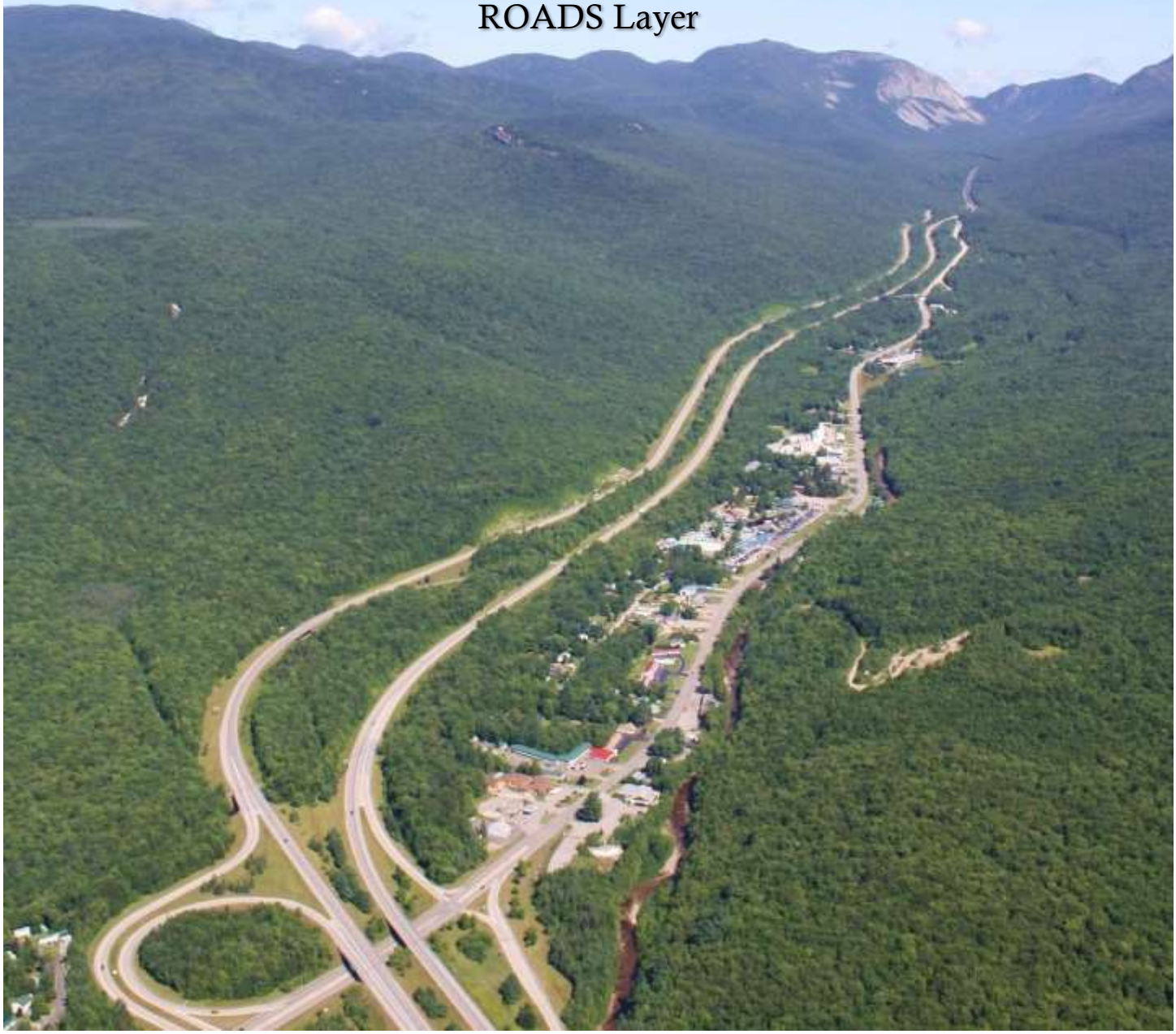
Roadway Data Inventory Manual

A quick reference guide to NHDOT's Geographic Information System
ROADS Layer



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PREFACE

The following document is a reference guide to the data contained in the attributes of the **NHDOT Roads Layer,** as well as some information from related layers in the NHDOT Geodatabase. This guide is organized into two different parts: Administrative and Location Information, and Physical Roadway Characteristics. In each section, one can find definitions for each data class involved, as well as the standards and procedures involved in collecting, processing, and cataloguing this data. For an abbreviated guide to the information presented, please see the **Metadata for the Roads Layer.** If you require data beyond what is shown, or if you find an error, please contact the GIS Section at the New Hampshire Department of Transportation, Bureau of Planning:

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BEFORE YOU BEGIN

Before you begin using this manual, a few items should be defined:

Roadway Sections – You will find that this manual refers many times to roadway sections. A roadway section is defined as a section of roadway (line segment) connecting two points or *nodes (see below).* GIS Users will recognize these as Anchor Sections, however, due to the wide demographic that this manual serves, the RDI committee settled on "roadway section" as the most intuitive naming convention. This convention is also congruent with the convention of the Road Surface Management System, RDI's sister program.

Nodes – Nodes are most commonly created at intersections. Town nodes are assigned a number in sequential order, starting from 1 in each town. NHDOT holds a database of all nodes in the state. This database contains the town node number, but also uses a Unique ID for each individual node, which eliminates any duplicate numbers in the system.

Direction of Observation – Unless otherwise noted, the direction of observation is in increasing order of route milepost.

NOTE: This data set is the property of the State of New Hampshire and is available for public use under the State's Right-to-Know laws. The data is under continual review and is not guaranteed to be free of errors or omissions. It represents the efforts of the NH Department of

Transportation to deliver an accurate statewide roadway network with updated roadway inventory information. No claim is made as to the validity or reliability or to any implied uses of these data.

PART 1: ADMINISTRATIVE AND LOCATION INFORMATION

Administrative and Location data is essential information that is collected and maintained for each roadway. The data are references that identify a section's location, as well as its functions and classification, and are collected from the first break (usually an intersection) of a roadway section to the second (ending) break of that section.

Administrative and Location Information serves to identify and classify all of the roadways in the state of New Hampshire. Starting with the Statewide Route Identifier (a sort of serial number unique to each road), followed by the road's names(s), the town and county in which the roadway lies, and its classification and maintenance information.

ADMINISTRATIVE AND LOCATION

- Statewide Route Identifier
- NHDOT/NHDOS Official Street Name
- Street Name Aliases
- Section Number
- Nodes
- Town ID/Town Name
- County ID/County Name
- Functional Classification
- Legislative Class
- Winter Maintenance Agreement
- Summer Maintenance Agreement
- Ownership
- National Highway System Class
- Federal Truck Route Designation

STATEWIDE ROUTE IDENTIFIER (SRI)

The Statewide Route Identifier (SRI) is the quickest way to access roadway information using a single code. Note that all sections of a route (roadway), not including adjacent ramps or slip ramps *(see Appendix C)* are given the same SRI. For instance, Bow Center Rd/Logging Hill Rd/South St/Woodhill Rd., Bow, NH (which is composed of 28 anchor sections, and has four unique street names) has an SRI of **N0510050__** along its entire length. Each section is given the same SRI as the continuous route because they are segments of a single roadway.

KEY INFORMATION

Data Name:
SRI

Definition:
Statewide Route Identifier, a 10-digit identification number assigned to each roadway in the state.

Data Type:
The SRI is entered in the following structure: *PTTTRRRRSD*, as shown in the flowchart on following page.

Source:
Manually Generated (NHDOT)

Data Accuracy: High

Exceptions/Special Circumstances:

- SRI's are manually generated. For each new road, the Route Number *(see flowchart, page 25)* is assigned in ascending sequential order from the penultimate.
- All slip ramps (see Appendix C) for L and N roads are manually assigned a sequential SRI in each town.
- Topology is included in state and federal route systems (US, NH, and Interstate routes, including non-numbered state routes). No Topology is included in roadways classified as L or P. (Aerial photograph is included)

STATEWIDE ROUTE IDENTIFIER - ASSIGNMENT PROCESS

Traditional SRI Structure is: *PTTTRRRRSD*, where:

P = Route Prefix

- Y = Slip ramp
- R = Ramp
- T = Turnpike
- I = Interstate
- U = US route
- S = Numbered state route
- N = Non numbered state routes
- C = Circle
- L = Local road
- F = Federal road
- M = Maintenance road (Non-public)
- P = Private road
- Z = Maintenance road (Out of State)

TTT = Town Identification Number

- Three digit town identification number
  - For example, Concord's Town Identification Number is '099'
  - (for "numbered" Routes *(i.e. Route 101)* = 000)

RRRR = Route Number

- Sequential in each town. Right justified and zero-filled
  - For numbered routes, the route number is the route's numerical index (*i.e. for Route 101A, RRRR =0101)*
  - For Turnpikes, RRRR = the turnpike's initials or abbreviation, right justified and zero-filled.
  - Turnpike Names : 'FEET' = FE Everett,'STAR'=Blue Start, 'SP' = Spaulding

S = Route Suffix

- i.e. State Routes: 101A, 11B, 11C
- If none, S = _

D = Secondary Direction of Divided Highways *(see sidebar, right)*

- S = South
- W = West
- _ = Bi-directional or primary direction of divided highway (North or East bound)

KEY INFORMATION

Town Identification Numbers are explained later in this manual. For a full list of New Hampshire Town Identification Codes, please see Appendix A of this manual.

NHDOT Surveys all State and Federal Highways from South to North, or from West to East. This directionality is known as the direction of inventory.

The direction of inventory delineates the northbound or eastbound barrel of a divided highway system as the primary direction.

Southbound and Westbound barrels are considered secondary, and are delineated by an "S" or "W" as the tenth character of their SRI.

Ramps do not follow typical SRI structure. The structures for these are shown in the table below:

For ramps servicing L or N roads:

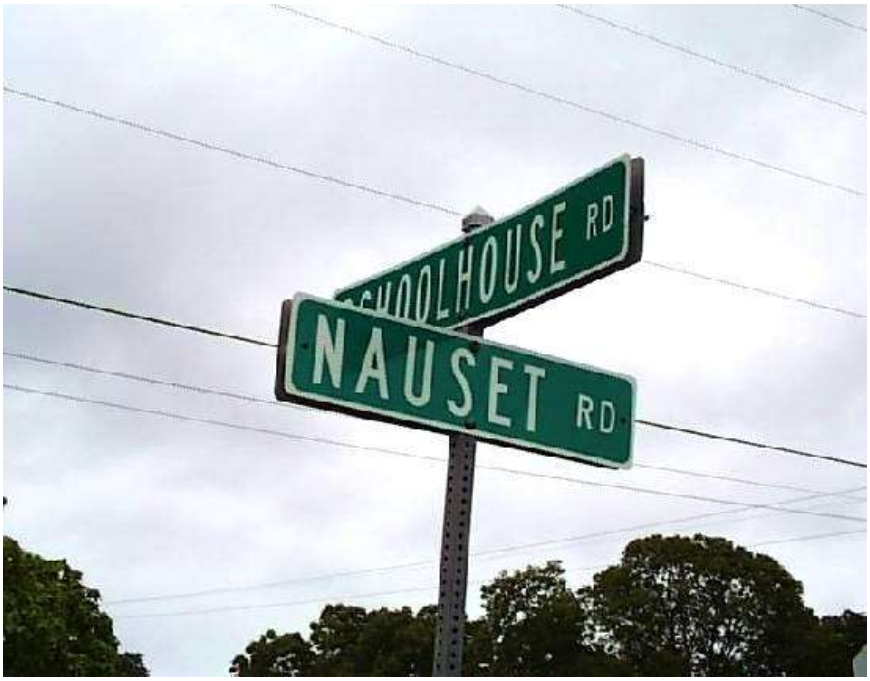
RPTTTSDEEA

For ramps servicing all numbered routes:

RPRRRSDEEA

where EE is the exit number and A is section lettering (A, B, C, etc.)

STREET NAME



Our roads are named to affirm a unique and positive location of that roadway section in reference to all other roads, the town, the county, the state, the country, and the world. Road names are also the method by which most people identify a road, and do their daily navigating. The Department of Transportation keeps a reconciled database of road names on file in the Roads layer, which is updated by the Department of Safety, Regional Planning Commissions, and municipalities. This communication and conglomeration of data allows for the greatest possible level of comfort and safety for each and every driver and rider on New Hampshire's roadways. This field is populated by the road names submitted to NHDOT by the NH Department of Safety. For local road name aliases, see "STREET_ALIASES".

KEY INFORMATION

Data Name: STREET

Definition:
The name for each respective road, as supplied by the NH Department of Safety. The DOT Database has been reconciled with the NH Department of Safety *Emergency 911* road name database; however, there are still some discrepancies between locally accepted names and the E911 names.

For a complete list of United States Postal Service road name suffixes and their abbreviations, see Appendix B

Data Type:
Text - name of road (with suffix).

Source:
NHDOT, updated by NHDOS

Data Accuracy: Constant Update

Exceptions/Special Circumstances:
May differ from "STREET_ALIASES" due to discrepancies in survey or in lexical tendencies.

HI-ORDER ROUTE

Many routes run concurrently in New Hampshire for at least a portion of their length. In order to prevent confusion among transportation and public safety officials, NHDOT has ordered all concurrent routes, based on their route type (see "Statewide Route Identifier"). From this order, NHDOT has identified the route of highest magnitude, or the high-order route, on each section. This ordering allows for consistent reference to sections with concurrent routes.

