Roadway Inventory Anomalies

- Originally started as a centerline to centerline representation, ignoring actual traffic flow such as through interchanges
- “Anomalies” always existed but grew with the desire for more detail, directional depiction, and routing capabilities
Nice grid pattern, easy to handle

Throw in some curves, still an easy centerline-to-centerline to represent and get accurate lengths, number of lanes
Then this comes up.

Still model as centerlines. Still gives overall system-level measure of miles and lanes.

Traffic count stations interchange to interchange; intersection to intersection (ignored mess within interchange).
Centerline-to-centerline

- Works for overall system level depiction
- Works for state system assessment
  - Traffic counts, VMT
  - Pavement condition
- Get more site specific for corridor analyses and project designs, but these are not “our” concern

But what about these? The “ramps” to either side are one lane. Do we ignore them and just add to the number of mainline lanes (have done so in small, local cases)? What if the ramp is two directional? Is this now three roads, not one? This particular example is a mixed bag for NYSDOT where one side had a reference route, but not the other. As a state route, any compromise we use is up to us. But for a local road…….
Two lanes on each leg. Owned by County which wants “credit” for CHIPS state aid funding (0.03 miles)

NYSDOT did get rid of this one with a paving project on the state route with which it intersects.
Centerline-to-centerline

• Works for overall system level depiction but not for tracking all pavement mileage when that is of concern
• Also does not work as the need to emulate “real world” movements becomes more of a concern
• But these are not the only anomalies

COUPLETS: US 4 in Troy – NB on 4th St, SB on 3rd St
NY 2 in Troy – EB on Ferry St, WB on Congress St
For this “simple” set of couplets:

- For state purposes, list as one road with all lanes and all traffic
- For city, need to include two streets for full credit for length CHIPS (state aid) but end up getting “extra” lanes

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<th>Couplets</th>
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NY 352 in Elmira – EB on Water St, WB on Church St – but both are two way. WB on Water is not a State Route; EB on Church is not a State Route. So how does one handle reporting lanes and traffic counts?
Couplets

Pair of two way city streets:

- For state purposes, list as one road with all lanes and all traffic
- For city, need to include two streets for full credit for length plus need to have a different set of lanes from NY 352 for accurate traffic counts
Watertown

- US 11 and NY 12 couplets; also overlap city streets and NY 3; this split was presumably done to mitigate congestion for through traffic but that need was eliminated with the construction of I-81 many years ago.
- What is the number of lanes on each piece for inventory? Report US 11 to HPMS, not Mill St, LeRay St, Holcomb St, Washington St.
- Also, how does one deal with traffic counts through-out this “mess”?
- From city perspective it is easy: count each street.
- From state perspective, how does one answer “what is the two way AADT on US 11 in Watertown?”

Added complication: Public Square is traversed by all three routes with different directions; Should this be modeled as a circular roadway, a divided roadway, other? Need to pick up all of the “slip ramps”? This is not unique, although most are squares or circles. This leads to next inventory issue: Roundabouts.
Roundabouts

• Basically a type of intersection
• Thus far have continued with centerline concept drawing through the circle as one would with a standard intersection
• Increasing interest in going around the circle (traffic safety, CHIPS mileage)

Full width of circle fits within standard (albeit large) intersection
Roundabouts

Centerline becomes skewed, even on a straight road, but centerlines on multi-turn lane intersections also have alignment issues.

Not talking about GIS here, mostly focused on centerline for length measures, but it becomes more of an issue when you do add in GIS.

The Town of Malta is our roundabout capital
Intersection of US 9, NY 67, and CR 108 in the Town of Malta

Extend CR 108 to US 9 SB to fully connect.

- North side: NY67 WB, CR 108 WB overlap
- East side: US9 NB, NY67 WB overlap
- South side: CR108 EB
  - not covered if don’t extend CR 108
- West side: US9 SB
  - no overlaps

Only two arcs covered by primary/inventory direction
I split it into 4 arcs for simplicity, but there are actually 8 arcs with different traffic/mixing patterns (affects traffic counts). Are counts on each of those arcs needed on an ongoing basis, or project/accident investigation level only?

Magic Roundabout, Swindon, England

Large center circle actually flows in the reverse direction so that the outer circles properly interact with it.
**Traffic Count Stations**

- Already talked about couplets
- Boundary crossing roads
  - Historically designated separately
  - Need to match counts across boundaries
- Counting across county lines
  - Stations based on county
  - Count axle factoring based on Region
  - Exacerbated on Interstates

**Interchange routing**

- “Routes” changing roadways can introduce complexity
- “Routes” changing roadways through a complex interchange introduces significant complexity
- “Routes” following ramps
Under the bridge is overlap NB but not SB (US 1 and city-owned street)
Black arrows represent Interstate 83 near Lemoyne, PA and the blue arrow represents PA-581. I-83 spanned to the PA-581 bridge then begins to run south under the bridge. The outer East/West ramps were not part of I-83 until 2018 when the LRS was reconstructed to incorporate the connecting ramps as part of I-83. PA-581 was then extended to the new I-83 points. Until this reconstruction, I-83 was represented as a 90 degree bend but, in reality, did not truly connect.
Reference route as part of the Interstate system.

