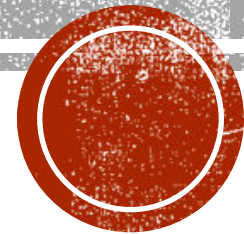


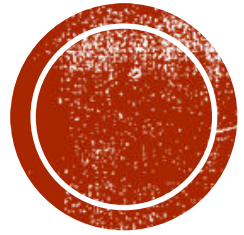
# WELCOME TO THE TRM USER FORUM

November 18, 2024

## AGENDA:

- WELCOME
- STAFFING UPDATES
- TRM UPDATES
- YOU SPOKE, WE LISTENED
- TIA VMT TOOL
- WISDOM EXCHANGE: Insights and Tactics
- NETWORKING





# TRM Staffing Updates

Leta Huntsinger, ITRE

# Team Member Updates

Congratulations to  
Alex Yoshizumi the  
New TRM Program  
Manager



# A bit about Alex

- Alex comes to us from the NC Clean Energy Technology Center (NCCETC) where he served as the Clean Transportation Project Manager.
- He also serves as the Executive Director of the nonprofit Applied Data Research Institute.
- Alex brings and expertise in systems modeling (both mathematical programming and process-based modeling), geospatial analytics, and data science, Alex applies these skills to answer questions at the intersection of energy, transportation, and land use.
- While his research spans a wide array of topics, the throughline of his work remains a passion for the environment and a desire to achieve a more sustainable, equitable, and resilient future.
- Alex received his Master of Environmental Management degree from the Duke University Nicholas School of the Environment and holds a Bachelor of Arts in Global Studies from the University of North Carolina at Chapel Hill. He is currently a PhD candidate an NC State University.



# Team Member Updates

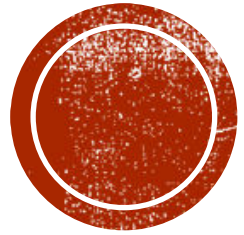
Congratulations to  
Leta Huntsinger on her  
upcoming retirement  
from NC State



# Major TRM Accomplishments

- Restructured and revitalized the TRM Service Bureau
- Provided leadership and direction on the development of TRMG2, a best practice hybrid trip based model designed with the end user in mind
- Expanded the technical support and analysis of the Service Bureau
- Established the TRM User Forum





# TRM UPDATES

Leta Huntsinger and Si Shi, ITRE

# CURRENT ACTIVITIES

- Ongoing maintenance of TRMG2v1.3 (*details on following slides*)
- Delivered draft TRMG2v2 to MPOs to support MTP development (*details on following slides*)
- New Performance Measures summary
- Ongoing efforts to improve User Guide and address GitHub issues
- Triangle Travel Survey underway this fall
  - Includes surveys for students at NC State, UNC and NC Central
- Investigations and analysis of transit on-board survey



# TRMG2 V1.3.2

- Available on GitHub!
- New reporting tools
  - Isochrones mapping tool
  - Zonal mode share summary
  - TIA standalone 2-step tool
  - Transit flow comparison map
  - New fixed OD tool that supports multiple projects
  - Delete all tool
  - Updates to external station data
  - Ongoing maintenance and bug fixes



# TRMG2 V2

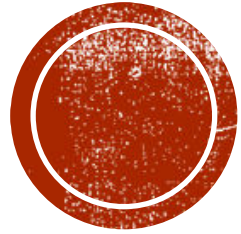
- Still underway
- New features
  - Same enhancements in v1.3.2
  - TransCAD 10
  - Performance measure summary
  - CoC equity tool



# TRMG2v3

- Same design and geographic coverage as TRMG2v2
  - Estimate coefficients using updated survey data
  - Develop a university student model using newly collected survey data
- Validation year of 2025, used to support 2060 MTP
- Current work effort is focused on data development
- RFP expected to be released in late Spring/early Summer 2025
- Model development work expected to begin in March/April 2026





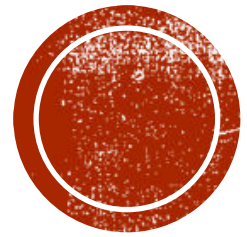
# YOU SPOKE, WE LISTENED

Leta Huntsinger, ITRE

# USER FORUM REQUESTS

- ✓ Implement a new delete tool that deletes everything except the assignment files
- ✓ Add flow chart information to the User Guide
- ✓ Modifications to project manager to consider multiple projects in a row
- ✓ Added scenario management best practice guidelines to the User Guide
- ✓ Updates to ArcGIS exports





# Using VMT for TIAs

Si Shi, ITRE

# Study Motivation



## Policy RC 1.5 Reducing Regional VMT

Support efforts to reduce traffic congestion and decrease vehicle miles traveled through cross-jurisdictional transit-oriented design and transportation planning programs.



