

17 - DEPARTMENT OF TRANSPORTATION

229 - OFFICE OF THE COMMISSIONER

Chapter 304: CRITERIA FOR THE FUNCTIONAL CLASSIFICATION OF HIGHWAYS

SUMMARY: Public Law 1981, Chapter 492, Part C, Section 28-1 requires a reclassification of all public highways in the State by July 1, 1982, in accordance with the Revised Statutes, Title 23, Section 53. 23 M.R.S.A. Section 53 (as amended) defines three classifications of highways. State Highways are comprised of a system of connected main highways throughout the State which primarily serve arterial or through traffic. State Aid Highways are highways which are not included in the system of State Highways which primarily serve as collector and feeder routes connecting local service roads to the arterial State Highway System. Town ways comprise all other highways not included in the State Highway or State Aid classifications which are maintained by Towns and primarily serve as local service roads providing access to adjacent land.

When the Local Road Assistance Program, (or Block Grant Program) was enacted by Public Law 1981, Chapter 492 the principal was recognized that roads which primarily serve regional or statewide needs should be the State's responsibility and roads which primarily serve local needs should be a local responsibility. The function of all public highways was reviewed in 1975, but the concept of a local Road Assistance Program was not in existence at that time.

It is appropriate that, owing to the passage of time since the last review, and the desirability of affording communities another opportunity to review and comment on both the criteria and the resulting classifications, a new reclassification study as directed by the legislation, be conducted. This study would focus on the function of roadways, particularly those classifications that are on the dividing line between State and local responsibility, namely collectors and local service roadways, both in rural and urban areas. The existing functional classification of roadways in each category will be individually reviewed in order to determine whether the classification is currently appropriate.

The major objective of this rule is to develop criteria which will help to define the line of demarcation between collector roads and local service roads, which will, by the same token, define the line of demarcation between State Aid Roads and Town Ways. A secondary benefit will be a more general review of other functional classes on an exception basis.

304.01 THE ORIGINAL 1975 FUNCTIONAL CLASSIFICATION CRITERIA

A. Rural

Rural principal arterial system

The rural principal arterial system consists of a connected rural network of continuous routes having the following characteristics:

1. Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
2. Serve all, or virtually all, urban areas in Maine.
3. Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise (e.g., international boundary connections and connections to coastal cities).

The principal arterial system is divided into the following two categories:

1. Interstate System. The Interstate subclassification consists of all presently designated routes of the interstate System.
2. Other principal arterials. This subclassification consists of all non-Interstate principal arterials.

Rural minor arterial road system

The rural minor arterial road system should, in conjunction with the principal arterial system, for a rural network having the following characteristics:

1. Link cities and larger towns (and other traffic generators, such as major resort areas, that are capable of attracting travel over similarly long distances) and form an integrated network providing interstate and intercounty service.
2. Be spaced at such intervals, consistent with population density so that all developed areas of the State are within a reasonable distance of an arterial highway.
3. Provide (because of the two characteristics defined immediately above) service to corridors with trip lengths and travel density greater than those predominately served by rural collector or local systems.

Minor arterials therefore constitute routes whose design should be expected to provide for relatively high overall travel speeds, with minimum interference to through movement.

Rural collector road system

The rural collector routes generally serve travel of primarily intracounty rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical, on the average.

In order to define more clearly the characteristics of rural collectors, this system is subclassified according to the following criteria:

Major collector roads. These routes generally:

1. Provide service to any county seat not on an arterial route, to the large towns not directly served by the higher systems, and to other traffic generators of equivalent intracounty importance, such as consolidated schools, shipping points, county parks, important mining and agricultural areas, etc.;
2. Link these places with nearby larger towns or cities, or with routes of higher classification; and
3. Serve the more important intracounty travel corridors.

Minor collector roads. These routes are generally:

1. spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road;
2. provide service to the remaining smaller communities; and
3. link the locally important traffic generators with their rural hinterland.

Rural local road system

The rural local road system should have the following characteristics:

1. Serve primarily to provide access to adjacent land; and
2. provide service to travel over relatively short distances as compared to collectors or other systems.

B. Urban

Urban principal arterial system

In every urban environment there exists a system of streets and highways which can be identified as unusually significant to the area in which it lies in terms of the nature and composition of travel it serves. In smaller urban areas these facilities may be very limited in number and extent, and their importance may be primarily derived from the service provided to travel passing through the area. In larger urban areas, their importance also derives from service to rural oriented traffic, but equally or even more important, from service for major movements within these urbanized areas.

This system of streets and highways, called here the urban principal arterial system, serves the major centers of activity of a metropolitan area, the highest traffic volume corridors, and the longest trip desires; and carries a high proportion of the total urban area travel on a minimum of mileage. The system is usually integrated, both internally and between major rural connections.

The principal arterial system carries the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central city. In addition, significant intra-area travel, such as between central business districts and outlying residential areas, between major inner city communities, or between major suburban centers is served by this class of facilities.

