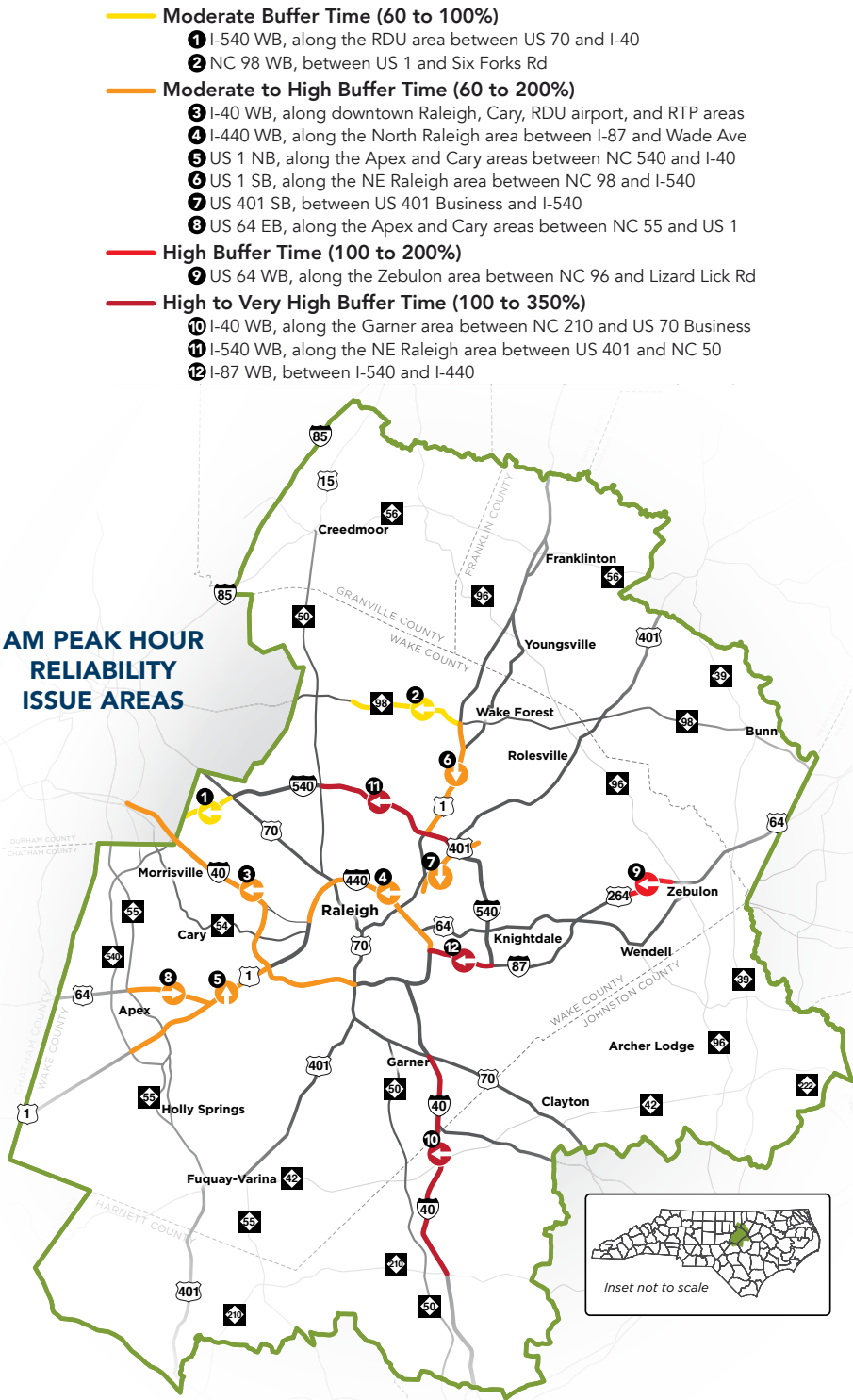