Orange/yellow part is technically not part of I-87 or I-90 but is still considered Interstate.
## Discontinuous Routes

- Thruway is sort of discontinuous between I-87 and I-90
- Actual discontinuous routes have gaps either physical or by designation
- Several Interstates are discontinuous across the US
  - I-86, I-99 discontinuous, designated in law

## Interstate 86

- Runs approx. 63 miles west from I-15 in Pocatello, ID
- Also 207 miles as a conversion of NY 17 from I-90 near Erie, Penn, to Waverly, NY
  - Additional 9 miles east of Binghamton as a continuation of NY 17 conversion to Interstate
  - About 40 miles of NY 17 connects the two NY pieces
Discontinuities in county and local roads, too.
Yellow is County Road 154 Osborne Road plus a little of Sand Creek.
Orange is town-owned Sand Creek Road except where county owns it.
Dummy segment? Two Roads?
Often happens where county roads meet state routes (dog leg intersections)
and where stop at village lines, continuing on other side.

Discontinuous Routes

- Gap not in Sand Ck name but in ownership
- City streets – 4 Hudson Avenues
- Service roads such as along Long Island Expressway – designated as Ref Rtes
- NY 42 Sullivan and Greene Counties, but skips Ulster (can traverse on local roads)
- PA 43 gap at Uniontown

Many cities repeat street names – would connect if lines extended; common in NYC;
four Hudson Avenues in Albany
Interstates set as plan nationally so there are gaps, but state routes may do so, too.
PA-43

- Black arrows represent tolled portions of PA-43 that the Pennsylvania Turnpike Commission owns. PA-43 begins at the WV-PA border and extends for approximately 12 miles north.
- PennDOT owns the section of PA-43 represented by the blue arrow.
- The portion of PA-43 ends when it merges with US-40 just south of Uniontown, PA.
- The PTC portion of PA-43 resumes north of Uniontown and continues through Fayette and Washington Counties then later ends in Allegheny County.

“Holes”

- Similar to “gaps” are “holes”
- Roadways exist but are not public
- As private roads, they are not part of the functional classification system even though they may be part of the actual flow of traffic in the network
Campus roads carry a lot of traffic but are kept private, presumably for control. Closed one 24 hr period per year to retain private status.

Most private roads are on a small, residential scale but some are a significant part of the network. Over ¼ mile of Spackenkill Road 4 lane arterial is owned by IBM causing a "dead end" in an arterial functional class. Like colleges, these may cause functional class network not to reflect actual "important routes" through an area.
Jurisdiction

Maintenance versus owning:
- By statute, NYSDOT maintains
  - Nearly 100 miles of OPRHP Parkways
    - Parkways are literally linear parks
    - OPRHP – NYS Office of Parks, Recreation, and Historic Preservation
  - Whiteface & Prospect Mtn roads owned by DEC
- County/town maintained service roads within NYSDOT ROW
- City streets on state development property
- Road to town park within village limits
- Town maintained remnants of state road
  such as at a realigned bridge where access still needed for homes on old road.

Of course, NYC is different

NEW YORK CITY MAINTENANCE:
ALL WORK DONE UNDER THIS CONTRACT WHEN COMPLETED SHALL BE MAINTAINED BY THE CITY OF NEW YORK IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AGREEMENT WITH THE CITY OF NEW YORK FOR MAINTENANCE OF IMPROVEMENTS OFF THE STATE ARTERIAL HIGHWAY SYSTEM FUNDED UNDER THE NEW YORK STATE FAUS, TOPICS, AND TITLE II PROGRAMS, DATED FEB. 3, 1977.

APPROVED PURSUANT TO THE ABOVE REFERENCED AGREEMENT WITH THE UNDERSTANDING THAT THE STATE WILL NOT FURNISH MAINTENANCE PAYMENTS.

Virtually all plans for highways in NYC have this note. Creates a third layer of responsibility: owning, maintenance, and major capital maintenance.
Another anomaly – bureaucratic orphans
Orange part is technically still part of NY340 as NYSDOT owns it. Town believes they own it and have spent money maintaining it. But no successful effort has been made to actually abandon it from state ownership to the Town.

State Highway Numbers

- Refers to a specific piece of typically state-owned pavement
- Not the same as a route number (tied to pavement, not the path or “route”)
- Often non-mainline roadways constructed under one contract lumped under one SH number, yielding some challenges
- More on SH numbers (and ref rtes) tomorrow
Interconnection between US1, I-95 (a Thruway-owned toll road) and other state, county, and local streets. Constructed under one contract, one State Highway Number, and therefore assigned one Reference Route number. Does not fit the “follow the route” model of assigning route numbers. Served as GIS challenge for years.

We did finally fix this one by splitting into three reference routes.
Two major roads actually owned and maintained by NYSDOT leave New York State:
- NY 17 (someday to be I-86)
- I-684
- One appears to leave the state
  - NY 120A

NY 17 (labeled as I-86 here) enters Pennsylvania. Built and maintained by NYSDOT. Has an interchange in Pennsylvania (not sure who maintains it). Claimed as in NYS in network and in HPMS.
Roads leaving the State

- Only indication that one is leaving (or entering) the state are signs that say “State Border”
As best I can determined, the NY120A is “implied” but NYS does not actually own or sign King Street while in Connecticut.