

**MARATHON COUNTY METROPOLITAN PLANNING COMMISSION'S
TECHNICAL ADVISORY COMMITTEE
AGENDA**



Date & Time of Meeting: **Tuesday, August 12, 2025, at 1:00pm**

Meeting Location: **Wisconsin Room, 1000 Lake View Drive, Wausau, WI 54403**

Members: Laurie Miskimins, Aaron Anklam, Jim Griesbach, Brain Grefe, Darryl Landeau, Dave Eckmann, Gaylene Rhoden, Jared Grande, Peter Kampfer, Greg Ulman, Peter Wegner, Ryan VanDeWalle, Tim Vergara, Jami Gebert, Michael Wodalski, Doug Mielke, Mark Thuot, Eric Lindman, Brad Lenz, Arran Hersey, Dave Meurett, Jason Nordberg, Evan Gross, Sydney Turner

The meeting site identified above will be open to the public. Instead of in person attendance, Technical Advisory Committee members and the public may attend this meeting by telephone and video conference. **Persons wishing to attend the meeting virtually may call into the telephone conference beginning five (5) minutes prior to the start time indicated above using the following number:**

PHONE NUMBER: 1-408-418-9388

ACCESS CODE: 2488 427 8963

Please Note: If you are prompted to provide an "Attendee Identification Number" press the # symbol. No other number is required to participate in the telephone conference.

When you enter the telephone conference, **PLEASE PUT YOUR PHONE ON MUTE!**

- 1. Call Meeting to Order**
- 2. Introductions**
- 3. Approval of Minutes: November 9, 2023, MPOTAC Committee Meeting**
- 4. Policy Issues, Discussion, and Possible Committee Action**
 - A. Wausau MPO Functional Classification System Map
- 5. Educational Presentations and Committee Discussion**
 - A. 2026-2031 STP-Urban Funding Cycle
 - B. 2026-2030 TAP Funding Cycle
- 6. Next Meeting Date & Time, Announcements, and Future Agenda Items**
 - A. Next Meeting Date & Time – October/November - Exact date and time TBD
 - B. Future Agenda Items – STP-Urban & TAP

7. Adjournment

Any person planning to attend this meeting who needs some type of special accommodation to participate should call the County Clerk's Office at 715-261-1500 or email countyclerk@marathoncounty.gov one business day before the meeting.

EMAILED TO: Courthouse, WDH, City Pages, and other Media Groups

EMAILED BY: AA

DATE: 8/5/2025

EMAIL TIME: 2:00pm

SIGNED: 
PRESIDING OFFICER OR DESIGNEE

NOTICE POSTED AT COURTHOUSE:

BY: _____
DATE & TIME: _____



**MARATHON COUNTY METROPOLITAN PLANNING COMMISSION
TRANSPORTATION TECHNICAL ADVISORY COMMITTEE
Minutes – November 9, 2023**

Meeting Attendance: Milton Olsen, Darryl Landeau, Andrew Lynch, Mark Thout, Kevin Lang, Jeff Gates, Michael Wodalski, Jared Grande, Tim Vergara, Brian Grefe, Brad Lenz, Jason Nordberg (FHWA), Jordan Kelbley (WisDOT), Rich Handrick (WisDOT), Lance Mueller, Dave Mack

1. Call to Order / Introductions

The presence of a quorum, the agenda being properly signed and posted, the meeting was called to order by Mack at 10:04 a.m., at 212 River Drive, Wausau and virtually via WebEx.

2. Public Comment – None.

3. Approve Minutes of the August 9, 2022 Transportation TAC meeting

Action: MOTION / SECOND BY LANG/GRANDE TO APPROVE THE AUGUST 9, 2022 MINUTES OF THE TRANSPORTATION TECHNICAL ADVISORY COMMITTEE, MOTION CARRIED BY VOICE VOTE, NO DISSENT.

4. STP-Urban Scoring Criteria Discussion

Discussion: Mack went over the funding allocation for the Wausau MPO and how there are still projects in the hopper that reduced the MPO share for this funding cycle. The MPO allocation this cycle is \$4.2 million dollars. Mack asked if anyone had comments or questions, and none were received.

Action: None

Follow Through: NONE

5. Surface Transportation Program (STP-Urban) FFY24-29 Project Ranking

Discussion: Mack pointed out that it should be FFY25-29. The scoring criteria were reviewed, and it was noted that each category is weighted. The rankings were discussed. Thuot had a question about the Project Coordination category. It was explained that full points were given for projects that had two or more communities partnering on a project. Lenz had a question regarding the County Roundabout project in the Village of Weston and asked if they were full partners on the project, or if it was just that the County was working on that intersection, and it happened to be in the village as to why they received full Project Coordination points. Lang explained that it was to be dually funded by the County and Village of Weston. Thuot asked about the Multimodal score. He mentioned that Ross Avenue is on the regional bike route system. Mack explained that the full score really went to projects that were building new trails or adding to the bike system. Mack asked if anyone wanted to suggest a change to one of the project scores. No changes were suggested. It was discussed amongst the group that maybe the group should look at refining these scoring criteria for future cycles. Mack mentioned that there was a discussion with WisDOT staff to determine eligible project costs for the applications. A new spreadsheet showing projects was displayed for the group and it took into account Participating Roadway Costs, State Review Cost, and Construction Engineering Cost. Mack explained that the TAC has agreed previously to not fund any projects below 55%. Staff recommended option 1, which funds the Weston project at 70% and the County project at 64%. Thuot agreed with that scenario.

Action: MOTION / SECOND BY VERGARA/THUOT TO RECOMMEND FUNDING OPTION #1, \$2,073,382 TO THE ROSS AVENUE (RIVER BEND TO PAULS) PROJECT AND \$2,144,182 TO THE CAMP PHILLIPS AND ROSS AVENUE ROUNDABOUT, MOTION CARRIED BY VOICE VOTE, NO DISSENT

Follow Through: STAFF WILL BRING THE STP-URBAN PROJECT FUNDING RECOMMENDATIONS TO THE

NEXT MEETING FOR APPROVAL BY THE PLANNING COMMISSION AND SEND OUT A PDF OF THE NEW SPREADSHEET TO THE TAC GROUP.

6. Transportation Alternatives Program (TAP) FFY25-28 Project Ranking

Discussion: Mack shared that there is a different scoring criterion used for TAP projects. Applications were received from the North Central Wisconsin Regional Planning Commission (NCWRPC) for SAFE Routes to School, which is for Planning funds, which are separate from construction funds. The City of Wausau also applied for funds to construct trails on 72nd Avenue as well as the East West Connector trail in the Business Campus. Mack mentioned that since only the City of Wausau applied for construction funds, the group may want to allow them to rank their two projects based on which they prioritized. Lynch mentioned the City do Wausau Bike and Pedestrian Committee ranked the 72nd Avenue project as the number one priority.

Action: **MOTION / SECOND BY LANG/WODALSKI TO RECOMMEND THE PRESENTED FUNDING PRIORITY OF NCWRPC RECEIVING THE #1 RANKING FOR PLANNING FUNDS AND WAUSAU RECEIVING THE NUMBER 1 AND NUMBER 2 RANKINGS FOR THEIR 72ND AVENUE AND EAST-WEST CONNECTOR TRAILS, MOTION CARRIED BY VOICE VOTE, NO DISSENT.**

Follow Through: STAFF WILL BRING THE TAP PROJECT FUNDING RECOMMENDATION PROJECTS TO THE NEXT MEETING FOR APPROVAL BY THE PLANNING COMMISSION.

7. Redesignation of MPO Urban and Planning Boundaries

Discussion: Mack discussed how the MPO must redesignate the urban and planning boundaries after each US Census is completed. The MPO received a new urban boundary from WisDOT and based on this, staff created a new Planning Area boundary. Staff still needs to coordinate with WisDOT staff to discuss and refine the boundary changes before bringing it to the Commission for approval.

Action: FOR INFORMATIONAL PURPOSES ONLY.

Follow Through: STAFF WILL CONTINUE TO UPDATE THE COMMITTEE WHEN NEEDED.

8. Restructuring of Bicycle/Pedestrian Committee

Discussion: Mack shared that over the course of the last few years, the MPO's Bike and Pedestrian Committee has seen a reduction of attendees. Most meetings garner only 6-7 attendees and the last meeting the MPO held in August 2023 only had one attendee. Based on the reduced participation, Mack recommends the committee be disbanded and move the Bike and Pedestrian Planning functions to the Technical Advisory Committee.

Action: **MOTION / SECOND BY WODALSKI/GATES TO MOVE THE BIKE AND PEDESTRIAN COMMITTEE FUNCTIONS TO THE TECHNICAL ADVISORY COMMITTEE, MOTION CARRIED BY VOICE VOTE, NO DISSENT.**

Follow Through: STAFF WILL BRING THIS ISSUE TO THE PLANNING COMMISSION FOR APPROVAL.

