

History of (Statewide) model network management and development of tools (March 2021)

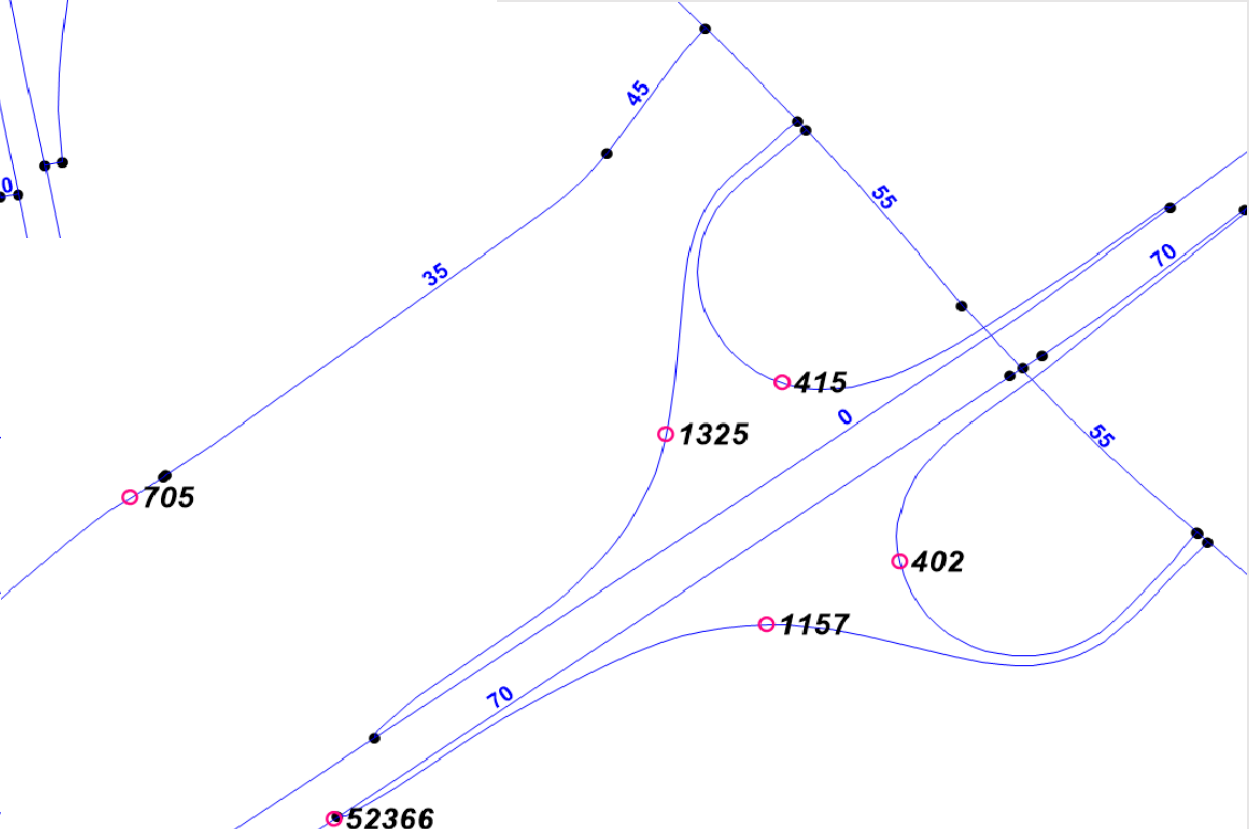
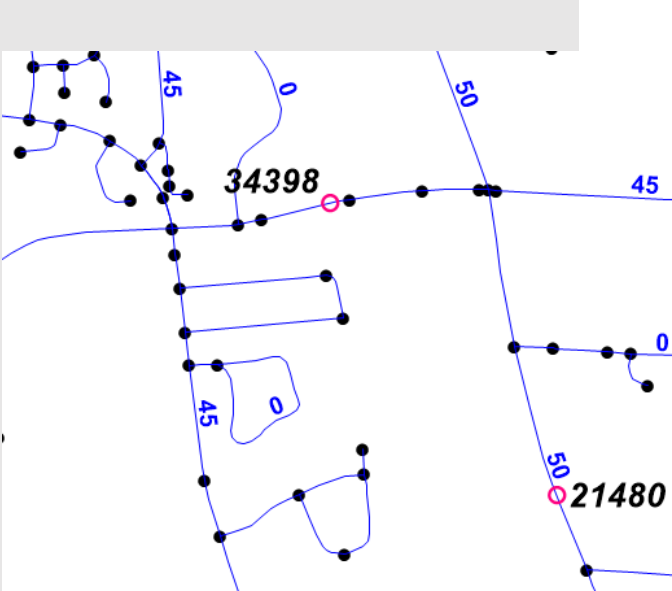
