

SECTION VI

GIS POLICIES

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The Rockingham Planning Commission maintains a Geographic Information System (GIS) comprised of digital map layers and associated databases, software, computers, printers and staff. The GIS is used to produce maps and provide spatial analysis information for many projects undertaken by RPC.

GIS at RPC is used in contract work for state agencies, municipalities and other entities. It is also used to provide map and data assistance to staff planners and in providing local technical assistance to member communities. Public officials and municipal employees are encouraged to utilize the RPC GIS capabilities in furtherance of their municipal or other public duties.

For more general information on GIS, see this website: <http://www.gis.com/whatisgis/index.html>

ARTICLE 1 GIS Services

The following is a list of the types of custom services that RPC provides. These describe the broad categories of assistance available. If you have other needs, please contact the staff and we will do our best to provide assistance. RPC may require a contract to ensure expense reimbursement and to specify the scope of work and terms for delivery of work.

A. Map Creation and Production

RPC can use existing, derived or newly mapped spatial data layers to produce custom map products of your community. Recent examples include Natural Resource Inventory map sets, Town Trail maps and a Town Emergency Dispatch Street Address map.

****We can also do updates and alterations of maps in our Standard Map Set for your community.**

B. GIS Analysis

The most powerful aspect of GIS is its ability to perform analytical overlay operations. RPC can derive new data and answer spatial questions through performing overlay analysis on existing data layers. This type of work can be simple or complex depending upon the spatial question to be answered. GIS analysis has been used in performing build-outs and natural resource co-occurrence maps. While many GIS Analyses projects are more involved, some operations are simple and can be provided very quickly - (example: acreage of development within a particular zoning district)

C. GPS Data Collection

RPC has a Global Positioning System (GPS) receiver, which can be used to map locations in the field. GPS is a geographic data collection system that uses a network of satellites to provide positional information to receivers on the ground. Specific locations can be mapped by going to the locations with RPC's GPS unit and collecting positional data from satellites. Refining the data through differential corrections may need to be performed at the office. RPC has previously used GPS for locating unmapped roads, trails, and critical facilities.

Our GPS is available to our communities for municipal use. The GPS is a Trimble XRS. This unit is a sub-meter quality GPS when used in conjunction with differential corrections. In order to use the GPS, you must have completed the GPS training class offered by UNH Coop Ext. and to sign a liability waiver. Note: The GPS is used for RPC activities and its availability will be subject to the RPC's needs. Call the RPC well ahead of time if you need to borrow the GPS.

ARTICLE II Requests for GIS Maps and Data

A. Member Communities

Member community requests for GIS services may incur a charge or require a contract depending on the complexity and size of the request. Charges are based on cost recovery of staff time and materials. Less demanding GIS requests are often covered by Local Technical Assistance funds provided by RPC membership dues. Local technical assistance to member communities may cover a variety of services. These typically include requests for map production, spatial data distribution, and GIS software assistance. Local technical assistance is available to member communities at the discretion of the RPC and is contingent upon available funds.

B. The Public

Response to public requests for copies of existing and available maps and/or public digital data is granted on a cost recovery basis. The public should be aware that the RPC is not a retail map outlet, but a public organization that exists to serve our municipal governments and to participate in state and federally funded planning activities to benefit the region. The RPC will do its best to accommodate requests from the general public and the private sector as staff time is available. We will charge for such requests based on (1) the cost of materials, (2) the cost of equipment operation and (3) the cost of staff time billed. The RPC's current non-member hourly rate is currently \$65/hour. In many cases the GIS staff may refer the public to commercially available atlases to obtain basic maps.

ARTICLE III The GIS Workload Priority

- 1 Contracted services
- 2 Requests from Member communities
- 3 Requests from Non-Member communities
- 4 All other requests

GIS provides both a primary and supporting role in much of the contract work done at RPC and it is used as a resource for many member organizations and individuals. Contracted services, especially those that are GIS mapping or analysis based, take priority over all other services. Municipal requests to serve volunteer boards or municipal employees in the fulfillment of their duties are deemed important to RPC. Effort is made to assist member communities in a timely manner, however first priority is given to previously established contracts. All other non contract and non member requests will be handled at the discretion of the RPC.

ARTICLE IV How to Request GIS Services

Please review this entire policy and related pages before contacting the RPC GIS Department to discuss your request. We will respond as soon as possible with a cost and time estimate for completing your request. When making your call or email, please give us your name and contact information. Let us know if you are a public official or employee making a request on behalf of your community. We have a GIS Request form on our website to help ease the process of GIS requests.