## Policy LU 4.4 Reducing Vehicle Miles Traveled Through Mixed-use

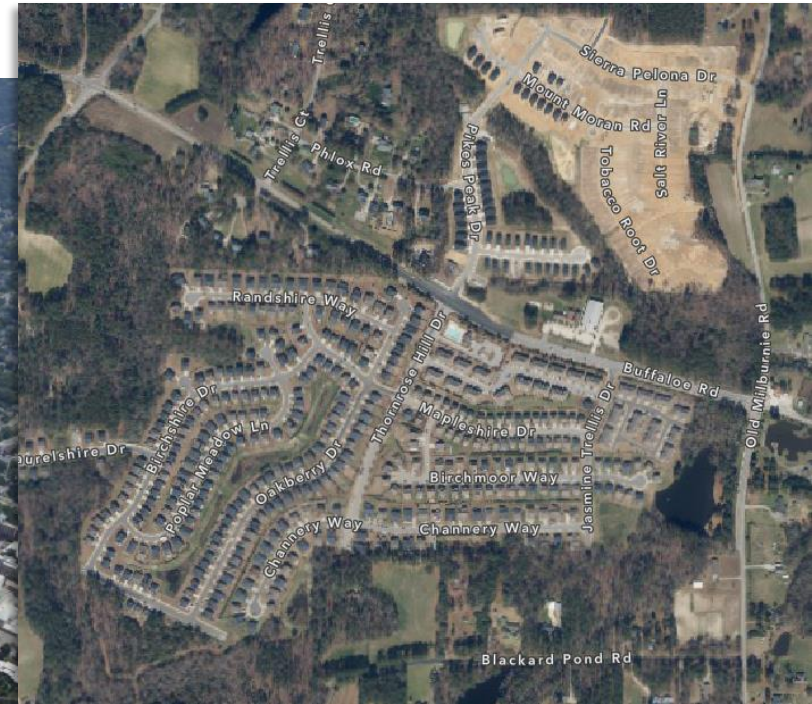
Promote mixed-use development that provides a range of services within a short distance of residences as a way to reduce the growth of vehicle miles traveled (VMT).



# Current TIA Framework



# Study Motivation



# TRMG2 Supported VMT Metrics

## Home-based VMT per resident

- Used for residential projects
- VMT calculated based on the trips being produced by the new project

## Home-based work VMT per employee

- Used for office projects
- VMT calculated based on the trips being attracted to the new project

## Total link VMT

- Used for regional retail projects
- Focuses on the market area served (**Local**: 90% of project traffic; **Extended**: 96% of project traffic; **Regional**: 100% of project traffic)
- Net change in VMT with and without the project for the roadway links in the area served



# TRMG2 Supported VMT Metrics

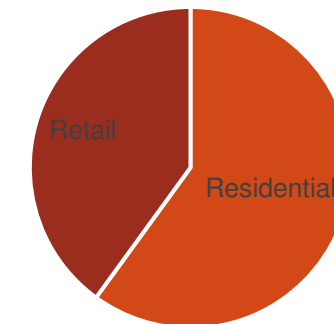
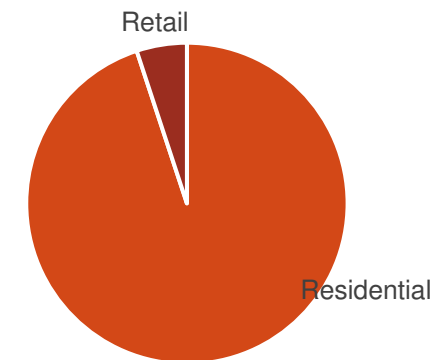
## Mixed use development with one dominant use

- Analysis focuses on the dominant land use type and other land use components can be ignored if they meet certain size criteria.
  - e.g. a small retail project (<50,000 ft<sup>2</sup>) can be excluded from the analysis as it generally reduces VMT

