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**CENTER FOR TRANSPORTATION RESEARCH**

# Dynamic Traffic Modeling for TxDOT

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CTR Symposium



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# The Need



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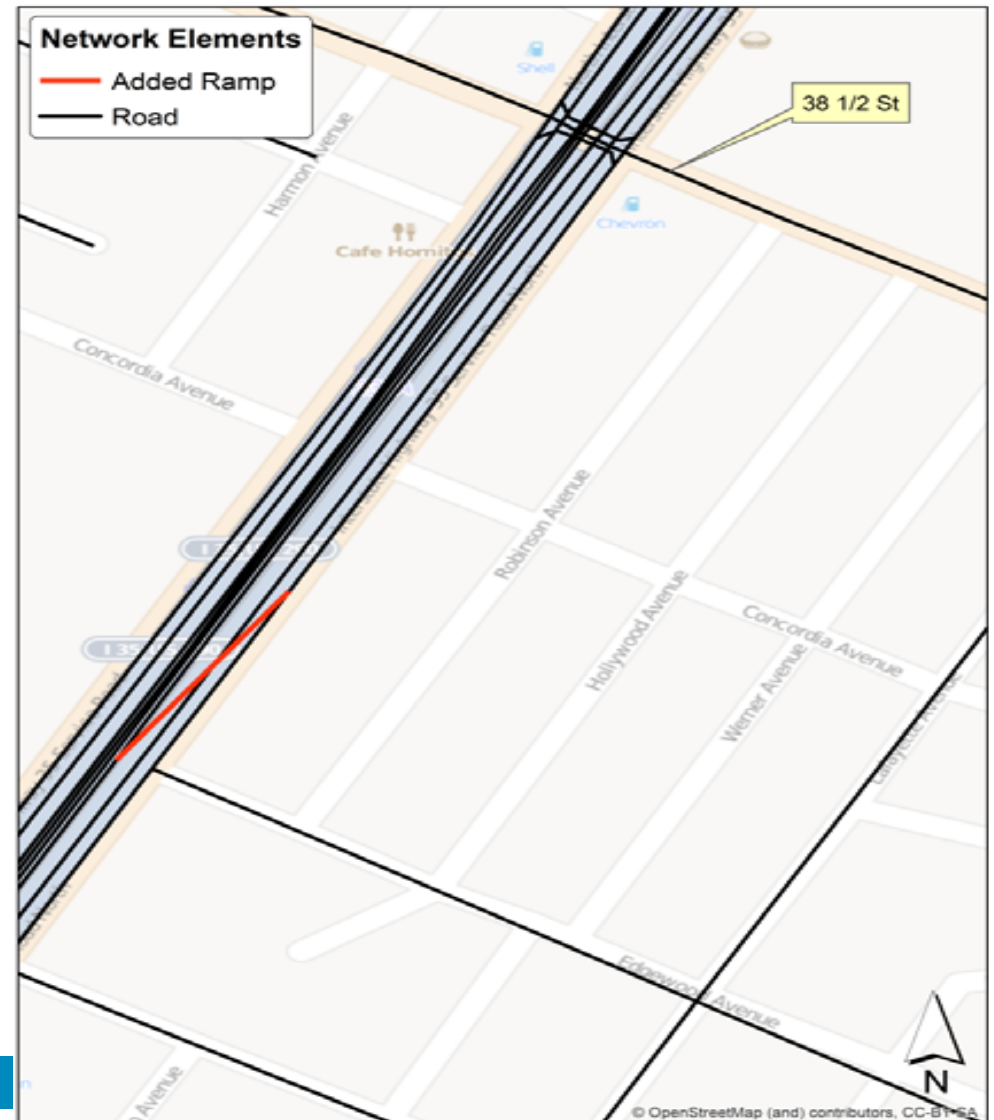
What paths will drivers take if frontage road left turns are prohibited?





# The Need

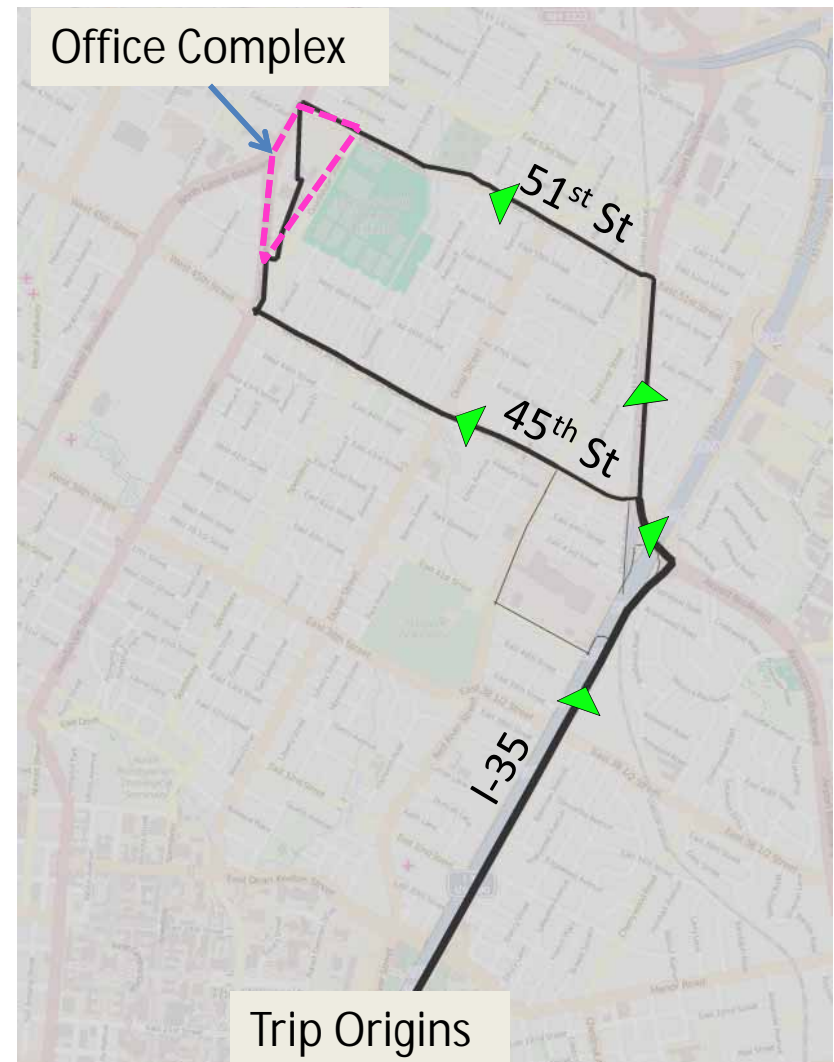
If we alter ramp configurations, what ramps will drivers take to access their neighborhoods?





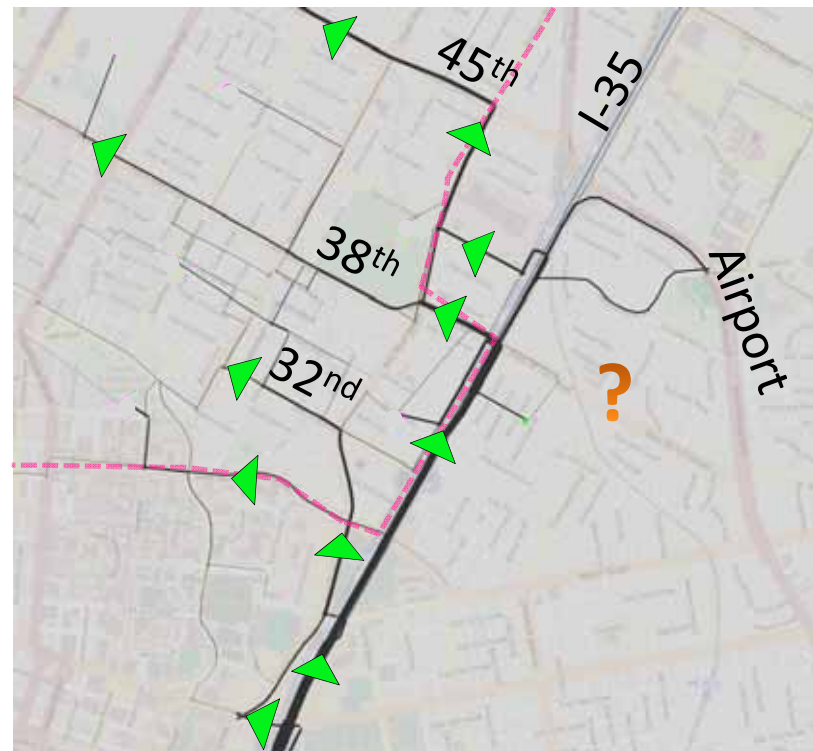
# The Need

What paths will drivers take to/from work?