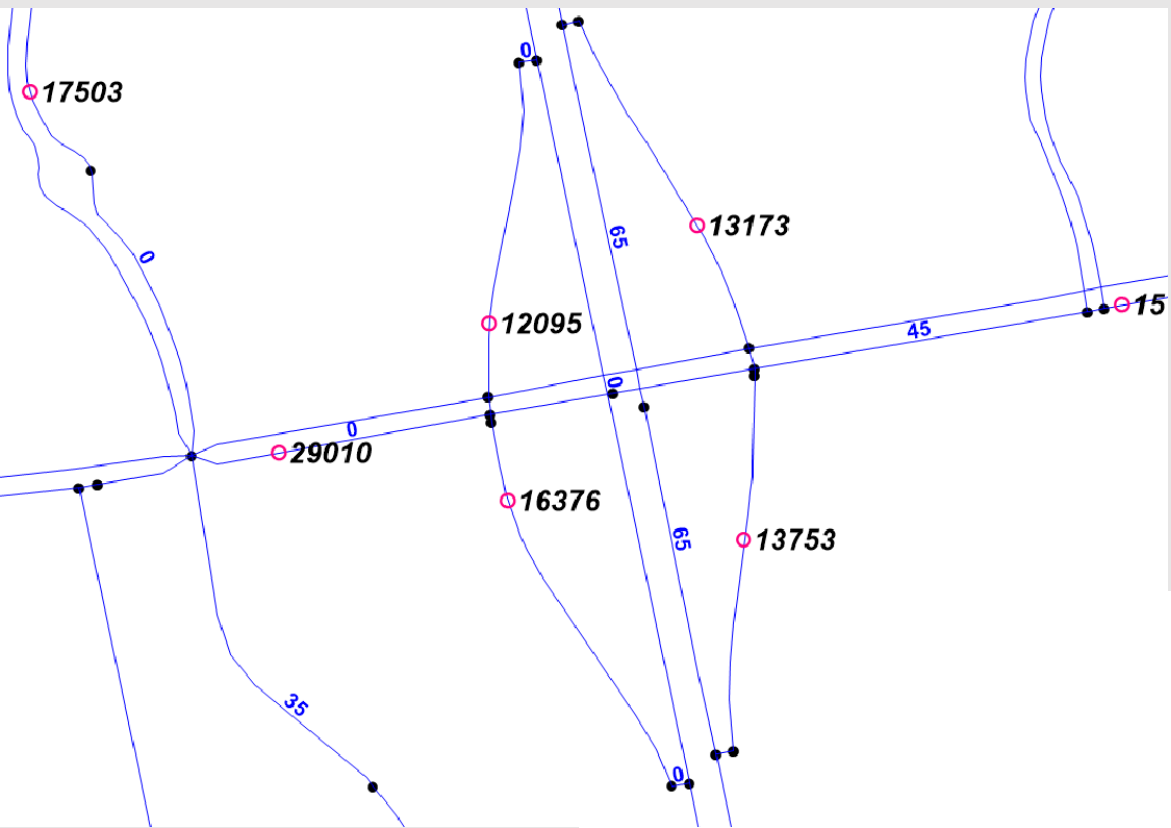
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Development and updating the statewide model highway network:

- Initially developed in 2003 from ODOT Roadway Inventory (RI) files, and (out-of-state) from TIGER street file and MPO networks
- Updating in theory: annually re-generate the network from Road Inventory shape file and data updates
- Updating in practice: RI shape file historically has lacked connectivity and routability, with freeways and other divided highways initially having “single line” representation without ramps. Considerable up-front work was done to make the network properly routable, and the foundational shape file has not been re-generated since then. Updates made on a roughly 5-year schedule, done semi-manually (RI attributes, project databases, aerial photos)
- Adding projects for horizon-year planning networks – from MPO TIPs and ODOT’s Ellis and TRAC systems for management of project development

Road Inventory: connectivity, e- 911, intersection modeling, and weaving analysis



Sources of data utilized for the highway network (beyond Road Inventory):

- Traffic counts: shape file of ODOT count stations, files maintained by MPOs, adjacent state DOTs, FHWA, U. S. FRA (RR grade crossings)
- Travel times/speeds: ODOT floating car studies/NPMRDS/INRIX
- Adjustments to free flow speeds: SR curvature files, RR Xings
- Truck PCE factors: (SR road grade data, generalized 4 local & halo area
- Intersection traffic controls (signals/stop signs): Initial defaults set via network calculators (f(fun.class/jurisdiction/volume)), overrides from MPO files, LEHD sup. (some counties), ODOT photolog & aerial photos
- Posted speed limits (local system): Defaults by FC, MPO files, LEHD sup.
- Turn lanes at intersections (aerials (OSIP, Google map/Streetview))
- Toll rates: Turnpike authorities (including adjacent states)
- Surface type/pavement condition (IRI-ODOT)

Use of Open Street Map (OSM) or other 3rd party network files?



Sources of data for the national RR network:

- Rail lines from U.S. BTS shape file
- Volumes and operating speeds overlaid from U.S. FRA's RR grade crossing inventory
- Service schedules from Class I RRs operating in Ohio (treated in the statewide model similar to passenger transit in that full trip time for freight depends more on access and transfer times than time a shipment is in motion)
- Rail Waybill data

Future Highway Networks – ODOT Side

- We send a query request to SPPM, who queries out project from Ellis

	A	B	C	D	E	F	G	H	I	J	K	L
	PID						Project			Actual/		
1	Count	Source	Dist	PID	Type	Cnty	Name (ie	Descripti	Actual	d	Award	Primary Work Category
23470	8259	Ellis	5	92458	ODOT Let	FAI	FAI SR 256	Add through lanes, u	07/01/14	2015	Widening	
23480	8443	Ellis	4	85076	ODOT Let	SUM	SUM Cleve	New capacity and sa	04/01/16	2016	Widening	
23481	8836	Ellis	10	93044	ODOT Let	GAL	GAL CR 60	Widen the curves an	07/01/15	2016	Widening	
23487	8872	Ellis	2	77242	ODOT Let	LUC	LUC IR 75	An Interchange Mod	01/01/17	2017	Widening	
23488	8872	Ellis	2	77242	ODOT Let	LUC	LUC IR 75	An Interchange Mod	01/01/17	2017	Widening	
23489	8872	Ellis	2	77242	ODOT Let	LUC	LUC IR 75	An Interchange Mod	01/01/17	2017	Widening	
23490	8872	Ellis	2	77242	ODOT Let	LUC	LUC IR 75	An Interchange Mod	01/01/17	2017	Widening	
23491	9161	Ellis	9	92789	ODOT Let	HIG	HIG CR 51	It is proposed on CR	07/01/16	2017	Widening	

- Yes, that is a lot of projects. They also have a lot of duplicates. We filter them to those we think might be capacity projects. (Yay! Only 3467!)
- We read through all the Ellis Descriptions to find which are actually capacity projects and remove duplicates. (Ooo! Down to 755 projects for 10 years.)
- Also note which are TRAC projects.

Future Highway Projects – MPO Side

- TIPs!!! Yes, someone actually reads those Tables you include in your TIP.
 - List of Projects Sold Since Last TIP
 - List of Projects to be Sold on Current TIP
- Cross-Reference with ODOT Ellis Projects. (Only projects with State or Federal funds are in Ellis. Also, only Ohio projects in Ellis.)

	A	B	C	D	
1	MPO	PID	Year	Location	Description
92	Columbus	80105	2014	FRA US-23 at Pennsylvania Ave	Intersection modification
93	Cincinnati	87401	2014	HAM IR 71 Fields-Ertel/Mason-Montgomery	New NB exit ramp
94	Newark	89478	2014	LIC CR 804 00.90	Improve turn lanes, widen radius of roadway
95	Cincinnati	6-8001.21	2014	BOO KY 237 from Woodcreek Drive to Rogers Lane	Reconstruct and widen KY 237
96	Cincinnati	6-158.00	2014	BOO KY 536 from US 42 to I-75	Widen to 5 lanes
97		6-8000.5	2014	BOO IR 275 MP 4.842 to 4.942	Construct entrance ramp and widening on KY 20 and IR 275
98	Lima	90849	2015	ALL SR 309	Widen roadway to meet design standards
99	Toledo	87659	2015	WOO IR 75 12.04	Widen bridge over Portage River
100	Cleveland	80406	2015	CUY Innerbelt CCG3B IR 77	Widening of all mainline bridges
101	Cleveland	86256	2015	CUY Memphis Ave	Reconstruction and interchange improvements
102	Cleveland	79671	2015	CUY/SUM IR077-00.00/33.00	Lane addition

