



NC Capital Area **Metropolitan Planning Organization**

# **CAPITAL AREA MPO**

**Technical Coordinating Committee  
Meeting**

**October 6, 2016**

**10:00 AM**

1. Welcome and Introductions
2. Adjustments to the Agenda
3. Public Comments

This is an opportunity for comments by those in attendance.

Please limit comments to three minutes for each speaker.

## 4. Minutes

### 4.1 Minutes from the September 1, 2016 meeting

#### Requested Action:

Approve Minutes from September 1, 2016 meeting.

## 5.1 FY 2016-2025 Transportation Improvement Program – Amendment #4

NCDOT's STIP Unit notified the MPO of amendments to the 2016-2025 State TIP. The MPO should update the TIP to reflect these changes in order to meet federal regulations stating that the TIP and STIP must be identical. Additionally, amendments to the 2016-2025 TIP are necessary to accommodate funding for LAPP Projects.

Staff released the draft FY 2016-2017 Transportation Improvement Program - Amendment #4 for public review and comment from September 19, 2016 through October 19, 2016. A public hearing is scheduled at the October 19, 2016 Executive Board meeting.

### Requested Action:

**Recommend Executive Board adopt FY 2016-2025 Transportation Improvement Program – Amendment #4 pending no adverse public comment.**



## 5.2 LAPP Project Amendments

The LAPP program receives many requests for modifications to funding, schedule and scope. Many are minor and approved at the staff level. Currently, there is one project in the Town of Morrisville with a funding change request that warrants Executive Board review and action. Additionally, another project was recently declined by the project sponsor, Granville County. The declined project is provided for information only.

### **Requested Action:**

**Action Recommend Executive Board approval of LAPP Project Amendment on C-5168, Morrisville Crabtree Creek Greenway to include \$806,302 additional CMAQ/TAP funds with \$806,302 required local match.**

## 5.3 Regional Freight Plan – Interim Update



# Agenda

- Introductions
- Plan Development Status
- Freight Future Conditions Assessment
- Draft Strategic Freight Corridors
  - Discussion: Triangle Corridors & FAST Act Urban Corridors
- Potential Development Zones
  - Discussion: Mobility & Development Strategies
- Next Steps

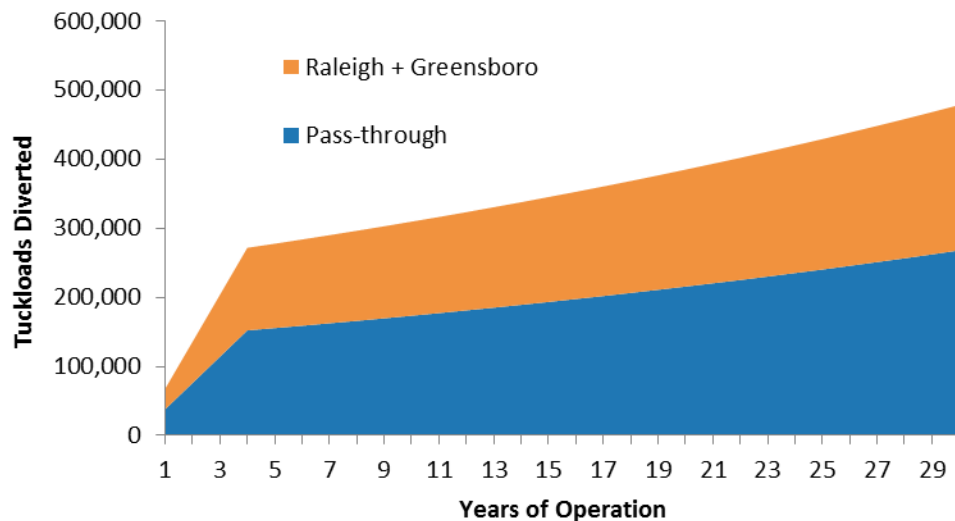
# Plan Development & Deliverables Status

- |  |   |
|--|---|
| 1. Project Management                              | <input checked="" type="checkbox"/> <b>Done to date</b>       |
| 2. Stakeholder Outreach & Engagement               | <input checked="" type="checkbox"/> <b>1 workshop to come</b> |
| 3. Data Collection & Assessment                    | <input checked="" type="checkbox"/> <b>1 survey to come</b>   |
| 4. Freight Goals/Objectives & Performance Measures | <input checked="" type="checkbox"/> <b>Done</b>               |
| 5. Trends & Existing Conditions                    | <input checked="" type="checkbox"/> <b>Done</b>               |
| 6. Freight Model & Forecasts – 2035/2045           | <input checked="" type="checkbox"/> <b>Done</b>               |
| 7. Evaluation of Future Conditions                 | <input checked="" type="checkbox"/> <b>Done</b>               |
| 8. Strategic Freight Corridors & Zones             |   |
| 9. Recommendations & Implementation Strategies     | <input checked="" type="checkbox"/> <b>Sep 2016</b>           |
|  | <input type="checkbox"/> <b>Nov 2016</b>                      |
| 10. Final Report                                   | <input type="checkbox"/> <b>Jan 2017</b>                      |
|  | <input type="checkbox"/> <b>Mar 2017</b>                      |

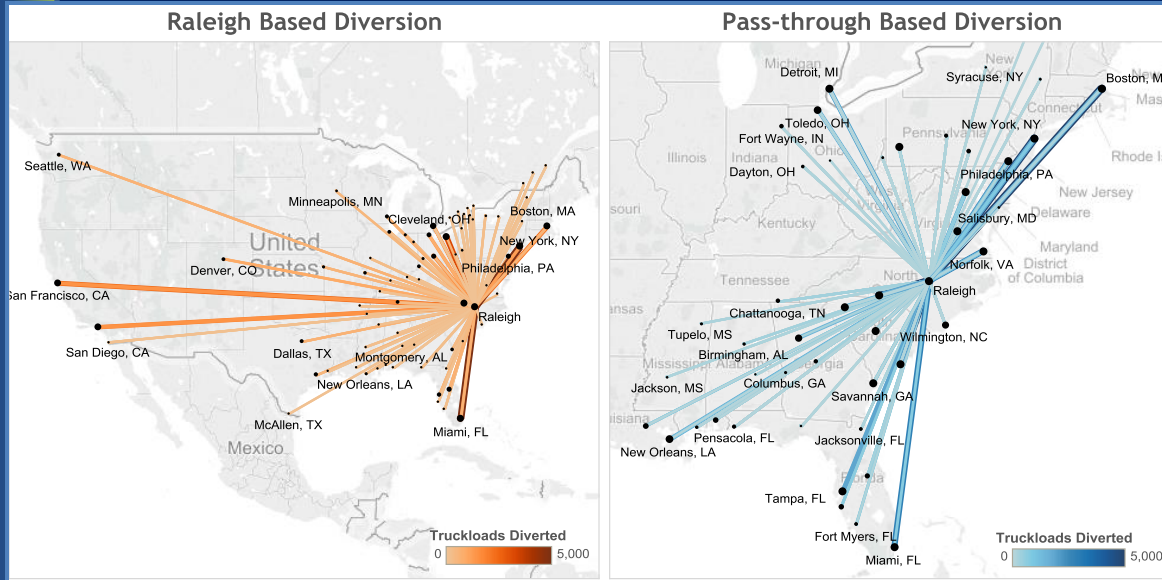
# Rail Future Conditions: New CSX Hub



- New CSX Intermodal hub opens 2020 in Rocky Mount
- “CCX” is 2<sup>nd</sup> hub in new intermodal operating model
- 119K NC trucks/year and 2.7 mil. truck miles diverted to rail, mostly from Triangle region
- Diverts another 150K trucks/year and 13.2 mil. truck miles passing through NC



# CCX Benefits Triangle Shippers



- Competitive lanes from Triangle reach throughout eastern US and across country
- Public benefits \$310 mil. in NC, \$1.8 bil. US – especially from shipper reduced costs

## Public Benefits Over 30 Years (Millions of 2015\$)

	Nationwide	North Carolina
Pavement Maintenance Savings	\$194.2	\$15.9
Shipper Savings	\$809.9	\$230.8
Congestion Savings	\$237.4	\$19.4
Emission Savings	\$287.7	\$23.5
Accident Savings	\$247.1	\$20.2
<b>Total Benefits</b>	<b>\$1,776.2</b>	<b>\$310.1</b>



# CCX Economic Development

## Rocky Mount Candidates Sites for ILC



- Strong potential for adjacent Intermodal Logistics Center (ILC) development
- 550 acre site could generate 4,000 jobs
- ➔ CCX diverts trucks, but adds them to US 64



# Air Cargo Future Conditions

- RDU's air cargo growth is conservative, consistent with national trends
- Top carriers are FedEx and UPS, low and flat growth in belly cargo
- Air cargo capacity appears to be sufficient
- Opportunity to increase international traffic at RDU, specifically at Foreign Trade Zone (FTZ) #93

## Projected Air Cargo Activity at RDU

Air Cargo Activity	2015	2045	Total Growth (2015-2045)	CAGR (2015-2045)
Total Cargo Volumes (tons)	84,680	109,586	29%	0.9%
All Cargo Operations	4,376	5,466	25%	0.7%

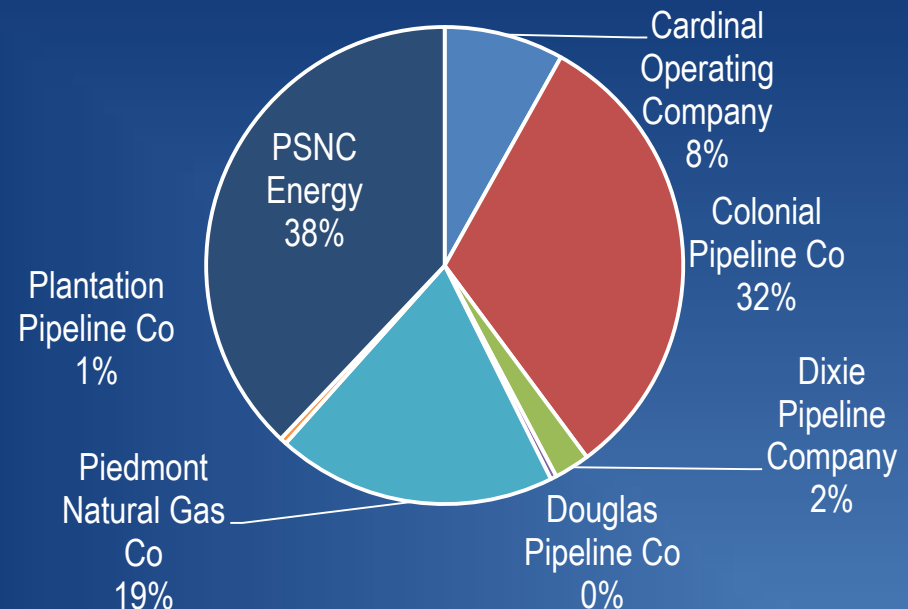
## Projected Top 5 Trade Partners at RDU

Airport	2045 Tons	% of Total
Memphis International	68,947	46%
Louisville International	35,851	24%
Indianapolis International	24,256	16%
London Heathrow	7,987	5%
Hartsfield-Jackson Atlanta International	2,408	2%

# Pipeline Profile

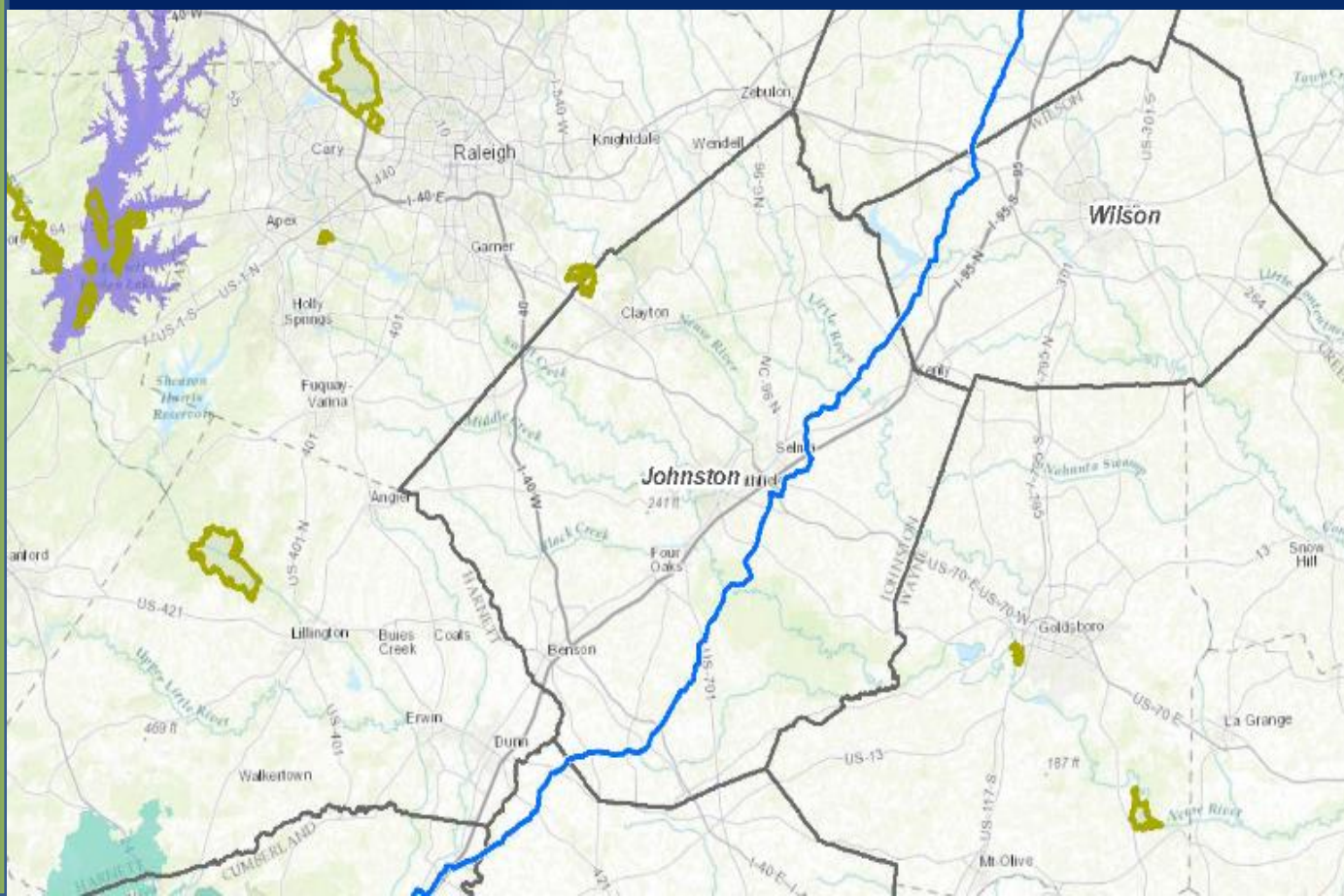
- 750 miles of pipelines in Triangle Region
- Three counties contain majority of pipeline mileage: Wake (24%), Johnston (22%), and Chatham (19%)
- 65% of pipelines carry natural gas, 32% carry non-HVL products
- Major Energy facilities:
  - Dixie Pipeline propane storage facility in Apex
  - Plantation Pipeline breakout tanks for petroleum products: Raleigh, Apex, and Selma
  - Liquefied natural gas (LNG) facilities in Cary (PSNC Energy) and Bentonville (Piedmont Natural Gas)

**Pipeline Operators in Triangle Region by Mileage**



# Future Pipeline Capacity

- Future Capacity:
  - Atlantic Coast Pipeline (ACP) slated to begin construction 2017
  - will transport Marcellus/Utica Shale gas from WV to NC
  - 37 miles of new pipeline infrastructure in Johnston County



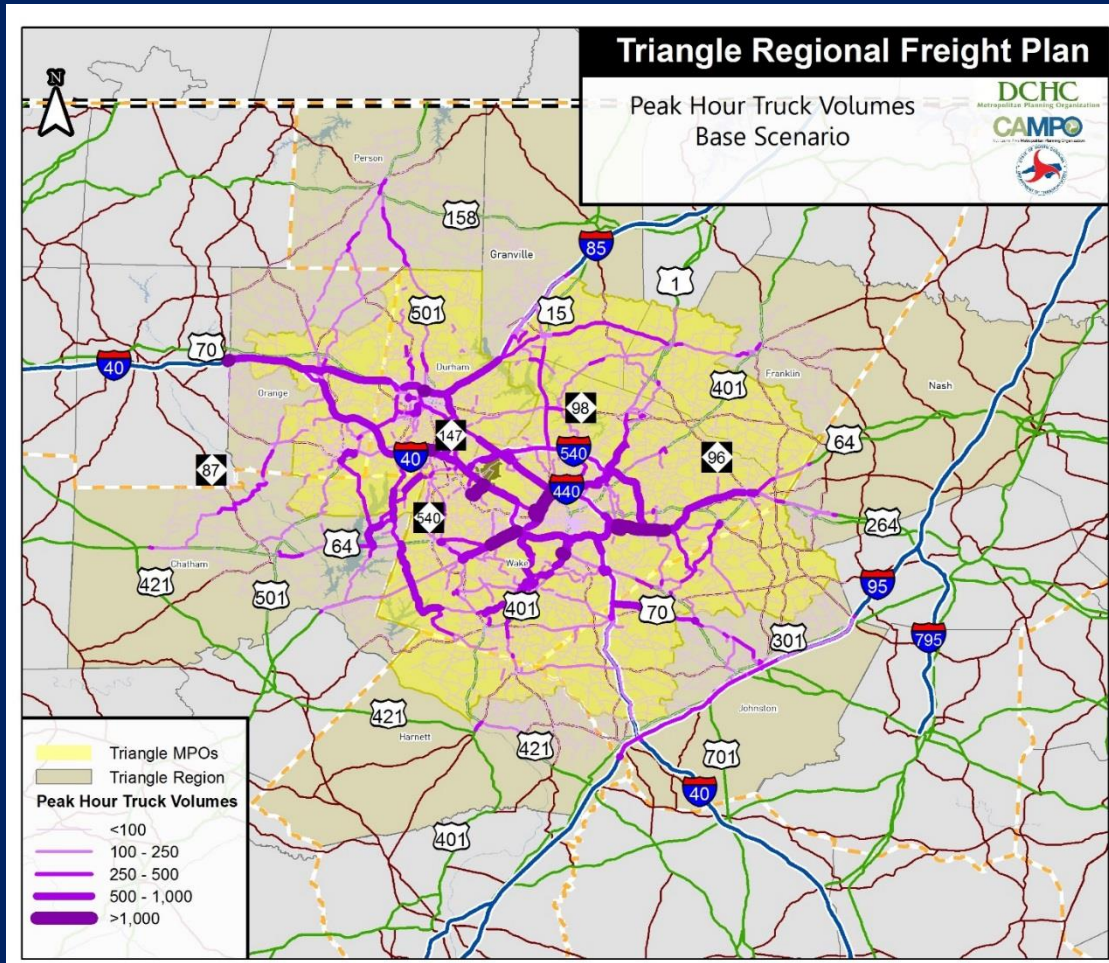
**Proposed Route of  
Atlantic Coast  
Pipeline in Triangle  
Region**

# Highway Future Conditions

- As truck volumes grow, poor performance at existing bottlenecks will be exacerbated while new bottlenecks may emerge
- Triangle Region travel demand model uses 2040 as the forecast year and incorporates the projects in the CAMPO and DCHC MPO FY 2016-17 TIP
- The results are for the evening peak hour, 4:30 P.M. to 5:30 P.M.

