

URBAN BOUNDARY and FUNCTIONAL CLASSIFICATION HANDBOOK

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Urban Boundary and Functional Classification Handbook

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1. INTRODUCTION

This Handbook is a supplement to the Urban Boundary and Functional Classification Procedure 525-020-311. It provides additional guidance, sample letters and forms, and background material. The sample letters in the Handbook can be tailored or changed to fit specific circumstances, providing only a starting point for users. Samples are not official forms of the Department.

The Census Bureau redefined the criteria for determining urbanized areas. Population density by census tract and block is the key factor in the selection of areas to be included in the Urbanized Area (UA). Place (or city) boundaries are not used. Using the Census boundary instead of smoothing the boundary will not involve a boundary delineation process.

However, there are consequences that must be discussed with the local governmental entities. The Census Bureau did not automatically recognize previously existing urban boundaries for Census 2010 Urban Area delineation and there is no “grand-fathering” of areas that qualified previously. Census boundaries are jagged and irregular. A Census urban area is made up of a core area and adjacent blocks with a certain density. Depending on the size of the block and the distance from the core area, density requirements can change and eligible blocks may not be contiguous to the core area.

The adjustment of the Census boundaries by the development of the Federal Highway Administration (FHWA) adjusted urban boundary is very much the same as in previous years. This is discussed in the Urban Boundary portion of this Handbook and displayed in the Attachments.

The determination must be made to use the 2010 Census boundary or the FHWA adjusted urban boundary prior to classifying the roads. The FHWA’s Office of Highway Policy Information’s, **Highway Functional Classification Concepts, Criteria and Procedures**, 2012, Edition discusses suggested procedures for functional classification in rural, urban cluster (the Census Bureau term; for the purpose of the FDOT Procedure and Handbook, urban cluster means urban area), and urbanized areas. The use of functional classification to update and modify the Federal-Aid Highway System is a legislative requirement dating back to 1973.

Federal functional classification is required by FHWA. The principal purpose of roadway classification is to establish the relative importance of a roadway in the overall hierarchy of roadways. Functional classification is used for planning, budgeting, programming, and for fiscal management. It is used to evaluate Federal, State and local highway programs. It is used by other offices within and outside of the Department, directly and

indirectly, to help meet other federal requirements, including the preparation of the Department's Work Program and the Metropolitan Planning Organization's (MPO) Transportation Improvement Programs. The Outdoor Advertising Office uses boundaries and functional classification to determine the roads with billboard restrictions. Federal functional classification is the only functional classification recognized by the Department. This is the functional classification coded in the Roadway Characteristics Inventory (RCI) database that is used as the basis for federal system assignment and funding. It is the responsibility of the FHWA Division Office to approve any changes to the urban boundaries and functional classification of highways. If FDOT proposes changes to the principal arterial system, those changes are submitted by TranStat to the FHWA Division Office for review and possible submittal to their headquarters in Washington for further review prior to Division action.

In addition to the above stated federal requirements, in Florida, transitioning areas are used to support transportation planning, facilities development and operations. Transitioning areas exhibit characteristics between rural and urban/urbanized areas. In the interest of efficiency, and at the discretion of the District, transitioning areas can be defined and coordinated at the same time as the FHWA boundaries, but must not be included on the final maps for FHWA signature.

2. ACRONYMS AND DEFINITIONS

Any terms used in the Procedure but not defined in this Handbook shall be defined as in FHWA's Office of Highway Policy Information's, *Highway Functional Classification, Concepts, Criteria and Procedures*, 2012 Edition, plus subsequent updates and related guidelines or memoranda that may be separately issued from time to time.

ARTERIAL HIGHWAY SYSTEM: The group of roads constituting the highest degree of through traffic movement and largest proportion of total travel. The interstate highway system is part of the federal arterial highway system.

CENSUS BLOCK: An area normally bounded by visible features, such as streets, streams, and railroads, and by non-visible features, such as the boundary of an incorporated place, minor civil division, county or other Census 2010 tabulation entity.

CENSUS BLOCK GROUP: A group of census blocks within a census tract whose numbers begin with the same digit.

CENSUS DESIGNATED BOUNDARY: The 2010 census boundary is determined by contiguous census tracts and census blocks that meet minimum population density requirements.

CENSUS TRACT: Small, relatively permanent statistical subdivisions of a county delineated by local participants as part of the U.S. Census Bureau's Participant Statistical Areas Program. Census tracts generally have between 1,500 and 8,000 people, with an optimum size of 4,000 people.

COLLECTOR ROAD SYSTEM: The group of roads providing a link between through traffic movement and direct private property access functions, typically within a given county or urban area, linking major property uses to each other or to the arterial highway system. The collector road system is composed of rural major collector roads, rural minor collector roads, urban major collectors and urban minor collectors.

DISTRICT STAFF: The FDOT staff in the District that handle the various requirements for designating boundaries and assigning functional classification. The District Director of Transportation Development has overall responsibility for District staff assignments for urban boundary designations, functional classification and development of transitioning area boundaries.

FEDERAL-AID HIGHWAY SYSTEMS: The National Highway System and the Dwight D. Eisenhower National Systems of Interstate and Defense Highways (the "Interstate System"). Note: With the enactment of MAP-21 as of October 1, 2012, all principal arterials are included on the National Highway System.

FEDERAL-AID HIGHWAYS: Highways on the Federal Aid Highway Systems and all other public roads not classified as local roads or rural minor collectors.

FHWA: The Federal Highway Administration.

FHWA ADJUSTED BOUNDARIES: Designated boundaries of a Census urban/urbanized area as adjusted by responsible State and local officials in cooperation with each other, subject to approval by FHWA.

FHWA RURAL AREA: A rural area is one that is outside an urban area. Population centers of less than 5,000 persons are considered to be rural for purposes of this Handbook.

FHWA URBAN AREA: An urban area as designated by the Bureau of Census having a population of 5,000 to 49,999, and not within any urbanized area. The boundaries shall encompass the entire urban area as designated by the U.S. Bureau of the Census *plus* that adjacent geographical area as agreed upon by local officials in cooperation with the State.

FHWA URBANIZED AREA: An area with a population of 50,000 or greater. The boundaries of the area shall encompass the entire urbanized area as designated by the U.S. Bureau of the Census *plus* that adjacent geographical area as agreed upon by local officials in cooperation with the State.

FUNCTIONAL CLASSIFICATION: Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

GEOGRAPHIC INFORMATION SYSTEM (GIS): A system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data; also termed as the merging of cartography, statistical analysis, and database technology.

LOCAL STREET SYSTEM: The class of roads having direct property access as their primary purpose. Although providing the largest proportion of road miles, this system contributes little to total highway travel due to short trip lengths and low volumes.

