above	Above	Within	**4**
S-103	8th Street N From 54th Avenue N / 50th Avenue N to State Highway 15	Minor Arterial	Above	Within	Within	Above	Above	Above	**3.5**
S-128	9th Avenue N From Northway Drive / 6th Avenue N to N Benton Drive	Minor Arterial	Above	Within	Within	Above	Above	Above	**3.5**
S-130	County Road 120 From County Road 4 to State Highway 15	Minor Arterial	Above	Within	Within	Above	Above	Above	**3.5**
S-53	Clearwater Road / 9th Avenue S From 22nd Street S to 2nd Street S	Minor Arterial	Above	Within	Within	Above	Below	Above	**3.5**
S-59	University Drive S From Cooper Avenue S to 15th Avenue Se	Minor Arterial	Above	Within	Within	Above	Below	Above	**3.5**
S-72	2nd Avenue S From 2nd Street S to 3rd Street N	Major Collector	Above	Above	Within	Within	Below	Within	**4.5**
S-99	Minnesota Street From County Road 2 to County Road 75	Minor Collector	Above	Within	Above	Above	Within	Within	**3.5**
S-83	Killian Boulevard SE From University Drive SE to 7th Street SE	Major Collector	Within	Above	Within	Above	Below	Above	**3.5**
S-78	9th Avenue N / 10th Avenue S From 2nd Street S to Northway Drive / 6th Avenue N	Minor Arterial	Above	Within	Within	Above	Within	Above	**3**
S-105	10th Avenue N / 54th Avenue N / County Road 134 From 3rd Street N to Pine Cone Road	Minor Arterial	Above	Within	Within	Above	Above	Within	**3**
S-109	8th Avenue NE From Minnesota Street to County Road 75	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-110	2nd Avenue NW From Minnesota Street to County Road 75	Minor Collector	Above	Within	Within	Above	Below	Within	**3**
S-112	Centennial Street From 33rd Avenue N to 9th Avenue N	Minor Collector	Above	Within	Within	Above	Below	Within	**3**
S-119	15th Street N From 9th Avenue N to 6th Avenue N	Minor Collector	Above	Within	Within	Above	Below	Within	**3**
S-137	1st Street S From benton Drive to Summit Ave S	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-142	Roberts Road From Pine Cone Road S to Heritage Drive	Minor Collector	Above	Within	Within	Above	Above	Within	**3**
S-143	8th Street N From Benton Drive to 6th Avenue N	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-147	Mayhew Lake Road NE From Golden Spike Road NE to 15th Avenue NE	Minor Arterial	Above	Within	Within	Above	Above	Within	**3**
S-151	4th Avenue N From 8th Street N to 11th Street N	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-164	2 1/2 Street / 2nd Street From Pine Cone Road to 2nd Avenue	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-186	27th Avenue S / Roosevelt Road / W Saint Germain Street From Division Street to 1st Stre	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-200	Cypress Road / Rolling Ridge Road From Ridgewood Road to County Road 4	Minor Collector	Below	Within	Within	Above	Below	Within	**3**
S-63	29th Avenue N From 2nd Street S to 3rd Street N	Minor Collector	Above	Within	Within	Above	Below	Within	**3**
S-66	State Highway 15 From 2nd Street S to County Road 120	Principal Arterial - Other	Above	Within	Within	Above	Above	Within	**3**

Seg. ID	Name	Current Functional Classification	AADT (two points)	Trip Length (two points)	Speed Limit (one point)	Primary Access Spacing (half point)	Secondary Access Spacing (half point)	Median (half point)	Total Flags
S-86	8th Avenue S From 2nd Street S to W Saint Germain Street	Minor Collector	Below	Within	Within	Above	Below	Within	3
S-89	1st Street S From 8th Avenue S to 7th Avenue S	Minor Collector	Above	Within	Within	Above	Below	Within	3
S-90	12th Avenue N From W Saint Germain Street to 2nd Street N	Minor Collector	Below	Within	Within	Above	Below	Within	3
S-102	Highway 23 From Highway 10 to 75th Avenue NE	Principal Arterial - Other	Within	Above	Within	Above	Above	Within	3
S-104	Highway 10 From 3rd Street NE to State Highway 15	Principal Arterial - Other	Within	Above	Within	Above	Above	Within	3
S-11	County Road 75 From I-94 to County Road 7	Major Collector	Within	Above	Within	Above	Above	Within	3
S-115	13th Street N From 13th Street N / Northway Drive to 7th Avenue N	Major Collector	Within	Above	Within	Above	Below	Within	3
S-117	E Saint Germain Street / 14th Ave NE From Highway 10 to Mayhew Lake Road NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-12	Broadway Street W From 235th Street to State Highway 23	Major Collector	Within	Above	Within	Above	Above	Within	3
S-120	15th Street N From Northway Drive to 9th Avenue N	Major Collector	Within	Above	Within	Above	Below	Within	3
S-124	35th Avenue NE From 2nd Street SE to 15th Street NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-13	County Road 47 From State Highway 23 to State Highway 15	Major Collector	Within	Above	Within	Above	Above	Within	3
S-134	15th Street NE From Mayhew Lake Road NE to Highway 23 NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-135	50th Avenue N From County Road 120 to Roberts Road / Heritage Drive	Major Collector	Within	Above	Within	Above	Above	Within	3
S-138	6th Avenue N From 1st Street S to 11th Street N	Major Collector	Within	Above	Within	Above	Below	Within	3
S-146	Heritage Drive From Pine Cone Road to Great River Road	Major Collector	Within	Above	Within	Above	Above	Within	3
S-148	Golden Spike Road NE From Mayhew Lake Road NE to APO Boundary	Major Collector	Within	Above	Within	Above	Above	Within	3
S-153	19th Avenue N From County Road 4 to 2 1/2 Street N	Major Collector	Within	Above	Within	Above	Above	Within	3
S-16	County Road 136 From State Highway 15 to I-94	Major Collector	Within	Above	Within	Above	Above	Within	3
S-161	35th Street NE From Highway 10 to Mayhew Lake Road NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-162	1st Avenue NE / N Benton Drive From 1st Street NE to Highway 10	Major Collector	Within	Above	Within	Above	Above	Within	3
S-17	County Road 115 From County Road 136 to County Road 7	Major Collector	Within	Above	Within	Above	Above	Within	3
S-170	Highway 10 From State Highway 15 to APO Boundary	Principal Arterial - Other	Within	Above	Within	Above	Above	Within	3
S-171	60th Street NW From Highway 10 to Mayhew Lake Road NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-173	County Road 3 From County Road 75 to County Road 4	Major Collector	Within	Above	Within	Above	Above	Within	3
S-174	County Road 4 From County Road 3 to County Road 2	Major Collector	Within	Above	Within	Above	Above	Within	3
S-175	15th Avenue NE From Hayhew Lake Road NE to APO Boundary	Major Collector	Within	Above	Within	Above	Above	Within	3
S-176	75th Street NW From Highway 10 to 15th Avenue NE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-178	County Road 3 From County Road 4 to County Road 17	Major Collector	Within	Above	Within	Above	Above	Within	3
S-18	Highway 10 From APO Boundary to 3rd Street NE	Principal Arterial - Other	Within	Above	Within	Above	Above	Within	3
S-181	Main Street E / County Road 5 From Central Avenue to County Road 1	Major Collector	Within	Above	Within	Above	Above	Within	3
S-182	County Road 2 From County Road 4 to Main Street	Minor Arterial	Within	Above	Within	Above	Above	Within	3
S-184	County Road 2 From Main Street to County Road 1	Minor Arterial	Within	Above	Within	Above	Above	Within	3
S-185	County Road 1 From 125th Street NW to 450th St/County Boundary	Major Collector	Within	Above	Within	Above	Above	Within	3
S-19	57th Street SE / 45th Avenue SE / 60th Street SE From County Road 8 SE to 75th Avenue S	Major Collector	Within	Above	Within	Above	Above	Within	3
S-20	75th Avenue SE From APO Boundary to 17th Street SE	Major Collector	Within	Above	Within	Above	Above	Within	3
S-201	County Road 17 From County Road 3 to 125th St NW	Major Collector	Within	Above	Within	Above	Above	Within	3
S-23	I-94 From County Road 75 / Roosevelt Road to State Highway 15	Principal Arterial - Interstat	Within	Above	Within	Above	Above	Within	3
S-24	I-94 From State Highway 23 to State Highway 15	Principal Arterial - Interstat	Within	Above	Within	Above	Above	Within	3
S-25	County Road 74 From State Highway 15 to 33rd Street S	Major Collector	Within	Above	Within	Above	Above	Within	3
S-26	State Highway 15 From I-94 to 2nd Street S	Principal Arterial - Other	Within	Above	Within	Above	Above	Within	3
S-27	County Road 136 From I-94 to 22nd Street S	Major Collector	Within	Above	Within	Above	Above	Within	3
S-3	I-94 From APO Boundary to County Road 75 / Roosevelt Road	Principal Arterial - Interstat	Within	Above	Within	Above	Above	Within	3
S-31	42nd Street SE / 45th Avenue SE / 12th Street SE From Highway 10 to Highway 10	Major Collector	Within	Above	Within	Above	Above	Within	3
S-38	I-94 From State Highway 23 to APO Boundary	Principal Arterial - Interstat	Within	Above	Within	Above	Above	Within	3
S-39	County Road 74 From 33rd Street S to 22nd Street S	Major Collector	Within	Above	Within	Above	Above	Within	3
S-4	Opportunity Drive / County Road 75 From APO Boundary to I-94	Major Collector	Within	Above	Within	Above	Above	Within	3
S-43	County Road 2 From 133rd Avenue to I-94	Minor Arterial	Within	Above	Within	Above	Above	Within	3
S-46	County Road 137 From County Road 6 to 28th Avenue S	Major Collector	Within	Above	Within	Above	Above	Within	3
S-49	County Road 137 / 7th Street S From County Road 137 / 28th Avenue S to 10th Avenue S	Major Collector	Within	Above	Within	Above	Above	Within	3