KEY INFORMATION

Data Name: ROUTE_HIORDER

Definition:
The high order route (SRI) of the roadway section is the higher order route when concurrent routes exist. Concurrent SRI's may exist on a single roadway section, and a complex algorithm determines the high order route, with considerations to route order (Y, R, T, I, U, S, N, C…), direction, and suffix. Turnpikes take precedence over concurrent Interstate sections, and a route may not take presence over a ramp or slip-ramp designation.

Data Type:
Text - name of hi-order route

Source: NHDOT

Data Accuracy: Constant Update

Exceptions/Special Circumstances:
See *STATEWIDE ROUTE IDENTIFIER* for more information on the ordering of route types.

STREET NAME: ALIASES

With over 106,000 roadway sections in the state, there are bound to be some discrepancies across the independent databases that each organization uses to store and process roadway data. NHDOT has partnered with the University of New Hampshire's Technology Transfer Center to work towards complete coverage of the state road network for all users. Road names have been submitted by the municipalities and RPCs to populate this STREET_ALIASES field. By keeping not only the state-accepted name, but the local aliases in the Roads database, we hope to ensure a greater level of security and accessibility to emergency, postal, and utility services.

KEY INFORMATION

Data Name: STREET_ALIASES

Definition:
The name for each respective road, as supplied by the municipality or RPC. The NHDOT Database has been reconciled with the NH Department of Safety *Emergency 911* road name database; however, there are still some discrepancies between locally accepted names and the E911 names.

For a complete list of United States Postal Service road name suffixes and their abbreviations, see Appendix B

Data Type:
Text - name of road (with suffix)

Source: NHDOT, updated by municipality

Data Accuracy: Constant Update

Exceptions/Special Circumstances:
May differ from STREET due to discrepancies in survey or in lexical tendencies.

NODE 1 AND NODE 2

Without nodes, the line sections in the Roads layer could not exist. The nodes define the geometry of sections, which are joined to form SRI_ Hi-Order Routes, Roads, and other linear layers. Nodes are defined at intersections and at Municipal boundary lines or at significant changes in roadway characteristics. For more information on nodes, please see the description at the introduction to this manual, or the metadata for the Nodes layer, published by NHDOT.

KEY INFORMATION

Data Name:
NODE_1

Definition:
A node that defines the start point of a section of roadway along a roadway under the same name. Without the nodes, a roadway line section cannot exist. Nodes are assigned a number in sequential order, starting from "1" in each town. Nodes are never deleted, but they can be retired.

Data Type:
Numerical - Town Node Number (AC_NUM)

Source:
NHDOT/RSMS

Data Accuracy: High

Data Name:
NODE_2

Definition:
The node that defines the terminal end of a roadway section. Nodes are assigned a number in sequential order, starting from "1" in each town. Nodes are never deleted, but they can be retired.

TOWN IDENTIFICATION NUMBER/TOWN NAME

New Hampshire's town and city names carry the diverse heritage of the Granite State. Often dating back to the original families who settled a region, the local history in each name gives each New Hampshire town a unique identity among the rest of the state. These names also serve an important purpose in the NHDOT RDI system: Town names and their matching ID's allow state agencies to easily search for features within a town or group of related towns. With this ability, agencies such as the Department of Transportation can focus funding in the areas where it is most needed, as well as easily identifying which town a piece of data belongs in, increasing safety and efficiency.

Note that many towns have "subtowns" or villages (such as Winnisquam or Penacook) that are not represented with a TOWN_ID due to the fact that they are not municipally incorporated.

KEY INFORMATION

Data Name:
TOWN_ID
Definition:
A 3-digit ID (odd-numbered) assigned to each NH town by NHDOT. See Appendix B for a full list of Town ID codes and Town Names.

Data Type:
Numerical - TOWN_ID codes are auto-generated as the first 3-digits in the SID (see Appendix) field of 'Anchorsections'. From there, they populate the 'TOWN_ID' field of the Roads Layer Attribute Table

Source: NHDOT Generated

Exceptions/Special Circumstances: None

Data Name:
TOWN_NAME

Definition:
The name of the New Hampshire town or city through which the roadway or roadway section passes. Populated by the 'TOWN_ID' field

Data Type:
Text - Full town name is auto-generated in the TOWN_NAME field. For complete description, see Appendix

Source:
Town Charters. NHDOT Maintains a Town Info Table, which services all DOT uses of town names and information.

Exceptions/Special

COUNTY IDENTIFICATION NUMBER/COUNTY NAME

The ten New Hampshire counties separate the state into a secondary level of administrative division. The counties are responsible for several administrative duties that encompass all of the municipalities in their jurisdiction.

Table 1: County ID Codes and County Names

County_ID	County Name
001	Belknap
003	Carroll
0035	Cheshire
007	Coos
009	Grafton
011	Hillsborough
013	Merrimack
015	Rockingham
017	Strafford
019	Sullivan

KEY INFORMATION

Data Name:
COUNTY_ID

Definition:
Odd, three-digit code (001-019) denoting in which New Hampshire County the roadway section lies.

Data Type:
Numerical - The COUNTY_ID is auto-generated.

Source: NHDOT generated

Exceptions/Special Circumstances:
None

Data Name:
COUNTY_NAME

Definition:
The name of the New Hampshire County in which the roadway or roadway section lies. Populated by the COUNTY_ID field.

Data Type:
Text - Full name of the county is auto-generated in the COUNTY_NAME field.

Source: Fixed

Exceptions/Special Circumstances: None

FUNCTIONAL CLASSIFICATION

All roadways and highways are grouped by the Federal Highway Administration into one of thirteen classes, depending on the characteristics of the roadways and their allowed degree of land access, as shown in the tables below:

Table 2: Rural Functional Classifications

Code	Description
00	Non-Public Roads, including Private and Leg. Class 6
01	Principal Arterial - Interstate
02	Principal Arterial - Other
03	Minor Arterial
07	Major Collector
08	Minor Collector
09	Local - Public

Table 3: Urban Functional Classifications

Code	Description
00	Non-Public Roads, including Private and Leg. Class 6
11	Principal Arterial - Interstate
12	Principal Arterial - Other Freeways and Expressways
14	Principal Arterial - Other
16	Minor Arterial
17	Collector
19	Local - Public

KEY INFORMATION

Data Name: FUNCT_CLASS

Definition: Functional classification is the process by which roadways are grouped into classes according to the levels of mobility (through) and access (destination) that they provide. Federal regulation regarding functional class can be found in **23 CFR 470.105.**

Data Type: Numerical - The thirteen functional classes are each represented by a two-digit code, as shown to the left.

Source: Manually-generated (NHDOT/FHWA)

Data Accuracy: High

Exceptions/Special Circumstances: NONE

Data Name: FUNCT_CLASS_DESCR

Definition: Description of the Functional Class of the road.

Data Type: Text - Description corresponding to the Functional Class code, as show to the left.

Source: Manually-generated (NHDOT/FHWA)

Data Accuracy: High

Exceptions/Special Circumstances: NONE

**NOTE: Functional Class is completely unassociated with New Hampshire Legislative Class. It is its own classification, promulgated by*

FUNCTIONAL SYSTEM

The Functional System is the FHWA arrived Functional Classification System. The functional classification of public roadways is coded according to the functional system. The combination of functional system and urban/rural destination translates to an equivalent functional classification. The functional classification attribute will eventually be phased out from the Roads attribute inventory.

Valid Codes:

Number	Description
0	Non-Public Roads (NH Only)
1	Principal Arterial - Interstate
2	Principal Arterial – Other Freeway | Expressway
3	Principal Arterial - Other
4	Minor Arterial
5	Major Collector
6	Minor Collector
7	Local

KEY INFORMATION

Data Name: FUNCT_SYSTEM

Definition: Functional grouping of classification is the roadways according to the levels of mobility (through) and access (destination) that they provide.

Data Type: Numerical - The functional system codes are each represented by a integer, as shown to the left.

Source: Auto-generated (NHDOT/FHWA) using Functional classification and Urban Id attributes.

Data Accuracy: High

Exceptions/Special Circumstances: NONE

LEGISLATIVE CLASS

Legislative classification allows the state of New Hampshire to delineate roadways as Primary Highways owned and maintained by the state (Class I), State-Aid Secondary Highways (Class IIa), Secondary Highways owned and maintained by municipalities (Class IIb), Recreational Roads (Class III), Roads in Urban Compact Areas (Class IV), Local Roads (Class V), non-maintained Local Roads (Class VI), and Federal Roads (Class VII).

NOTE: New Hampshire Legislative Class is completely unassociated with Federal Highway Functional Class.

KEY INFORMATION

Data Name: LC_LEGEND

Definition:
Code used for mapping purposes to simplify the Legislative Class coding.

Data Type:
Text - description, either "Private", "State", "Local", "Recreation", "Federal", or "Not Maintained"

Source: Manually-generated

Data Accuracy: High

Exceptions/Special Circumstances: None

Data Name: LEGIS_CLASS

Definition:
Classification of roadways using Roman numerals I- VII

Data Type:
Roman numeral, as shown at left

Source:
Manually-generated
(New Hampshire RSA 229:5)

Data Accuracy: High

Exceptions/Special Circumstances: None

Data Name: LC_II_TYPE

Definition:
Designates Class II State Aid Highways as an improved or unimproved portion of a state highway

Data Type: Code - Describing whether the section is Class IIA

LEGISLATIVE CLASS (CONTINUED)

Legislative Class Descriptions

Class I - Primary Highways: Owned and maintained by the state.

Class II - Secondary Highways: Divided into two categories:
2A - RSA 230:3 Class II State Aid Highways; Improved Portions. – The department of transportation shall assume full control and pay the costs of reconstruction and maintenance of all class II highways which have been improved to the satisfaction of the commissioner of transportation.
2B – RSA 230:4 Unimproved Portions. – All other class II highways shall be maintained by the city or town in which they are located, and may be improved to the satisfaction of the commissioner of transportation with the use of state aid funds.

Class III - Recreational Roads: All recreational roads leading to, and within, state reservations designated by the legislature

Class IV - Compact Roads: All highways within the compact sections of cities and towns listed in the sidebar. The compact section of any such city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the commissioner of transportation, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year and not for a season only.

Class V - Local Roads: Owned and maintained by the municipality.

Class VI – Non-maintained Local Roads: Owned by the municipality. Not maintained.

Class VII - Federal Roads: Owned and maintained by the Federal Government

NOTE: Roadways with a legislative class of "0" are Private Roadways

KEY INFORMATION

Municipalities in which compact areas may be established:

Amherst
Bedford
Berlin
Claremont
Concord
Derry
Dover
Durham
Exeter
Franklin
Goffstown
Hampton
Hanover
Hudson
Keene
Laconia
Lebanon
Londonderry
Manchester
Merrimack
Milford
Nashua
Pelham
Portsmouth
Rochester
Salem
Somersworth

For more information, see New Hampshire RSA 229.5.

WINTER MAINTENANCE AGREEMENT

Winter maintenance allows for safe travel on New Hampshire roadways in the inclement weather during the winter months. From snow removal and roadway treatment (including salting and sanding) to pothole filling and storm clean up, the responsibility of winter maintenance on our roadways is a large one.

This responsibility does not necessarily fall to the entity that owns the road. NHDOT often makes agreements with other agencies (such as municipal public works departments or the Vermont Agency of Transportation) to maintain each other's roadways. These agreements work to ensure continuity and efficiency in winter maintenance efforts and improve the safety of winter travel.

KEY INFORMATION

Data Name:
WINTER_MAINT

Definition:
Designates the party responsible for winter-based maintenance such as plowing and roadway treatment, etc.

Data Type: Text/Numeric

- For numeric codes, first digit indicates highway district # (1-6 for standard highway districts, or 8 for turnpikes), while remaining digits indicate shed # within the district.
- Alphanumeric codes include VT (State of Vermont), DRED (maintained by Department of Resources and Economic Development), TOWN (maintained by the town), NM (not maintained) or PRIVATE.

Source: NHDOT Operations

Data Accuracy: High

Exceptions/Special Circumstances: None

SUMMER MAINTENANCE AGREEMENT

In the summer months, it is important for roadway maintenance agencies such as the Department of Transportation and municipal highway departments to repair the damage done to roadways during the winter. Summer maintenance includes preventative, repair maintenance, and rehabilitation, and focuses on pothole, culvert, and shoulder maintenance.

Just as with winter maintenance responsibilities, summer maintenance responsibilities do not always fall to the agency that owns the roadway. NHDOT makes many agreements with other agencies to exchange summer maintenance duties based on usage and efficiency. These agreements are mutually beneficial and increase the coverage of summer restoration and improvement efforts.

KEY INFORMATION

Data Name:
SUMMER_MAINT

Definition:
Designates the party responsible for summer-based maintenance, such as pothole filling, culvert upkeep, etc.

Data Type: Text/Numeric

- For numeric codes, first digit indicates highway district # (1-6 for standard highway districts, or 8 for turnpikes), while remaining digits indicate shed # within the district
- Alphanumeric codes include VT (State of Vermont), MAINE (State of Maine), DRED (maintained by Department of Resources and Economic Development), TOWN (maintained by the town), NM (not maintained) or PRIVATE.