## Mixed use development without one dominant use

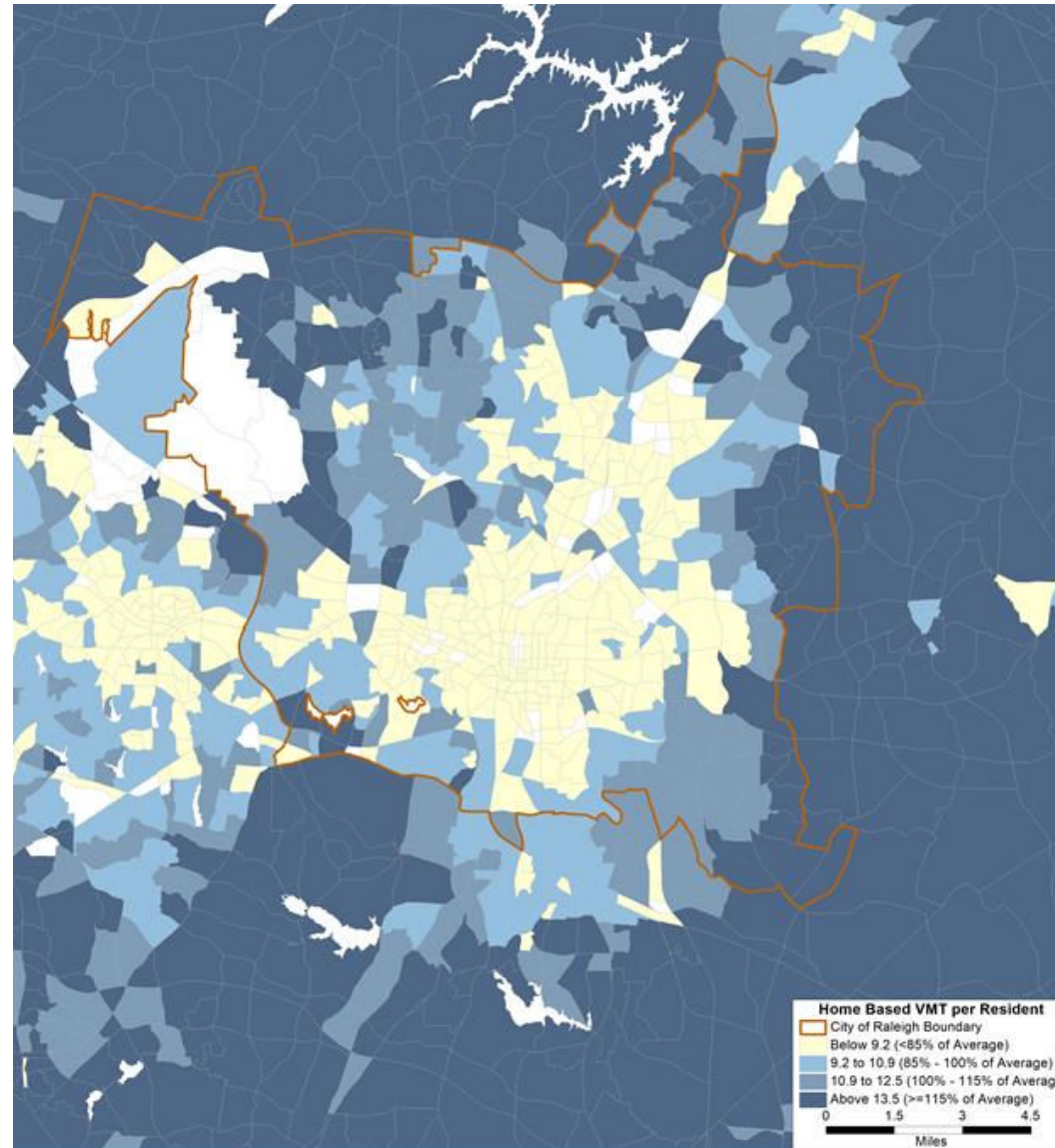
- Analysis is focused on trying to isolate the impact that each land use has on VMT.
- VMT is calculated using the appropriate metric depending on the land use type.

