Nothing Compares
NORTH CAROLINA

GIS-T 2016

NCDOT evolution of temporal polygons for spatially derived events

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Background

NC DOT Spatially Derived polygons

- County boundary
- Municipal Boundary
- Smoothed Urban Boundary
- Terrain Boundary

NC DOT Spatially Derived Fields

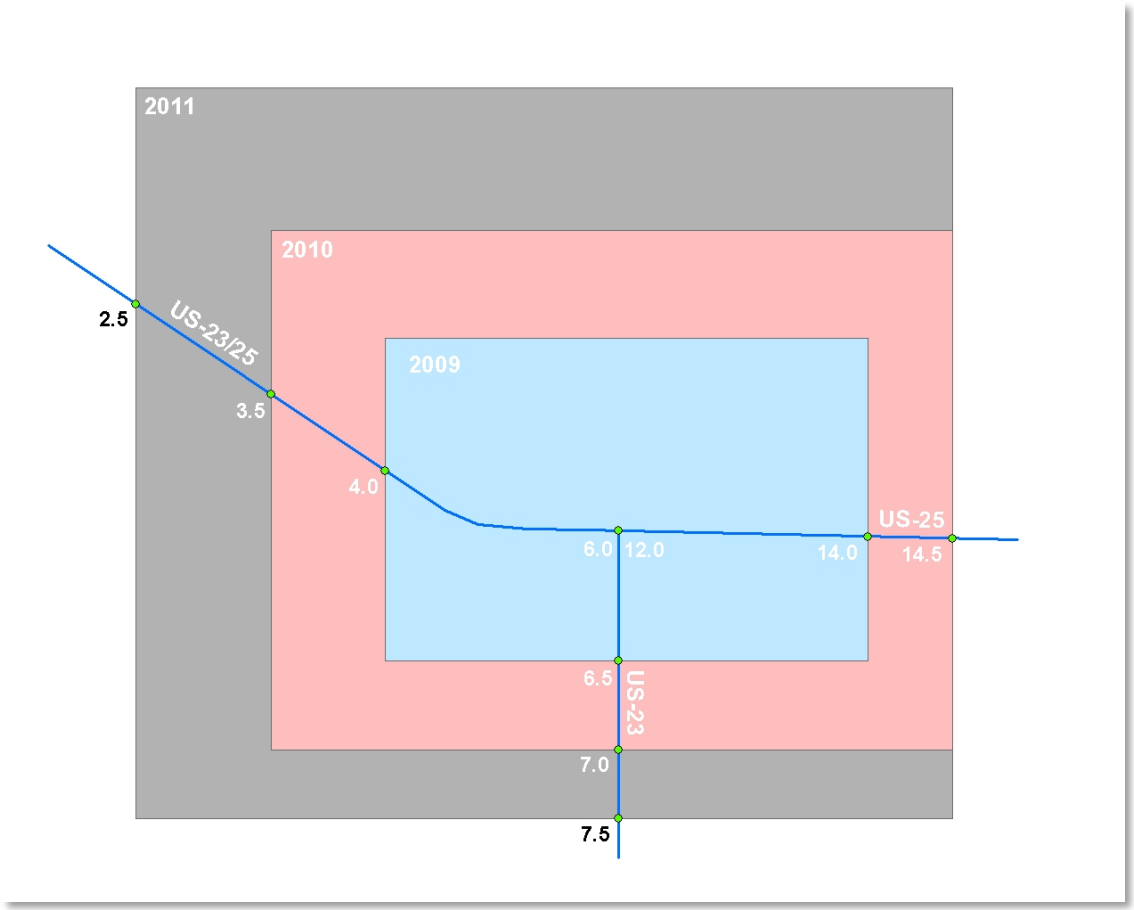
Used for HPMS

- Urban Id
- Terrain

Internal use

- State Highway System
- Urban Area Type
- Urban Population
- Town Code
- Town Name
- Municipal Population Group
- Location County

Temporal Polygons



History

History

- Up until 2008
  - Mainframe

- 2008
  - Moved to ArcMap and later to SDE

  - Used EFG (Event Feature Generator) - an in-house program to create a Road Characteristics file