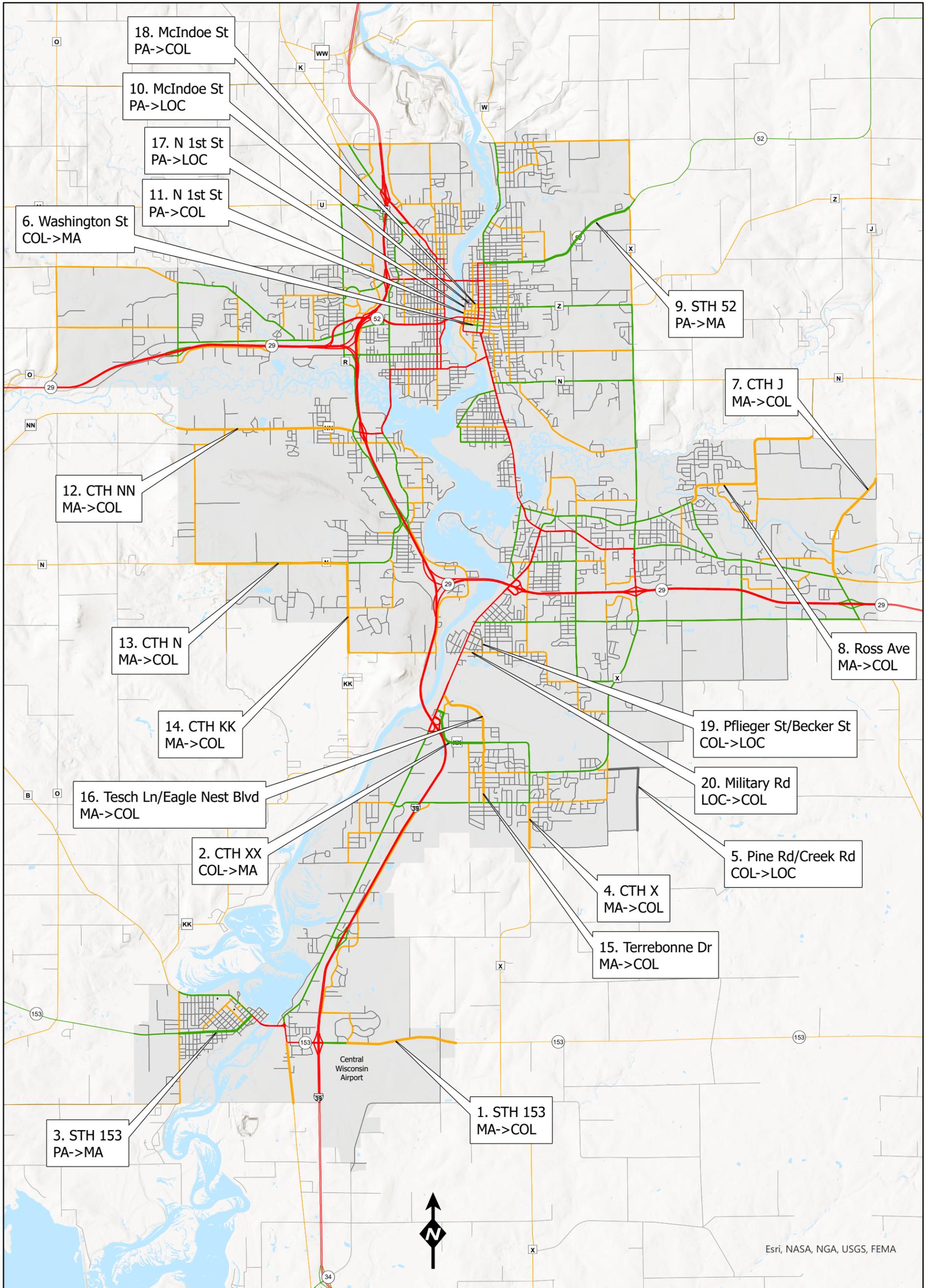
9. Adjourn

Action: There being no further business to come before the members, **MOTION / SECOND BY GATES / LANG TO ADJOURN THE MEETING OF THE MARATHON COUNTY METROPOLITAN PLANNING COMMISSION TRANSPORTATION TECHNICAL ADVISORY COMMITTEE AT 1:24 AM. MOTION CARRIES.**

Submitted by:
David Mack, MPO Director
Marathon County Conservation, Planning and Zoning

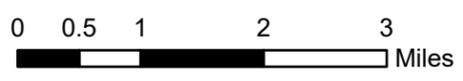
Wausau

Functional Classification - Recommended Changes



Esri, NASA, NGA, USGS, FEMA

- Principal Arterial
- Minor Arterial
- Major Collector
- Local
- Urban Area Boundary
- Other Nearby Urban Area



WisDOT Bureau of Planning and Economic Development
 FHWA Approval Date: XX/XX/XX

The information on these maps was created for the official use of the Wisconsin Department of Transportation (WisDOT). Any other use, while not prohibited, is the sole responsibility of the user. WisDOT expressly disclaims all liability regarding fitness of use of the information for other than official WisDOT business.

RECOMMENDED FUNCTIONAL CLASSIFICATION CHANGES

WisDOT Region:	North Central (NC)
County:	Marathon
Urban(ized) Area:	Wausau
Population:	77,429

**Urban Area:
WAUSAU**

Starting Mileage:	IH	PA	MA	COL	LOC	TOTAL
	9.5	54.53	92.3	100.29	461.33	717.95

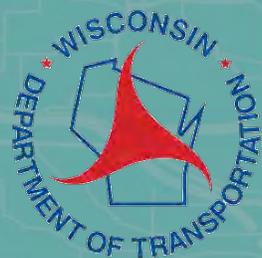
No.	Route	Limits	From	To	IH	PA	MA	COL	LOC	Reason
1	STH 153	Golf Club Blvd - UAB	uMA	to uCOL			-1.80	1.80		AADT is below MA minimum (2300), Improved continuity (removes arterial dead-end)
2	CTH XX	Tesch Ln - Old USH 51	uCOL	to uMA			1.23	-1.23		AADT (6600) is above MA minimum (4400), continuity improvement (more logical route for MA connection to old USH 51)
3	STH 153	Range Line Rd - CTH B	uPA	to uMA		-1.31	1.31			AADT is slightly below PA minimum (7500) except at bridge, Improved continuity (removes arterial dead-end)
4	CTH X	Kowalski Rd - Wood Rd	uMA	to uCOL			-0.75	0.75		No AADT data, Improved continuity (removes arterial dead-end)
5	Pine Rd/Creek Rd	Pleasant Dr - Bank Rd	uCOL	to uLOC				-1.55	1.55	No AADT data, Improved continuity (removes collector dead-end), limited land use
6	Washington St	N 1st St - N 6th St	uCOL	to uMA			0.33	-0.33		Estimated AADT for MA, Segment changed to 2-way traffic
7	CTH J	Schofield Ave - UAB	uMA	to uCOL			-1.90	1.90		AADT is below MA minimum (3100), Improved continuity (removes arterial dead-end)
8	Ross Ave	Fuller St - UAB	uMA	to uCOL			-2.93	2.93		Improved continuity (removes arterial dead-end)
9	STH 52	N 6th St - CTH X	uPA	to uMA		-2.72	2.72			AADT is below PA minimum (5300), Improved continuity (removes arterial dead-end)
10	McIndoe St	N 3rd St - N 1st St	uPA	to uLOC		-0.11			0.11	AADT is below PA minimum, Improved continuity (STN rerouted)
11	N 1st St	Grant St - STH 52	uPA	to uCOL		-0.12		0.12		AADT is below PA minimum, Improved continuity (STN rerouted)
12	CTH NN	UAB - CTH R	uMA	to uCOL			-2.91	2.91		AADT is below MA minimum (3700), Improved continuity (removes arterial dead-end)
13	CTH N	Thornapple Rd - CTH KK	uMA	to uCOL			-2.53	2.53		AADT is below MA minimum (3100), Improved continuity (removes arterial dead-end)
14	CTH KK	CTH N - Fox Glove Rd	uMA	to uCOL			-1.50	1.50		AADT is below MA minimum (3700), Improved continuity (removes arterial dead-end)
15	Terrebonne Dr	Kowalski Rd - CTH XX	uMA	to uCOL			-1.00	1.00		AADT is well below MA minimum (730), improved continuity: CTH XX is a more logical minor arterial in this area
16	Tesch Ln/Eagle Nest Blvd	CTH XX - Old USH 51	uMA	to uCOL			-1.21	1.21		AADT is below MA minimum (4000), improved continuity: CTH XX is a more logical minor arterial in this area
17	N 1st St	Grant St - McIndoe St	uPA	to uLOC		-0.12			0.12	AADT is below PA minimum, Improved continuity (STN rerouted)
18	McIndoe St	N 3rd St - N 6th St	uPA	to uCOL		-0.20		0.20		AADT is below PA minimum, Improved continuity (STN rerouted)
19	Pflieger St/Becker St	Military Rd - Grand Ave	uCOL	to uLOC				-0.44	0.44	Military Rd planned route is constructed now and is the more logical COL route, estimated AADT below COL level
20	Military Rd	Grand Ave - Pflieger St	uLOC	to uCOL				0.35	-0.35	Planned route that was been constructed now, AADT of 1200 is in the range for COL
21				to						
22				to						

Change:	0	-4.58	-10.94	13.65	1.87
---------	---	-------	--------	-------	------

End Mileage:	9.5	49.95	81.36	113.94	463.2	717.95
--------------	-----	-------	-------	--------	-------	--------

End %:	1.3%	7.0%	11.3%	15.9%	64.5%
desirable range		4% - 11%	7% - 14%	3% - 16%	62% - 74%

Functional Classification Criteria and Procedures



WISCONSIN DEPARTMENT of TRANSPORTATION
Division of Transportation Investment Management

BUREAU of PLANNING and ECONOMIC DEVELOPMENT

August 2022



GUIDANCE DOCUMENT

Contents

- 1. Functional Classification Overview1**
 - 1.1. History1
 - 1.2. Purpose.....1
 - 1.3. Funding Implications2
 - 1.4. FHWA Guidance.....2
- 2. Functional Classification Theory and Concepts..... 3**
 - 2.1. Functional Classification Basics3
 - 2.2. Functional Classification Category Characteristics4
 - 2.2.1. Arterials4
 - 2.2.2. Collectors5
 - 2.2.3. Local Roads.....7
 - 2.3. Differences Between Classifications in Urban and Rural Areas.....7
 - 2.4. Density of Development.....8
- 3. The Functional Classification Update Process10**
 - 3.1. Classification Process10
 - 3.2. Boundary Considerations.....12
 - 3.3. Review Timeline12
- 4. Functional Classification Factors.....13**
 - 4.1. Primary Factors14
 - 4.1.1. System Continuity.....14
 - 4.1.2. Route Usage/Traffic Volume.....16
 - 4.1.3. Land Use.....17
 - 4.1.4. Route Spacing20
 - 4.2. Supplemental Factors21
 - 4.2.1. System Mileage Percentages.....21
 - 4.2.2. Geographic Barriers.....21
 - 4.2.3. Arterial Connections22
 - 4.2.4. Alternate Population Connections.....22
 - 4.2.5. Parallel Routes22
 - 4.2.6. Truck Routes/Bus Routes23
 - 4.2.7. Seasonal Demand23
 - 4.2.8. Roadway Characteristics23
- 5. Functional Classification Criteria Tables 24**
 - 5.1. Land Use Factors.....25
- 6. Planned Routes..... 26**
- Appendix A: Population Densities by County A-1**
- Appendix B: Revision Notes B-1**