METROPOLITAN PLANNING ORGANIZATION (MPO): A metropolitan planning organization is a federally mandated and federally funded transportation policy-making organization that is made up of representatives from local government and governmental transportation authorities. Federal law requires the formation of an MPO for any urbanized area with a population of 50,000 or greater. Federal funding for transportation projects and programs are channeled through this planning process. Congress created MPOs in order to ensure that existing and future expenditures of governmental funds for transportation projects and programs are based on a continuing, cooperative, and comprehensive (“3-C”) planning process.

MOBILITY: The movement of people and goods.

NATIONAL HIGHWAY SYSTEM (NHS): A system designated by Congress that includes all Interstate routes, urban and rural principal arterials, the Strategic Highway Network (STRAHNET) and Strategic Highway Network Connectors and connectors to approved Intermodal Facilities.

PROFUNCL: A characteristic in RCI feature 121 for the coding of proposed functional classification. After FHWA approves the proposed functional classification, TranStat will transfer the proposed information into the FUNCLASS characteristic. DISTRICTS DO NOT UPDATE FUNCLASS.

ROADWAY CHARACTERISTICS INVENTORY (RCI): RCI is a computerized database of information related to the roadway networks that are maintained by or are of special interest to the FDOT, the RCI contains other data as required for special Federal and State reporting obligations.

STATE HIGHWAY SYSTEM (SHS): Roads under the jurisdiction of the Florida Department of Transportation, state-chartered expressway authorities, and other state agencies.

STRATEGIC HIGHWAY NETWORK (STRAHNET): Interstate and non-Interstate highways essential to strategic mobility. These highways can support mobilization and sustainment of forces during a defense contingency. These routes constitute part of the NHS.

SURFACE TRANSPORTATION PROGRAM (STP) FUNDS: Federal funding category available for all roads functionally classified as rural major collector, urban minor collector, urban major collector, minor arterial and principal arterial.

TRANSITIONING AREA: An area that exhibits characteristics between rural and urban areas.

TRANSPORTATION STATISTICS OFFICE (TranStat): The FDOT Central Office responsible for reviewing draft and final proposals for boundary and functional classification and submitting these documents for FHWA review and approval.

URBAN AREA:

- An area with a population of 5,000 and above (mostly used for functional classification)
- An area with a population between 5,000 and 49,999 (mostly used to distinguish developed areas that are not urbanized)

URBANIZED AREA (UA): An area that consists of a densely settled core of census tracts and census blocks that meet minimum population density requirements, along with adjacent densely settled surrounding census blocks that together encompass a population of at least 50,000 people.

3. URBAN BOUNDARIES

MAKING THE CHOICE

FDOT, MPOs, local governments and FHWA may adopt the Census urban boundaries or propose further adjustments of these boundaries (smoothing). Any adjustments that are proposed must include the entire area that the Bureau of Census included within the Census urban boundary.

DETERMINING THE FHWA URBAN BOUNDARY

The 2010 urban and urbanized area boundaries are to be determined by responsible FDOT and local officials in cooperation with each other, subject to approval by FHWA.

The first step in determining the new FHWA adjusted boundaries is to obtain applicable information. This information includes the 2010 census boundary maps, property use maps showing areas of growth that can be used to predict areas of future growth and, where available, the latest aerial images. **Attachment 1** lists some of the resources available to guide this designation effort. Schematics showing the relationship between different types of boundaries recognized by FDOT are found in FHWA's Office of Highway Policy Information's, **Highway Functional Classification Concepts, Criteria and Procedures**, 2012 Edition.

Adjusted urban boundaries, as a minimum, encompass the entire urban area designated by the U.S. Bureau of the Census (Census boundary). Any adjusted Census urban area boundary must be agreed on by the appropriate local governmental officials (City, County and/or MPO) in cooperation with the District Office and TranStat, and approved by FHWA. This final boundary is referred to as the FHWA urban or urbanized area boundary. FHWA adjusted urban area boundaries are to be established before or concurrent with initiating functional classification activities within a given county.

Census boundaries should be expanded so as to smooth out irregularities, maintain administrative continuity of peripheral routes, and encompass fringe areas having residential, commercial, industrial, and/or national defense significance. Transportation terminals serving the area such as airports and seaports should also be included within the redefined area if they lie within a reasonable distance of the urban area boundary that would otherwise be selected. Careful consideration should be given to the selection of boundary locations which will include logical control points for transportation linkages such as interchanges, major cross roads, etc., where the inclusion of such areas will not unduly distort the urban area as would otherwise be selected. Boundaries should not be modified to accommodate a single project.

FHWA urban and urbanized area boundary determinations should also consider the service areas of transit operations. Such considerations are particularly important if boundaries are to determine eligibility of capital projects, e.g. commuter railroad lines and stations, and rail transit and bus lines.

Draft maps showing the original census urban boundary as well as the proposed boundaries should be prepared in a geographic information system (GIS). TranStat will work with the Districts to accomplish this. The boundaries should be delineated on maps of a scale necessary to show all prominent highways and streets, all fixed transit right-of-way facilities, all major bus routes, corporate limits, township lines, etc., as well as the new limits of the urban area. The draft maps will be submitted through TranStat to FHWA for preliminary approval. If FHWA has concerns, the District and the local governments will review and modify the boundaries for re-submittal to FHWA. After preliminary approval is received from FHWA, the District will prepare a final set of maps, together with any supporting documentation. The final maps will not include the original census boundary. District and local officials will sign the signature block on the final maps indicating their formal approval. TranStat will submit these boundary maps to the FHWA Division Office for final approval.

When the designation of urban boundaries has significant transit implications, and Federal Transit Administration (FTA) concurrence is necessary, the FHWA Division Administrator should secure such concurrence from FTA before formal approval is given. FHWA approval will be indicated by signature on the maps in the space provided.

An interim modification to an approved FHWA adjusted urban/urbanized area boundary is handled in the same way as the decennial update. All parties must be involved in the decision-making process and FHWA must approve the final boundary.

FHWA BOUNDARY DEVELOPMENT

The Urban Boundaries Process Flowchart, **Attachment 2**, shows the order in which urban boundary development is recommended. Particulars of boundary designation follow:

TranStat will provide assistance to enable Districts to make their maps. The 2010 FHWA adjusted boundary must incorporate the entire 2010 Census boundary. Coordinate with the local officials to obtain their input. The 2010 Census boundary **does not** grandfather in areas that did not meet the population density criteria.

When coordinating boundaries, it should be remembered that a census boundary that parallels a road, street, or similar right of way **does not include** the right of way when it is in an urban/urbanized area. This can be modified to include the right of way if FDOT and local officials choose to include the right of way in the FHWA approved urban/urbanized area. The Census boundary that parallels an incorporated area boundary **includes** the right of way. It is recommended that parallel roadways be included in the adjusted boundary.

Attachments 3 and **4** are examples of the correspondence that is used when urban/urbanized area boundaries require local signatures.

After the boundary is approved by FHWA, the District is to update feature 124 (urban classification) of RCI.

