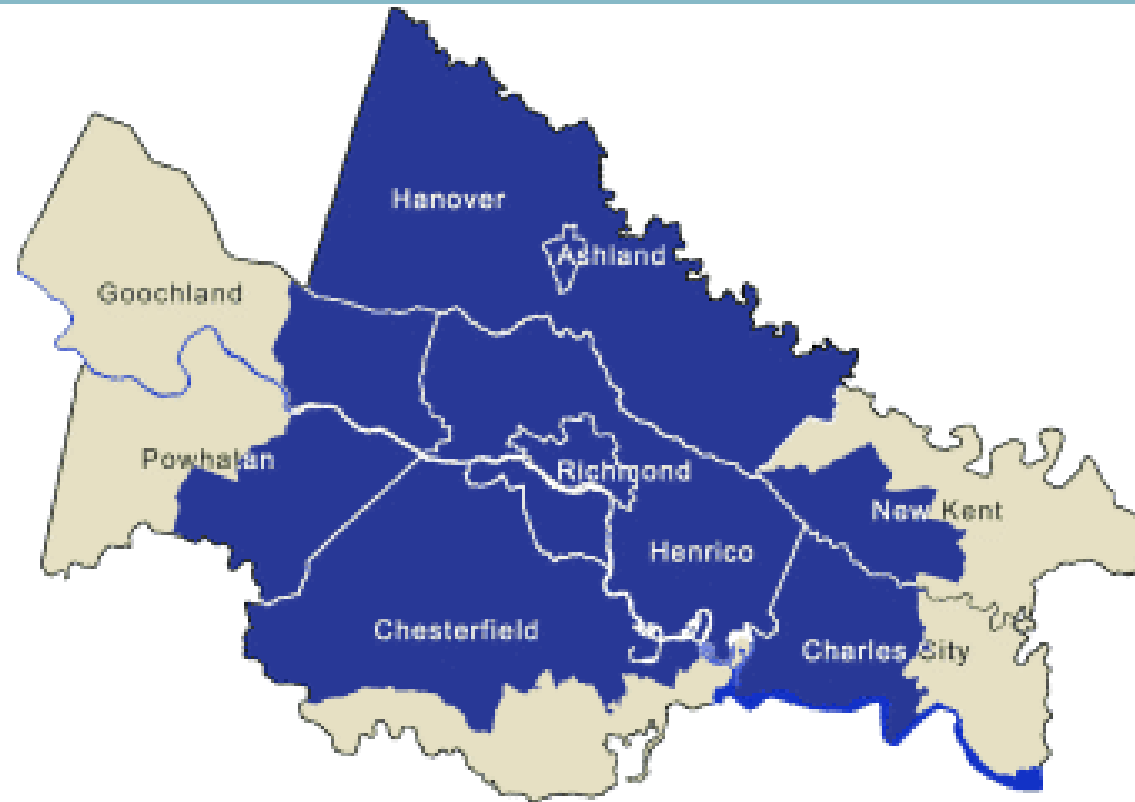


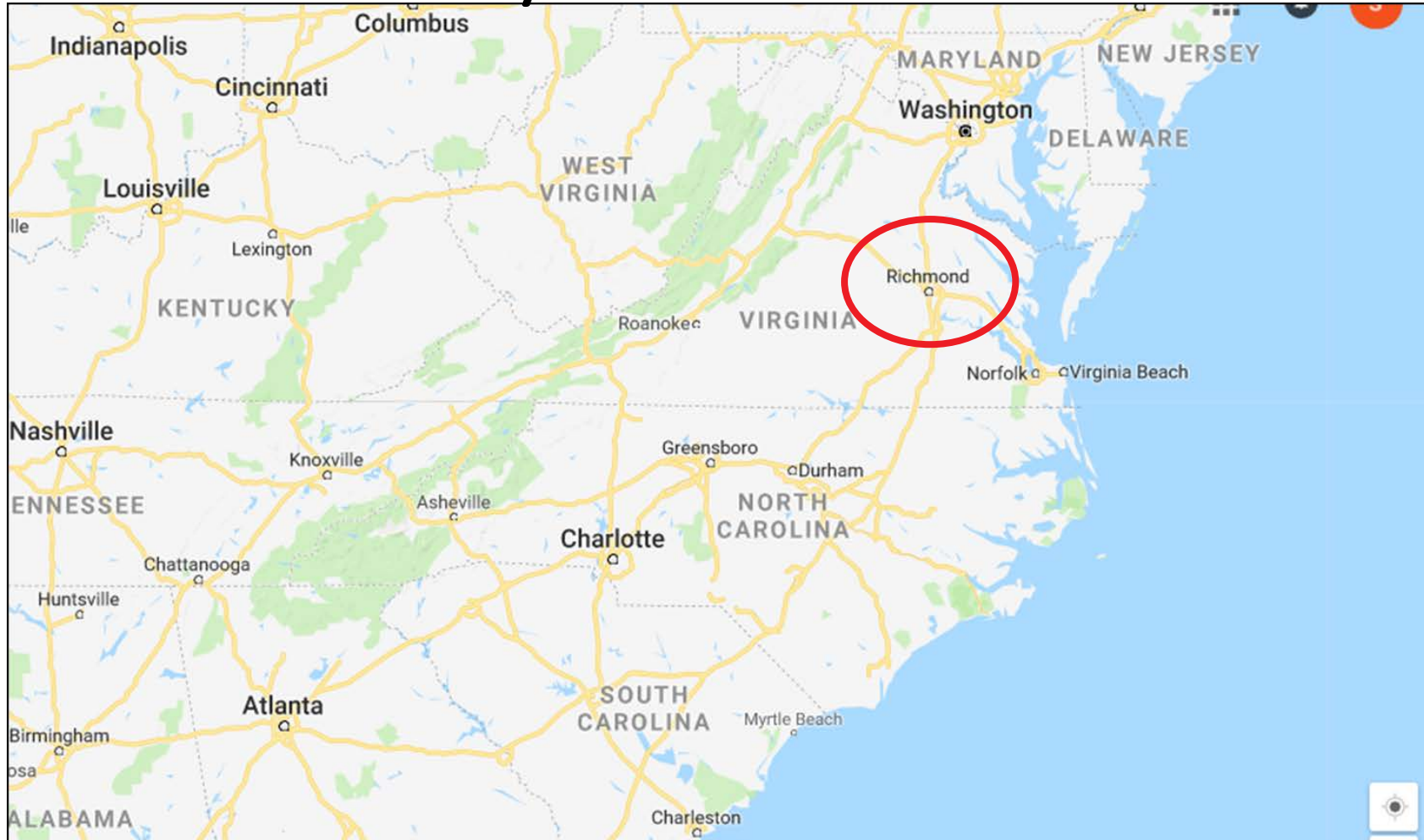
I-295 Truck Corridor Forecasts Development Richmond, VA

