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## **GIS POLICIES**

The Rockingham Planning Commission maintains a Geographic Information System (GIS) comprised of digital map layers and associated databases, software, computers, large format printers and well trained 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. Please note, we are not a high volume map production shop, sometimes your needs will be better met by purchasing commercially available products (i.e. a simple topo 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 sub-meter 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  
*Traffic Count Data*  
*Transportation Maps (Regional)*  
*Traffic Modeling*  
*Hazard Mitigation*

Robert Pruyne, GIS Specialist rpruyne@rpc-nh.org ext. 108  
*Mapping Analysis*  
*Buildouts*  
*Environmental GIS*  
*GIS Contracts (Tax Maps, TBG, CZP)*  
*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
<b>Member Communities and Community Non-Profits<sup>1</sup></b>	\$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
<b>Federal, State and Local Public Agencies</b>	\$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
<b>All Others</b>	\$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 or currently approved hourly rate.

All Others: \$65 per hour or currently approved hourly rate.

**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.

<sup>1</sup> 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 RPC supplies data to GRANIT as is possible.

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. This website does sometimes require approval.

## **ARTICLE XI RPC Standard Maps**

RPC has developed a set of ‘Standard’ maps, which were 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). RPC now have 2005 1’ pixel resolution and some of the county in 2008 1’ resolution.

## **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, and only with written permission from the town)
- 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:

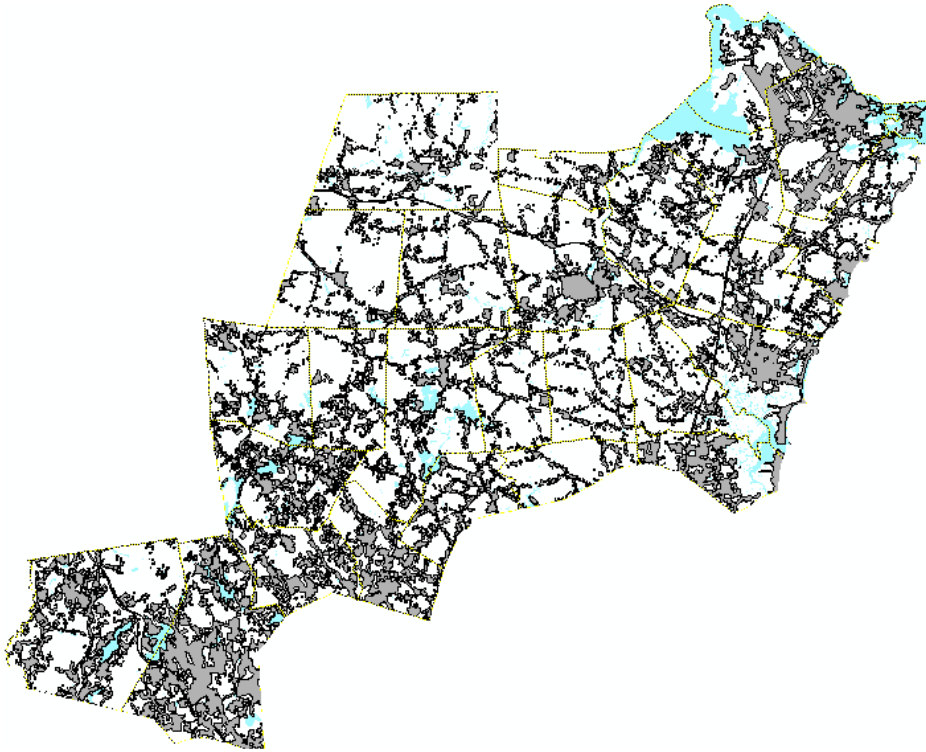
Town	Year	Lines/Poly	Format	Consultant	Other Years
Atkinson	2004	Polygon	Shapefile	Terramap/RPC	
Brentwood	2005	Polygon	Shapefile	Cartographic Assoc	Older Tiff
Danville	2005	Lines	DWG	Dollard	2002,2004
East Kingston	2004	Lines	DWG	Dollard	2002
Epping	2003	Polygon	Shapefile	UNH Engineering	2002
Exeter	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

Note: this table changes often, this may not be up to date.