Development Percentage



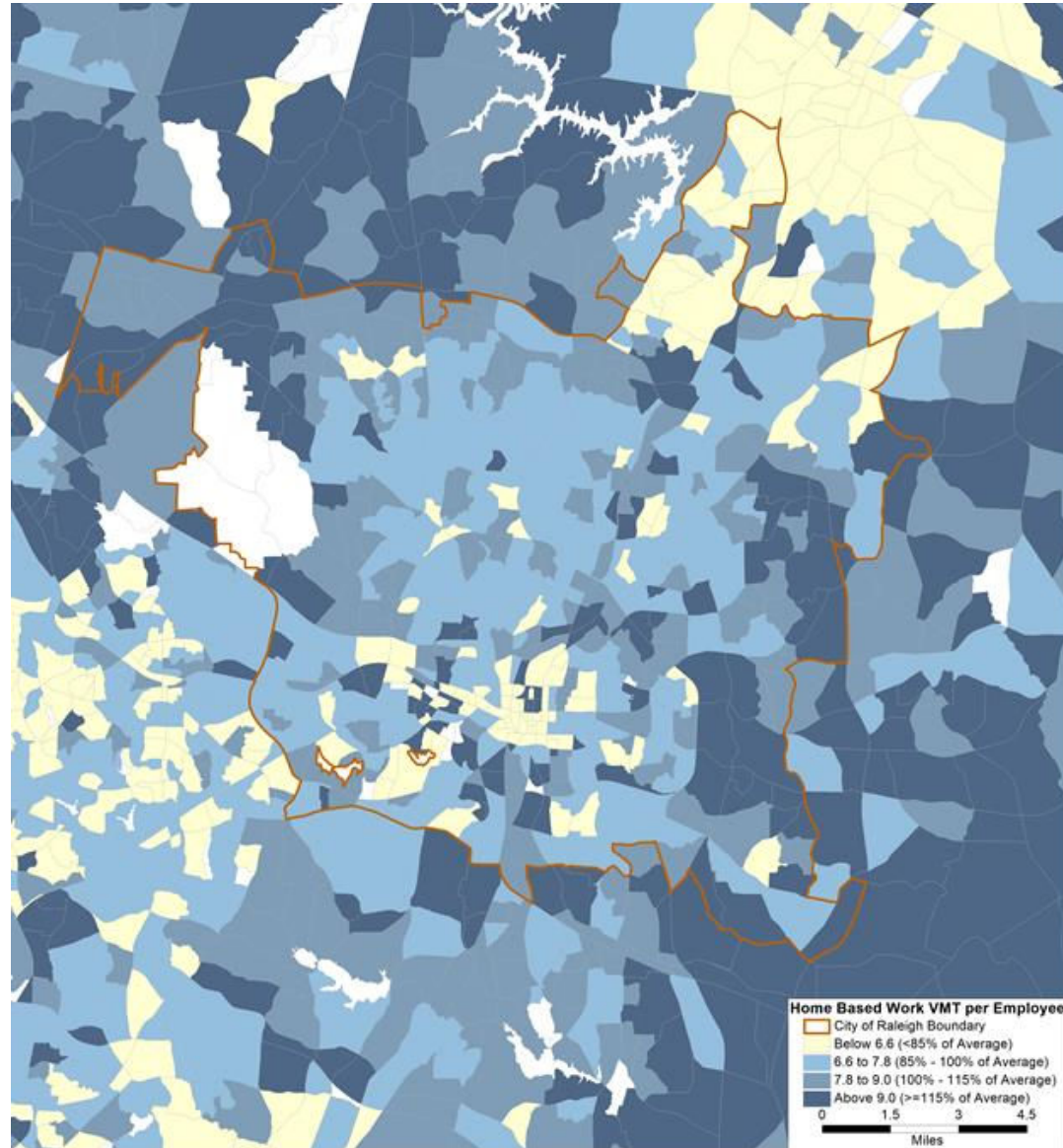
Home Based VMT  
per Resident

**2020 Baseline using  
85% threshold**



Home Based Work VMT  
per Employee

**2020 Baseline using  
85% threshold**



# Converting Land Use to Model Input

- Consistent with current TRMG2 data development process
- Simple crosswalk based on NAICS codes
- Units:
  - Household: # of people/units
  - Employment: # of emp/1,000 ft<sup>2</sup>

Land Use Type	Uses	Conversion Factor
Households	Single-Family	2.81
	Multifamily	2.02
Employment	Industrial	1.90
	Office	3.30
	Retail	2.90
	Service High	3.20
	Service Low	2.90



# Case Studies

Case Study	Location	Context	Scenario	
			Dwelling Units	Commercial Space / Other
1	Clover Lane	Urban Neighborhood	329	4,000 ft <sup>2</sup> Retail
2	Auburn Knightdale	Exurban	200	-
3	Davie at McDowell	Downtown	-	821,698 ft <sup>2</sup> Office 21,069 ft <sup>2</sup> Retail
4	Hillsborough at Gorman	Urban Mixed-use	-	542,271 ft <sup>2</sup> Office 43,382 ft <sup>2</sup> Retail
5	Corporate Center Drive	Suburban	715	10,000 ft <sup>2</sup> Office 50,000 ft <sup>2</sup> Retail
6	Pinnacle Apartments	Crabtree Mixed-use Center	402	-
7	River Towne	Exurban	982	-
8	Park City South Phase 1A	Urban Mixed-use	336	16,800 ft <sup>2</sup> Retail
9	Buffaloe Bend Grocery	Suburban	-	72,740 ft <sup>2</sup> Grocery Retail
10	5401 North	Suburban	2,400	50,000 ft <sup>2</sup> Daycare 350,000 ft <sup>2</sup> Elementary and Middle School 1,400,000 ft <sup>2</sup> Office 700,000 ft <sup>2</sup> Retail



