CMAP

Functional Classification Revision Workbook

August 2016

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Introduction

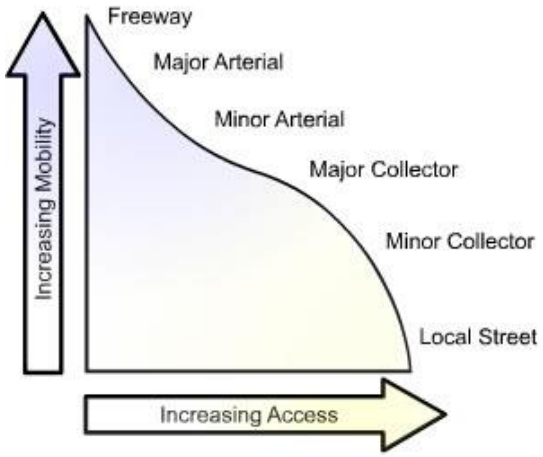
The main purpose of the functional classification of roadways is to provide a framework for identifying the particular role of a roadway in moving vehicles through a network of highways. Roadways are assigned to one of several possible functional classifications within a hierarchy according to the character of travel service provided and the roadway's design, speed, capacity and relationship to adjacent land use and development. The *Fixing America's Surface Transportation Act*, or FAST, the five year federal transportation authorization act for federal fiscal years 2016-20, uses functional classification in determining eligibility for federal funding. Enhancing federal funding eligibility cannot be used as a justification for revising functional classification, however. Revisions must be warranted based on changes in the functional characteristics of the roadway.

Roadways serve two primary travel needs: access and mobility between locations. While these two functions lie at opposite ends of the continuum of roadway function, most roads provide some combination of each.

- Roadway mobility function: Provides few opportunities for entry and exit and therefore low travel friction from vehicle access.
- Roadway accessibility function: Provides many opportunities for entry and exit, which creates potentially higher friction from vehicle access.

While most roadways offer both access to property and travel mobility services, it is the roadway's primary purpose that defines the classification category to which a given roadway belongs.

Illustration of Access-Mobility Continuum



Source: FHWA

As time passes and development patterns change, functions of some roadways also change. Roadways that once functioned as local roads may take on the characteristics of collectors. Similarly, if a roadway was once a collector and the attributes of the area have changed, it may

begin to act as a minor arterial. Both of these situations would suggest the need for a change in classification. Additional reasons for re-classification include new traffic generators, improvements to the roadway, significant growth in population and/or traffic volumes. After every decennial census, the entire functional class system should be reviewed. This is an excellent time to review the whole system as well as submit revisions as much analysis is occurring at that time.

Functional Classification Definitions and Characteristics

The functional classification is a hierarchical system developed by the Federal Highway Administration (FHWA) and implemented by the Illinois Department of Transportation (IDOT) in Illinois. The following definitions were developed based on the IDOT and FHWA guidance.

Interstate

Interstate roads form an interconnected network of fully access controlled, divided highways constructed with mobility and long-distance travel in mind.

Freeways and Expressways

Similar to interstates, these roadways are designed and constructed to maximize their mobility function and abutting land uses are not directly served. They can be fully or partially access controlled, have high traffic volumes and usually serve longer regional and intra-urban trips.

Other Principal Arterials (OPA)

These roadways serve major development centers and provide a high degree of mobility; however, abutting land uses can be served directly. OPAs generally provide similar service in both urban and rural areas. Characteristics of urban and rural principal arterials are provided in the table below.

Characteristics of Urban and Rural Principal Arterials	
Urban	**Rural**
• Serve major activity centers, highest traffic volume corridors and longest trip demands • Carry high proportion of total urban travel on minimal mileage • Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area • Serve demand for intra-area travel between a commercial district or industrial center and outlying residential areas	• Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel • Connect all or nearly all urbanized areas and a large majority of urban clusters with 25,000 and over population • Provide an integrated network of continuous routes without stub connections (dead ends)

Source: FHWA

The spacing of arterials is closely related to the adjacent development density. The spacing of these facilities in larger urban areas may vary from less than 1 mile in highly developed central business areas to 5 miles or more in the sparsely developed rural areas.

Minor Arterials

Minor arterials provide service for trips of moderate length, serve smaller geographic areas than their principal arterial counterparts and offer connectivity to the higher arterial/expressway system.