Seg. ID	Name	Current Functional Classification	AADT (two points)	Trip Length (two points)	Speed Limit (one point)	Primary Access Spacing (half point)	Secondary Access Spacing (half point)	Median (half point)	Total Flags
S-5	County Road 7 From 200th Street to County Road 44	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-52	Traverse Road From Cooper Avenue S to Roosevelt Road	Major Collector	Within	Above	Within	Above	Below	Within	**3**
S-6	County Road 44 From County Road 7 to APO Boundary	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-61	W Saint Germain Street From W Saint Germain Street / 33rd Avenue S to 2nd Street S	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-7	County Road 8 From Grand Lake Road to Highway 23	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-79	2nd Street SE / 55th Avenue SE / 17th Street SE From Highway 23 E to 75th Avenue SE	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-80	7th Avenue S / 6th Avenue N From 2nd Street S to 9th Avenue N	Major Collector	Within	Above	Within	Above	Below	Within	**3**
S-84	Wilson Avenue SE / 7th Street SE From 3rd Street SE to Lincoln Avenue SE	Major Collector	Within	Above	Within	Above	Below	Within	**3**
S-91	County Road 134 From County Road 75 to Ridgewood Road	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-92	1st Street S From 7th Avenue S to 5th Avenue S	Major Collector	Within	Above	Within	Above	Below	Within	**3**
S-95	County Road 2 From I-94 to County Road 75	Minor Arterial	Within	Above	Within	Above	Above	Within	**3**
S-97	County Road 51 From APO Boundary to County Road 2	Major Collector	Within	Above	Within	Above	Above	Within	**3**
S-114	Westwood Parkway APO Boundary to Ridgewood Road	Minor Collector	Below	Within	Within	Above	Within	Within	**2.5**
S-168	12th Street From Pine Cone Road to Riverside Avenue N	Minor Collector	Below	Within	Within	Above	Within	Within	**2.5**
S-113	County Road 2 From County Road 75 to County Road 4	Minor Arterial	Within	Above	Within	Above	Within	Within	**2.5**
S-123	County Road 134 From Pine Cone Road to County Road 120	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-126	5th Street S / 10th Street NE From Summit Avenue S to Mayhew Lake Road NE	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-144	18th Street N / Summit Avenue N From State Highway 15 to 2nd Street N	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-149	1st Avenue N / 11th Street N / Stearns Drive From Benton Drive to 2nd Street N	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-156	4th Avenue N From 11th Street N to 35th Street NE	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-165	2 1/2 Street N From 19th Avenue to Pine Cone Road	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-32	Cooper Avenue S From 40th Street S to 33rd Street S	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-56	Washington Memorial Drive From Roosevelt Road to 1st Street S	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-73	Washington Memorial Drive / W Saint Germain Street From 1st Street S to 8th Avenue S	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-75	W Lake Boulevard / 12th Avenue S From 7th Street S to W Saint Germain Street	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-76	College Avenue / County Road 121 From County Road 138 to County Road 75	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-85	7th Street SE / Highway 10 S Frontage / 15th Avenue SE From Highway 10 to 2nd Street SI	Major Collector	Within	Above	Within	Above	Within	Within	**2.5**
S-159	2nd Street From Riverside Avenue S to 2nd Street	Minor Arterial	Within	Within	Below	Below	Above	Within	**2**
S-169	75th Avenue NE From Highway 23 to 55th Street NE	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-183	County Road 5 From County Road 3 to Central Avenue	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-2	County Road 141 From Rausch Lake Road to State Highway 15	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-42	County Road 122 / County Road 138 From State Highway 23 to I-94	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-44	County Road 160 From APO Boundary to County Road 2	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-70	1st Street S / 2nd Street S From State Highway 15 to Highway 10	Principal Arterial - Other	Above	Within	Within	Within	Within	Within	**2**
S-77	75th Avenue SE From 17th Street SE to Highway 23 NE	Minor Collector	Within	Within	Above	Above	Above	Within	**2**
S-111	County Road 4 From 54th Avenue N / 50th Avenue N to County Road 4	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-131	County Road 120 From State Highway 15 to County Road 1	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-139	2nd Street N From Benton Drive to Highway 10	Minor Arterial	Within	Within	Within	Above	Below	Above	**1.5**
S-141	Pine Cone Road S From County Road 120 to 2nd Street S	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-152	Benton Drive From State Highway 15 to 1st Street NE	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-158	2nd Street S / 1st Street NE From Riverside Avenue S to State Highway 15	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-163	Pine Cone Road From 2nd Street to 27th Street	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-33	33rd Street S From State Highway 15 to Roosevelt Road	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-47	22nd Street S From State Highway 15 to Cooper Avenue S	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-50	Minnesota Boulevard From 15th Avenue SE to Highway 10	Minor Arterial	Within	Within	Within	Above	Above	Above	**1.5**
S-98	Wilson Avenue SE / 2nd Avenue S From 3rd Street SE to Benton Drive	Major Collector	Within	Within	Within	Above	Below	Above	**1.5**
S-121	Benton Drive From Highway 10 to State Highway 15	Minor Arterial	Within	Within	Within	Above	Within	Above	**1**
S-160	2nd Street S From Pine Cone Road to Riverside Avenue S	Minor Arterial	Within	Within	Within	Above	Within	Above	**1**
S-35	Cooper Avenue S From 33rd Street S to Cooper Avenue S	Minor Arterial	Within	Within	Within	Above	Within	Above	**1**
S-62	25th Avenue N From Roosevelt Road to 12th Steet to 13th Street N	Minor Arterial	Within	Within	Within	Above	Within	Above	**1**

