



## FDM 4-1-1 Background

July 2, 1979

From the early territorial days and through several decades of statehood, the development and improvement of highways was strictly a function of the local governments (towns and counties). With the enactment of the revised statutes of 1849, the Legislature had conferred sufficient authority on the counties and towns for the location, construction, and maintenance of all public highways deemed necessary. It was evident that then, as now, the development and upkeep of highways was a heavy financial obligation, and assistance from the state was sought. The state government, although it had always encouraged the development of good roads, could extend no assistance to the local governments because of a constitutional provision prohibiting the state from participating in works of internal improvement.

The constitutional amendment of 1908 gave authority to the state government to participate in works of internal improvement. This was shortly followed in 1911 by the creation of the State Highway Commission.

From that time to the present a modern network of highways, roads, and streets has evolved to accommodate the transportation needs of Wisconsin. The present system consists of the State Trunk Highway System, local roads (including county trunk highways and town roads), and city streets. These are all classified into the various functional categories in accordance with their traffic-handling and service characteristics. Upon the local road, city street, and state trunk highway systems are superimposed the various statutory categories and funding systems, all of which will be treated in this Chapter.

## FDM 4-1-5 Jurisdictional Relationships

May 15, 2019

All public roads and streets are administered by a governmental unit under authority established by state or federal statute.

### 5.1 State Trunk Highways

This system of highways, which includes the National System of Interstate and Defense Highways (Interstate System) and the U S numbered highways, constitutes the primary intercounty and intercity highways in Wisconsin. It is administered by the Department of Transportation per authority vested under Section 84 of the Wisconsin Statutes.

Highways of the State Trunk Highway System are designated by number. (Refer to the annual list of "Signed Terminations of U.S. and State Trunk Highway Routes" prepared by the Bureau of Highway Operations), Wisconsin originated this system and inaugurated it in 1918. Except for the U S numbered highways and the Interstate System, continuity in the numbering across state lines is not practiced.

U. S. Numbered Highways: The system of U S numbered highways is for marking and signing purposes only. This system of highways was introduced in 1925 by the federal government in cooperation with the states and provides a highway network that crosses the continental United States. The highways were marked and numbered continuously without regard for state boundaries, using the familiar shield bearing on the upper portion an abbreviation of the name of the state in which the particular section of highway was located, and the letters "U S" and the route number of the highway underneath. Designation of these highways as U S numbered highways does not give them any advantage insofar as making additional funds available for their improvement.

Interstate System: The Interstate System is the result of legislation enacted by the United States Congress in 1944 through 1956. Interstate highways are to be constructed in accordance with established national design criteria to provide uninterrupted traffic flow with controlled access, in the interest of the nation's economy and defense.

#### 5.1.1 Corridors 2030 Routes

The State Trunk Highway system is divided into a hierarchy of sub-systems ranked in decreasing order of importance about statewide mobility and economic activity:

- Corridors 2030 Backbone routes,
- Corridors 2030 Connector routes,
- Other Principal Arterials, Minor Arterials, and Collectors and Local Function Roads.

The two most important sub-systems of the State Trunk Highway system are the routes that comprise the

approximately 3,650-mile Corridors 2030 network. These sub-systems are: a multi-lane Backbone system and a 2- and 4-lane Connector system. The [Corridors 2030 network](#) defines a system of high quality 2-lane and multi-lane highways serving virtually all Wisconsin communities with populations greater than 5,000.

The Corridors 2030 Backbone sub-system consists of an approximately 1,550-mile network of highways connecting all major populations and economic regions of the state and tying them to the national transportation network. Over 75% of these routes are currently freeways or expressways; the rest are still 2-lane highways that will be upgraded to multi-lane divided facilities in the future.

The Corridors 2030 Connector sub-system includes a 2,100-mile network of high-quality highways, mostly 2-lane routes, directly linking other significant economic and tourism centers to the Backbone network.

## 5.2 Connecting Highways

This is a system of marking and signing to provide continuous routes for State Trunk Highway System traffic over the streets or highways in any municipality for which the municipality will be responsible for maintenance, traffic control, and the maintenance and operation of any swing or lift bridge. The connecting highway is not a part of the State Trunk Highway System but is a connection between the termini of that System, which are usually established at or near the corporate limits of municipalities.

## 5.3 County Trunk Highways

The County Trunk Highway System, established in 1925, forms the secondary system of highways within the state and constitutes the interconnecting highways supplementing the State Trunk Highway System. It is comprised mainly of highways of secondary through-traffic importance and generally consists of highways that provide, and facilitate, local service.