TRANSITIONING AREA BOUNDARY DEVELOPMENT

Transitioning Areas are “fringe” areas that exhibit characteristics between rural and urban/urbanized characteristics

Transitioning Area boundaries are important for several aspects of transportation planning and facilities development and operations in Florida. Transitioning Area boundaries are used in the determination of Level of Service (LOS) standards and capacity/LOS measurement, access management, interchange spacing, signage, and posted speed limits, and they may be a factor in determining design standards for roadway improvements. As such, they have significant impact on corridor studies (including PD&E studies), project traffic analyses, local impact analyses (such as for DRIs), and overall design standards for roadway improvements.

The Districts should prepare maps for the Transitioning Areas as a starting point for local governments and MPOs to review and give input. One option that may be used to develop these draft maps is as follows:

- Perform an evaluation of projected population densities within Traffic Analysis Zones (TAZs) for the year in which TAZ data is available, nearest to a 20 year horizon, for areas outside the approved FHWA Urbanized/Urban Area boundaries in an effort to identify areas that are anticipated to reach urban densities (as defined by the Census Bureau). As part of this evaluation, also review environmentally sensitive areas. Based on this analysis, identify those areas expected to become urban/urbanized over the next twenty years. Where appropriate, adjust these boundaries to coincide with roadways or natural features to present more logical and understandable boundaries.
- Final working maps should include the FHWA urban/urbanized boundaries, County Boundaries, and the Transitioning Areas.

Once the District has prepared the draft transitioning boundaries, the MPOs and local governments should review the draft maps. The District should schedule workshop-type meetings with each MPO and county and city governments to receive their comments, suggestions and other input, to answer their questions, and to resolve any differences and issues regarding the boundaries.

There is no statutory requirement for formal MPO or local government action or approval of the Transitioning Area boundaries. Therefore, each MPO and local government may decide whether concurrence with the proposed boundaries can take place at the staff level or if more formal action is desired.

Individual Districts may use the process described above or some variation of this process determined to be more appropriate for their situation. The key is to work through a cooperative process with the MPOs and local governments to reach a consensus on the transitioning area boundaries for each area. Transitioning

urban/urbanized boundaries are not to be included on the final maps for FHWA signature.

4. FUNCTIONAL CLASSIFICATION

Functional classification is the process when streets and highways are grouped into classes, or systems, according to the character of service they provide. The designation of functional classification is made at least once every 10 years following the decennial Census.

Five functional classification categories are common to rural and urban roads. The rural or urban designation is part of the complete functional classification designation; e.g., Urban Minor Arterial.

<u>Urban</u>	<u>Rural</u>
Principal Arterial	Principal Arterial
Minor Arterial	Minor Arterial
Major Collector	Major Collector
Minor Collector	Minor Collector
Local	Local

Table 1 summarizes the relationship between functional characteristics and the three broad categories of functional classification.

Table 1: Relationship between Functional Classification and Travel Characteristics

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

Travel desire relates to functional classification, with arterials representing the heaviest used trip route and locals representing the least used facility. The arterial system provides a high level of through traffic movement, local facilities provide predominantly direct property access and the collector system lies between the other two.

Conceptually, in rural areas, arterial highways provide direct service between cities and larger towns and accommodate longer trip lengths. Collectors serve small towns and connect them to the arterial system. Local roads serve individual farms and other rural property uses ultimately tying to collectors. The same basic concepts apply in urban areas. The urban roadway network connects residential, commercial and public areas by this hierarchy of arterial, collector and local roads.

PROCESS

The District may hold concurrent boundary and functional classification workshops, but the urban boundary must be determined and approved by FHWA prior to requesting rural or urban functional classification assignment.

All boundary and functional classification designations are to be made jointly by FDOT, local governments, and where applicable, the MPO. These designations are subject to approval by the FHWA following submission by FDOT.

All existing roads shall be assigned functional classification according to how the roadway is functioning in the current year only. Future routes should be functionally classified with the existing system if they are included in an approved short range improvement program (i.e.; 5 year work program) and there is a good probability that the route will be under construction within 4 years. Where applicable, the same classification should be given to the future route and to the existing route that it will replace until the future route is constructed.

A road located within an adjusted FHWA urban/urbanized area boundary shall be classified as urban. Those roads located outside urban areas shall be classified as rural.

The classification of a road may change where there is a change in traffic conditions, property use and development, and other factors. Trip purposes may change at intersections or large developments.

Functional classification designations usually remain stable over many years, being changed only when necessary to recognize evolving travel patterns, relocated urban/urbanized area boundaries, and other factors. These are changes that should be considered during the ten year Census boundary revisions. FHWA usually accepts revisions at this time within the context of the overall decennial reevaluation of functional classification.

Interim re-evaluations can occur when FDOT or a local government has indications that the usage of a road has changed so as to indicate a possible change in function. A local government or an MPO may request re-evaluation by writing to the appropriate District Secretary. If a local government is requesting a review of a road or roads located within the area influenced by an MPO, then both parties should be involved in the re-evaluation process and concur with the outcome of the review. District staff should complete the Department's portion of the re-evaluation work within 6 months from the date the request is received.

Changes to urban area boundaries, feature 124 (HWYLOCAL) and proposed functional classification, feature 121 (PROFUNCL) must be updated in the RCI database by District staff. TranStat will update feature 112 (FAHWYSYS) and batch load the

proposed functional classification from PROFUNCL to the current federal functional classification (FUNCLASS). **Attachment 5** is a sample screen print for feature 121. Districts should not enter or change information in FUNCLASS.

CRITERIA AND METHODS FOR CLASSIFYING ROADS

Trip purpose identified by one or more quantifiable conditions

FHWA's Office of Highway Policy Information's *Highway Functional Classification, Concepts, Criteria and Procedures*, 2012 Edition, calls for the grouping of similarly ranked travel generators. This Handbook delineates twelve traffic generators, more precisely referred to in this Handbook as trip purposes. When evaluating the function of a road, FDOT should consider the character of service these roads are intended to provide. A road may serve more than one significant trip purpose.

Use of the twelve (Numbered 1-12) trip purposes, described later in this section of the Handbook, to determine the functional classification should be as follows:

Principal Arterial	- 2 or more of trip purposes 1-7
Minor Arterial	- only 1 of trip purposes 1-7
Major Collector	- 1 or more of trip purposes 8-10
Minor Collector	- trip purpose 11
Local Road	- trip purpose 12

Trip purpose identified by concept of service and consideration of proximity

It is not necessary for a road to go directly to the main entrance of a traffic generator for it to serve that traffic generator. A number of connections may exist between the primary access route and the traffic generator. For example, a state university has many entrances accessed by local roads that connect to the major road network at multiple points. It may be sufficient for a major road to pass along or near a boundary of the university for it to be "served" by that road. In the same way, an Interstate highway that passes along the periphery of an urban area serves that urban area if a direct connection is provided between the Interstate highway and the urban area.