GUIDANCE DOCUMENT

Appendix C: Functional Classification and Funding Implications C-1

Appendix D: Additional Resources D-1

Figures

Figure 2.2: Roadway Focused on Access, Spaight Street..... 3

Figure 2.1: Roadway Focused on Mobility, I-90 Arterial.....3

Figure 2.3: Example of Population Density..... 9

Figure 4.2: Example of Diffusion..... 14

Figure 4.1: Example of Arterial Dead-end..... 14

Figure 4.4: Example of Continuity Improvement..... 15

Figure 4.3: Example of Continuity Issue 15

Figure 4.6: Ramp Example 15

Figure 4.5: Roundabout Example 15

Figure 4.7: Functional Classification Examples.....20

Figure 4.8: Geographic Barrier Example.....21

Figure 4.9: Alternate Population Connection and Arterial Connection Example22

Figure 4.10: Parallels Arterial Example22

Figure 6.1: Planned Route Example26

Tables

Table 2.1: Roadway Classes 3

Table 2.2: Federal Functional Classification Categories 4

Table 2.3: Principal Arterial Characteristics 5

Table 2.4: Minor Arterial Characteristics 5

Table 2.5: Major Collector Characteristics..... 6

Table 2.6: Minor Collector Characteristics..... 7

Table 2.7: Urban and Rural Population Densities 8

Table 4.1: Route Usage 16

Table 4.2: Urban Land Uses – Arterials..... 17

Table 4.3: Urban Land Uses – Collectors..... 17

Table 4.4: Rural Land Uses – Arterials..... 18

Table 4.5: Rural Land Uses – Collectors 18

Table 4.6: Factor Levels for Rural Land Use Types 19

Table 4.7: Land Use Service Distance..... 19

Table 4.8: Maximum Spacing Guidelines 20

Table 4.9: System Mileage Percentage Guidelines..... 21

Table 5.1: Urban Criteria 24

Table 5.2: Rural Criteria 24

Table 5.3: Urban Land Use Factors..... 25

Table 5.4: Rural Land Use Factors..... 25

Table 5.5: Rural Collector Land Use Factor Levels 25



GUIDANCE DOCUMENT

1. Functional Classification Overview

Wisconsin’s roadway network connects people and places within the state and beyond. Elements of this network have been developed with various travel objectives in mind, ranging from long-distance passenger and freight movement to local travel from residential neighborhoods to nearby businesses. Functional Classification is a way of defining and categorizing the various roles that streets and highways play in serving these varied transportation needs as part of the statewide system.

Highways typically enable mobility, allowing higher speed travel with few disruptions for longer distance trips, while other roads and streets primarily provide access—to homes, places of business or industry, civic buildings, recreational areas, and many other types of facilities. Arterial, Collector, and Local classifications were developed to categorize roads based on the amount and types of traffic the roads carry, characteristics of the roadways, land uses in the vicinity of the roadways, and the development and population density of the surrounding area.

1.1. History

On a national level, the functional classification system began with the passage of the Federal Aid Act of 1921, which established the federal aid primary system to distribute federal funds for state highway improvement projects. The Federal-Aid Highway Act of 1973 created policies and procedures for classifying roadways eligible for federal aid based on the functional usage of the roadways. This resulted in a defined set of standard functional classifications. The functional system became effective July 1, 1976.

The intended audience of this document are Transportation System Planners in WisDOT’s region offices, WisDOT’s Division of Transportation Investment, and interested agencies and stakeholders. The focus is technical information on the numerous factors that influence the functional classification of a road or street.

1.2. Purpose

Beyond determining eligibility for funding under the Federal-aid program, functional classification data is used for numerous planning, programming, and design purposes. These include:

- ▶ Performance measurement and reporting (Highway Performance Monitoring System (HPMS), etc.)
- ▶ Federal and state funding programs
- ▶ Program budgeting and project prioritization
- ▶ Highway design considerations
- ▶ Traffic counting program
- ▶ Maintenance planning

While a road’s functional classification alone does not dictate its design, it is an important factor in design considerations. Functional classification carries with it expectations about travel speed, travel capacity, and relationship to existing and future land use development. The AASHTO “Green Book”, A Policy on Geometric Design of Highways and Streets, includes design considerations for each classification of roadway. With agencies moving toward a performance-based design and management approach,



FUNCTIONAL CLASSIFICATION CRITERIA

functional classification will continue to be an important consideration in setting expectations and measuring outcomes for transportation mobility.

1.3. Funding Implications

Functional classification is a criterion for federal funding eligibility. Traditionally, there has been a minimum functional classification requirement where urban roads have to be classified as a Collector or higher, and rural roads must be classified as a Major Collector or higher in order to receive federal highway aid. However, the [Bipartisan Infrastructure Bill \(BIL\)](#), passed in November 2021, added an optional funding category for Rural Minor Collectors, Rural Local Roads, and some Urban Local Roads (in urban areas with a population less than 50,000). See [Appendix C: Functional Classification Funding Implications](#) for additional information on the impact of classification on funding options.

The distinction between urban and rural roads is discussed in [Section 2](#).

1.4. FHWA Guidance

The Federal Highway Administration (FHWA) published its [Highway Functional Classification Concepts, Criteria, and Procedures guidance](#) in 2013. WisDOT has ensured that Wisconsin's Functional Classification Criteria are aligned with federal guidance; it is referenced below, where appropriate. When the FHWA guidance is updated, WisDOT will review this document and revise it, if necessary, to remain aligned with federal guidance.

2. Functional Classification Theory and Concepts

2.1. Functional Classification Basics

Roadway segments are assigned to one of several possible functional classifications based on the character of the travel service each roadway provides.

Roadways serve two primary travel needs: access and mobility.

- ▶ Roadway access focuses on providing people with access to and from homes, businesses, and other destinations. This type of roadway typically provides many opportunities for entry and exit.
- ▶ Roadway mobility focuses on providing efficient travel over longer distances, limiting entry and exit points, and generally allowing for higher speed travel.

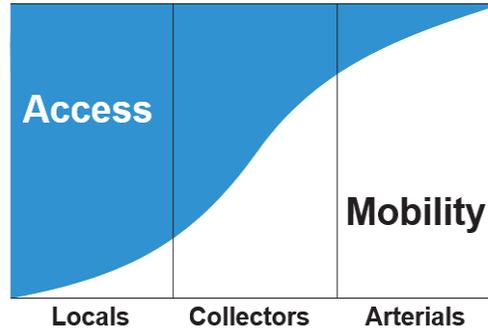


Figure 2.2: Roadway Focused on Access, Spaight Street



Figure 2.1: Roadway Focused on Mobility, I-90 Arterial

Three broad classes of roadways exist: **Arterial**, **Collector**, and **Local Road**. Generally, Arterials focus on travel mobility while Local Roads focus on providing access. Positioned between the two, Collectors offer a combination of mobility and access.

Table 2.1: Roadway Classes

Roadway Type	Definition
Arterial	Provide mobility so people can move from one place to another quickly and safely
Collector	Provide links between Arterial and Local Roads and balance of mobility and access safely
Local	Provide access to homes, businesses, and other property



FUNCTIONAL CLASSIFICATION CRITERIA

2.2. Functional Classification Category Characteristics

The three roadway functional classifications (Arterial, Collector, and Local) are further refined into seven federal sub-categories based on their role and function. It is important to note that the characteristics of these classifications can vary depending on whether a roadway is in an urban or rural setting. The following descriptions and tables present some of the key differences.

Arterials are divided into Principal and Minor Arterials, with Principal Arterials subdivided into Interstate, Freeways and Expressways, and Other. Collectors are divided into Major and Minor Collectors.

Table 2.2: Federal Functional Classification Categories

Functional Classification	Abbreviation	FHWA Code*
Principal Arterial - Interstate	PA	1
Principal Arterial - Freeways and Expressways	PA	2
Principal Arterial - Other	PA	3
Minor Arterial	MA	4
Major Collector	MAC/COL	5
Minor Collector	MIC	6
Local	LOC	7

*Functional system code as defined in the HPMS Data Collection Field Manual.

2.2.1. Arterials

Arterial roadways are at the highest level of the highway functional classification system. They provide a high level of mobility, have high speed limits, carry high traffic volumes, and allow for long-distance, uninterrupted travel. Rural Arterial roadways connect states, regions, and urban centers, may have multiple lanes, and provide limited access, such as at interchanges. Urban Arterials serve the major activity centers within the urban area and are its highest traffic volume corridors. FHWA separates Arterials into the following sub-categories.

Principal Arterials

- ▶ Interstates: Getting from place to place is easiest on the interstate system. Compared to other roadways, interstates have high speed limits, 4-lanes of travel or more, and the most vehicle miles of travel (VMT) of other roadway types. Interstate access is only provided at interchanges, thus, land along interstates cannot be directly accessed by the interstate itself. Interstates have the lowest centerline mileage percentage on Wisconsin’s roadway network.
- ▶ Freeways and Expressways: These roadways are very similar to interstates. They offer high mobility, have high VMT, and provide limited access with high-speed limits and multiple travel lanes. Freeways are divided highways with no at-grade intersections, ramp only access, and no driveway connections. While Expressways allow some at-grade intersections and some driveways are possible.
- ▶ Other Principal Arterials: These roadways also offer high levels of mobility but provide at-grade access to side roads and direct access to adjacent homes and businesses.



FUNCTIONAL CLASSIFICATION CRITERIA

Table 2.3: Principal Arterial Characteristics

Principal Arterials	
Urban	Rural
<ul style="list-style-type: none"> • Serve major activity centers, highest traffic volume corridors, and longest trip demands • Carry high proportion of total urban travel on minimum of mileage • Connect to major rural corridors • Serve demand for intra-area travel between the central business district and outlying residential areas 	<ul style="list-style-type: none"> • Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel • Connect urban areas with populations greater than 25,000 • Provide an integrated network of continuous routes

Adapted from Table 3-1 in FHWA Highway Functional Classification: Concepts, Criteria, and Procedures.

Minor Arterials

Minor Arterials connect and support the system of Principal Arterials, serving trips of moderate length. In rural areas they provide links between cities, while in urban areas, Minor Arterials often support other transportation modes, such as bus travel, and typically have lower speeds than Principal Arterials. All Minor Arterials provide opportunities for direct access to adjacent land uses.

Table 2.4: Minor Arterial Characteristics

Minor Arterials	
Urban	Rural
<ul style="list-style-type: none"> • Interconnect and augment Principal Arterials • Serve trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials • Distribute traffic to smaller geographic areas than those served by Principal Arterials • Provide access to adjacent land uses and neighborhoods 	<ul style="list-style-type: none"> • Link cities and larger towns (and other major destinations such as resorts capable of attracting travel over long distances) • Form and provide intrastate and inter-county service • Are spaced at intervals, consistent with population density, so that all developed areas within Wisconsin are within a reasonable distance of an Arterial roadway • Provide service to corridors with trip lengths and travel density greater than those served by Collectors and Local Roads

Adapted from Table 3-2 in FHWA Highway Functional Classification: Concepts, Criteria, and Procedures.

2.2.2. Collectors

As the name implies, the primary role of Collectors is to collect and distribute traffic from Local Roads to Arterials. Within urban areas, Collectors provide circulation in residential neighborhoods, commercial, civic, and industrial areas. While in rural areas, they link communities and agricultural areas not served by Arterials. Collectors carry more traffic and longer trips than local roads and provide more access to adjacent homes and businesses than Arterials.