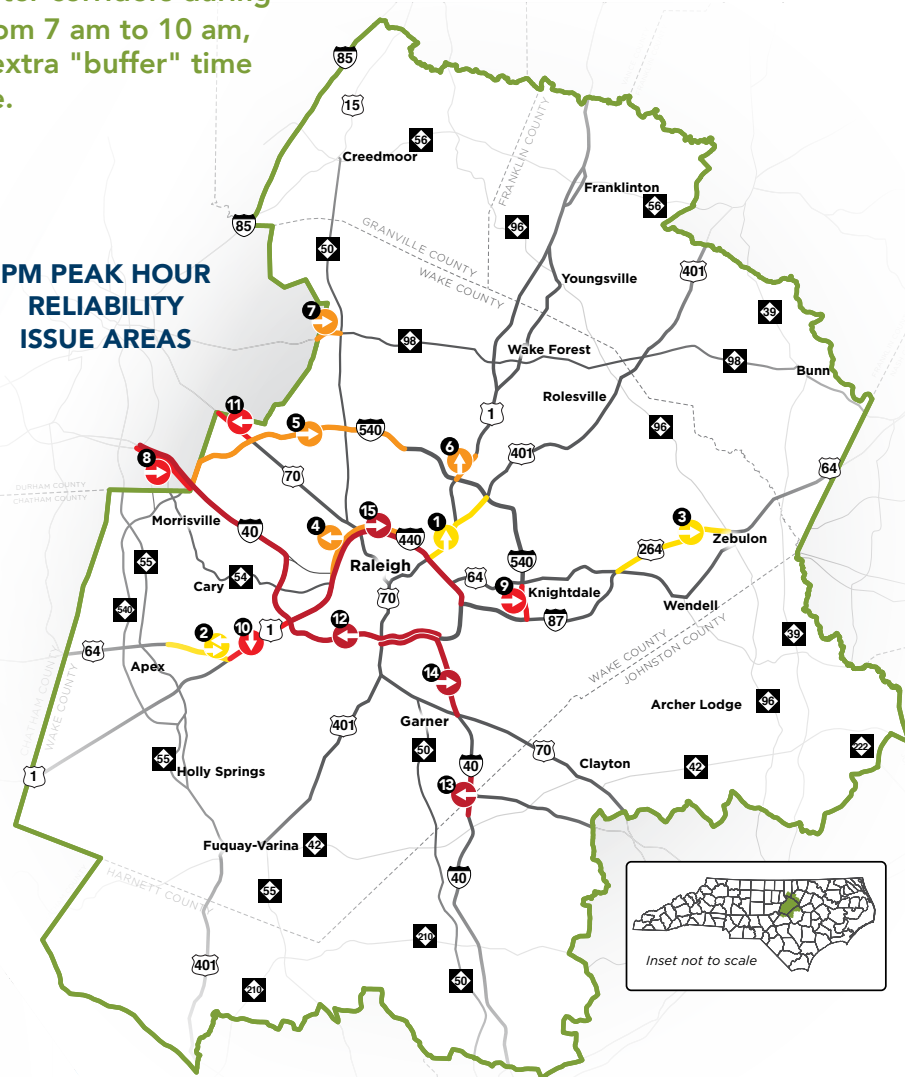