Source: NHDOT Operations

Data Accuracy: High

Exceptions/Special Circumstances: None

OWNERSHIP

Sometimes, roadways are damaged beyond the realm preventative maintenance. Natural phenomena, unexpected loadings, and repetitive wear-and-tear can cause deterioration and distresses in a roadway that warrant significant repair or replacement efforts. When the need for repair maintenance or reconstruction to a roadway arises, it is important for all of the parties involved to know on whom the responsibility lies to complete it and to fund it. With Ownership data effectively catalogued, large maintenance and reconstruction projects can be accomplished in a timely manner.

KEY INFORMATION

Data Name:
OWNERSHIP

Definition:
Designates the party financially responsible for major roadway repairs such as destroyed culverts

Data Type: Text/Numeric

- For numeric codes, first digit indicates highway district # (1-6 for standard highway districts, or 8 for turnpikes), while remaining digits indicate shed # within the district
- Alphanumeric codes include VT (State of Vermont), MAINE (State of Maine), DRED (maintained by Department of Resources and Economic Development), TOWN (maintained by the town), NM (not maintained) or PRIVATE.

Source: NHDOT Operations

Data Accuracy: High

Exceptions/Special Circumstances: None

Data Name:
OWNERSHIP_DESCR

Definition:
Classifies ownership into categories

Data Type:
Text - "District," "Turnpikes," "Town," "DRED," "Private," "State of Vermont," or "State of Maine"

Data Accuracy: High

LEVEL OF WINTER MAINTENANCE (PLOW) SERVICE

NHDOT strategically prioritizes its winter maintenance efforts using a system of designated winter maintenance service guidelines, commonly referred to as "plow level." The levels are shown in the table below:

Table 4: Plow Levels

Code	Description
1	Highways on the Interstate and Turnpike Systems and those highways carrying 15,000 vehicles or more daily should have full width bare pavement as soon as practical after a winter storm terminates.
2	Highways on the State system and carrying 5,000 to 15,000 vehicles daily should have full width bare pavement as soon as practical after a winter storm terminates.
3	Highways on the State system carrying 1,000 to 5,000 vehicles daily should have some bare pavement as soon as practical after a winter storm terminates.
4	Highways on the State highway system carrying less than 1,000 vehicles daily should have bare pavement in left wheel tracks near the center of the highway as soon as practical after the winter storm. Included in this classification are highways carrying less than 500 vehicles daily for which snow-covered pavement is deemed acceptable.

KEY INFORMATION

Data Name:
PLOW_LEVEL

Definition:
Plowing designation for the winter maintained State highway system. These designations have been determined by traffic volume primarily but have been modified to include consideration of posted speed, highway grade, truck volume, accessibility to hospitals and emergency services, special events, second and/or third shifts at major industrial complexes and major commercial traffic generators as well as to establish continuity between highway districts.

Data Type:
Numerical - Code for plow level, as shown in the table at left.

Source: NHDOT Operations

Data Accuracy: High

Exceptions/Special Circumstances:
For more detailed information, see the *NHDOT Winter Maintenance Snow Removal and Ice Control Policy* at:

http://www.nh.gov/dot/org/operations/highwaymaintenance/documents/WinterMaintSnowandIcePolicy.pdf

NATIONAL HIGHWAY SYSTEM (NHS)

The National Highway System was established in 1995 as a strategic network of highways connecting most locations in the United States. NHS comprises the Eisenhower Interstate Highway System and certain other Federal and State routes, and services major public transportation hubs such as bus terminals, train stations, airports, and ports. It constitutes only a small portion of the nation's roadways, but carries a major portion of the nation's traffic. NHS also plays a pivotal role in the Strategic Highway Network, linking major military installations in the United States.

Table 5: NHS Codes

Code	Description
9	Major Ferry Terminal
8	Major Pipeline Terminal
7	Major Public Transportation Terminal
6	Major Inner City Bus Terminal
5	Major Rail/Truck Terminal
4	Major Amtrak Station
3	Major Port Facility
2	Major Airport
1	Non-connector NHS
0	NOT part of NHS

KEY INFORMATION

Data Name: NHS

Definition: Denotes classification of a roadway section in the National Highway System.

Data Type: Numerical - (0-9) NHS Codes in the Roads Layer are shown in the table below.

Source: Highway Performance Monitoring System

Data Accuracy: High

Data Name: NHS_DESCR

Definition: Describes the NHS classification of a road.

Data Type: Text - NHS Code descriptions are shown in the table below.

Data Name: IS_NHS

Definition: Yes/No field, denotes whether a road is part of NHS or not.

Data Type: Text - "Yes" or "No"

FEDERAL TRUCK ROUTE DESIGNATION

Trucking carries an enormous amount of the nation's goods from manufacturing and production centers to the populous. Without trucking, high-demand goods would remain stranded at major air, sea, or rail-based transportation hubs. FHWA allocates certain roadways as federally designated truck routes through their Highway Performance Monitoring System (HPMS), in order to increase efficiency in trucking and in civilian traffic flow.

Table 6: Truck Route Designations

Code	Description
0	Non-designated Truck Route
1	Designated Truck Route

KEY INFORMATION

Data Name:
TRK_ROUTE

Definition:
Denotes designation (or lack thereof) as a truck route, under federal regulatory authority 23 CFR 658.

Data Type:
Numerical - Code 0 or 1, as shown in table at left.

Source:
Highway Performance Monitoring System

Data Accuracy: High

Data Name:
IS_TRK_ROUTE

Definition:
Yes/No field designating whether or not a roadway section is part of a truck route.

Data Type: Text - "Yes" or "No"

TRAFFIC COUNTER IDENTIFICATION NUMBER

Traffic counters are used on many state-maintained roadways in order to assess the amount of wear-and-tear on a roadway, and for traffic-safety studies. Constructed of several pressurized rubber hoses and a specialized counting device, a traffic counter can count either the number of axles or the number of vehicles that cross-over the counter.

KEY INFORMATION

Data Name:
COUNTER_ID

Definition:
Identification number of the traffic counter in use on the roadway section

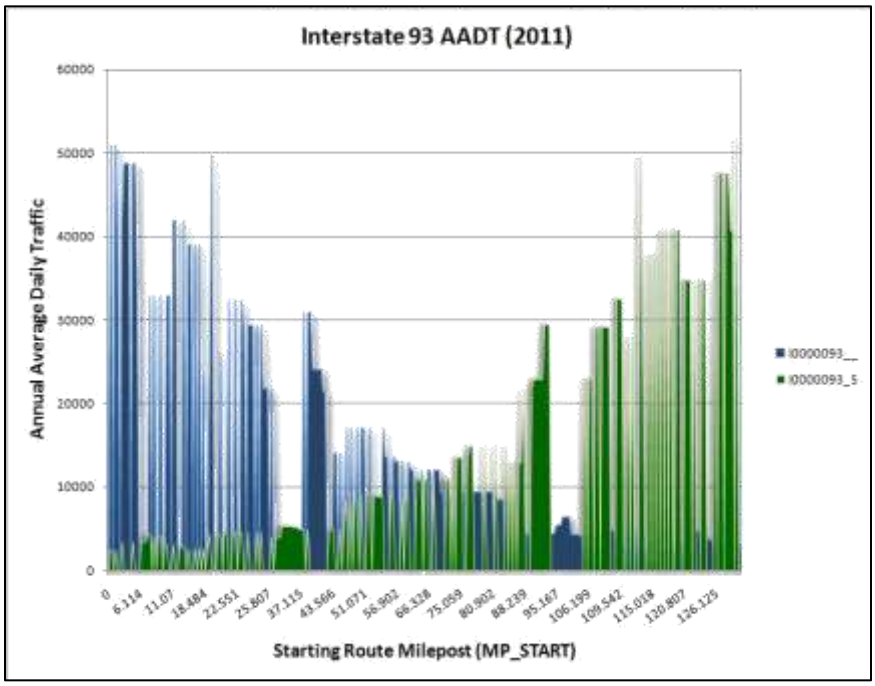
Data Type:
Numerical - ID number

Source:
Manually-generated (NHDOT Bureau of Traffic)

Data Accuracy: High

Exceptions/Special Circumstances: None

ANNUAL AVERAGE DAILY TRAFFIC



Annual Average Daily Traffic is data collected for the FHWA's Highway Performance Maintenance System. The data, represented in number of vehicles per day (averaged over the course of a year), is used for apportionment, administrative, legislative, analytical, and national highway database purposes. All federal-aid highways, including ramps located within grade-separated interchanges are surveyed for annual average daily traffic.

KEY INFORMATION

Data Name:
AADT_CURR_YEAR

Definition:
Year for which AADT was last updated

Data Type:
Numerical - Year (YYYY)

Source: NHDOT

Data Accuracy: High

Data Name:
AADT

Definition:
Annual Average Daily Traffic

Data Type:
Numerical - number of vehicles

Source:
NHDOT, municipalities, RPC, HPMS

Data Accuracy: High

TOLL

From NHDOT Turnpike Bureau's Operations Website:

"The New Hampshire Turnpike System presently consists of 88.9 miles of limited access highway, 36 miles of which are part of the US Interstate Highway System, comprising a total of approximately 617 total lane miles. Since [its inception] in 1950, the Turnpike System has contributed to the development of New Hampshire. It has also been a major factor in the growth of the tourism industry in the state. The Turnpike System comprises three limited-access highways: the Blue Star Turnpike (I-95), the Spaulding Turnpike, and the F.E. Everett Turnpike."

Table 7: Toll Codes

Code	Description
0	No Toll Charged
1	Toll Charged

KEY INFORMATION

Data Name:
TOLL

Definition:
A code for roadway section that requires a fee to access or exit from on the NH Turnpike system

Data Type:
Numerical - Toll maintained roadways are coded as follows:

Exceptions/Special Circumstances: None

Source: Highway Performance Monitoring System

Data Accuracy: High

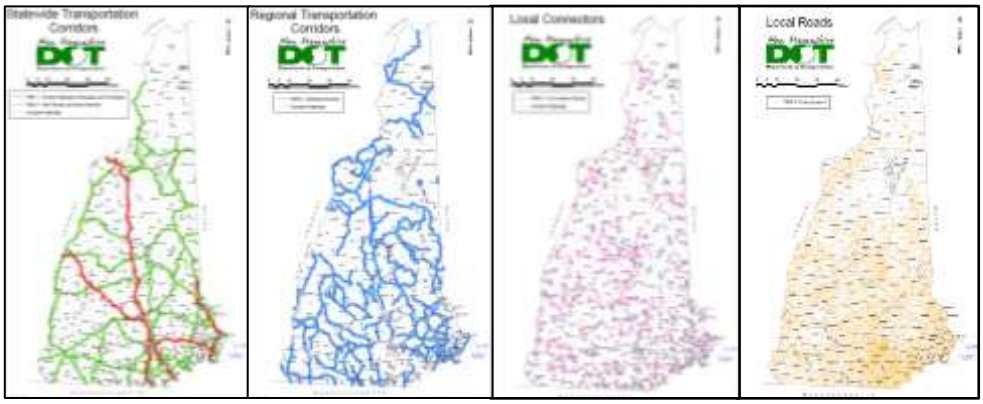
Exceptions/Special Circumstances:
None

Data Name:
IS_TOLL

Definition:
Yes/No field designating whether or not a roadway section requires a toll charge to be traveled.

Data Type: Text - "Yes" or "No"

HIGHWAY TIERS



System Purpose

A fundamental step in asset management is separating the highway system into groups based on like function. State highway groups range from statewide transportation corridors focused on mobility to local connectors focused on access to land and places. Grouping provides a common framework for analysis of condition and performance, investment levels, and operations and maintenance levels. This framework also provides the foundation to establish and communicate goals, performance targets, strategies, and project prioritizations within groups to meet customer expectations with available resources.

Adopting common strategies for highway groups aligns NHDOT's asset management approach with the performance measures of the Balance Score Card (BSC).

Statewide Transportation Corridors (Tier 1 and Tier 2)
Statewide corridors support the highest travel demand and carry passengers and freight between regions in the state and to/from New Hampshire and neighboring states. These 45% of state road miles carry 82% of the state's Vehicle Miles Traveled (VMT).

Regional Transportation Corridors (Tier 3**)**
Regional corridors primarily support travel within regions and access statewide corridors. Tier 3 roads make up 37% of state road miles and support medium traffic volumes.

Local Connectors (Tier 4)
Local connectors are state owned roads that support travel within and between communities. These 18% of state roads miles support the lowest traffic volumes and traffic speeds.

Local Roads (Tier 5)
Locally owned roadways or State owned roads within Compact limits maintained by communities out number state highways almost 3 to 1. These roadways are often the first and last roads of a trip.

KEY INFORMATION

NHDOT has separated highways into four groups comprised of 5 tiers based on their primary function and characteristics:

STATEWIDE TRANSPORTATION CORRIDORS

Highways that provide statewide travel and carry high traffic volume at high speeds

(Tier 1)

Interstates, Turnpikes, and Divided Highways

(Tier 2)

Other statewide corridors

REGIONAL TRANSPORTATION CORRIDORS

(Tier 3)

Highways that provide travel within regions, access statewide corridors, and support moderate traffic volumes at moderate speeds

LOCAL CONNECTORS

(Tier 4)

Roadways that provide travel between and within communities, and support low traffic volumes at low speeds

LOCAL ROADS

(Tier 5)

Community owned roadways that provide local access, and support varying volumes of traffic at varied speeds

Note: Compact Highways (state owned highways maintained by communities) are included in Tier 5. Compact Highways can provide the functions of Tiers 1-5.