# The Need

Will this change to a TxDOT roadway lead to cut-through traffic in my neighborhood?

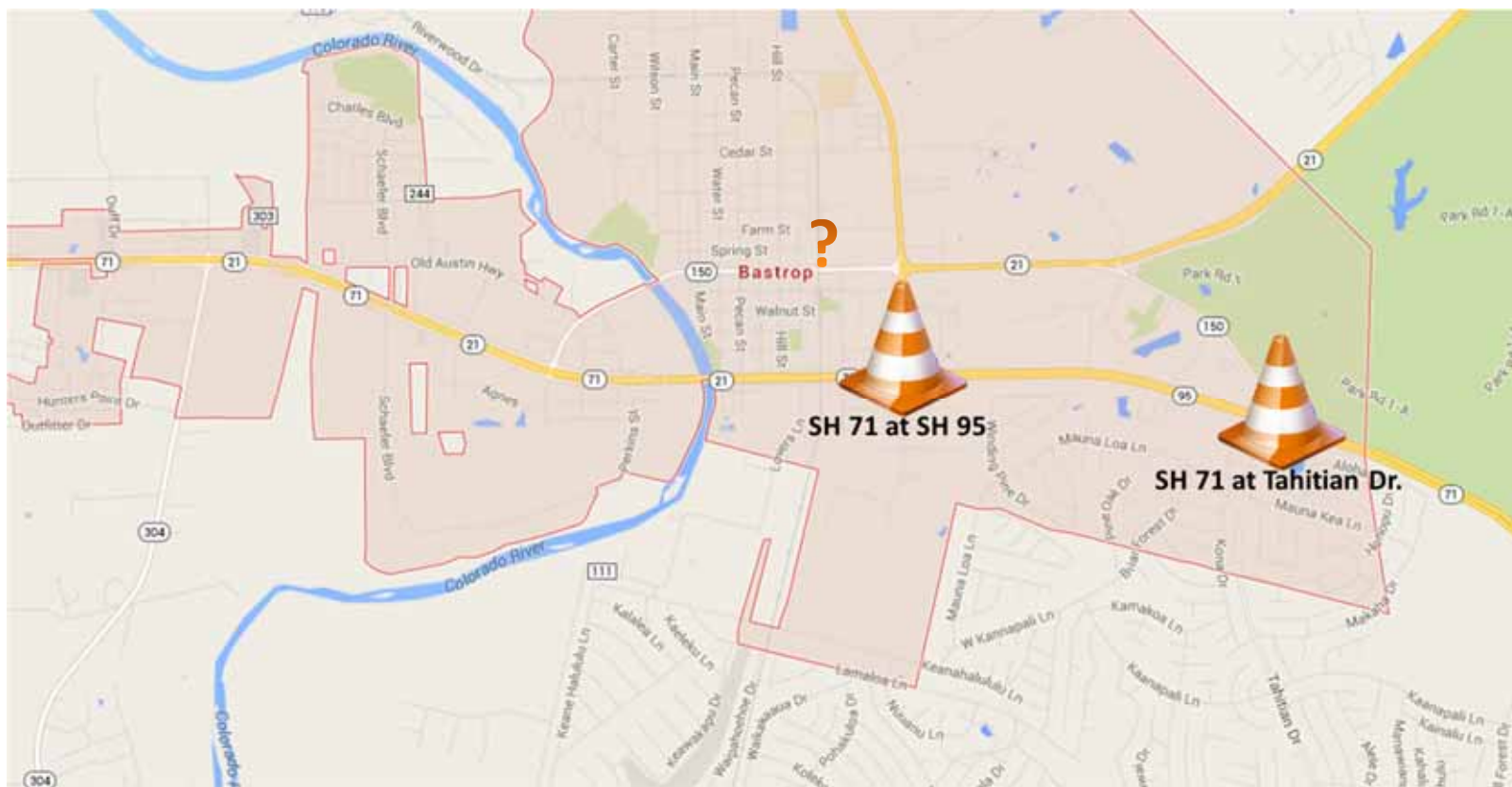






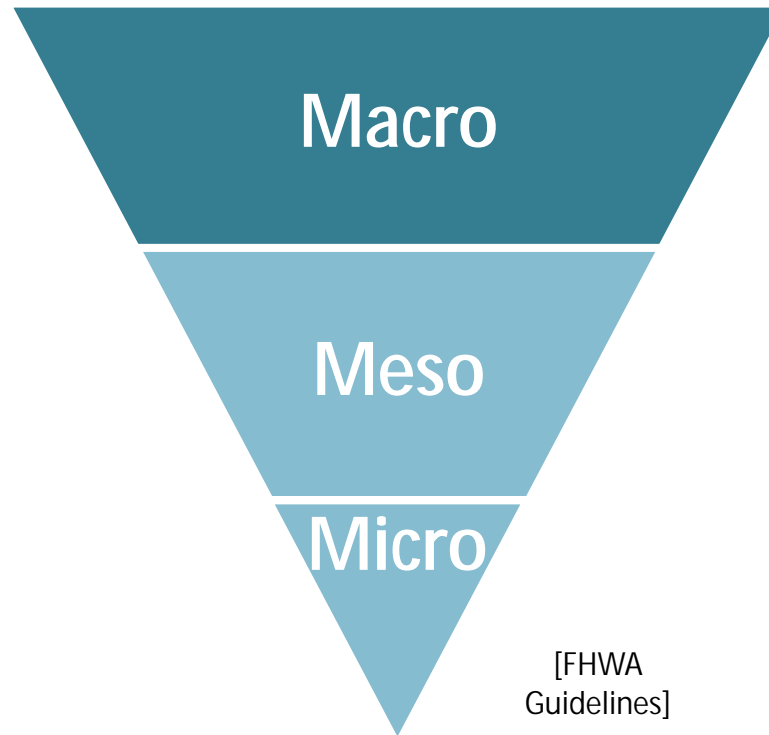
# The Need

How are trips on City streets affected by TxDOT's plans?