NOTE: GIS data requestors who are individuals or companies working for a member community should have the municipality make or endorse (in writing) the GIS request to RPC. This establishes a higher priority for the request and may make the request eligible under Local Technical Assistance without incurring further cost to the municipality.

ARTICLE V Who To Contact:

Tom Falk, GIS Coordinator tfalk@rpc-nh.org 603-778-0885 ext. 107
Transportation Related Maps
Traffic Modeling
Traffic Count Data
Hazard Mitigation

Robert Pruyne, GIS Specialist rpruyne@rpc-nh.org ext. 108
Environmental GIS
Buildouts
Town Based Analysis
Zoning

ARTICLE VI Timeframe for GIS Map and Data Requests

Please expect about a two-week (or greater) completion time on non-contracted GIS requests. Requests will generally be handled in the order in which they are received. In order to stay current on contracted workload, staff may need to limit available time for other GIS requests.

ARTICLE VII Map and Data Distribution Prices

A. Maps

Copies of existing and readily available maps, not requiring additional preparation, are available as follows:

| | Cost per Copy by Map Size | | | | | |
|---|--|--|-----------|-------------------------|-----------|-------------------------|
| | 11" x 17" | | 24" x 36" | | 36" x 48" | |
| | Standard | with Aerial Photography | Standard | with Aerial Photography | Standard | with Aerial Photography |
| Member Communities and Community Non-Profits¹ | \$12.00, \$3.00 each additional (up to 10) | \$15.00, \$3.75 each additional (up to 10) | \$20.00 | \$25.00 | \$25.00 | \$31.25 |
| Federal, State and Local Public Agencies | \$15.00, \$4.00 each additional (up to 10) | \$18.75, \$4.00 each additional (up to 10) | \$25.00 | \$31.25 | \$30.00 | \$37.50 |
| All Others | \$20.00, \$5.00 each additional (up to 10) | \$25.00, \$6.25 each additional (up to 10) | \$60.00 | \$75.00 | \$100.00 | \$125.00 |

Note: Volume discounts are not available for larger maps. Aerial Photo maps are on photo paper to prevent over saturation of ink.

B. All other Maps

Requests for new or custom maps, for the recovery of older maps, or for edited versions of existing maps will require a charge to cover staff time plus costs as stated above for map size. This service is generally reserved for RPC Member Communities.

C. Data

GIS Data will be distributed on a cost-recovery basis. Data requests require staff time for gathering and putting data on CD-ROM. Charges will follow current billing rate plus media costs. Small orders for readily available data less than 10 MB in size may be emailed for no charge.

ARTICLE VIII Current RPC Billing Rates – August 2008

Member Communities: \$50 per hour
 All Others: \$65 per hour

ARTICLE IX Delivery

Data and maps may be picked up in person from the RPC office. Please call ahead (603-778-0885) to arrange for a pick-up time. Maps and data may be mailed on request. Additional postage and handling charges will apply.

¹ As approved by the Executive Director

ARTICLE X Ready Access to GIS Data:

A. GRANIT

Much of the Spatial Data used at RPC originates from GRANIT, the New Hampshire State GIS. For more information and to request or download GIS data from GRANIT, see <http://www.granit.sr.unh.edu/>.

The GRANIT Data Mapper (<http://mapper.granit.unh.edu>) is a useful tool for basic mapping needs.

B. NH Department of Environmental Services

The NH Department of Environmental Services (NHDES) maintains a web-mapping application that allows the user to view information specific to the NHDES GIS database. See <http://www.des.state.nh.us/gis/onestop/> for more information.

ARTICLE XI RPC Standard Maps

RPC has developed a set of 'Standard' maps, which are being produced for all communities within the region for use in local land use planning and resource protection. The content of the maps was determined based on review of common master plan mapping needs and GIS data availability. These maps are being made publicly available through the RPC website at: <http://www.rpc-nh.org/mapsets.htm>.

The standard maps use regional datasets and have standardized legends, which make them more efficient and easier to produce than town-specific maps. They can however form the basis for producing more customized maps for communities. They also are a good medium for providing map corrections (missing roads, etc.) to RPC.

Once produced, hardcopy sets of the maps were provided to the Planning Boards of each community and when possible, PDF formatted versions are put on the RPC website (some of the aerial photo maps were too large). Additional hardcopy maps are available to municipal boards and municipal departments of member communities by request. The maps are 24 x 36 inches in size.