FUNCTIONAL CLASSIFICATION CRITERIA

Major Collectors

Major Collectors circulate traffic and provide access to local businesses or homes. They distribute trips between Local Roads and Arterials over greater distances than Minor Collectors. Major Collectors generally have fewer driveways, higher speed limits, higher VMT, more travel lanes, and are spaced at greater intervals than Minor Collectors. In rural areas they provide service to small-to-moderate sized communities and other intra-area traffic generators and link those generators to nearby larger population centers (cities, villages, and towns) or Arterials. Many rural Major Collectors are also county highways.

Table 2.5: Major Collector Characteristics

Major Collectors	
Urban	Rural
<ul style="list-style-type: none"> • Serve both land access and traffic circulation in higher density residential, and commercial/industrial areas • Penetrate residential neighborhoods, often • for significant distances • Distribute and channel trips between Local Roads and Arterials, usually greater than three-quarters of a mile • Operating characteristics include higher speeds and more signalized intersections 	<ul style="list-style-type: none"> • Provide service to any county seat not on an Arterial route, to the larger communities not directly served by an Arterial and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks and other important rural industry locations • Link these places with nearby larger communities and urban areas or with Arterial routes • Serve the most important intra-county travel corridors (arterials or other major collectors).

Adapted from Table 3-3 in FHWA Highway Functional Classification: Concepts, Criteria, and Procedures.

Note: In 2008, FHWA policy added the option to divide Urban Collectors into Urban Major and Minor Collectors. Before that time all Collectors in an urban area were classified only as Urban Collectors. Beginning in 2010, all existing Urban Collectors were to be reported in HPMS as Urban Major Collectors. Splitting the Urban Collector pool into major and minor categories is optional and left to each State's discretion. Since both Urban Major and Urban Minor Collectors are considered Federal Aid Eligible Roads, Wisconsin has not divided them and does not define Minor Collectors in urban areas. All Urban Collectors in Wisconsin are considered Urban Major Collectors.

Minor Collectors

The role of Minor Collectors is very similar to that of Major Collectors, but they connect Arterials and Local Roads over shorter distances and serve lower density areas. Generally, they have lower speed limits and serve smaller communities than Major Collectors do. Rural Minor Collectors provide service to smaller population clusters not already served by a Collector or Arterial, link the locally important traffic generators, and are spaced to collect traffic from Local Roads and bring developed areas within a reasonable distance of a Collector road.



FUNCTIONAL CLASSIFICATION CRITERIA

Table 2.6: Minor Collector Characteristics

Minor Collectors	
Urban	Rural
<ul style="list-style-type: none"> • Serve both land access and traffic circulation in lower density residential and commercial/industrial areas • Penetrate residential neighborhoods, often only for a short distance • Distribute and channel trips between Local Roads and Arterials, usually less than three-quarters of a mile • Operating characteristics include lower speeds and fewer signalized intersections 	<ul style="list-style-type: none"> • Are spaced at intervals, consistent with population density, to collect traffic from Local Roads and bring all developed areas within reasonable distance of a Collector • Provide service to smaller communities not served by an Arterial or Major Collector • Link locally important traffic generators with surrounding rural areas

Adapted from Table 3-3 in FHWA Highway Functional Classification: Concepts, Criteria, and Procedures.

Note: Wisconsin does not use the Urban Minor Collector classification; all Collectors in urban areas are classified as Urban Major Collectors.

2.2.3. Local Roads

Local Roads are at the bottom of the functional classification hierarchy, even though they comprise the largest percentage of all roadways in the state. Their role is to provide access to homes and businesses. They have low speed limits and offer limited mobility for through traffic.

2.3. Differences Between Classifications in Urban and Rural Areas

Urban areas are defined as populated places with populations of 5,000 or higher. After each decennial census, WisDOT works with local officials to develop an adjusted urban area (UA) boundary for each census-defined urban area. FHWA reviews and approves these adjusted boundaries. Once approved, the adjusted boundary becomes the official Urban Area Boundary for purposes of functional classification. All areas not within an Urban Area Boundary are designated as rural areas. Throughout this document, any references to “urban” or “urban area” refer to this adjusted urban area boundary. Roadways located inside the UA boundary are considered urban for the purposes of functional classification, while roads outside the UA boundary are considered rural. Functional classification maps are prepared for each urban area and each county (for rural areas) in the state.

The term urban is sometimes confused with a municipal (city, village) boundary, but for purposes of functional classification urban refers to roadways within an adjusted urban area boundary.

When classifying roadways, the emphasis is on function and service rather than the road’s location on either side of an urban boundary. Nevertheless, urban areas generally have a higher density of roadways, more land use development, and greater population than rural areas, so separate thresholds for urban and rural roads have been established for several key classification criteria. When considering factors such as traffic volumes and land use, for example, the criteria tables in Section 5 are separated for urban and rural roadways.



FUNCTIONAL CLASSIFICATION CRITERIA

2.4. Density of Development

Beyond an area’s urban or rural nature, the level of development is an important factor to consider. Traffic volumes generally increase as the density of population and development increase. A sparsely populated county such as Iron County will have much less traffic overall than a densely populated county such as Waukesha County. In urban areas, traffic volumes in lower density (suburban) areas are generally lower than in higher density (urban core) areas.

Using the same AADT guidelines for roadways in high- and low-density areas would not result in a balanced network. For this reason, three levels of density have been defined (low, medium, high) to be used when evaluating traffic volumes (AADT). Corresponding AADT thresholds have been developed for each density level.

In rural areas, density is defined by the population density (population/square mile) of each county, excluding the urban area population. See Appendix A for population densities by county. Urban areas often encompass multiple cities, villages, and towns with differing density levels. For example, the Janesville urban area includes the City of Janesville, City of Milton, and parts of the surrounding towns (Janesville, Harmony, La Prairie, Milton, and Rock). For urban areas, the population of each city, village, or town within it are used as a guide to select the proper density level. In the Janesville example, Janesville would be considered high density, with a population over 50,000, while Milton and town areas would be considered low density, with populations under 25,000.

Table 2.7: Urban and Rural Population Densities

	Urban	Rural
Low Density	Population 5,000-25,000	Population 0-30/SQ Mile
Medium Density	Population 25,000-50,000	Population 30-45/SQ Mile
High Density	Population Above 50,000	Population 45+/SQ Mile

Three levels of density give the planner more ability to use the density category that best describes the development level of an area. The Madison urban area, illustrated in Figure 2.3, depicts these various population densities.

In the Madison urban area, even though Middleton and Monona have a population under 25,000, they would be considered high density because they are extensions of Madison from a land development viewpoint. The core developed area in each of these areas is essentially merged to form a single larger developed area.

Sun Prairie would be considered medium density with its core land development separate from Madison’s and a population around 33,000. Sun Prairie’s core land development does not merge with Madison in the same way that Middleton and Monona do.

FUNCTIONAL CLASSIFICATION CRITERIA

Fitchburg is an example of a city that includes both a highly developed section and a rural area. The northern part of the city would be considered high density as part of the Madison developed area, while the southern section, if it were within the Madison UAB, would be considered low density as it contains mainly farm fields.

Stoughton, Waunakee, De Forest, and Cottage Grove would be considered low density (with a population under 25,000) because their core land development is separate from Madison's.

Rural communities with less than 5,000 population are not considered urban areas by definition (per FHWA, as discussed earlier) but, as their population grows, traffic volumes increase and development becomes more dense. At some point during this progression, these communities may function more as small urban areas than undeveloped rural areas.

Planners can use the "rural community" column in the Criteria Tables 4.1, 4.7, 4.8, and 5.2 when evaluating these communities. Planners should use judgement on when to apply the "rural community" standard; many communities with a population under 2,000 may be more rural in character, while those above 3,000 may begin to exhibit more low-density urban characteristics.

In addition to traffic volumes, density categories can be useful when considering maximum roadway spacing. In urban areas, Arterial and Collectors will often be spaced closer together in the more densely developed areas. Rural developed communities are also more likely to have roadways spaced closer together than the less developed portions of a county. See Section 4.1.4 for additional guidance.

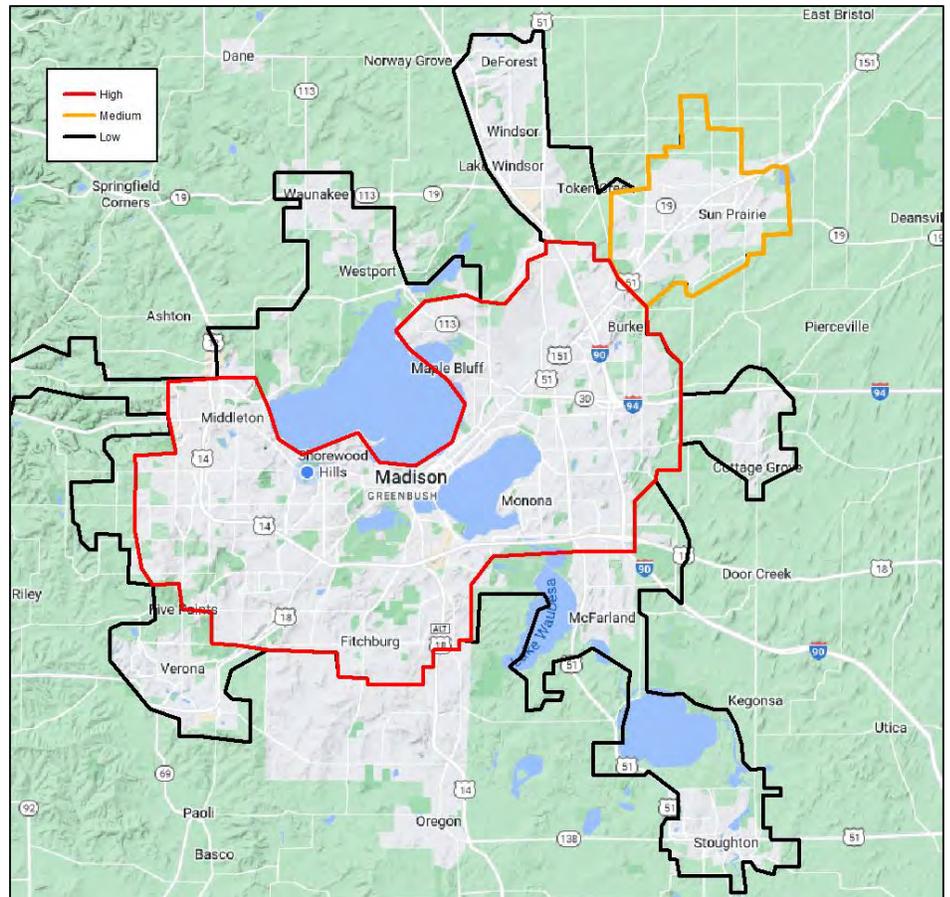


Figure 2.3: Example of Population Density



3. The Functional Classification Update Process

3.1. Classification Process

WisDOT's Bureau of Planning and Economic Development (BPED) is responsible for updating and maintaining the state's functional classification system. Changes to the system take place regularly as part of the state's comprehensive transportation planning efforts and in response to proposed changes by MPOs and county and municipal officials.