# Answering the Need Multi-Level Tools



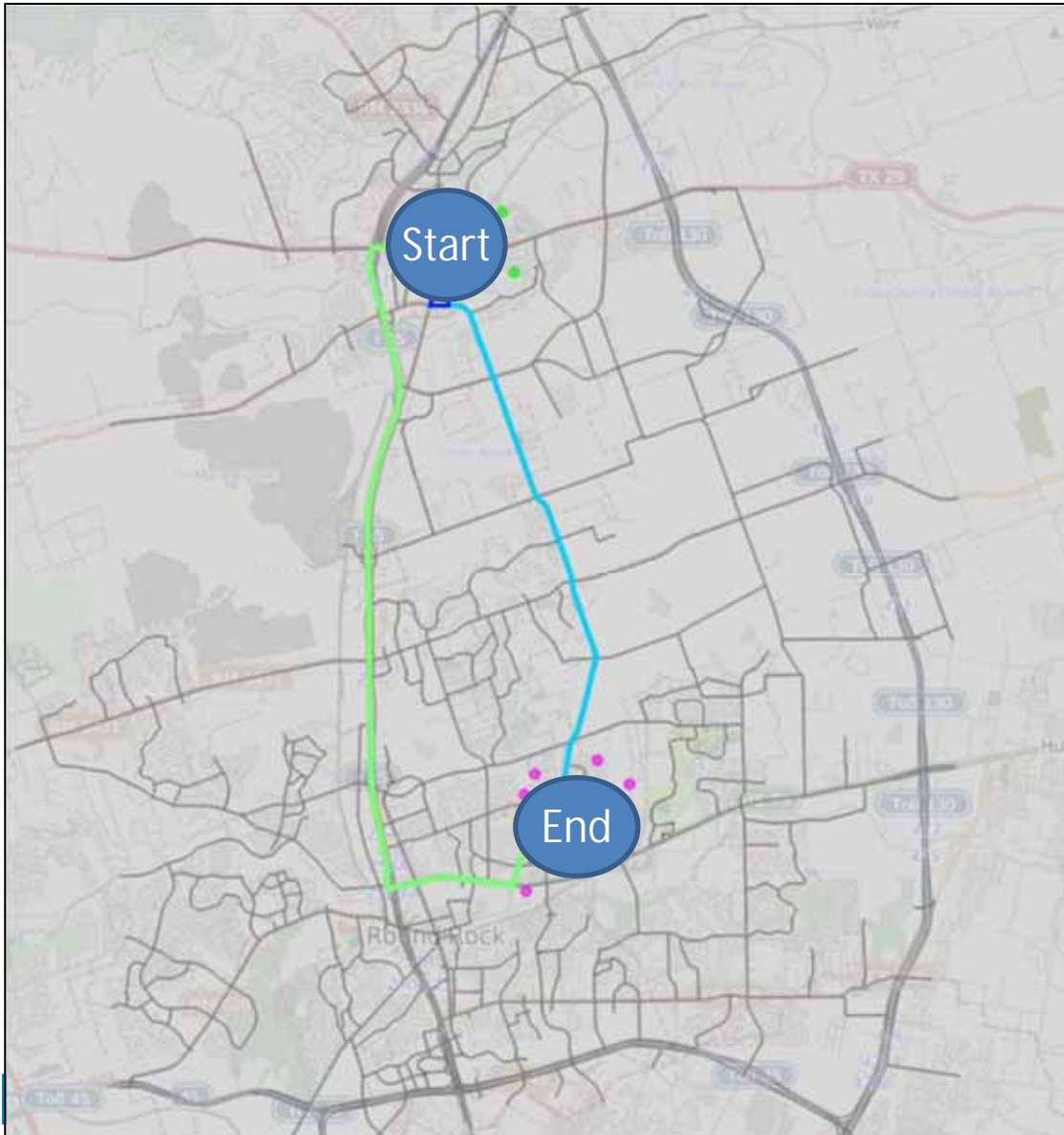
[FHWA  
Guidelines]