The start of our new journey

Where have we been

- Week of August 19th, 2013 – JAD (Joint Application Design) meetings with Esri for ROME project
- August 27, 2013 – NCDOT email about network changes 3rd Qtr 2013
- Nov 19, 2014 – Esri requested what scheme we wanted and started working on the tool
- December 10, 2014 – Webcast of functionality
- March 18, 2015 – Requested the ability to run tool statewide
- August 31, 2015 – Started talking about temporal polygons

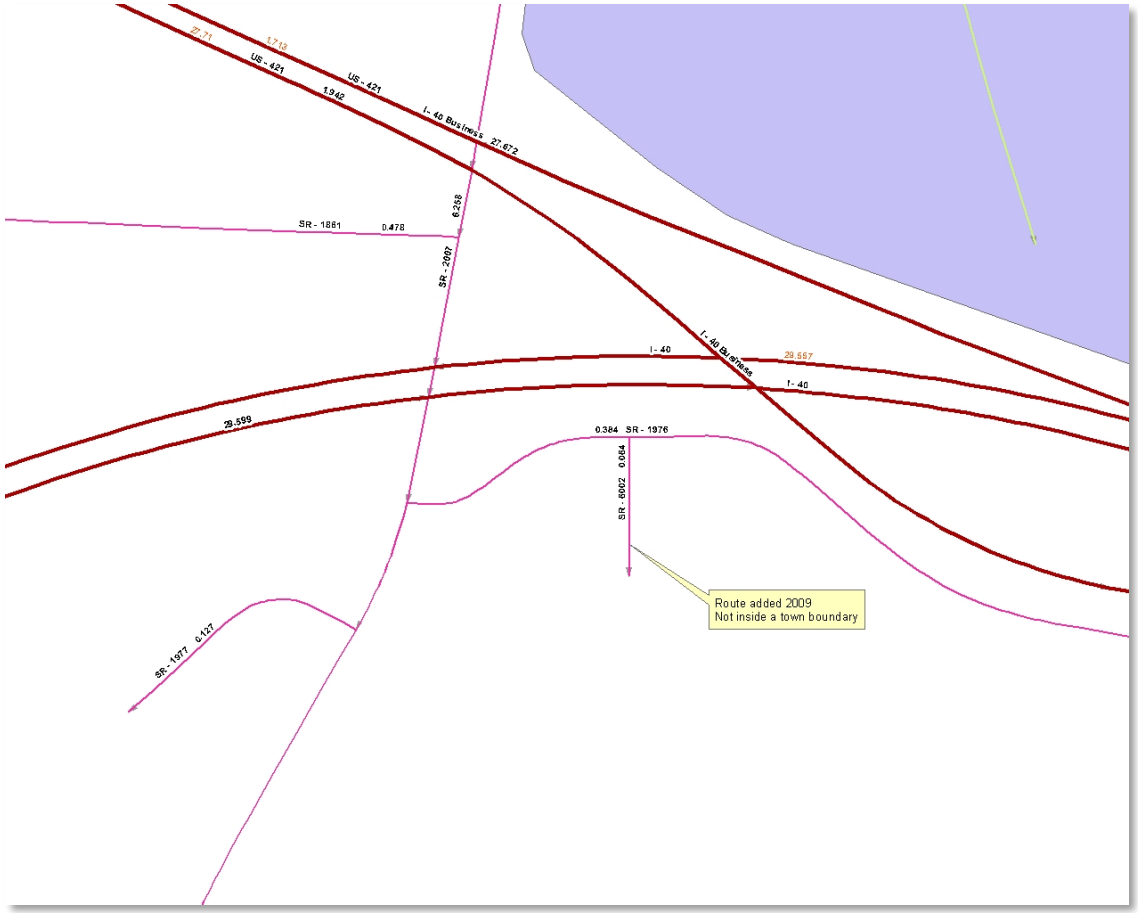
What started all this

- Routes changes in a quarter: 10,000
- Total number records in 5 years = 2 billion records
- Current statewide file size = 4 GB
- End of 5 years = 10 TB

