

ISMS External Analysis Process

Iowa DOT – MTMUG – 09/04/2019

Outline

- What is the External Analysis (EA)?
- What is needed for an EA?
- What is the MPO's role in this process?
- What is the Iowa DOT's role in this process?
- What are other DOT's roles in this process?

External Analysis

- An analysis of all trips entering and exiting the model planning area for a travel demand model update.
- Includes: External-External, External-Internal, and Internal-External trips

Required Items

- MPO TAZ file with pseudo TAZs at every single road entering the region
 - Including B-roads, gravel, local, and major roads
 - Pseudo TAZs act merely as reference points
- External Counts Forecasting Excel Worksheet
- iTRAM Network/Nodes
- GISDK Script
- Patience
- Patience
- Patience
- Excel EA VB Macro

Example of TAZs

AAMPO 2015 Base TAZ



SIMPCO 2015 Base TAZ



TAZ File

- TAZs numbered 1-100
 - If an MPO has more than 100 external stations (i.e. DMAMPO), can continue counting upwards
 - VB Macro would have to be adjusted but not difficult.
- TAZs do not need any data inside of them besides following the numbering scheme above

External Counts Worksheet

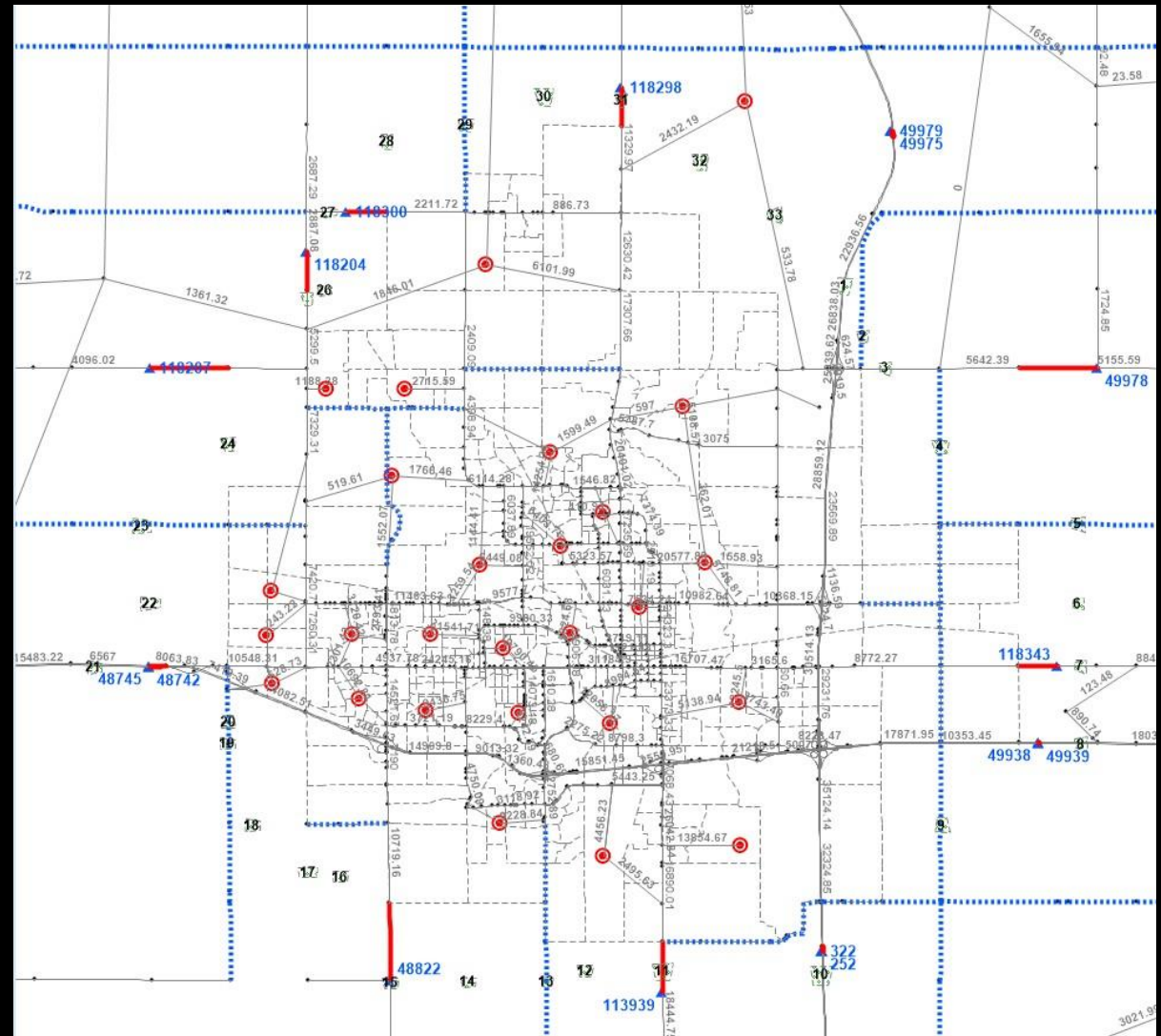
- Automated Excel File that is in its 3rd iteration
- 1st Iteration: Eric Wilke for INRCOG
- 2nd Iteration: AAMPO and CMPO, small updates to display data slightly more efficiently
- 3rd Iteration: Automated worksheet to work with multi-state MPOs
 - Most notably SIMPCO and DMATS

External Counts Worksheet pt. 2

- Demonstration
- Each neighboring state DOT provided statewide average growth rates
- Future modification may come about if need presents itself

iTRAM

- Set-up Subarea to be analyzed
 - Sub_Centroids
 - Sub_Crossings
 - Sub_Externals
- An auto process exists but TransCAD seems to glitch out, step has to be completed manually



GISDK

- Script completes a Multi-Modal Multi-Class Assignment process on the subarea created
- Small edits were done to catch errors and display them
- Long run time
 - Base Models: ~28-30 hours
 - Forecast Models: ~35-40 hours
- Keyword: Patience
- Creates pa_subarea.mtx for all trip purposes (HBW, HBO, etc.)

VB Macro

- Excel Macro that create trip tables by time period, type of day, trip type (EE/EI)
- Uses the following files:
 - Subarea.csv, created from exporting the pa_subarea.mtx that is created by the GISDK script
 - Itramlink.csv (all links in the iTRAM network)
 - Itramnodetaz.csv, a reference list of all iTRAM TAZs within the subarea
 - Tod_1108ext.csv, time of day factors
- Both 3 time period and 4 time period models supported

Moving Forward

- iTRAM Update will likely result in refinement
 - Especially moving to TransCAD 8.0
- Upcoming MPO models will have a slightly more automated process
- Python script for VB Macro Output files

Questions?