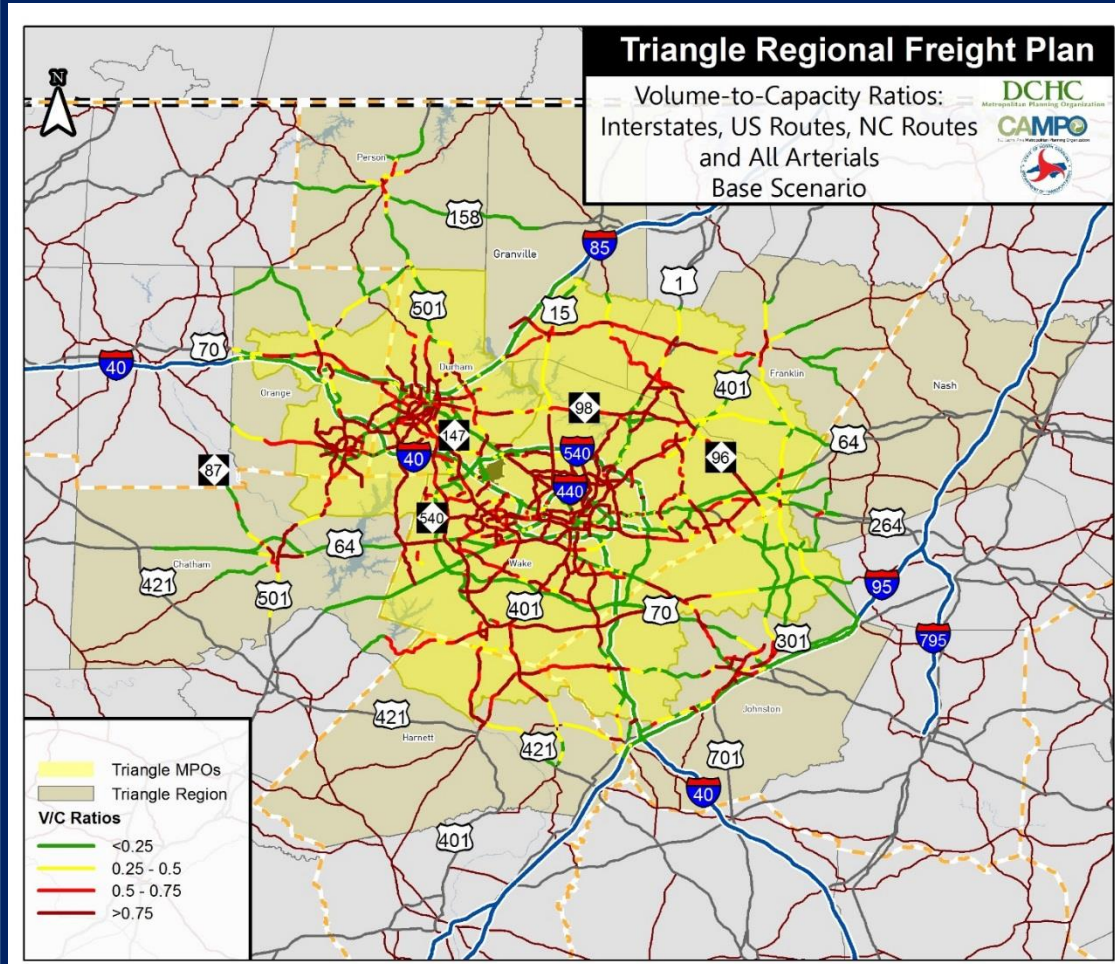


# 2040 Peak Hour Truck Volumes



- U.S. 264/I-495, I-40, I-440, I-85, and U.S. Highways 1, 64, 70, and 264 and SR 55 have segments with truck volumes > 500 trucks/hour
- These highways already carry significant amounts of highway freight. The model indicates that this is not likely to change given future conditions

# 2040 Volume to Capacity Ratios



- V/C exceeding or approaching 1: U.S. Hwy 1, 401, and portions of U.S. 70/Glenwood Ave, SR 55
- While the interstate highway system is not expected to exhibit capacity-constrained conditions, much of the arterial network is predicted to approach capacity limits
- It is often the first and last miles of truck trips that determine whether or not a carrier can deliver on-time performance

# Potential Freight Bottlenecks

Corridor	Peak Hour Truck Volumes (2040)	V/C Ratio (2040)	Truck Travel Time Index (2015)	Truck Buffer Time Index (2015)
U.S. 264/I-495: I-440 to Smithfield Rd	990 – 1,200	0.10 – 0.15	1.0 – 2.0	0.1 – 3.0
I-440: Wade Avenue to U.S. 70/Glenwood Ave	1,220 – 1,230	0.19 – 0.20	1.1 – 3.4	0.1 – 5.2
State Route 55: SR 540 to U.S. 1	250 - 500	>1.0	1.2 – 5.0	0.4 – 2.7
U.S. 70: SR 50/Creedmoor Rd. to Duraleigh Rd./West Millbrook Rd.	450 - 820	>1.0	1.4 – 4.4	0.8 – 4.0
U.S. 1: I-540 to U.S. 1 ALT/Main St	400 - 800	0.07 – 0.11	1.6 – 2.3	1.3 – 4.0



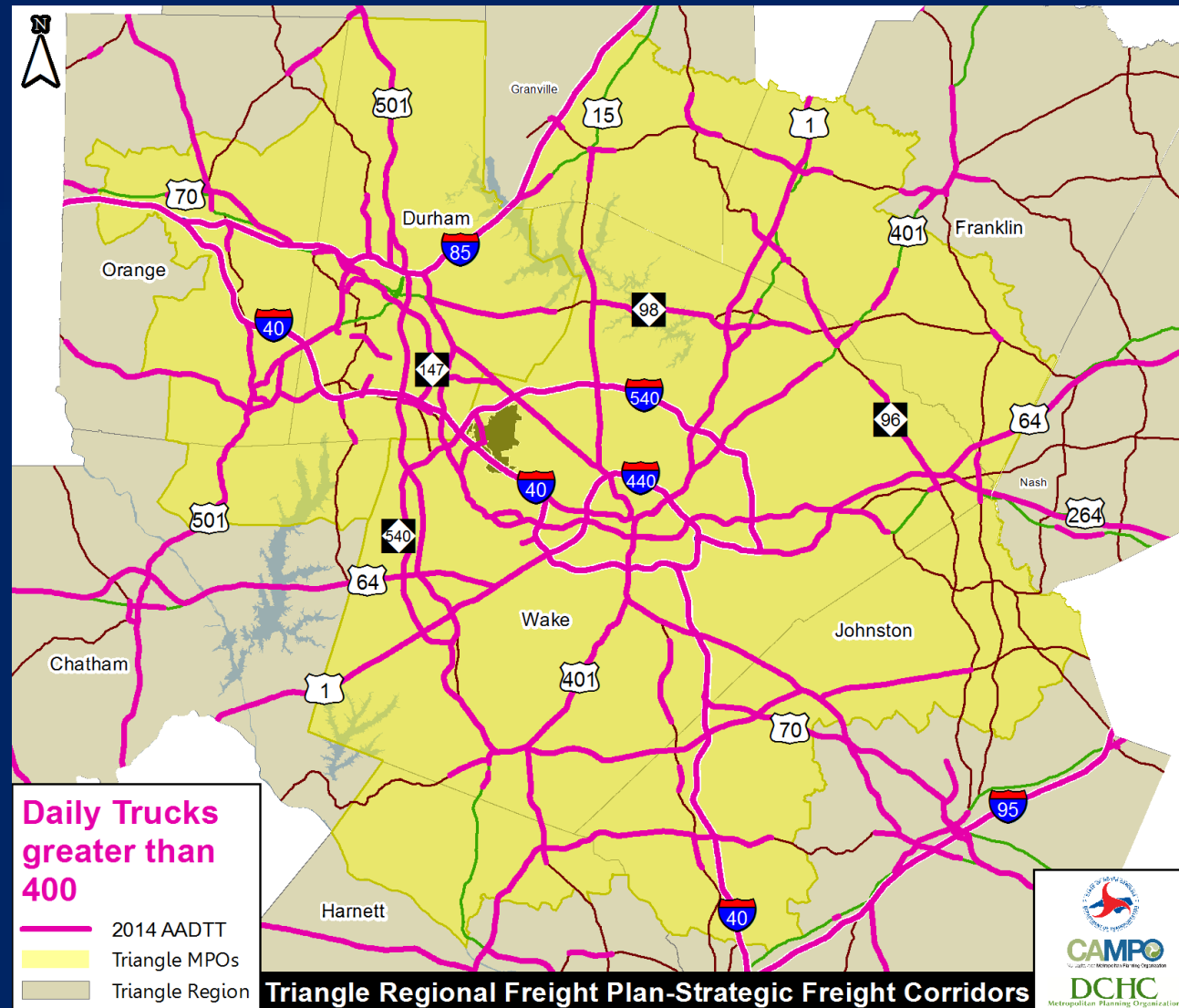
# Strategic Freight Corridors: Approach

- Base Year Truck Volumes
- Forecast Year Truck Volumes
- Access to Freight-Related Industries
- Service to Freight Employment Clusters
- Supply to Commercial Centers
- Multi-Modal Connectivity
- Route Reliability
- Land Use Conflicts / EJ Concerns

# Base Year Truck Volumes

## 2014 ADTT

- Over 400 Trucks
- Mostly Interstate, and Major US and NC Routes



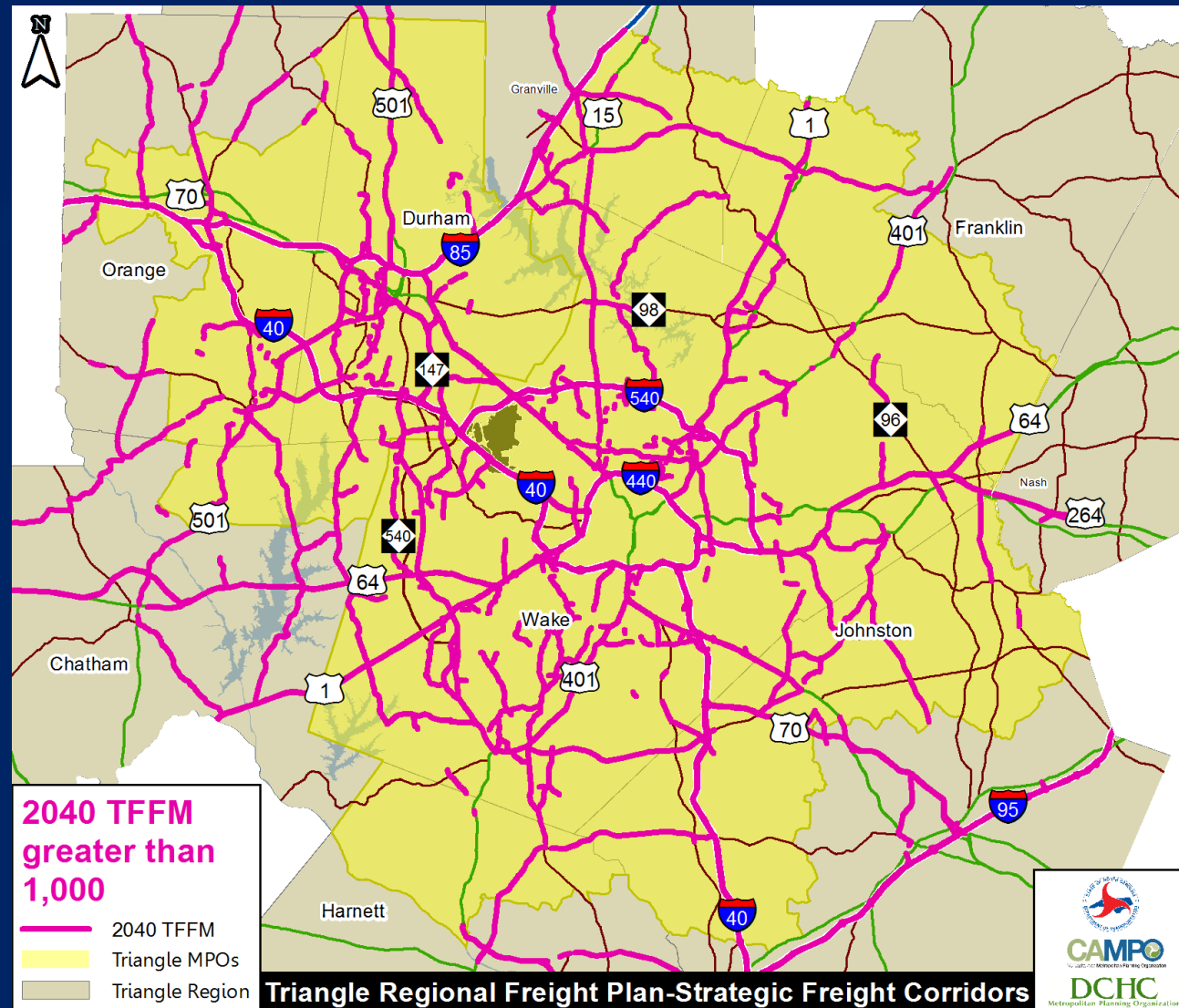
- Over 1,000 Trucks
- Not adequate for urban network