# Case Study 1 – Clover Lane

## Home-based VMT per resident

### Context

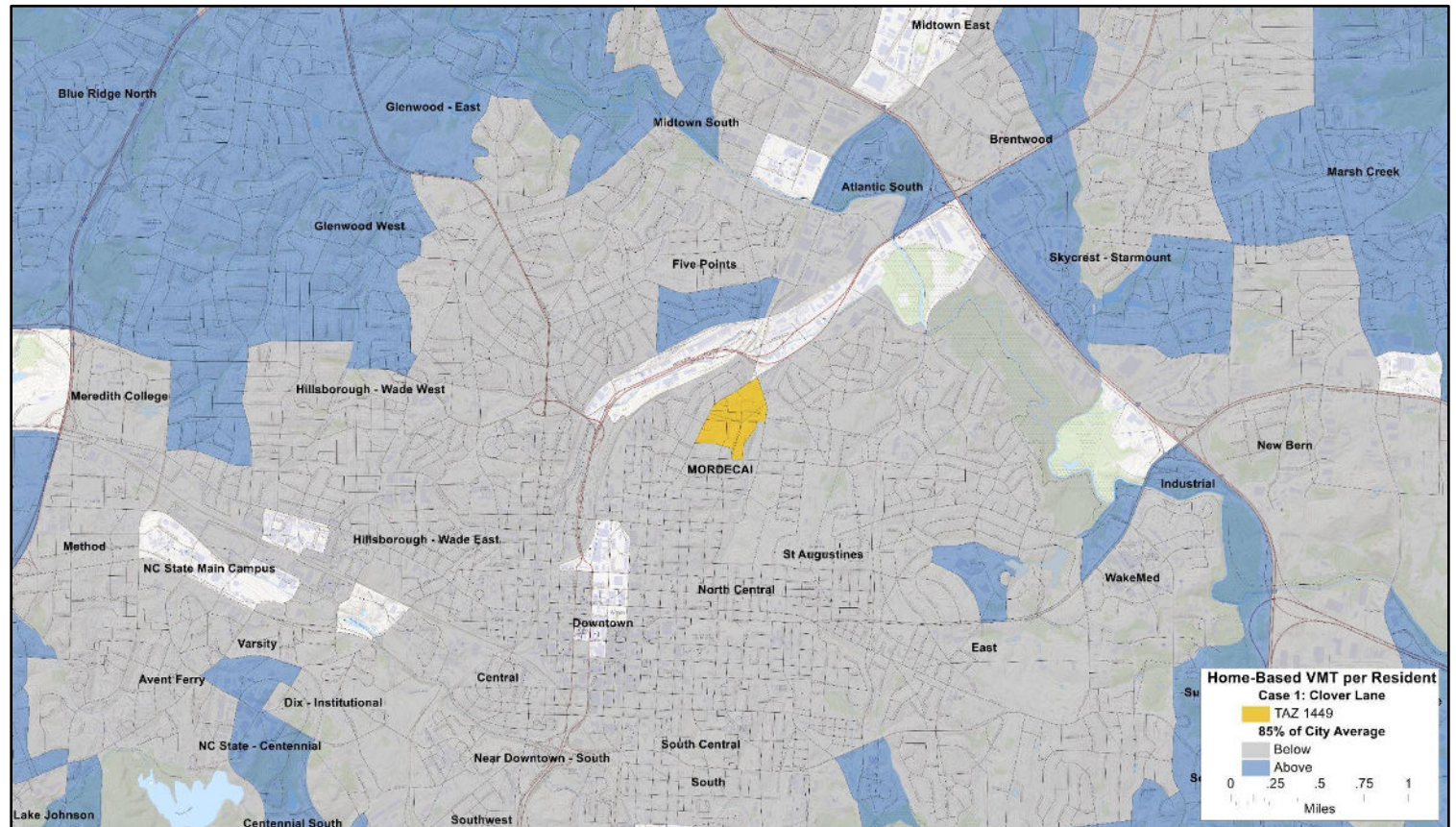
- Urban Neighborhood

### Scenario Evaluated

- 329 d.u.
- 4,000 ft<sup>2</sup> retail

### Model Inputs

- 12 retail jobs
- 329 households
- 665 residents



# Clover Lane Results

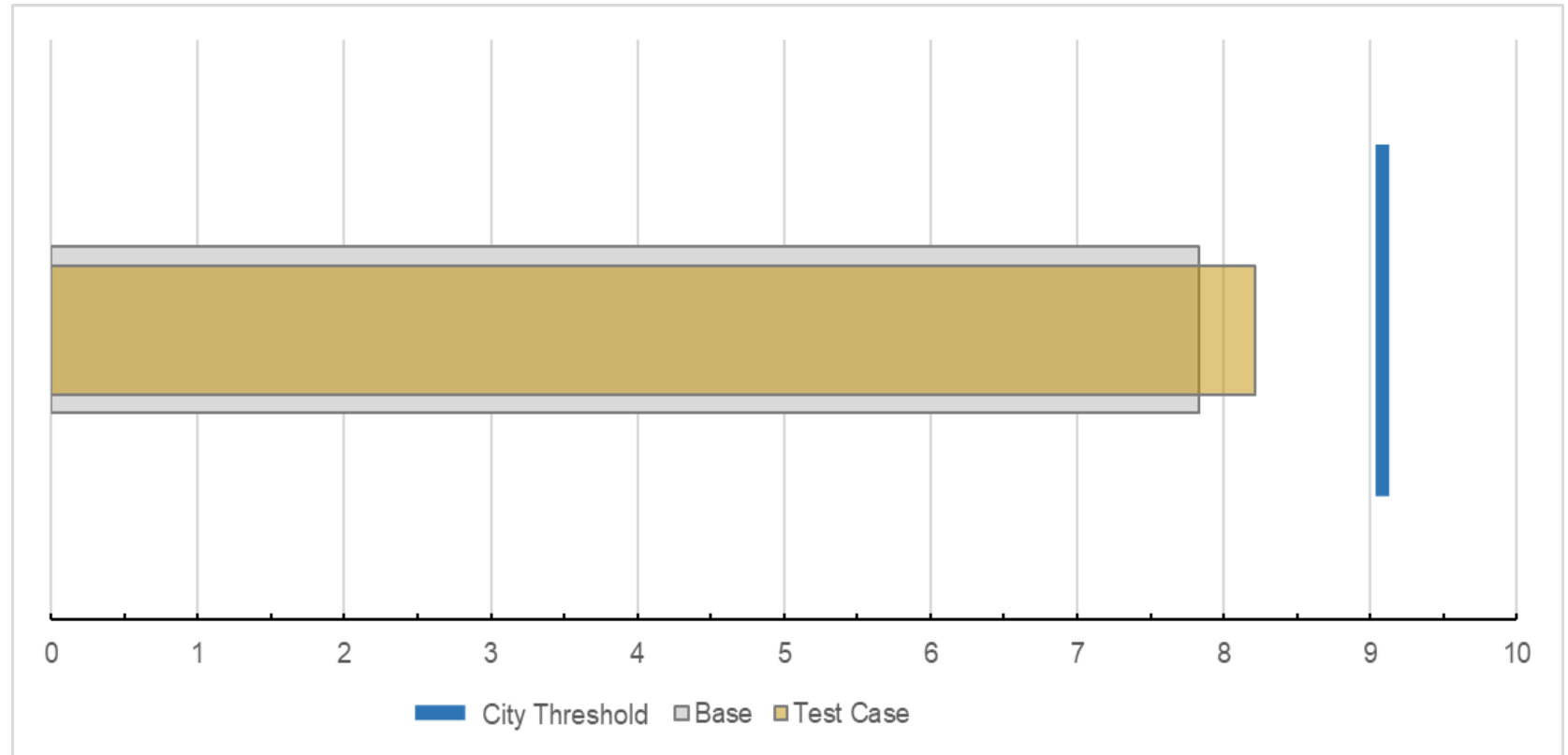
85%  
Threshold

9.2

TAZ  
1449

Base: 7.8