Staff in BPED's Planning Section, Statewide Planning Unit, perform a systematic statewide review of the functional classification network following each decennial census. This process examines classifications for each county and every urban area in the state. Planning staff coordinate with the stakeholders in each area to revise the functional classification map and submit changes to FHWA for approval. With 72 counties and over 70 urban areas, this process and the associated stakeholder coordination takes several years to complete. **The goal is to review and update the entire system every 10 years.**

In addition to BPED's systematic review of the network, functional classification is also reviewed in response to local government or MPO-proposed changes (related to updated boundaries, new development, road construction, traffic information, etc.) and WisDOT Region-proposed changes as part of a specific improvement or jurisdictional transfer efforts.

The functional classification review and approval process is iterative and follows these steps:

1. BPED begins by reviewing any changes that have taken place in the area being studied since its last functional class map was approved. This review looks at many factors including:
 - » The area's current mileage percentages
 - » Identification of any Arterial continuity issues
 - » Changes in development within the community
 - » New roadways and new road configurations
 - » Changes in traffic volumes
 - » Urban area boundary adjustment needs
 - » Population changes
2. Using these criteria, as well as [FHWA's Highway Functional Classification: Concepts, Criteria and Procedures](#), BPED Planning staff analyze the roadways in the area and creates a map of any proposed classification changes. The proposed changes include a map highlighting the roadways that are changing and a table that lists the impacts to mileage and reasons for change. Note: Due to the roadway and land use complexity of larger urban areas, BPED often collaborates with MPO staff on developing the list of initial proposed changes.
3. BPED shares the proposed functional classification changes with the appropriate WisDOT DTSD Region planning staff for review and follow-up discussion. After incorporating input from the Region, the changes are finalized for presentation to the local officials.



FUNCTIONAL CLASSIFICATION CRITERIA

4. The DTSD Region planner presents the proposed changes to the local elected officials—MPO contact and board, Urban Area (City/Town) elected officials or board, or County Board/Commission—for local review, consideration, and approval.
 - » If the local officials have questions or suggestions, they will communicate those to the Region Planner who will then discuss them with BPED.
 - » If beneficial, BPED can meet with the Region Planner and local officials to discuss the proposed changes, consider information or data provided by the locals, and reach concurrence on the proposal.
 - » After BPED incorporates local and Region input, the revised proposal is submitted to the local officials for approval.
5. Local officials discuss the proposed classification changes at a board or committee meeting and approve the changes. They then send a copy of the approval document to the DTSD Region staff who reviews it to make sure it is correct and complete and then forwards it to BPED. (Most often, the approval document is a resolution approving the changes. However, a copy of the meeting minutes showing a passed motion to approve the functional classification changes is acceptable in certain circumstances)
6. Once a local approval document is received, BPED prepares a final draft of the proposed changes for submittal to FHWA for approval. The submittal packet contains the following documents.
 - » Formal letter (signed by the BPED Bureau Director) requesting that FHWA approve the proposed changes to the given urban or rural area
 - » Change list (spreadsheet) identifying road segments, old and new classifications, changes in mileage, and brief description of reasoning for each change
 - » Change map highlighting the proposed changes
 - » Documentation of local approval from the local officials
 - » Draft of the revised Final Functional Classification Map
 - » Any additional documentation required
7. FHWA reviews and approves the proposed functional classification changes and draft map and sends an approval letter to BPED.
 - » If FHWA has questions before approving the changes, they will communicate those to BPED.
 - » BPED will clarify the reasoning for the proposed changes and will meet with FHWA, if necessary, to discuss and concur on the final changes before FHWA approval.
 - » If FHWA does not approve a given change (this is rare), BPED will send a revised proposal back to the municipality for re-approval.
8. BPED creates the final approved map PDF and posts it to the WisDOT website, sends a copy to FHWA, and notifies the Region Planner, who then notifies the local officials.



3.2. Boundary Considerations

Functional classification changes sometimes include revisions to the urban area boundary. In cases where significant development has taken place outside of the current urban area since the last UA boundary map was approved, it may be necessary to consider revising the boundary to reflect this change. In these cases, a new adjusted urban area boundary and associated documentation are included as part of the submittal packet to FHWA for approval. For more information on how urban areas are defined and adjusted after each decennial census, see *WisDOT Boundary Adjustment Guidance*.

3.3. Review Timeline

Review of proposed function/boundary changes is an iterative process and prone to delays while one party is waiting for another party to complete its phase of the review. To coordinate changes in a timely manner, WisDOT has established a timeframe for the review and approval process. The policy (linked below) states that after WisDOT region planners and BPED concur on the proposed change, the region sends them to the local government (MPO, urban area, municipality, or county) for review. From this date, the local entity has 60 days to complete its review of the proposed functional classification changes and respond to the Region with notice of approval or with questions or comments that require further discussion.

WisDOT's policy on review timelines are available on the functional classification webpage: (<https://wisconsindot.gov/Documents/projects/data-plan/plan-res/functional/timeframes.pdf>)



4. Functional Classification Factors

There are many factors that impact the determination of the functional classification of a roadway. Generally, no single factor defines the functional classification of a road on its own; multiple factors must be considered when making the designation. As highlighted in the current FHWA guidelines: *“The process of determining the correct functional classification of a particular roadway is as much art as it is science.”* And, as stated in the first section of those guidelines, any changes should aim to achieve a logical and continuous roadway system in which traffic moves efficiently on and between Local Roads, Collectors, and Arterials.

When considering a change to the existing functional classification of a roadway, or determining the appropriate functional classification for a new or not previously classified roadway, WisDOT Systems Planners consider each of the **primary factors**:

- ▶ System Continuity
- ▶ Route Usage/Traffic Volume
- ▶ Land Use Served
- ▶ Route Spacing

Typically, at least two factors must be met to justify a roadway’s functional classification. In rare cases, a single factor is strong enough (such as a very high traffic volume), that it can justify a classification on its own. Road segments are not evaluated in a bubble though, and the proposed classification must fit into the larger network. **A strong emphasis is placed on maintaining overall system continuity.** For example, if an individual segment meets the criteria for a Primary Arterial, but a parallel Primary Arterial like a Freeway is located nearby, it might only be designated a Minor Arterial to maintain system balance.

FHWA provides guidelines for statewide system percentage goals for each class of roadway (see table 3-5 and 3-6 in the [FHWA Highway Functional Classification: Concepts, Criteria and Procedures](#)). When designating roadway classifications, planners strive to balance each county and urban area with these guidelines in mind.

While system continuity, traffic volumes, land use, and spacing are the primary factors used in determining functional class, several **supplemental factors** are also considered:

- ▶ System Mileage Percentages
- ▶ Geographic Barriers
- ▶ Arterial Connections
- ▶ Alternative Population Connections
- ▶ Parallels Arterials
- ▶ Truck Routes/Bus Routes
- ▶ Seasonal Demand
- ▶ Roadway Characteristics

4.1. Primary Factors

4.1.1. System Continuity

Continuity and connectivity are cornerstones of a well-functioning road network. Arterials, which make up the backbone of the roadway system, should connect to other Arterials and terminate at other Arterials of equal or higher classification. Principal Arterials should end only at other Principal Arterials, while Minor Arterials should end at either a Minor or Principal Arterial. Arterials should create a closed loop system and not dead-end.

However, there are exceptions to this guideline. Arterials can terminate at large regional traffic generators (such as ports) or can connect at an intersection of several lower classified routes that together provide the same capacity as the Arterial; this is called diffusion.



Figure 4.1: Example of Arterial Dead-end



Figure 4.2: Example of Diffusion

Collectors follow this same general guideline, primarily ending at Arterials or other Collectors, but are a bit more flexible when it comes to end points. Collectors can end at major destinations (high schools, malls, etc.) if topological or other factors prevent them from connecting to another Collector or Arterial. Collectors can also end in an intersection of multiple Local Roads or Minor Collectors which together provide comparable service.

Local Roads can connect to any type of roadway but are more likely to connect to Collectors than Arterials.

Road segments that don't meet the normal criteria for a specific classification can be classified higher in order to maintain the overall continuity of the roadway network. The reverse is also true. For example, in [Figure 4.3](#), CTH A is designated a Minor Arterial from 8th Street to the urban area boundary. Even though that segment of road might have higher traffic volumes, the Arterial should end at 8th Street improving system continuity, as shown in [Figure 4.4](#).

FUNCTIONAL CLASSIFICATION CRITERIA

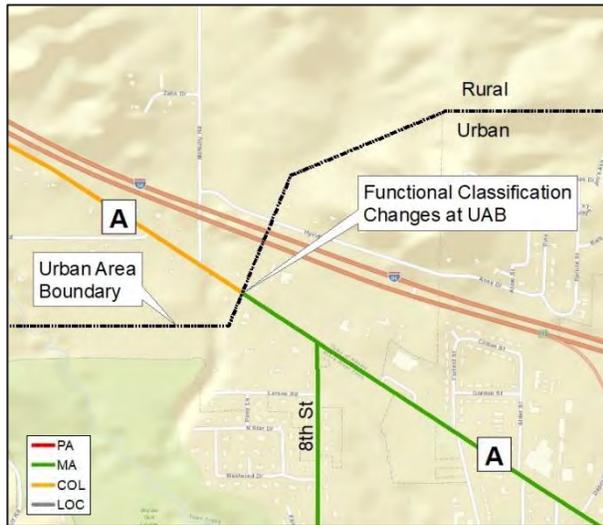


Figure 4.3: Example of Continuity Issue

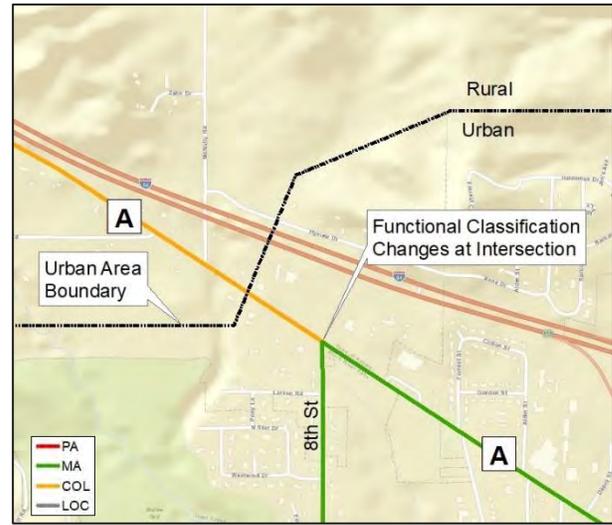


Figure 4.4: Example of Continuity Improvement

While functional classification criteria differ in urban and rural areas, the functional classification of a roadway does not change just because it crosses an urban area boundary. A road's classification changes only when the prevailing criteria justify it, and then, only at a qualifying intersection. For example, as CTH A enters an urban area (Figure 4.3), it should not change at the urban area boundary but continue as a Collector until it reaches 8th street, as shown in Figure 4.4. This way the Minor Arterial remains continuous and changes at a logical intersection rather than at the adjusted urban area boundary.