7th TRB Innovations in Travel Modeling Conference



Sulabh Aryal- Richmond TPO
Srin Varanasi- Corradino
Aditya Katragadda- Corradino

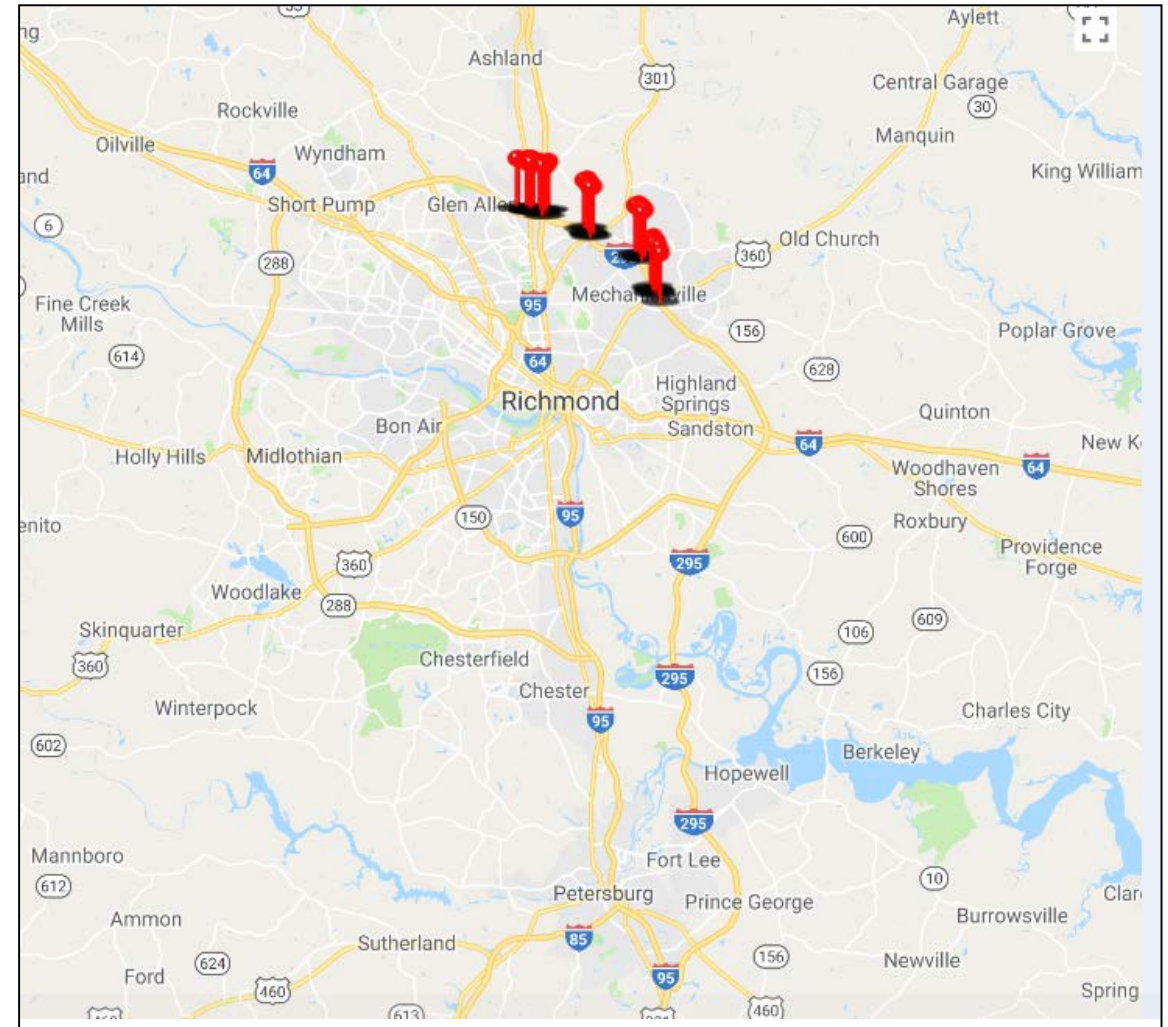
Location of the Study Area



Objectives of the Study

- ❑ To perform truck and auto forecasts- on I-295 Corridor
- ❑ Explore the use of Streetlight OD data for subarea corridor traffic forecasting

I-295, Richmond, VA- Truck Corridor Study Area



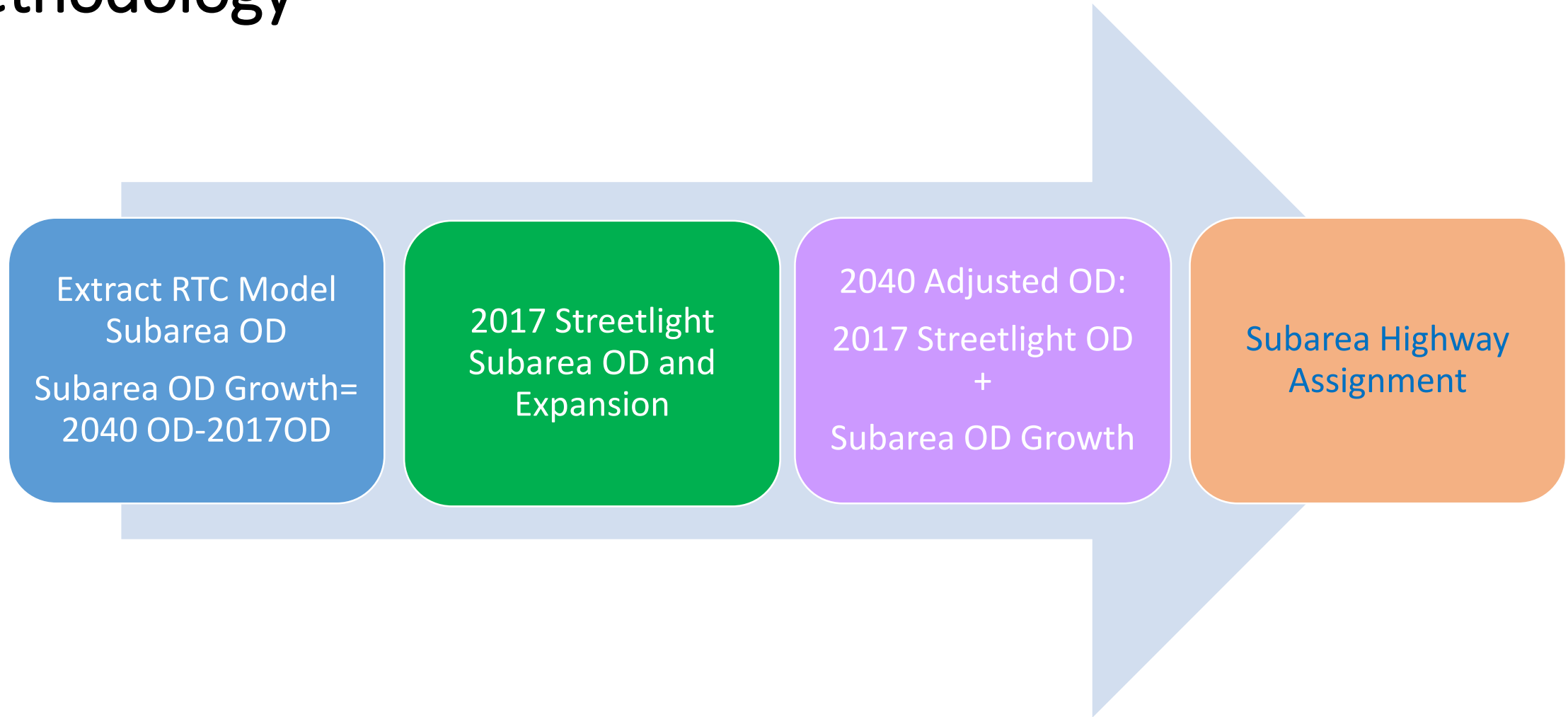
Tools Selection and Development

- ❑ **Richmond-Tri Cities Travel Demand Model (RTC Model)**
 - Time of day model with 4 time periods
 - Quick Response Freight Manual Method truck sub model
 - Assigns auto and truck trips using multiclass highway assignment