This system of highways is administered by the county in which the county trunk highway is located per authority vested under Section 83 of the Wisconsin Statutes. The County Trunk Highway System includes all highways that have been selected by the county boards and approved by the Department in accordance with Section 83.025.

Highways of the County Trunk Highway System are designated alphabetically, and the marking and signing is uniform throughout the state. Continuity of the lettered route across county lines is encouraged by statute.

Improvements or construction of highways on the County Trunk Highway System must conform to the lower geometric design criteria established in Trans. 205 of the Wisconsin Administrative Code and enumerated in [Chapter 11](#) of this Manual.

Other roads administered by the county are institution roads and park roads located on county-administered lands.

## 5.4 State Park, Forest, and Institution Roads

These are the various incidental public roads that provide service and access to state parks, state forests, and state institutions (University of Wisconsin; state charitable, health, penal institutions, etc.). Jurisdiction over these roads is vested in the respective state boards, commissions, departments, or offices in accordance with the provisions of Section 84 of the Wisconsin Statutes.

## 5.5 National Forest Road System

All projects (maintenance, improvement, etc.) on roads, streets, and highways within the boundaries of national forests (the Chequamegon and the Nicolet in Wisconsin), and in certain instances, those roads and highways in the vicinity of, or adjacent to, the national forests as well, have a potential effect upon the national forests, which are under the jurisdiction of the U.S. Department of Agriculture, National Forest Service. WisDOT's operating procedures for administering and coordinating projects within the national forests are specified in the "Forest Highway Cooperative Agreement" and the "Memorandum of Understanding, which are included in Chapter 5 of this Manual.

Many roads, streets, and highways within, and adjacent to, the National Forests are also a part of either the Forest Highway System or the Forest Development Road System.

**Forest Highway System:** Forest highways are those federal-aid primary or federal-aid secondary routes within, adjoining, or adjacent to the national forest that have been designated as part of the Forest Highway System in accordance with the provisions of 23 USC 204 and 23 CFR 660. The Federal-Aid System maps prepared by the Division of Transportation Investment Management show these designated routes.

**Forest Development Road System:** Forest development roads are those access and service type roadways within the national forests that primarily serve to aid in the administration, protection, utilization, and development of the forest and its resources. Typically, on the town road systems, these roads provide access

for recreation, logging, fire protection, etc.

## 5.6 Local Roads and Streets

The balance of the public roads in Wisconsin are the town roads and the city and village streets. Responsibility for the administration and maintenance of these roads is vested in the towns and incorporated municipalities in which the local roads or streets are located, in accordance with the provisions of Sections 80, 81, and 86 of the Wisconsin Statutes. Local roads and streets constitute the bulk of the public road mileage in the state.

Improvement or construction of town roads must conform to the lower design criteria as specified in Section 86.26 of the Wisconsin Statutes and enumerated in [Chapter 11](#) of this Manual. City and village streets have no comparable established statutory design criteria.

## FDM 4-1-10 Special Statutory Highways

May 15, 2019

Specific legislation has been enacted to confer special status upon various roads, streets, and highways, as follows:

### 10.1 Silent Cross Memorial Highway

Section 84.103 of the Wisconsin Statutes established "...the 'Silent Cross Memorial Highway' as a living memorial to and in honor of our soldiers, living and dead, of all wars in which the United States of America has engaged. The highway shall consist of a horizontal and a vertical member." The vertical member corresponds to U.S. Highway 51 and the horizontal member between Milwaukee and Madison, to I.H. 94. From Madison the Statutes specify, "...thence proceeding westerly, leaving the state at La Crosse or Prairie du Chien." All aspects of this highway, including the nature of the facility, its capacity, aesthetics, etc., are specified in the statute.

### 10.2 32nd Division Memorial Highway

Section 84.104 of the Wisconsin Statutes established that, "In order to commemorate the 32nd Infantry Division, also known as The Red Arrow Division, which, while composed mainly of men from Wisconsin, Illinois and Michigan, brought fame and glory to these states during World Wars I and II by their sacrifice, devotion and bravery and which is now established as a Wisconsin national guard division, the highway commission is directed to establish a highway memorial designated route 32 by renumbering certain existing highways linking Illinois and Michigan through Wisconsin." In addition to the numbering of the route, "...the highway markers on this highway carry a red arrow...and historical markers are directed to be erected and maintained along the highway in honor of the 32nd Division and its members."