When classifying a roundabout, typically the entire roundabout is assigned the classification of the highest classification connected to it; see Figure 4.5. There may be some variation to this for very complex designs.



Figure 4.5: Roundabout Example



Figure 4.6: Ramp Example

For ramps, all four legs of a standard ramp are assigned the classification of the highest classified road connected to it, not including the main through line; see Figure 4.6. For example, if a Collector and a Minor Arterial connect to a Principal Arterial via ramps, all ramps would be classified as Minor Arterial.



FUNCTIONAL CLASSIFICATION CRITERIA

4.1.2. Route Usage/Traffic Volume

While there is a general relationship between the functional classification of a roadway and its Annual Average Daily Traffic volume (AADT), **traffic volume alone does not dictate a roadway’s functional classification**. Two roads that carry the same traffic volume may serve very different purposes and therefore have different functional classifications. Conversely, two roadways may have the same functional classification but carry very different traffic volumes.

When examining volumes in any given area, the higher functionally classified roads generally carry the higher traffic volumes. Arterials, for instance, tend to carry higher volumes of traffic than other functional classes. So, while AADT is an important factor in assigning functional classification, it must be used along with other supporting factors and the system percentage goals (see [Section 4.2.1](#)) to determine the proper classification to fit the overall roadway network.

Larger population and a greater density of development result in higher traffic volumes. To account for this during the classification process, AADT thresholds have been developed for three levels of density. In urban areas, density is based on total population of each municipality within the adjusted urban area boundary. In rural areas, density is defined by the population density per square mile ([Table 2.7](#)).

Table 4.1: Route Usage

Route Usage (AADT)							
FC	Urban			Rural			
	Low	Med	High	Low	Med	High	Rural Community
PA	3750+	6000+	9000+	2000+	3000+	6000+	3750+
MA	1500+	3000+	4500+	800+	1200+	2000+	1500+
MAC/COL	750+	1500+	2250+	300+	500+	1000+	750+
MIC				200+	300+	400+	450+

WisDOT collects traffic data by county on a 3-, 6-, or 10-year cycle based on traffic volume and functional classification of the roadway. This approach is based on guidance in the HPMS Field Manual, which states that Principal Arterials be counted on a minimum three-year cycle and Minor Arterials and Major Collectors be counted on a minimum six-year cycle. Current and past AADT data, statewide, can be accessed through WisDOT’s Traffic Count application, [TCMap](#).

On road segments where current AADT counts are *not* available, planners have two options:

- ▶ Request that a special count be conducted during the next traffic count season, or
- ▶ Create an estimated count using tools such as WisDOT’s travel demand models or the Institute of Transportation Engineer’s Trip Generation Manual.

Traffic counts or estimates performed by the local government or consultants can also be used when available, if approved by WisDOT. Routes that are classified as Collectors and above become part of the statewide traffic count program and will be counted as part of the traffic counting cycle. Once actual counts are available, they must be checked to ensure they support the classification selected. If necessary, the classification will be revised. The most recent traffic counts available should always be used when making any determination.



FUNCTIONAL CLASSIFICATION CRITERIA

4.1.3. Land Use

The type of land uses served by a roadway can be used as a factor in determining its classification. To provide travelers access to and from important destinations, specific classes of roadways are typically located near specific land use types. The level of classification is related to the level of land use importance or access needed. For example, a major emergency health facility or large high school may be served by a higher classified road than a neighborhood park.

The characteristics and density of land use features differ between urban and rural areas and are described in the following sections:

Urban Land Use

In urban areas, Principal Arterials are generally located near high-level public facilities, providing travelers easy access to these important destinations. Minor Arterials serve mid-level public facilities that are not already served by a Principal Arterial. The following table describes land use features typically served by Urban Arterials:

Table 4.2: Urban Land Uses – Arterials

Principal Arterial	Minor Arterial
Intermodal terminals	Airports
Regional shopping centers	Community shopping centers
Major colleges and universities	Commercial/Industrial areas
Large industrial parks	Large high schools or community colleges
Large stadiums/arenas, convention centers	Community hospitals/medical centers
Major medical centers	Large Parks or recreation areas
Large gambling facilities	Fire stations or emergency Services
Central business district of an urban area	Theatre complexes
Major airports	Civic/Community centers

In urban areas, Collectors usually serve most base-level public facilities that are not already served by an Arterial. Base-level public facilities include:

Table 4.3: Urban Land Uses – Collectors

Land Uses Served by Urban (Major) Collectors
Schools (elementary, middle, and high schools)
Commercial/Industrial areas
Neighborhood shopping areas
Parks or recreation areas (typically with parking and multiple facilities)
Marinas
Municipal buildings/facilities (administration, garage, etc.)



FUNCTIONAL CLASSIFICATION CRITERIA

Rural Land Use

In rural areas, in addition to providing connections between major population centers, Principal Arterials also provide access to recreational areas of national or regional significance, such as Wisconsin Dells, Devils Lake, and Door County. Minor Arterials interconnect and augment the Principal Arterial system and provide connections to mid-sized communities. They also serve areas of state or local significance such as Mirror Lake, Governor Dodge State Park, House on the Rock, and Perrot State Park that are not already served by a Principal Arterial. The following table describes land use features typically served by Rural Arterials:

Table 4.4: Rural Land Uses – Arterials

Land Uses Typically Served by:	
Rural Principal Arterial	Rural Minor Arterial
Apostle Islands	Areas of state or local significance that attract hundreds of thousands of visitors each year, such as Mirror Lake, Governor Dodge State Park, House on the Rock, and Perrot State Park, and are not already served by a Principal Arterial.
Wisconsin Dells/Lake Delton Area	
Devils Lake	
Oneida/Vilas County Lakes Area	
Hayward Area	
Horicon Marsh Area	
Lake Geneva Area	
Kettle Moraine Area	
Iron Mountain (MI) Area	

In rural areas, planners should determine what land use features are served by a given roadway. If the segment being evaluated serves at least one high-level land use feature (or equivalent) it may be considered for a Minor Collector designation. If the road serves two or more high-level land use features it may be considered for a Major Collector classification.

Table 4.5: Rural Land Uses – Collectors

Type	Factors Required
Major Collector	Two or more high-level land use factors or equivalent
Minor Collector	One high-level land use factor or equivalent

The following table describes typical rural land use features that may be served by Rural Major or Minor Collectors. These features are divided into three categories: high-level, mid-level, and base-level.



FUNCTIONAL CLASSIFICATION CRITERIA

Table 4.6: Factor Levels for Rural Land Use Types

Factor Level	Typical Land Use Types
High-level	School, medical facility, county/state park, population cluster of 200+, state/county institution, large business, freight or transportation terminal, airport
Mid-level	Church, community or civic center, campground, grocery, gas station, convenience store, agri-business facility, restaurant, tavern, landfill site, lumber mill, quarry, utility plant, commercial/industrial/corporate park, gambling facility, population cluster of 100-199, golf-course, marina, ski resort, medium sized business, senior housing complex
Base-level	Sports field (soccer, baseball, etc.), trail head, community park, horse stables, population clusters of 50-99, commercial forestland, public hunting/fishing lands

For this guideline, two mid-level land uses are equivalent to one high-level land use and two base-level land uses are equivalent to one mid-level use. For example: two base-level and one mid-level would equal one high-level use, etc.

This is meant as a rough guideline; planners should use their experience and judgement to determine if a given roadway meets the land use criteria to be considered a Collector. If a mid-level feature is large enough it may be considered a high-level factor. For example, a large ski-resort could be considered a large business, and therefore, a high-level land use. The reverse is also true; if a land-use feature is smaller than average it should be considered a level lower. For example, a campground with only a few sites might be considered only a base-level land use.

The specific land uses identified regardless of types will be assessed by WisDOT to determine the proper factor levels.

Land Use Service Distance

In some cases, a classified road may directly connect to the corresponding land use, like a Principal Arterial leading to the entrance of a major airport or a Collector running in front of a high school. Functionally classified roads don't always have to directly connect to a related land use to serve them though. For example, a hospital located a couple blocks away from an Arterial road may be close enough to allow traffic to quickly get access to and from it.

It isn't always practical to have a classified roadway connect directly to specific land use type. [Table 4.7](#) gives the planner some guidelines for considering the distance a facility may be from a corresponding roadway classification to be considered served by it.

Table 4.7: Land Use Service Distance

Classification	Urban	Rural	Rural Community
Principal Arterial	1 mile	10 miles	---
Minor Arterial	½ mile	2 miles	---
Collector	¼ mile	½ mile	¼ mile

Note: Land use service is based on "over the road" distance, not "as the crow flies" distance.

FUNCTIONAL CLASSIFICATION CRITERIA

4.1.4. Route Spacing

Route spacing is an important factor in the functional roadway network. Optimal spacing allows travelers to easily move from Local Road to Collector to Arterial and back again. Appropriate spacing of Collectors and Arterials will help in achieving an efficient and effective roadway system.

Ideally, regular and logical spacing of each class of roadway exists with Arterials spaced at greater intervals than Collectors, and Collectors spaced further apart than Local Roads.

In the example, Principal Arterials form the backbone of the roadway network with Minor Arterials located between Principal Arterials. Collectors are located between Arterials, collecting the traffic from Local Roads and channeling it to the Arterial network.

The actual spacing of roadways vary based on the density of an area. In general, the more intense the development, the closer the spacing of roadways within the same functional classification category. In suburban areas for example, neighborhoods tend to be larger than in the urban core of a city, resulting in greater roadway spacing. Geographic barriers, such as bodies of water, can greatly influence the layout and spacing of roadways as well.