- ❑ **Develop Subarea Extraction Routine**
 - Extract subarea OD tables for the analysis

- ❑ **Streetlight OD data and Expansion**
 - GPS Navigation OD data within the subarea
 - Provides ramp-to-ramp traffic flows (corridor subarea OD) using “Pass-through” zones
 - Expand using ODME process, with a feedback loop with highway assignment

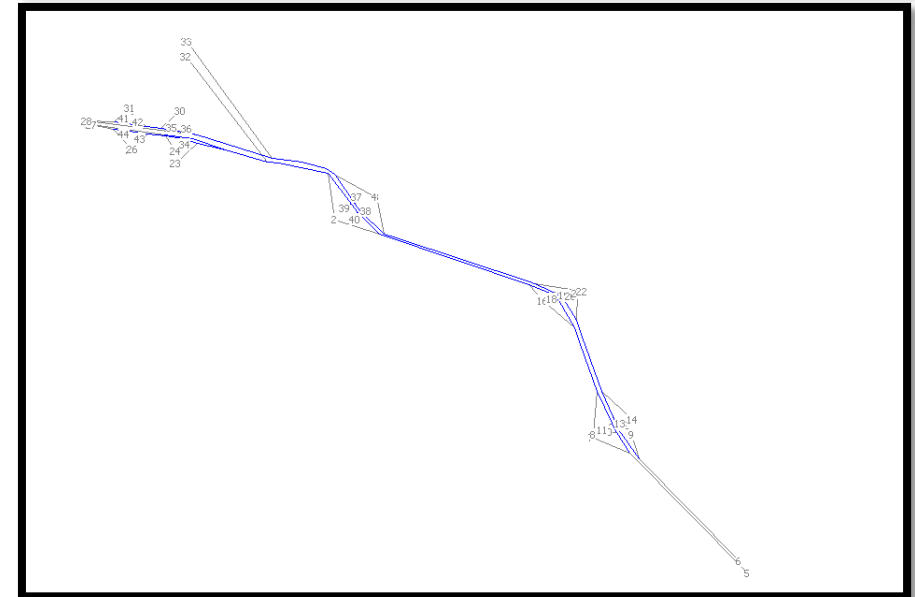
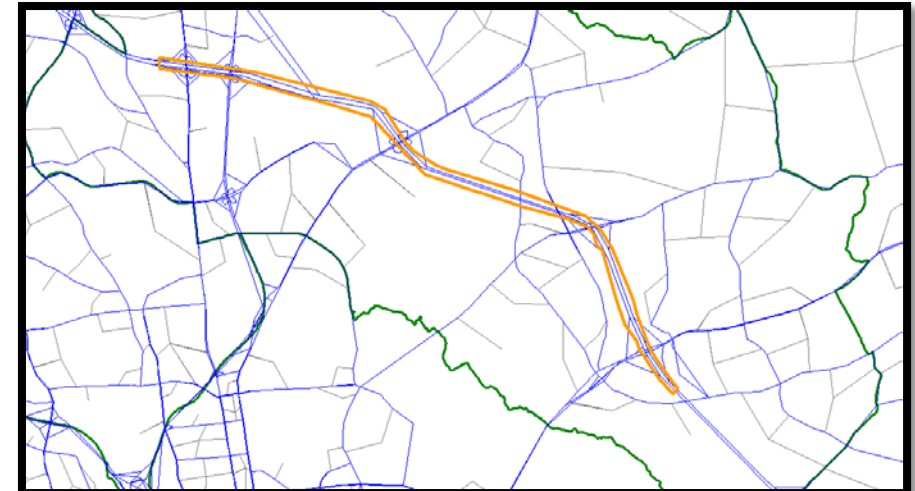
Methodology



Streetlight Data Processing Step1:

Create Subarea Boundary & Extract Subarea Network

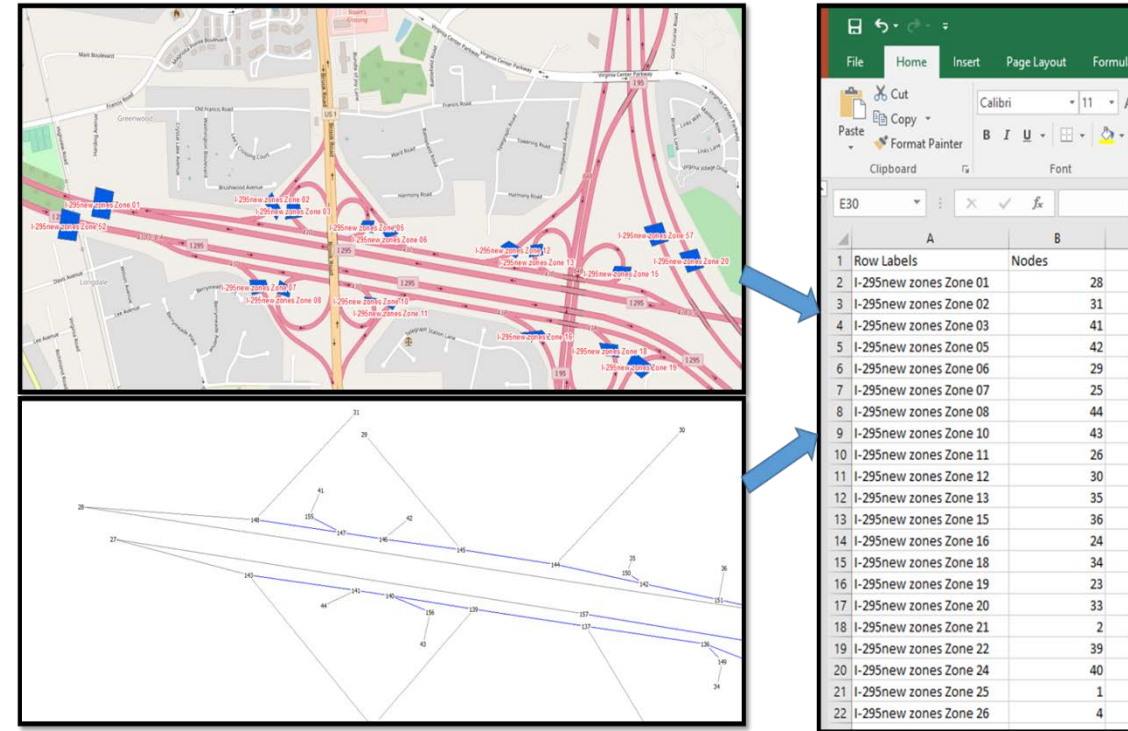
- Select subarea boundary from the model
- Using subarea extraction process, extract the subarea network
- Extract subarea OD matrices from the RTC model