## Comprehensive Insight



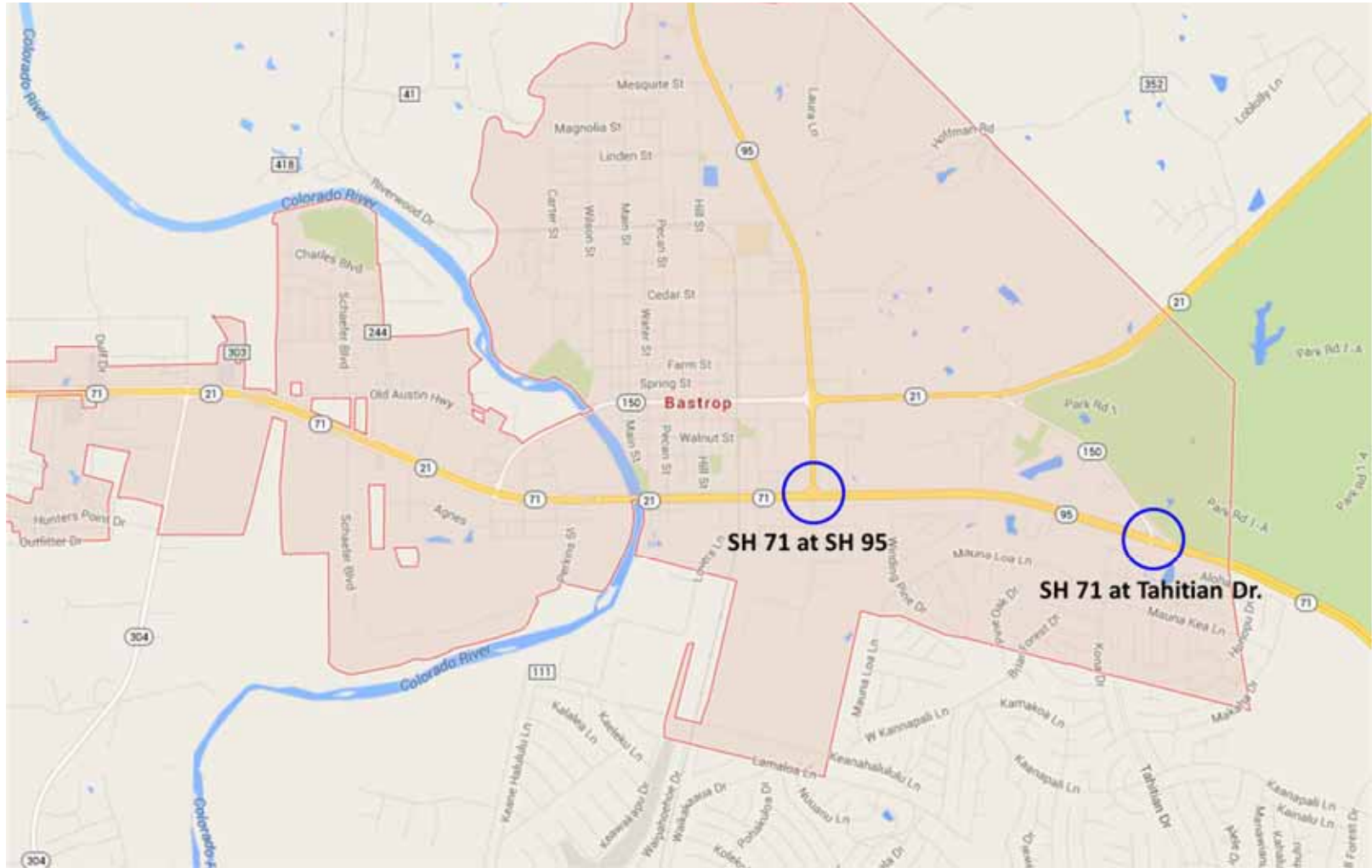


# Dynamic Traffic Assignment



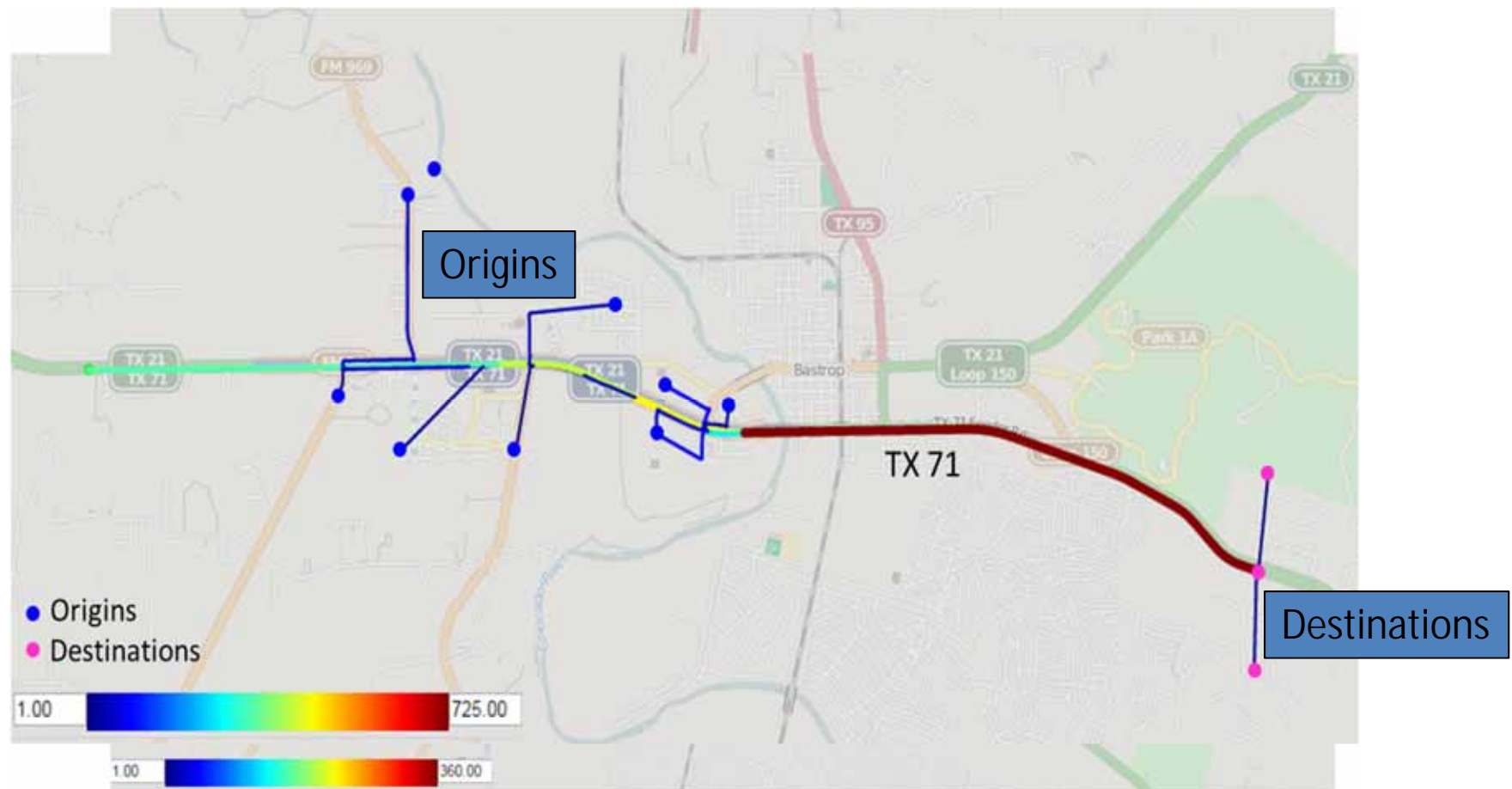
1. Considers capacity in addition to demand
2. Re-routes traffic due to congestion
3. Provides more detailed roadway network

# Project 1: SH 71 Overpass Construction in Bastrop





# Will SH 71 traffic cut through downtown Bastrop during construction?

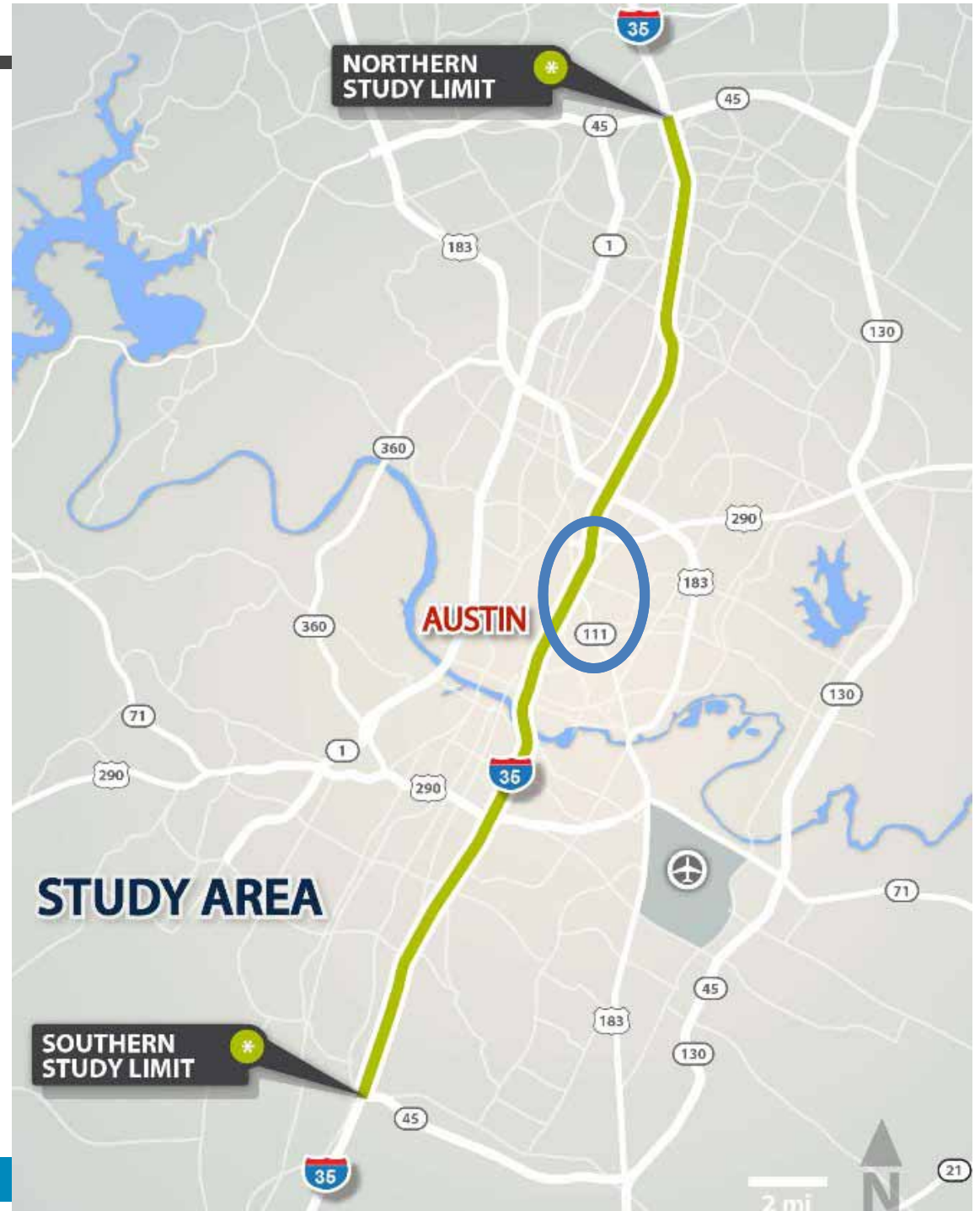


PM Peak Period



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# Project 2: Mobility 35 Improvements in Central Austin