Case: 8.2



# Case Study 4 – Hillsborough at Gorman

Home-based work VMT per employee

## Context

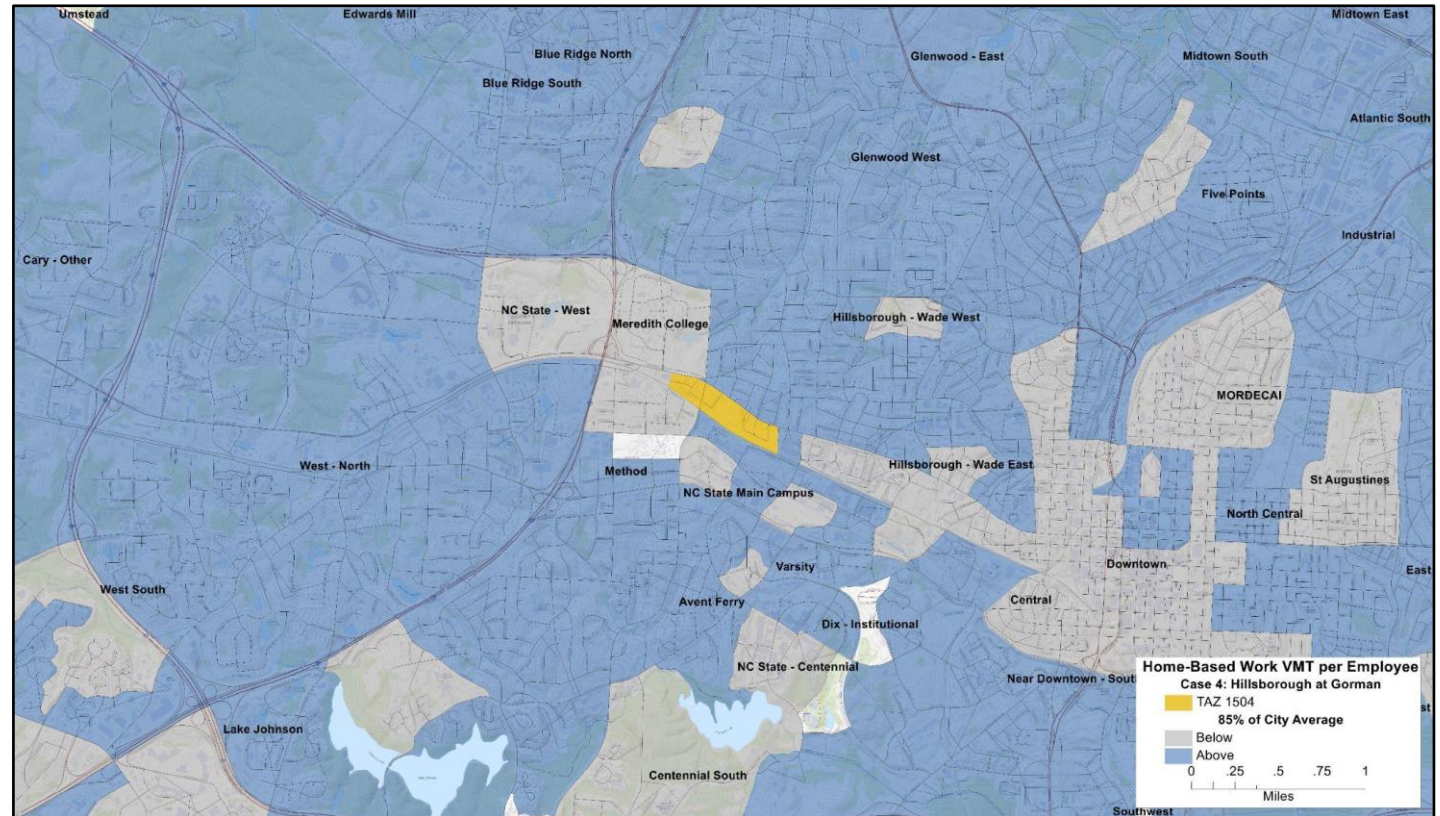
- Urban Mixed-Use

## Scenario Evaluated

- 542,271 ft<sup>2</sup> office
- 43,382 ft<sup>2</sup> retail

## Model Inputs

- 1,789 office jobs
- 126 retail jobs



# Hillsborough at Gorman Results

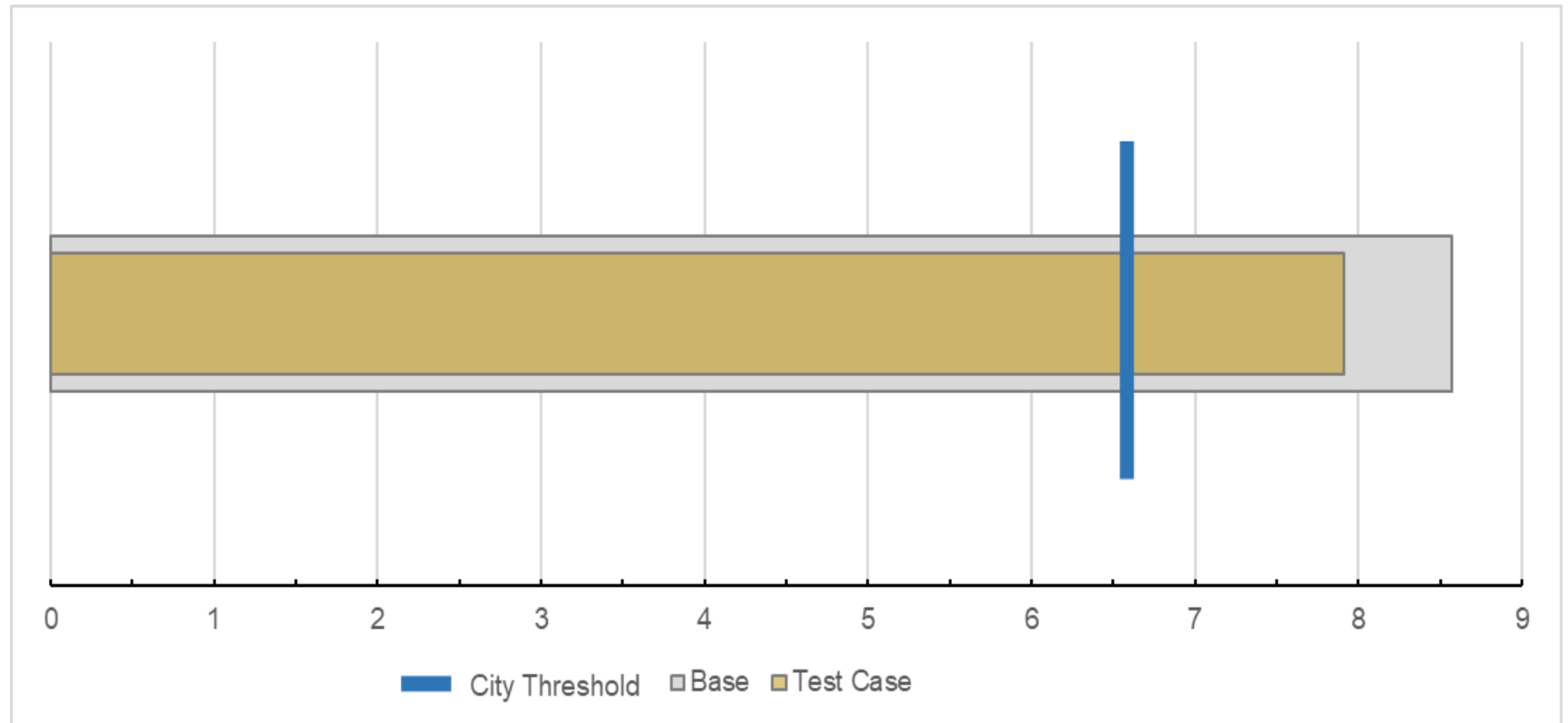
85%  