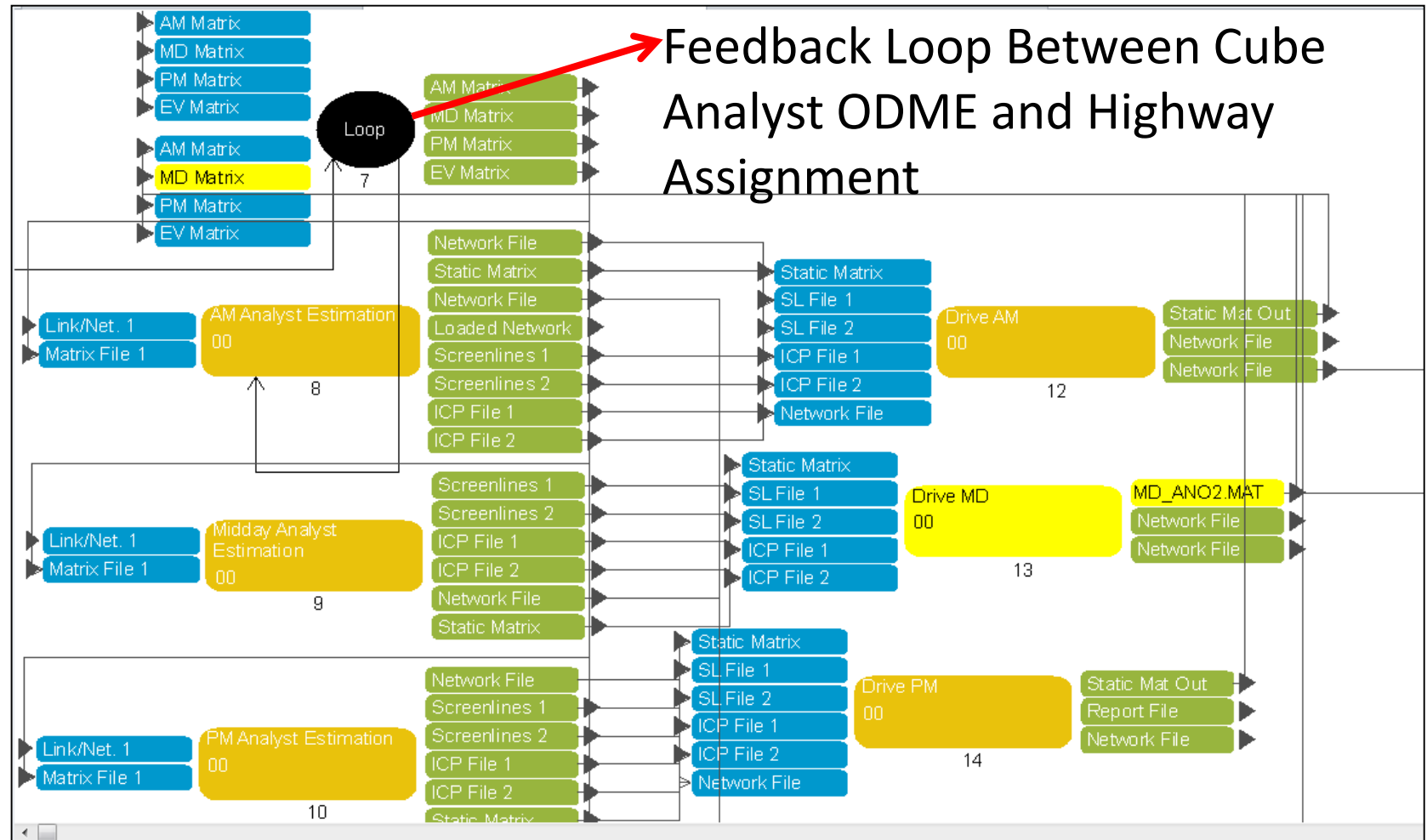
Streetlight Data Processing Step2:

Create Pass-through Zones that Match Subarea External Zones

- ❑ Create pass through polygons perpendicular to the network link
- ❑ All polygons correspond to “directional” links
- ❑ The zone names are automatically assigned by streetlight
- ❑ Correspond these to the model external nodes using a lookup table (GIS/manual process)

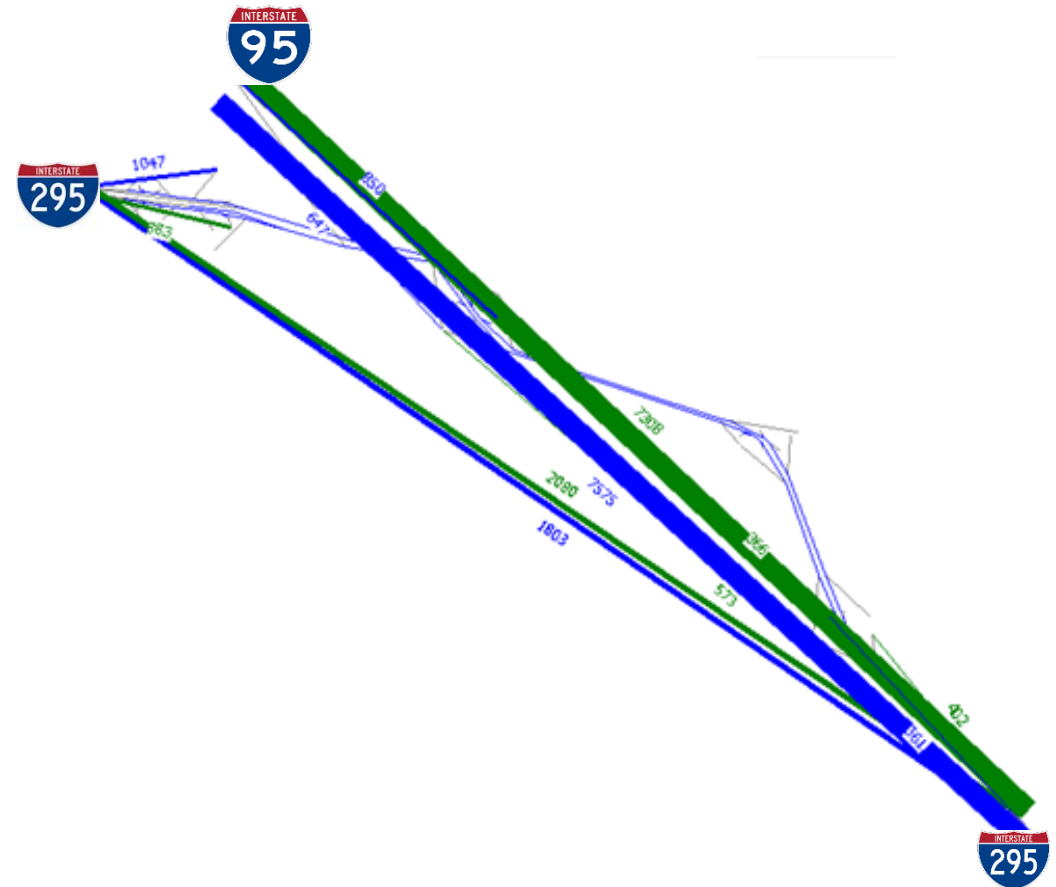
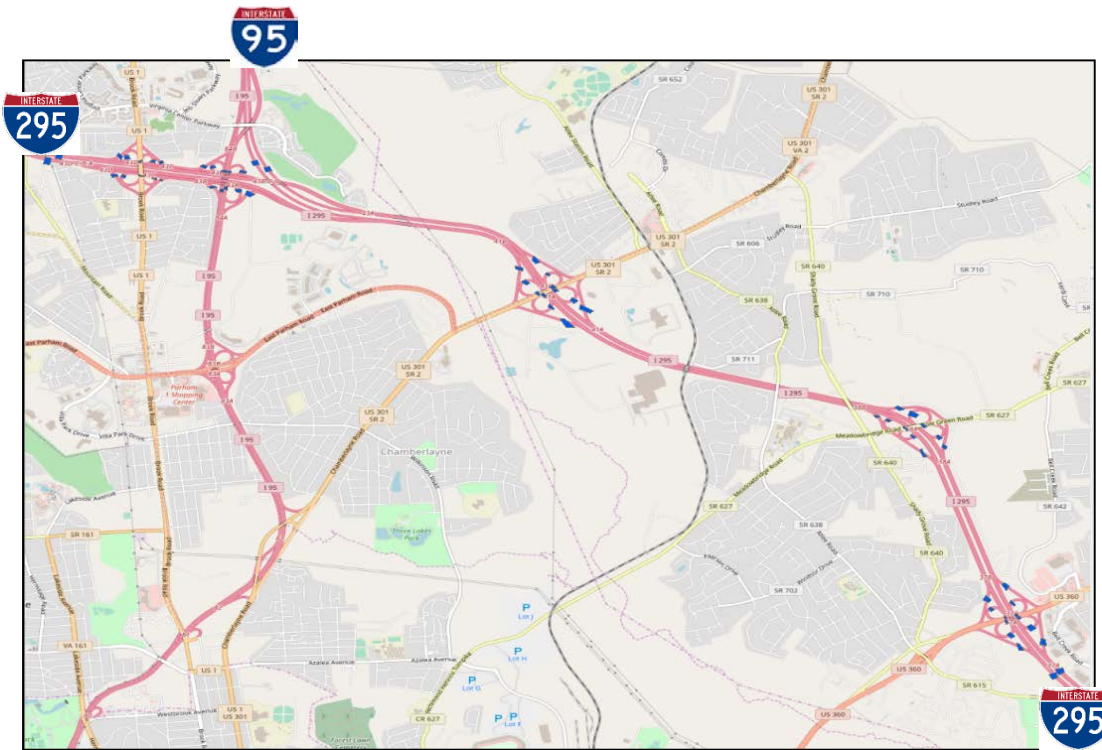