# Forecast Year Truck Volumes

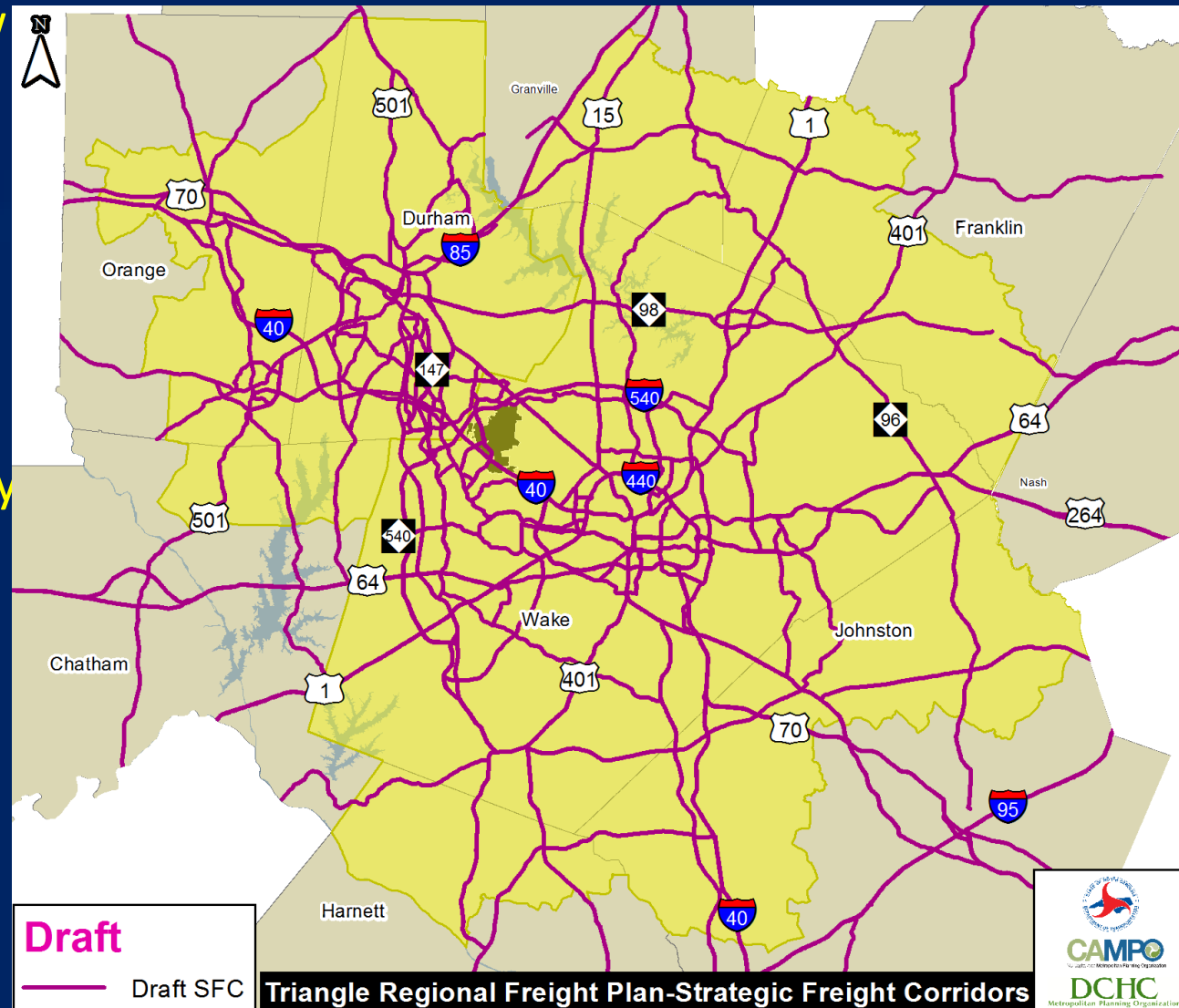
## 2040 ADTT - TFFM

- Over 1,000 Trucks
- Good urban network



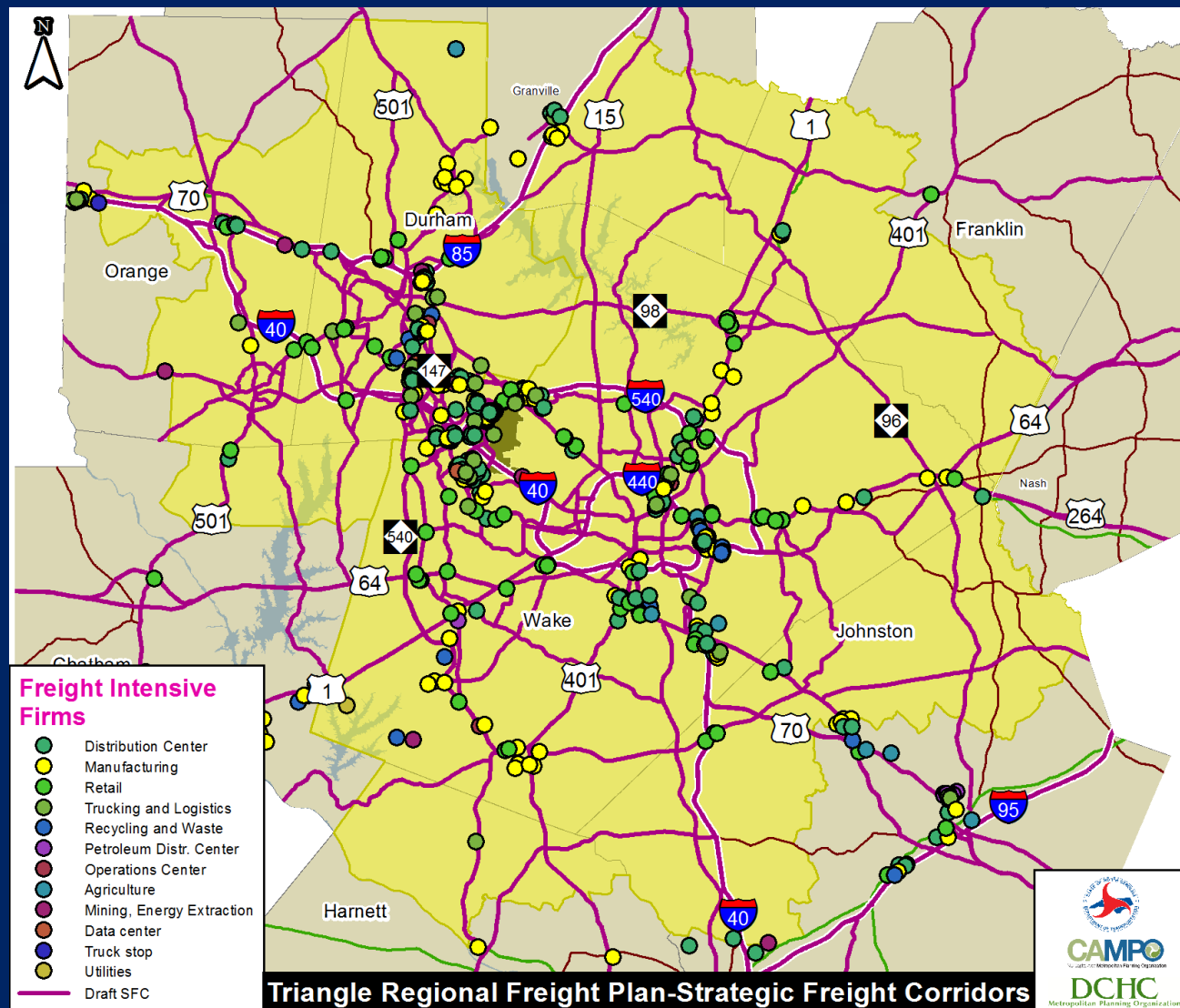
# Strategic Freight Corridors (SFC)

- DRAFT for Review & Discussion
- 1150 miles (with Interstates) to start
- ➔ Should trim, but retain redundancy



# Access to Freight Industries

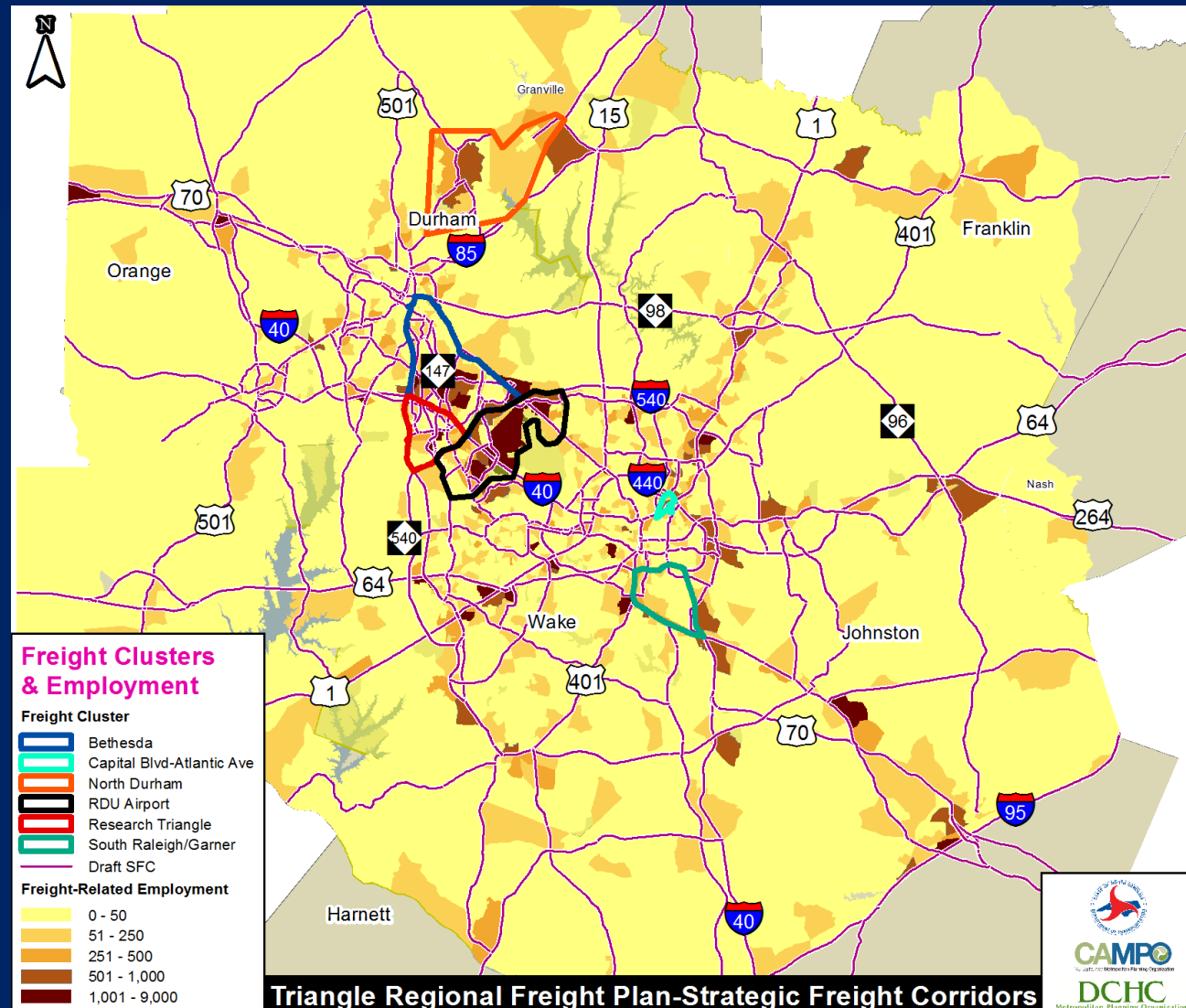
- Draft SFC has a few missing links around the rural periphery with a few stray firm locations





# Freight Employment Clusters

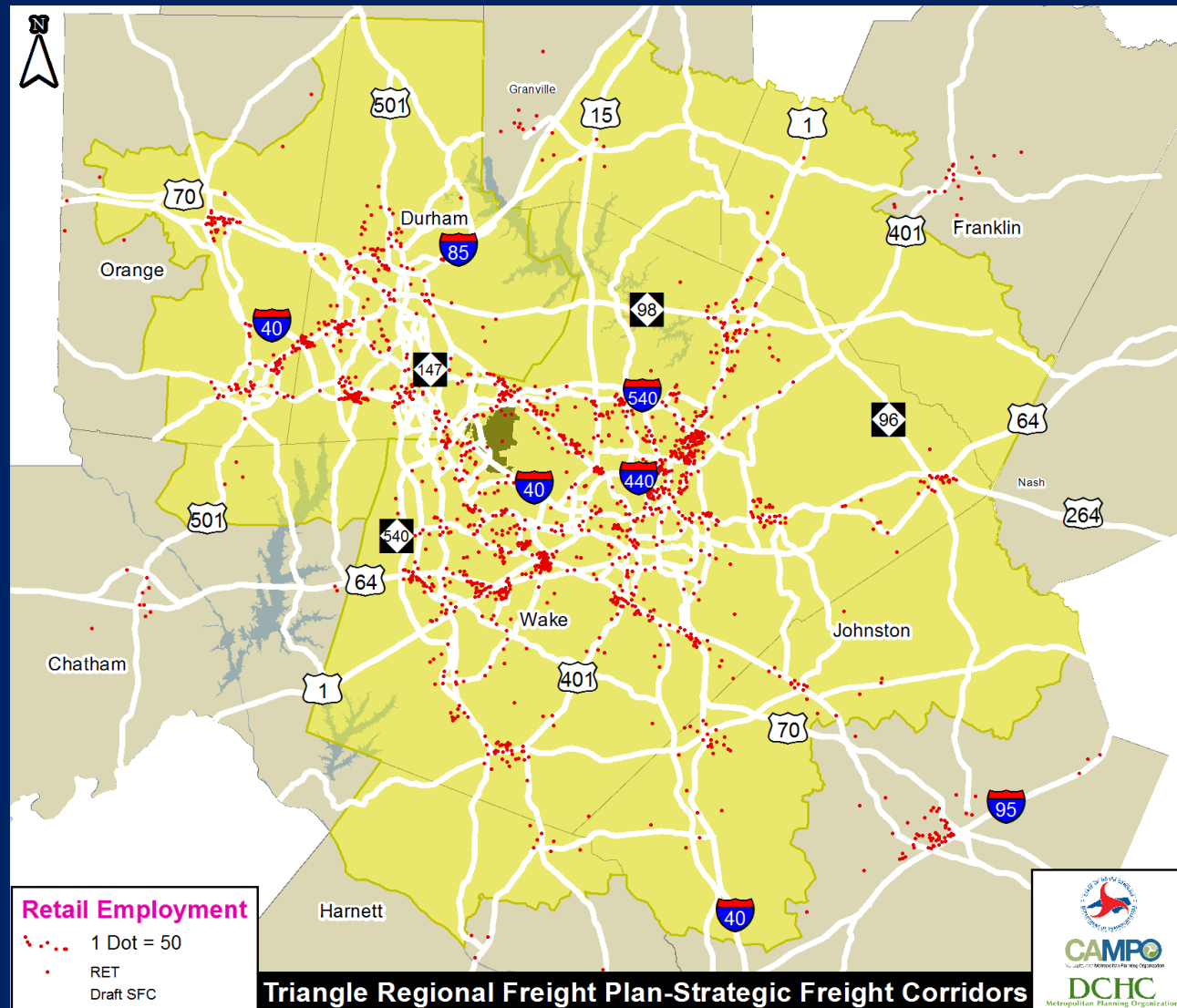
- Draft SFC works well with the urban area clusters
- North Durham and South Raleigh/Garner clusters need review





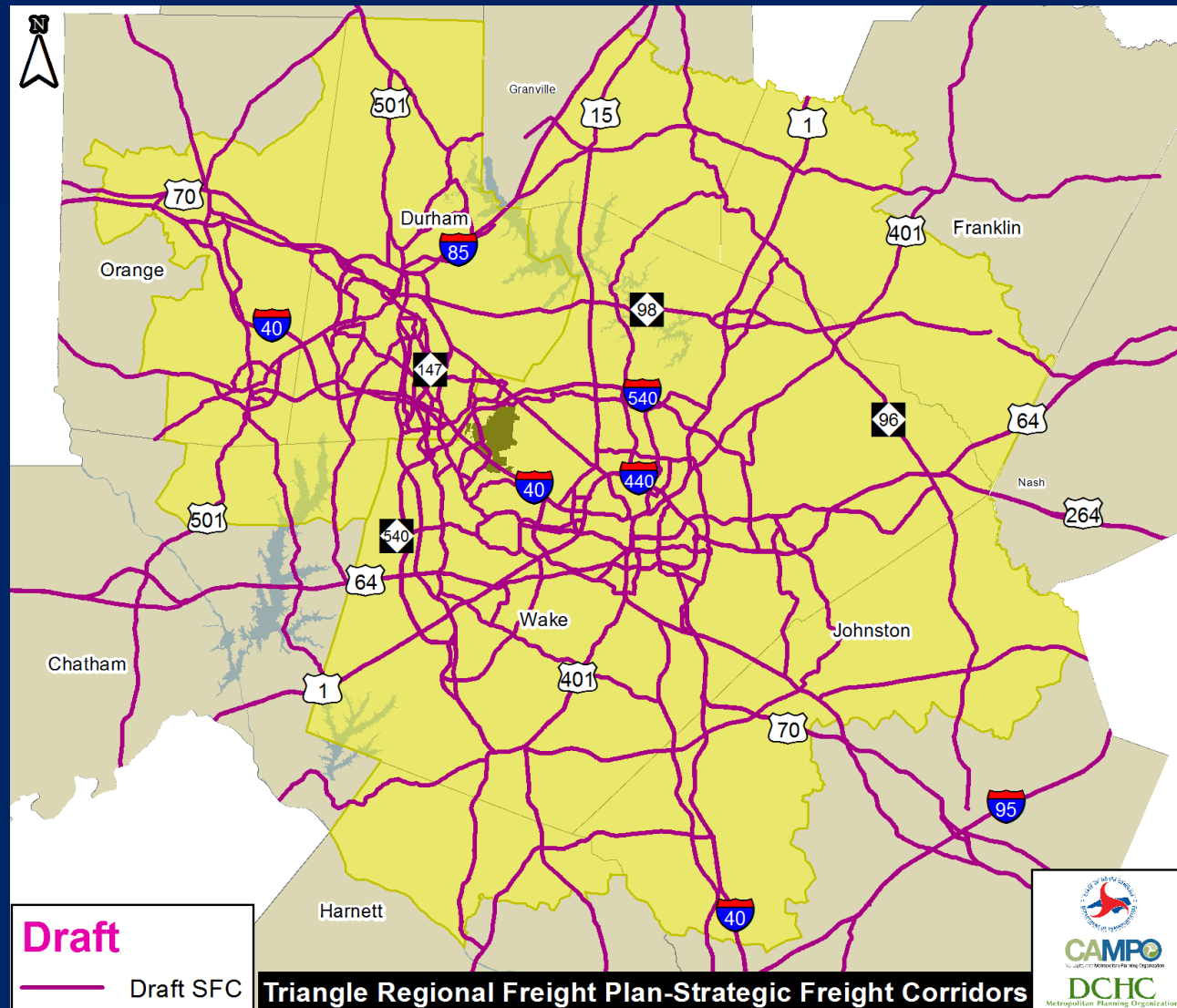
# Commercial Centers

- Draft SFC provides well coverage to the shopping centers



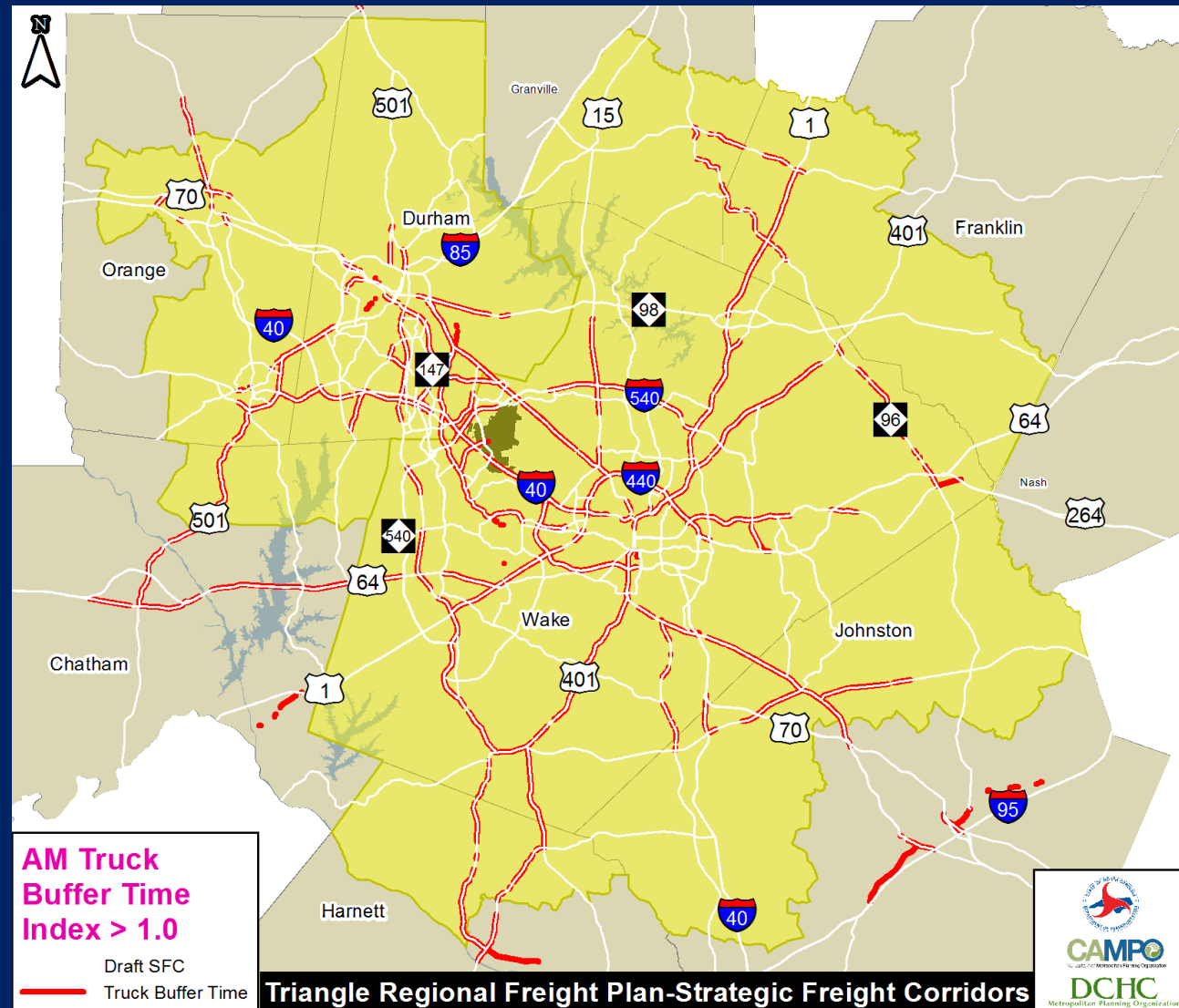
# Multimodal Connections

- Draft SFC provides good connections to
  - the RDU Airport,
  - Rail Intermodal Terminals (Norfolk Southern in Greensboro and CSX in Rocky Mount), and
  - the Seaports (Norfolk, Morehead City, Wilmington, Charleston and Savannah)