Please see the RPC web page <http://www.rpc-nh.org/mapsets.htm> for more information and to download PDF versions of standard maps that have been done for our communities.

A. RPC Standard Map Set:

- **Transportation Map** – Roads by Legislative Highway Classification; bus routes; commuter rail service; traffic count locations; bicycle routes, elevation contours.
- **Zoning Map** – Zoning districts as mapped by RPC- *not official town zoning map*.
- **Land Use Map** – 1998 Land use from GRANIT- CICEET Land Use Change Study.

- **Surface Water Resources Map** – Hydric soils; National Wetlands Inventory; watershed divides; flood hazard areas.
- **Stratified Drift Aquifers Map** – Aquifers by Transmissivity.
- **Conservation Map** – GRANIT Conservation Lands and any updates by RPC; Local Resource Protection Priorities; National Register of Historic Places; Old Graveyards.
- **Composite Tax Map** (if available)
- **Community Facilities** – Facilities such as town halls, schools, police and fire stations, community centers, water/sewer service areas.
- **Soil Potential for Development Map** – Soil potential for Ratings for Low Density Development as listed by the Rockingham County Conservation District.
- **Digital Orthophoto Map** – 2003, 1meter pixel resolution (1 foot resolution in Route 1 coastal communities).

ARTICLE XII RPC GIS Data

The following datasets are available on request from RPC. Distribution costs apply. Data is kept in the NH State Plane NAD 1983 coordinate system. Additional information may be available as 'in progress' work, such as fixed transit routes. Ask GIS staff for more information. An extensive list of datasets are distributed by NH GRANIT at UNH.

- Tax Parcels (not available for all towns)
- 2005 Generalized Land Use
- Town Zoning Delineations
- Fixed Transit Routes
- Road Centerlines
- Traffic Count Data

A. Tax Parcels



B. Parcel Data Rules

While RPC is not the data custodian for municipal tax maps, RPC has some form of parcel data for many of the municipalities in the region. Some datasets were digitized by RPC from hardcopy tax sheets. A few datasets were obtained directly from the municipality, and others were obtained from private vendors. The municipalities have stated that their parcel data be released only with their permission.

Those requesting digital tax parcel data must first gain municipal permission prior to data release. RPC will only release parcel data when directed to do so by the appropriate municipality. Initiate your request by contacting the town administrator(s).

RPC does not maintain digital parcel data (except for 1 town) but we may have parcel datasets acquired or converted for use in various projects. Therefore, many of the parcel datasets are out of date. Not all datasets are polygon or GIS based. Parcel datasets for a few RPC Towns were obtained and licensed from a private vendor. We are not permitted to re-distribute this data. These towns include: Danville, East Kingston, Fremont, Hampstead and Sandown.

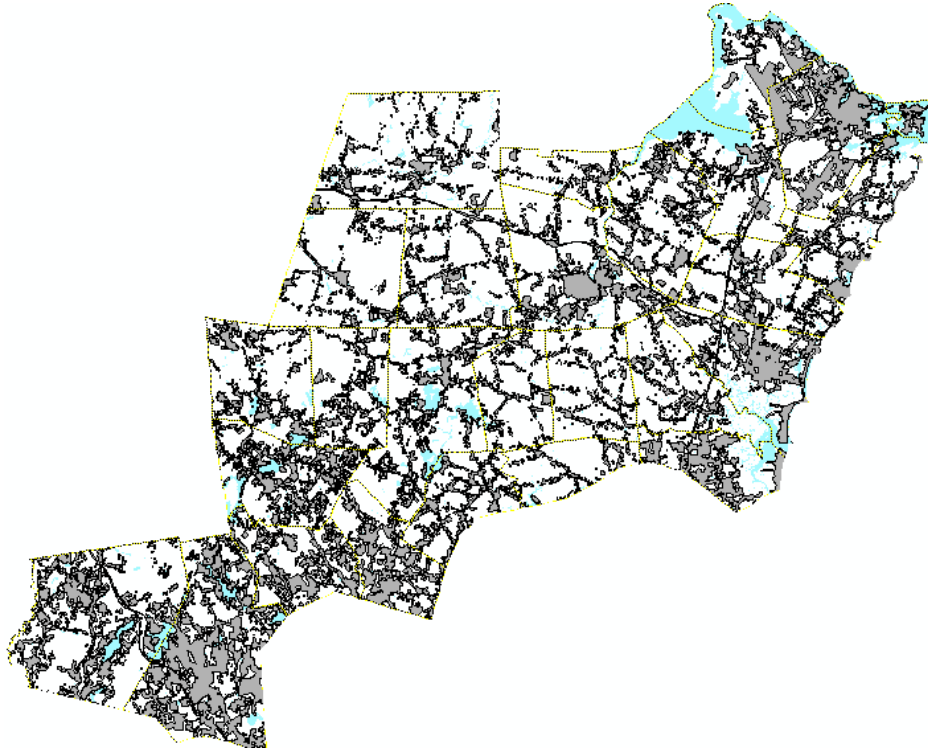
C. Digital Parcel Availability Table:

| Town | Year | Lines/Poly | Format | Consultant | Other Years |
|---------------|-------|------------|-------------|------------------------------------|--------------------------|
| Atkinson | 2004 | Polygon | Shapefile | Terramap/RPC | |
| Brentwood | 2005 | Polygon | Shapefile | Cartographic Assoc | Older Tiff |
| Danville | 2005 | Lines | DWG | Dollard | 2002,2004 |
| East Kingston | 2004 | Lines | DWG | Dollard | 2002 |
| Epping | 2003 | Polygon | Shapefile | UNH Engineering | 2002 |
| Exeter | 2004 | Polygons | Shapefile | Cartographic Assoc | 2003 |
| Fremont | 2007 | Polygons | Shapefile | Dollard/RPC | 2006,2004,2003 |
| Greenland | 2007 | Polygons | Shapefile | John E. O'Donnell & Associates/RPC | 2003 |
| Hampstead | 2007 | Lines | Shapefile | Dollard/RPC | |
| Hampton | 2004 | Polygon | Shapefile | Cartographic Assoc | 1999,2001,2002,2003 |
| Hampton Falls | 2007 | Polygon | Shapefile | RPC | 2001,2003,2004,2005,2006 |
| Kensington | 1998 | Polygon | Shapefile | RPC | |
| Kingston | 1998 | Lines | Shapefile | RPC | |
| New Castle | 1999 | Polygon | Shapefile | Sewell/RPC | |
| Newfields | 2004? | Polygon | Shapefile | | |
| Newington | 2007 | Lines | DWG | Town | 2004 |
| Newton | None | | | | |
| North Hampton | 2003 | Polygon | Shapefile | James Verra & Associates | 2002 |
| Plaistow | 2005 | Polygon | Coverage | Applied Geo | 2002,2003 |
| Portsmouth | 2005 | Polygon | Shapefile | City of Portsmouth | 1998,2002 |
| Rye | 2006 | Lines | Shapefile | Sewell/RPC | 2002,2005 |
| Salem | 2005 | Polygons | Geodatabase | City of Salem | 2003,2006 |
| Sandown | 2004 | Lines | Shapefile | Dollard/RPC | 2003,2004 |
| Seabrook | 2007 | Lines | Shapefile | Stockton/RPC | 2003,2004,2005,2006 |
| South Hampton | None | | | | |
| Stratham | 2007 | Polygons | Geodatabase | RPC | 2001,2004,2006 |
| Windham | 2008 | Polygon | Geodatabase | Town of Windham | 2003 |

* not available for redistribution

Distribution Format: Most datasets can be distributed as shapefiles.