# How will Mobility 35 impact access to neighborhoods?

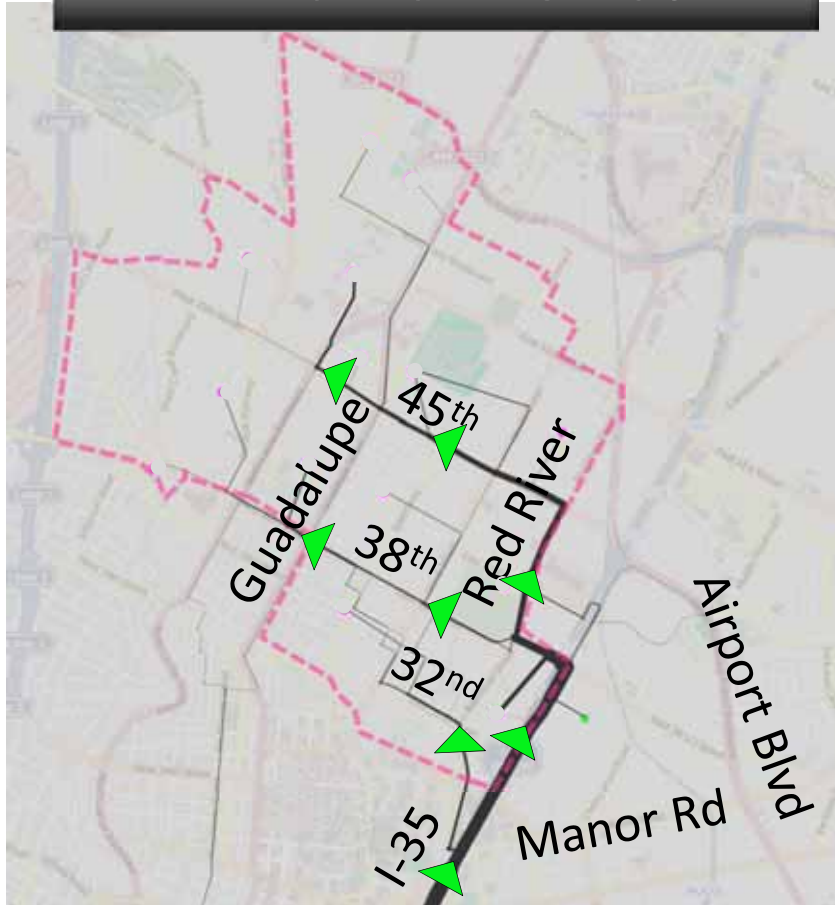
- Changes to ramp configurations
- Left turn prohibitions from frontage road to 38<sup>th</sup> ½ Street