Seg. ID	Name	Current Functional Classification	AADT (two points)	Trip Length (two points)	Speed Limit (one point)	Primary Access Spacing (half point)	Secondary Access Spacing (half point)	Median (half point)	Total Flags
S-64	Cooper Avenue From University Drive S to 3rd Street N	Minor Arterial	Within	Within	Within	Above	Within	Above	**1**
S-101	8th Street N From State Highway 15 to 9th Avenue N	Minor Arterial	Within	Within	Within	Above	Below	Within	**1**
S-108	County Road 133 From County Road 75 to County Road 4	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-116	12th Street N / 13th Street N / Northway Drive From State Highway 15 to 9th Avenue N	Minor Arterial	Within	Within	Within	Above	Below	Within	**1**
S-118	Mayhew Lake Road NE From Highway 23 to Golden Spike Road NE	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-129	County Road 4 / County Road 1 From State Highway 15 to 9th Avenue N	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-132	State Highway 15 From County Road 120 to Highway 10	Principal Arterial - Other	Within	Within	Within	Above	Above	Within	**1**
S-136	County Road 4 From County Road 120 to County Road 133	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-14	County Road 47 From Broadway Street E to State Highway 23	Minor Collector	Within	Within	Above	Within	Within	Within	**1**
S-140	Riverside Avenue S From State Highway 15 to 2nd Street S	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-145	Golden Spike Road NE From Highway 10 NW to Mayhew Lake Road NE	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-155	6th Street S / County Road 133 From County Road 4 to Pine Cone Road S	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-21	County Road 8 SE From APO Boundary to Minnesota Boulevard	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-22	Roosevelt Road From I-94 to Cooper Avenue S / University Drive S	Principal Arterial - Other	Within	Within	Within	Above	Above	Within	**1**
S-36	Granite View Road From County Road 6 to 33rd Street S	Minor Collector	Within	Within	Within	Above	Above	Within	**1**
S-40	State Highway 23 From I-94 to State Highway 15	Principal Arterial - Other	Within	Within	Within	Above	Above	Within	**1**
S-68	Walte Avenue S / 44th Avenue N From 2nd Street S to State Highway 15	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-69	7th Street S From Washington Memorial Drive to 5th Avenue S	Major Collector	Within	Within	Within	Above	Below	Within	**1**
S-71	County Road 75 / Division Street From I-94 to State Highway 15	Principal Arterial - Other	Within	Within	Within	Above	Above	Within	**1**
S-82	Lincoln Avenue SE From 15th Avenue SE to 3rd Street NE	Minor Arterial	Within	Within	Within	Above	Above	Within	**1**
S-87	3rd Street N / 16th Avenue N / 2nd Street N From State Highway 15 to 10th Avenue N	Minor Arterial	Within	Within	Within	Above	Below	Within	**1**
S-100	Lincoln Avenue SE From 3rd Street SE to S Benton Drive	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-122	Pine Cone Road From County Road 134 to County Road 120	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-127	Summit Avenue S From Benton Drive to 2nd Street N	Major Collector	Within	Within	Within	Above	Within	Within	**0.5**
S-166	Riverside Ave From 2nd Street to 27th Street	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-167	7th Street N From Pine Cone Road to Riverside Avenue N	Major Collector	Within	Within	Within	Above	Within	Within	**0.5**
S-34	Clearwater Road From Roosevelt Road to Roosevelt Road	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-48	7th Street S / 18th Street S From 10th Avenue S to State Highway 15	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-55	W Saint Germain Street / 33rd Avenue N From 22nd Street S to 12th Street N	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-57	2nd Street S / Roosevelt Road From State Highway 15 to Cooper Avenue S	Principal Arterial - Other	Within	Within	Within	Within	Above	Within	**0.5**
S-58	15th Avenue SE From Minnesota Boulevard to Highway 10	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-60	Oak Grove Road SW / Maine Prairie Road From 22nd Street S to Roosevelt Road	Major Collector	Within	Within	Within	Above	Within	Within	**0.5**
S-65	10th Avenue N From 7th Street S to 3rd Street N	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-67	2nd Avenue South From 7th Street S to 2nd Street S	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-74	15th Avenue N / 3rd Street N From Division Street to State Highway 15	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-96	2nd Street N / 1st Street N From 10th Avenue N to Highway 10	Minor Arterial	Within	Within	Within	Above	Within	Within	**0.5**
S-88	5th Avenue S From 2nd Street S to 1st Street N	Minor Arterial	Within	Within	Within	Within	Within	Within	**0**