HPMS FACILITY TYPES

Code	Description	
1	One-Way Roadway	Roadway that operates with traffic moving in a single direction during non-peak period hours.
2	Two-Way Roadway	Roadway that operates with traffic moving in both directions during non-peak period hours.
4	Ramp	Non-mainline junction or connector facility contained within a grade-separated interchange.
5	Non Mainline	All non-mainline facilities excluding ramps.
6	Non Inventory Direction	Individual road/roads of a multi-road facility that is/are not used for determining the primary length for the facility.
7	Planned/Unbuilt	Planned roadway that has yet to be constructed.

KEY INFORMATION

Data Name:
HPMS_FACILITY_TYPE

Definition:
Identification of Facility types in Roads layer to connect HMPS data for analysis.

Data Type: Include same description as for Functional system.

Source: First populated from HPMS 2014 data submission. Updated manually.

Data Accuracy: High

PART 2: PHYSICAL ROADWAY CHARACTERISTICS

A roadway section exists only between two ***nodes***. Physical roadway characteristics define the shape, feel, and use of a roadway, and are considered in a roadway's design, maintenance, and safety designations. These characteristics are recorded as a predominant value within a roadway section. Predominant means the most common value of a characteristic within a given roadway section. Physical roadway characteristics are the characteristics most often used by the general public as they describe the section.

Physical characteristics are largely surveyed by municipalities during road inventory and RSMS survey. Alternately, some data may be collected by NHDOT via Windshield Survey or through analysis of high-resolution aerial imagery. Some characteristics are collected as part of the Highway Performance Monitoring System (HPMS).

PHYSICAL ROADWAY

- Section Length
- Surface Type
- Roadway Width
- Total Number of Lanes
- Number of Auxiliary Lanes
- Lane Width
- Shoulder Type
- Shoulder Width (Left and Right)
- Direction Way

SECTION LENGTH

Section Length is the basis of some of the most valuable pieces of information that the Roads layer has to offer. Without the length of each and every roadway section, the total mileage could not be calculated and tabulated in the SRI_Hi-Order Routes layer. Without the length of a roadway or roadway system at our command, maintenance calculations would prove inaccurate, and thousands of dollars would go to waste. With the length of a section immediately at our command, our efficiency in both labor and materials is greatly increased.

KEY INFORMATION

Data Name:
SECT_LENGTH

Definition:
Length of the roadway section, in miles, measured to the nearest 0.001 mile.

Data Type:
Numerical - Auto-generated

Source: GIS Base map geometry

Data Accuracy: High

Exceptions/Special Circumstances: None

SURFACE TYPE

For maintenance and usage purposes, the surface type of a roadway or roadway section is paramount. Everyone from plow and maintenance crews to motorcyclists, bicyclists, and every day motorists need to know beforehand the surface of the roadway they will be interfacing with. Knowing if a roadway section is paved or not helps avoid unfortunate consequences, including misplaced maintenance and motor vehicle accidents.

The codes and descriptions for surface type are shown in the table below:

Table 8: Surface Types

Code	Description
1	Paved
2	Unpaved

KEY INFORMATION

Data Name:
SURF_TYPE

Definition:
The surface type of the roadway section

- "Paved" (Code 1) is defined as asphalt-surfaced roadway, but also includes other treated surfaces such as brick, cobblestone, timber, or concrete.
- "Unpaved" (Code 2) includes non-surfaced roadways such as gravel and/or dirt.

Data Type:
Code number, from table shown at left.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: Medium

Exceptions/Special Circumstances: None

SURFACE TYPE - AERIAL IMAGERY

Paved Roads:

Unpaved Roads:

KEY INFORMATION

Bi-directional U, S, or L Road: Well-maintained, striped, paved surface

US Route 4 - Lee

P-Road: Two lanes, private, unmarked paved road

Ballard St - University of New Hampshire, Durham

L Road: Rural, two-lane, unpaved road: Narrow, less maintained

Calef Hill Rd - Sanbornton

L Road: Rural two-lane unpaved roadway: Wide, well-maintained

Chemung Rd - Meredith

ROADWAY WIDTH

Roadway width is essential in virtually all NHDOT maintenance calculations. Estimations for winter maintenance materials such as road salt, as well as estimations for plow routes are all based on values calculated from roadway width. Resurfacing and other paving estimations are also completed using values derived from roadway width. Standards for these calculations can be found in the Appendix of this manual.

KEY INFORMATION

Data Name:
ROADWAY_WIDTH

Definition:

- *For PAVED ROADWAYS* - The total width of the pavement, measured from edge of pavement to edge of pavement, including paved shoulders, designated bike lanes, painted medians, and parking. **DO NOT INCLUDE** positive barrier medians or curbed medians. Measured perpendicular to the path of travel, to the nearest foot.
- *For UNPAVED ROADWAYS* - Total width of the visible travel way, as determined from visual inspection. Measured perpendicular to the path of travel, to the nearest foot

Data Type:
Numerical - Number of feet, measured to the nearest foot.

Source: NHDOT or Municipality - Collected via Aerial Imagery or Windshield Survey

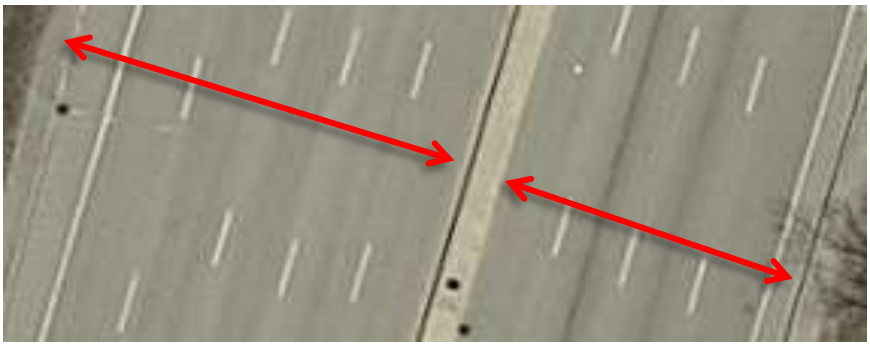
Data Accuracy: Low

Exceptions/Special Circumstances: None

ROADWAY WIDTH - AERIAL IMAGERY

KEY INFORMATION

With positive barrier median

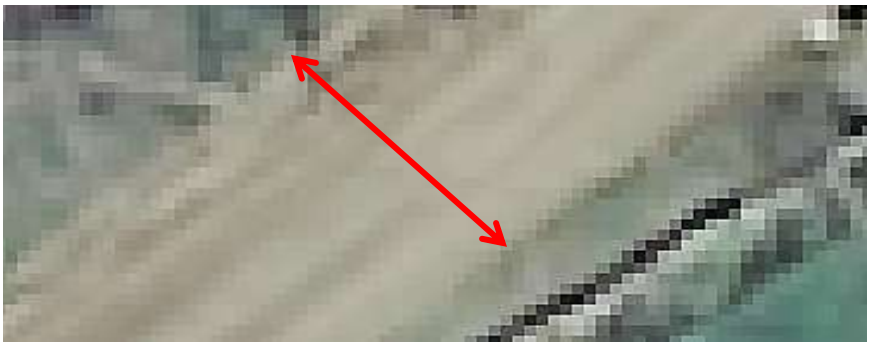


Roadway width, measured from edge of pavement to edge of pavement, including the maintained and surfaced shoulders on each side. Notice the concrete barrier median is **not** included in the roadway width.

With auxiliary lane

Roadway width, measured from edge of pavement to edge of pavement, including the maintained and surfaced shoulders on each side. Notice the shared-left-turn lane **is** included in the roadway width.

Unpaved roadway



Roadway width, measured from edge of travelable roadway surface to edge of travelable roadway surface.

NUMBER OF LANES

The roadway network in the state of New Hampshire contains a wide array of roadway types, from interstate highways to unmaintained dirt roads. The feature that perhaps varies the most over the many varieties of roadways is the number of lanes. As such, number of lanes is one of the most important attributes collected by New Hampshire Department of Transportation. It is used (in conjunction with barrel miles) to calculate lane miles, salt lane miles, and plow miles. These calculations are used to estimate maintenance costs *(for more info, see Appendix)*. On the following page, you will find images of common roadway layouts, with the number of lanes labeled and explained.

KEY INFORMATION

Data Name:
NUM_LANES

Definition:
Total number of lanes on the roadway, including both directions. Auxiliary lanes, such as truck lanes, turning lanes, and passing lanes are included.

Data Type:
Numerical - integers only, representing number of lanes. For instance, for a four-lane roadway, a four (4) is recorded.

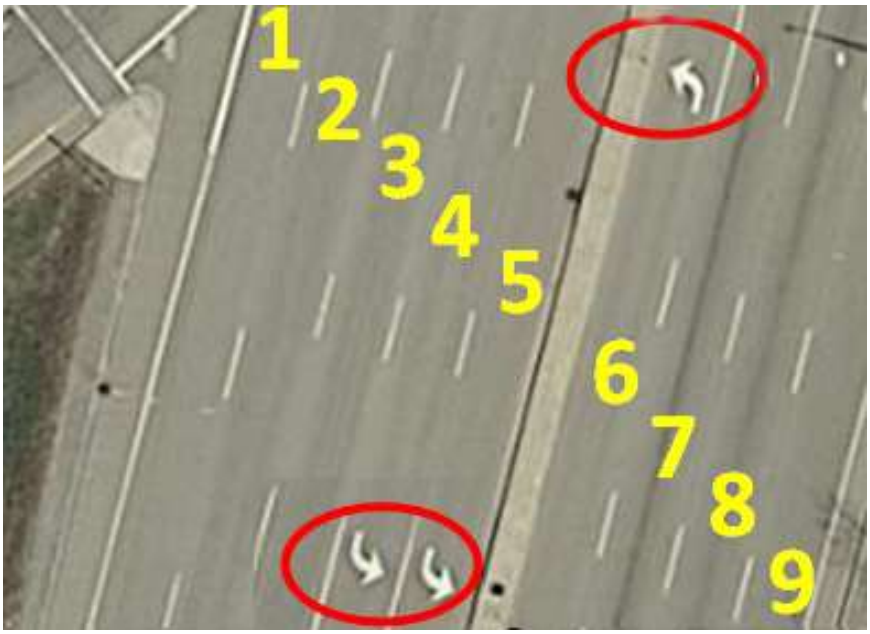
Source: Municipality/Aerial Imagery

Data Accuracy: Low

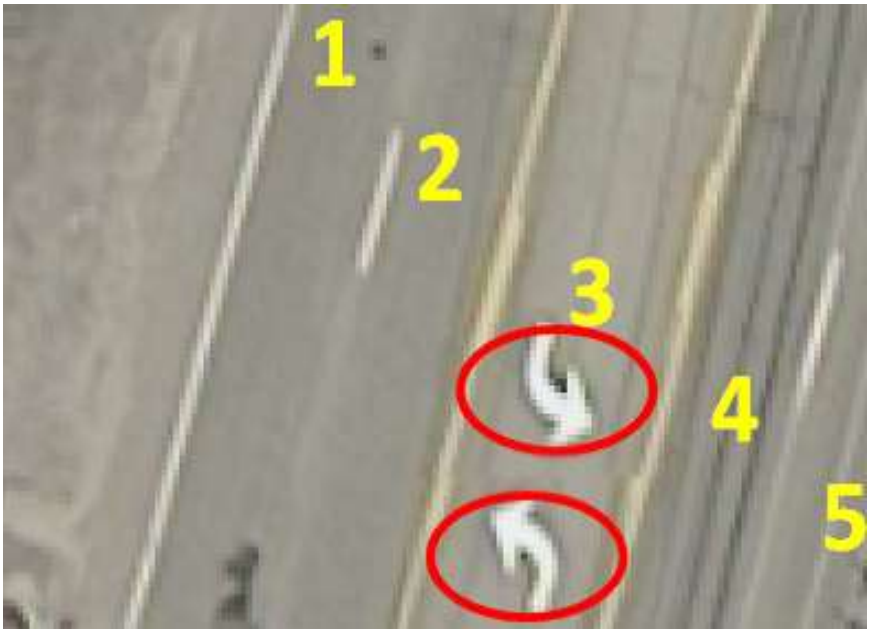
Exceptions/Special Circumstances:
Roadways with no pavement markings should be recorded as two (2) lanes, unless the roadway width (see page 9) is 12 feet or less. In this case, the roadway section should be recorded as one (1) lane.

NUMBER OF LANES - AERIAL IMAGERY

Example 1



Example 2



KEY INFORMATION

This roadway would be documented as a nine-lane roadway, with three auxiliary lanes, circled in red (see "Auxiliary Lane" page for more information).

This roadway would be documented as a four-lane roadway with one auxiliary lane. Notice the continuous-shared-left-turn lane is only counted as one lane.