2017 Streetlight OD Data Expansion Routine

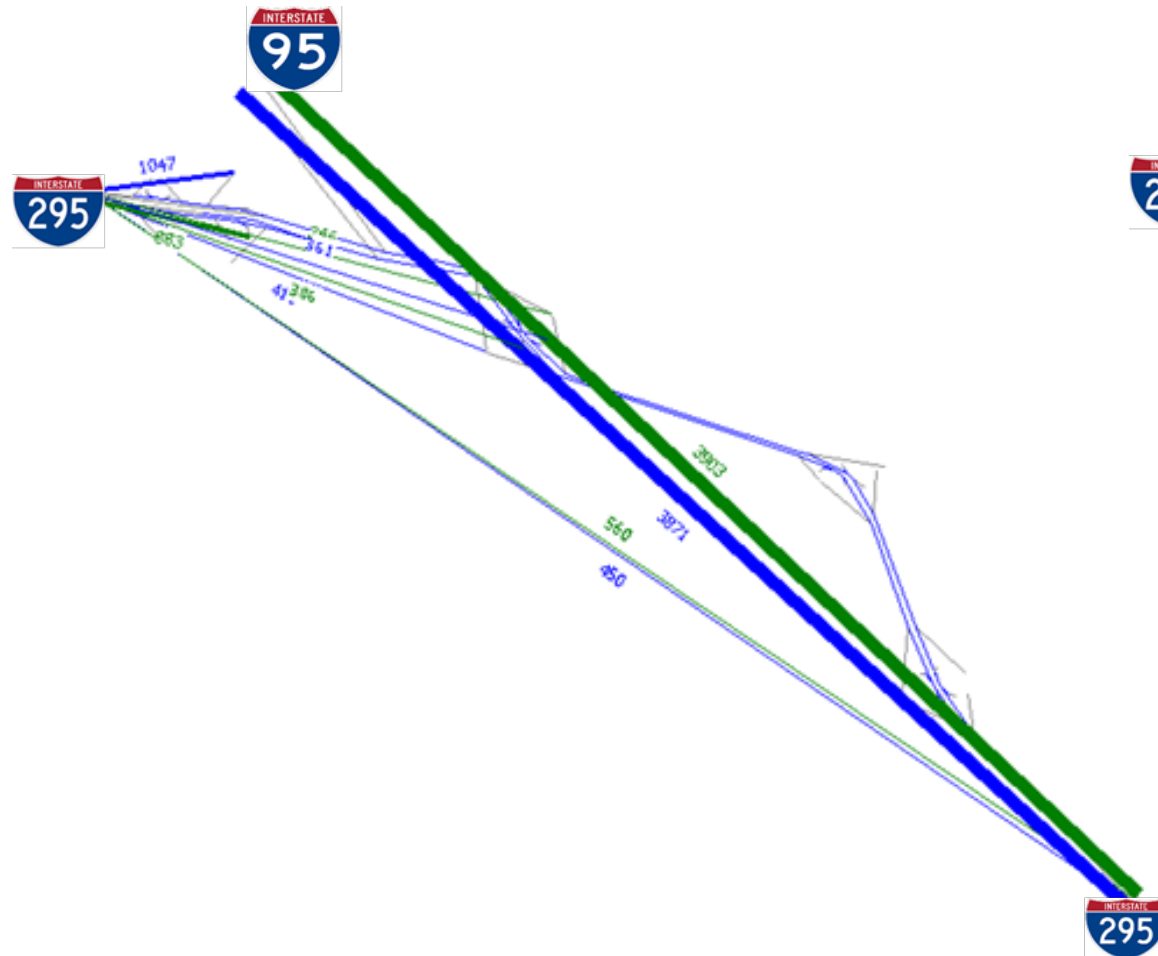


Results Discussion- 2017 Truck OD Travel Patterns Comparison

2017 Streetlight-Raw Truck Project Index



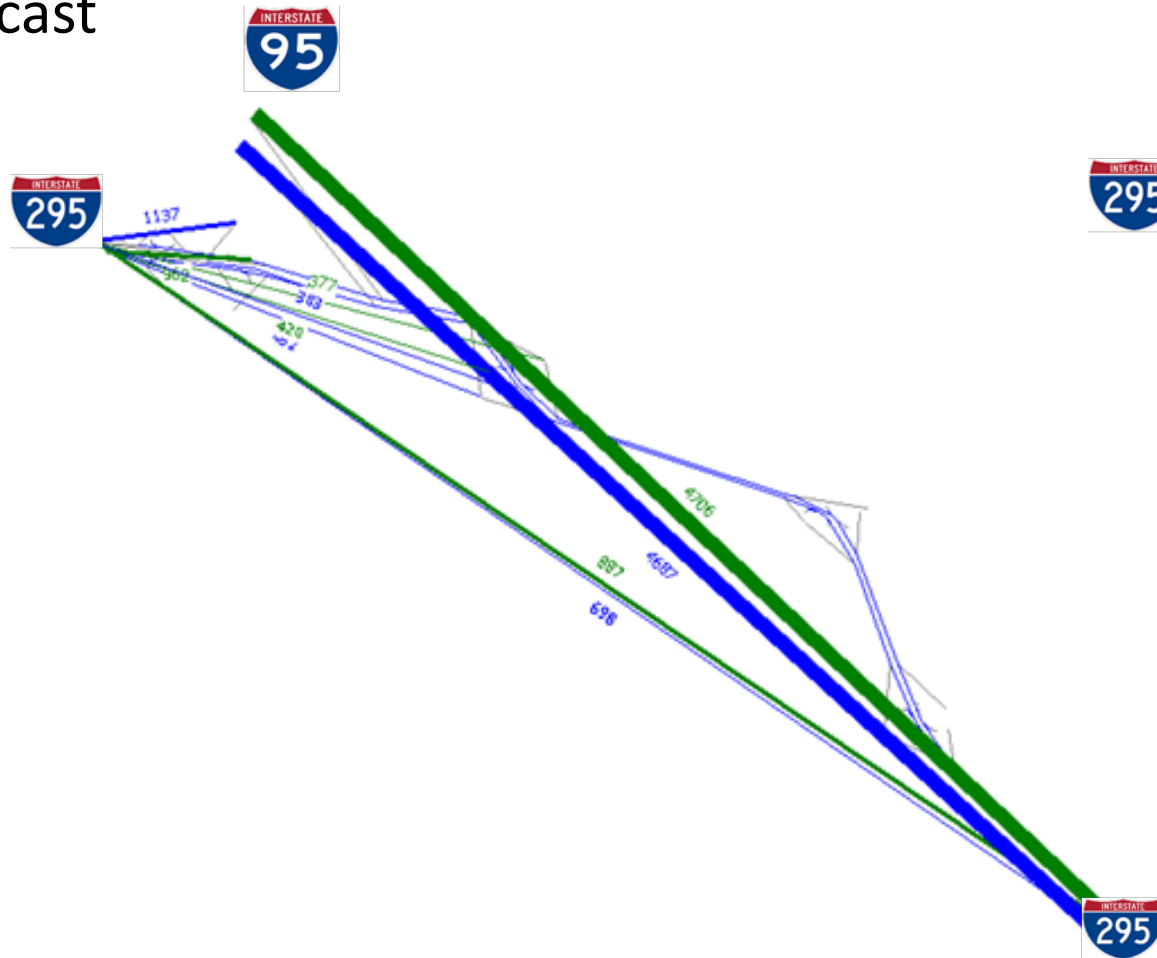
2017 Streetlight- Expanded Project Trucks