Figure 1. AADT Segment Rating Map

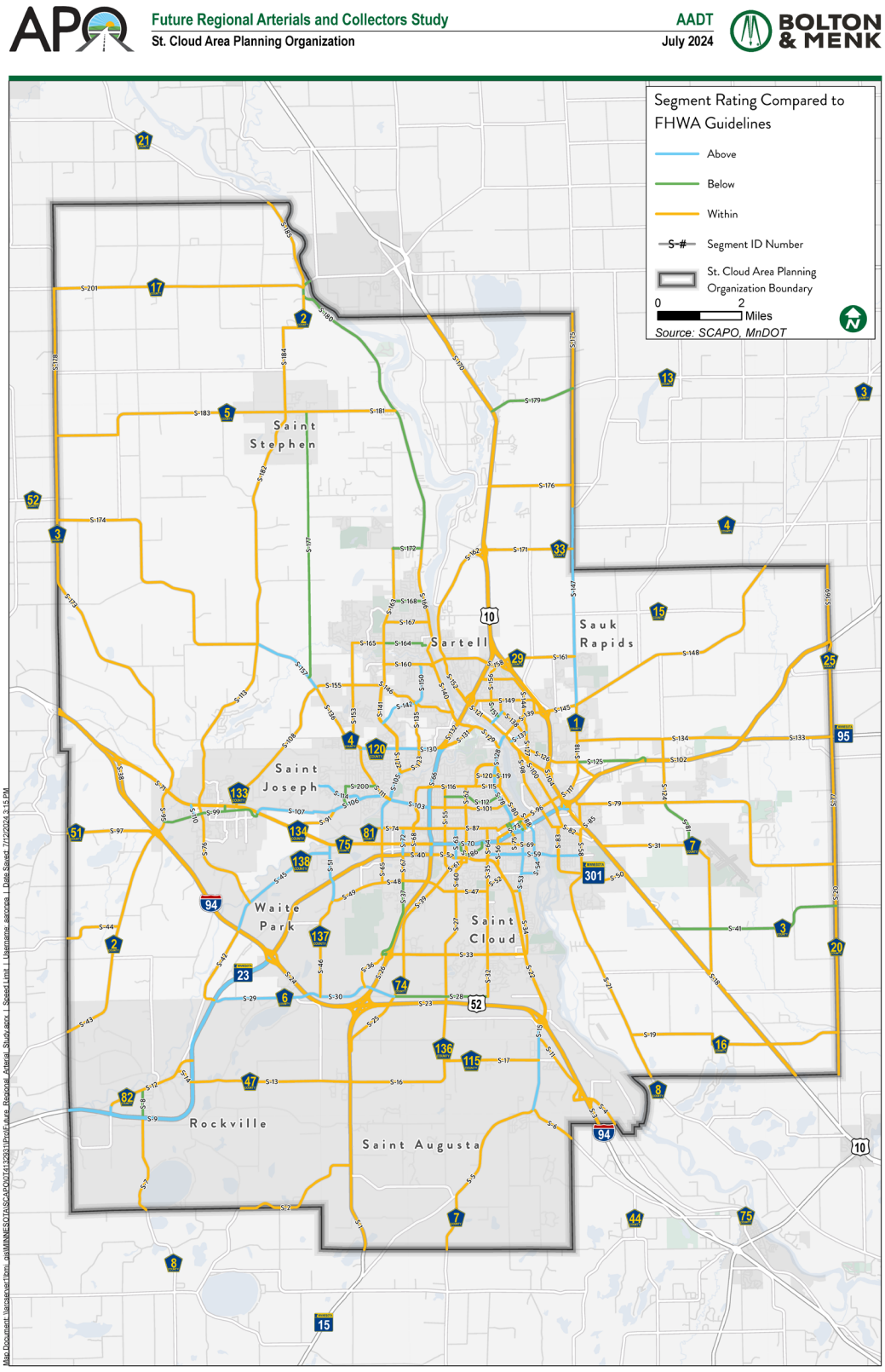


Figure 2. Average Trip Length Segment Rating Map

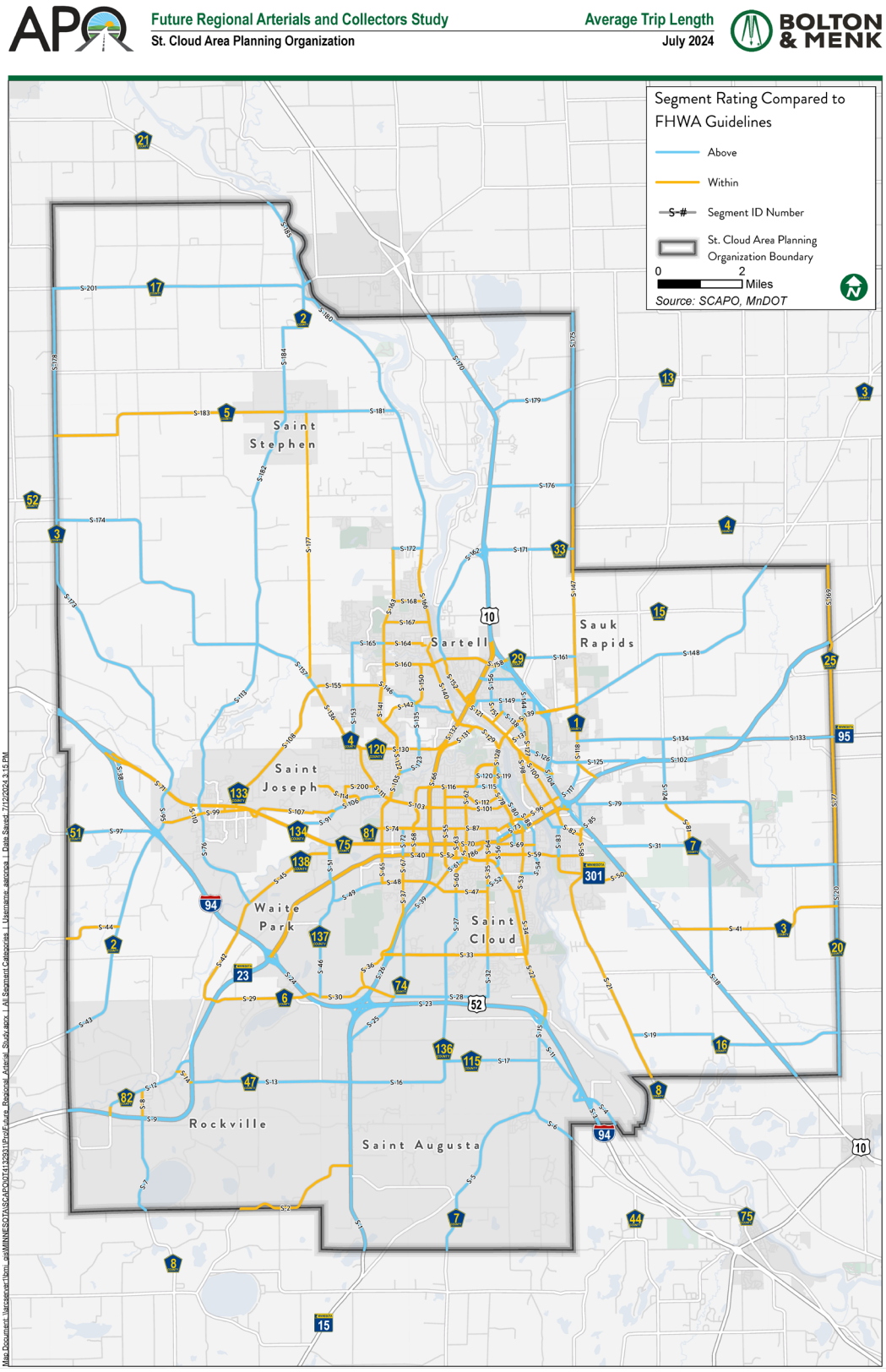


Figure 3. Speed Limit Segment Rating Map

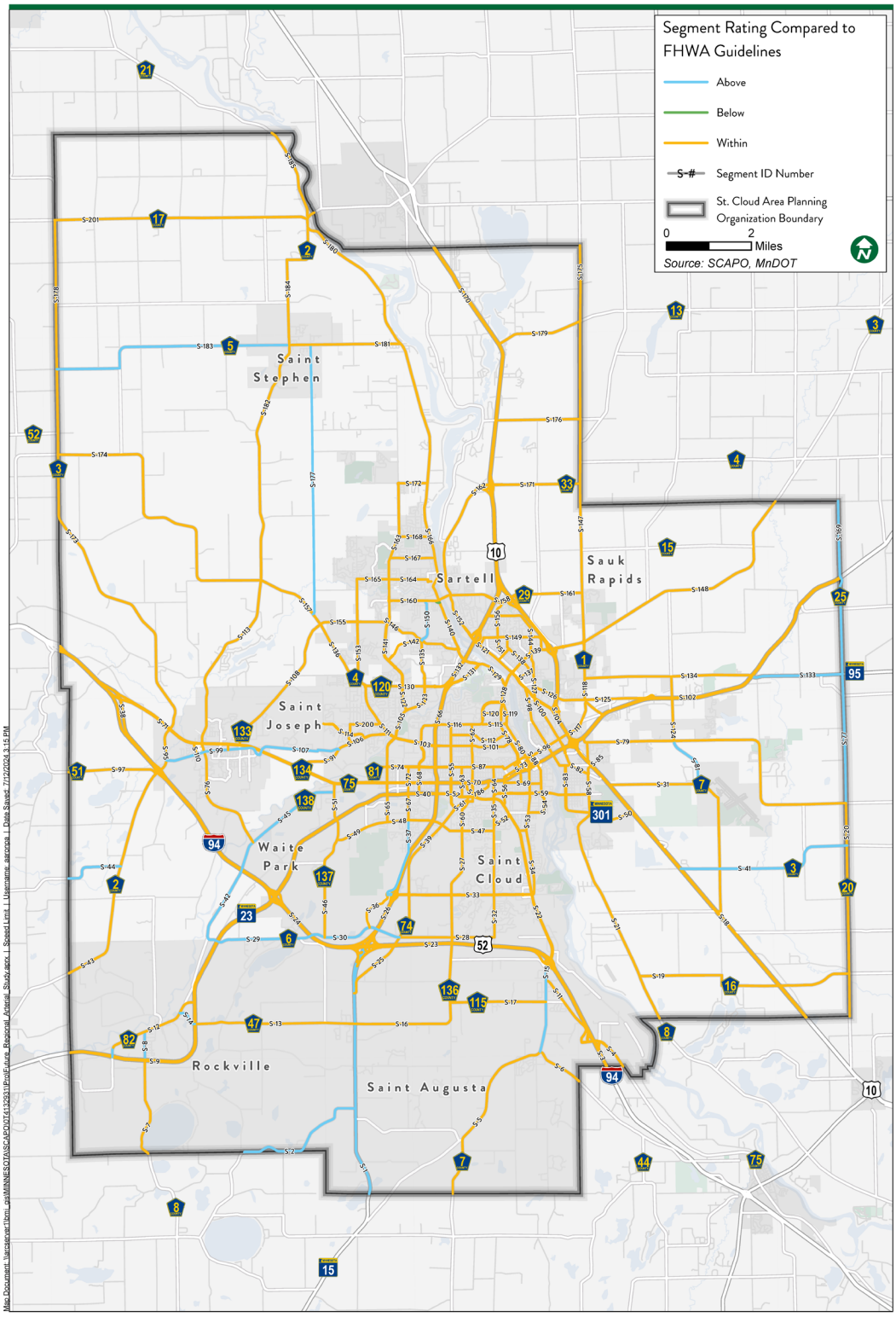