- In an urban context, they interconnect and augment the principal arterial and expressway system, provide intra-community continuity and should not penetrate residential neighborhoods.
- In rural settings, they provide inter-regional or inter-county service.

Minor arterials should be spaced at smaller intervals than principal arterials, commensurate with the adjoining population density and so that all developed areas are connected to a higher level arterial. The spacing of minor arterial streets typically varies from $^1/_8$ to $^1/_2$ mile in central business districts and 2 to 3 miles in the suburban areas. Normally, the spacing should not exceed 1 mile in heavily developed areas. Characteristics of urban and rural minor arterials are provided in the table below.

Characteristics of Urban and Rural Minor Arterials	
Urban	**Rural**
• Interconnect and augment the higher-level 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 higher-level arterials • Provide more land access than principal arterials without penetrating identifiable neighborhoods • Provide urban connectors for rural collectors	• Link cities and larger towns (and other major destinations such as resorts capable of attracting travel over long distances) and form an integrated network providing interstate and inter-county service • Be spaced at intervals, consistent with population density, so that all developed areas within the State are within a reasonable distance of an arterial roadway • Provide service to corridors with trip lengths and travel density greater than those served by rural collectors and local roads and with relatively high travel speeds and minimum interference to through movement

Source: FHWA

Major and Minor Collectors

Collectors gather traffic from local roads and funnel it to the arterial network. Collectors serve primarily intra-county travel and typical travel distances are shorter than on arterial routes. Collectors are broken down into two categories: *Major Collectors* and *Minor Collectors*. Generally, major collector routes are longer in length; have lower driveway densities; have higher speed

limits; are spaced at greater intervals; have higher traffic volumes; and may have more travel lanes than their minor collector counterparts.

The minimum spacing between two collector roadways in suburban areas of Illinois is ½ or 1 mile typically. In a densely populated urban area, two collector roadways might be found at ¼ mile spacing or less, but in most areas within the Chicago metropolitan region ¼ mile is considered an absolute minimum and requires significant justification in terms of the traffic patterns and land uses served. An exception is the case of paired one-way roads serving traffic moving in the opposite direction of each other.

Projects on roadways with a minor collector functional classification and located outside of the adjusted urbanized area boundary are not eligible for federal-aid funding. Characteristics of urban and rural major and minor collectors are provided in the tables below.

Characteristics of Urban and Rural Major Collectors	
Urban	**Rural**
• 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 over a distance of *greater than* three-quarters of a mile • Operating characteristics include higher speeds and more signalized intersections	• Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks and important mining and agricultural areas • Link these places with nearby larger towns and cities or with arterial routes • Serve he most important intra-county travel corridors

Source: FHWA

Characteristics of Urban and Rural Minor Collectors	
Urban	**Rural**
• 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 over a distance of *less than* three-quarters of a mile • Operating characteristics include lower speeds and fewer signalized intersections	• Be 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 a higher class facility • Link locally important traffic generators with their rural hinterlands

Source: FHWA

Local Roads or Streets

Local roads or streets are those not classified above. Local roads primarily provide access to property and connect with higher classified routes. Design speeds are low, stub sections are common, and the main consideration is given to access needs. They offer the lowest level of

mobility, have the shortest trip lengths, and through traffic is often deliberately discouraged. Local roads and streets are typically not eligible for federal-aid funding, though some bicycle and pedestrian projects on local roads and streets may be eligible for federal-aid funding. Characteristics of urban and rural local roads are provided in the table below.

Characteristics of Urban and Rural Local Roads	
Urban	**Rural**
• Provide direct access to adjacent land • Provide access to higher systems • Carry no through traffic movement • Constitute the mileage not classified as part of the Arterial and Collector systems	• Serve primarily to provide access to adjacent land • Provide service to travel over short distances as compared to higher classification categories • Constitute the mileage not classified as part of the Arterial and Collector systems

Source: FHWA

Related Characteristics

Determining what functional class a roadway is should be based on the previous descriptions but also requires some assessment in comparison to adjacent roadways. The chart and text below are resources to complete the evaluation of the road in question in the context of nearby roadways.