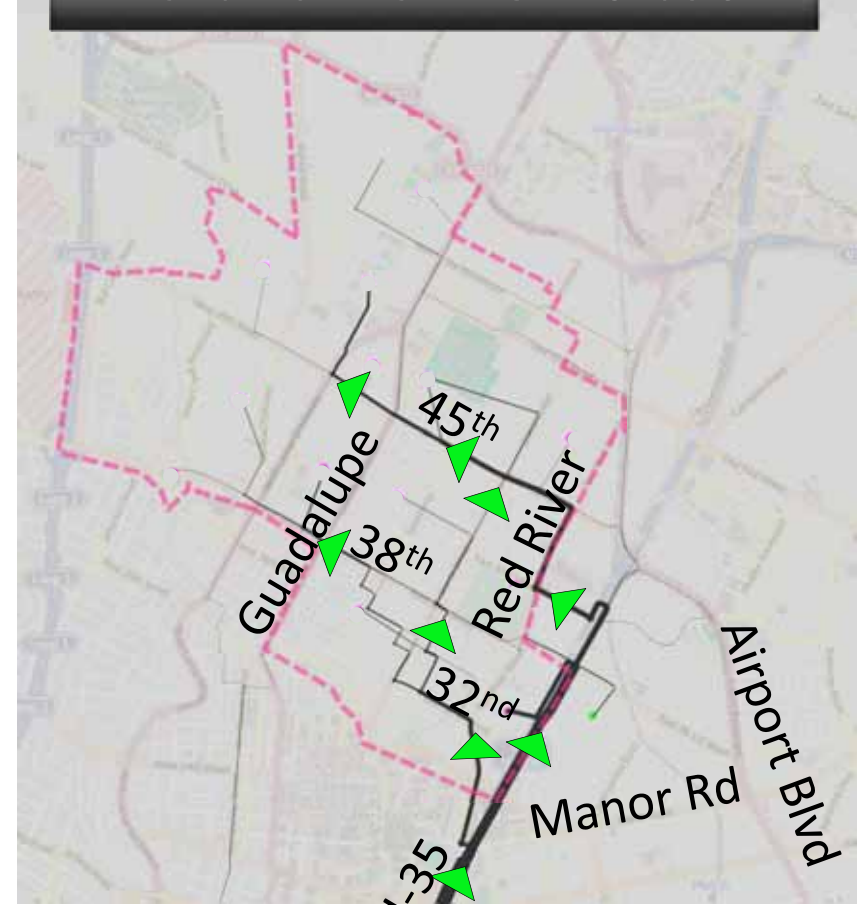


# Impacts of the Left Turn Prohibition

All Turns Allowed



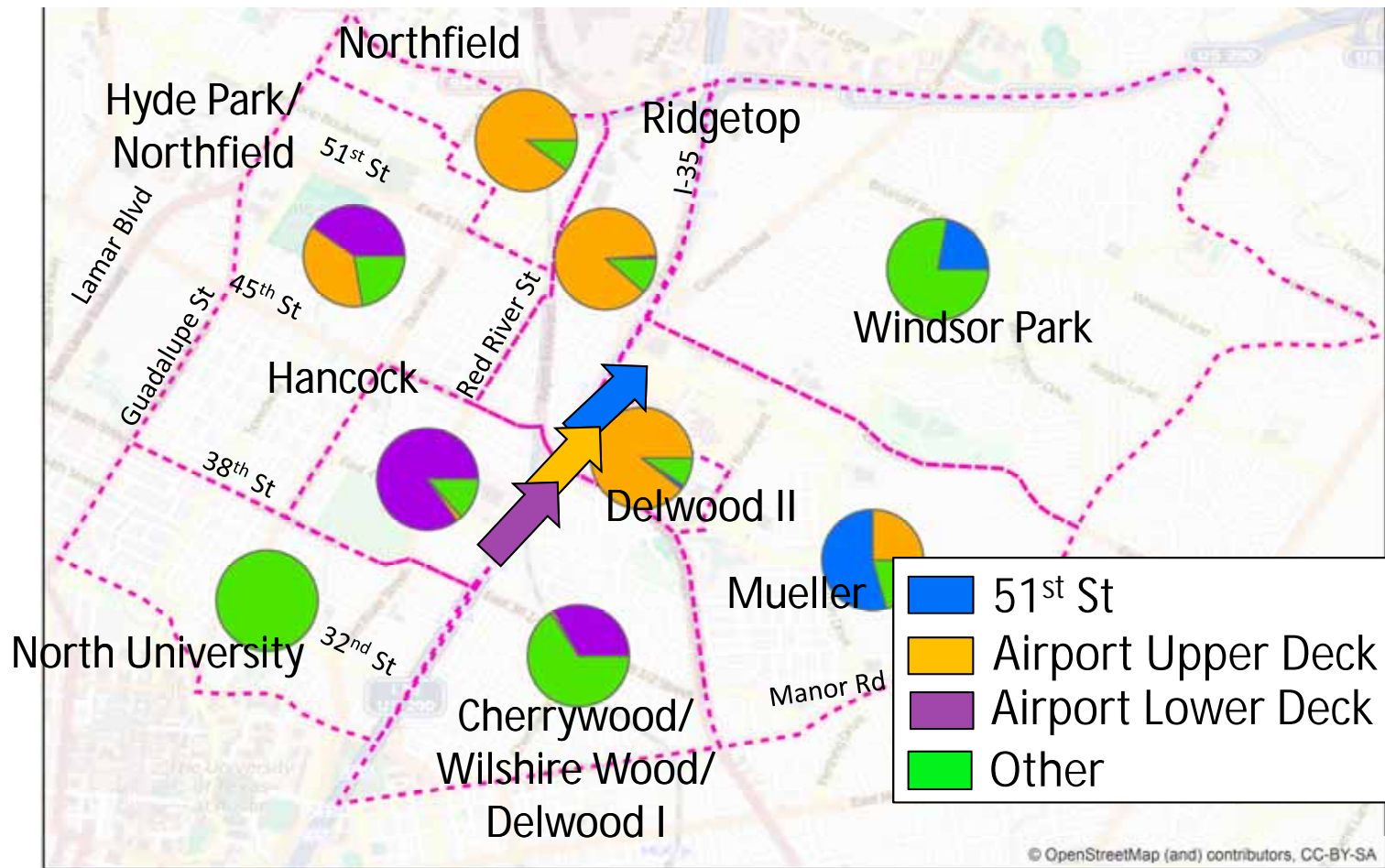
Left Turns Prohibited





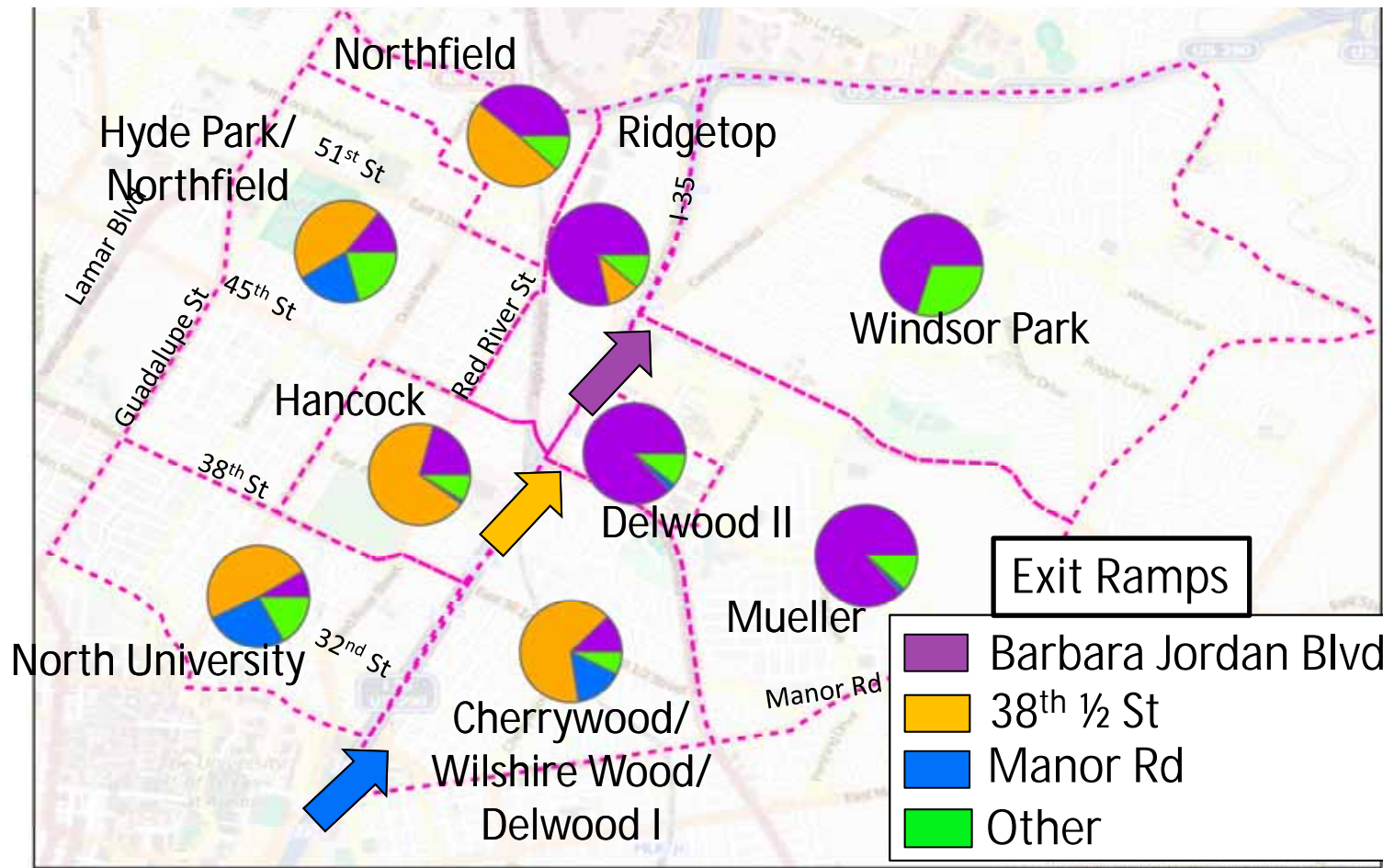
# How will Mobility 35 impact access to neighborhoods?

Existing Configuration  
PM Peak Period - NB



# How will Mobility 35 impact access to neighborhoods?

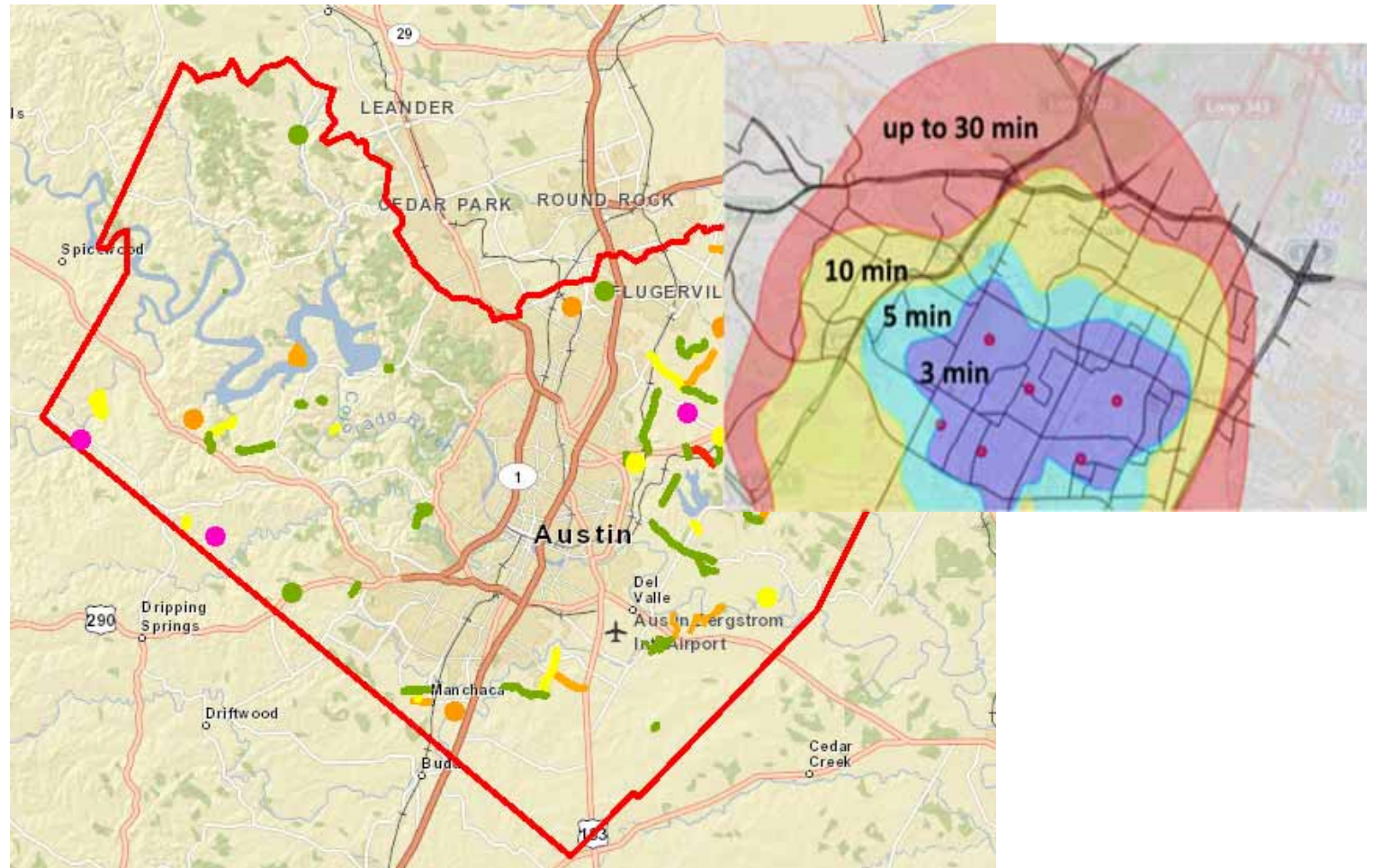
Planned Configuration  
PM Peak Period - NB