**Distribution Format:** Most datasets can be distributed as shapefiles.

D. Developed/Non-Developed Lands

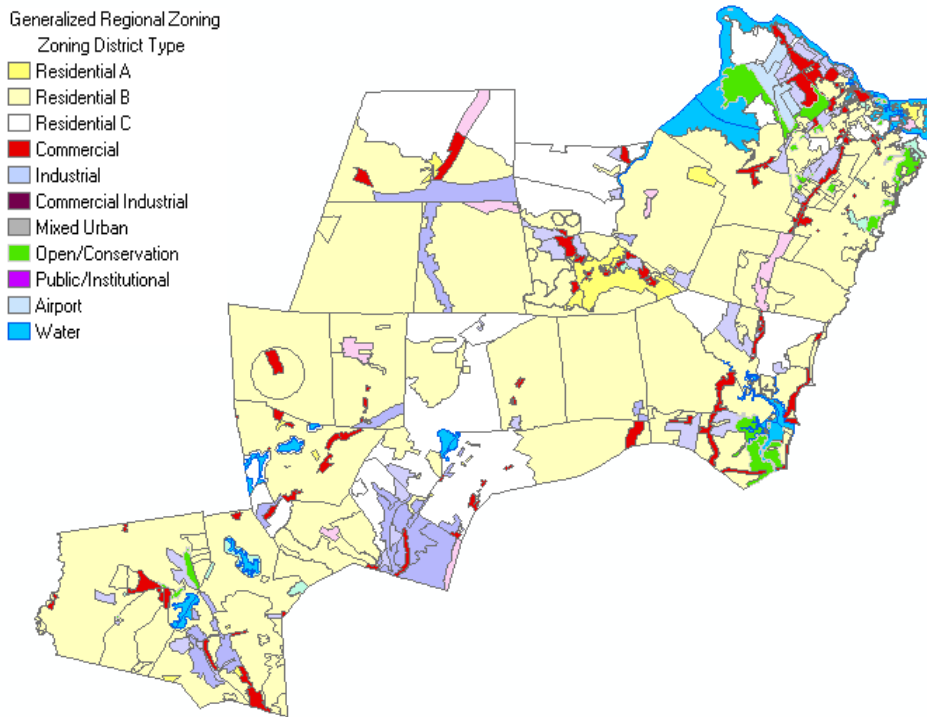


**Available for:** RPC Region

**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

2008 Color Orthophotos, 1 foot resolution are available for the southern half of the county.

2005 Color Orthophotos, 1 foot resolution are available throughout the county from GRANIT

**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

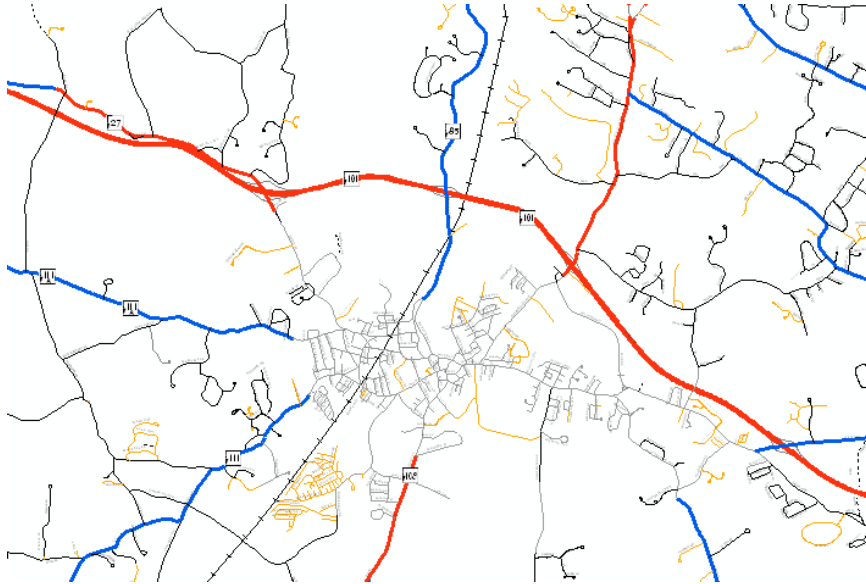
*More Information...*

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](http://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 Oct 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.

**SYSCCLASS** \_\_\_\_\_ **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:

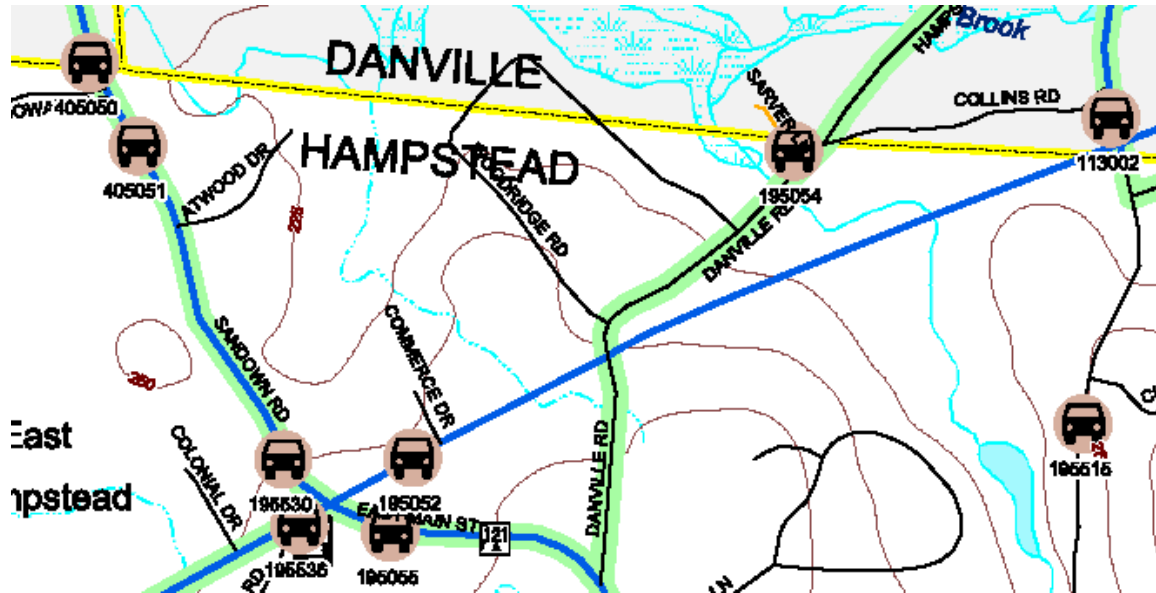
<u>Code</u>	<u>Descriptions</u>
00	Non-Public roads Example; Class VI
01	Principal Arterial -- Interstate
02	Principal Arterial -- Other
06	Minor Arterial
07	Major Collector
08	Minor Collector
09	Local

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

## ARTICLE XIV Traffic Count Locations

Available for: RPC Region



**Traffic Count Locations** were mapped by NHDOT and RPC over our standard base map. Traffic Counts were collected by NHDOT and RPC. Traffic count locations are labeled by a unique 'Site Code' value, as found in the NHDOT traffic count database. For traffic volume information refer to the most recent information found on the NHDOT website: <http://webster.state.nh.us/dot/transportationplanning/traffic/rockingham.htm>

**Distribution Format:** Shapefile, includes traffic count fields for years 1996 through 2003.