NUMBER OF AUXILIARY LANES

UNDER CONSTRUCTION

Since the total number of lanes is used in calculations for roadway maintenance, NHDOT inventories all of the lanes of a road, be they through lanes or auxiliary lanes. To that end, NHDOT also delineates how many of the total lanes are auxiliary lanes, to aid in emergency planning, traffic flow analysis, and safety design. Types of auxiliary lanes are listed in the table below:

Table 9: Types of Auxiliary Lanes

Type of Lane	Description
Truck Lane	"Slow" Lane for trucks, usually found on steep grades. Often mistaken as a passing lane. Signed with "SLOW TRAFFIC KEEP RIGHT".
Turning Lane	Lane that permits motorists to turn without blocking the through-way. These are generally found in areas with higher speed limits and/or low visibility. Turn lanes are striped, and are marked with a large, white, curved arrow that points in the direction which the turn is permitted
Shared Left Turn Lane (Center)	Center lanes of a roadway, where opposing traffic may make a left turn.

KEY INFORMATION

Data Name:
NUM_AUX_LANES

Definition:
Number of auxiliary lanes in a roadway section, of the total number of lanes. *See Number of Lanes for more information on total number of lanes)*

Data Type:
Numerical - number of lanes.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: Low

Exceptions/Special Circumstances:
See description at left for the different kinds of lanes than can be qualified as auxiliary lanes.

NUMBER OF AUXILIARY LANES - AERIAL IMAGERY

UNDER CONSTRUCTION

Data Name:
NUM_AUX_LANES

Definition:
Number of auxiliary lanes in a roadway section, of the total number of lanes. *See Number of Lanes for more information on total number of lanes)*

Data Type:
Numerical - number of lanes.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: Low

Exceptions/Special Circumstances:
See description at left for the different kinds of lanes than can be qualified as auxiliary lanes.

Since the total number of lanes is used in calculations for roadway maintenance, NHDOT inventories all of the lanes of a road, be they through lanes or auxiliary lanes. To that end, NHDOT also delineates how many of the total lanes are auxiliary lanes, to aid in emergency planning, traffic flow analysis, and safety design. The types of auxiliary lanes are listed in the table below:

LANE WIDTH

Lane width is used for administrative decisions regarding roadway usage. In conjunction with other elements of roadway design, it is a deciding factor in speed limit designation and other safety regulations. It is also considered in cost estimation for maintenance and construction projects. While lane width measurement on clearly marked roadways is relatively straightforward, delineation on unmarked roads can be somewhat ambiguous. In an effort to achieve consistency in lane measurements on unmarked roads, NHDOT has instituted a "Rule of Thumb" for unmarked lane measurement, which is shown in the table below.

Table 10: Lane Width Rule of Thumb

Surface Width	Lane Width and Shoulder Widths
Width ≤ 16'	Lane: One (1) lane @ 8 - 12 feet, as measured
	Shoulders: None
16'< Width ≤ 28'	Lanes: Two (2) lanes @ ½ pavement width each
	Shoulders: None
Width > 28'	Lanes: Two (2) lanes @ 12 feet each
	Shoulders: Half of remaining surface width (each)

KEY INFORMATION

Data Name:
LANE_WIDTH

Definition:
A traffic lane is a portion of roadway used to channel traffic. Traffic lanes are separated from other portions of a highway by striping.

- *With pavement markings:* The average width of the lanes of a given section. Lanes are delineated by the pavement markings, and measured to the nearest foot.
- *Without pavement markings*: The width of the travel lanes based on the intent of the surface layout from visual inspection, or designated by NHDOT or Town. See *Rule of Thumb* table, below.

Data Type:
Numerical - number of feet.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: Low

Exceptions/Special Circumstances: *See "Rule of Thumb" table at left*

LANE WIDTH - AERIAL IMAGERY

Typical Situations

Exceptions/Special Circumstances

KEY INFORMATION

With pavement markings: By measuring from the centerline to the fog line using a digital measuring tool on aerial imagery, a lane width of 12 feet can be determined for this roadway section.

Without pavement markings: By measuring from the curb on the right to the edge of pavement on the left using a digital measuring tool on aerial imagery, a lane width of 12 feet can be determined for this roadway section. **NOTE**: This is a one-way roadway.

The roadway pictured at left is narrow for a two-lane roadway, with an unpaved surface width of only 16 feet. In this case, lane width is considered to be 8 feet each, with no shoulders.

The roadway pictured at left is wide with an unpaved surface width of 24 feet. In this case, lane width is considered to be 12 feet each, with no shoulders.

SHOULDER TYPE (LEFT AND RIGHT)

The shoulders of a roadway offer many advantages to pedestrians, cyclists, motorists, and Emergency Services. They often provide a sufficient analog in the absence of designated sidewalks, bike lanes, or roadside parking. Paved shoulders are considered in calculation of plow routes for winter maintenance.

Table 11: Shoulder Types

Code	Description
1	None; no shoulder exists
2	Paved shoulder
3	Unpaved shoulder
4	Combination shoulder

KEY INFORMATION

Data Name:
SHLDR_TYPE_R
SHLDR_TYPE_L

Definition:
The type of shoulder bordering the roadway surface on the right or left (in the direction of inventory, respectively).

Data Type:
Numerical - Code number, from the table shown at left.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: Low

Exceptions/Special Circumstances:
By definition, unpaved roadways have NO SHOULDER (Code 1). SHLDR_RIGHT and SHLDR_LEFT should be marked as zero (0).

Combination and unpaved shoulders are not guaranteed by any means to be structurally sound, and their widths should be taken only as an estimate, rather than a design specification.

∗ For the State of New Hampshire's roadway inventory, "shoulders to the right of the roadway in the direction of inventory" are generally considered to be to the right when traveling a roadway northward or eastward, unless otherwise noted. As such, "shoulders to the left…" are considered to be to the left while traveling in the direction of inventory. If the direction of inventory is questionable, use the direction of increasing SRI Mileposts.

SHOULDER TYPE - AERIAL IMAGERY

KEY INFORMATION

No Shoulder (***Code 1***)
The shoulder does not exist on this roadway. Shoulders are not considered when surveying a gravel (or other unpaved) roadway such as this one.

Paved Shoulder (***Code 2***)
The shoulder is of the same material as the roadway surface. As seen here, the coloration of the pavement can be seen even in aerial imagery.

Unpaved Shoulder (***Code 3***)
The shoulder on this well-maintained roadway is easily distinguishable as being a different color than the paved surface. From this information, we can tell that the shoulders on this roadway are surfaced with gravel.

Combination Shoulder (***Code 4***)
On this roadway, one can clearly see the two foot paved shoulder (which is homogeneous with the roadway surface) and the clear border with the gravel shoulder, which extends four feet to the left and two feet to the right. This pattern creates what is known as the combination shoulder or "combo", the predominant shoulder type in the state.

SHOULDER WIDTH (LEFT AND RIGHT)

A wide enough shoulder may be used as a breakdown area for stranded motorists, offering a safe area in which to assess damage and request assistance. In the absence of designated parking, the shoulder may be used as an alternative parking area in certain (especially rural) areas, as well as access points for Emergency Services vehicles. Collecting the width of the shoulder is vital, because it allows agencies to determine what uses the shoulder is suitable for. It is also essential in the calculation of maintenance mileage.

Shoulders to the right of the roadway in the direction of inventory are generally considered to be to the right when traveling a roadway northward or eastward, unless otherwise noted. As such, shoulders to the left are considered to be to the left while traveling in the direction of inventory.

KEY INFORMATION

Data Name:
SHLDR_WIDTH_RIGHT
SHLDR_WIDTH_LEFT

Definition:
The measured width of the shoulder to the right or left (in the direction of inventory), to the nearest foot. Due to the variable and temporary nature of a shoulder, particularly one of gravel and/or earth, the shoulder width is often determined using windshield survey. Shoulders are assessed from the painted lane line (or the visible edge of an unmarked travel lane) to the outer edge of the maintained shoulder. This border can be the break of the slope, or another natural barrier such as growth of vegetation. Shoulder information is not collected on Local or Private Roadways.

Data Type:
Numerical - number of feet.

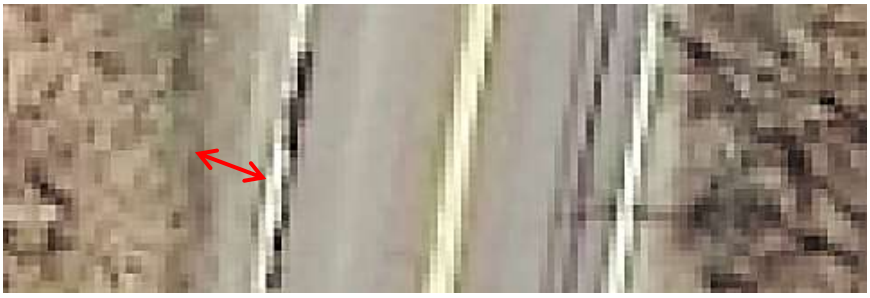
Source:
Windshield Survey/Aerial Imagery

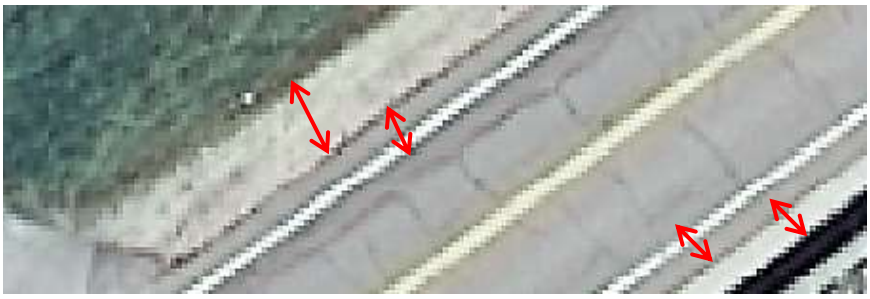
Data Accuracy: Low

Exceptions/Special Circumstances:
Shoulder information is now collected on Local or Private Roadways.

For more information regarding the measurement of shoulders on unmarked roadways, see “Rule of Thumb (for Unmarked Roadways)” table on the Lane Width page.

SHOULDER WIDTH - AERIAL IMAGERY





KEY INFORMATION

Paved Shoulder ***(Code 1)***
The shoulder is of the same material as the roadway surface. When this is the case, the shoulder width is measured from the edge of pavement to the center of the white 'fog' line

No Shoulder ***(Code 2)***
The shoulder does not exist on this roadway. Shoulders are not considered when surveying a gravel (or other unpaved) roadway such as this one.

Unpaved Shoulder ***(Code 3)***
In the case of a gravel shoulder on well-marked roadways, the shoulder width is measured from the edge of the pavement out to the shoulder break or the edge of the maintained shoulder. This border may include a change in material, or a natural border such as a rock shelf or growth of vegetation.

Combination Shoulder ***(Code 4)***
On this roadway, one can clearly see the two foot paved shoulder (which is homogeneous with the roadway surface) and the clear border with the gravel shoulder, which extends four feet to the left and two feet to the right. In this case SHLDR_RIGHT would be recorded as '4' and SHLDR_LEFT would be recorded as '6'.

DIRECTION WAY

Possibly the most important piece of information necessary when considering travel on a roadway section is whether the roadway is bidirectional or not. What would happen if someone unknowingly went the wrong direction on a divided highway or used the opposing lane on a two-way roadway as a continuous passing lane? The direction of a one-way roadway is important to the public as they plan routes throughout the state, and is also important to state agencies as they devise maintenance routes and other service coverage.

Table 12: Direction Way Codes

Code	Description
1	One-way
2	Two-way

KEY INFORMATION

Data Name:
DIRECTION_WAY

Definition:
The direction way code describes one and two way sections of roadway.

Data Type:
Numerical - Code, as shown in the table below.

Source:
Windshield Survey/Aerial Imagery

Data Accuracy: High

Exceptions/Special Circumstances: None

APPENDICES

APPENDIX A: NEW HAMPSHIRE TOWN CODES

The following table contains the NHDOT town codes and their associated town names. More information on these town codes can be obtained by contacting the GIS Section at the NHDOT Bureau of Planning.