Frequently, the principal arterial system will carry important intraurban as well as intercity bus routes. Finally, this system in urbanized areas provides continuity for all rural arterials which intercept the urban boundary.

Because of the nature of the travel served by the principal arterial system, almost all fully and partially controlled access facilities is a part of this functional class. However, this system is not restricted to controlled access routes. In order to preserve the identification of controlled access facilities, the principal arterial system is stratified as follows: (1) Interstate, (2) other freeways and expressways, and (3) other principal arterials (with no control of access).

For principal arterials, the concept of service to abutting land is subordinated to the provision of travel service to major traffic movements. It should be noted that only facilities with the "other principal arterial" subclass are capable of providing any direct access to land, and such service should be purely incidental to the primary functional responsibility of this class of roads.

Urban minor arterial street system

The minor arterial street system interconnects with and augments 'the urban principal arterial system and provides service to trips of moderate length at a somewhat lower level of travel mobility than major arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system.

The minor arterial street system includes all arterials not classified as principal and contains facilities that place more emphasis on land access than the higher system, and offers a lower level of traffic mobility. Such facilities may carry local bus routes and provide intracommunity continuity, but ideally should not penetrate identifiable neighborhoods. This system should include urban connections to rural collector roads where such connections have not been classified for internal reasons as urban principal arterials.

Urban collector street system

The collector street system provides both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. In the central business district, and other areas of like development and traffic density, the collector system may include the street grid which forms a logical entity for traffic circulation.

Urban local street system

The local street system serves primarily to provide direct access to abutting land and access to the other systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged.

304.02 EXPANDED CRITERIA FOR FURTHER DELINEATION BETWEEN COLLECTORS AND LOCAL SERVICE FACILITIES

A. General

The original criteria used in 1975 serve well to distinguish arterial from collector highways. In order to make a distinction between collector and local highways, the following five criteria will be used in conjunction with the 1975 criteria:

1. Land Use
2. Relative Annual Average Daily Traffic (AADT)
3. Trip Length
4. Network Configuration and Continuity
5. Route Spacing

In all cases, if a route generally meets three out of the five criteria, with Land Use, Relative AADT, and Trip Length having a heavier weight in the criteria, then the route will be considered a collector.

If the above criteria are not applicable, then three additional criteria will be used to make a distinction between collector and local highways. In all cases, if a road meets all of the following three criteria, it will be designated a collector:

1. The road has a State Route Number assigned to it,
2. The road is within a city, town or plantation, and
3. The road provides direct access to a significant acreage of Maine Public Reserve Land.

If the above criteria are not applicable, then the following additional criteria will be used to make a distinction between minor collector and local highways. In all cases, if a road meets all of the following criteria, it may be designated a minor collector/State Aid:

In order to promote continuity in the state-aid highway system, and

1. Not withstanding any existing laws, rules and regulations, and
2. Subject to a signed petition representing the majority of municipal officers of the requesting municipality(ies), and
3. IF it enables the connection of a State Aid road presently NOT connected on one end to a State Highway or State Aid, and
4. IF the present TOWNWAY/LOCAL section is SHORTER than the connecting STATE AID in question,

Then, based on meeting ALL of the above criteria:

MDOT may, upon review, accept a road that is classified LOCAL / designated TOWNWAY to be a Minor Collector State Aid Highway.

In addition, overall Federal Highway Administration percentage guidelines for federal functional classes of Maine roads must be satisfied and this could affect any future reclassification efforts.

Current main office staff knowledge, Maintenance Division Engineers, and file information, supplemented by local input, will be used in the application of this and the following criteria.

B. LAND USE (Density of Development - Presence of Traffic Generators)

Land use criteria will be considered for those roadways and city streets which have previously been or would tend to be classified in the minor collector or local category.

1. Collectors or Arterials Generally Serve:

- a. Regional shopping
- b. Industrial parks and free standing manufacturing or processing plants employing a substantial number of persons.
- c. Recreational uses such as golf courses, marinas, horse racing tracks, and major boat landings.
- d. Institutional uses such as regional schools, colleges, and hospitals.
- e. Military bases or regional airports.

2. Roadways and streets classified as "Local" are expected to service the following land uses and minor traffic generators:

- a. Residential neighborhoods and strip residential development.
- b. Local businesses.
- c. Farms.
- d. Agricultural or timber lands.

C. RELATIVE ANNUAL AVERAGE DAILY TRAFFIC

The Annual Average Daily Traffic (A.A.D.T.) varies widely throughout the State due to heavily and sparsely populated areas. Therefore, Annual Average Daily Traffic per se is not a direct input for criteria in determining functional highway classifications, but will be used on a percentage basis relating the

individual communities' urban areas (inside the Maine Department of Transportation compact area) and the rural areas separately.

The highway functional classification indicated by this criteria will be determined by multiplying the average of the area's three (3) highest traffic volumes (latest existing area wide traffic volumes) by the following percentages:

Highway Classification Percent of Average Volume

Collector 16-39

Local 0-15

In determining the average of the three (3) highest volumes in urban areas, only one (1) of the three volumes will be taken from the Central Business District (CBD).