Future Highway Projects – E&C vs. Build

- Base Year Network – What Sam said. Also check with Sold Ellis Projects
- Existing & Committed – These are non-TRAC capacity projects that are in Ellis or MPO TIPs. Basically, what’s in your TIP, minus TRAC projects.
 - Projects are coded in Cube and Log Files are saved by year. Generally, I assume that the project will be open to traffic the year after they are (scheduled to be) sold. However, for some large local funded projects, I may delay them a second year.
 - Note that they can’t be coded all in a day, so intermediate files are saved together.
 - Also note that the turn prohibitors are coded as the projects are. Cube ignores turn prohibitors for junctions that don’t exist. Note that you cannot reuse node numbers if you do this.
- E&C networks are produced by 5 year increments. (e.g. 2015 and 2020.)

Name	Date modified	Type	Size
1_2010_missedprojs_all.LOG	8/2/2013 10:21 AM	Text Document	14 KB
1_2011_all.LOG	8/5/2013 9:55 AM	Text Document	341 KB
1_2012_all.LOG	8/5/2013 2:29 PM	Text Document	257 KB
1_2013_all.LOG	8/5/2013 2:38 PM	Text Document	197 KB
1_2014_all.LOG	8/5/2013 2:42 PM	Text Document	246 KB
1_2015_all.LOG	7/31/2013 12:44 PM	Text Document	195 KB
1_2016_all.LOG	7/30/2013 3:25 PM	Text Document	59 KB
1_2017_all.LOG	7/31/2013 11:13 AM	Text Document	14 KB

Future Highway Projects – E&C vs. Build

- Build Networks – These are the TRAC projects. Each TRAC project is coded individually. Also, each Phase of a TRAC project is coded individually. This is due to the TRAC scoring process.
- Tier I projects are placed into the Year where the project is expected to open.
- Tier II projects are placed into a even more future year. (After all Tier I projects have been built and opened.)
- Tier III projects are placed into the very last year. (e.g. 2050)
- During the TRAC scoring process, a single project is coded onto the E&C network. Its effects are then compared to the E&C assignments.
- Note all projects are coded with PID_EC or PID_TRAC and description and year.

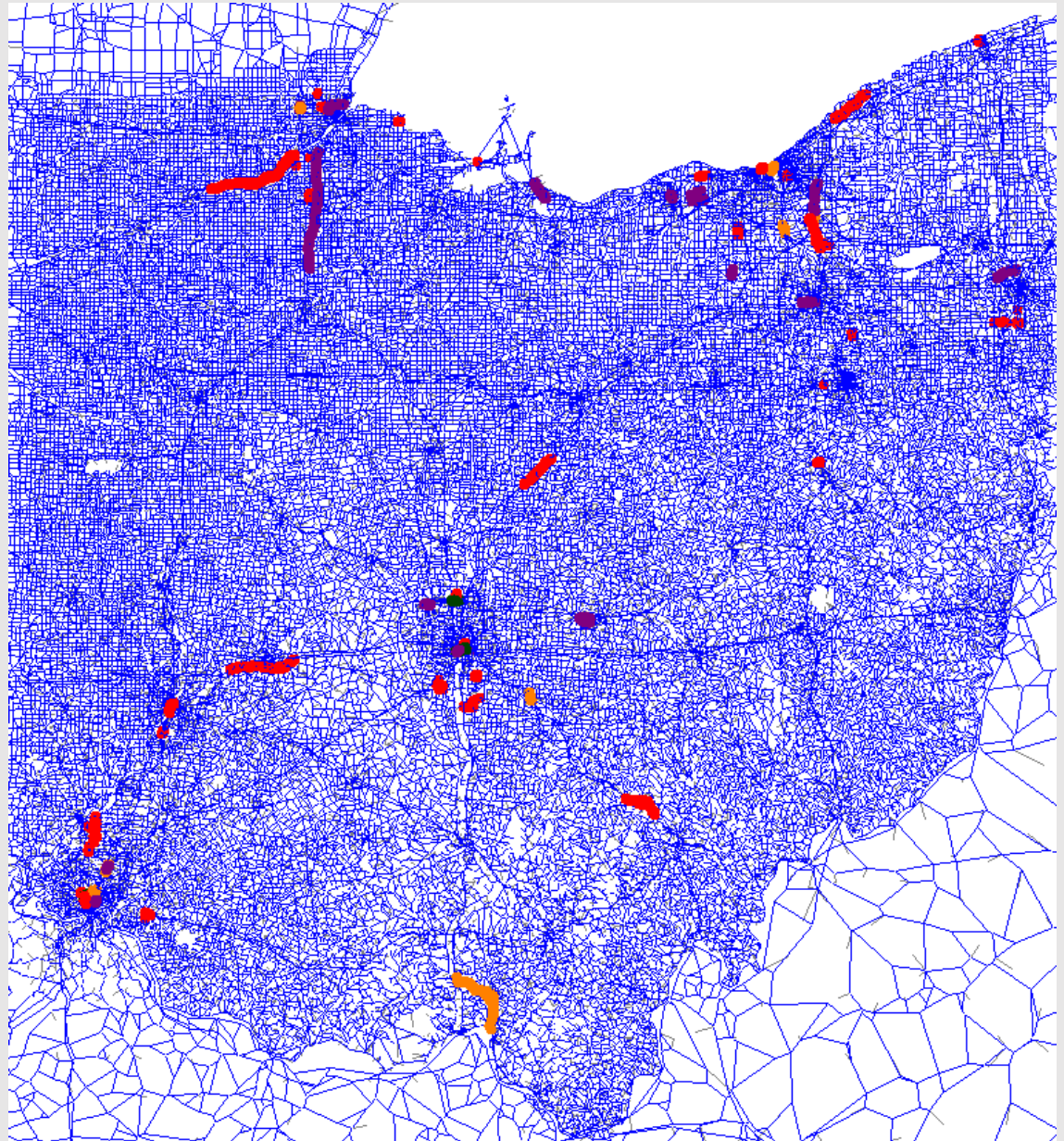
Bryan got to try to figure out what all those projects actually were and to put them on the network.