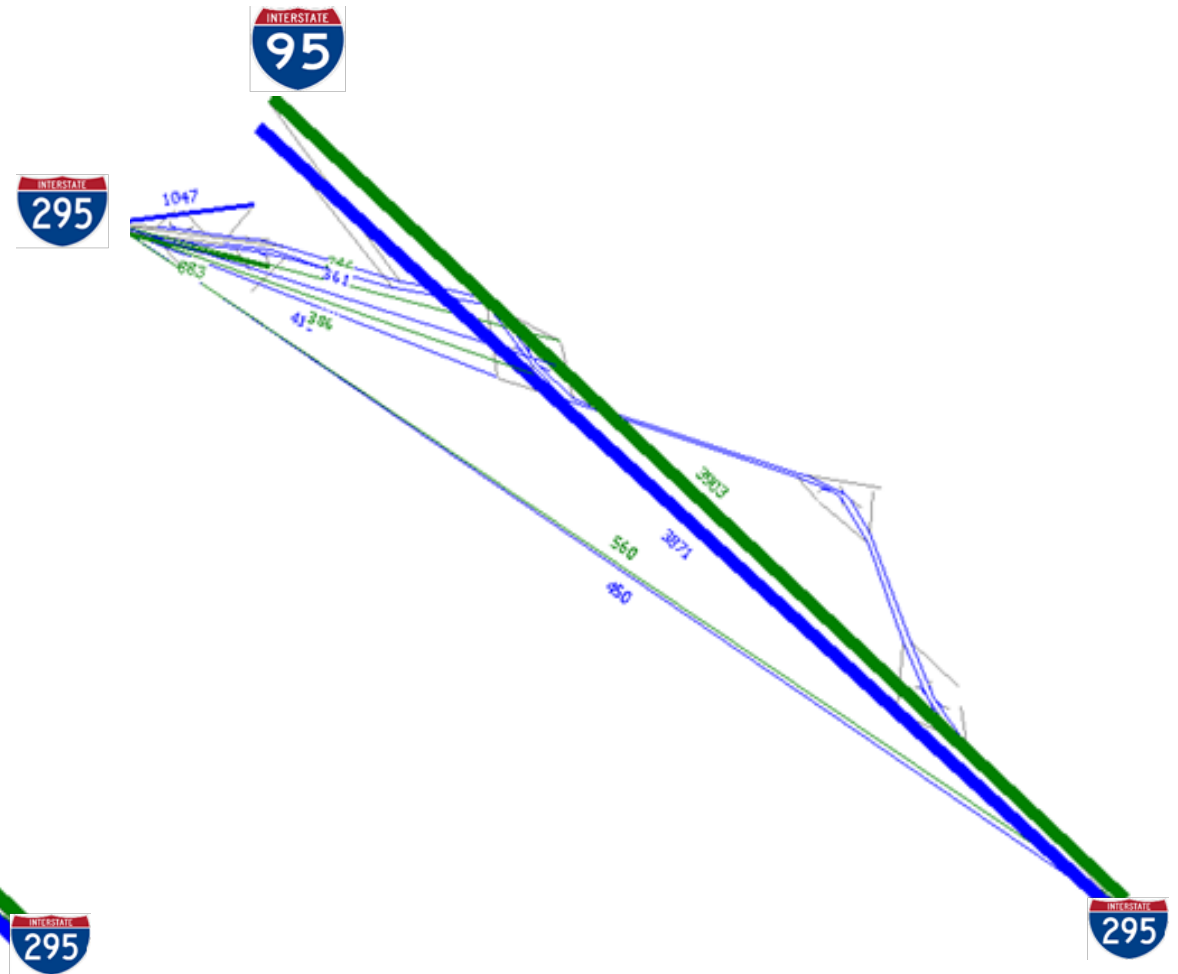
2017 RTC Model –Project Trucks



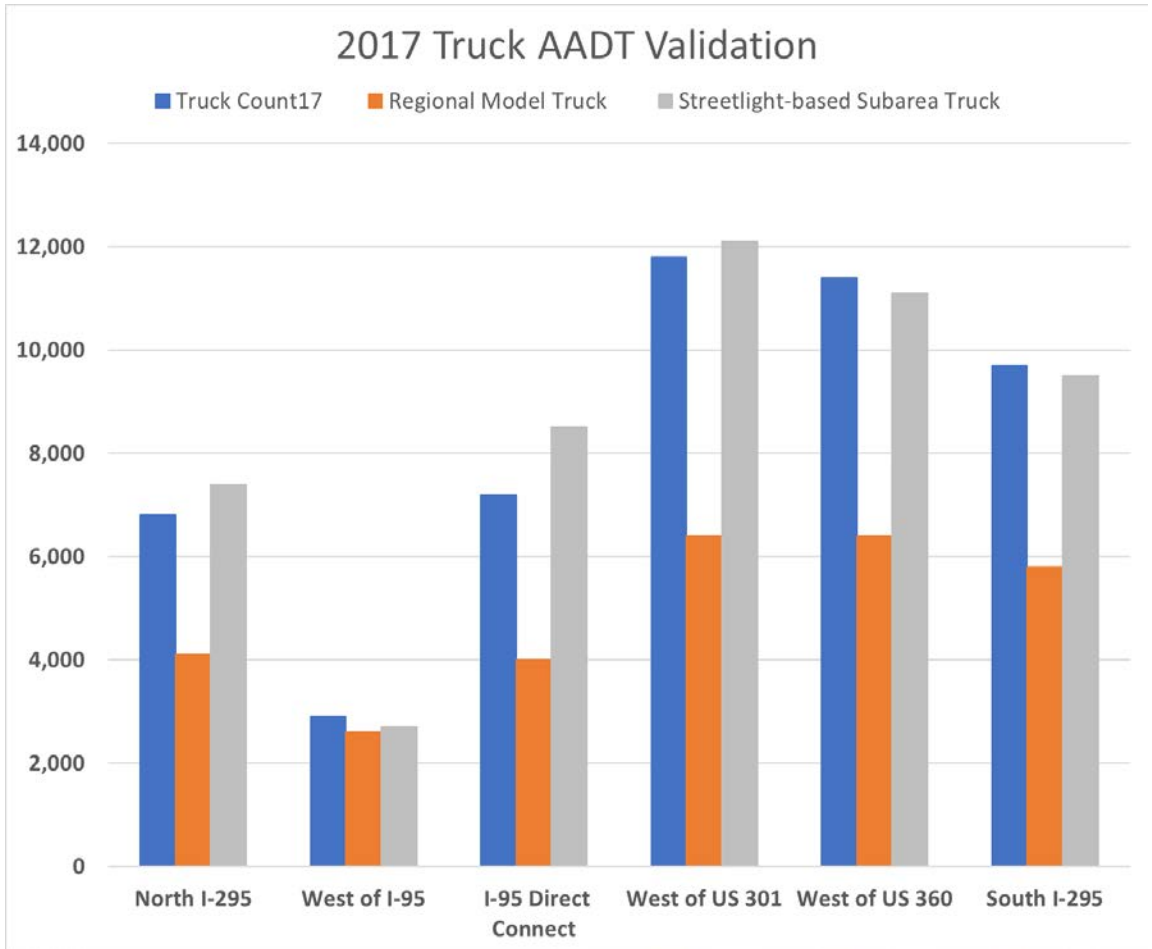