ARTERIALS

The **arterial system** serves the highest degree of through traffic movement and largest proportion of total travel. As used in the functional classification system the Interstate Highway System is considered an arterial network. Arterials generally have higher design standards than other roads.

A road serving two or more trip purposes 1 through 7 will be classified as a principal arterial road. All limited-access highways and all roads serving the purpose of connecting urbanized areas to each other are considered to serve several trip purposes

and are thus classified as principal arterial roads. A road serving only one of the trip purposes 1 through 7 should be classified as a minor arterial road.

The **urban principal arterial system** includes Interstate highways, other freeways and expressways, and other principal arterials. The urban principal arterial system serves the major centers of activity of a metropolitan area, has the highest traffic volume corridors, and the longest trip desires; and should carry a high portion of the total urban area travel on a minimum of mileage. It carries most trips entering and leaving urban areas, and it provides continuity for rural principal arterials that intercept urban boundaries.

A **rural principal arterial highway** network provides interstate and inter-county service so that all urban areas are within a reasonable distance of an arterial highway. Rural principal arterials typically link nonadjacent urbanized areas. Rural principal arterial highways provide an integrated network without stub connections except where needed because of unusual geographic or traffic conditions (for example, connections to coastal cities, water ports and airports). The rural principal arterial network is divided into three subsystems, Interstate highways, other freeways and expressways and other principal arterials.

Table 2 presents a few key differences between the character of service that urban and rural principal arterials provide.

Table 2: Characteristics of Urban and Rural 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 + 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 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; + Serve all or nearly all urban areas with 50,000 and over population and a large majority of urban areas with 25,000 and over population + Provide an integrated network of continuous routes without stub connections (dead ends)

The **urban minor arterial system** typically provides service for trips of moderate length and at a lower level of through traffic movement than principal arterials. They connect with urban principal arterial roads and rural collector routes.

A **rural minor arterial highway** typically links cities and larger towns and serves an urban area if it penetrates or comes within 2 miles of the urban boundary. A road connecting the rural minor arterial highway to the urban area is not necessary.

Table 3 presents a few key differences between the character of service that urban and rural minor arterials provide.

Table 3: Characteristics of Urban and Rural Minor Arterials

Urban	Rural
<ul style="list-style-type: none"> + Interconnect with and augment the higher-level arterials + Serve trips of moderate length at a somewhat lower level of through traffic movement than principal arterials + Distribute traffic to smaller geographic areas than those served by higher-level arterials; + Provide more direct property access than principal arterials without penetrating identifiable neighborhoods; + Provide urban connections for rural collectors. 	<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) and form an integrated network providing interstate and intercounty service + Be spaced at intervals, consistent with population density, so that all developed areas within Florida 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.

Trip Purpose 1. Travel to and through urbanized areas

These are primary routes that connect one urbanized area to another. In selecting the primary route between two adjacent urbanized areas when more than one direct route exists, the District should first consider the route that extends to the largest number of distant urbanized areas. If that criterion does not provide a clear selection, the District may then consider which road serves the largest volume of traffic traveling between the two adjacent urbanized areas. A connected urbanized area may be in another state. Two routes may be considered when the amount of travel in a given corridor connecting two urbanized areas is substantially served by trips on more than one highway. This is also true when an urbanized area is so geographically large as to result in multiple corridors having been established. This two-route option will be applied in limited cases. The Manager of TranStat will review two-route options as proposed by the District and present them to FHWA for consideration. In general, the use of multiple highways to serve trip needs of a single corridor for this trip purpose should be recognized only when the two facilities are of different access control types (i.e., one is limited-access and the other is not). For example: I-10 is a limited access facility. US 90 that parallels I-10 is not a limited access facility.

Trip Purpose 2. Travel to and through small urban areas

These are primary routes that connect one small urban area to an adjacent small urban area, an adjacent urbanized area, or to the network of roads connecting urbanized areas to each other. If there is no urban area in the county, connection should be made to the county seat.

Trip Purpose 3. National defense

A national defense route is identified as a primary National Strategic Highway Network (STRAHNET) route. National defense routes also include connector routes identified in the STRAHNET Connector Atlas.

Trip Purpose 4. Interstate and regional commerce

Routes serving this trip purpose are identified by relatively high volumes of freight movements over long distances. A U.S. route may often indicate that the designated route serves the primary purpose of interstate commerce. Those roads that serve the purpose of travel to and through urbanized areas are considered to serve the needs of regional commerce and thus meet both trip purposes, and vice versa. Identification of this trip purpose may involve evaluating the appropriateness of existing U.S. route designations

Trip Purpose 5. Access to airports, seaports, and major rail terminals or intermodal transfer facilities

These major routes that provide access to regional or international airports, seaports handling ocean-going or river barge traffic, and rail/truck intermodal facilities, are designated by FDOT and approved by FHWA.

Trip Purpose 6. Access to major public facilities

A route to the major point of entrance to a major public facility is considered the primary access route. Major public facilities are distinguished from minor public facilities by their frequency of use and customer service. The general guide for selecting facilities meeting this purpose is to identify those for which the generated traffic would substantially impact the performance of connecting roads; i.e., the number and frequency of trips to or from the facility would place a significant demand on the facility. For the purposes of this Handbook, major public facilities are: state or private universities; community colleges; regional medical centers; natural attractions, such as beaches, rivers, and state parks, that draw from a regional area and serve an average daily attendance of 1,000 persons in a single area; manmade attractions, such as theme parks, that attract audiences from a regional area; publicly-owned cultural and historic facilities, such as performing arts centers, civic centers, and museums, that attract audiences from a regional area.

Trip Purpose 7. Access to minor public facilities

A route providing access to the major point of entrance to a minor public facility is considered the primary access route. For the purposes of this Handbook, minor public facilities are those not meeting the requirements listed in Trip Purpose 6, access to major public facilities, and include manmade attractions and publicly owned cultural and historical facilities that attract local audiences.

COLLECTORS

Collectors typically are designed for travel at lower speeds and for shorter distances. Collectors are typically two-lane roads that collect and distribute traffic to/from the arterial system.

The **urban collector system** is stratified into two systems: major and minor collectors. **Major collectors** provide direct property access and traffic circulation in higher density residential neighborhoods and commercial and industrial areas. Unlike arterials, major collector roads may penetrate residential neighborhoods for significant distances and also channel traffic from local streets onto the arterial system.

Minor collectors provide traffic access and traffic circulation in lower density residential and commercial/industrial areas. They may penetrate residential neighborhoods for only a short distance and also channel traffic from local streets to/from the arterial system.

The **rural collector system** is stratified into two systems: major and minor collectors. **Major collectors** provide service to any county seat not on an arterial route. They also serve larger towns not accessed by higher order roads, and important industrial or agricultural centers that generate significant traffic and smaller communities not served by a higher class facility. **Minor collectors** are spaced at intervals, consistent with population density, to collect traffic from local roads and to insure that all developed areas are within a reasonable distance of a collector road.