Figure 4. Primary Intersection Spacing System Rating Map

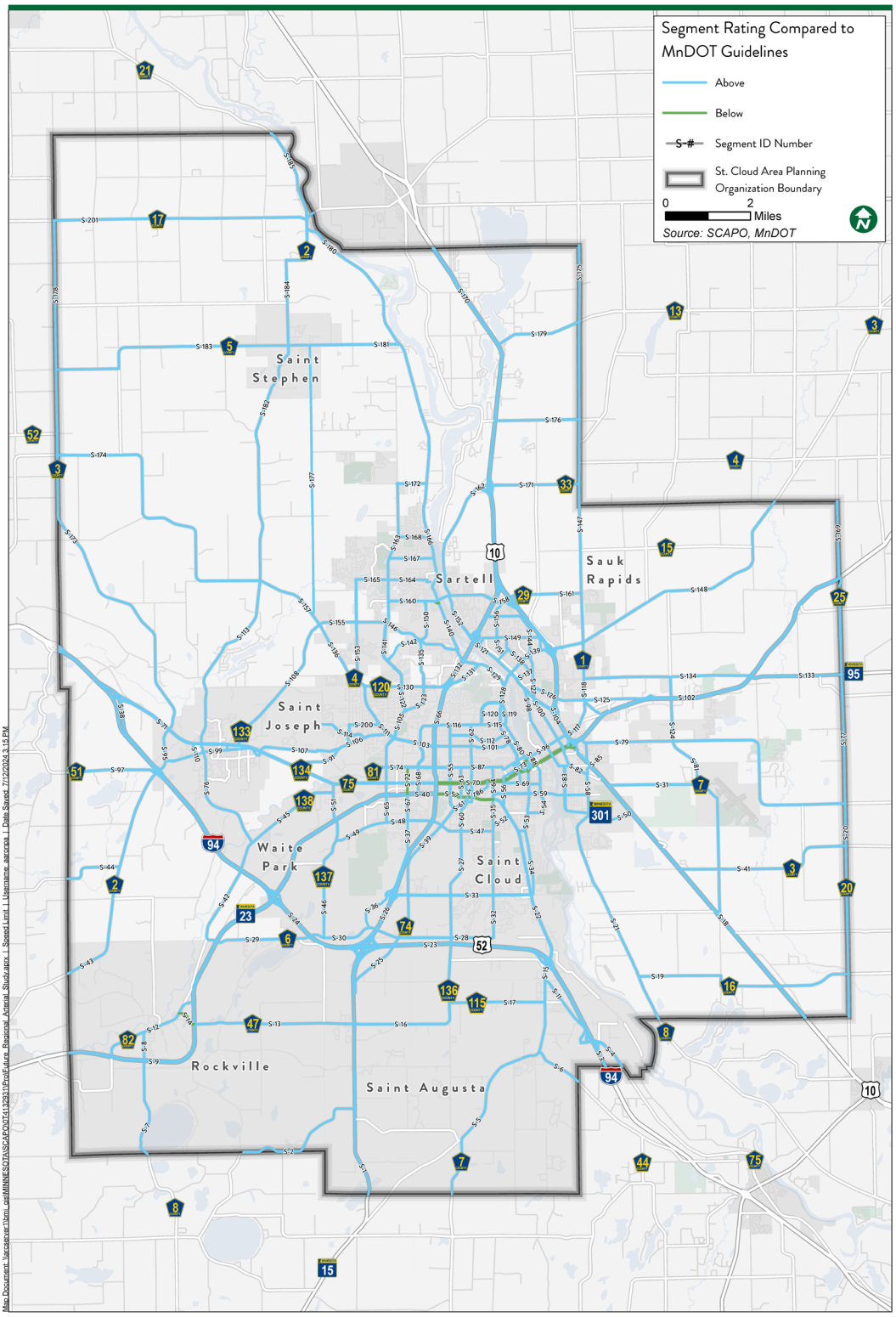


Figure 5. Secondary Intersection Spacing System Rating Map

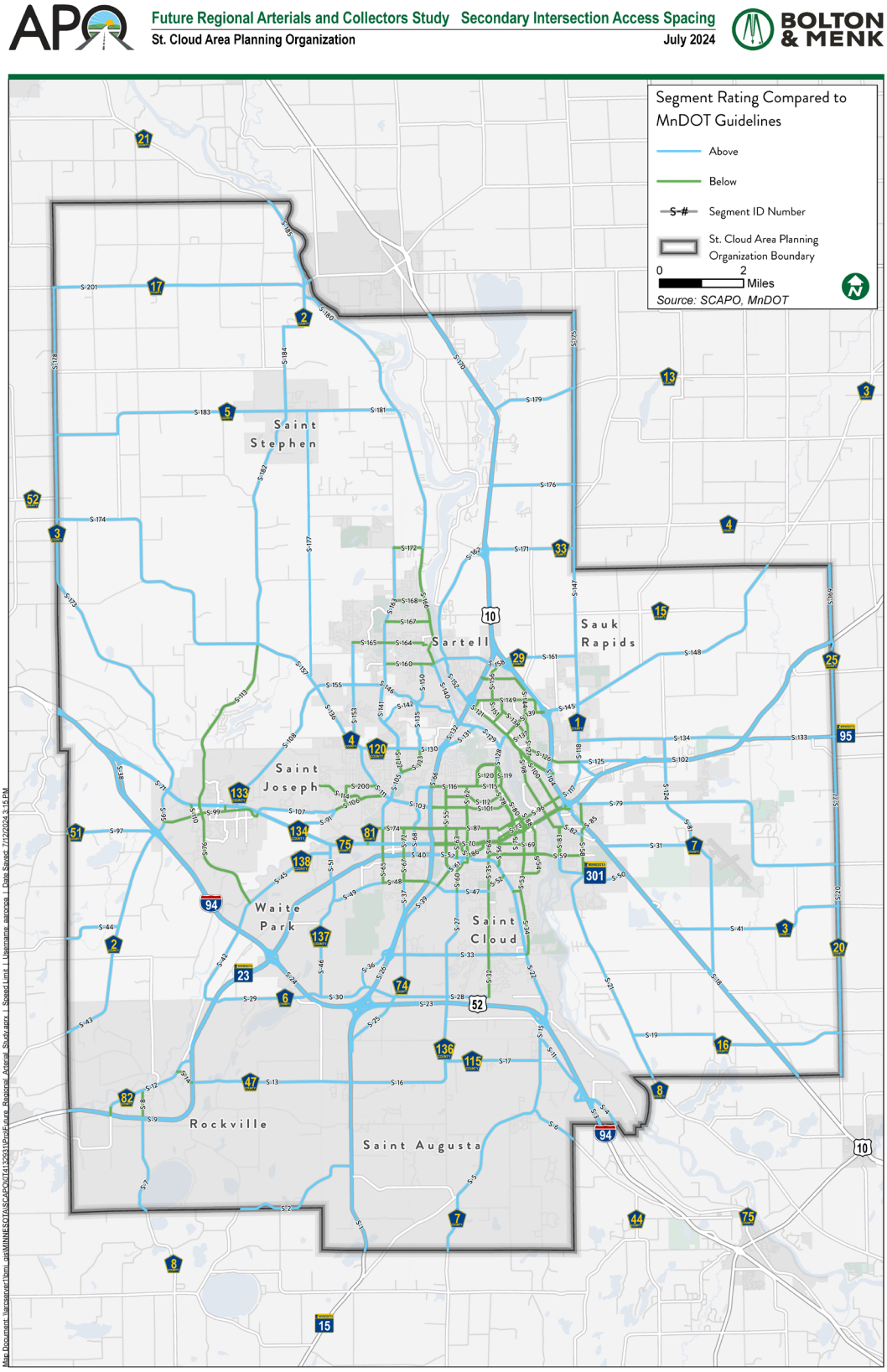
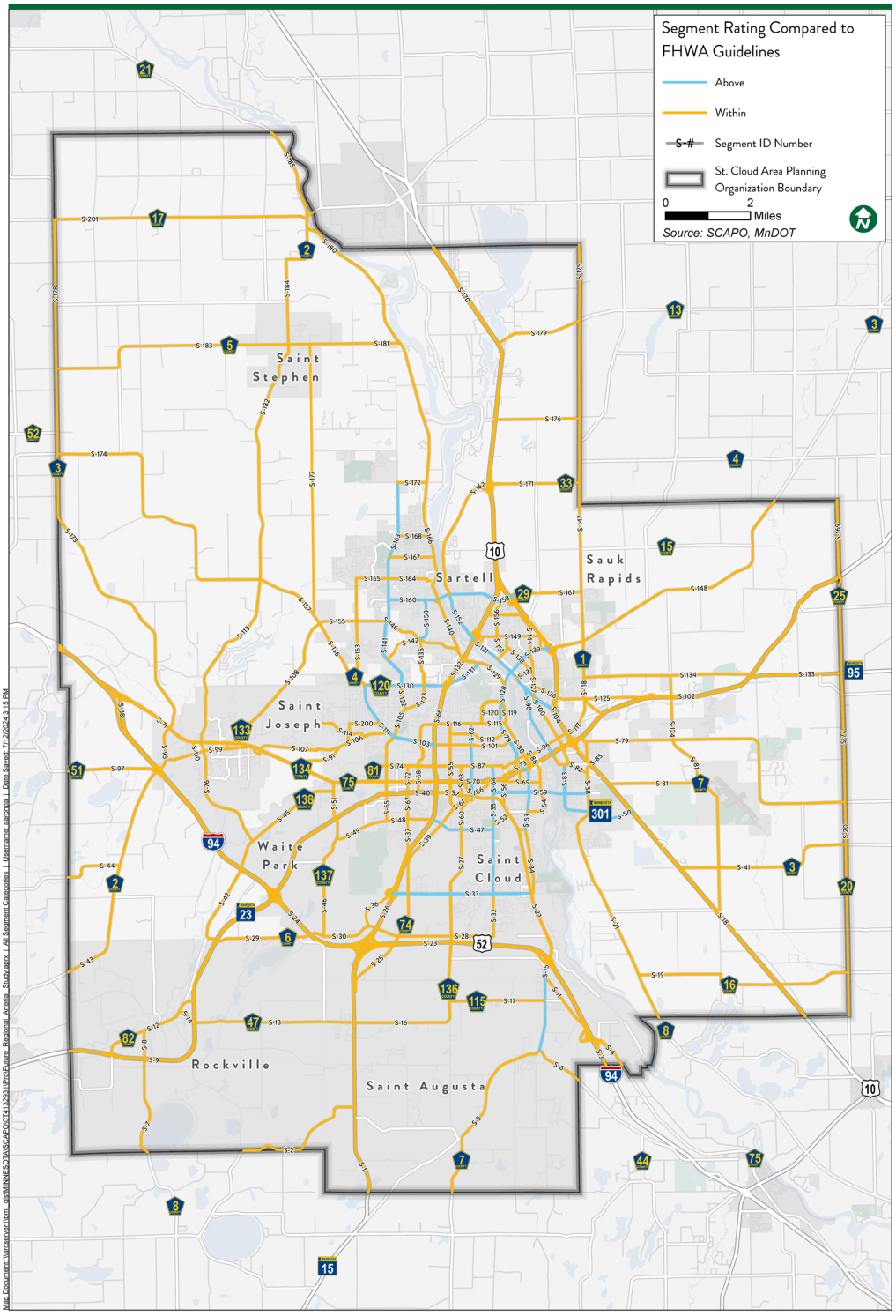