Relationship between Functional Classification and Travel Characteristics							
Functional Classification	**Distance Served (and Length of Route)**	**Access Points**	**Speed Limit**	**Distance between Routes**	**Usage (AADT and DVMT)**	**Significance**	**Number of Travel Lanes**
Arterial	Longest	Few	Highest	Longest	Highest	Statewide	More
Collector	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Local	Shortest	Many	Lowest	Shortest	Lowest	Local	Fewer

Source: FHWA

Route Spacing

Directly related to the concept of channelization of traffic throughout a network is the concept of distance (or spacing) between routes. Arterials are typically spaced at greater intervals than collectors, which are spaced at much larger intervals than locals. This spacing varies considerably for different areas; in densely populated urban areas, spacing of all routes types is closer and generally more consistent than the spacing in suburban or sparsely developed rural areas. Geographic barriers, such as bodies of water, greatly influence the layout and spacing of roadways. Spacing guidance is provided with the definitions for each classification. If a proposed functional classification revision is too close to a road of the same classification, it may be appropriate to request that the other road be downgraded.

Route Usage (Annual Average Daily Traffic [AADT] Volumes)

While there is a general relationship between the functional classification of a roadway and its daily traffic volume, two roads that carry the same traffic volume may actually 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.

Traffic volumes, however, can come into play when determining the proper functional classification of a roadway. Furthermore, AADT can often be used as a tie-breaker when trying to determine which of two (or more) similar and roughly parallel roadways should be classified with a higher (or lower) classification than the other. It may be helpful to examine near term (5-year) traffic projections if significant land use changes are anticipated in the next five years and to provide those projections to demonstrate the impact of the new development.

System Continuity

Because the roadway system is an interconnected network of facilities channeling traffic in both directions from arterials to collectors, then to locals and back again, the concept of continuity of routes is important to recognize. A basic tenet is a roadway of a higher classification should not terminate at a single roadway of a lower classification. Generally speaking, arterials should only terminate at other arterials. However, there are exceptions to this guideline. Arterials can terminate at very large regional traffic generators or can connect to multiple parallel roads of lower functional classification that, together, provide the same function and capacity as an arterial.

Process to Revise a Roadway Functional Classification

A local government wishing to reclassify a roadway must provide the information requested in the *Functional Classification Revision Request Template* (Appendix A) to the appropriate Planning Liaison. This process requires a resolution to demonstrate the subregional Council of Mayors' support for the roadway classification change. Once approved by the Council of Mayors, the Planning Liaison will submit the application to IDOT. These are the steps in the process:

1. Discuss the possible request with the Planning Liaison or IDOT prior to completing the request. This is recommended if the local government is unsure of which functional class its roadway should be. To determine the current functional class of the roadway, check IDOTs *Getting Around Illinois* map (Appendix B).

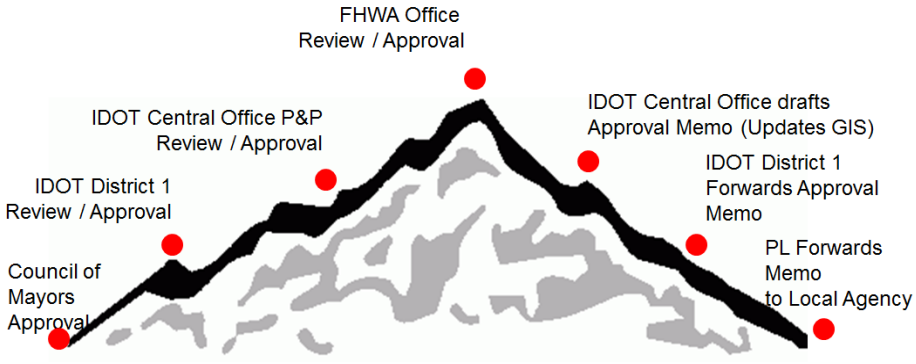
2. Submit the request to the Council of Mayors' Planning Liaison using the template in Appendix A. See the submittal checklist in Appendix C, and the FAQs and Top 5 Reasons for Denial or Delay of Functional Classification Revision Requests on the CMAP website.

3. Include an electronic document providing the relevant part of IDOT's current functional classification map with the desired change indicated in the correct color. This map is available at IDOT's *Getting Around Illinois* web site (Appendix B). Also, provide a good quality location map that is to scale and shows how the proposal connects with the larger regional system.