The resulting volume will be compared to available traffic information on specific facilities to categorize roadways into the above groups, under this criterion.

Additionally, the presence of heavy trucking will tend to associate with collector facilities. This will be considered to the extent information is available.

D. TRIP LENGTH

Trip Length will be incorporated into the study by considering the following:

Functional classification defines the role that any particular road or street serves in accommodating the flow of travel through a highway network. The following guidelines describe the type of travel generally associated with the various functional classes:

Collector Travel distances are shorter than those on the Arterial system. Primarily serves trips from local residential areas, commercial/industrial area, and locally important traffic generators such as, consolidated schools, hospitals, etc., to the arterial system.

Local Predominant travel distances are short. Predominantly serves travel from adjacent land areas to the arterial and collector systems.

Data to be used include ADT, available mapping, field reviews and local input.

E. NETWORK CONFIGURATION & CONTINUITY

Continuity and configuration of the functional systems will vary with population density. The following guidelines are general and may vary depending upon the type of area served by the roadway under consideration.

1. Collector System. Serves as local feeder routes connecting local service roads to the arterial systems. In urban areas routes on this system should be configured such that they serve the function of linking

residential neighborhoods, commercial/industrial areas and locally important traffic generators with the arterial systems. Generally collectors have no stub ends or do not include dead end roads. A traffic route number would generally associate with a collector.

2. Local Service System Consists of all roads not classified as Arterials or Collectors. These roads which can connect with any of the functional classes of roadway serve the function of carrying travel from adjacent land areas to the arterial and collector systems. No traffic route numbers are usually formed on local service-facilities.

Special care will be used in assuring continuity between rural and urban designations in the vicinity of compact lines and designation changes will be made at logical breaks in facility service. Generally, urban designations will be at least equivalent to rural designations at those transition points.

A review of area mapping and available aerial photography will generally establish the distinction between locals and collectors from a network configuration and continuity standpoint.

F. ROUTE SPACING - PARALLEL & SIMILAR FACILITIES

Routes on the Arterial System shall be spaced so that all developed areas of the State are within reasonable distance of an arterial highway.

Routes on the Collector System shall be spaced at intervals, consistent with population density to provide service to locally important traffic generators such as, consolidated schools, hospitals, etc.

Spacing of highways with like functional classification shall be evaluated to assure that their geographical distribution provides the desirable levels of service.

In the event parallel routes are determined to provide identical function, a determination will be made as to which of the routes predominate and other parallel route(s) will revert to the next lower functional classification.

Available mapping and aerial photography will provide the basis for use of this criterion.

G. PERCENTAGE GUIDELINES FOR FUNCTIONAL CLASSES

The following guidelines will determine the extent of functional systems and will be applied on a Statewide and on an individual urban area basis. The rural guidelines will also be applied on a county basis but a reasonable variation will be allowed, if offset by other counties so that the Statewide percentages are met. If the percentage guidelines indicate adjustments are desirable, a reevaluation of marginal roads in communities least affected by the reevaluation will be made in order to comply with the percentage guidelines on a statewide basis.

RURAL

System Percentage of Total

Rural Miles

Arterial System 6 - 12

Collector System 15 - 30

Local Road System 60 - 75

URBAN

System Percentage of Total

Rural miles

Arterial System 15 - 25

Collector System 5 - 10

Local Road System 65 - 80

304.03 APPLICATION OF CRITERIA

Both the original criteria and expanded criteria will be used in the reclassification process. Maximum use of existing information and volunteered local input will be made. Limited data acquisition may be possible in special cases. Office information supplemented as necessary with field review and local input is expected to provide an adequate basis for the reclassification review. Street pattern and culture will be taken from the extensive mapping base maintained at the Augusta offices. Extensive staff and maintenance field division engineers' knowledge, expertise, and judgment will be used in the application of the criteria. The designations will be made on the basis of best total fit of all criteria as opposed to meeting or not meeting any single criterion.

After the functional classification review has determined the appropriate functional classification for each facility, the State Highway-State Aid-Town Way designation will be made as follows:

With particular reference and care to Section 53, part C of Public Laws of 1981, Chapter 492, local service facilities will be designated Town Ways, collector facilities and arterial facilities will be designated either State Aid Highways or State Highways; the functional classification and the historical criteria used for designating State Highways will be used to distinguish between State Aid and State Highway classifications.

The expanded criteria will be weighted as follows:

Land Use 1.3

A.A.D.T. 1.3

Network Configuration 1.0

Trip Length 0.9

Route Spacing 0.9

The weights assigned reflect the applicability and relative reliability of available data and the relationships between the criteria and functional use. Percentage guidelines for functional classes are not weighted as this criteria cannot be applied on an individual roadway basis.

STATUTORY AUTHORITY: Maine Transportation Act, 23 M.R.S.A. 4201 et seq.; 23 M.R.S.A. 53 (as amended); P.L. 1981, c.492, Part §28.

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