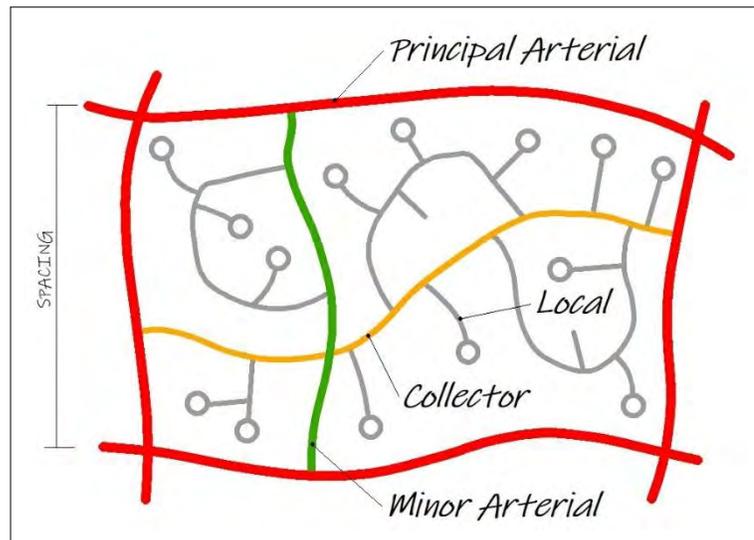


Figure 4.7: Functional Classification Examples

With this in mind, spacing guidelines have been developed for Wisconsin’s roadway network. In rural areas, the goal is for the distance between Collectors to be no more than 10 miles and the distance between Arterials to be no more than 30 miles, where topography allows. In urban areas, spacing varies by the density of development ranging from ¼ mile to 1 mile in the urban core to 1 to 3 miles in suburban areas.

Table 4.8: Maximum Spacing Guidelines

Functional Class	Urban	Urban Core	Rural	Rural Community
Principal Arterial	3 miles	1 mile	30 miles	---
Minor Arterial	2 miles	½ mile	30 miles	---
Collector (Major)	1 mile	¼ mile	10 miles	1 mile
Collector (Minor)	---	---	10 miles	½ mile

While there is no minimum spacing requirement, the guideline is to avoid assigning the same functional classification to adjacent parallel routes unless enough other factors justify the need to do so. This is especially true when classifying Arterials.

When considering functional classification modifications, these maximum spacing guidelines can be used in conjunction with the other factors to determine the appropriate roadway classification.

FUNCTIONAL CLASSIFICATION CRITERIA

4.2. Supplemental Factors

4.2.1. System Mileage Percentages

FHWA provides guidelines for statewide mileage percentages for each classification of roadway. Thus, system mileage should be an important consideration when determining functional classification.

Functional classification is analyzed for each urban area and the rural portion of each county in the state. Even though the system mileage goals are based on statewide percentages, it is a good practice to try to keep each individual urban area and county within the desired ranges in order to ensure the overall statewide system remains within the guidelines. There will be some variation within individual rural and urban areas.

In areas where the total mileage of a specific functional classification is considerably higher than the FHWA guidelines, the mileage percentage goals themselves may be considered as a factor in classifying a specific roadway segment.

Table 4.9: System Mileage Percentage Guidelines

Classification	Urban	Rural
Principal Arterial - Interstates	1% - 3%	1% - 3%
Principal Arterial	4% - 11%	2% - 8%
Minor Arterial	7% - 14%	2% - 6%
Collector/Major Collector	3% - 16%	8% - 19%
Minor Collector	---	3% - 15%
Local	62% - 74%	62% - 74%

Normally a county's combined Arterial and Collector mileage account for 35% or less of its total mileage. In some counties with a high percentage of Arterials, the Arterial and Collector mileage combined may exceed the 35% guideline, normally by the amount its Arterial system exceeds 12%.

4.2.2. Geographic Barriers

Extra care should be taken when classifying routes that cross major rivers or Freeways or pass through or around large natural areas, reserves, bluffs, lakes, or other geographic barriers. Though these roads may carry lower traffic volumes, when the nearest road that provides an alternative route around a barrier is a significant distance away, the presence of a geographic barrier should be a consideration in classifying the road. This applies primarily to Collectors, but in some situations such as a major river crossing, it may apply to Arterials.



Figure 4.8: Geographic Barrier Example

FUNCTIONAL CLASSIFICATION CRITERIA

4.2.3. Arterial Connections

Local Roads that connect directly to a Freeway or other Arterial should be examined to see if they serve as a channel for other connected local streets. Freeway connection can be used as a consideration in the designation of Collectors; see [Figure 4.9](#).

4.2.4. Alternate Population Connections

In many instances, two or more routes provide connections between the same two population centers. Primary routes between the two are generally easily identified and can be classified using the primary criteria. If additional routes exist, the fact that they provide an alternate population connection can be used as a consideration in determining functional classification. This factor only applies to the designation of Collectors or Minor Arterials; see [Figure 4.9](#).

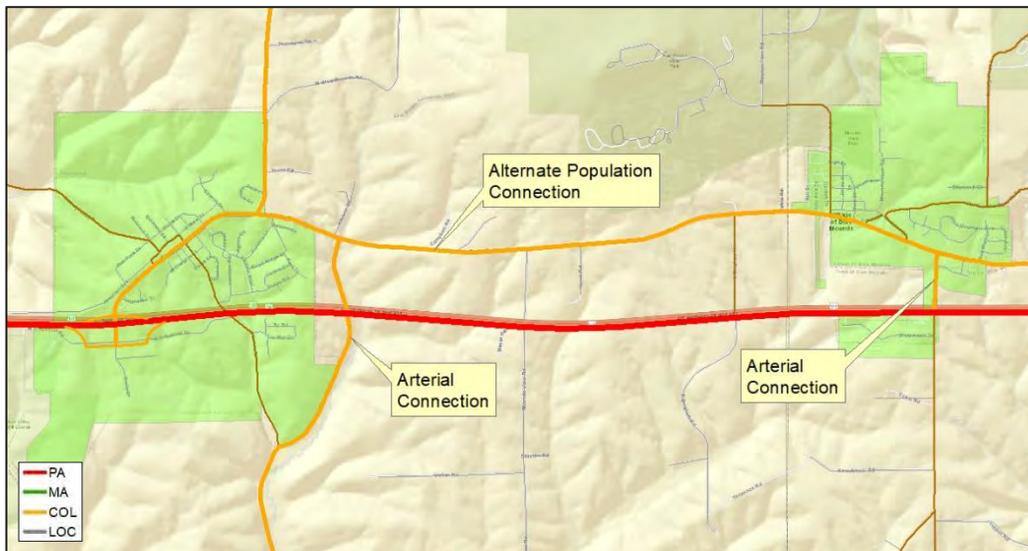


Figure 4.9: Alternate Population Connection and Arterial Connection Example

4.2.5. Parallel Routes

A rural route that closely parallels an Arterial often keeps the shorter trips off the Arterial. Parallel routes can also be important detour routes if traffic needs to be diverted from the Arterial. As such, the fact that a Local Road parallels an Arterial can be used as a factor in designating it as a Collector; see [Figure 4.10](#). Also, when two Arterials closely parallel each other with roughly the same attributes, one of the two is typically designated a class lower. It is not desirable to have Arterials of the same classification side-by-side (see spacing guidelines in [Section 4.1.4](#)).

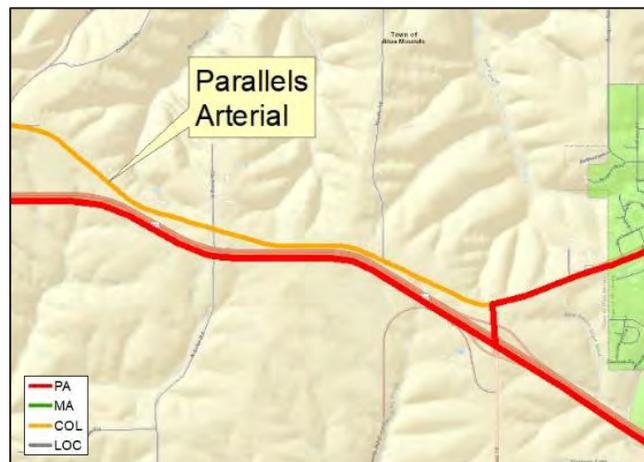


Figure 4.10: Parallels Arterial Example



FUNCTIONAL CLASSIFICATION CRITERIA

4.2.6. Truck Routes/Bus Routes

A route that serves as a truck or bus route can be a justifying factor for classification of Minor Arterials or Collectors.

4.2.7. Seasonal Demand

For routes that experience a large increase in traffic during specific times of the year due to tourism, recreation, or other recurring events, the increased seasonal demand can be considered as a factor in determining the appropriate classification.

4.2.8. Roadway Characteristics

In cases where a road's classification isn't apparent using the other selection criteria, its existing characteristics can help in determining the appropriate classification. Roadway characteristics to consider include:

- ▶ *Number of Access Points* – Arterials in general have less access points (driveways) allowed than Collectors or Local Roads.
- ▶ *Speed Limit* – Arterials tend to have higher speed limits and Locals have lower speed limits.
- ▶ *Number of travel lanes* – In general, Arterials have more travel lanes than Collectors and Collectors have more travel lanes than Locals.
- ▶ *Truck/Commercial Vehicle Usage* – Roadways that carry more trucks or commercial vehicles are more likely to have a higher classification than roads that are not suited to large vehicle traffic.
- ▶ *Signalization* – Roadways with more traffic signals are more likely to function as Collectors and Arterials than as Local Roads.
- ▶ *Divided/Undivided Status* – Divided roadways are often classified higher than undivided roadways.



FUNCTIONAL CLASSIFICATION CRITERIA

5. Functional Classification Criteria Tables

These tables present the classification factors in a compact format for easy reference. These factors are discussed in detail in Section 4. Use the Urban Criteria table for roadways within an urban area; use the Rural Criteria table for roads outside these areas.