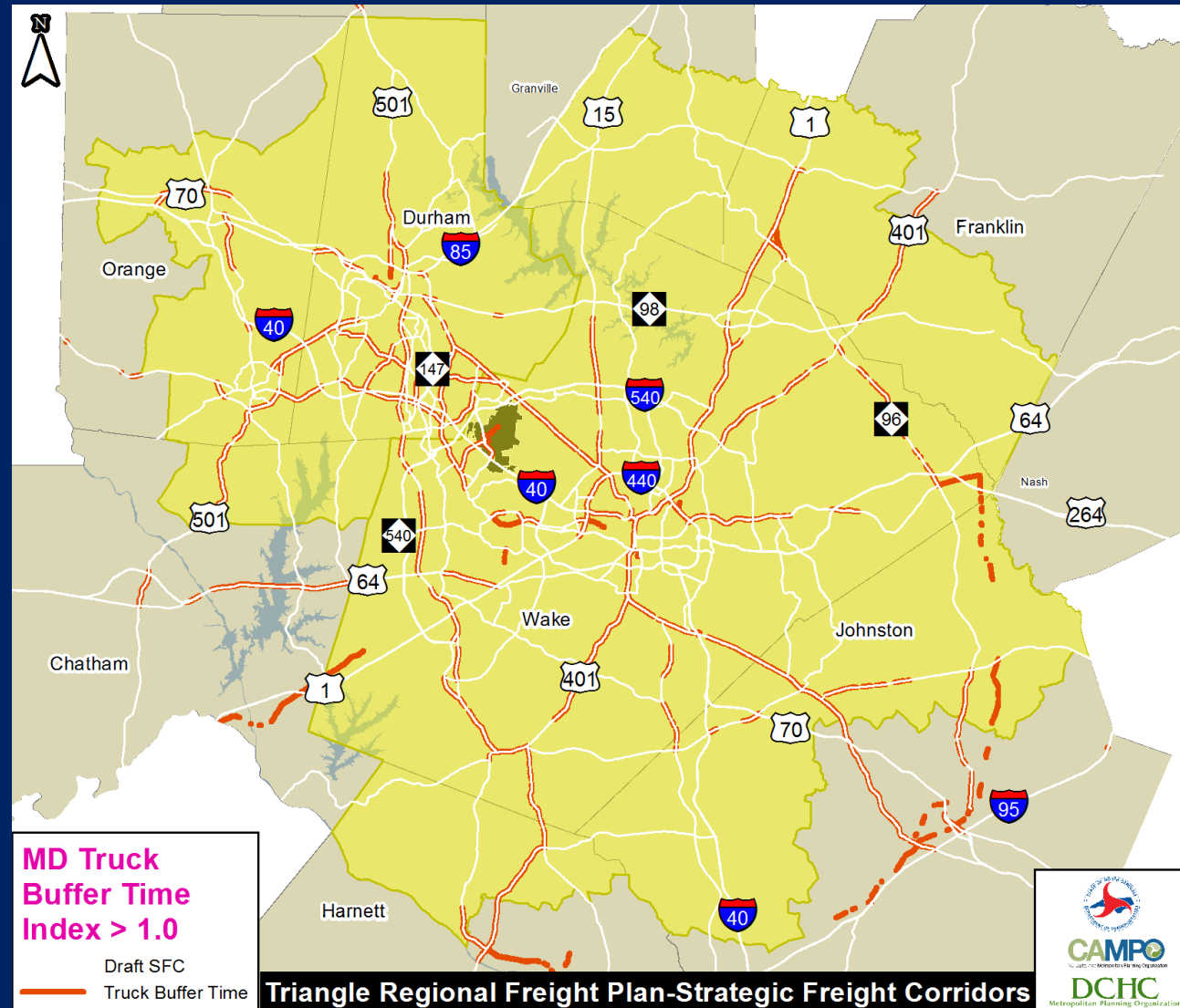
# Reliability: Buffer Time Index - AM

- AM Peak Hour
- BTI > 1.0



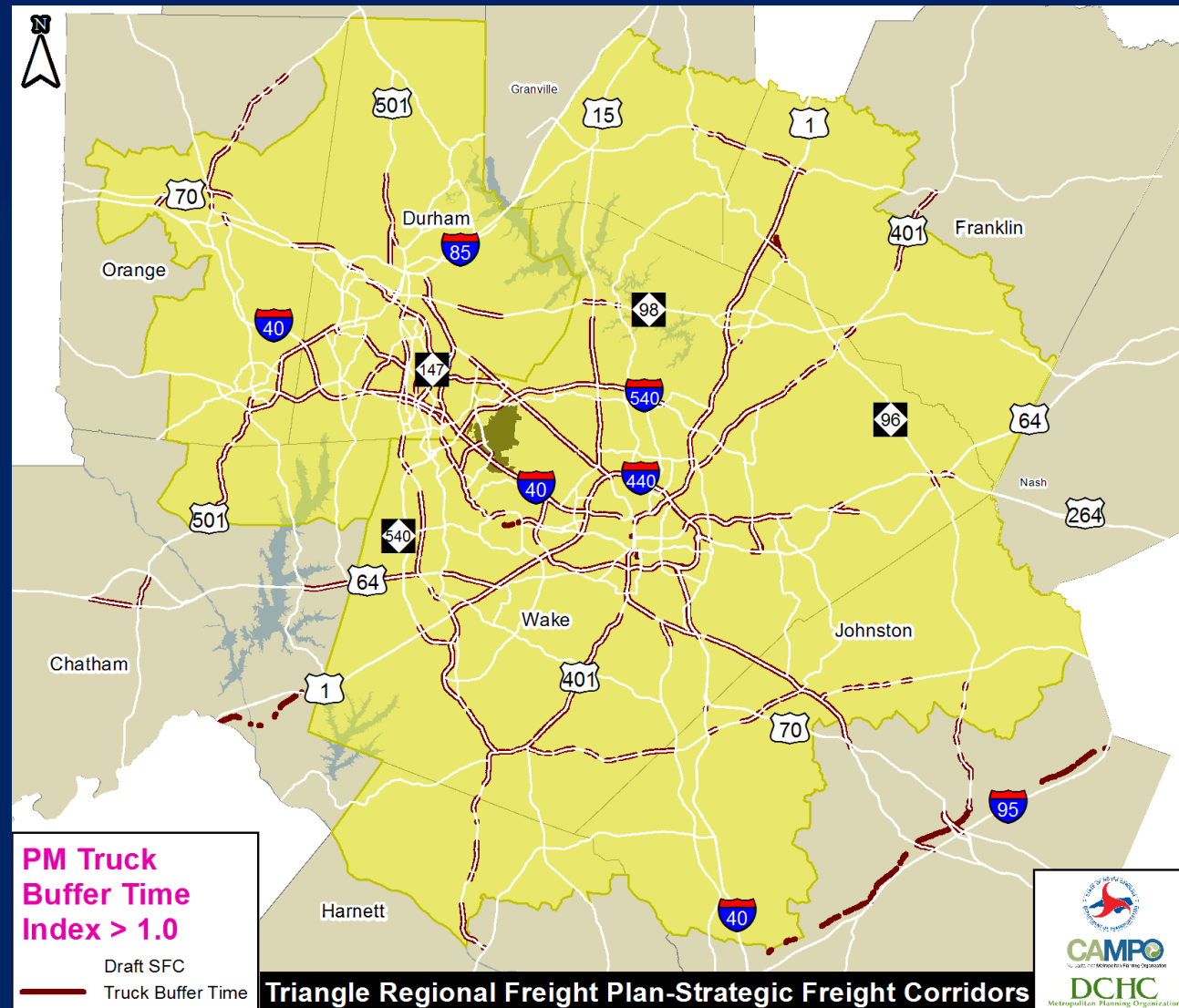
# Buffer Time Index – Mid Day

- Mid-Day Peak Hour
- $BTI > 1.0$



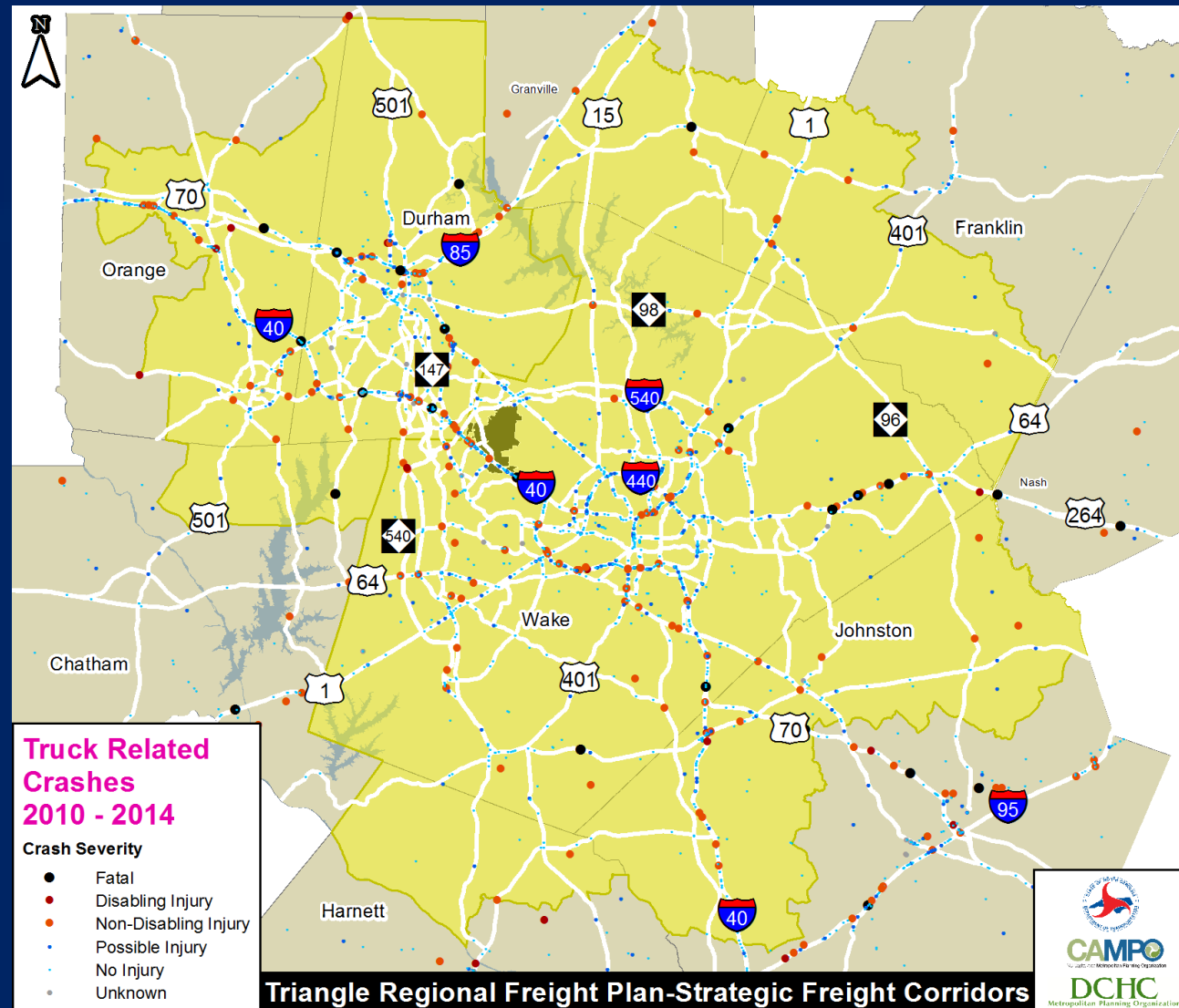
# Buffer Time Index - PM

- PM Peak Hour
- BTI > 1.0



# Truck-Related Crashes

- Five Years of Truck-Related Crashes (2010-2014)

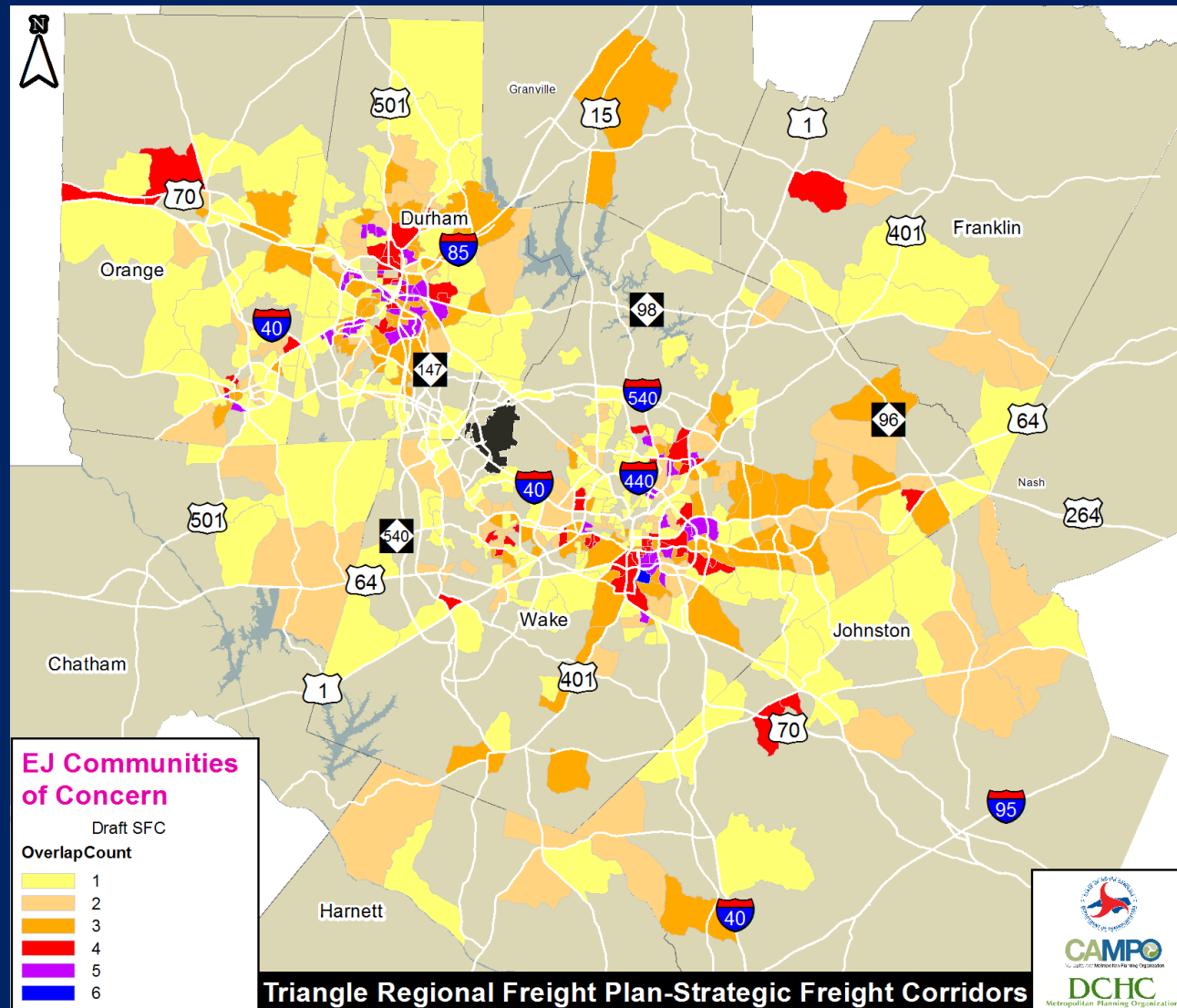




# Land Use Impacts

- Community of Concerns

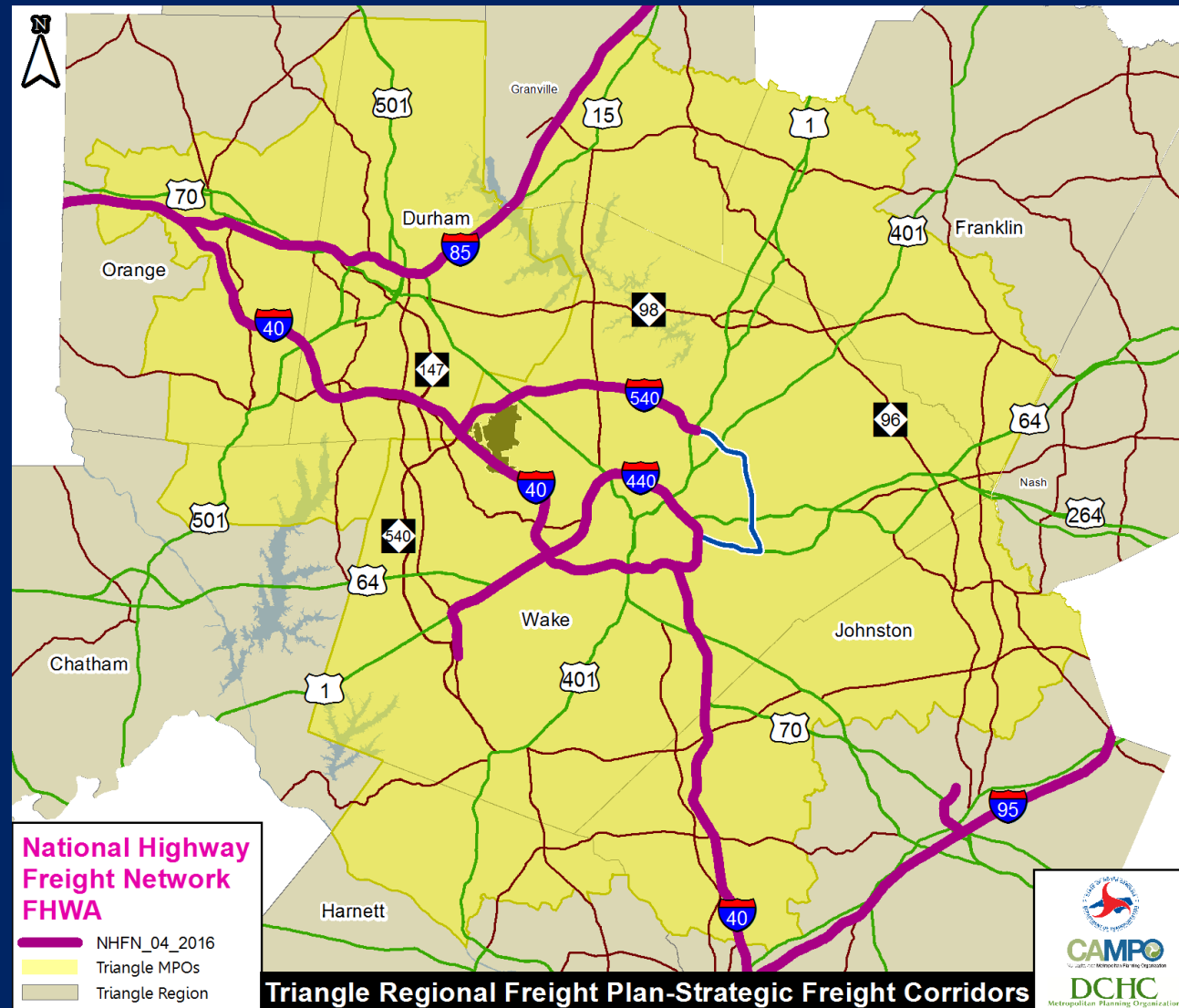
- Zero-Car Households
- Individuals making less than 150% of the federal poverty rate
- Non-White Race
- Linguistic Isolation (Speak English "Not at all" or "Not very well")
- Hispanic/Latino Origin
- Age 70 and over