TODAY'S TRAFFIC

Traffic bottlenecks along the region's commuter corridors during morning and afternoon commuting hours (from 7 am to 10 am, and 4 pm to 7 pm) based on the amount of extra "buffer" time needed to be on-time 95 percent of the time.

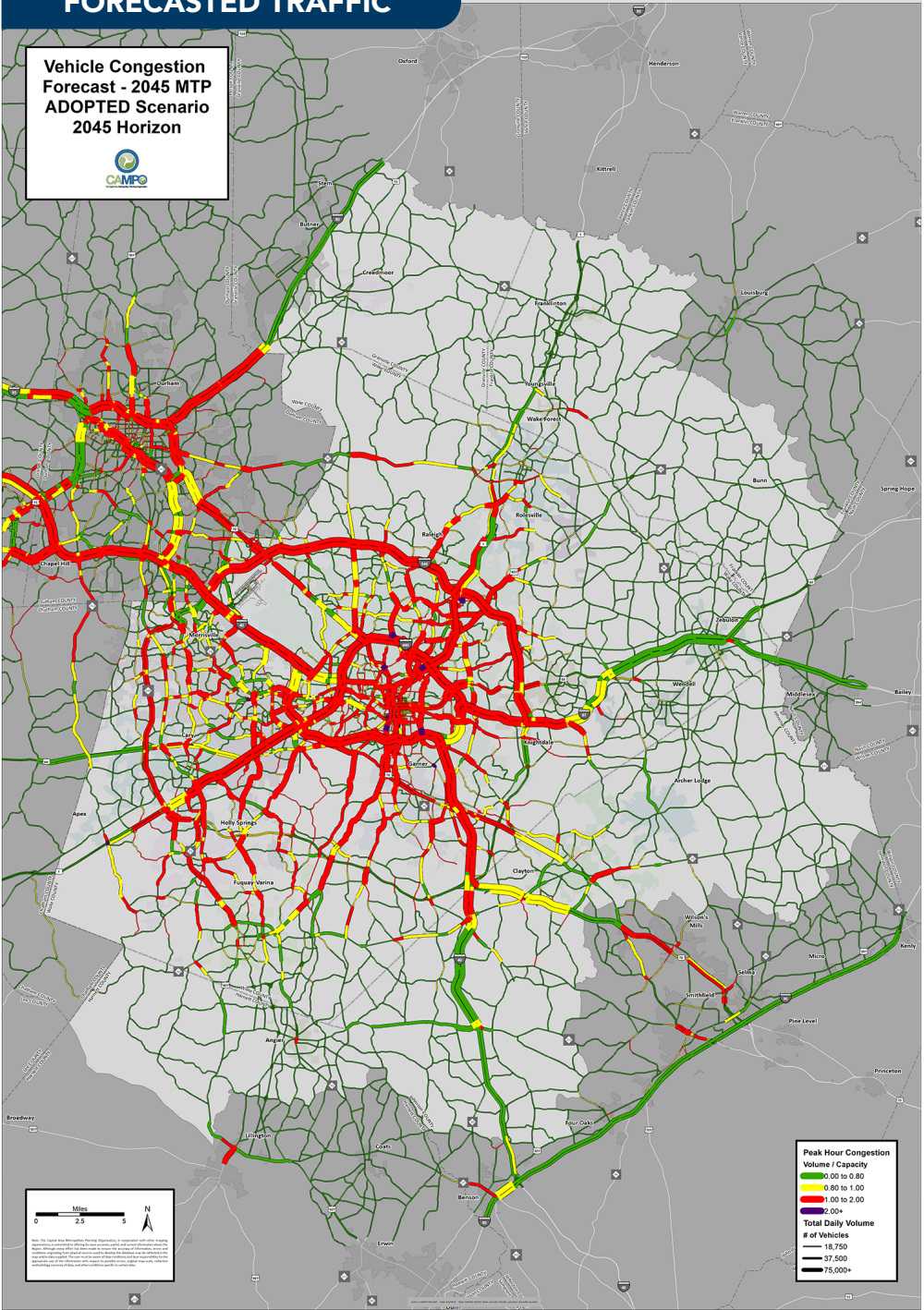


**PM PEAK HOUR RELIABILITY ISSUE AREAS**



- Moderate Buffer Time (60 to 100%)**
  - 1 US 401 NB, between US 1 and I-540
  - 2 US 64 EB and WB, between Lake Pine Rd and US 1
  - 3 US 64 EB, between US 64 Business and US 264
- Moderate to High Buffer Time (60 to 200%)**
  - 4 I-440 WB, between Six Forks Rd and Wade Ave
  - 5 I-540 EB, between I-40 and Six Forks Rd
  - 6 US 1 (Capital Blvd) NB, between I-540 and Durant Rd
  - 7 NC 98 EB, between Coley Rd and NC 50
- High Buffer Time (100 to 200%)**
  - 8 I-40 EB, along the RTP and RDU airport areas
  - 9 I-540 EB, between US 64 Business and I-87
  - 10 US 1 SB, between I-40 and US 64
  - 11 US 70 WB, along the Brier Creek area west of I-540
- High to Very High Buffer Time (100 to 350%)**
  - 12 I-40 WB, along downtown Raleigh, RDU airport, and RTP areas
  - 13 I-40 WB, along the Garner area around the US 70 Bypass interchange area
  - 14 I-40 EB, along downtown Raleigh, and Garner areas between South Saunders Rd to US 70 Business
  - 15 I-440 EB, between I-40/US 1 and I-87