Figure 6. Median System Rating Map



V. Recommended Existing Functional Class Changes

The screening process identified the total number of flags per segment in order to create a subset for further context analysis related to future functional classification needs. The same attributes and technical flag analysis, with the same weights, was used to understand changes to segment existing functional classifications. Instead of the total number of flags, the net number of flags was used to understand existing needs. Attribute flags above and below were summed to give a net understanding of the attributes in relationship to functional class guidance.

During this analysis, no segments identified in the net analysis attained equal to or below a negative 3.5 net flag score. As a result, no existing functional classification downgrades were considered as part of this analysis.

Seventeen segments totaled a net flag value over 3 (greater or equal to 3.5). Based on analysis of these 17 segments, the following recommendations are proposed:

- For the two segments currently identified as a Principal Arterial – Other, no changes to existing functional classification are recommended due to these roadways meeting the highest level of functional classification (outside of Interstate).
- For the four segments currently identified as Minor Arterials but flagged as possible considerations for Principal Arterial – Other, additional screening methods were utilized to determine the potential to adjust the functional classification. It should be noted that the changes from a Minor Arterial to a Principal Arterial – Other require thorough vetting and approval beyond this cursory analysis. Based upon additional context analysis, these segments did not pass initial screening because they do not connect to the existing Principal Arterial system. In addition, these segments tended to include attributes within the Minor Arterial and Principal Arterial range.
- The remaining 11 segments advanced strictly on net flag analysis. This required further review and input from local agencies regarding system function and needs.

For the 11 segments advanced based on the net flag analysis, the following changes to the existing functional classification system are recommended:

- Upgrading the six identified Major Collectors to Minor Arterials.
- Upgrading the five identified Minor Collectors to Major Collectors.

In addition, one segment (an existing Major Collector) was upgraded to a Minor Arterial for connectivity/consistency. As a result, this brings the recommended upgrades from Major Collector to Minor Arterial to seven.

These segments were reviewed with roadway authorities and are listed in **Table 4**. Segment S-93 was removed due to local system changes.

Table 4. Existing Functional Classification Changes

UID	Segment Name	Existing Functional Class	Net Flags	Existing Functional Class Change	Notes
S-15	County Road 7 From County Road 44 to I-94	Major Collector	5	Minor Arterial	
S-157	County Road 4 From County Road 2 to County Road 133 / 6th Street S	Major Collector	5	Minor Arterial	
S-51	28th Avenue S From County Road 137 to Division Street	Major Collector	5	Minor Arterial	Segment limits may need to be adjusted for Minor Arterial connectivity
S-106	Ridgewood Road From County Road 134 to County Road 4	Major Collector	4.5	Minor Arterial	
S-107	Ridgewood Road From County Road 75 to County Road 134	Minor Collector	4	Major Collector	
S-37	Granite View Road / 2nd Avenue S From 33rd Street S to 7th Street S	Minor Collector	4	Major Collector	
S-41	32nd Street SE / 27th Street SE From Highway 10 to 75th Avenue SE	Minor Collector	4	Major Collector	Sherburne County identifies this segment as an existing Major Collector
S-45	County Road 138 From I-94 to 28th Avenue S	Minor Collector	4	Major Collector	Adjust segment limits to CR 121 to 28th Ave S
S-72	2nd Avenue S From 2nd Street S to 3rd Street N	Major Collector	3.5	Minor Arterial	
S-99	Minnesota Street From County Road 2 to County Road 75	Minor Collector	3.5	Major Collector	
S-91	County Road 134 From County Road 75 to Ridgewood Road	Major Collector	3	Minor Arterial	Included for Minor Arterial System Connectivity
~~S-93~~	~~11th Avenue N From W Saint Germain Street to 2nd Street N~~	~~Major Collector~~	~~4~~	~~Minor Arterial~~	Segment removed due to local connection change

TECHNICAL MEMORANDUM

Date: December 31, 2024

To: St. Cloud Area Planning Organization Technical Advisory Committee

From: Bolton & Menk Future Functional Class Arterial and Collector Study Team

Subject: Task 6: Future Functional Classification System Network and Context Analysis

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I. Introduction

This memo provides an overview of how future functional classification was analyzed for system and network connectivity and context analysis. All technical analysis can be viewed on the study webmap including the results of the full context analysis process, agency feedback, and system vision at the following link:
https://bmi.maps.arcgis.com/apps/instant/sidebar/index.html?appid=9a57ac10b4c84867b2d5c2e9ea3d06e3

II. Future Functional Classification Segment Identification

Test segments were identified from the existing functional class screening process (See Roadway Segment Existing Functional Classification Screening Documentation Technical Memorandum), new alignments from the APO's 2050 Metropolitan Transportation Plan, and additional connections and new alignments or upgrades from local agencies transportation and comprehensive plans. Potential functional classifications for each screened and new segment were identified using information from the existing functional class screening and local plans. Potential classifications were compared against the network in the area around the segment, and a reasonable option was chosen for each combined with local agency expertise and preference. New segments were adjusted for network consistency.

III. Future Functional Class System Segment Context Analysis

In addition to including metrics with existing data and information, the analysis included four different factors critical to the segment analysis process: system spacing, growth area considerations, future traffic volumes, and environmental constraints.