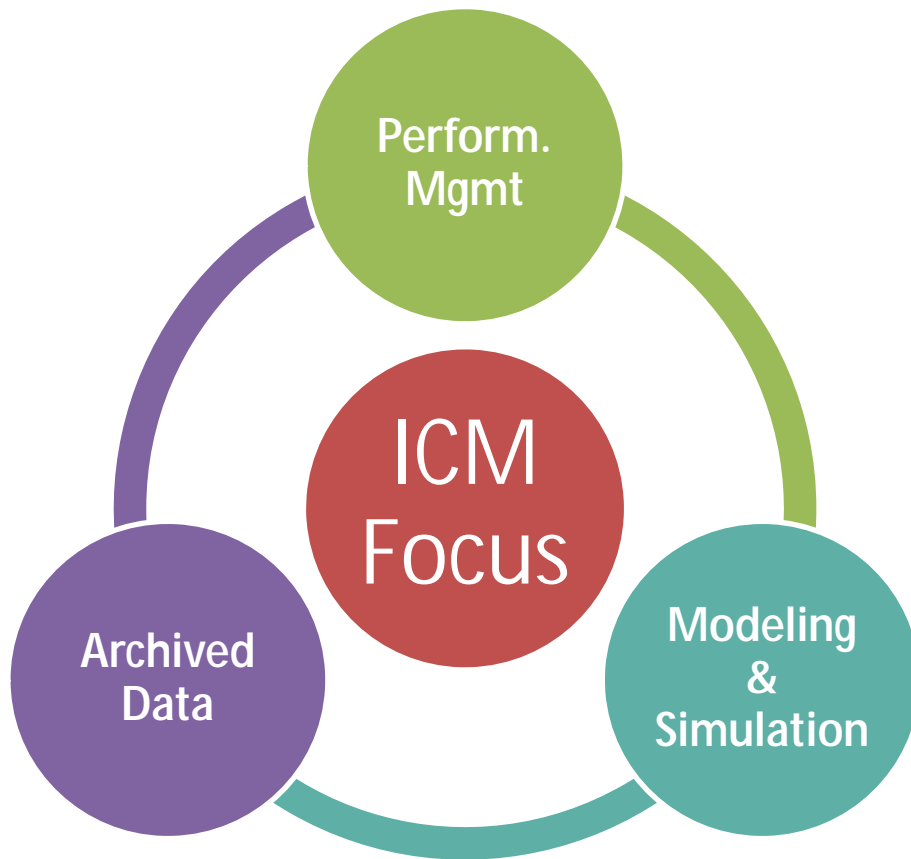
# Other Applications of Dynamic Traffic Modeling