4. Request a resolution from the affected subregional Council of Mayors approving the request for a change in classification. The resolution should include a thorough description of the roadway and adjacent land use characteristics that serve as justification for the change. Funding eligibility is not a valid justification. The council must vote in support of the reclassification based on the submitted justification. The requesting local government and adjacent or affected jurisdictions may also pass a resolution requesting the change or supporting the change, but this step is optional.

5. Coordinate with the Planning Liaison to ensure that he or she submits a complete request to IDOT. The submitted request will go through various reviews before being approved or denied, as illustrated below.

Approval Agencies and Processes



Source: IDOT

Appendix A

Functional Classification Revision Request Template

1. Name(s) of proposed roadway to be reclassified:

2. Name of agency requesting revision (roadway jurisdiction):
   (An agency should not request reclassification of a roadway that is not under its own jurisdiction without the support of the maintaining jurisdiction. For a township-maintained street within a municipality, the township should agree to the change prior to Council of Mayors consideration.)

3. Contact information (name, title, address, phone and email):

4. Council(s) of Mayors:

5. County(ies) containing roadway proposed to be reclassified:

6. Township(s) containing roadway proposed to be reclassified:

7. Additional roadway jurisdiction(s), if any, containing the roadway proposed to be reclassified:

8. Current functional classification for this roadway, as classified by IDOT:

9. Proposed functional classification for this roadway:

10. The IDOT key route designation number for this roadway:
(This number is available on the IDOT Getting Around Illinois website. The key route designation number is the Key Route Type, a hyphen, and the Key Route Number from the map.)

11. Endpoints of proposed roadway to be reclassified
    - North or West endpoint:
    - North or West endpoint road's functional classification:
    - South or East endpoint:
    - South or East endpoint road's functional classification:

12. Length of proposed roadway to be reclassified:

13. Current Average Annual Daily Traffic (AADT):

(Provide AADT by segment if the AADT is not consistent along the entire route. Indicate the source and year of the AADT. Some AADT values are available on the IDOT Getting Around Illinois website. If the AADT is not from a published source, supply raw field data and provide the date(s), the day(s) of week, the hours of collection, and the type of equipment used to collect the traffic data. HI-STAR or equivalent technology is preferred.)

14. Spacing:
    - Provide the name of and distance to the next adjacent roadway (to the north or east) with the same classification as the subject road's proposed functional classification:

    - Provide the name of and distance to the next adjacent roadway (to the south or west) with the same classification as the subject road's proposed functional classification:

15. Indicate whether the proposed revision also requires a change (downgrade) to the functional classification of any adjacent roadways to accommodate the spacing requirements for this proposed functional classification revision:

    (Provide key route designation number and endpoints as well as road name and proposed change.)

16. Access Management:
    - How does the municipality or other jurisdiction plan to manage access along the road? Examples would be an access management ordinance, subdivision ordinance, or planned development ordinance.

    - How many driveways now exist along the right-of-way?

    - Are left-turns controlled by raised or barrier-protected medians?

17. Provide current and planned Traffic Signalization along proposed route:
    (Mark locations on the map with a rectangle with three circles inside it, or similar; use the same symbol and write "future" by planned signals.)

18. Provide current and planned Stop Sign Control on proposed route and on the cross-streets:
    (Mark locations on the map with an octagon or similar; use the same symbols and write "future" by planned signs.)

19. Major Traffic Generators along the proposed reclassified route:

20. Justification for the proposed revision based on definitions, characteristics and spacing guidance provided:

    ("To establish federal funding eligibility" is NOT a justification.)

21. Provide any additional (optional) information or justification:

22. Attach Support Resolutions & Letters:
    1. Local Council(s) of Mayors resolution(s) of support (required)
    2. Affected neighboring jurisdictions' letters of support (required)
    3. Requesting municipality's resolution of request (optional)