FORECASTED TRAFFIC





## ABOUT THE STUDY

The Commuter Corridors Study was initiated in December of 2018 by the Capital Area Metropolitan Planning Organization (CAMPO), in cooperation with the North Carolina Department of Transportation (NCDOT). The purpose of the study was to understand the underlying causes of traffic congestion along major commuter corridors in the region, explore the emerging growth and mobility trends, and test hypothetical future scenarios in terms of their impacts on mobility, safety, accessibility, and the environment.

As can be seen in the forecast map shown on the other side, all interstates and highways in the region are projected to have some level of traffic congestion in the future. Traffic volumes are anticipated to exceed capacity for these roadways by year 2045. This congestion forecast is based on the region's growth projections of two million people, one million jobs, and nine million trips. These growth projections were adopted as part of the region's 2045 Metropolitan Transportation Plan (MTP). These commuter corridors serve as the economic backbone of the region as they connect the City of Raleigh's employment centers with the commercial centers, educational institutions, medical facilities, logistics centers, and suburban communities in Wake and several neighboring Counties (i.e., Durham, Chatham, Harnett, Johnston, Nash, Franklin, and Granville) as well as the Research Triangle Park (RTP). This observation led to the question:

**Why is there so much red in the map despite approved plans<sup>1</sup> for significant roadway and transit investments?**

This led to the launch of the **Commuter Corridors Study**.

## STUDY PROCESS AND SCOPE

The study involved a consultant team from Baseline Mobility Group and Resource Systems Group, and a technical steering committee that consisted of several CAMPO member and partner agencies. The technical steering committee guided the development and analysis of future scenarios. This included a broad-based scenario planning approach where realistic as well as unrealistic/hypothetical scenarios could be tested.

The study area included four Interstates, seven U.S. Highways, and six N.C. highways for a total of 17 corridors, listed below.

- Interstates: I-40, I-440, I-87, I-540
- U.S. Highways: US 1, US 1 Alt., US 64 Bus, US 70, US 70 Bus, US 401
- NC Highways: NC 55, NC 55 Bypass, NC 540, NC 50, NC 54, and NC 98

A total of six scenarios were developed and analyzed by the consultant team using a combination of land use, travel demand and benefit-cost analysis models<sup>2</sup>. All six scenarios were developed by pivoting from the socio-economic projections that are embedded in the 2045 MTP.

<sup>1</sup> Statewide Transportation Improvement Program (STIP); 2045 Metropolitan Transportation Improvement Program (MTIP)

<sup>2</sup> The land use model used in the study is the region's CommunityViz model, the travel demand model used is the Triangle Regional Model (TRM), and the benefit cost model used is the FHWA's Benefit Cost Analysis (BCA) Tool.

## PERFORMANCE MEASURES FOR FUTURE SCENARIOS<sup>1</sup>

FUTURE SCENARIO	NET BENEFIT (Millions of 2019 US Dollar per Year)	TRAFFIC CONGESTION	TRAVEL SPEED	MODE SPLIT	TRANSIT RIDERSHIP	TRAVEL TIME & RELIABILITY	SAFETY, PHYSICAL ACTIVITY & ACCESSIBILITY
TOLL3	-123.3						
ETOD	45.5						
GIG	97.2						
MHUB	-16.3						
RESY	-85.1						
		POSITIVE CHANGE	NEGATIVE CHANGE	NEUTRAL/MIXED CHANGE			

<sup>1</sup>Changes in performance measures are reported based on comparison to the 2045 Adopted MTP