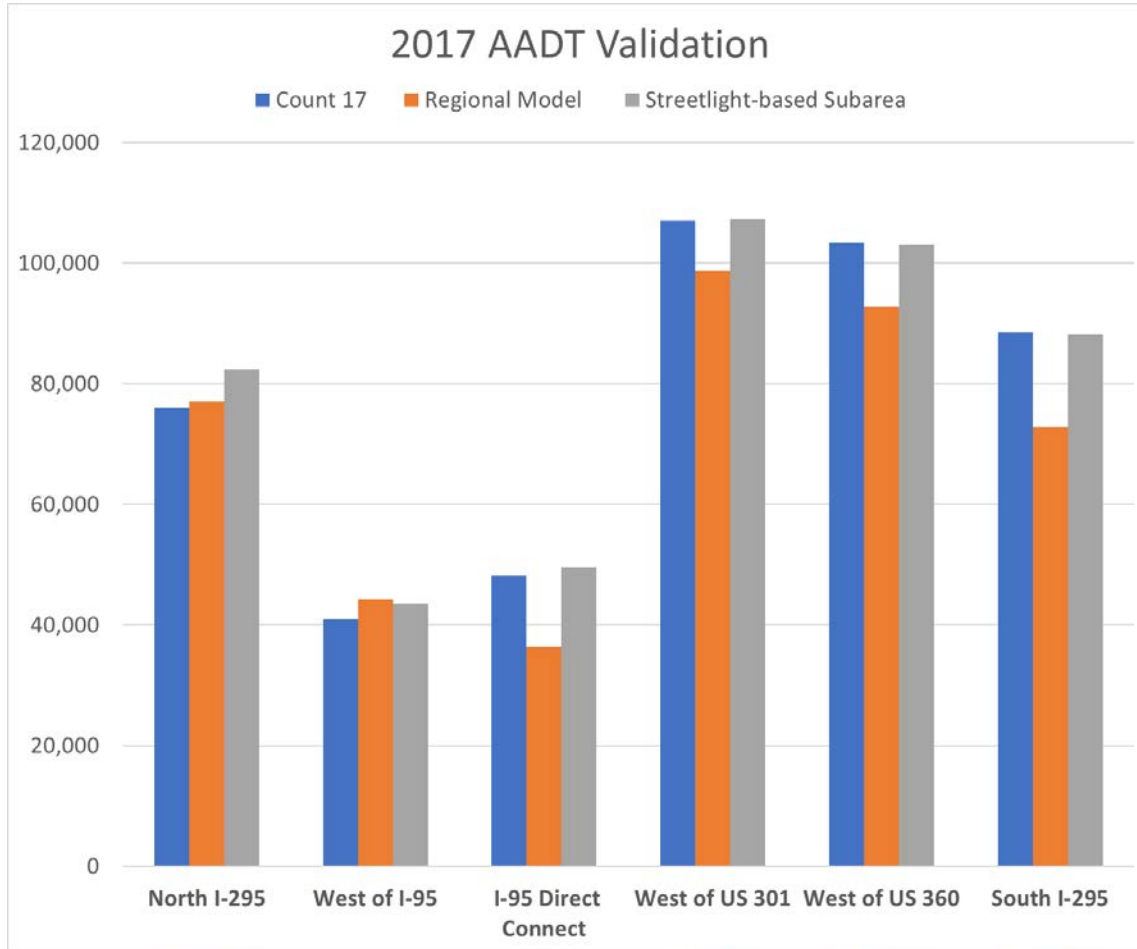
2040 Streetlight-Based Truck Forecast