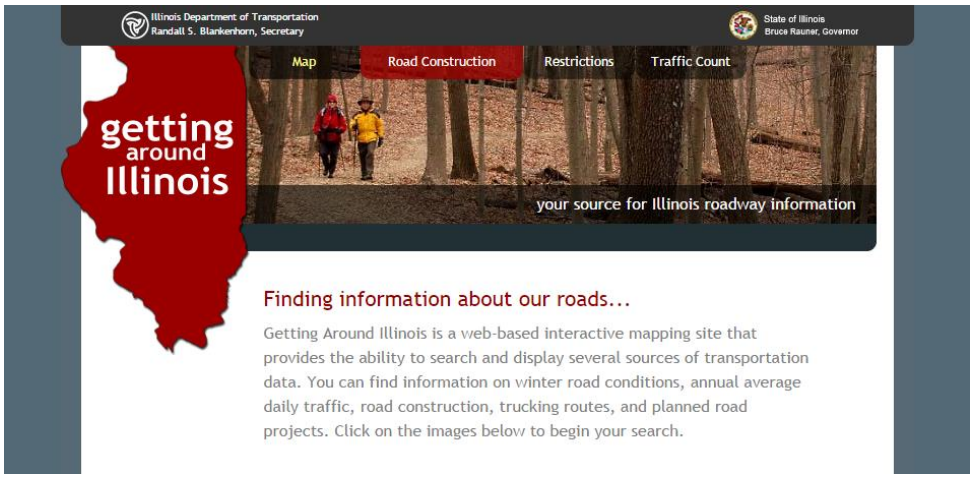
Appendix B

Using IDOT Web Based Maps for Needed Information

Determining current functional classification of roads in the request

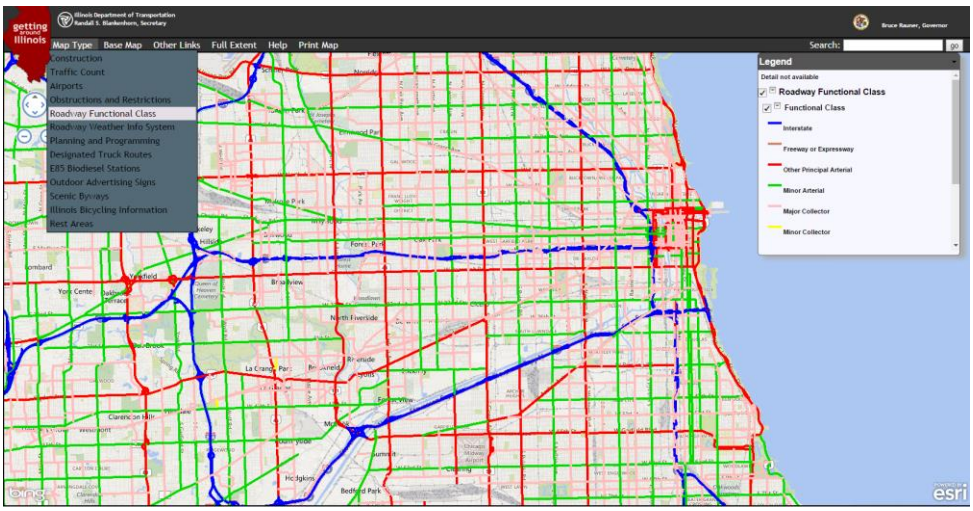
To ascertain the existing functional classification of roadways, see IDOT's *Getting Around Illinois* web site. Click on the "Map" tab to get to the IDOT base map.

Getting Around Illinois Website



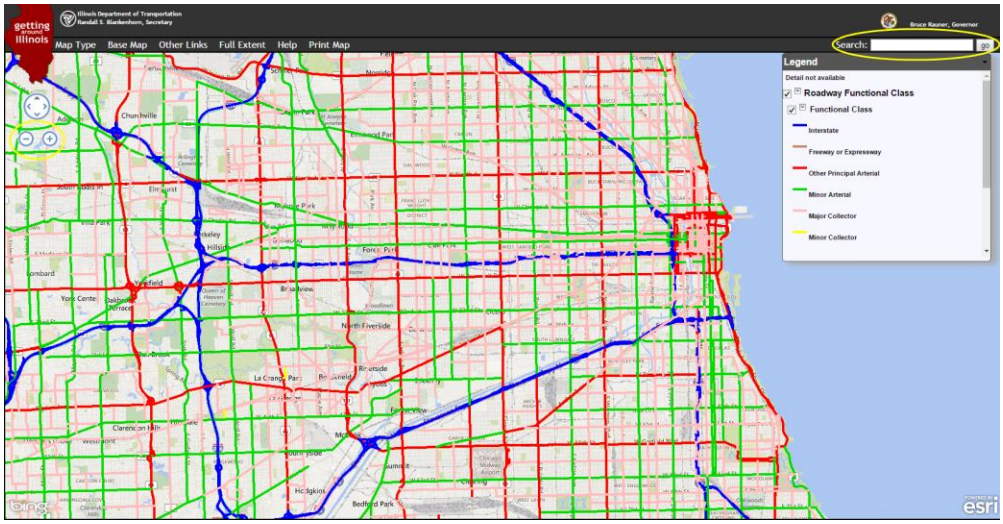
To move to the functional classification map, click the "Map Type" tab and select "Roadway Functional Class".