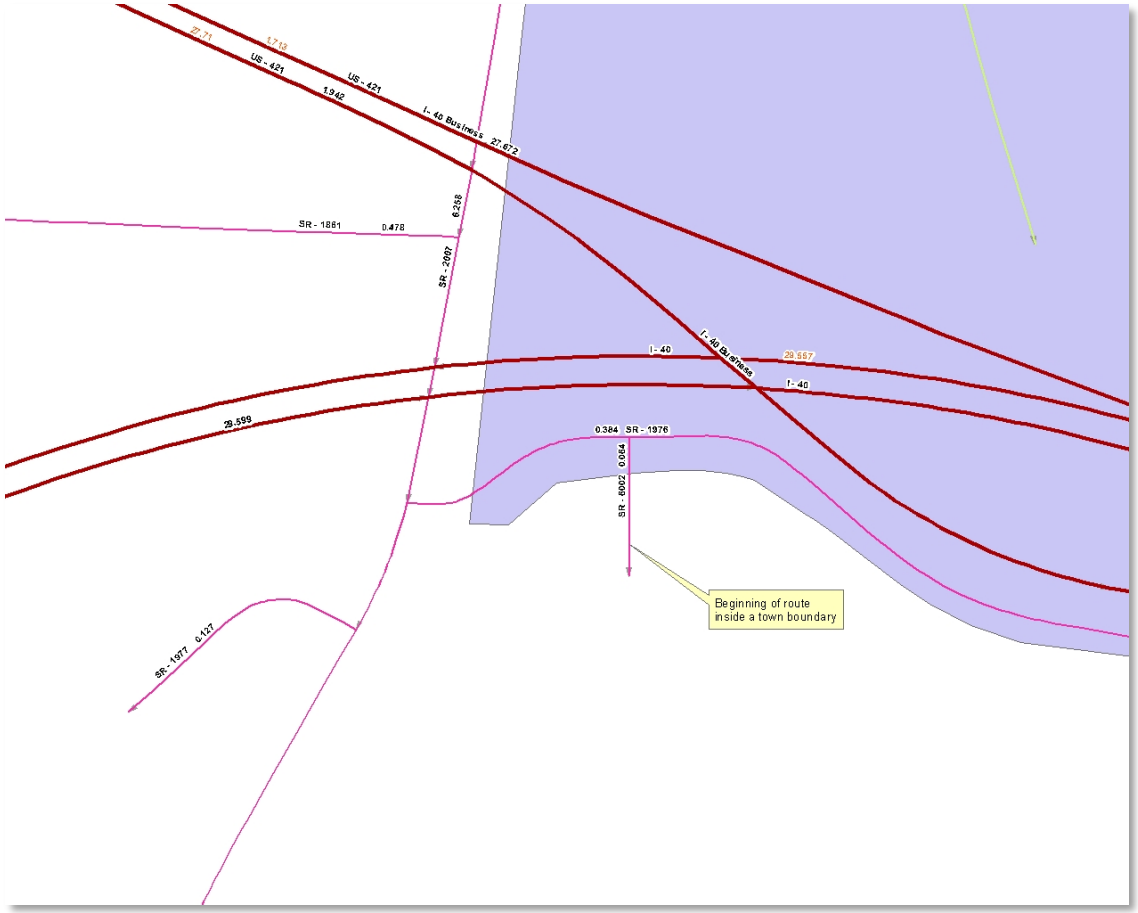
The data behind the why

- LRSE_LocationCounty
  - Esri delivered NCDOT data : 88,090
  - Esri SD Tool created data: 359,114
- LRSE_TerrainType
  - Esri delivered NCDOT data : 128,932
  - Esri SD Tool created data: 357,114
- LRSE_StateHighwaySystem
  - Esri delivered NCDOT data : 98,452
  - Esri SD Tool created data: 382,320
- LRSE_TownCode
  - Esri delivered NCDOT data : 37,760
  - Esri SD Tool created data: 159,107
- LRSE_UrbanId
  - Esri delivered NCDOT data : 56,080
  - Esri SD Tool created data: 203,774
- Total : 1,461,429 records x 5 yrs = 7,307,145 records