D. Developed/Non-Developed Lands

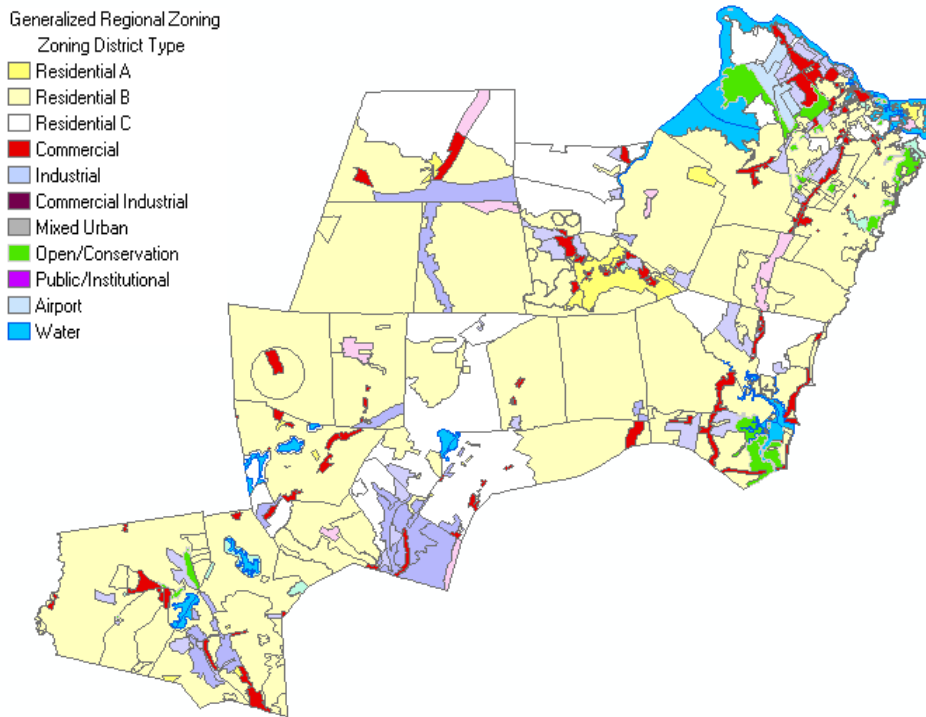


Available for: RPC Region

Developed/Non-Developed Lands were mapped from manual interpretation of digital orthophotography taken in 1998. Developed areas comprise housing, industrial/commercial areas, parking lots, limited access highways, cemeteries, athletic fields, campgrounds, junk yards etc. Data automation and interpretation performed by GRANIT, Complex Systems Research Center, Durham, NH. Data completed July 2002.

Distribution Format: Shapefile

E. Generalized Zoning Districts



Available for: RPC Region

Zoning Districts were mapped by RPC over our standard base map. This data is representative of the municipal zoning map and aggregates zoning districts by general category so they can be compared regionally. It does not represent the official zoning map for any town in the region. Zoning District boundaries are generalized and may not reflect their true location, especially for zones that are spatially defined using specific tax lots. This layer is used as part of the RPC Standard Map Set, and is used in the Traffic Modeling process.

Zoning Polygon Attributes:

TOWN – name of municipality

DESCDETAIL – name of zoning district

CODE_LOCAL – municipal code for zoning district

OSP_CODE – generalized category (numeric code)

UPDATED_FR – document used to map zone (zoning ordinance)

DATE_UPDAT – Date of source zoning ordinance

OSP_TYPE – description of OSP_CODE

Distribution Format: This data is kept in ESRI Geodatabase format. It can be distributed as a whole geodatabase or can be distributed as a shapefile for one or more municipalities.

F. Digital Orthophotography

2003 Color Infrared and Colorized Orthophotography, 1 foot resolution

Available for: Greenland, Portsmouth, New Castle, Rye, North Hampton, Hampton, Hampton Falls and Seabrook.



Colorized Infrared



Color Infrared

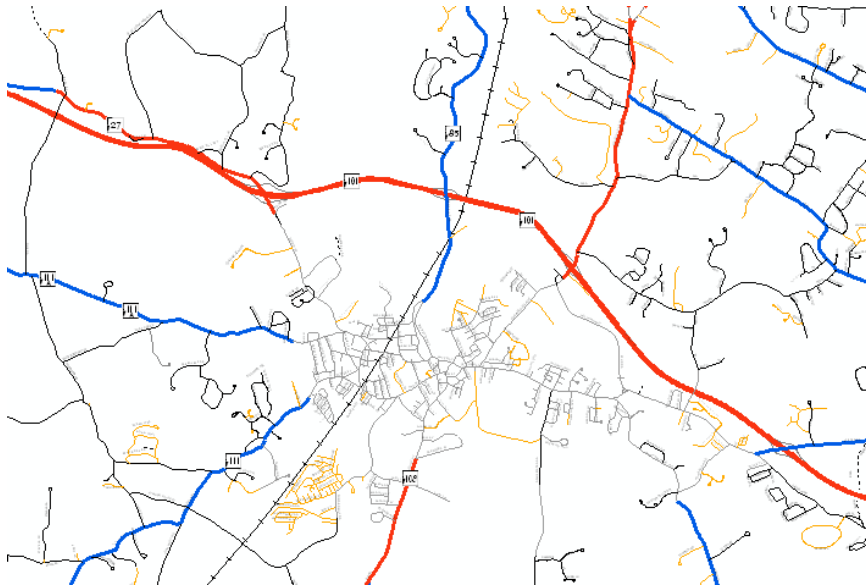
More Information...