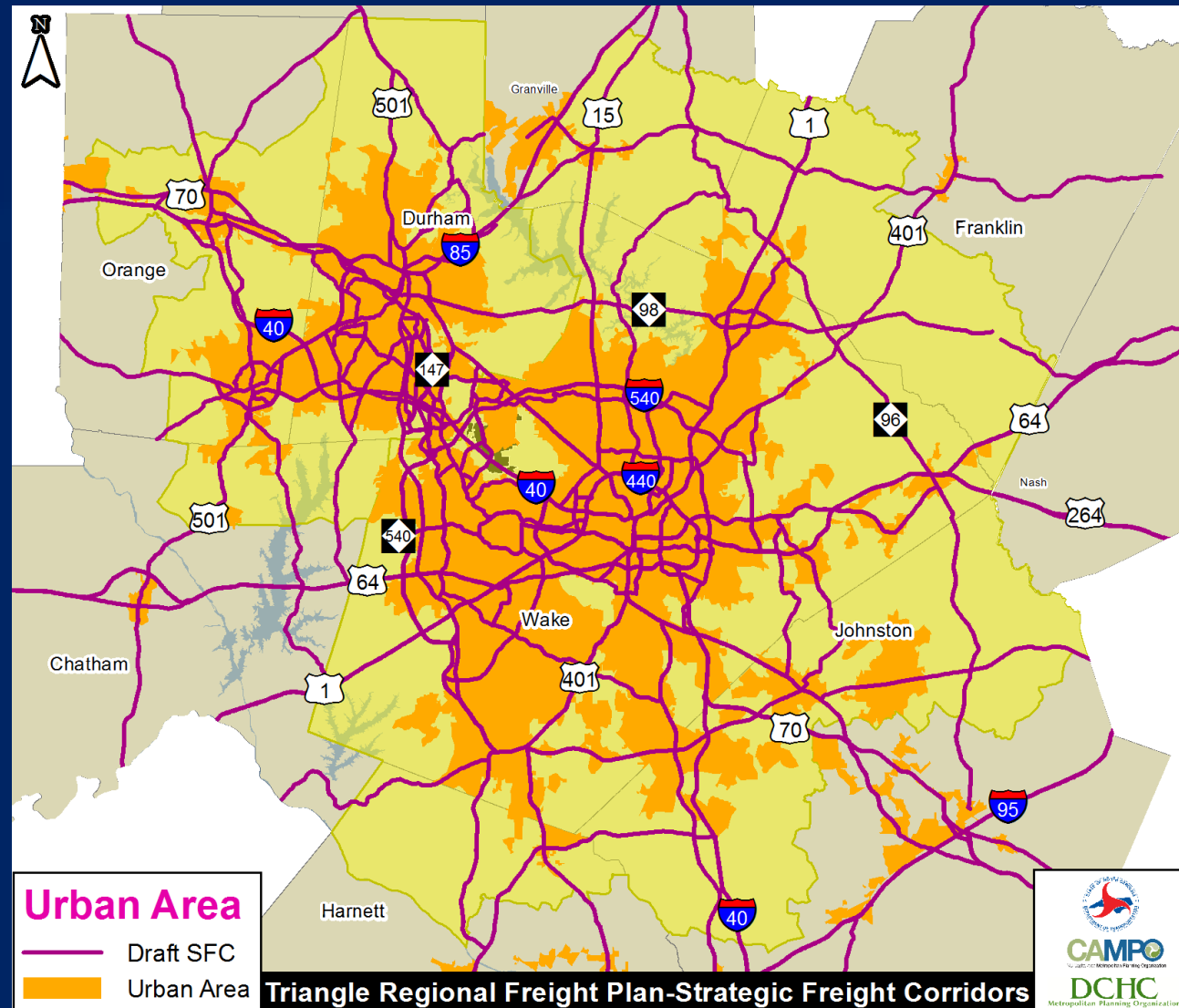
# FAST Act NHFN in the Region

- Mostly Interstate routes plus US 1 segment in Wake County
- Critical Urban & Rural Corridors add to it, but are capped



# SFC – Urban and Rural

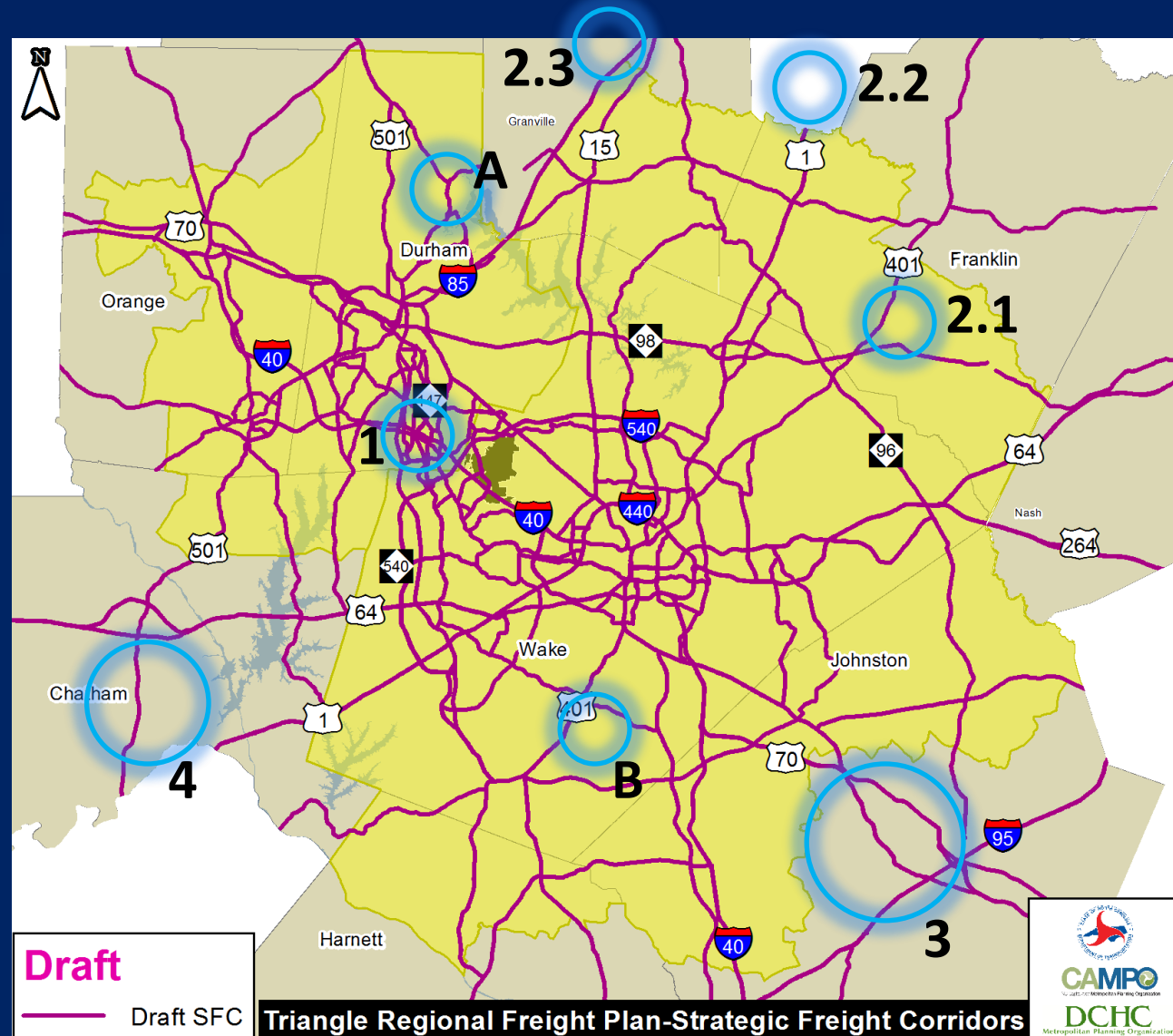
- FAST Urban & Rural Corridors: SFC essentially all eligible
- Limited to 103 urban, 207 rural statewide, but:
  - ➔ Designations are moveable, and should tie to projects



# Potential Development Zones

- Potential Development Zones

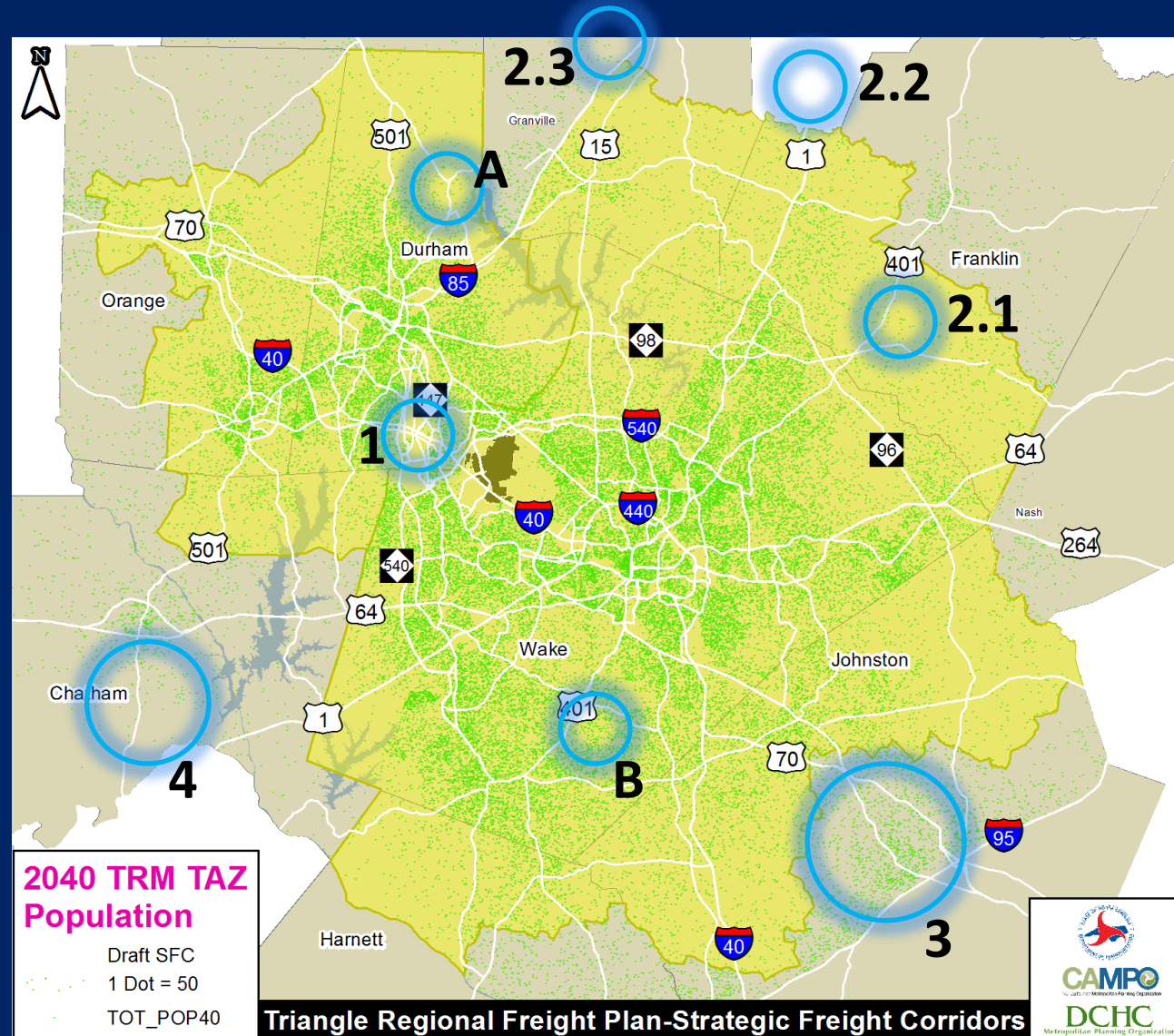
- 1: Sites around RDU & the Park Center in RTP
- 2.1 – 2.3: Triangle North
- 3: Johnston County
- 4 Sanford-Lee County
- A: North Durham Biotech Cluster
- B: South Garner Opportunity Area



# 2040 Population

- Potential Development Zones

- 1: Sites around RDU & the Park Center in RTP
- 2.1 – 2.3: Triangle North Properties
- 3: Johnston County
- 4: Sanford-Lee County
- A: North Durham Biotech Cluster
- B: South Garner Opportunity Area

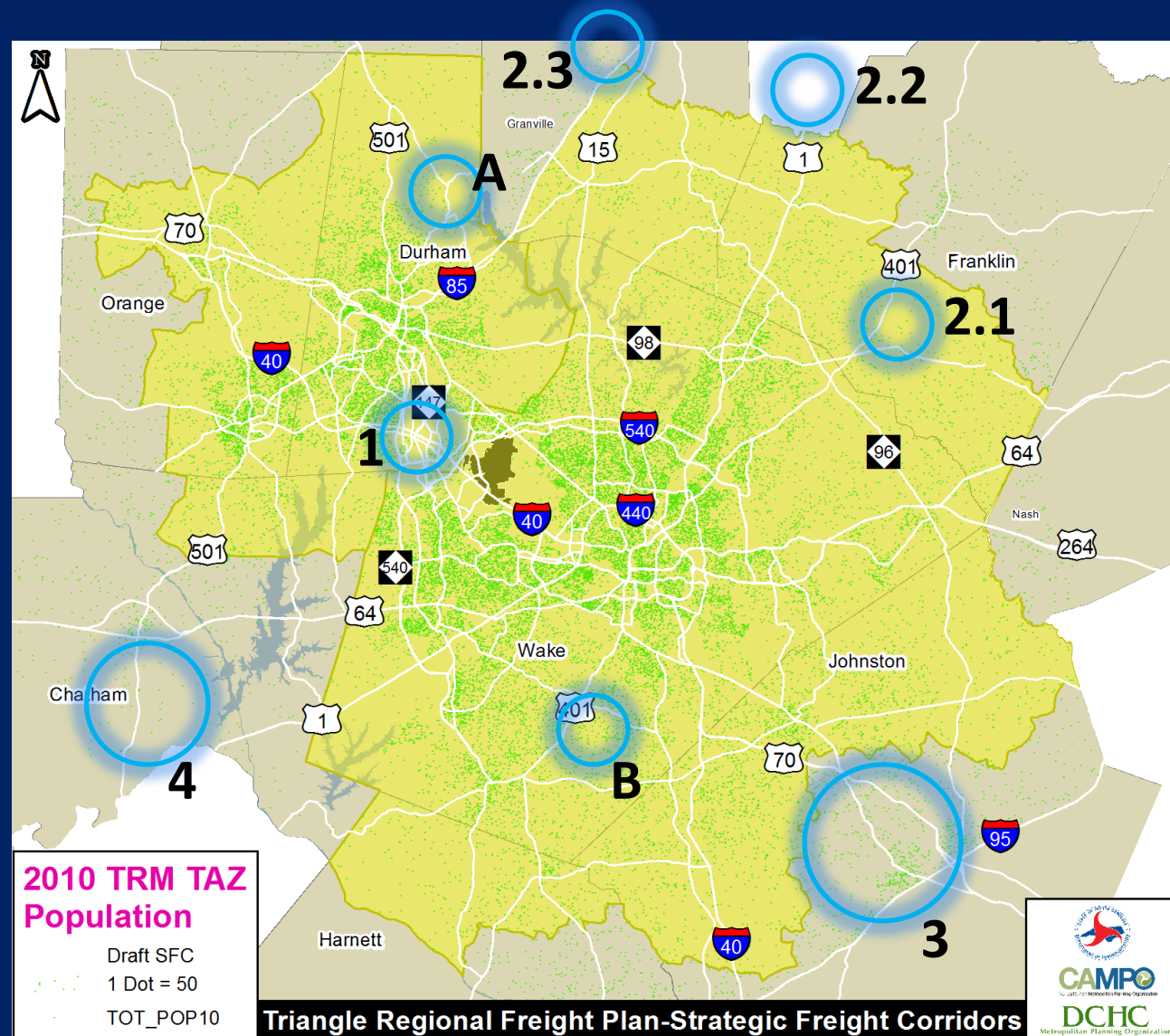




# 2010 Population

- Potential Development Zones: Discussion

- Viable?
- Additions, modifications?
- Fit with SFC?
- Mobility strategy?