2009


27.71
1.713
US - 421
US - 421
1.942
I - 40 Business
27.672
6.255
SR - 1881
0.478
SR - 2007
I - 40
I - 40 Business
29.557
I - 40
29.599
0.384
SR - 1976
0.064
SR - 8002
Route added 2009
Not inside a town boundary
SR - 1977
0.127

2010


27.71
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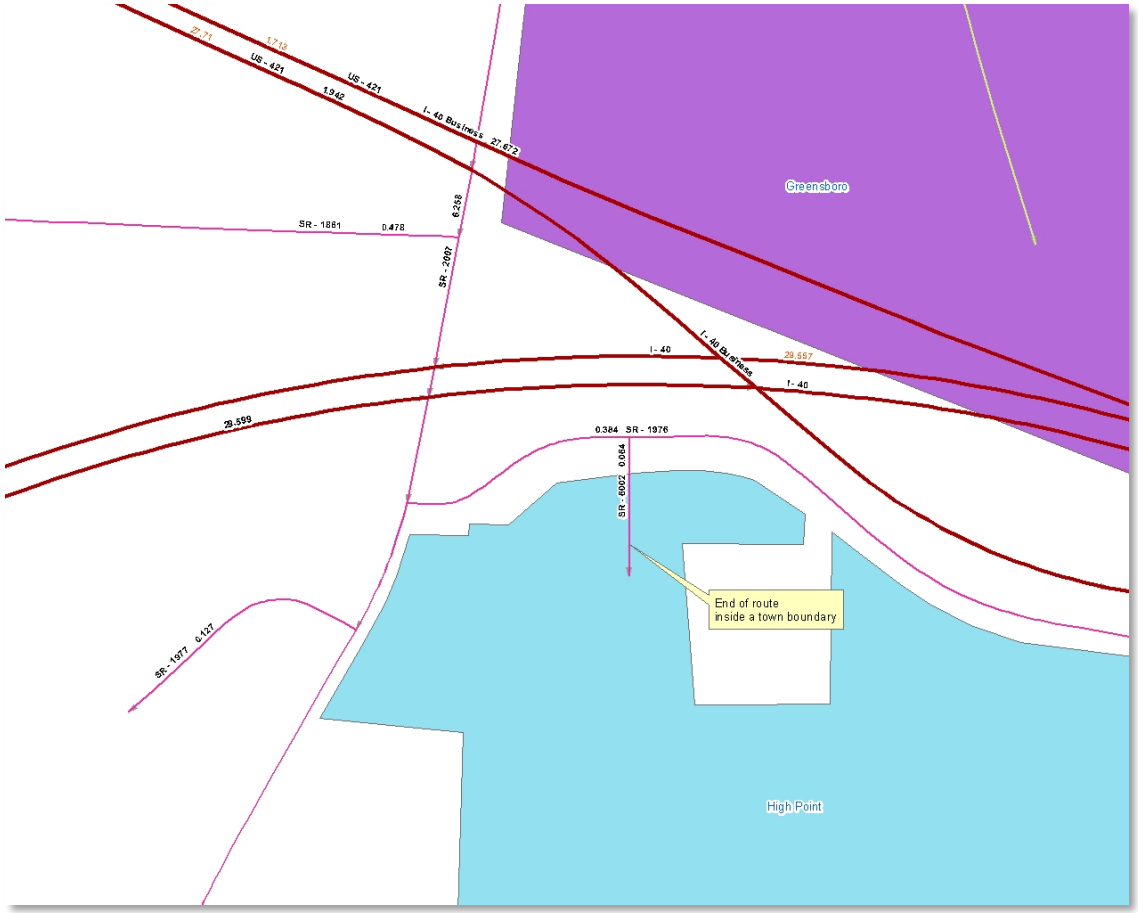
29.557
I- 40
29.599
0.384
SR - 1976
0.064
SR - 6002
Beginning of route
inside a town boundary
SR - 1977
0.127

2015


27.71
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SR - 1881
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SR - 2007
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29.557
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29.599
0.384
SR - 1976
0.064
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End of route
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High Point

Where are we today?

Today

Take away

Without doing something, we will have a large dataset of redundant data using resources that could be used elsewhere

Whatever the archive rate suggested is, this alone will speed up that time line a great deal

Questions?