This 'orthophotography' is the result of aerial photography that has been spatially corrected with USGS National Elevation Data to remove displacements associated with perspective, camera tilt, and terrain relief. The aerial photographs were taken in April 2003 and have a ground resolution (pixel size) of 1 foot. This set of imagery was produced by EMERGE (www.emergeweb.com) and funded by the New Hampshire Dept. of Transportation, The New Hampshire Coastal Program, Rockingham Planning Commission and by the City of Portsmouth and the Towns of Rye, Greenland, North Hampton, Hampton Falls, and Seabrook.

Distribution Format: This data was originally created in TIFF format with world files (TFW). The Tiff files range in size from 2.2 MB to 45 MB. The TIFF files were converted to JPG format by Portsmouth Dept. of Public Works. The resultant JPG files range in size from 88K to 2.2 MB and can all fit on 1 CD-ROM with no noticeable loss of resolution. Metadata text files created for the original TIFF files are available with the JPG files. They are named by Collection area and by tile. Collection area 22144 = North; 22145 = South.

ARTICLE XIII Road Centerlines

Available for: RPC Region



Road Centerlines were provided by the NH Department of Transportation (NH DOT) in June 2008. The data was initially extracted from the USGS DLG's 1:24,000/1:25,000, and subsequently updated to incorporate road re-alignments and new road construction. Updates are mapped using Global Positioning System (GPS) receivers. Many of the roads within the Rockingham Planning Region have been updated by Rockingham Planning Commission and by NH Department of Transportation through ongoing efforts.

NOTE: RPC makes no claim to the accuracy of this data. We do attempt to incorporate more accurate information when we can get it, either through municipal feedback or through the statewide Road Inventory process.

Road Centerline Attributes

SYSCLASS – State Highway System Class *

RDNAME – road name

F_CLASS – Functional Class *

SOURCE – data source

TOWN_ID – Town Identification Number

RDI_ID – Road Inventory Unique ID (Used by NHDOT)

LIMACC – If road is a limited access highway, YES/NO value

* see listing on next page

Distribution Format: This data is kept in Geodatabase format. It can be distributed in Geodatabase or in shapefile format. A road name annotation layer is also available, but only in the geodatabase format.

SYSCLASS _____ **Descriptions**

| | |
|----|---|
| 11 | State-maintained primary system. |
| 14 | State primary system within compact - maintained by the Town or City (Urban extensions of Class I highways). |
| 19 | Toll maintained expressways on the State primary system. |
| 22 | State-maintained secondary system. |
| 24 | State secondary system within compact maintained by the Town or City (Urban extensions of Class II highways). |
| 25 | Extensions of the designated State secondary system, uncompleted and Town maintained. |
| 33 | State-maintained recreation roads. |
| 44 | Town and City maintained streets within compact. |
| 55 | Regularly maintained Town streets and roads outside of compact. |
| 58 | Town roads, or City streets maintained by Special Legislation. |
| 66 | Town or City streets not regularly maintained. |
| 81 | National system of Interstate and Defense highways, State-maintained. |
| 89 | National system of Interstate and Defense highways, toll maintained. |
| 0 | Private Roads |

Legislative Class I - VI

| <u>Class</u> | <u>System / Class</u> | | | |
|--------------|-----------------------|----|----|----|
| I | 11 | 19 | 81 | 89 |
| II | 22 | 29 | | |
| III | 33 | | | |
| IV | 14 | 24 | 44 | |
| V | 25 | 55 | 58 | |
| VI | 66 | | | |

Note:
Legislative Class I through VI are not carried in the Road Inventory Tables, but can be generally defined using the System / Class definitions.

F-Class: Functional Class codes

A code describing the use of the roadway to carry traffic. Function class codes have two classifications; Rural and Urban.

Rural:

| <u>Code</u> | <u>Descriptions</u> |
|-------------|------------------------------------|
| 00 | Non-Public roads Example; Class VI |
| 01 | Principal Arterial -- Interstate |
| 02 | Principal Arterial -- Other |
| 06 | Minor Arterial |
| 07 | Major Collector |
| 08 | Minor Collector |
| 09 | Local |

Urban:

| <u>Code</u> | <u>Descriptions</u> |
|-------------|--|
| 00 | Non-Public roads Example; Class VI |
| 11 | Principal Arterial -- Interstate |
| 12 | Principal Arterial -- Other Freeways and Expressways |
| 14 | Principal Arterial -- Other |
| 16 | Minor Arterial |
| 17 | Collector |
| 19 | Local |