Table 13: NHDOT Town Identification Codes

Code	Town Name	Code	Town Name	Code	Town Name
1	ACWORTH	71	CANDIA	141	EFFINGHAM
3	ALBANY	73	CANTERBURY	143	ELLSWORTH
5	ALEXANDRIA	75	CARROLL	145	ENFIELD
7	ALLENSTOWN	77	CENTER HARBOR	147	EPPING
9	ALSTEAD	79	CHANDLERS PURCHASE	149	EPSOM
11	ALTON	81	CHARLESTOWN	151	ERROL
13	AMHERST	83	CHATHAM	153	EXETER
15	ANDOVER	85	CHESTER	155	FARMINGTON
17	ANTRIM	87	CHESTERFIELD	157	FITZWILLIAM
19	ASHLAND	89	CHICHESTER	159	FRANCESTOWN
21	ATKINSON	91	CLAREMONT	161	FRANCONIA
23	AUBURN	93	CLARKSVILLE	163	FRANKLIN
25	BARNSTEAD	95	COLEBROOK	165	FREEDOM
27	BARRINGTON	97	COLUMBIA	167	FREMONT
29	BARTLETT	99	CONCORD	169	GILFORD
31	BATH	101	CONWAY	171	GILMANTON
33	BEANS GRANT	103	CORNISH	173	GILSUM
35	BEANS PURCHASE	105	CRAWFORDS PURCHASE	175	GOFFSTOWN
37	BEDFORD	107	CROYDON	177	GORHAM
39	BELMONT	109	DALTON	179	GOSHEN
41	BENNINGTON	111	DANBURY	181	GRAFTON
43	BENTON	113	DANVILLE	183	GRANTHAM
45	BERLIN	115	DEERFIELD	185	GREENFIELD
47	BETHLEHEM	117	DEERING	187	GREENLAND
49	BOSCAWEN	119	DERRY	189	GREENS GRANT
51	BOW	121	DIXVILLE	191	GREENVILLE
53	BRADFORD	123	DORCHESTER	193	GROTON
55	BRENTWOOD	125	DOVER	195	HAMPSTEAD

57	BRIDGEWATER	127	DUBLIN	197	HAMPTON
59	BRISTOL	129	DUMMER	199	HAMPTON FALLS
61	BROOKFIELD	131	DUNBARTON	201	HANCOCK
63	BROOKLINE	133	DURHAM	203	HANOVER
65	CAMBRIDGE	135	EAST KINGSTON	205	HARRISVILLE
67	CAMPTON	137	EASTON	207	HARTS LOCATION
69	CANAAN	139	EATON	209	HAVERHILL
211	HEBRON	295	MEREDITH	379	PORTSMOUTH
213	HENNIKER	297	MERRIMACK	381	RANDOLPH
215	HILL	299	MIDDLETON	383	RAYMOND
217	HILLSBOROUGH	301	MILAN	385	RICHMOND
219	HINSDALE	303	MILFORD	387	RINDGE
221	HOLDERNESS	305	MILLSFIELD	389	ROCHESTER
223	HOLLIS	307	MILTON	391	ROLLINSFORD
225	HOOKSETT	309	MONT VERNON	393	ROXBURY
227	HOPKINTON	311	MONROE	395	RUMNEY
229	HUDSON	313	MOULTONBOROUGH	397	RYE
231	JACKSON	315	NASHUA	399	SALEM
233	JAFFREY	317	NELSON	401	SALISBURY
235	JEFFERSON	319	NEW BOSTON	403	SANBORNTON
237	KEENE	321	NEWBURY	405	SANDOWN
239	KENSINGTON	323	NEW CASTLE	407	SANDWICH
241	KILKENNY	325	NEW DURHAM	409	SEABROOK
243	KINGSTON	327	NEWFIELDS	411	SHARON
245	LACONIA	329	NEW HAMPTON	413	SHELBURNE
247	LANCASTER	331	NEWINGTON	415	SOMERSWORTH
249	LANDAFF	333	NEW IPSWICH	417	SOUTH HAMPTON
251	LANGDON	335	NEW LONDON	419	SPRINGFIELD
253	LEBANON	337	NEWMARKET	421	STARK
255	LEE	339	NEWPORT	423	STEWARTSTOWN
257	LEMPSTER	341	NEWTON	425	STODDARD
259	LINCOLN	343	NORTHFIELD	427	STRAFFORD
261	LISBON	345	NORTH HAMPTON	429	STRATFORD
263	LITCHFIELD	347	NORTHUMBERLAND	431	STRATHAM
265	LITTLETON	349	NORTHWOOD	433	SULLIVAN
267	LIVERMORE	351	NOTTINGHAM	435	SUNAPEE
269	LONDONDERRY	353	ORANGE	437	SURRY

271	LOUDON	355	ORFORD	439	SUTTON
273	LOW & BURBANKS GRANT	357	OSSIPEE	441	SWANZEY
275	LYMAN	359	PELHAM	443	TAMWORTH
277	LYME	361	PEMBROKE	445	TEMPLE
279	LYNDEBOROUGH	363	PETERBOROUGH	447	THOMPSON-MESERVES P.
281	MADBURY	365	PIERMONT	449	THORNTON
283	MADISON	367	PINKHAMS GRANT	451	TILTON
285	MANCHESTER	369	PITTSBURG	453	TROY
287	MARLBOROUGH	371	PITTSFIELD	455	TUFTONBORO
289	MARLOW	373	PLAINFIELD	457	UNITY
291	MARTINS LOCATION	375	PLAISTOW	459	WAKEFIELD
293	MASON	377	PLYMOUTH	461	WALPOLE

				State/Country Codes	
463	WARNER	483	WILMOT		
465	WARREN	485	WILTON	600	New Hampshire
467	WASHINGTON	487	WINCHESTER	700	Maine
469	WATERVILLE VALLEY	489	WINDHAM	800	Massachusetts
471	WEARE	491	WINDSOR	900	Vermont
473	WEBSTER	493	WOLFEBORO	950	Canada
475	WENTWORTH	495	WOODSTOCK		
477	WENTWORTHS LOCATION	497	SARGENTS PURCHASE		
479	WESTMORELAND	499	SUGAR HILL		
481	WHITEFIELD				

APPENDIX B: STREET NAME ABBREVIATIONS

(Ref.: US Postal Service Publication 28, Appendix C and National Emergency Number Association (NEMA))

Table 14: USPS Street Name Suffixes and Abbreviations

Suffix	Abbreviation	Suffix	Abbreviation	Suffix	Abbreviation
Alley	ALY	Courts	CTS	Glen	GLN
Annex	ANX	Cove	CV	Glens	GLNS
Arcade	ARC	Coves	CVS	Grove	GRV
Avenue	AVE	Creek	CRK	Groves	GRVS
Bayou	BYU	Crescent	CRES	Harbor	HBR
Beach	BCH	Crest	CRST	Harbors	HBRS
Bend	BND	Crossing	XING	Haven	HVN
Bluff	BLF	Crossroad	XRD	Heights	HGTS
Bluffs	BLFS	Crossroads	XRDS	Highway	HWY
Bottom	BTM	Curve	CURV	Hill	HL
Boulevard	BLVD	Dale	DL	Hills	HLS
Branch	BR	Dam	DM	Hollow	HOLW
Bridge	BRG	Divide	DV	Inlet	INLT
Brook	BRK	Drive	DR	Island	IS
Brooks	BRKS	Drives	DRS	Islands	ISS
Burg	BG	Estate	EST	Isle	ISLE
Burgs	BGS	Estates	ESTS	Junction	JCT
Bypass	BYP	Expressway	EXPY	Junctions	JCTS
Camp	CP	Extension	EXT	Key	KY
Canyon	CYN	Extent ions	EXTS	Keys	KYS
Cape	CPE	Fall	FALL	Knoll	KNL
Causeway	CSWY	Ferry	FRY	Knolls	KNLS
Center	CTR	Field	FLD	Lake	LK
Centers	CTRS	Fields	FLDS	Lakes	LKS
Circle	CIR	Flat	FLT	Land	LAND
Circles	CIRS	Flats	FLTS	Landing	LNDG
Cliff	CLF	Ford	FRD	Lane	LN
Cliffs	CLFS	Fords	FRDS	Light	LGT
Club	CLB	Forest	FRST	Lights	LGTS
Common	CMN	Forge	FRG	Loaf	LF
Commons	CMNS	Forges	FRGS	Locks	LCK
Corner	COR	Fork	FRK	Lodge	LDG

Corners	CORS	Forks	FRKS	Prairie	PR
Course	CRSE	Fort	FT	Radial	RADL
Court	CT	Freeway	FWY	Ramp	RAMP
Garden	GDN	Loop	LOOP	Ranch	RNCH
Gardens	GDNS	Mall	MALL	Rapid	RPD
Gateway	GTWY	Manor	MNR	Rapids	RPDS

Rest	RST	Passage	PSGE	Village	VLG
Ridge	RDG	Path	PATH	Shoal	SHL
Ridges	RDGS	Pike	PIKE	Shore	SHR
River	RIV	Pine	PNE	Shores	SHRS
Road	RD	Pines	PNES	Skyway	SKWY
Roads	RDS	Place	PL	Spring	SPG
Route	RTE	Plain	PLN	Spur	SPUR
Row	ROW	Plains	PLNS	Spurs	SPUR
Rue	RUE	Plaza	PLZ	Square	SQ
Run	RUN	Point	PT	Squares	SQS
Manors	MNRS	Points	PTS	Station	STA
Meadow	MDW	Port	PRT	Stravenue	STRA
Meadows	MDWS	Ports	PRTS	Stream	STRM
Mews	MEWS	Trace	TRCE	Street	ST
Mill	ML	Track	TRAK	Streets	STS
Mills	MLS	Traffic way	TRFY	Summit	SMT
Mission	MSN	Trail	TRL	Terrace	TER
Motorway	MTWY	Trailer	TRLR	Throughway	TRWY
Mount	MT	Tunnel	TUNL	Villages	VLGS
Mountain	MTN	Turnpike	TPKE	Ville	VL
Mountains	MTNS	Underpass	UPAS	Vista	VIS
Neck	NCK	Union	UN	Walk	WALK
Orchard	ORCH	Unions	UNS	Walks	WALK
Oval	OVAL	Valley	VLY	Wall	WALL
Overpass	OPAS	Valleys	VLYS	Way	WAY
Park	PARK	Viaduct	VIA	Ways	WAYS
Parkway	PKWY	View	VW	Well	WL
Parkways	PKWYS	Views	VWS	Wells	WLS
Pass	PASS				

APPENDIX C: SLIP RAMP IDENTIFICATION GUIDE

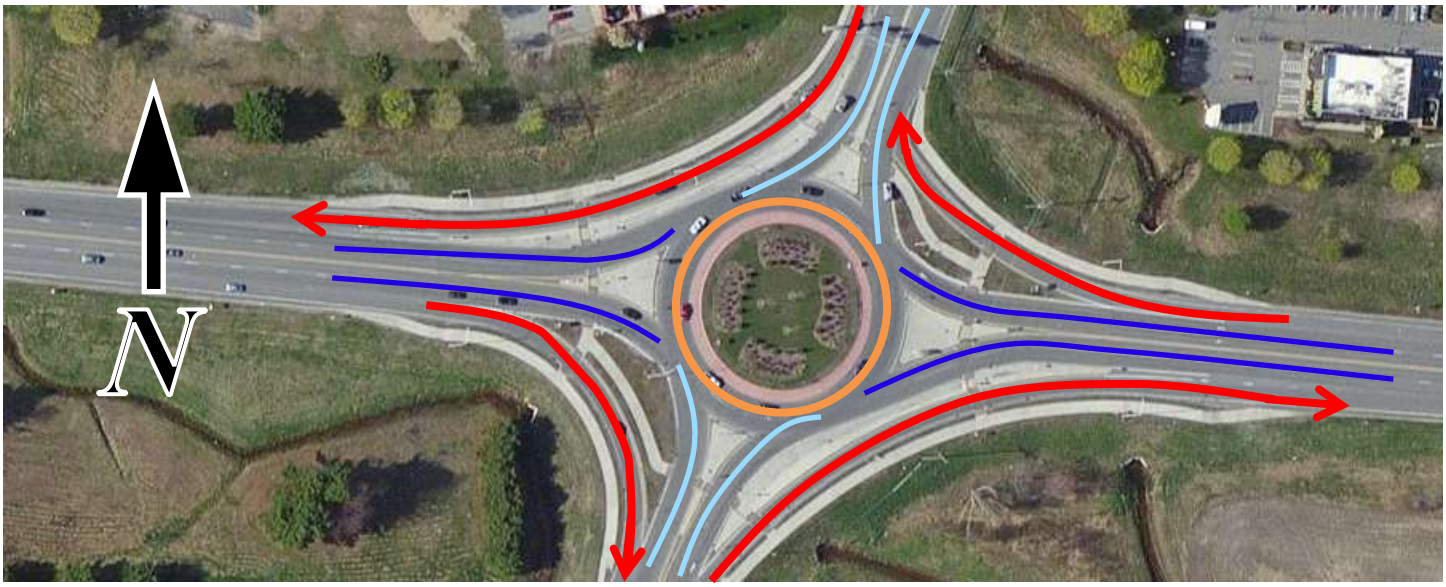
Slip ramps are a subset of ramps designed to ease congestion by providing smoother transitions between main roadways (generally part of the state and federal highway systems) in situations that do not require traditional intersections. Slip ramps always diverge from a primary ramp or roadway. The key difference between primary and slip ramps is that primary ramps can be accessed from either direction, even if the access path crosses opposing traffic; slip ramps are one-way, single-lane connectors to other roadways, and can only be accessed by diverging from another roadway in the same direction of travel. Slip ramps always create an island with their primary ramp.

Ramp and slip ramp entering I-93 southbound from NH 132 in Northfield (Exit 19). The slip ramp (marked in red) can only be accessed while traveling south on NH 132; the primary ramp (marked in green) can be accessed from either direction. The slip ramp terminates when it meets the primary ramp. Note the island created between the primary ramp, the slip ramp, and the diverging route (NH 132).

Ramp and slip ramp entering NH 155A from US 4 in Durham, and ramp entering US 4 from NH 155A. The slip ramp (marked in red) diverges from the primary off-ramp, and can only access the eastbound lane of NH 155A. The primary off-ramp (marked in green) can access either direction. Since the on-ramp can be accessed by traffic from either direction on NH 155A, it is classified as a primary ramp, not a slip ramp.

What is NOT a slip ramp?

Only the slip ramps of major highway routes (Turnpikes, Interstates, US Routes, and State Routes) will be classified. Interior portions of traffic circles, which are accessed by multiple entry points, will not be classified as slip ramps. Any ramp that does not divide will not be classified as a slip ramp, regardless of the directionality of access or egress.