Major collectors typically serve higher traffic volumes than minor collectors. Overall, in both urban and rural setting, the total mileage of Major Collectors should be lower than the total mileage of Minor Collectors.

Table 4 presents some of the characteristics of urban and rural major and minor collectors.

Table 4: Characteristics of Urban and Rural Major Collectors

Major Collectors	
Urban	Rural
<ul style="list-style-type: none"> + Serve both property 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 streets and Arterials, usually over a distance of greater than three-quarters of a mile 	<ul style="list-style-type: none"> + 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 intracounty importance such as consolidated schools, shipping points, county parks, important mining and agricultural areas + Link these places with nearby larger towns and cities or with arterial routes; + Serve the most important intracounty travel corridors
Minor Collectors	
Urban	Rural
<ul style="list-style-type: none"> + Serve both direct property 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 streets and Arterials, usually over a distance of less than three-quarters of a mile 	<ul style="list-style-type: none"> + 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

In both urban and rural areas, a distinction is recognized between major and minor collector roads, those serving any of the trip purposes 8, 9, and 10 will be considered to be major collector roads and those serving trip purpose 11 only will be considered to be minor collector roads.

Trip Purpose 8. Interconnection of major thoroughfares

A route that provides a high-volume cross-connection between roads that meet at least two of the trip purposes 1 through 6 qualifies for this trip purpose. The intent is to ensure that the trips being observed are for through traffic seeking to reach the distant major road.

Trip Purpose 9. Interconnection of minor thoroughfares

A route that provides cross-connection between roads that meet at least one of the trip purposes 1 through 7 qualifies for this trip purpose.

Trip Purpose 10. Access to concentrated property use areas

This is a route that connects major thoroughfares to concentrations of property use, such as the primary connection to a community, large residential subdivision, neighborhood shopping center, or a public facility serving a local audience.

Trip Purpose 11. Access to rural diffused property use areas and lower density urban residential and commercial/industrial areas

A route that connects major thoroughfares to diffused areas of a single or mixed property use and lower density urban residential and commercial/industrial areas serves this trip purpose. Such areas include the primary connection to a rural farming area consisting of large acreage tracts, and scattered small residential developments or in urban areas, lower density residential and commercial/industrial areas.

Trip Purpose 12. LOCAL Access and Circulation

Local roads represent the largest percentage of all roadways in terms of mileage. For rural and urban areas, all public road mileage below the collector system is considered local. Local roads provide basic access between residential and commercial properties, connecting with higher order highways. A route meeting this purpose would connect a home, work, or entertainment trip by connecting the final destination to the roads serving longer trips. Examples of roads meeting the purpose described in this paragraph include those located within a residential subdivision or a cluster of commercial buildings.

Local roads generally do not carry bus routes and, in many instances, they include various roadway treatments to discourage through traffic. In general, local roadways are often classified by “default”. In other words, once all arterial and collector roadways have been identified, all remaining roadways are classified as locals.

Table 5 presents some of the key characteristics of local roads.

Table 5: Characteristics of Locals

Urban	Rural
<ul style="list-style-type: none">+ Provide direct property access to adjacent property+ Provide access to higher systems+ Carry no through traffic movement	<ul style="list-style-type: none">+ Serve primarily to provide direct property access to adjacent property+ Provide service to travel over short distances as compared to higher classification categories+ Constitute the mileage not classified as part of the arterial and collectors systems

5. MAP-21 FEDERAL- AID PROGRAMS DETERMINED BY FUNCTIONAL CLASSIFICATION

PROGRAMS

The two largest MAP-21 Programs are the National Highway Performance Program and the Surface Transportation Program.

The National Highway Performance Program provides funding for an enhanced National Highway System (NHS) which includes the existing NHS, all principal arterials, STRAHNET, and intermodal connectors.

The Surface Transportation Program (STP) includes additional roads eligible for federal-aid that are not on the NHS and are not functionally classified as local roads or rural minor collectors. The STP was established to provide funds for non-NHS roads that are eligible for federal-aid.

The National Highway System currently includes roads in all functional classification categories. Many of the designated connector routes are classified as collectors and locals.

FUNDING

For information on the use of federal funds, refer to the Work Program Instructions, Part IV-Federal Aid Programs Administrated by Federal Highway Administration (FHWA).

ROADWAY CHARACTERISTICS INVENTORY (RCI) FEATURE 112 (FEDERAL SYSTEMS)

NHS roads are included on Outdoor Advertising Regulatory maps that are used to determine the regulation of signs along certain roads. The Outdoor Advertising maps include not only the NHS but also roads that were classified as Federal-Aid Primary as of June 1, 1991. These categories are found in federal-aid feature 112 in the RCI database. Changes to feature 112 are the responsibility of TranStat.

NATIONAL HIGHWAY SYSTEM CHANGES

Changes to the NHS can be made when FHWA determines the change is justified. When a request for a change is made, the District will work with the requesting entity to compile information on the preferred route. The request for a change must include justification and maps of a quality suitable for submittal to FHWA for consideration and approval. The submittal must also include evidence of coordination with local officials.

Some types of justification considered for changes to the NHS are changes to STRAHNET or STRAHNET connector routes, realignments, new construction of more efficient travel ways and changes in travel patterns and demands.

Some of the types of justification considered for changes to NHS connectors to intermodal facilities are freight and passenger needs, routes that more effectively serve facility users, and future system considerations such as facility relocation or closure.

6. STEPS IN FUNCTIONALLY CLASSIFYING RURAL, URBAN AND URBANIZED AREA ROADWAYS

The Functional Classification Process Flowchart, **Attachment 6**, shows the order in which functional classification development is recommended. This flow of activities logically shows the coordination process and the order of events required to obtain FHWA functional classification approval.

Using the new proposed or approved urban area boundary map:

1. Prepare a map showing the road network and the existing federal functional classification superimposed over the new boundary map.
2. Add property service characteristics, such as major traffic generators and property use patterns. The most recent aerial images available for an area are a good resource.
3. Reclassify the functional classification for highway and streets where property service characteristics have changed. **NOTE:** The revised functional classification will be coded in RCI feature 121, *Proposed Functional Classification (PROFUNCL)*. **DO NOT** change the Federal Functional Classification (FUNCLASS) characteristic.

When reclassifying roads, remember to include logical system continuity considerations. Select principal arterial systems first, followed by minor arterials, then collectors and locals.