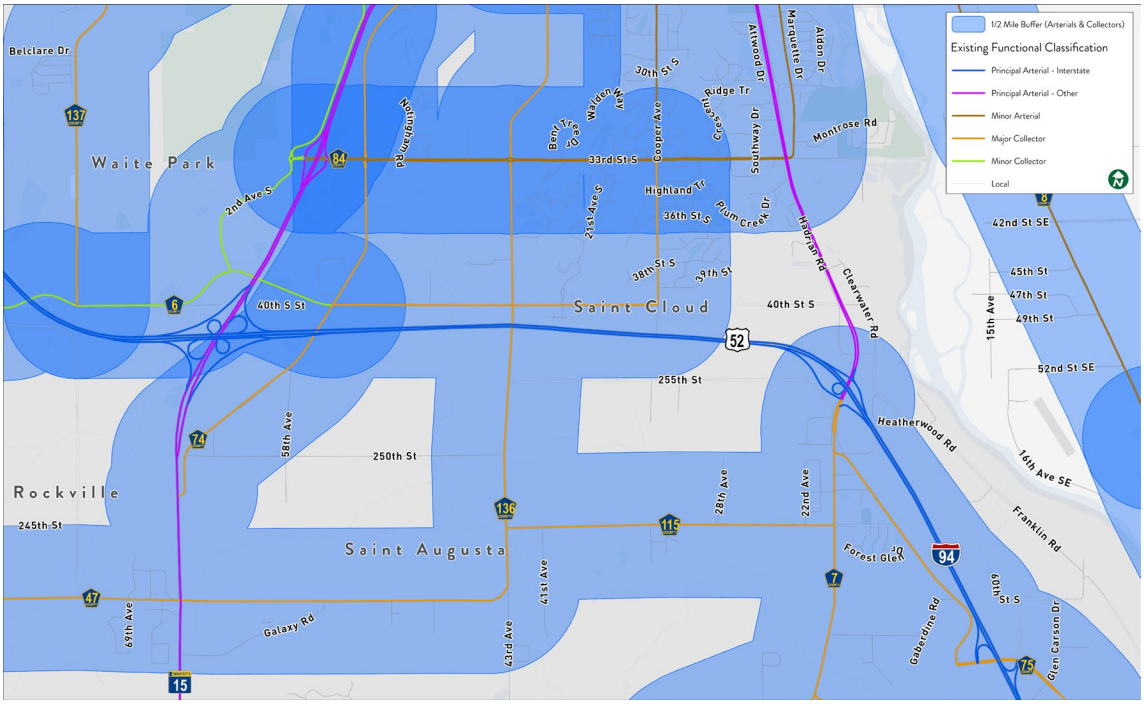
Understanding System Spacing

Segment spacing was evaluated to understand how the existing and planned functionally classed highway system will serve the region. To accomplish this, two buffer sizes were used for this analysis:

- A three-mile buffer for Interstates and Principal Arterials.
- A half-mile buffer for Minor Arterials, Major Collectors, and Minor Collectors.

While no concerns were identified with the three-mile buffer, the half-mile buffer area (**Figure 1**) revealed gaps in coverage where no future roadway was identified to serve certain locations. These areas were compared to growth areas and reviewed for potential planned roadway alignments or upgrades of the existing local system to serve these areas.

Figure 1. Excerpt from 1/2 Mile Buffer Map



Growth Area Considerations

The 2050 Saint Cloud APO growth area was included in the test segment context analysis. Using the socioeconomic (SE) data already incorporated into the APO's 2050 travel demand model, areas with anticipated growth in both households (**Figure 2**) and employment centers (**Figure 3**) were identified in the urban or soon-to-be urbanizing area. Test segments were reviewed based on their proximity to areas of projected household and employment growth to understand potentially long-term changing characteristics of the corridor's context. This information, combined with the spacing buffer areas, assisted in understanding the network coverage of the future functionally classed system.

Figure 2. Excerpt from Residential Density Increase Map

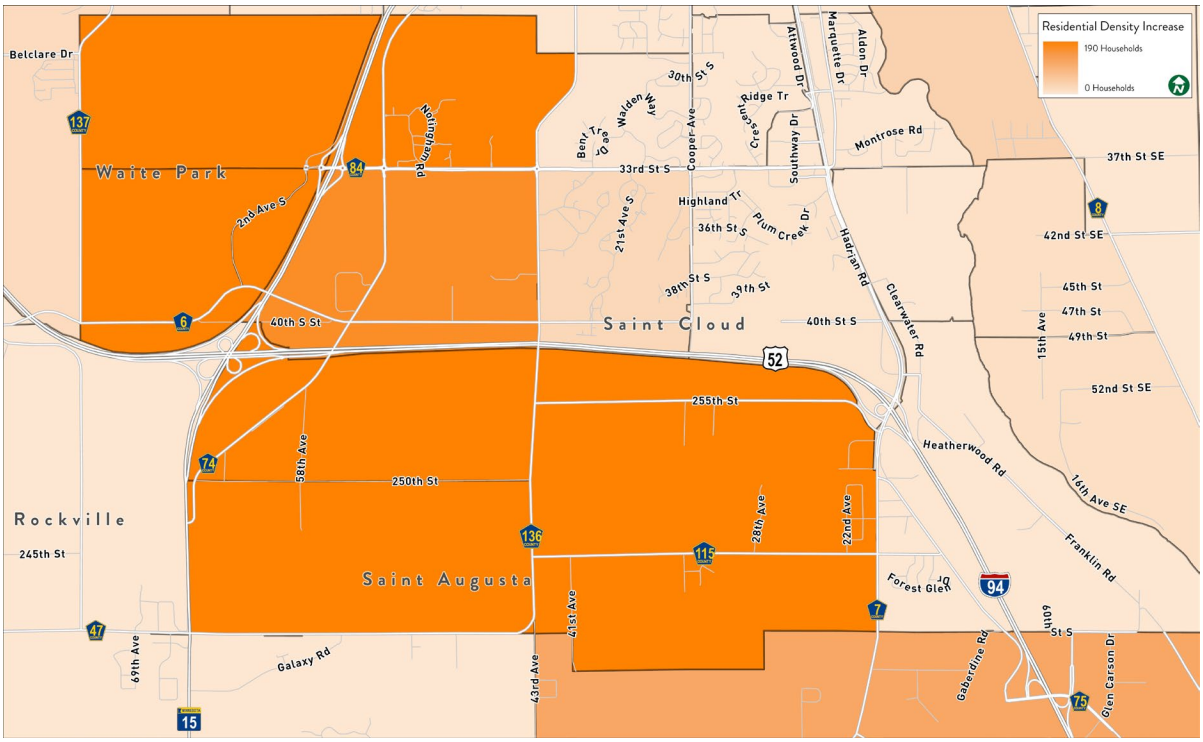


Figure 3. Excerpt from Employment Density Increase Map

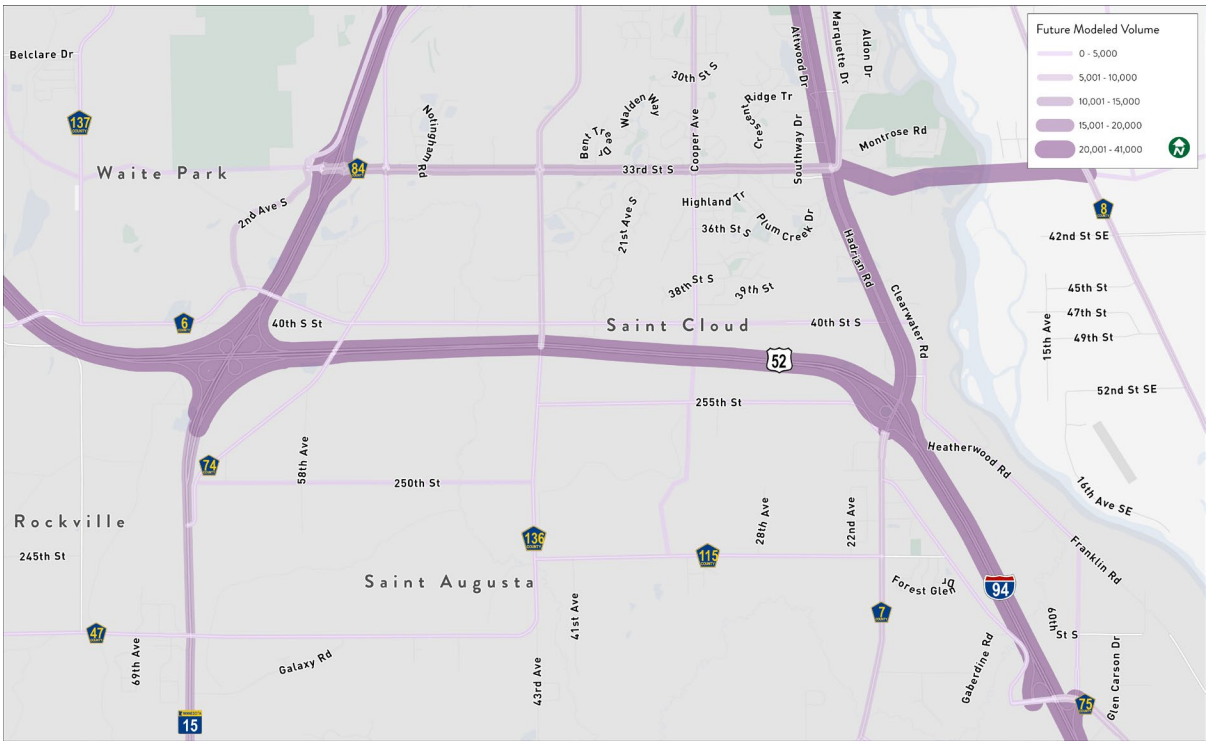
Future Volume Outputs from Test Future Functional Class Model Run

Each test segment was included in a new 2050 travel demand model run. The segment inputs incorporated into this model run included both the new test future functional classification on select roadway corridors as well as new fiscally unconstrained improvements and connections identified through the context analysis.