Keene Traffic Circle (shown in orange), at the intersection of NH 101 (shown in dark blue) and Winchester St (shown in light blue). The only slip ramps are highlighted in red. Each can only be entered from one direction, can only exit in one direction, and connects two different roadways. The circle can be accessed from either route in either direction, and can also be exited onto either route in either or their respective directions. None of the sections pictured are classified as a primary ramp.

Interchange between NH 16 (shown in dark blue) and NH 9 (shown in light blue) in Dover. Each ramp (shown in green) is not a slip ramp. Despite single directions of access and egress, none of the ramps divide, and are therefore classified as primary ramps rather than as slip ramps, as one might have expected.

APPENDIX D: MILEAGE CALCULATIONS AND SPECIFICATIONS

The following are descriptions and specifications for the calculation of various mileages frequently reported by the GIS Section. Each mileage type differs slightly from the others in its purpose and calculation. Some mileage types are based on another mileage type, and every effort has been made to list the types in order of precedence.

System Miles

Description: Length of centerline of bi-directional highways and Northbound (NB) or Eastbound (EB) barrels of divided highways.

Extents: Primary SRI Routes only (no ramps or slip ramps)

Typical Uses: Federal and state legislative reporting.

Centerline (Barrel) Miles

Description: Length of centerline of bi-directional highways and **both** barrels of divided highways.

Extents: Primary SRI Routes (ramps and slip ramps only as necessary)

Typical Uses: Lane Miles, Equivalent Lane Miles, Salt Lane Miles, Maintenance Lane Miles Equivalent, Winter Lane Miles Equivalent, Dirt Lane Miles, Maintenance Lane Miles.

Lane Miles

Description: Centerline (Barrel) miles multiplied by number of lanes.

Extents: Primary SRI Routes only (no ramps or slip ramps)

Typical Uses: Traffic volume analysis and modeling, Plow Miles

Equivalent Lane Miles

Description: Centerline (Barrel) miles multiplied by paved surface width, divided by 12 feet.

Extents: Primary SRI Routes only (no ramps or slip ramps)

Typical Uses: Summer Maintenance

(Continued…)

Salt Lane Miles

Description: Centerline (Barrel) miles plus ramps and slip ramps, multiplied by number of lanes

Extents: Primary SRI Routes, ramps, and slip ramps

Typical Uses: Salting and deicing estimate calculations.

Maintenance Lane Miles Equivalent

Description: Centerline (Barrel) miles plus ramps, multiplied by paved surface width (width of travel way and shoulder widths), divided by 12 feet.

Extents: Primary SRI Routes and ramps

Typical Uses: Summer maintenance estimate calculations

Winter Lane Miles Equivalent

Description: Centerline (Barrel) miles plus ramps and slip ramps, multiplied by paved surface width (width of travel way and shoulder widths), divided by 12 feet.

Extents: Primary SRI Routes, ramps, and slip ramps

Typical Uses: Winter maintenance estimate calculations

Dirt Lane Miles

Description: Centerline miles multiplied by two (2). (Assumes two lanes per unpaved road)

Extents: Primary SRI Routes of **UNPAVED** roads, only.

Typical Uses: Unpaved Roadway estimate calculations

Maintenance Lane Miles

Description: Centerline (Barrel) miles plus ramps and slip ramps, multiplied by number of lanes.

Extents: Primary SRI Routes, ramps, and slip ramps

Typical Uses: Assorted maintenance estimation calculations

A note on concurrent routes:

Concurrent routes: Hi-Order routes with the lowest route number are reported.

a. Hi-Order Route ranking - Turnpike, Interstate, US, State Numbered Routes, State Non-Numbered Routes, Local, Private, and Federal.
b. Ramps are not considered part of routes. Hi-Order routes do not run concurrently with ramps or slip ramps.

APPENDIX E: ROADS LAYER METADATA CODE DESCRIPTIONS

The following section is taken from the NHDOT GIS Roads Layer Metadata Code Descriptions. It summarizes the information found in the "Key Information" column on the right-hand side of the main body of this document. These descriptions can be found in *FGDC Content Standards for Digital Geospatial Metadata* compliant XML metadata files, available from the Bureau of Planning via direct request or through GRANIT, New Hampshire's GIS Data Clearinghouse.

SRI: Statewide Route Identifier, a 10-digit identification number assigned to each roadway in the state.

Format = Ptttrrrrsd

Where 'P' = route type:

Type code	Description
Y	Slip ramp
R	Ramp
T	Turnpike
I	Interstate
U	US route
S	Numbered state route
N	Non numbered state routes
C	Circle
L	Local road
F	Federal road
M	Maintenance road (Non-public)
P	Private road

Where "ttt" = Three digit town number. Non-numbered state routes, slip ramps, circles, local and private roads use this format of "ttt". Statewide numbered routes are not town based therefore they have a town number = '000'. These include I, U, S, T routes.

Where "rrrr" = Town based road inventory number for non-numbered routes. Sign number for numbered routes i.e. '101' in route 101A

Where "s" = Route suffix. i.e. 'A' in route 101A.

Where "d" = Secondary direction of divided highways. i.e. Northbound I-89 is 'I0000089__' and Southbound I-89 is 'I0000089_S'

Code	Description
_	Bi-directional <u>or</u> primary direction of divided highway (North or East bound)
S	Secondary direction 'South' route for two barrel North/South routes
W	Secondary direction 'West' route for two barrel East/West routes

Ramps and Slip ramps do not follow typical SRI structure.
For ramps servicing L or N Roads:
RPTTTSDEEA
For ramps servicing all numbered routes:
RPRRRSDEEA, where EE = Exit Number, RRR = Route number, and A equals section lettering.
Slip ramps - Same convention as Ramps, but with a Y designation, YPRRRSDEEA.

MP_START: Route mile point, in miles, at beginning of road section.

MP_END: Route mile point, in miles, at end of road section.

STREET: Street name as provided Emergency 911 system.

TOWN_ID: A 3-digit ID (odd-numbered) assigned to each Municipality by the NHDOT.

TOWN_NAME: Official name of the Municipality.

SECT_LENGTH: Length of the roadway section, in miles, measured to the nearest 0.001 mile.

FUNCT_CLASS: A FHWA code (number) describing the use of the roadway, according to the character of service they are intended to provide. Function class codes have two classifications; Rural and Urban. Rural codes are 0 thought 9 and Urban codes are 11 thought 19.

FUNCT_CLASS_DESCR: A description of the function class number.

Rural:

Code	Description
0	Non-Public roads Example; Class VI & Private
1	Principal Arterial - Interstate
2	Principal Arterial - Other
6	Minor Arterial
7	Major Collector
8	Minor Collector
9	Local

Urban:

Code	Description
0	Non-Public roads Example; Class VI & Private
11	Principal Arterial - Interstate
12	Principal Arterial - Other Freeways and Expressways.
14	Principal Arterial - Other
16	Minor Arterial
17	Collector
19	Local

LC_LEGEND: Code used for mapping purposes to simplify the Legislative Class coding. (Federal, State, Local, Recreation, Private, Not Maintained).

LEGIS_CLASS: Legislative Class

Code System Class

I Class I highways shall consist of all existing or proposed highways on the primary state highway system, excepting all portions of such highways within the compact sections of the cities and towns listed in RSA 229:5, V, provided that the portions of the turnpikes and the national system of interstate and defense highways within the compact sections of these cities and towns shall be class I highways.

II Class II highways shall consist of all existing or proposed highways on the secondary state highway system, excepting all portions of such highways within the compact sections of the cities and towns listed in RSA 229:5, V.

III Class III highways shall consist of all recreational roads leading to, and within, state reservations designated by the legislature.

IV Class IV highways shall consist of all highways within the compact sections of cities and towns listed in RSA 229:5, V. The compact section of any such city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the commissioner of transportation, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year and not for a season only. Whenever the commissioner reclassifies a section of a class I or class II highway as a class IV highway, the commissioner shall prepare a statement of rehabilitation work which shall be performed by the state in connection with the turn back. No highway reclassification from class I or II to class IV shall take effect until all rehabilitation needed to return the highway surface to reputable condition has been completed by the state. Rehabilitation shall be completed during the calendar year preceding the effective date of the reclassification. A copy of the commissioner's statement of work to be performed by the state shall be attached to the notification of reclassification to class IV, and receipt of said statement shall be acknowledged, in writing, by the selectmen of the town, or the mayor of the city, affected by the reclassification. The commissioner of transportation may establish compact sections in the following cities and towns:
Amherst, Bedford, Berlin, Claremont, Concord, Derry, Dover, Durham, Exeter, Franklin, Goffstown, Hampton, Hanover, Hudson, Keene, Laconia, Lebanon, Londonderry, Manchester, Merrimack, Milford, Nashua, Pelham, Portsmouth, Rochester, Salem, Somersworth.

V Class V highways shall consist of all other traveled highways, which the town has the duty to maintain regularly, and shall be known as town roads. Any public highway which at one time lapsed to Class VI status due to 5-years' non-maintenance, as set forth in RSA 229:5, VII, but which subsequently has been regularly maintained and repaired by the town on more than a seasonal basis and in suitable condition for year-round travel thereon for at least 5 successive years without being declared an emergency lane pursuant to RSA 231:59-a, shall be deemed a Class V highway.

VI Class VI highways shall consist of all other existing public ways, and shall include all highways discontinued as open highways and made subject to gates and bars, except as provided in paragraph III-a, and all highways which have not been maintained and repaired by the town in suitable condition for travel thereon for 5 successive years or more except as restricted by RSA 231:3, II.
Federal Highways

LC_II_TYPE: Designates Class II State Aid Highways as an improved or unimproved portion of a state highway.
2A. RSA 230:3 Class II State Aid Highways; Improved Portions. - The department of transportation shall assume full control and pay the costs of reconstruction and maintenance of all class II highways which have been improved to the satisfaction of the commissioner of transportation.
2B. RSA 230:4 Unimproved Portions. - All other class II highways shall be maintained by the city or town in which they are located, and may be improved to the satisfaction of the commissioner of transportation with the use of state aid funds.

WINTER_MAINT: Designates the party responsible for winter maintenance. For numeric codes, first digit indicates highway district # (1-6 for standard highway districts, or 8 for turnpikes), while remaining digits indicate shed # within the district. Alphanumeric codes include VT (State of Vermont), DRED (maintained by Department of Resources and Economic Development), TOWN (maintained by the town), NM (not maintained) or PRIVATE.

SUMMER_MAINT: Designates the party responsible for summer maintenance. Valid codes include those for WINTER_MAINT, with the addition of MAINE (State of Maine).

OWNERSHIP: Designates the party responsible for major road repairs, such as destroyed culverts. Valid codes include those for WINTER_MAINT, with the addition of MAINE (State of Maine).

OWNERSHIP_DESCR: Designates the ownership by District, Turnpikes, Town, DRED, private, or State of Maine.

PLOW_LEVEL: Plowing designation for the winter maintained State highway system. These designations have been determined by traffic volume primarily but have been modified to include consideration of posted speed, highway grade, truck volume, accessibility to hospitals and emergency services, special events, second and/or third shifts at major industrial complexes and major commercial traffic generators as well as to establish continuity between highway districts.

Code	Description
1	Highways on the Interstate and Turnpike Systems and those highways carrying 15,000 vehicles or more daily should have full width bare pavement as soon as practical after a winter storm terminates.
2	Highways on the State system and carrying 5,000 to 15,000 vehicles daily should have full width bare pavement as soon as practical after a winter storm terminates.
3	Highways on the State system carrying 1,000 to 5,000 vehicles daily should have some bare pavement as soon as practical after a winter storm terminates.
4	Highways on the State highway system carrying less than 1,000 vehicles daily should have bare pavement in left wheel tracks near the center of the highway as soon as practical after the winter storm. Included in this classification are highways carrying less than 500 vehicles daily for which snow-covered pavement is deemed acceptable.

SURF_TYPE: The type of surface of the roadway.

Code	Description
1	Unpaved
2	Paved

ROADWAY_WIDTH: For paved roadways - Total width of pavement, in feet, from edge of pavement to edge of pavement. Includes travel lanes, paved shoulders, parking, medians, and designated bike lanes. Measured to the nearest foot.
For unpaved roadways - Total width of the visible travel way, as determined from visual inspection. Measured to the nearest foot.

NUM_LANES: Total number of lanes on the roadway, including both directions. Auxiliary lanes, such as truck lanes, turning lanes, and passing lanes are included.

LANE_WIDTH: Prevailing traffic lane width (through lanes) to the nearest foot.

SHLDR_TYPE_LEFT & SHLDR_TYPE_RIGHT: Code for the type of the left & right shoulders (in the direction of inventory) for the section. By definition, unpaved roadways have no shoulders (Code 1) and SHLDR_TYPE_RIGHT and SHLDR_TYPE_LEFT should have values of zero.

Code	Description
1	None - No shoulders or curbs exist.
2	Paved
3	Unpaved
4	Combination - Combination of the two surface types.

SHLDR_WIDTH_LEFT & SHLDR_WIDTH_RIGHT: Measured width of the left & right shoulders, in direction of inventory, to the nearest foot.

DIRECTION_WAY: The direction way code describes one and two way sections of roadway.

Code	Description
1	One-way Roadway
2	Two-way Roadway

IS_TOLL: A code for roadway section that requires a fee to access or exit from on the NH Turnpike system. Valid values are yes and no.

IS_NHS: A NHS code designated by FHWA's HPMS (Highway Performance Monitoring System). Valid values are yes and no.

