Functional Class by the Numbers

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[New York Department of Transportation logo]
Functional Class – A grouping system applied to roads, streets, and highways to identify the character of service the road provides to the overall transportation network.

*An attempt to categorize a road’s importance to the national transportation network
*More recently, includes expectations about travel speeds, roadway capacity, and existing future land use
FHWA Functional Class Characteristics

- FHWA Table from “Highway Functional Classification Concepts, Criteria, and Procedures”
- FC runs from mobility to access
  - Arterial – Maximum mobility
  - Collector – Compromise of mobility and access
  - Local – Focused on access
- Majority of long trips on arterial
- Majority of short trips on locals/collectors
Principal Arterial – Interstate

- FHWA Code – 1
- New York State Codes – 11/1

Principal Arterial – provide a high degree of mobility and carry a high proportion of travel for long distance trips

* This is the only functional class with zero ambiguity

Clockwise:
- Northway near twin bridge
- Northway in the Adirondacks
- I-87 – I-287 Split near Jersey
- I-88 Delaware County
- Holland Tunnel
- Robert F Kennedy Bridge
Principal Arterial – Other Freeways and Expressways

- FHWA Code – 2
- New York State Codes – 12/2

Principal Arterial – provide a high degree of mobility and carry a high proportion of travel for long distance trips. Non-interstates can serve the same transportation needs as an interstate highway.
- Look and feel similar to interstates.
- Fully limited access or few at-grade intersections
- Typically divided

Clockwise:
NY-140 in Webster, Monroe County
Cross Island Pkwy, Hempstead, Nassau County
Taconic State Pkwy, Mt. Pleasant, Westchester County
NY-50, Saratoga Springs, NY
NY-481, Fulton, NY
FDR Drive, Near 42nd Street
Principal Arterial – Other

- FHWA Code – 3
- New York State Codes – 14/4

Principal Arterial – provide a high degree of mobility and carry a high proportion of travel for long distance trips. Non-interstates can serve the same transportation needs as an interstate highway.

- Serve major centers of metro areas
- Driveways and at-grade intersections
- Still provide a high degree of mobility

Clockwise:
Broadway, Manhattan near 48th and 49th streets
Broadway, Buffalo, NY
NY-9N Near Diamond Point
E Gennessee St, Syracuse
NY-417, Salamanca, Cattaraugus county
NY-79, Ithaca, NY
Minor Arterial

- FHWA Code – 4
- New York State Codes – 16/6

Minor Arterial – provide a service for trips of moderate length, serve geographic areas that are smaller, and offer connectivity to the higher classified arterial roadways
- Provide intra-community connectivity in urban areas
- Good candidate for local bus routes

Clockwise:
NY-9P, Saratoga Springs
Sycamore Street, Buffalo, NY
NY-86, Wilmington NY near Whiteface
Spring Street, Manhattan
NY-12B, Madison County, near Town of Lebanon/Hamilton boundary
Geyser Rd, Saratoga Springs, NY
Major Collector

- FHWA Code – 5
- New York State Codes – 17/7

Clockwise:
East Circular Street, Saratoga Springs, NY
NY-28N, Minerva, Essex County
CR-42, Shelter Island, Suffolk County
NY-158, Rotterdam, Schenectady County
US-11, Watertown, Jefferson County
Angola Rd, Cornwall, Orange County

Major Collectors – Gather traffic from local roads and funnel to the arterial network
• Provide access while maintaining mobility
Local roads—Often classified by default, as in local is what’s left. Designed for access over mobility, typically don’t carry bus routes, and are focused mostly on land access. Often designed to discourage through traffic.

Typically poor candidates for local bus routes

Clockwise:
Congress St, Saratoga Springs, NY
Irving Place, Manhattan
Massachusetts Ave, Islip, NY
Runnymere Rd/Court, Brighton, Monroe County
Partridge St, Albany, NY
River Rd, North Creek, NY
Umm, Minor Collectors?

- FHWA FC Code 6
- New York State FC Codes 18/8
- Lower density urban areas
- Introduced around 2009
- Largely unused in New York to date

<table>
<thead>
<tr>
<th>State</th>
<th>Minor Collector Mileage</th>
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<tbody>
<tr>
<td>Florida</td>
<td>3,625.50</td>
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<tr>
<td>Nevada</td>
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<tr>
<td>Puerto Rico</td>
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</tbody>
</table>

- Top 5 states in this functional class
- Skip a few
- New York
- Skip a few
- 6 states, DC, and PR with 0
How should we approach the numbers?
Keep in mind... ESTIMATES!
Variance within a Functional Class

Variety is the Spice of Life
NYSDOT Inventory Summarized by Functional Class
Local roads dominate
NYC dominates
Most New York cities are small
Poughkeepsie/Newburgh merged in 2002
Kingston and Saratoga created in 2005
VMT Per Thousand People in NYS Urbanized Areas

Missing Counties
Lewis
Hamilton
Schuyler

Slope = 9.9
VMT Per Thousand People in NYS Urbanized Areas

Slope = 9.9
Slope = 22.4

Missing Counties
Lewis
Hamilton
Schuyler
NYS Rural Counties

County Land Area and Total Centerline Miles (NYSDOT Rural Counties)

SCHUYLER
LEWIS
SUFFOLK
HAMILTON
Shelter Island
Fisher Island
Major Urban Areas in the United States
FHWA NYC total VMT = 293 million vmt
NYSDOT total VMT = 150 million vmt
Network Stability through Time
2005 – Mileage impacts from UAB adjustment. Kingston and Saratoga Springs UAB added
2014 – Mileage impacts from UAB adjustment. Watertown UAB created.
2014 – GIS-based review of non-FAE roads began
Arterials are fairly stable, fairly small mileage numbers through the years
Substantial change in Collector and minor arterial mileage (FC 16/17) in 2004-5
All three principal arterial FC classes (11, 12, 14) have stable mileage
FC 17 (Major collector) really sticks out

- FHWA suggests collector mileage should be about 1/3 of the total local road mileage. NYS has less
- Collectors seek to provide a balance of mobility and access. Thus, people want to get onto a roadway that better serves their needs

Recession/sub prime mortgage crisis not as obvious here as other datasets
Similar pattern to NYS in their Major collectors
Began using minor collectors in 2014
Conclusions

• Lots of variation within a functional class
  • Usage
  • Look and feel
• Urban areas within New York compare well to each other
  • NYC is quite the exception
• New York urban areas compare well with similar cities nationally
  • NYC is quite the exception
• Many of the readily apparent trends are noise, not signal
• As more of our systems become GIS enabled, it will be easier to seek out the signal

Questions, comments, concerns?

http://www.google.com/publicdata/explore?ds=gb66jodhlsaab