### 10.3 National Parkways

Section 84.105 of the Wisconsin Statutes established legislation enabling the Department to cooperate in the planning and developing of all national parkways that may be proposed for development in Wisconsin. The term "national parkway" as used in this statute shall mean and include the Great River Road along the Mississippi River. Information pertaining to investigations, surveys, studies, and departmental actions are covered in this statute. Procedures for the implementation of National Parkways and Great River Road programs are contained in FHPM 6-9-3 and FHPM 6-9-15, respectively.

### 10.4 Rustic Roads

Section 83.42 of the Wisconsin Statutes established the Rustic Road System: "In order to create and preserve rustic and scenic roads for vehicular, bicycle and pedestrian travel in unhurried, quiet and leisurely enjoyment; to protect and preserve recreational driving, culture, beauty, trees, vegetation and wildlife by establishing protective standards of rustic road design, access, speed, maintenance and identification, which will promote a continuous system of rustic roads and scenic easements for the public health and welfare...."

The underlying authority for administration of the Rustic Road System is the county highway committee. Reference should be made to the Wisconsin Administrative Code, Chapters RR 1 through RR 11, for a description of the qualifications for rustic road designation, the procedure for such designation, maintenance policies, etc.

### 10.5 Controlled Access Highways

In accordance with Section 84.25 of the Wisconsin Statutes, "The legislature declares that the effective control of traffic entering upon or leaving intensively traveled highways is necessary in the interest of public safety, convenience and the general welfare. The department is authorized to designate as controlled-access highways the rural portions of the state trunk system on which, after traffic engineering surveys, investigations and studies, it shall find, determine and declare that the average traffic potential is in excess of 2,000 vehicles per 24-hour day." Designation as a controlled access highway requires that a public hearing be held on the matter prior to making such a determination. Refer to [FDM 6-10-1](#) of this Manual for a further discussion of public

hearing requirements.

Designation as controlled access highways of portions of the State Trunk Highway System is limited by statute to 1,500 miles. The records of all such designations are maintained in the Central Office Design Section, and the implementation of all controlled access designations should be coordinated through that Section. Refer to [Chapter 12](#) of this Manual for a further discussion of controlled access highways.

### 10.6 National System of Interstate and Defense Highways

Section 84.29 of the Wisconsin Statutes authorizes all state agencies and units of state and local government to cooperate with agencies of the federal government in the planning, developing, and constructing of portions of the Interstate System that may be located wholly or partially within Wisconsin. The Statutes further provide the Department with the authority to exercise jurisdiction over such portions of the Interstate System:

*"Upon finding by the department that the development of any proposed highway as a route of the national system of interstate highways...or any portion thereof, including the laying out, construction, maintenance and operation of any part thereof as a freeway or expressway, is in the promotion of the public and social welfare of the state and for the benefit of public travel, the department is empowered and it shall have full authority to lay out, construct, operate and maintain such highway as a state trunk highway. Except as otherwise provided by this section, all provisions of law relative to the acquisition of land for highway purposes and for surveys, plans, establishing, laying out, widening, enlarging, extending, constructing, reconstructing, improving, maintaining and financing of state trunk highways shall apply to the interstate highways undertaken in this state."*

In addition to establishing existing state trunk highways or new locations as portions of the Interstate System, the Department is authorized to lay out and establish any such portions of the Interstate System as freeways or expressways.

The United States Congress first established the Interstate System in 1944 and with subsequent amending legislation has authorized a system of 42,500 miles of highways connecting, by routes as directly as practicable, the principal metropolitan areas, cities, and industrial centers to serve the national defense. It also connects at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico.

### 10.7 Freeways and Expressways

Section 84.295 of the Wisconsin Statutes provides for "...the development of a well-balanced and integrated state trunk highway system further modernized and improved to adequate standards to provide needed increased traffic capacity, relieve the congestion on over-taxed existing highways, and otherwise more adequately serve the present and anticipated future needs of highway travel, and toward that end to prevent conflicting costly economic development on areas of lands to be available as right of way when needed for future highway construction."

The Statutes further provide that, "Where the department finds that the volume and character of the traffic to be served thereby warrant the construction or the acquisition of right-of-way for the ultimate construction of a highway to accommodate 4 or more lanes for moving traffic and that such development is in the public interest, it may by order designate as freeways or expressways segments of state trunk highways having currently assignable traffic volumes in excess of 4,000 vehicles per day. Except as otherwise provided by this section, all provisions of law relative to the acquisition or dedication by subdivision plat or otherwise, of land and interests in land for highway purposes, and relative to surveys, plans, establishing, laying out, widening, enlarging, extending, constructing, improving, maintaining and financing of state trunk highways shall apply to the segments designated freeways or expressways pursuant to this section."