Roadway Functional Class Map Layer



Zoom in to an area to check the functional classification of a roadway. The search box in the upper right corner is also available for searching by municipality, township, county, or zip code to get to the specified area.

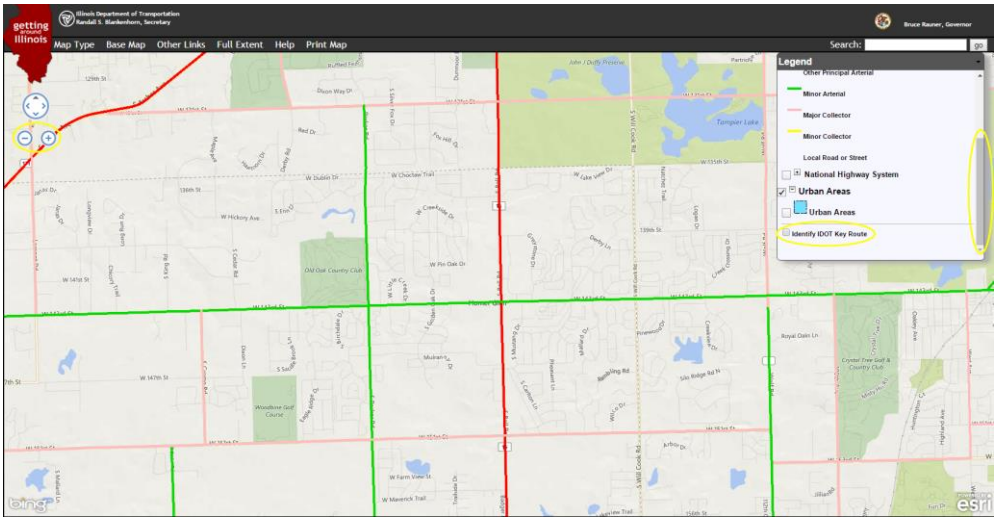
Zoom and Search Map Example



The IDOT map is updated nightly to reflect any changes in roadway functional classification.

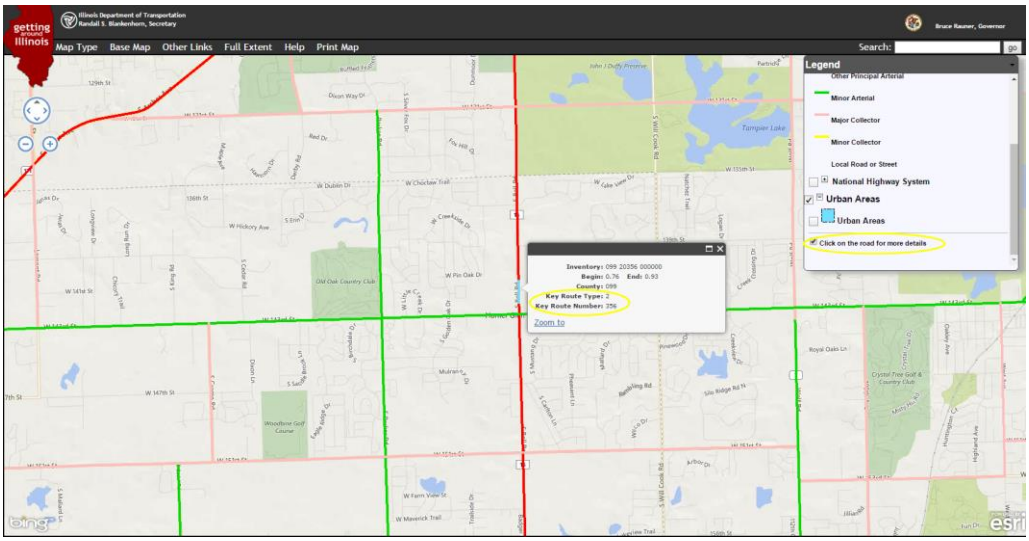
Determining the key route designation number for the road in question