Table 5.1: Urban Criteria

Urban Criteria														
FC	System Continuity	Primary Factors					Supplemental Factors							
		Route Usage (AADT)			Spacing		Land Use	System Mileage %	Geographic Barrier	Arterial Connection	Alt Population Con			
		Low	Med	High	Urban	Urban Core								
PA		3750+	6000+	9000+	3 mi	1 mi	1 mi of high- level facilities	5.0%-14.0%*						
MA		1500+	3000+	4500+	2 mi	1/2 mi	1/2 mi of mid-level facilities	7.0%-14.0%						
COL		750+	1500+	2250+	1 mi	1/4 mi	1/4 mi of base-level facilities	3.0%-16.0%						
LOC							62.0%-74.0%							
Meet at Least 2 Factors														

*Note: Includes Interstate mileage, which is 1%-3% statewide

Table 5.2: Rural Criteria

Rural Criteria														
FC	System Continuity	Primary Factors					Supplemental Factors							
		Route Usage (AADT)			Spacing		Land Use	System Mileage %	Geographic Barrier	Arterial Connection	Alt Population Con			
		Low	Med	High	Rural Community	Rural						Rural Community		
PA		2000+	3000+	6000+	3750+	30 mi	*	Named Place List	3.0%-11.0%*					
MA		800+	1200+	2000+	1500+	30 mi	*	> 300k Annual Visits	2.0%-6.0%					
MAC		300+	500+	1000+	750+	10 mi	1 mi	2 High Level Factors	8.0%-19.0%					
MIC		200+	300+	400+	450+	10 mi	1/2 mi	1 High Level Factor	3.0%-15.0%					
LOC							62.0%-74.0%							
Meet at Least 2 Factors														

*Note: Includes Interstate mileage, which is 1%-3% statewide



FUNCTIONAL CLASSIFICATION CRITERIA

5.1. Land Use Factors

These tables present the land use factors in a compact format for easy reference. See Section 4.1.3 for a detailed explanation of these factors. Table 5.3 below is for roadways within an urban area, while roads that are outside these areas use Table 5.4.

Table 5.3: Urban Land Use Factors

Principal Arterial within 1 Mile of:	Minor Arterial within 1/2 Mile of:	Collector within 1/4 Mile of:
Intermodal terminals	Airports	Schools
Regional shopping centers	Community shopping centers	Commercial/Industrial areas
Major colleges and universities	Commercial/Industrial areas	Neighborhood shopping centers
Large industrial parks	Large High schools or community colleges	Park or Recreation areas
Large stadiums, convention centers	Community hospital/medical centers	Marinas
Major medical centers	Large Park or Recreation areas	Municipal Administration Buildings
Large gambling facilities	Fire station or Emergency Services	
Central business district of an urban area	Theatre Complex	
Major Airports	Civic Center/Community Center	

Table 5.4: Rural Land Use Factors

Type	Factors Required
Principal Arterial	Segments serving specific high-profile destinations - see Table 4.3.3
Minor Arterial	Segments serving destinations with greater than 300,000 annual visits
Major Collector	Segments serving two (2) or more high-level land use factors (HLF) or equivalent
Minor Collector	Segments serving one (1) high-level land use factor (HLF) or equivalent

Table 5.5: Rural Collector Land Use Factor Levels

Factor Level	HLF	Land Use Types
High-level	1.0	School, medical facility, county/state park, population cluster of 200+, state/county institution, large business, transportation terminal, airport
Mid-level	0.5	Church, community or civic center, campground, grocery, gas station, convenience store, agri-business facility, restaurant, tavern, landfill site, lumber mill, quarry, utility plant, commercial/industrial/corporate park, gambling facility, population cluster of 100-199, golf-course, marina, ski resort, medium sized business, senior housing complex
Base-level	0.25	Sports field (soccer, baseball, etc.), trail head, community park, horse stables, population clusters of 50-99, commercial forestland, public hunting/fishing lands

6. Planned Routes

Planned Routes are roadways that are scheduled for future construction and programmed for completion within four years and are therefore included in the STIP, TIP, or have secured local funding. When updating the functional classification of a rural or urban area, these planned routes should be analyzed, and the planned functional classification should be assigned (based on estimates from existing roads and/or WisDOT approved forecast numbers for the planned route).

These planned routes, symbolized with dashed lines to represent that they are not constructed yet, are included on the map submitted to FHWA for approval. The estimated construction year for planned routes must be included in the submittal. Per FHWA guidance, only projects that are programmed and scheduled to be complete in the next four years are to be included for approval as planned routes.

Planned routes approved on a functional classification map do not need to be re-approved after the road is constructed.

Only the map needs to be updated with a solid line to indicate the completed route. This practice avoids having to repeat the map submittal and approval process for only the newly constructed roadway.

Projects planned beyond 4 years are not included on the functional classification map. However, a new planned route, once designated and scheduled for programming, can be added to the map at any time following the normal approval process. If a planned project is canceled, the functional classification map should be revised to reflect this change and submitted to FHWA for approval following the process defined in section 3.

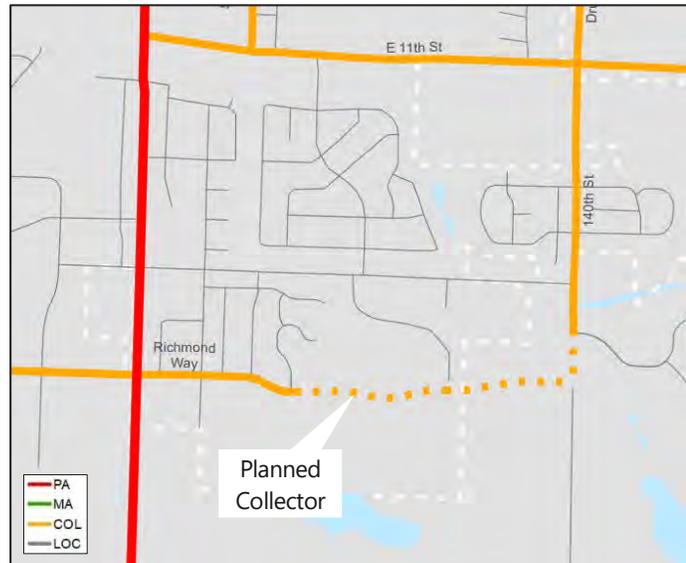


Figure 6.1: Planned Route Example



Appendix B: Revision Notes

This 2022 version of WisDOT's Functional Classification (FC) Criteria significantly updates, clarifies, and streamlines the previous document to make it more useful both as a reference and as user manual. It is the first major update to Wisconsin's FC criteria, although there have been a few minor changes over the last 40 years, most recently in April 2013. The revisions included in this update are based on a thorough review of current uses of the road network in both urban and rural areas, as well as updated information on population, population density, density of development, land uses, traffic flow, and system continuity. Over time, interpretation of the existing criteria had evolved and led to some factors which were not clearly or accurately described in the criteria, and others which were never used. Also, there have been road, traffic, and land use situations where the existing criteria simply did not provide appropriate guidance for consistent analysis and decision-making. While this update remains true to the original document, it improves the descriptions of functional classification factors, removes outdated concepts, formalizes current practices, and aligns WisDOT's criteria with FHWA Functional Classification guidance (*FHWA Highway Functional Classification: Concepts, Criteria and Procedures, 2013*).

B.1. Key Changes

- ▶ Improved format and organization
- ▶ Added information on the background, purpose, and theory of Functional Classification
- ▶ Added information on WisDOT's Functional Classification update process
- ▶ Reemphasized System Continuity as a key consideration
- ▶ Separated urban/rural considerations from Functional Classification factors
- ▶ Clarified explanation of Functional Classification factors and provision for flexibility in interpretation
- ▶ Simplified and updated Land Use factors and replaced point system for Rural Collectors
- ▶ Eliminated separate category for "Chart C" communities; replaced with criteria for smaller developed communities in rural areas
- ▶ Reduced horizon for inclusion of planned routes from ten years to four years
- ▶ Updated and reformatted Criteria Tables
- ▶ Eliminated Population Service as an active criterion



Appendix C: Functional Classification and Funding Implications

The federal Surface Transportation Block Grant (STBG) program provides funding for federal-aid eligible roads that constitute the National Highway System (NHS) and for other public roads. Traditionally, roads functionally classified as a Rural Major Collector or higher and Urban Collector or higher were eligible for STBG funds. However, the [Bipartisan Infrastructure Law](#) (BIL), passed in November 2021, provides an option for up to 15% of a state's STBG allocation—for rural areas and urban areas with populations less than 50,000—to be used for projects on roadways functionally classified as Urban Local Roads, Rural Local Roads, and Rural Minor Collectors. WisDOT created the STP-Local Program to address this new funding opportunity. Note: Roads in urban areas with populations of 50,000 and higher are excluded from this optional funding program.

In Wisconsin, STBG funds are awarded through the STP-Urban, STP-Rural, and new STP-Local Program. For more information on funding, see WisDOT's [Program Management Manual](#) and [Local Programs Webpage](#). These resources will be updated with current information as details for implementing the new federal law are finalized.

The Urban/Rural designation is determined by the federally-approved adjusted urban area boundary. After each decennial census, the census-defined urban boundaries are reviewed by WisDOT and respective local governments, adjusted to meet transportation planning needs, and approved by FHWA.

There are several important considerations for funding eligibility:

- ▶ Public ownership of the road or street—the jurisdiction (city, village, town) in which the road lies—does not affect STBG funding eligibility.
- ▶ The functional classification—Principal Arterial, Major Collector, etc.—does not affect *the amount* of federal funds for which a road is eligible. That dollar amount is determined through WisDOT's highway improvement program development and local program project selection processes.
- ▶ Funding eligibility is determined by the *current* functional classification of the road. The intended, desired, or expected future classification is not a valid criterion for functional classification of the roadway. **A need or desire for additional funding is not a valid justification for a functional classification change.**
- ▶ The [Local Bridge Program](#) and [Local Road Improvement Program](#) (LRIP) do not have a functional classification requirement; however, LRIP does have a statutory "deteriorating roadway" requirement and Local Bridge is governed by a statutory sufficiency rating requirement. For more information on these requirements, see WisDOT's Local Programs Webpage.

Guidance is provided in FHWA's [Federal-Aid Policy Guide](#); this and links to other relevant federal funding guidance will be updated as the details of the BIL are finalized.



Appendix D: Additional Resources

FHWA Functional Classification Guidance

FHWA Highway Functional Classification: Concepts, Criteria and Procedures, 2013

WisDOT Facilities Development Manual (FDM)

Facilities Development Manual *(Chapter 4-1-15 covers functional classification concepts)*

WisDOT Program Management Manual (PMM)

Program Management Manual *(Chapter 2 covers functional classification for STP Program Funding)*

HPMS Field Manual

HPMS Data Collection Field Manual



Surface Transportation Program – Urban (STP-U) Information:

<https://wisconsin.gov/Pages/doing-bus/local-gov/astnce-pgms/highway/stp-urban.aspx>

Transportation Alternatives Program (TAP) Information:

<https://wisconsin.gov/Pages/doing-bus/local-gov/astnce-pgms/aid/tap.aspx>