# Next Steps

- Provide feedback on draft Strategic Freight Corridors and mobility strategy
  - Input to Task 8
- Next meeting: December
  - Formulation of recommendations



Requested Action:  
Receive as Information

## 5.4 Prioritization (SPOT) 4.0

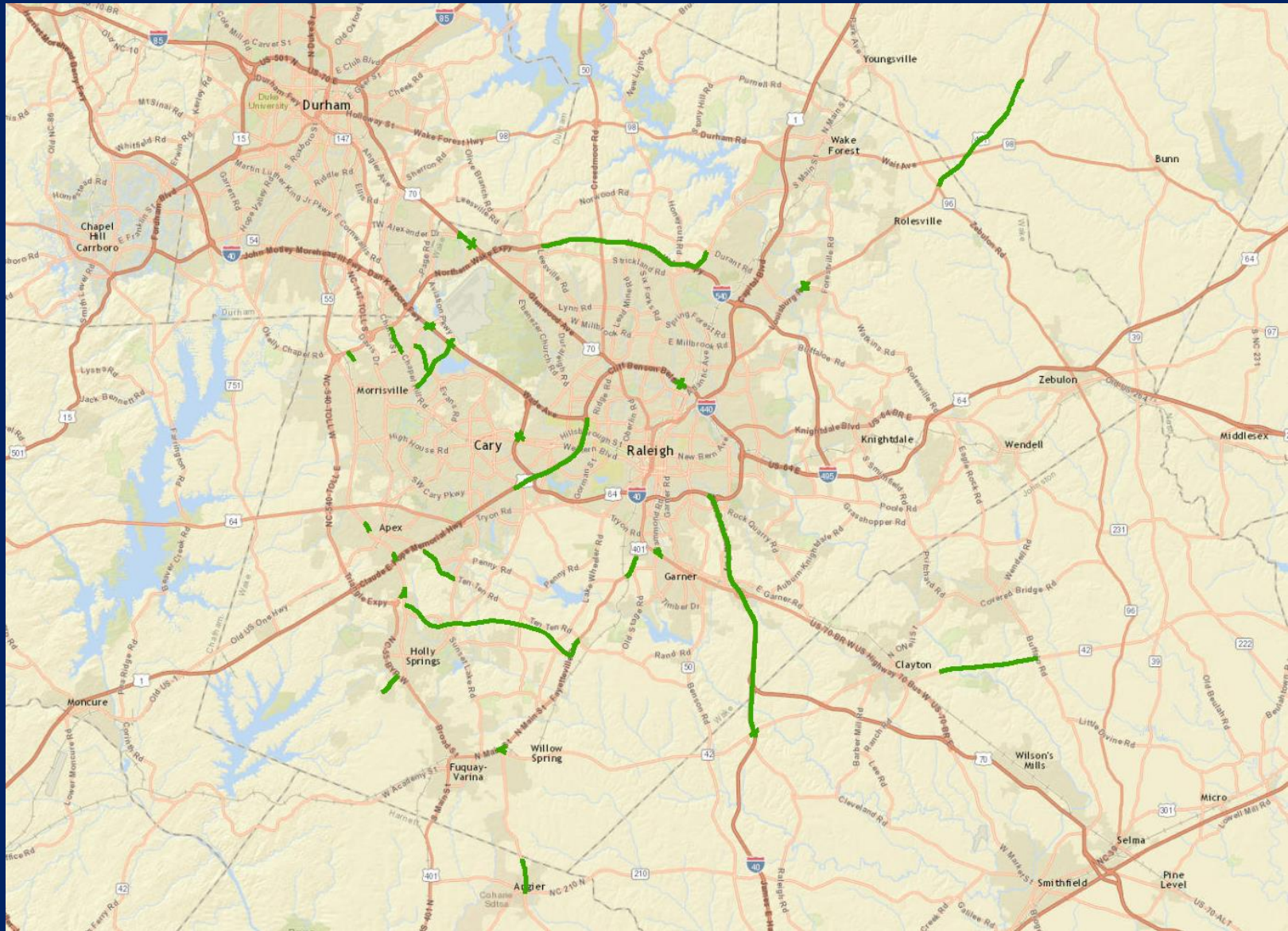
- CAMPO has drafted a recommendation for the Division Needs category point allocation based on the adopted methodology
- Public Review & Comment Period will run through October 18, 2016 with final a public hearing scheduled for the Executive Board meeting on October 19, 2016.

# Prioritization 4.0 Timeline

Date	Activity
April 13, 2016	Quantitative Scores and Draft list of Programmed Statewide Mobility Projects released
April 18, 2016 – July 29, 2016	Regional Impact Local Input Points assignment window open (Division Needs Local Input Points optional)
August 2016	NCDOT calculates Regional Impact total scores and programs Regional Impact projects
September – October 2016	Division Needs Local Input Point window opens for 2 months
November 2016	NCDOT calculates Division Needs total scores and programs Division Needs projects
December 2016	NCDOT prepares 2018-2027 Draft STIP
January 2017	2018-2027 Draft STIP released



# Prioritization (SPOT) 3.0 Committed Projects



# 5.4 Prioritization (SPOT) 4.0

## DRAFT Statewide Mobility

YRS 1-5

2018 -2022

*\$642,800,000*

- I-40 (I-440/US1/64 to Lake Wheeler)
- I-540 (Glenwood to Leesville Rd) eastbound auxiliary lane
- NC 540 (US 401 to I-40) **TOLL**
- US 1 (I-540 to Durant Rd)
- US 64 (Laura Duncan Rd to US 1)
- TW Alexander Interchange (US 70)
- US 70 Freeway Upgrade (TW Alexander to I-540)

YRS 6-10

2023 – 2027

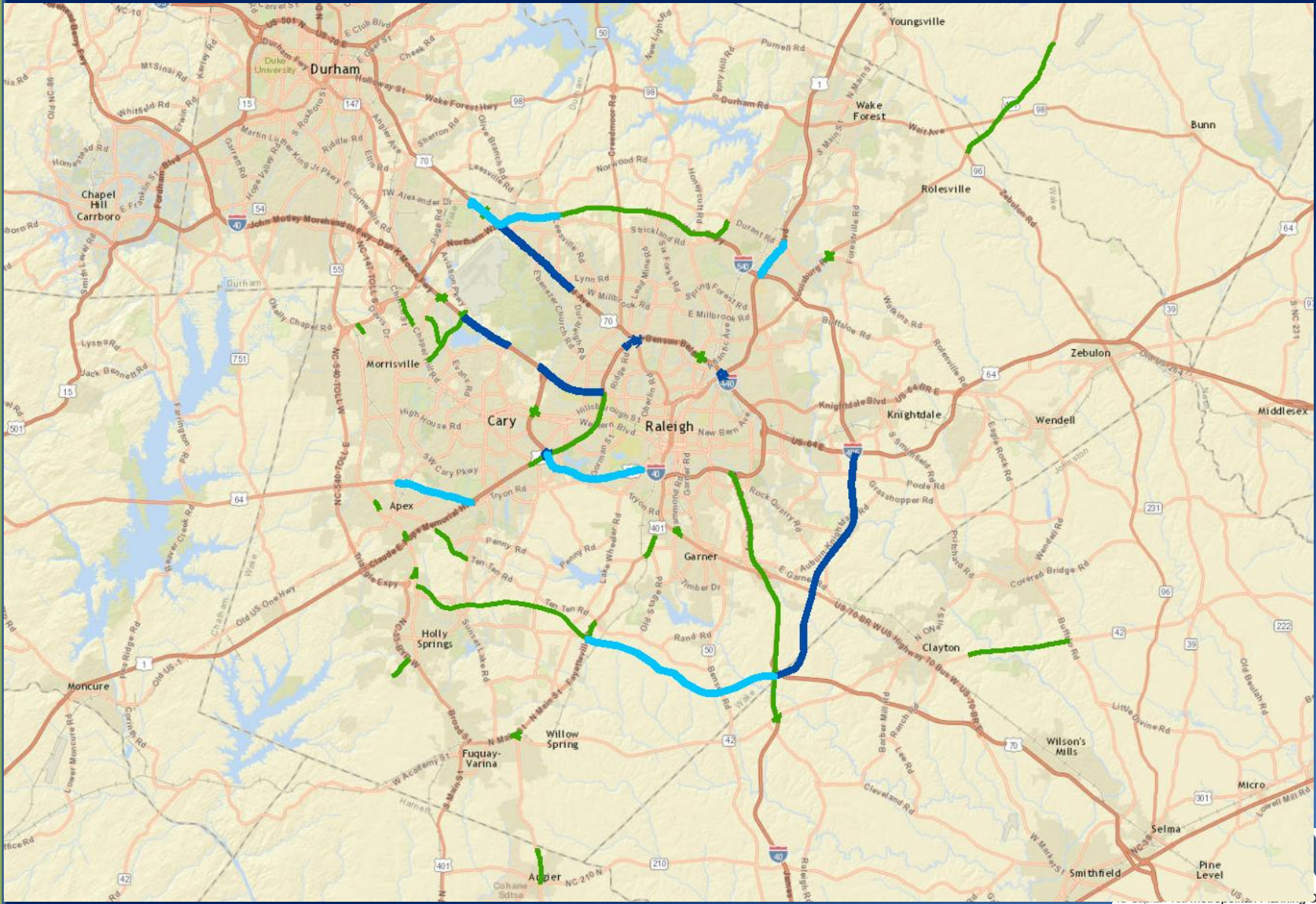
*\$561,287,000*

- I-40 / I-440/US 1/64 Reconstruct Interchange
- I-40 (Aviation to Harrison Ave) auxiliary lanes
- I-440/Crabtree Valley Ave. Improvements
- I-440, US 1 / Capital Blvd – Interchange Improvements
- US 70 (I-540 to Hilburn Dr) 6 lane SuperStreet
- Wade Ave (I-40 to I-440) 6 lane widening
- NC 540 (I-40 to US 64/264) **TOLL**



# 5.4 Prioritization (SPOT) 4.0

## DRAFT Statewide Mobility



# 5.4 Prioritization (SPOT) 4.0

## DRAFT Regional Impact

YRS 1-5

2018 -2022

*\$289,295,000*

- Morrisville Citywide Signal system
- NC 42 (NC 50 to US 70 Bypass)
- NC 42 (US 70 Bypass to US 70 Bus)
- NC 54 / McCrimmon Parkway Grade Separation
- US 1 (Durant Road to Burlington Mills Road)
- NC 50 (I-540 to NC 98)

YRS 6-10

2023 – 2027

*\$274,882,000*

- US 401 median (Judd Parkway to NC 55/NC 42)
- Clayton Citywide Signal System
- US 1 / NC 55 DDI Interchange
- NC 147 Triangle Parkway Extension
- US 1 (Burlington Mills Road to NC 98)
- US 1 (NC 98 to Harris Road)



# 5.4 Prioritization (SPOT) 4.0

## DRAFT Regional Impact



# CAMPO Adopted Methodology

- **Maximizing Funding Potential**

- “Wasted Effort”

- Some of our projects score so well quantitatively, they do not need any additional local points



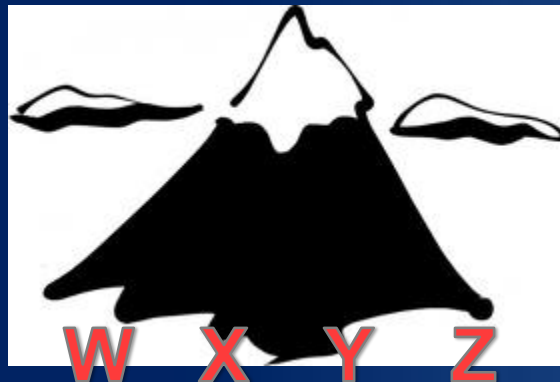
While very important to the region, putting our limited, local points here would not significantly improve their chances for funding

# CAMPO Adopted Methodology

- **Maximizing Funding Potential**

- “Wasted Effort” (Part 2)

- Some of our projects score poorly, and even the maximum number of local points would not make them competitive

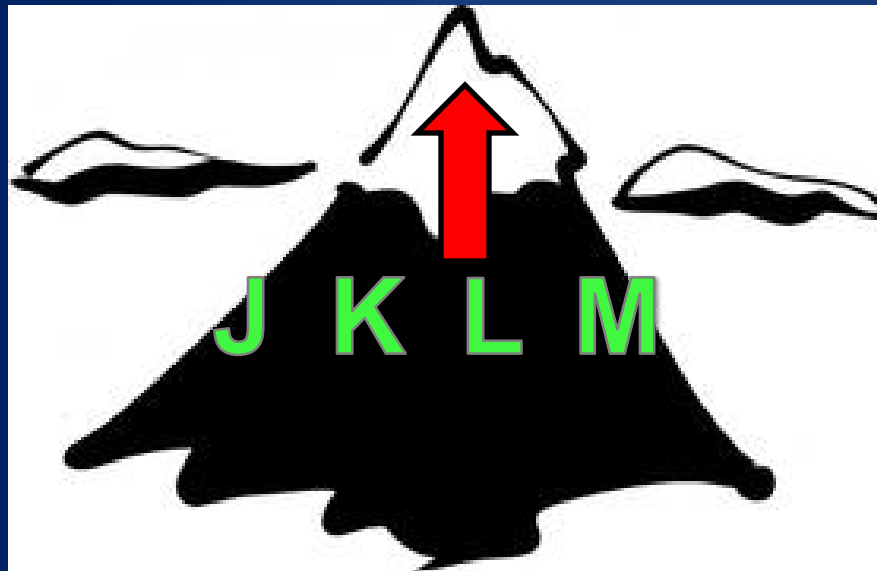


While important to the region, these projects are not competitive in this process



# CAMPO Adopted Methodology

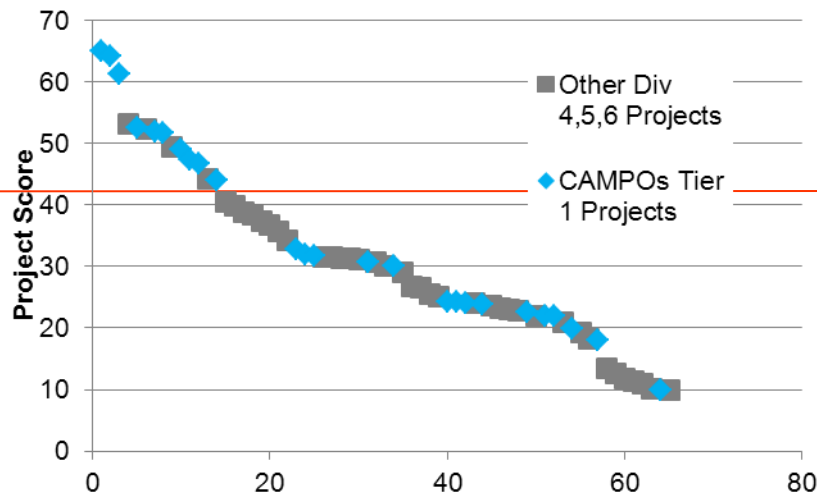
- **Maximizing Funding Potential**
  - The goal, then, is to assign points to bring projects from the middle of the pack to the top



# CAMPO Adopted Methodology

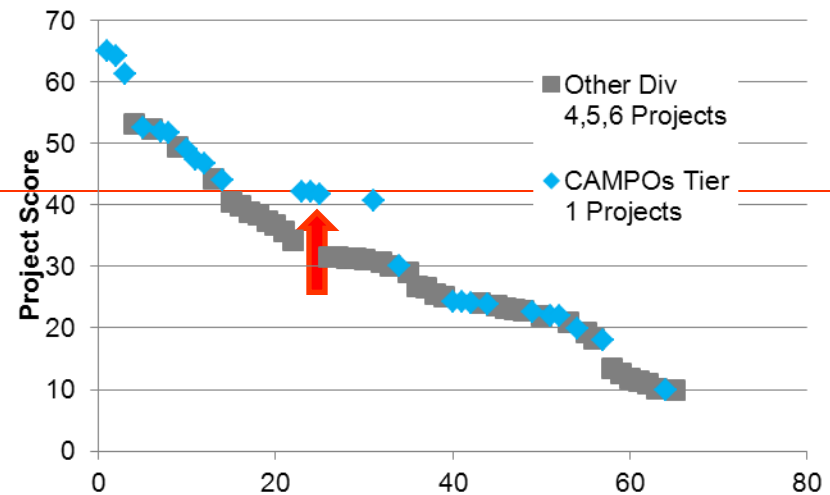
- **Maximizing Funding Potential**
  - Example: Regional Projects

## Before



**No local points applied to projects above the red line (already competitive)**

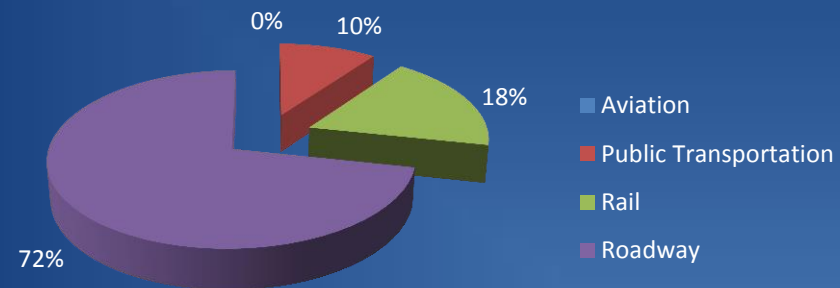
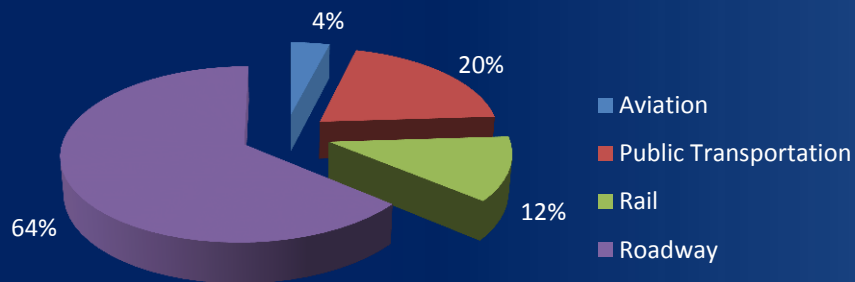
## After