- Perform a preliminary classification of the total arterial system considering the list below
 - Evaluate service to urban activity centers
 - Consider system continuity
 - Determine property use considerations
 - Evaluate spacing between routes and the spatial distribution of activities to be served
 - Average trip length
 - Traffic volumes (AADT)
 - Access control
 - Vehicle miles of travel and system mileage
- Classify the final arterial system breaking it into the principal and minor arterial street system
 - By service to urban activity centers
 - Business districts
 - Air, rail, bus, and truck freight terminals
 - Regional retail shopping centers

- Large colleges, hospital complexes, military bases, and other institutional facilities
- Major industrial and commercial centers
- Important recreation areas

By system continuity

- The principal arterial system should provide an integrated, continuous network throughout an area.
 - Minor arterials, collectors and locals are not integrated systems by themselves. They are in combination with previously designated higher order systems.
- Sub-stratify the principal arterial system
 - Divide it into Interstate, other freeways and expressways, and other principal arterials
 - Classify the minor arterial system (arterials not qualifying as principal arterials)
 - Classify collector and local streets
 - Collector streets
 - Have a relatively important property access function
 - Serve to funnel traffic between local streets
 - Local streets
 - All remaining streets which have not been designated as arterials or collectors
 - FHWA requests the submittal of a spreadsheet at the same time maps are provided for review that shows the changes to FC by road. An example of this spreadsheet is found as ***Attachment 7***.

Roads are assigned to a Federal System according to their functional classification designation. **Do not** request RCI feature112 update until functional classification has been approved by FHWA and feature 121 has been updated in RCI.

Functional classification is important for determining federal-aid funding eligibility; the following is a summary of federal-aid funding eligibility.

System/Funding Eligibility	Functional Classification
<p>National Highway Performance Program</p> <p>(determined by Congress and revised by FHWA and Department of Defense (DOD) request)</p>	<p>May Include:</p> <p>Principal arterials, minor arterials, collectors, locals</p>
<p>Surface Transportation Program</p>	<p>May Include:</p> <p>All functional classifications except rural Minor collectors and locals</p>
<p>Federal Aid – None</p> <p>Except for special considerations, contact the FDOT Work Program Office for additional information</p>	<p>May Include:</p> <p>Rural minor collectors, locals</p>

7. DISTRICT FINALIZATION RESPONSIBILITIES

The District, MPO and local governments should all confirm that the map or maps reflect the accurate representation of the decisions made for the urban boundary and functional classification. After FHWA approves the urban boundary and functional classification designations, the District will prepare final maps.

Obtain the following official signatures, required by the Procedure, on the final maps and provide the described materials as follows:

- County maps and unincorporated urban area maps shall be signed by the Chairman, Board of County Commissioners (or other authorized representative of the county).
- Incorporated urban area maps shall be signed by the Mayor (or other authorized representative of the city) and if they extend beyond the municipal limits, the Chairman, Board of County Commissioners (or other authorized representative of the county). (This does not include urban areas within a MPO planning area boundary.)
- FHWA urbanized area maps shall be signed by the Chairman of the MPO (or other authorized representative of the MPO) for all areas within the MPO planning area boundary. For urbanized areas with multiple MPOs, the Chair of each MPO (or other authorized representative of the MPOs) will sign the maps. If the MPO planning area includes the entire county, the MPO has coordination responsibility with local governments and only the MPO must sign.
- Signature blocks shall be signed by the FDOT District Director of Transportation Development (or other District senior manager as determined by the District Secretary) and FHWA.
- The District will finalize the written descriptions and functional classification tabulations.
- The District will prepare the final package for submittal to FHWA, which will consist of the following items:
 - A cover letter requesting TranStat to transmit the package to FHWA for approval.
 - Signed county, urban area, and urbanized area functional classification maps.

- Final written descriptions and the functional classification tabulations showing the extent of functional classification on a district-wide scale.
- A statement that the functional classification was developed in cooperation with local officials (County, City, or MPO).
- Any available resolution(s) from the involved local officials (County, City or MPO) agreeing to the designations.

8. PROBLEMS THAT AFFECT FUNCTIONAL CLASSIFICATION OF ROADWAYS

To review each county and urbanized/urban area, GIS maps are produced utilizing the data represented in RCI features 121 (functional classification) and 124 (urban classification). This mapping process brings direct attention to problem areas that need further examination and review. Some of the more common problems are listed below.

- RCI features 121 and 124 must be updated whenever changes occur and they must complement each other. Feature 121 directly affects feature 112 (federal systems). Districts should request TranStat to update feature 112.
- If the difference in length between the digitized and RCI alignments is ≥ 0.100 miles or 5% of the RCI length, Districts should provide marked-up aerials displaying the correct alignment for comparison with the GIS basemap.
- If a realignment of a roadway has not been digitized into the base map, the correct realignment should be shown on a copy of the latest aerial image. Districts should make sure the location of the realignment can be determined within the county by adding discerning features. RCI feature 140 (section status exception) must be coded correctly, and the total realignment length must be correctly noted in RCI. Feature 138 (roadway realignment) must be completed.
- The original digitized alignment of a roadway may not have been put in correctly on the GIS base map. A marked aerial printout showing the correct alignment will be needed to make required adjustments.
- The field Distance Measuring Instrument (DMI) measurement can be used instead of the GIS digitized length when the lengths are within 0.009 miles. The length of the road and the magnitude of the error will determine the selection of one or the other, using the information described in the bullets above.
- Problems will occur if two or more section numbers are assigned to the same section of roadway or to overlapping roadways. If this is determined to be an exception, code it in properly. If this is not due to an approved exception, the problem will need to be corrected by field or map review.