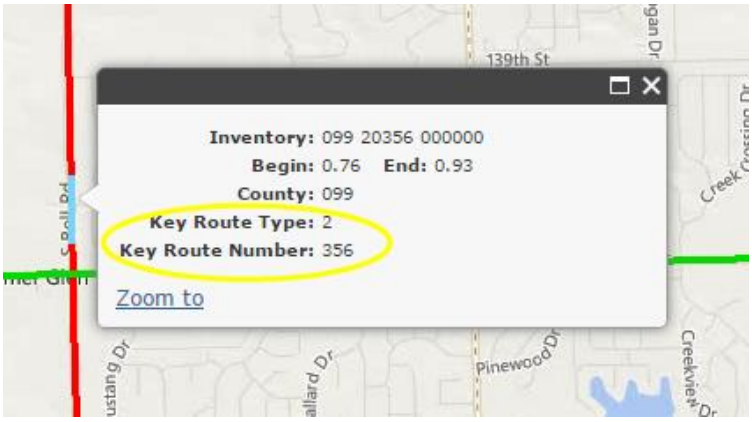
Provide the name(s) of the subject road, IDOT key route designation number, and the endpoint roads in the request for revision. Once the Roadway Functional Class map is accessed at a level of detail where the legend becomes active, scroll down in the legend to the check box for "Identify IDOT Key Route", the key route information will then be available in a pop-up box when the roadway is selected.



For the key route designation number use the Key Route Type, a hyphen, and the Key Route Number. In the example below this would be 2-356. When used in conjunction with the County information provided, this is a unique identifier for the road.

Detailed Example of Getting Around Illinois Map





Eligibility for federal funding is based on a route's functional classification. The seven functional classifications are defined on pages 2, 3 and 4 of this document and summarized again here:

1 = Interstate
2 = Other Freeways and Expressways
3 = Other Principal Arterial
4 = Minor Arterial
5 = Major Collector
6 = Minor Collector (not eligible if located outside adjusted urban area boundary)
7 = Local (not eligible)

Making a color map for the request

The request should include a copy of the IDOT Roadway Functional Class map for the subject area with the proposed revision indicated with the appropriate color. Once the correct portion of the IDOT Roadway Functional Class map for the proposed change is found, zoom in or out of the map to capture the proposed route. Currently there is no direct way to edit the IDOT map and it is recommended to take a screen shot of the appropriate portion of the map and save it in a format that can be edited with available software.

Mark the proposed functional class revision with the color assigned (see below) for the desired functional classification. If the requested functional class designation is for a road that is yet to be built or terminates at a road that has not been constructed or classified as yet, use a dashed line in the appropriate color for these future roads. Local roads are not colored on the IDOT Roadway Functional Class maps and are not eligible for federal funding. If the request includes the downgrading of a nearby collector road to a local road, crosshatch the route on the map.

Color Scheme for Functional Classification

Blue	Interstate
Brown	Freeway or Expressway
Red	Other Principal Arterial
Green	Minor Arterial
Pink	Major Collector
Yellow	Minor Collector
No color	Local Roads

Identify any traffic signals and stop signs along the subject route as well. The preferred symbols are a rectangle with three circles inside and an octagon, respectively. Mark planned traffic control devices with the word “future”.

Appendix C

Functional Classification Revision Request Submittal Checklist

Required:

- ☐ Completed CMAP Functional Classification Revision Request with clear justification
- ☐ Marked up IDOT Roadway Functional Class Map
- ☐ Traffic Count(s)
- ☐ Resolution of support from the Council(s) of Mayors
- ☐ Letters or resolutions of support from affected municipalities/townships
- ☐ Location map (to scale) showing how the proposal connects with the larger regional system

Optional:

- ☐ Traffic projection(s) (5-year)
- ☐ Development approvals/comprehensive plan maps
- ☐ Jurisdictional Transfer Agreements/Annexation Agreements
- ☐ Resolution of support from sponsoring municipality

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The Chicago Metropolitan Agency for Planning (CMAP) is our region's official comprehensive planning organization. The agency and its partners are developing ON TO 2050, a new comprehensive regional plan to help the seven counties and 284 communities of northeastern Illinois implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

See **www.cmap.illinois.gov** for more information.

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