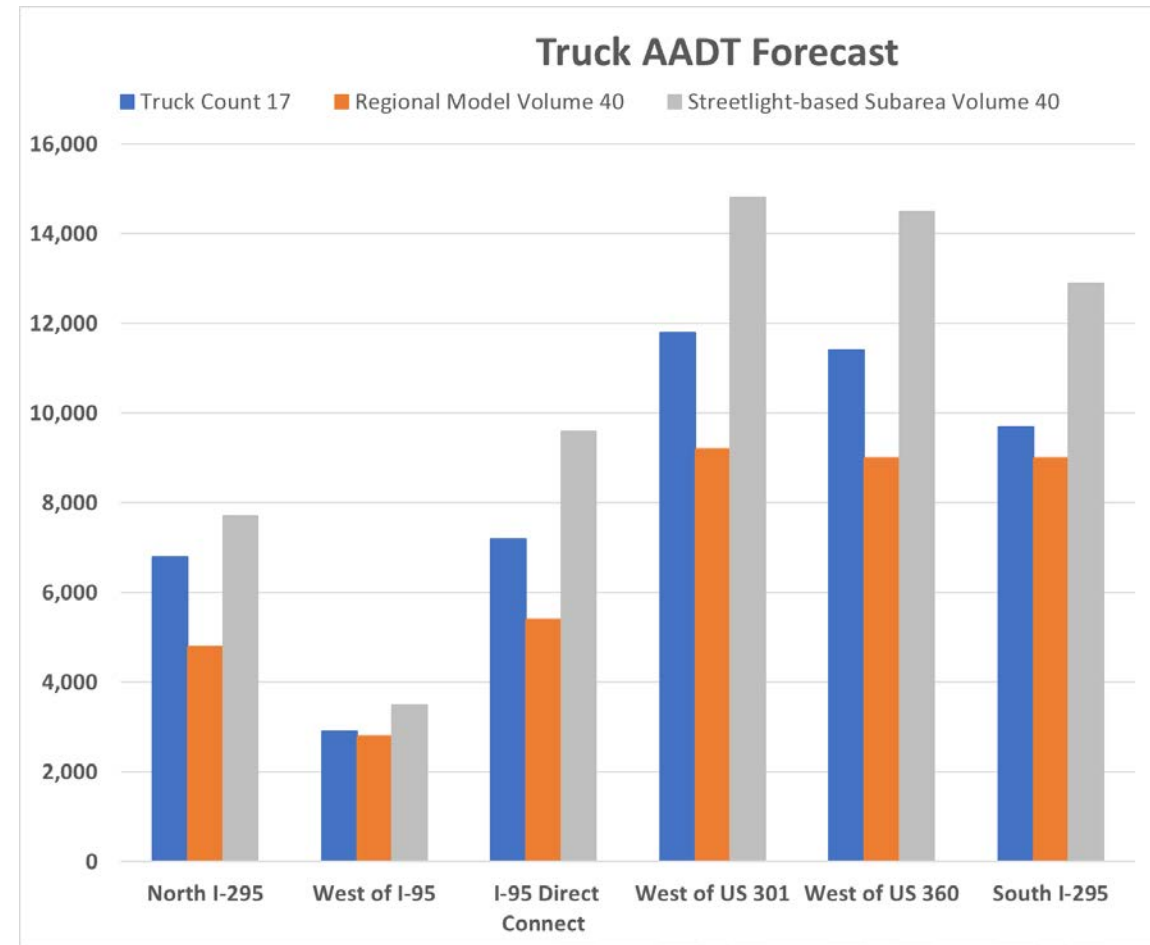
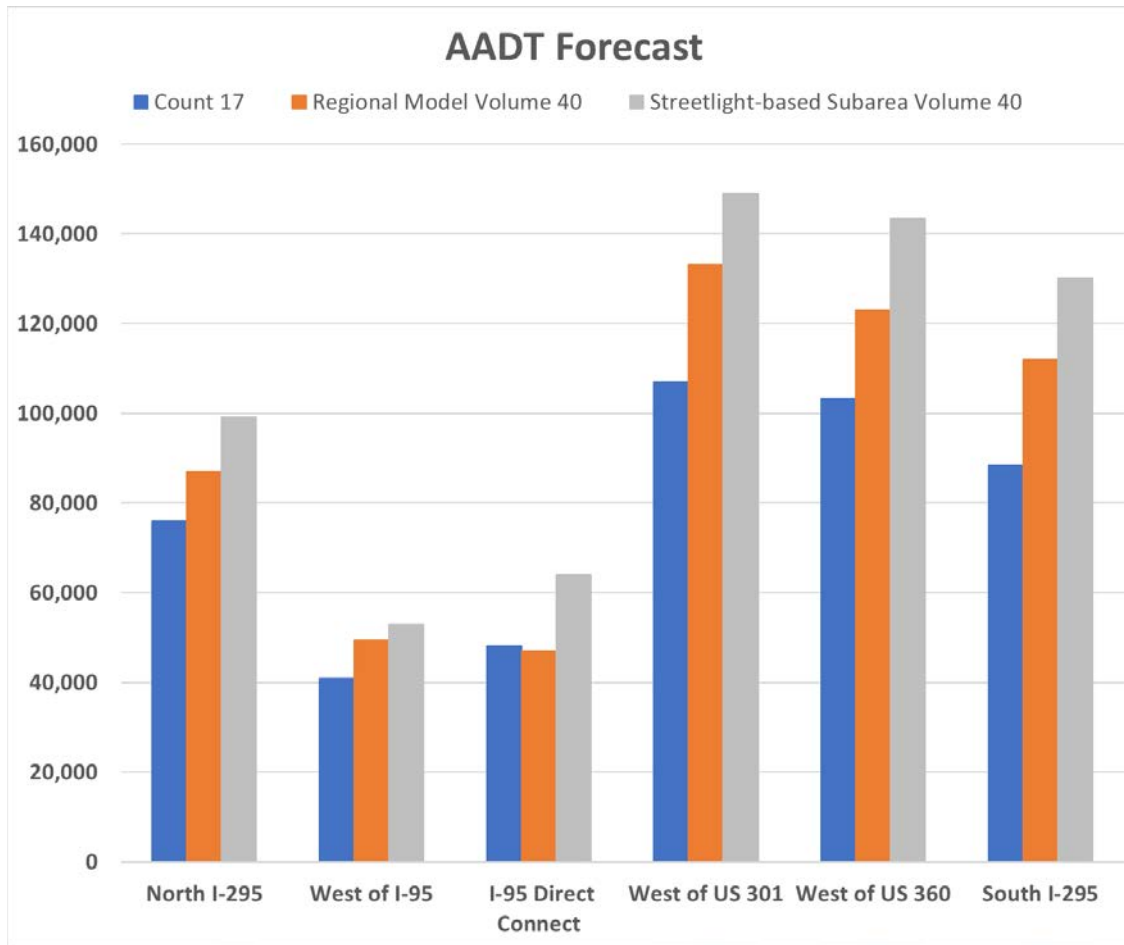
2040 RTC Model- Project Trucks



2017 AADT Validation



2040 Forecast Comparison



Conclusions/Lessons Learned

- Streetlight Data/ Big Data can be used to develop OD seed matrices for corridor studies
- Streetlight-based data provides promising OD distribution for corridor studies
- Do not obtain truck percentages from Streetlight (Auto and truck indices are obtained using separate processes)
- This procedure successfully adjusts for any errors in base year validation
- One limitation is that it does not address the model's future growth uncertainties.

Thank You

FOR MORE INFORMATION

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