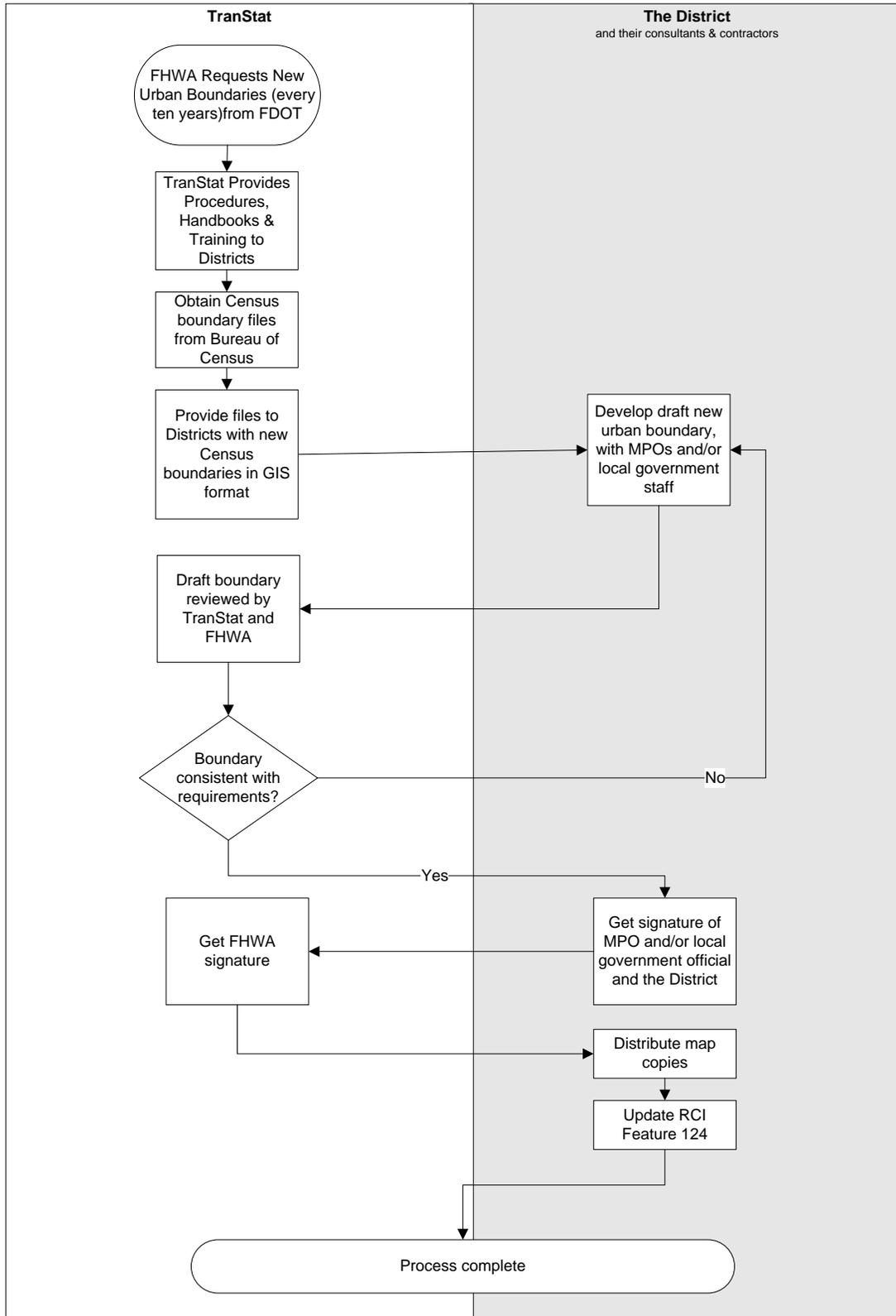
Attachment 1 AVAILABLE DATA SOURCES

In addition to existing functional classification maps, a number of useful sources are available to help guide the Districts in proposing functional classification designations, and urban boundaries. Various types of maps and listings are available from TranStat (850-414-4848 or 889-4848), the Office of Policy Planning (850-414-4800), the Surveying and Mapping Office (850-249-1555), Maps and Publications (850-414-4050) and the Outdoor Advertising Office (850-414-4545).

Maps and listings of the NHS are available from TranStat. TranStat furnishes the Outdoor Advertising Office with copies of Outdoor Advertising Regulatory maps.

- Lists of Census designated urban and urbanized areas (Office of Policy Planning).
- Digitized maps of the SHS are available from TranStat in standard GIS formats; these maps include the SHS, many off-system roads classified as collector or above, and county boundaries.
- Aerial photography (Surveying and Mapping Office); contact prints of 1" to 2000' countywide photography is available.
- County highway maps (Maps and Publications Office and Surveying and Mapping Office); these maps include state and local highways, county boundaries, and water features such as lakes and rivers. The standard size is 1/2" to a mile.
- Rural and urban total public road mileage by District (TranStat).
- Data from other sources such as plat maps, engineering drawings, and field review. Special care should be taken when using outside data sources and, when possible information should be verified through multiple sources.

Attachment 2 Urban Boundaries Process Flow Chart



Attachment 3

Sample Letter or correspondence to local officials
concerning urban or urbanized area boundaries

Date

Mr. James Jones
Mayor
123 Olde Road
Adams City, Florida 31234

Dear Mr. Jones:

Subject: Urban Area Boundary Map

The Urban Area Boundary map for Adams City is enclosed. The District prepared this map incorporating all the changes recommended by your office.

It is a requirement of the Federal Highway Administration (FHWA) that urban area maps be signed by the Mayor and by the Chairman of the Board of County Commissioners. Therefore, we are asking that after you have signed the map, that you forward it to the County Commission Chairman for signature.

After we receive the map signed by both parties, we will send it to the FDOT's Tallahassee Transportation Statistics Office for submittal to FHWA for their final approval and signature.

Your cooperation in returning this map to this Office within 20 working days from date of receipt will be appreciated. A copy of the signed map will be sent to you and the Chairman of the Board of County Commissioners.

Please contact this office if you have any questions or need any additional assistance.

Sincerely,

Mary Jane Smith
District 10

Attachment
cc:

Attachment 4

Sample Letter or correspondence of local official's
concurrence with urban or urbanized area boundaries

November xx, 2012

Mr. *(District Contact)*
District Planning and Environmental Engineer *(Or Other District contact)*
Florida Department of Transportation, District *(Number)*
(Mailing Address)
(City), FL *(Zip Code)*

Dear Mr. *(District Contact)*:

SUBJECT: Concurrence on 2010 FHWA Adjusted Urban Boundary Designation

The *(MPO Name or could be a city or county)* Metropolitan Planning Organization (MPO) has reviewed and concurred with the draft 2010 Federal Highway Administration (FHWA) Adjusted Urban Boundaries for *(Name)* County. Your office may forward the proposed boundary to the FDOT Central Office and FHWA for their review and approval. We understand that additional coordination with our agency and local government entities on Federal Functional Classification designation for all public roads in *(Name)* County will be carried out by your office. After FHWA has approved the proposed boundary and functional classification designations, your office will also prepare a final boundary map for signature by the Chairperson of the MPO Board.

Thank you for your attention and assistance in this matter.

Sincerely,

(Name)
Executive Director

cc: The Honorable *(Name)*, *(MPO or city or county name)* MPO Chair/Commissioner, City of *(Name)*; *(Other Contacts as needed)*

Attachment 5 New Proposed Functional Classification RCI Feature 121 (PROFUNCL) (example only)

Roadway ID: 55040000	Man-Dist: 03	Geo-Dist: 03	County: LEON	Beg. MP: 0.000	End. MP: 12.156	Net Length: 12.156 VideoLog	Overall Status: ACTIVE ON THE SHS Enterprise GIS
Description: SR 363/SR 61							

Feature 121 - FUNCTIONAL CLASSIFICATION							LENGTH/NON-INTERLOCKING	
Beg. MP	End. MP	Characteristic	Value	Unit	Side	Offset	Char. Updated	
0.000	3.690	FUNCTIONAL CLASSIFICATION	16 - URBAN MINOR ART	CD	C		KN330JB 04/27/2005	
0.000	3.690	PROPOSED FUNCTIONAL CLASSIF.	16 - URBAN MINOR ART	CD	C		KNMEIGP 12/03/2012	
3.690	6.410	FUNCTIONAL CLASSIFICATION	06 - RURAL MINOR ART	CD	C		KN330JB 04/27/2005	
3.690	6.410	PROPOSED FUNCTIONAL CLASSIF.	06 - RURAL MINOR ART	CD	C		KNMEIGP 12/03/2012	
6.410	12.156	FUNCTIONAL CLASSIFICATION	14 - URBAN OTHER PRIN ART	CD	C		PL934TH 04/21/2005	
6.410	12.156	PROPOSED FUNCTIONAL CLASSIF.	14 - URBAN PRIN ART OTHER	CD	C		KNMEIGP 12/03/2012	