Section 84.295(10) provides the Department with the authority to preserve corridor for the development of future freeways and expressways by establishment of the approximate locations and widths of rights-of-way for such future facilities. Public hearing requirements under this subsection are defined in [FDM 6-10-1](#) of this Manual.

## FDM 4-1-15 Functional Classification System

May 15, 2019

### 15.1 Definitions

A functionally classified road system is one in which streets and highways are grouped into classes according to the character of service they provide, ranging from a high degree of travel mobility to land access functions. At the upper limit of the system (principal arterials, for example), are those facilities that emphasize traffic mobility (long, uninterrupted travel), whereas at the lower limit are those local roads and streets that emphasize access.

Definitions of the functional classifications are as follows:

### 15.1.1 Rural Classifications

**Principal Arterials:** Principal arterials serve corridor movements having trip length and travel density characteristics of an interstate or interregional nature. These routes generally serve all urban areas greater than 5,000 population. The rural principal arterials are further subdivided into (1) interstate highways and (2) other principal arterials.

**Minor Arterials:** Minor arterials, in conjunction with the principal arterials, serve cities, large communities, and other major traffic generators providing intraregional and interarea traffic movements.

**Major Collectors:** Major collectors provide service to moderate sized communities, and other intra-area traffic generators, and link those generators to nearby larger population centers or higher function routes.

**Minor Collectors:** Minor collectors provide service to all remaining smaller communities, link the locally important traffic generators with their rural hinterland, and are spaced consistent with population density to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road.

**Local Roads:** Local roads provide access to adjacent land and provide for travel over relatively short distances on an inter-township or intra-township basis. All roads not classified as arterials or collectors are local function roads.

### 15.1.2 Urban Classifications

**Principal Arterials:** Principal arterials serve the major centers of activity of an urban area, the highest traffic volume corridors, and the longest trip desires, and carry a high proportion of the total urban area travel on a minimum of mileage. The urban principal arterials are connected to the system of rural principal and minor arterials. Within this category the urban principal arterials are subdivided into (1) interstate highways, (2) other freeways and expressways (connecting links of rural principal arterials, connecting links of rural minor arterials, and non-connecting links), and (3) other principal arterials (connecting links of rural principal arterials, connecting links of rural minor arterials, and non-connecting links).

**Minor Arterials:** Minor arterials provide intracommunity continuity and service to trips of moderate length, with more emphasis on land access than principal arterials. The minor arterial system interconnects with the urban arterial system and provides system connections to the rural collectors.

**Collectors:** Collectors provide both land access service and traffic circulation within residential neighborhoods, commercial areas, and industrial areas. The collector system penetrates residential neighborhoods, distributing trips from the arterials through the area to the local streets. The collectors also collect traffic from the local streets in residential neighborhoods and channel it onto the arterial system. In the central business district, and in other areas of like development and traffic density, the collector system may include the street grid, which forms the basic unit for traffic circulation.

**Local Streets:** Local streets comprise all facilities not on one of the higher systems. They serve primarily to provide direct access to abutting land and access to the higher order systems. Local streets offer the lowest level of mobility, and service to through-traffic movement on this system is usually discouraged.

The Federal-Aid Highway Act of 1973 set forth policies and procedures for implementing the functional realignment of the Federal-Aid Highway System based on the functional usage anticipated during the 1980-1985 period. The Wisconsin DOT, in cooperation with appropriate local officials, has the primary responsibility for establishing and periodically updating a statewide highway functional system based on anticipated functional usage for the specified period. The functional system became effective July 1, 1976, and it is based upon anticipated functional usage for 1980. Functional usage is determined in accordance with the functional concepts, criteria, and procedures established in Volume 20, Appendix 12, of the Federal Highway Administration's "Highway Planning and Program Manual."

Beyond the federal requirements for functional classification and subsequent realignment of the respective Federal-Aid Systems, Chapter 29, Wisconsin Laws of 1977, created Section 86.30, mandating that distribution of state transportation-related financial aids to local units of government be based upon current functional usage and classification. These statutes provide that uniform criteria be applied to assure compatibility between state and federal functional systems, and are briefly enumerated as follows:

1. Population centers within and without the state, stratified and ranked according to size.
2. Important traffic-generating activities, including, but not limited to, recreational, agricultural, governmental, business, and industrial activity centers.
3. Directness of travel and distance between points of economic importance.
4. Lengths of trips.