TRAC	Award SFY	Dist	PID	Cnty	Project Name (ie CRS)	Coding Notes	Description
	2012	11	78034	HAS	HAS SR0646 16.130	made changes. Assumed s	Remove existing structure and construct at-grade intersection.
	2012	11	79175	JEF	JEF SR 822 0.27	made changes deleted lin	Removal of Ft. Steuben Suspension Bridge and redesign/removal of approach ramp
*	2012	12	78076	CUY	CUY BESSEMER AVE PH 2A		Extend Bessemer Avenue from East 87th Street to Union Avenue in the City of Cl
	2012		89306	Akron	SUM Canton Rd	intersection not in model	New traffic signal
	2012		90890	Akron	SUM Whit Pond Dr	vague description	Intersection improvements
	2012		3	Akron	SUM IR 80-178.01	?????	Widen to six lanes, reconstruct toll plaza
	2012		89529	Akron	WAY SR 585-17.62	turn lanes	Construct offset turn lanes, modify signals
	2012		86536	Canton	STA N Main Ph 4	widened	Widen to 5 lanes Applegrove to Orion
	2012		82555	Cincin	CLE Eastgate Blvd to Jackson Square	??? Wasn't sure is this pro	Relocate Eastgate North with three lane section
	2012		86800	Cincin	HAM US 22 Gallbraith Road to SR 126	changed from 4 to 3 lanes	Change lane configuration from 4 to 3 lanes with a center two way left turn lane
	2012		83077	Cincin	HAM IR 71 Pfeiffer Road to I-275	turn lanes	Add 1 auxillary lane northbound
	2012		4	Cincin	CAM KY 9 at KY 915	turn lane	Construct a righ turn lane with positive offset
	2012		5	Cincin	KEN 4th Street West of Philadelphia	not sure what limits are	Construct an additional lane
	2012		6	Cincin	KEN US 25 Intersection with Dudley	turn lane	Construct right turn lane on Dixie Hwy to Dudley Pike
	2012		7	Cincin	KEN KY 1303 mp 5.7 to 5.797	turn lane	Widen the IR 275 westbound on ramp from Turkeyfoot Road for dual left turns
	2012		81438	Clevel	CUY SR014-07.50	not specific enough...	Add turn lanes
	2012		8	Colum	DEL - Liberty Rd.	New Road	Connect Liberty Rd. N of Home Rd. to Liberty Rd. S of Home Rd. Realignment.
	2012		90985	Colum	FRA Gender Rd from US-33 to Lehman	widen, turnlanes	Minor Widening/intersection modification
	2012		90241	Colum	FRA Gender Rd at Refugee Rd	turn lanes and additional t	Intersection modification

Fancy New Network

Other things of note:

- All projects are coded on the full network. Focus Links are then removed for model runs.
- We are working toward a ~35k zone statewide model network that will have all these links in it.
- It will also have your MPO zones and network.



Questions?