### TECHNICAL STEERING COMMITTEE MEMBERS

NCDOT | City of Raleigh | GoRaleigh | GoTriangle  
NCSU - Institute for Transportation Research and Education (ITRE)  
Triangle J Council of Governments (TJCOG)  
Town of Clayton | Durham-Chapel Hill-Carrboro (DCHC) MPO

## FUTURE LAND USE-TRANSPORTATION SCENARIOS

The six "hypothetical" future scenarios modeled and analyzed in the study are summarized below. These six scenarios were measured using a host of traffic congestion measures such as level of traffic saturation, travel speed, travel time reliability, and modal split between Single-Occupant Vehicle (SOV), Carpool, Bus, Rail, Walking and Biking. These scenarios were also analyzed using benefit-cost measures to understand the net economic, social and environmental benefit of a scenario – see the table. More detailed information for each scenario is available at [www.campo-nc.us](http://www.campo-nc.us); search "commuter corridors".

**HWYX – Highway Mega Expansion:** This scenario hypothetically assumed doubling of the number of General-Purpose lanes along congested commuter corridor segments in the CAMPO region including I-40, I-440, I-540, US 1, US 64, US 70, and US 401.

> **OUTCOME:** This scenario was deemed unrealistic and infeasible due to huge costs and community impacts, so it was excluded from the list of final scenarios modeled.

**TOLL3 – Congestion Pricing - Dynamic Tolling:** This scenario was intended to capture the emerging trend of applying tolls to ease traffic congestion in urban areas. The study assumed dynamic pricing, meaning the price fluctuates in real-time, during peak periods along the region's freeway corridors. It was also assumed that the peak toll pricing is only applicable to Single-Occupant Vehicles (SOVs) and trucks, but not to High-Occupancy Vehicles (HOVs) and buses.

> **OUTCOME:** This scenario was deemed feasible for some corridors such as I-40 and I-540 where we looked at tolling on managed lanes only, but was considered very difficult for the I-440 corridor where we looked at tolling all lanes of travel due to right-of-way restrictions and community impacts.

**ETOD – Equitable Transit-Oriented Development:** This scenario is a transit-emphasis scenario. It was assumed that more of the anticipated future growth can be redirected towards station areas through supportive zoning policies and other incentives. The study assumed 50 percent additional growth in affordable multi-family, office and retail uses within half-mile of each planned transit station in the region, and 100 percent increase in transit frequency for future transit routes in the region.

> **OUTCOME:** This scenario was deemed realistic and feasible, and has the potential to curb future traffic congestion in the region.

**RESY – Regional Resiliency:** This scenario was intended to illustrate the importance of resiliency planning for traffic disruptions due to extreme weather events. The study assumed 50 percent reduction in the number of available lanes at several commuter corridor segments that were deemed to be vulnerable to flooding in an extreme weather event.

> **OUTCOME:** This scenario was deemed necessary for resiliency planning. Potential negative impacts could worsen if adequate roadway connectivity is not built into the commuter corridors.

**GIG – Gig Economy of Mobile Workers:** This scenario was intended to capture the emerging socio-economic trend where an increasing number of people work from home due to the growth of mobile (telecommuting), part-time, and independent workers. Guided by national estimates, the study assumed 25 percent reduction in work-related commute trips for medium-income and high-income households.

> **OUTCOME:** This scenario was deemed realistic based on current trend. It has the potential to curb freeway traffic congestion during regular commuting hours, but may cause negative impacts to off-peak travel conditions or on local arterials.

**MHUB – Smart Mobility Hubs:** This scenario was intended to capture the new mobility trend of using shared ride services for first-mile and last-mile trips. The study identified 13 future mixed-use center locations around the edges of the region as hypothetical future smart mobility hubs. This scenario also assumed 50 percent additional growth in household, office and retail uses within one and one half-mile band of each of the identified mobility hubs, along with high frequency premium transit service during commuting hours to connect each mobility hub with downtown Raleigh and the Research Triangle Park (RTP).

> **OUTCOME:** This scenario was deemed realistic and feasible based on current trends, and has the potential to curb future traffic congestion in the region.