**This strategy increases the number of projects with a chance at funding**

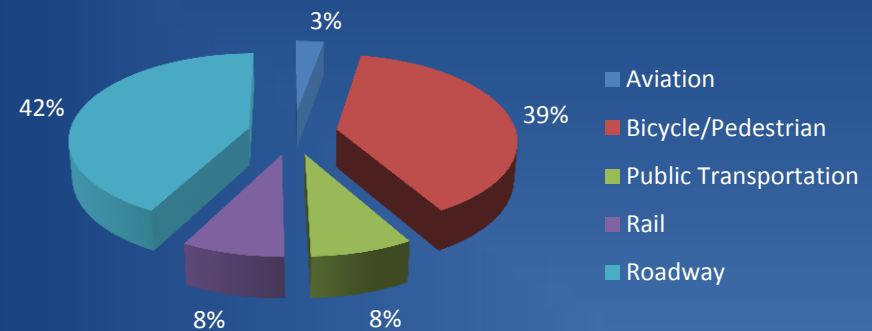
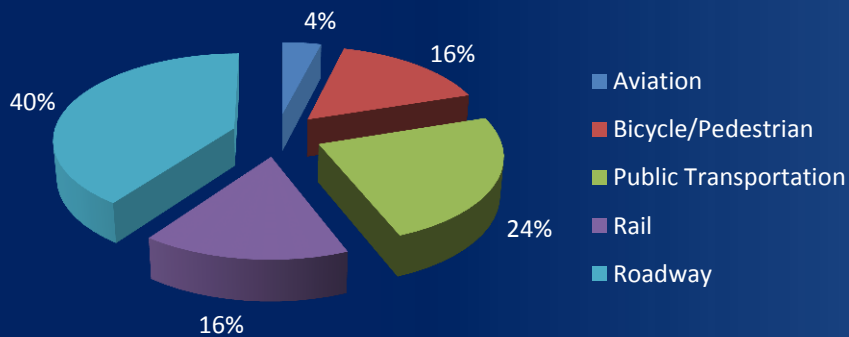
## Regional Impact Modal Targets

	Target	Recommendation
Aviation	100	0
Bike/Ped	N/A	N/A
Public Transportation	500	250
Rail	300	458
Roadway	1600	1792
<b>Total</b>	<b>2500</b>	<b>2500</b>



## Division Needs Modal Targets

	Target	Recommendation
Aviation	100	100
Bike/Ped	400	900
Public Transportation	600	500
Rail	400	8
Roadway	1000	992
<b>Total</b>	<b>2500</b>	<b>2500</b>



## 5.4 P4.0 Regional Impact Point Assignment

- Division Needs Point Assignment (2500 points)

Division 4 Projected

10 yrs Funding: \$391,582,000

Available: \$190,524,000

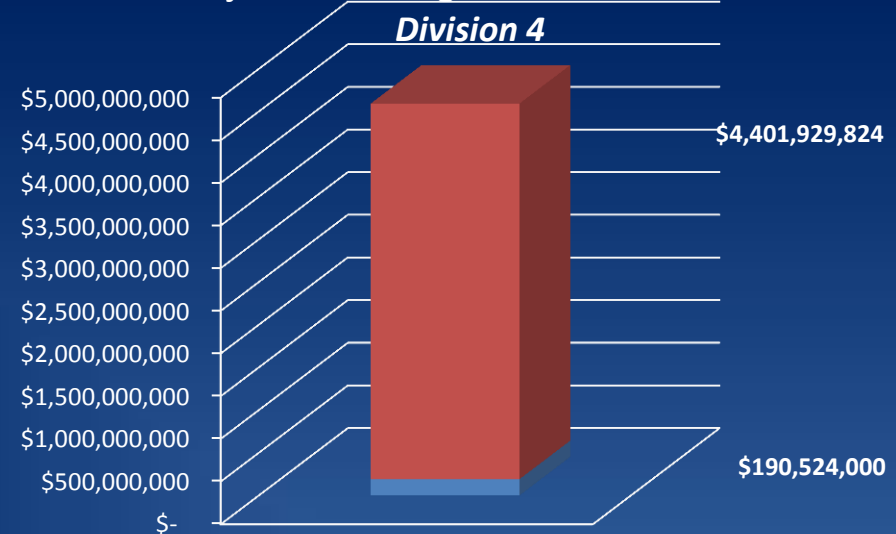
Division 4 Projects: 130

CAMPO Projects: 8

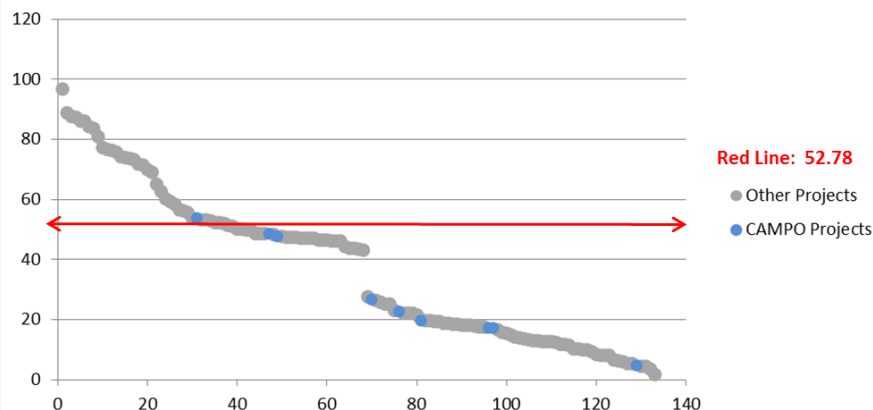
Potentially Competitive

CAMPO Projects 3

Projected Funding vs. Submitted Need



■ Division 4 Projected Available Funding ■ Division 4 Total Project Needs:





## 5.4 P4.0 Regional Impact Point Assignment

- Division Needs Point Assignment (2500 points)

Division 5 Projected  
10 yrs Funding: \$391,582,000

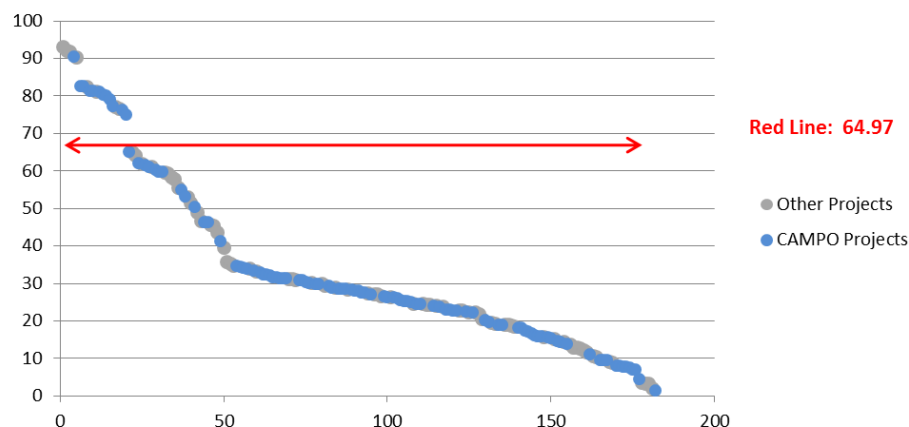
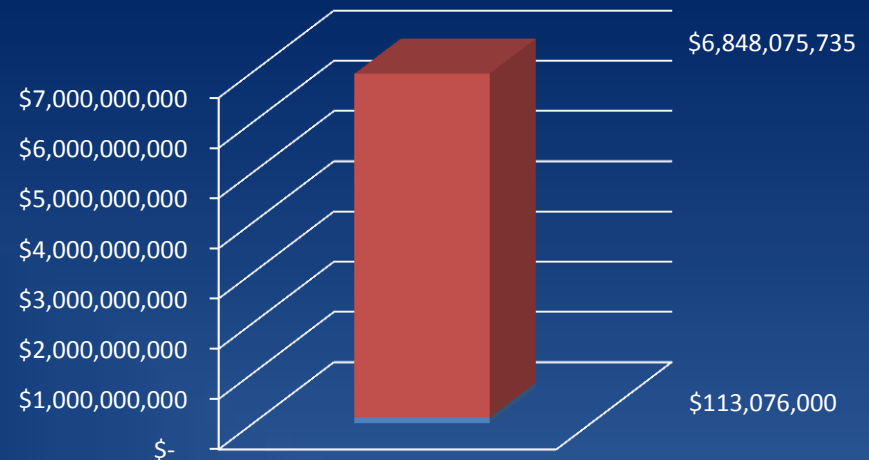
Available: \$113,076,000

Division 5 Projects: 182

CAMPO Projects: 104

Potentially Competitive  
CAMPO Projects 13

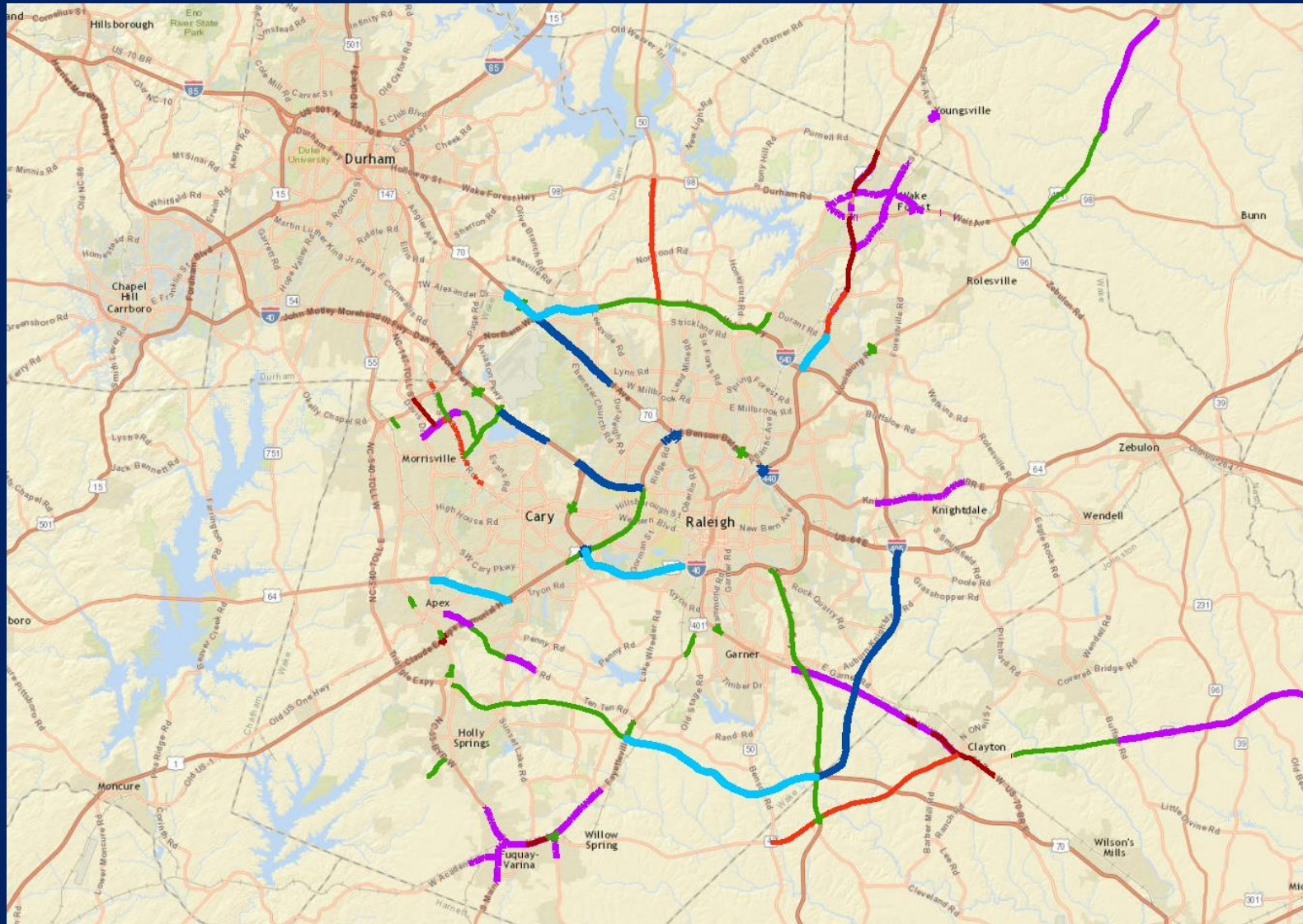
Projected Funding vs. Submitted Need  
*Division 5*



■ Division 5 Projected Available Funding  
■ Division 5 Total Roadway Project Costs:

## 5.4 Prioritization (SPOT) 4.0

### DRAFT Regional Impact



## 5.4 P4.0 (SPOT) Division Needs Point Assignment

### Requested Action:

**Recommend approval of proposed local input point assignment for Division Needs projects including donations of local input points from other MPOs or RPOs.**

## 5.5 Connect 2045; Update on SE Data, future scenario development, and land use modeling

The 2045 Metropolitan Transportation Plan (MTP) will be a joint plan by the Capital Area MPO and the DCHC MPO as has been the case for the last two plan updates. The Triangle J Council of Government (TJCOG) has been responsible for coordinating the many activities and tasks of the two MPOs and of local government staff, particularly with the Community Viz land use allocation activities. TJCOG provided an update on expected methodologies for the socioeconomic data (SE Data), land use modeling (Community Visualization) and the land use scenarios and transportation networks needed for an alternatives analysis, and on assistance that will be needed from local government staff at the August meeting. Support documents are included as attachments.

### Requested Action:

**Action Receive as information and consider recommendation of items to the Executive Board for use in development of the 2045 MTP.**



## 5.6 Title VI, Minority, Limited English Proficiency (LEP) and Low Income Public Outreach Plan Update

Staff reviewed the existing Title VI, Minority, Limited English Proficiency (LEP), and Low Income Public Outreach Plan and determined the LEP measure for identifying those communities was not possible due to data limitations with the Census. This sparked a review of the entire methodology. After setting up a collaborative effort with Federal Highway Administration, NCDOT, DCHC MPO, and Triangle J COG, a new methodology that includes the entire region is now ready. Along with some technical corrections and the update of all the complaints forms, this is the updated plan. One significant change is the use of the "safe harbor" threshold for LEP--it will require CAMPO to look at many more languages for translation than in the past, and is required by both FHWA and NCDOT.

**Requested Action:**  
**Receive as Information**





NC Capital Area Metropolitan Planning Organization

# Serving Up (Environmental) Justice

CAMPO Title VI/LEP Update 2016





# TRANSPORTATION & ENVIRONMENTAL JUSTICE

*There are three fundamental environmental justice principles:*

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

# Metropolitan Planning Organizations

To certify compliance with Title VI and address Environmental Justice, MPOs need to:

- Enhance their analytical capabilities to ensure that the long-range transportation plan and the transportation improvement program (TIP) comply with Title VI.
- Identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed.
- Evaluate and - where necessary - improve their public involvement processes to eliminate participation barriers and engage minority and low-income populations in transportation decision making.

# BASIS

*"No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."*

*- Title VI of the Civil Rights Act of 1964*



## TITLE VI AND ENVIRONMENTAL JUSTICE ADDRESS WHICH GROUPS?

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin.

Executive Order 12898 and the DOT and FHWA Orders on Environmental Justice address persons belonging to any of the following groups:

- **Black** - a person having origins in any of the black racial groups of Africa.
- **Hispanic** - a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **Asian** - a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.
- **American Indian and Alaskan Native** - a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- **Native Hawaiian or Other Pacific Islander** - a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- **Low-Income** - a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines.

Source: [http://www.fhwa.dot.gov/environment/environmental\\_justice/overview/](http://www.fhwa.dot.gov/environment/environmental_justice/overview/) retrieved 20151228



# In Addition to Title VI

In addition to Title VI, there are other Nondiscrimination Statutes that afford legal protection. These include:

- **Section 162 (a) of the Federal-Aid Highway Act of 1973 (23 USC 324) (sex),**
- **Age Discrimination Act of 1975 (age), and**
- **Section 504 of the Rehabilitation Act of 1973/Americans With Disabilities Act of 1990 (disability)**

Taken together, these requirements define an over-arching **Title VI/Nondiscrimination Program.**

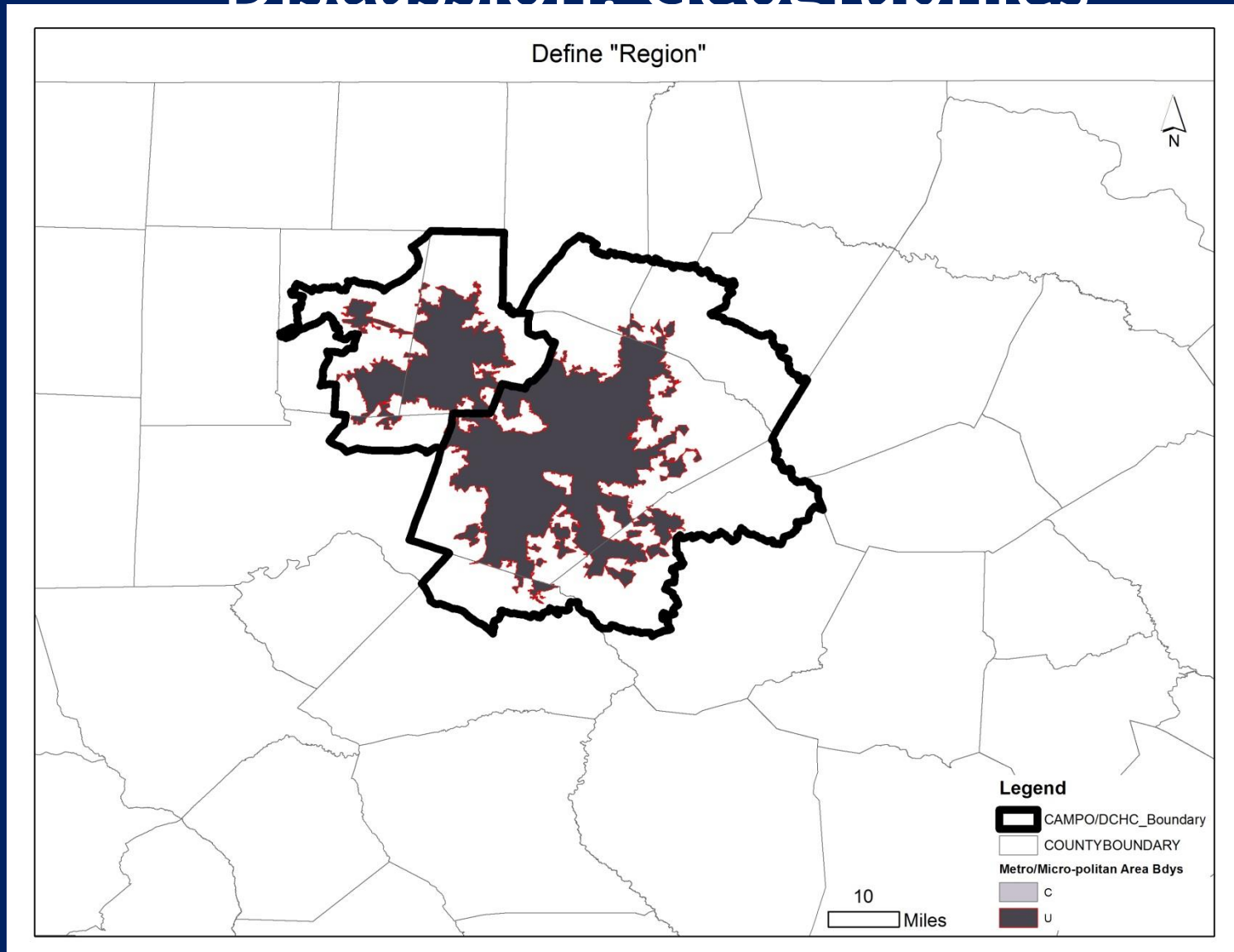
# What we did:

- We built a regional-scale screening tool.
- We had to figure out
  - Geographic Extent
  - What to measure
  - How to measure it
- It is NOT meant to capture every EJ instance,  
but to provide an indication that one is more or less likely to be present.