5. Character and volume of traffic.
6. Appropriate spacing (between facilities).
7. System continuity.

The basic difference between the federally approved functional system and that adopted for computation of state aids is that the federal system represents functional usage as projected for a defined future year and it includes planned routes, whereas the state aids systems is based upon certified plats of the local units, which delineate current usage.

For a detailed description of the application of the respective criteria to state aids functional classification, refer to Chapter Hy 35 of the Wisconsin Administrative Code, wherein the details of the implementation of Section 86.30 are delineated.

## 15.2 System Changes

All reclassifications of the present system require ultimate Federal Highway Administration approval. WisDOT's submittal to FHWA shall include appropriate maps showing the functional systems and the proposed alterations, statistics regarding the mileage of the functional systems, and a statement that the study was conducted in cooperation with appropriate local officials. Changes in the functional systems are initiated by the Region and coordinated through the Division of Transportation Investment Management, Bureau of System Planning. All changes to the functional systems are directly related to federal-aid eligibility; therefore, the federal-aid ramifications of such changes must be considered. (Should such changes affect subsequent changes in the "federal-aid systems," they must be coordinated with the Design Section.)

Maps of the functional systems are available through the Regional Planning Sections or the Bureau of System Planning.

## FDM 4-1-20 Federal Aid System

May 15, 2019

### 20.1 Background

During the 1970's and 1980s, the Federal Aid Highway Program was directed primarily toward the construction and improvement of four Federal-aid systems: Interstate, Primary, Secondary, and Urban. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) completely restructured the Federal-Aid Program, abolishing the four systems and creating instead the National Highway System (NHS) and a flexible Surface Transportation Program (STP) which is available for all roads except those functionally classified as rural minor collectors or local streets. About 25% of total roadway mileage in Wisconsin is eligible for federal-aid.

### 20.2 National Highway System

The NHS includes all Interstate routes, a large percentage of roads classified as Rural and Urban Principal Arterials and roads important for national defense. It serves major population centers, airports, water ports, public transportation facilities truck traffic, intermodal transportation facilities and other major travel generators.

The NHS has two components: the Base System and the Intermodal Connector System. The rural component matches the state's Corridors 2030 network; the urban component consists of Corridors 2030 connections through urban areas as well as other important local routes. While the Base System is composed primarily of Interstate and state truck highways, it does include approximately 100 miles of roadways under local jurisdiction, located mainly in larger urbanized areas.

The Intermodal Connectors are the roads which provide the most direct access from the Base System to passenger and freight terminals. FHWA has approved 90 miles of connections to 22 intermodal facilities in Wisconsin. These are listed in [Attachment 20.1](#). All states' Intermodal Connectors were submitted to Congress in May of 1996. It is anticipated that Congress will act on them in a 1997 legislative session.

The Division of Transportation Investment Management, Bureau of Planning and Economic Development maintains a National Highway Systems web page that contains further information and links to FHWA NHS mapping for Wisconsin and other states. The page also contains maps of Wisconsin's existing and planned urban NHS routes:

<https://wisconsindot.gov/Pages/projects/data-plan/plan-res/nhs.aspx>

Federal-aid eligibility is again determined by system category. NHS funds are reserved for use on the National Highway System. Surface Transportation Program (STP) funds can be used on the NHS but are also available for roads not on the NHS. Funds eligibility for roads not on the National Highway System continues to be determined by the functional classification of the route, as discussed in [FDM 4-1-15](#). Specific rules for federal-aid eligibility and participation are presented in the Program Management Manual.

### **20.3 System Updates**

At any time, WisDOT may request that FHWA approve a revision to Wisconsin's National Highway System network. Recommendations for revisions to the NHS should be sent to the DTIM Bureau of Planning for evaluation, processing, and submittal to FHWA. Changes to the NHS due to relocations/bypasses should be sent to the Bureau of Planning for processing once a final location for the relocated roadway has been determined.

Eligibility for Surface Transportation Program funds is based on functional classification and, therefore, changes whenever functional systems are updated (following the process described in [FDM 4-1-15](#)).

### **LIST OF ATTACHMENTS**

[Attachment 20.1](#) National Highway System Intermodal Connector Route Listing