NHS_DESCR: Text field describing the function of the road in the National Highway System.

Code	Description
0	This section is NOT on the NHS
1	This section is on the NHS but is not an intermodal connector
2-9	*NHS intermodal connectors*
2	Major Airport
3	Major Port facility
4	Major Amtrak station
5	Major Rail/truck terminal
6	Major Inter-city bus terminal
7	Major Public transit terminal or multi-modal passenger terminal
8	Major pipeline terminal
9	Major ferry terminal

IS_TRK_ROUTE: Truck route designated under Federal regulatory authority in 23 CFR 658. Valid values are yes and no.

COUNTY_ID: A 3- digit code (000-019) assigned by the NHDOT denoting the County.

Code	Description
001	Belknap
003	Carroll
005	Cheshire
007	Coos
009	Grafton
011	Hillsborough
013	Merrimack
015	Rockingham
017	Strafford
019	Sullivan

COUNTY_NAME: County Name

COUNTER_ID: Identification number of the traffic counter associated with the roadway segment, if applicable and may be linked to the Traffic Volume reports.

AADT_CURR_YEAR: Reporting year for Annual Average Daily Traffic (AADT)

AADT: Annual Average Daily Traffic

STREET_HIORDER: The high order route (SRI) of this roadway section is the highest order route when concurrent routes exist. Concurrent SRI's may exist on a roadway section and a complex algorithm determines the high order route with considerations for high order (Y, R, T, I, U, S, N, C…) of the route, route direction, route suffixes. Turnpikes take precedence over Interstate and no route may take precedence over a ramp designation.

STREET_ALIASES: Street names of all the concurrent routes of this roadway section.

NODE_1: A reference node that defines the start point of a roadway section along a roadway under the same name. Without the nodes, a roadway line section cannot exist. Nodes are assigned a number in sequential order, starting from "1" for each of the Towns. Nodes are never deleted, but they can be retired.

NODE_2: A reference node that defines the terminal point of the same roadway section.

APPENDIX F: EXCERPTS FROM NEW HAMPSHIRE RSAS

TITLE XX
TRANSPORTATION

CHAPTER 229
HIGHWAY SYSTEM IN THE STATE

Section 229:1

229:1 Highways Defined. – Highways are only such as are laid out in the mode prescribed therefor by statute, or roads which have been constructed for public travel over land which has been conveyed to a city or town or to the state by deed of a fee or easement interest, or roads which have been dedicated to the public use and accepted by the city or town in which such roads are located, or roads which have been used as such for public travel, other than travel to and from a toll bridge or ferry, for 20 years prior to January 1, 1968, and shall include the bridges thereon.
Source. RS 53:7. CS 57:7. GS 68:8. GL 74:8. PS 67:1. PL 74:1. RL 90:1. 1943, 57:1. 1945, 188:1, part 1:1. RSA 230:1. 1967, 283:1. 1981, 87:1, eff. April 20, 1981.

Section 229:2

229:2 Primary Highway System. – There shall be a system of highways known as the "Primary State Highways System'' which shall consist of all existing or proposed highways designated on a map entitled "Primary State Highway System, 1945,'' prepared by the commissioner and filed in the office of the secretary of state.
Source. 1945, 188:1, part 1:2. RSA 230:2. 1981, 87:1, eff. April 20, 1981.

Section 229:3

229:3 Turnpikes and System of Interstate and Defense Highways. – The turnpikes, as established by RSA 237, and the approved national system of interstate and defense highways, shall be a part of the primary state highway system.
Source. RSA 230:2-a. 1961, 4:1. 1981, 87:1, eff. April 20, 1981.

Section 229:4

229:4 Secondary System. – There shall be a system of highways known as the "Secondary State Highway System'' which shall consist of all existing or proposed highways designated on a map entitled "Secondary State Highway System, 1945,'' prepared by the commissioner and filed in the office of the secretary of state.
Source. 1945, 188:1, part 1:3. RSA 230:3. 1981, 87:1, eff. April 20, 1981.

Section 229:5

229:5 Classification. – Highways of the state shall be divided into 7 classes as follows:

I Class I highways shall consist of all existing or proposed highways on the primary state highway system, excepting all portions of such highways within the compact sections of the cities and towns listed in RSA 229:5, V, provided that the portions of the turnpikes and the national system of interstate and defense highways within the compact sections of these cities and towns shall be class I highways.

II Class II highways shall consist of all existing or proposed highways on the secondary state highway system, excepting all portions of such highways within the compact sections of the cities and towns listed in RSA 229:5, V.

III Class III highways shall consist of all recreational roads leading to, and within, state reservations designated by the legislature.

IV Class IV highways shall consist of all highways within the compact sections of cities and towns listed in RSA 229:5, V. The compact section of any such city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the commissioner of transportation, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year and not for a season only. Whenever the commissioner reclassifies a section of a class I or class II highway as a class IV highway, the commissioner shall prepare a statement of rehabilitation work which shall be performed by the state in connection with the turn back. No highway reclassification from class I or II to class IV shall take effect until all rehabilitation needed to return the highway surface to reputable condition has been completed by the state. Rehabilitation shall be completed during the calendar year preceding the effective date of the reclassification. A copy of the commissioner's statement of work to be performed by the state shall be attached to the notification of reclassification to class IV, and receipt of said statement shall be acknowledged, in writing, by the selectmen of the town, or the mayor of the city, affected by the reclassification. The commissioner of transportation may establish compact sections in the following cities and towns:
Amherst, Bedford, Berlin, Claremont, Concord, Derry, Dover, Durham, Exeter, Franklin, Goffstown, Hampton, Hanover, Hudson, Keene, Laconia, Lebanon, Londonderry, Manchester, Merrimack, Milford, Nashua, Pelham, Portsmouth, Rochester, Salem, Somersworth.

V Class V highways shall consist of all other traveled highways, which the town has the duty to maintain regularly, and shall be known as town roads. Any public highway which at one time lapsed to Class VI status due to 5-years' non-maintenance, as set forth in RSA 229:5, VII, but which subsequently has been regularly maintained and repaired by the town on more than a seasonal basis and in suitable condition for year-round travel thereon for at least 5 successive years without being declared an emergency lane pursuant to RSA 231:59-a, shall be deemed a Class V highway.

VI Class VI highways shall consist of all other existing public ways, and shall include all highways discontinued as open highways and made subject to gates and bars, except as provided in paragraph III-a, and all highways which have not been maintained and repaired by the town in suitable condition for travel thereon for 5 successive years or more except as restricted by RSA 231:3, II.
Federal Highways

Source. 1925, 110:1. PL 83:22. RL 99:24. 1943, 123:1. 1945, 188:1, part 1:4. 1951, 30:1. RSA 230:4. 1955, 333:2. 1957, 181:1, 2, 3. 1961, 4:2. 1973, 418:1-3. 1975, 249:1-3. 1979, 216:1. 1981, 87:1; 443:1. 1983, 131:1. 1985, 235:1-4; 402:6, I(b)(1). 1992, 265:8-10. 1995, 77:1. 1999, 109:1. 2000, 24:1, eff. May 28, 2000.

CHAPTER 231
CITIES, TOWNS AND VILLAGE DISTRICT HIGHWAYS

Repair of Highways by Towns

Section 231:79

231:79 Highways to Summer Cottages; Exemption. – Towns shall be exempt from keeping open and repairing highways to summer cottages from December 10 to April 10.

Source. 1893, 4:1. PL 80:34. RL 96:34. 1945, 188:1, part 16:23. RSA 245:24. 1981, 87:1, eff. April 20, 1981.

APPENDIX G: GLOSSARY

Anchor Section – An anchor section is a GIS (see GIS) term for a roadway section. An anchor section may exist only between two nodes. Anchor sections are the building blocks for the linear layers in the GIS system, including Roads and SRI Hi-Order Routes. For more information, see the *Metadata for Anchor Sections* guide, published by NHDOT Bureau of Planning.

Auxiliary lane – An auxiliary lane is defined as the portion of the roadway adjoining the traveled way that is used for purposes supplementary to through traffic, such as parking, speed change, turning, storage for turning, weaving, or truck climbing.

Channeled Intersection – An at-grade intersection in which traffic is directed into definite paths by islands.

Divided Highways – A divided highway is a highway with separated lanes for traffic in opposite directions.

FHWA – Federal Highway Administration. The Federal Highway Administration is a government agency instituted to assist state and local government in design, monitoring, and maintenance of federal-aid highways (including the Eisenhower Interstate System and other US routes)

GIS – Geographic Information System. GIS is a system in which features are created as points, lines, or polygons, and are spatially related in a geodesic coordinate system. Although our reference system is linear, GIS is actually based nodally; without nodes, none of the features in GIS could exist. NHDOT's Geographic Information System is edited and maintained through ESRI's ArcGIS software, and is powered by Oracle databases (see Oracle database).

HPMS – Highway Performance Monitoring System. A system maintained by the Federal Highway Administration (see FHWA) that catalogues data on the "extent, condition, performance, use and operating characteristics of the nation's highways.

Interchange – An interchange is a system of interconnecting roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels.

Intersection – The general area where two or more highways join or cross. There are three types of intersections: intersections at grade, grade separations without ramps, and interchanges.

Median – The portion of a divided highway separating the traveled way for traffic in opposing direction. A positive barrier normally consists of a guardrail or a concrete "Jersey-type" barrier. A line of closely spaced (large) trees or of thick, impenetrable shrubbery on most of a section might also be considered a positive barrier median. Turning lanes or bays are not considered medians unless a median exists on the major portion of the roadway, and the turning lanes/bays are cut into the median at intersection, entrances to commercial enterprises, etc.
A continuous turning lane is not to be considered a median. Continuous crosshatching that is at least 4 feet wide may be considered a median, however, if a crosshatched portion of a roadway is used as a turning lane it is considered a turning lane, by law, not a median. A curbed median consists of some kind of stone curbing (generally granite, 4 to 10 inches in height) which separates the roadway surface from a concrete, paved, or earthen "island" in the between the opposing travel ways.

NHDOT – New Hampshire Department of Transportation. The New Hampshire Department of Transportation is the state agency in charge of design, construction, and maintenance of all state- owned, funded, or maintained channels of transportation, including roadway, rail, air, and sea. In order to provide an expurgated system of transportation excellence in the Granite State, NHDOT (with the aid of Regional Planning Commissions (see RPC) and municipalities) also assiduously maintains a data system on all transportation channels in the state that are not state owned or maintained.

Node – A node is the most important feature in the GIS (see GIS) system. Nodes are created at the intersections of roadways in the physical world (either during field survey or through aerial imagery) and other breaks in a survey route such as legislative boundaries or notable roadway features such as bridges. Nodes are connected by anchor sections (see anchor section), not vice versa. Nodes may exist without anchor sections, however, anchor sections cannot exist without nodes to start and end them. Nodes give geometry to all of the shapes and features in GIS. Nodes are never deleted, though they may be retired. In this manner, their spatial locations are affirmed in perpetuity.

Oracle Database – Oracle databases are object-relational database maintenance systems which catalogue and relate data. These databases are maintained through computerized routines designed by NHDOT personnel. Oracle databases can be queried using *Structured Query Language* (SQL) to locate data and relationships.

Ramp – The term "ramp" includes all types, arrangements, and sizes of turning roadways that connect two or more legs at an interchange. The components of a ramp are 1) a terminal at each leg, and 2) a connecting road, usually with some curvature, and on a grade. The term interchange indicates that there are one or more grade separations between the interconnecting roadways. Ramp components are also being referred to as deceleration lane (exit terminal), ramp proper, and acceleration lane (entrance terminal). In some cases due to geometric and physical characteristic of highways the entrance terminal may be very short and followed by either a weaving section or an auxiliary lane.

Roadway – The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

RPC – Regional Planning Commission. An RPC obtains state and federal aid to perform maintenance, monitoring, and construction on a local level.

Shoulders – The portion of the roadway contiguous with traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface course.

Slip ramp – An individual turning roadway that is separated from the normal traveled way by an island at a channelized intersection.

Traffic Lane – The portion of the roadway separated from the other portions by two parallel lines to channel vehicles traveling in the same direction. Lane lines are often painted with reflective paint to increase conspicuity.

Traveled way – The portion of the roadway indented for the movement of vehicles, exclusive of shoulders.

Turning roadway – A connecting roadway that connects two intersection legs for turning traffic

Turnpike – A Turnpike is a roadway that is maintained through the money collected on it through tolls. Turnpikes are not the same as an Interstate Highways or US routes, although they may run concurrently, such as the FE Everett Turnpike and Interstate 93.

Weaving section – A Weaving section is a highway segment where the pattern of traffic entering and leaving at contiguous access points results in crossed vehicle paths.

CLOSING REMARKS/CREDITS

This manual was originally created between May and December 2012. It is reviewed and edited by NHDOT personnel on a quarterly basis, in conjunction with the quarterly archive data snapshots. It was created in order to help members of the New Hampshire Department of Transportation, outside contractors, and municipal organizations better understand the processes and standards involved in the Road Inventory process, and to aid in the transition to a more universal road network database.

Resources cited include:

Matthew Baker Road Inventory Manual for NHDOT Contract
Federal Highway Administration's Highway Performance Monitoring System Manual
NHDOT Road Inventory Manual Editions 2003 and 2004
Wikipedia.org
FHWA.gov

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