Threshold

6.6

TAZ  
1504

Base: 8.6

Case: 7.9



# Case Study 9 – Buffalo Bend Grocery

Total VMT

## Context

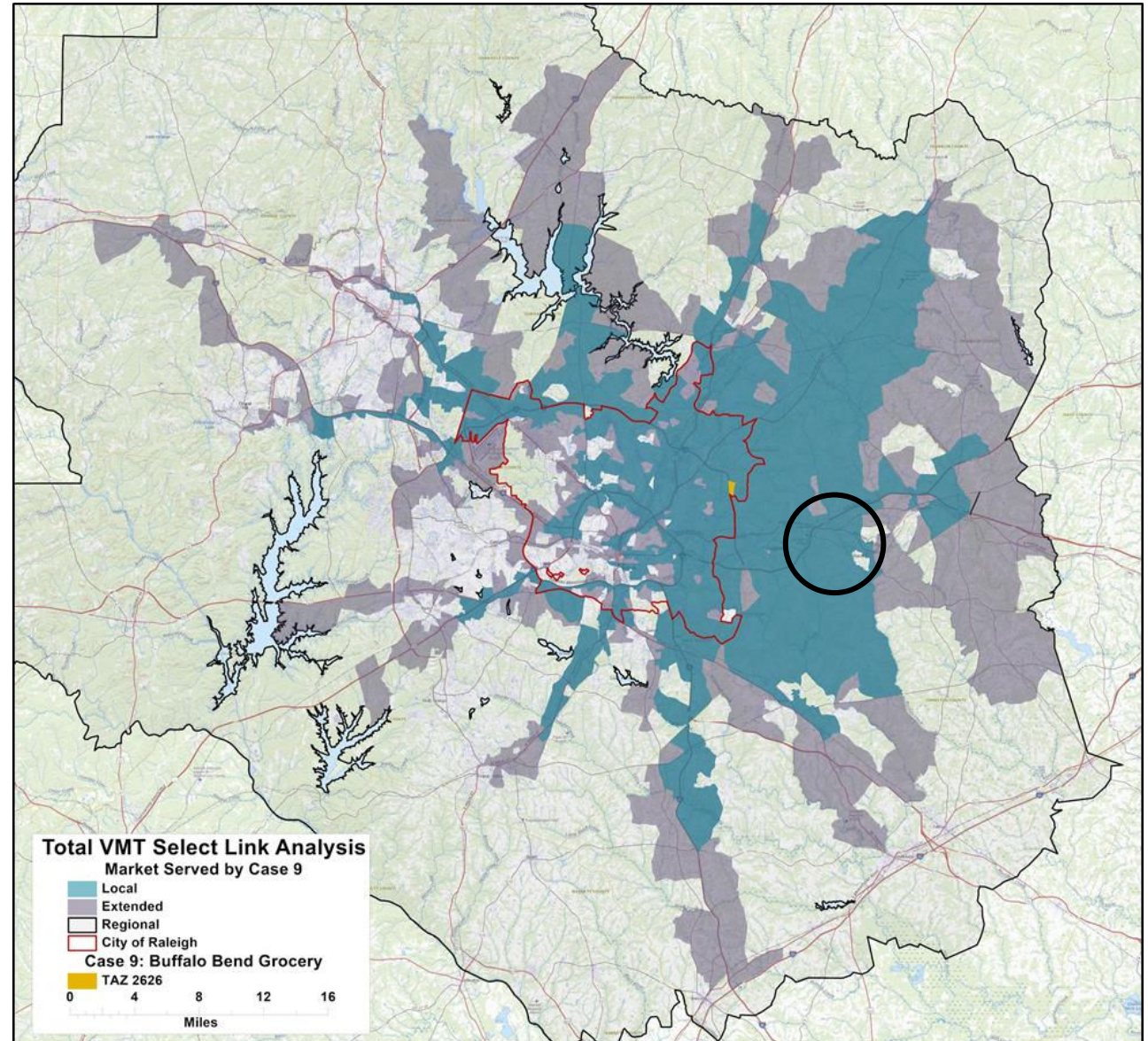
- Suburban

## Scenario Evaluated




- 72,740 ft<sup>2</sup> grocery/retail

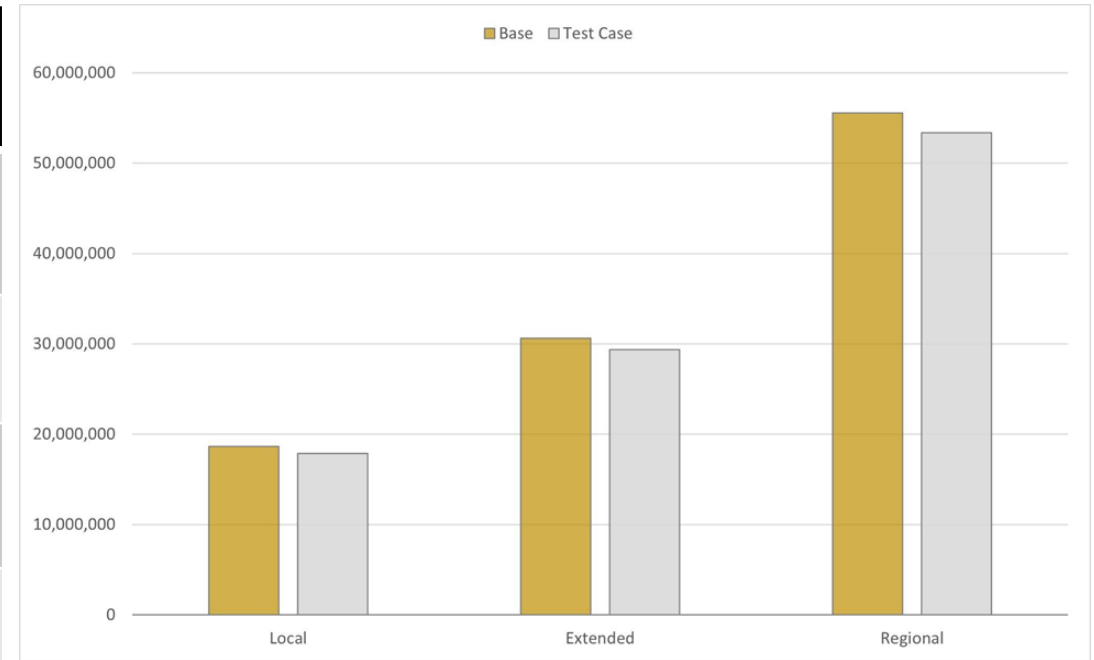
## Model Inputs

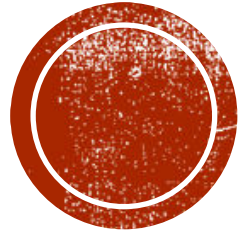
- 211 retail jobs



# Buffaloe Bend Results

Market Served	Total Link VMT			
	Base	Test Case	Change	
<b>Local</b>	18,649,048	17,850,100	-798,948	
<b>Extended</b>	30,647,984	29,386,343	-1,261,641	
<b>Regional</b>	55,549,160	53,389,206	-2,169,954	





# WISDOM EXCHANGE

Insights and Tactics – all invited to participate

# TOPICS TO KICK THINGS OFF

TRMG2 experience sharing

TRMG2 reporting tools

Other???





THANK  
You!

# Networking