The resulting volume output (**Figure 4**) from this technical exercise demonstrated how new alignments or roadway upgrades impacted traffic patterns in the region. This, in turn, assisted in understanding the impact the test segment changes made to the overall network and if the modeled results were the desired outcome for each particular segment.

Output volumes by segment reflect aggregation from smaller model segments to the larger study segments. The purpose of this data exercise was to understand big changes related to changing the function of a roadway or adding a new connection. Volume outputs were reviewed for individual segments to understand if the test future functional classification assignment in the model matched the expected future roadway operations as predicted by the model.

Figure 4. Excerpt from Future Modeled Volumes Map



Environmental Context Analysis

Finally, a context analysis was performed to understand environmental constraints for each study segment and potential future improvements. Environmental factors that were considered include:

- Environmental Justice and Title VI populations
- Wetlands
- Drinking water sources
- Sites of sensitive or significant biological diversity

- DNR Management Areas
- Known historic properties
- Scientific and Natural Area boundaries
- Steep slope areas

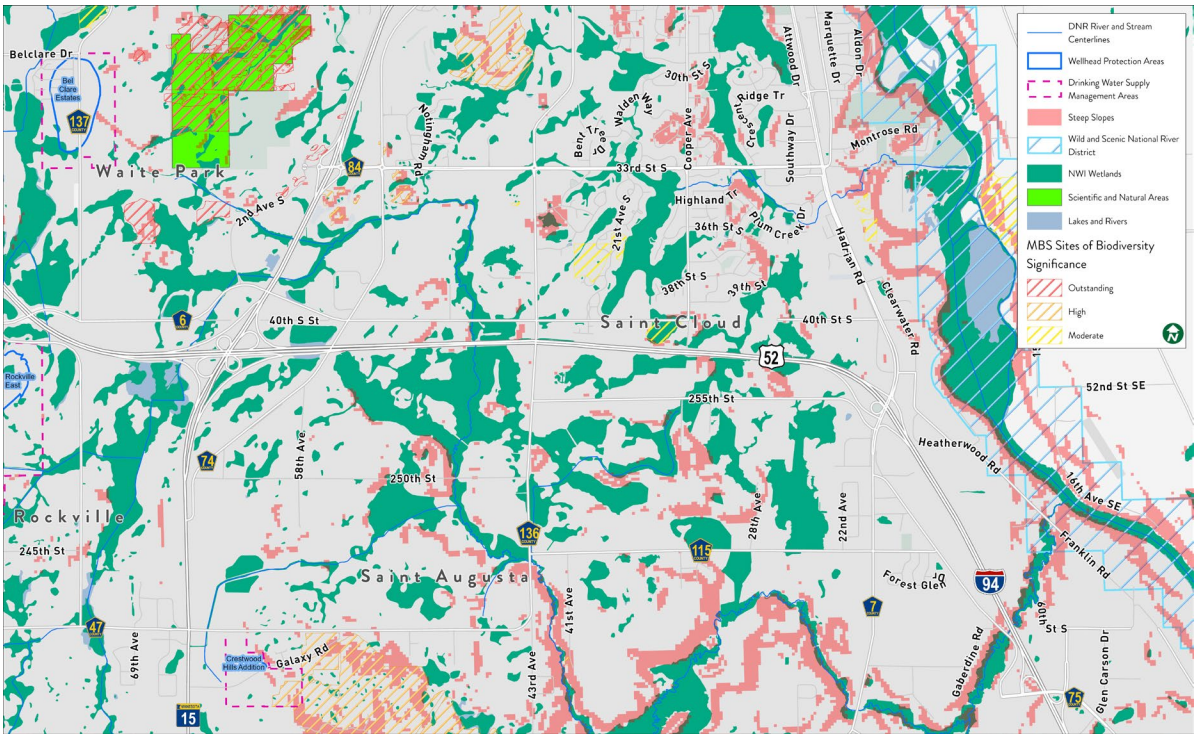
Additionally, three environmental factors within the City of St. Cloud boundaries were mapped and displayed on the environmental context analysis web map:

- City of St. Cloud Natural Sites
- City of St. Cloud Natural Areas
- City of St. Cloud Natural Area Locations

Since these three layers only had information withing the City of St. Cloud boundary and not the entire APO, they were included for reference only and did not factor into the context analysis.

Each factor was mapped (see both **Figure 5** below and the web map for more details) and any segment that ran through any identified environmental features was flagged (one flag per environmental feature). Assignment of a flag to a study segment represents that study segment's proximity to that specific environmental feature and does not identify specific environmental impacts or risk. Approximately 10% of the analysis segments had 6-8 flags and about 25% of the study segments had 5 flags. The results of the environmental context analysis are informational, since the environmental risk varies significantly depending on which feature is impacted. The analysis provides initial insight into the proximity of study segments to various environmental features and does not offer an in-depth environmental review.

Figure 5. Excerpt from Environmental Context Analysis Map



IV. Agency Focus Groups and Feedback

Agency focus groups were held on Oct. 8 and Oct. 9, 2024, to discuss the future functional classification segment evaluation process with stakeholders including APO member agencies and environmental agencies. Each focus group session included a recap of the test segment identification process, a review of the environmental context analysis, a presentation of the segment evaluation process and outputs, and a discussion of the future system recommendations process.

An interactive webmap was provided to participants to review all of the evaluation components with segment specific feedback requested. During and shortly after the focus group sessions, agencies were able to add new segments for a future functional classification designation, removed certain segments, and changed designation based on context analysis. Participants were given a four-week review timeline to provide feedback. All eight APO member agencies provided specific feedback during this phase. Comments from agencies were received and incorporated into the system recommendation.

V. Public Engagement Open House and Survey

An open house was held on November 14th at the Great River Regional Library in St. Cloud. The meeting was open to the public and held in an accessible location per the St. Cloud APO's public participation plan. Project content included printed boards, which included project information about purpose, process, technical analysis, and recommendations. A laptop was available during the public meeting for participants to access the online survey and interactive webmap. Four APO Board members attended and discussion focused on the system vision recommendation including comments about the importance of long-term system planning among multiple jurisdictions for a future connected highway system.

An online survey was available throughout the formal 30-day comment period from November 12, 2024 – December 13, 2024. Twenty-five responses were received. Average rating of support for the recommended "future functional classification" vision for the region (Scale of 1 - 10) : 6.6 with a median of 7. Survey comments focused on the need for new regional roadway connections, traffic congestion concerns, need for existing infrastructure upgrades, road safety concerns, economic considerations, and the need to incorporate environmental impacts in future roadway planning efforts. A few comments also stated concern about a specific future functional classification related to an upgrade from the existing functional classification mostly related to local roads being upgraded to Minor Collectors or Minor Collectors to Major Collectors.

An engagement report is included as an appendix along with all survey responses including study team response to open ended comments.

VI. Recommended System Vision

The study recommendations establish a vision for the future function of existing and new roads in the APO's planning area. The recommended future functional classification system vision provides a connected arterial system and identifies future collectors. The future arterial system connects to other arterials within the region with the exception of CR 7 south of I-94 to CR 44. This segment was evaluated and recommended as a future Minor Arterial based on existing data and context analysis areas; however, additional system planning is needed outside of the planning area to understand how this segment will connect in with the arterial system east of the planning area.

Future collectors support the arterial system and regional growth. The recommended future functional classification system vision was modeled using the APO's 2050 regional travel demand model to understand future regional travel patterns. Projected future volumes using the future functional classification system vision from this study are available as a planning tool for future studies and planning efforts.

Although the future functional classification designation does not directly correlate to roadway design, it can impact long-term roadway planning by defining a range of future roadway needs including potential future right of way and access spacing for a corridor. By completing this study effort, APO member jurisdictional planners and engineers can gain better insight into the future system connections and roadway function in order to better address future regional mobility and operational needs. **Figure 6** depicts the recommended future functional classification system vision.

Figure 6. Recommended Future Functional Classification