Short Cut

<input checked="" type="radio"/> Roadway <input type="radio"/> Route		*Feat. Number:	Beg. MP:	End. MP:	Side:	Offset:	Characteristic Code:
*ID:		121					
55040000							

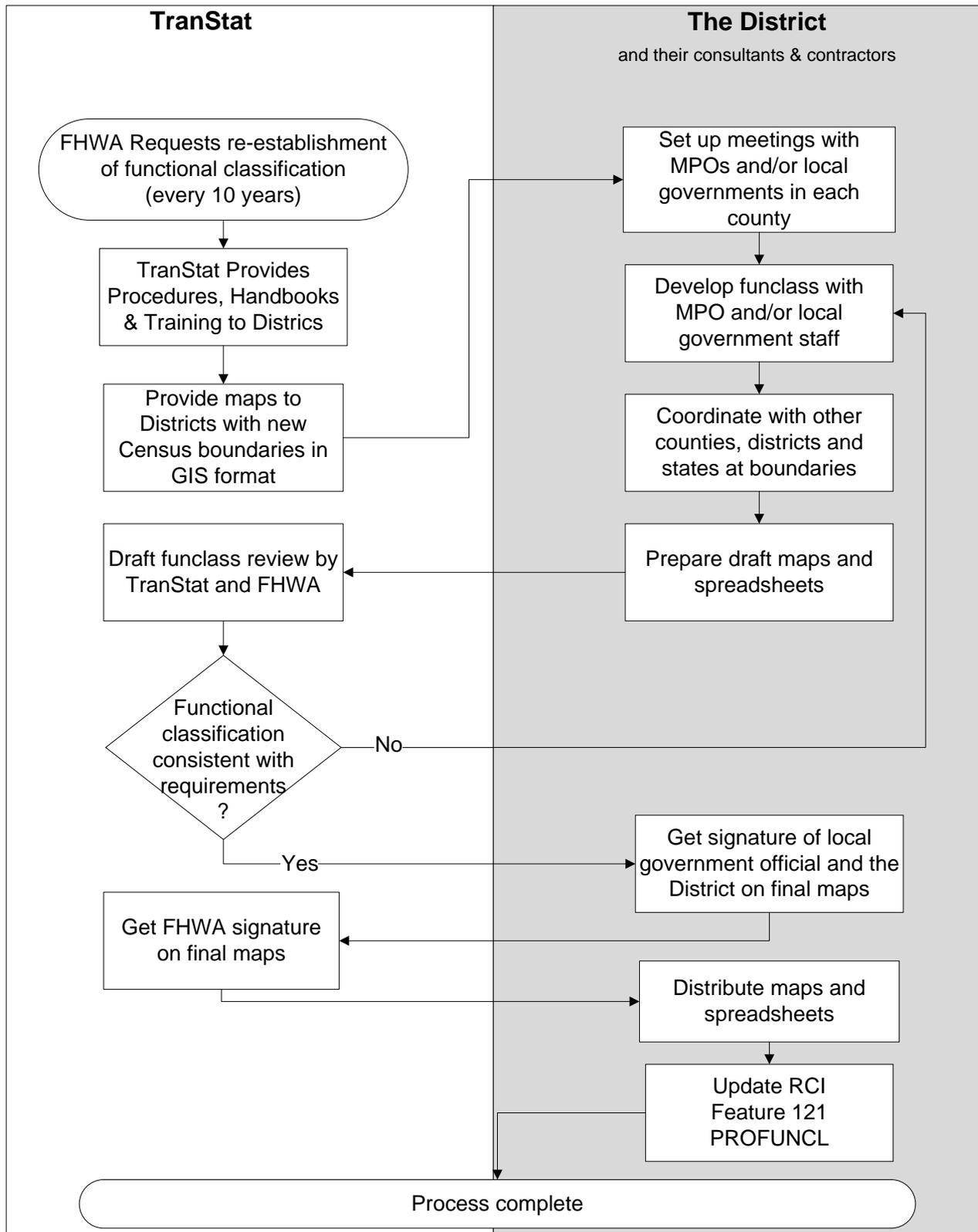
Code only **Proposed FC**. Do not change data in the current functional classification.

As an **area** is completed, TranStat will replace the current functional classification with the proposed functional classification.

An area is:

- a rural county,
- a county with urban area(s),
- a county with urbanized area(s),
- a county with urbanized area(s) and urban area(s),
- an urban area(s) or urbanized area(s) that extend into 2 or more counties (when this occurs, all the counties, urban areas and urbanized areas are considered one **area**). An example of this could be – Lee and Collier counties, Bonita Springs and Naples urbanized area, and Marco Island urban area. Proposed functional classification will not be moved to current functional classification until this entire **area** is complete and the boundaries and functional classification are approved by FHWA.

**Attachment 6
Functional Classification Process Flow Chart**



Attachment 7

Example of Written Narrative Described in the Procedure

Section 2.2.3.2

This is the minimum information to be provided to FHWA on the narrative spreadsheet.

county name	section no.	road no.	local name	MP	from	MP	to	net lgth	curr FC	prop FC
Polk	16280	CR 542	Central Ave.	0.000	SR 555	0.380	SR 549	0.380	UMA	TBA
		SR 542	Central Ave.	0.380	SR 549	6.338	SR 25	5.958	UMA	TBA
		CR 542	Dundee Rd.	6.338	SR 25	6.352	boundary	0.014	UL	TBA
		CR 542	Dundee Rd.	6.352	boundary	7.177	SR 17	0.825	RL	TBA
	16080	CR 540A	CR 540A Lk Eloise Rd	1.419 2.746	CR 655 Lk Eloise Rd	2.746 7.244	Lk Eloise Rd SR 540	1.327 4.498	UL UC	TBA TBA

Other information that may be added to the spreadsheet to justify functional classification changes are; AADT, lane additions, changes in trip purpose, etc.

These are only examples. You may have different column headings.

AADT 2000	AADT 2010	AADT proposed (2015)	lanes 2000	lanes 2010	trip purpose 2000	trip purpose 2010	trip purpose proposed (2015)
1,500	10,500	18,300	2 undivided	4 divided	sparse residential	medium density strip commercial	high density strip commercial
25,000	3,200		4 divided	4 divided		traffic rerouted on new facility	
-0-	21,000		-0-	4 divided		new facility	