# Project Prioritization

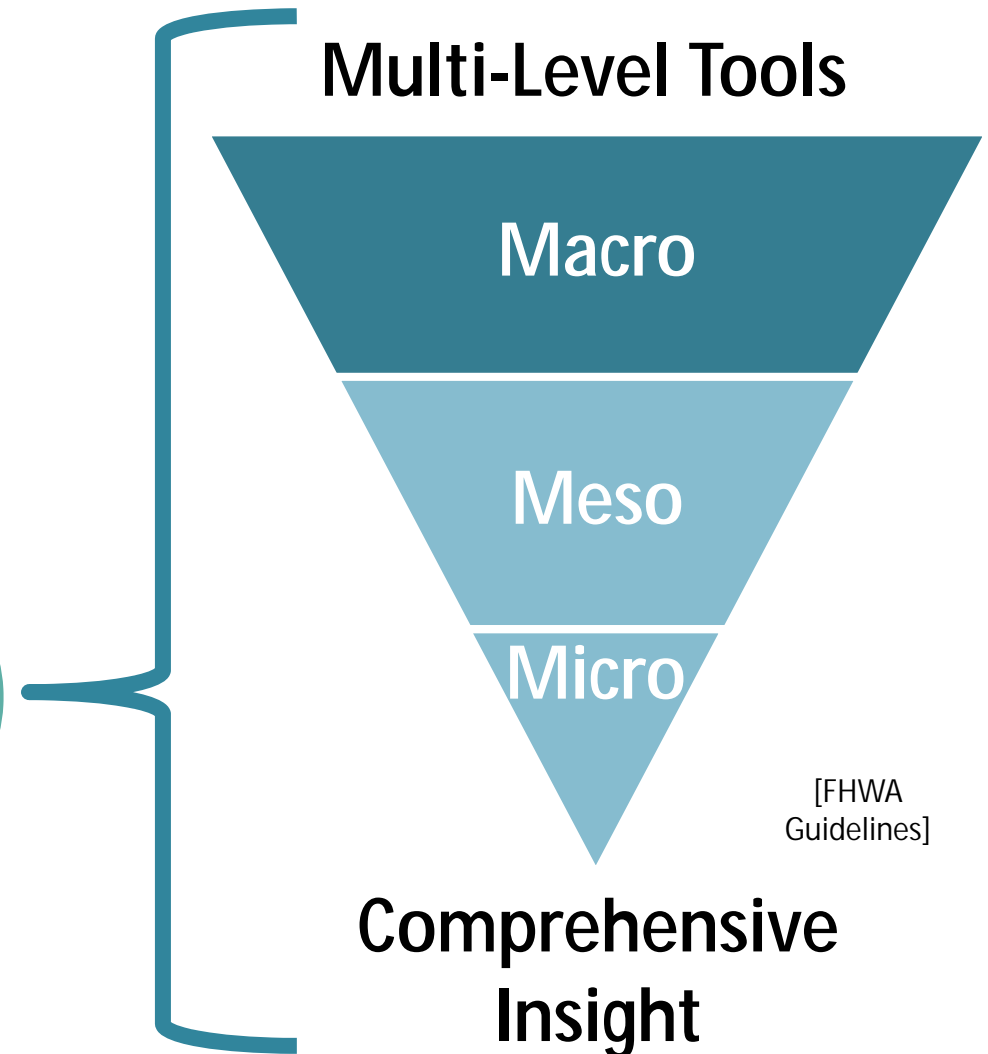




# Integrated Corridor Management

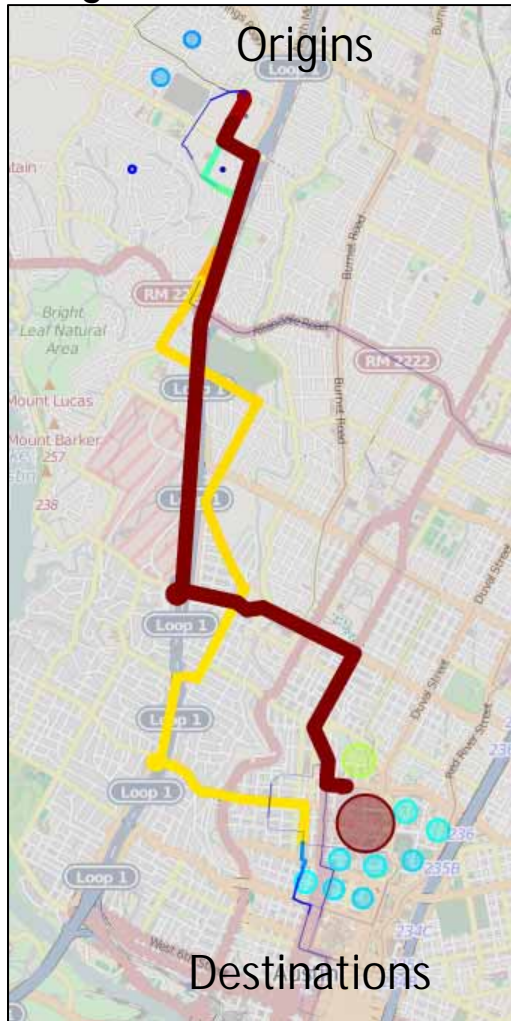


[Adapted from Wunderlich and Noblis, 2010]

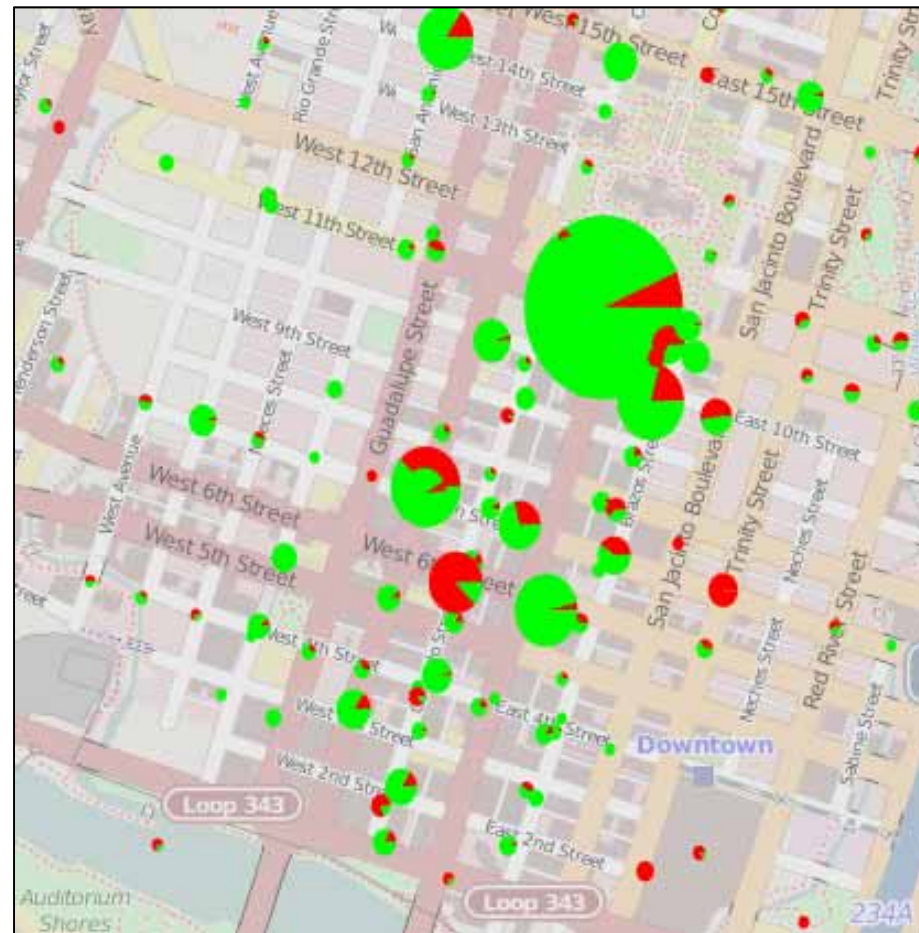


# Transit

Routes used Between a Set of  
Origins and Destinations



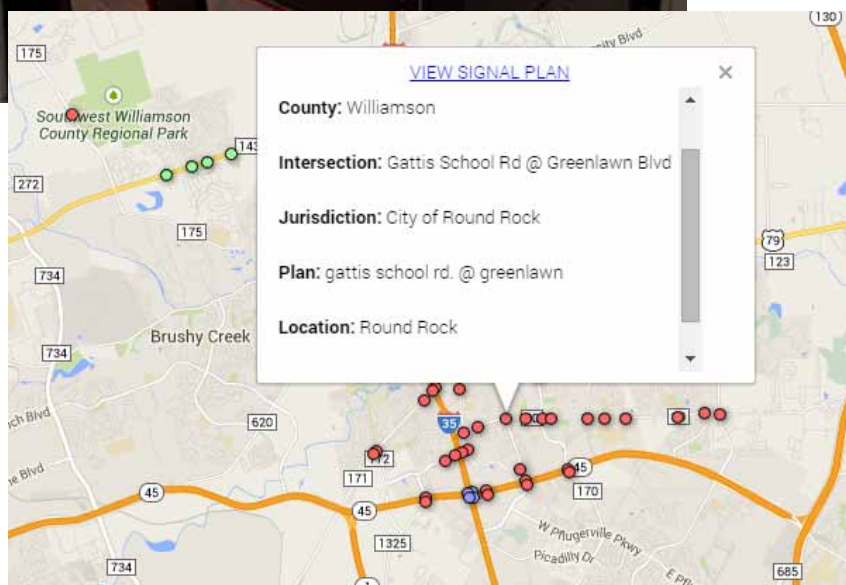
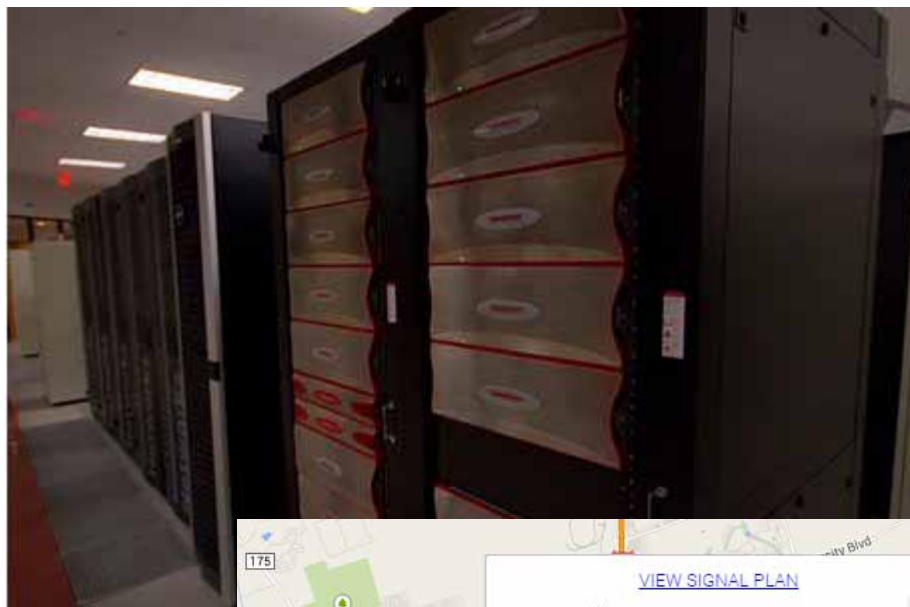
Boardings and Alightings at Stops







# Data Warehouse





## Conclusion

- Dynamic traffic models *fill a need* by answering questions that other model types cannot answer
- We are *implementing* these models in practice for TxDOT
- We are also actively conducting *research* to push the state-of-the-art in advanced travel modeling



## Questions?

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