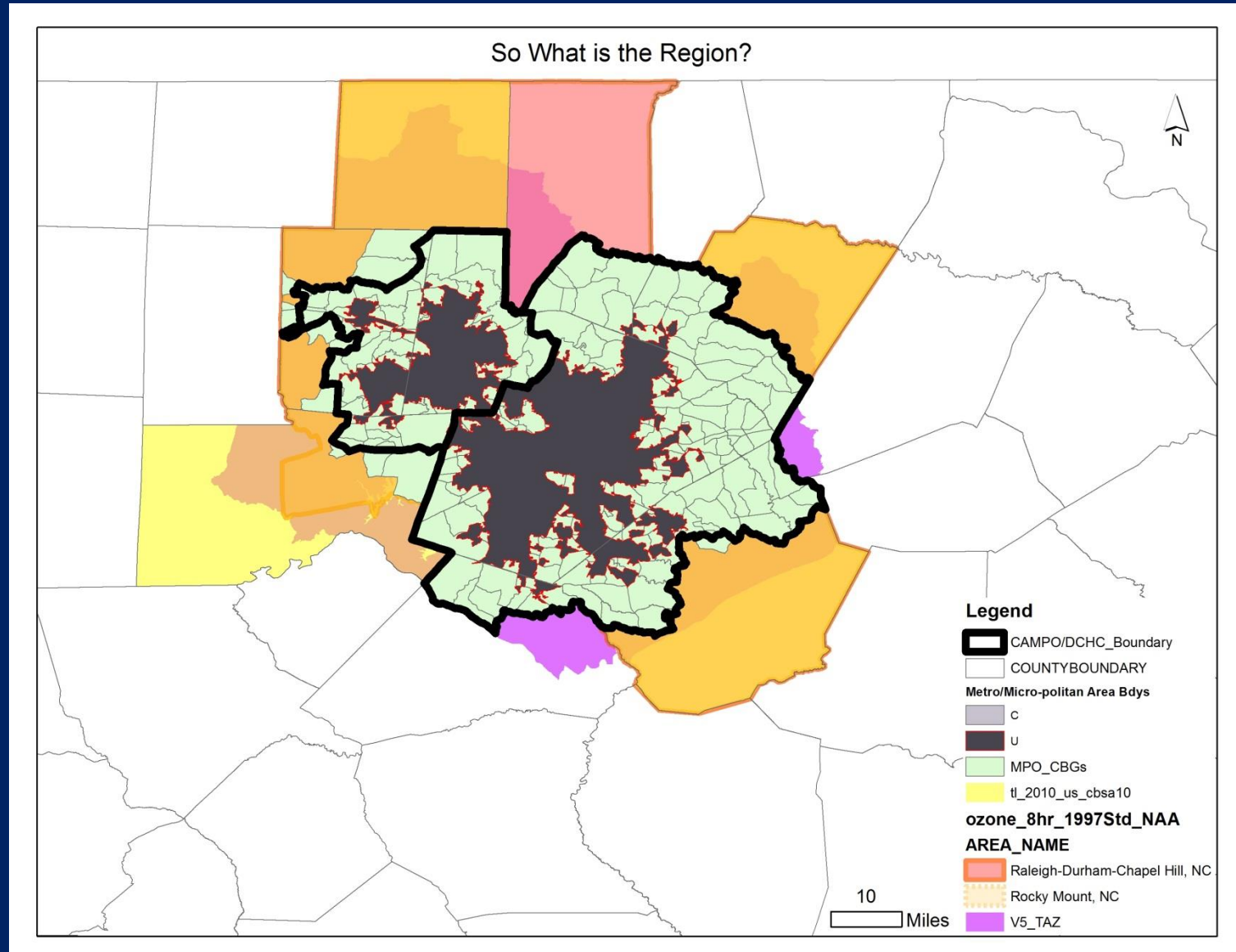
# Step 1: Define Geographic Extent

- Define geographic scope:
  - County by County versus region-wide; this is important because setting the universe for the statistical measures important for next step
  - What is the region?
    - MSA includes Person County But not Granville or Harnett
    - MPO boundaries include Granville and Harnett but not Person.
    - Model Area Boundary (MAB) includes parts of Person and Nash
    - Air Quality Region includes whole counties except Chatham
  - Use only tracts in the MPOs, or if part of a county is in, use the whole county for calculations? Or something else?

# Discussion: Geographies

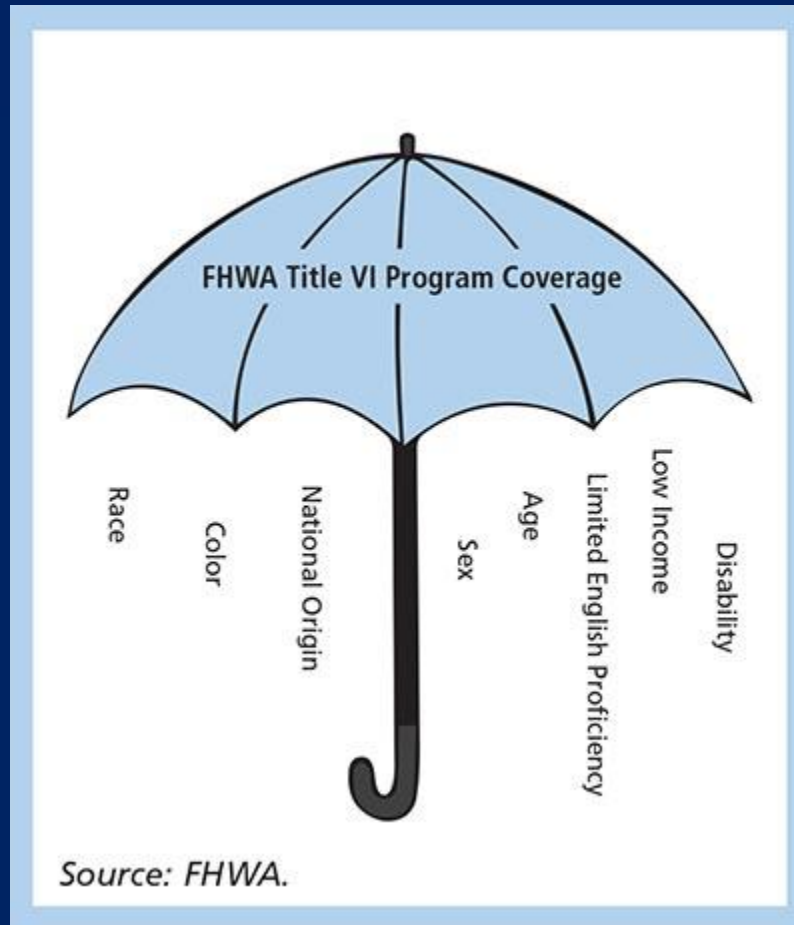


# Final: Block Groups In (or part in) the MPO Boundaries





# Protected Classes



# Step 2: Define Indicators (Variables)

## As Defined by Title VI

- **Minority:**
  - **Race** (Black, Asian, American Indian and Alaskan Native, Native Hawaiian or Other Pacific Islander, [Mixed Race?] )
  - **Hispanic/Latino Origin**
- **Low-Income** (specifics defined later)

## Step 2: Define Indicators (cont.)

### In addition to Title VI:

- **Limited English Proficiency (LEP)** (Executive Order 13166)
- **Persons with Disability** (ADA/Section 504)  
Measured as **Zero-Car Households** for transportation planning purposes
- **Age** (Age Discrimination Act of 1975) Measured as probable non-driving populations

# Voice of Experience: Durham-Chapel Hill Carrboro MPO



## 2014 ENVIRONMENTAL JUSTICE REPORT

Lindsay R. Smart, AICP  
*Senior Transportation Planner*

**DCHC**  
Metropolitan Planning Organization  
Planning Tomorrow Today

2.11.2015 MPO Board Meeting



# “State of Practice” Review Performed by DCHC MPO Summer/Fall 2014

- Mid-Ohio Regional Planning Commission (FHWA featured case study)
- Other EJ Reports Reviewed\*:
  - Delaware Valley Regional Planning Commission
  - South Jersey Transportation Planning Organization
  - Southwestern Pennsylvania Commission
  - North Central Texas Council of Governments
  - Syracuse Metropolitan Planning Area
  - Coastal Region Metropolitan Planning Organization (Georgia)
  - Wilmington Area Planning Council

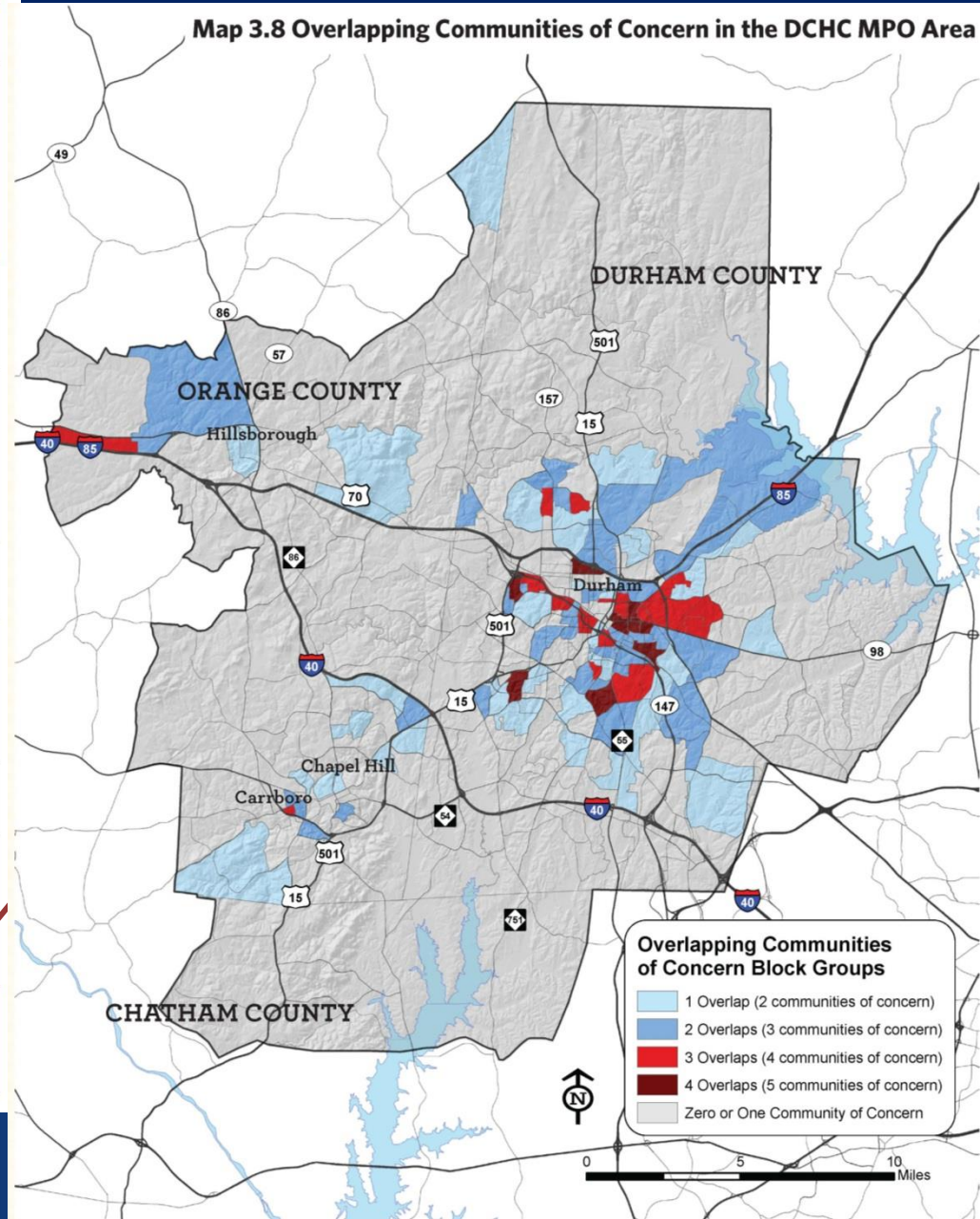
\*not all-inclusive list of documents that were reviewed



# Chapter 3: Demographic Profiles

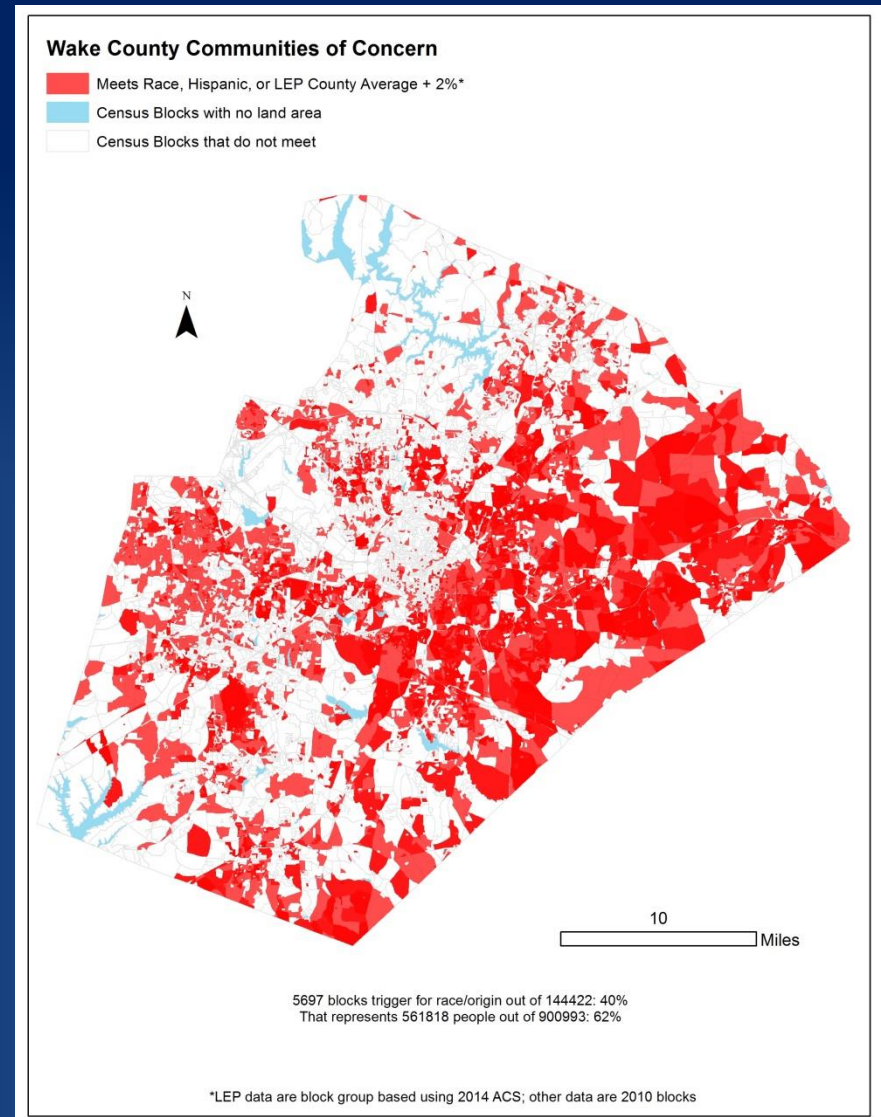
## Overlapping EJ Block Groups

Column A	Column B	Column C	Column D
EJ Populations	Total # of Communities of Concern Block Groups	Total # of Block Groups in DCHC MPO Area	Percent of Total Block Groups
Racial Minority Populations	88	257	34%
Hispanic/Latino Ethnicity Origin Populations	61	257	24%
Elderly Population	48	257	19%
Limited English Proficiency Populations	60	257	23%
Low-Income Households	53	257	21%
Zero-Car Households	51	257	20%
<i>TOTAL</i>	455		
Averaged Percent of Total Block Groups (sum of Column D ÷ 6)			25%



# Back to Paul

- Started as a review of existing plan
- LEP variable was not possible (not available at the block level)



## Step 2: Define Indicators

Based on DCHC's indicators, we used:

- **Minority Non-White (includes all protected race categories)**
- **Hispanic/Latino Origin**
- **Limited English Proficiency (all languages)**
- **Zero-Car Households**
- **Age 65+**

*(maps will follow in the next section on choosing the threshold measure)*

## Step 2: Define Indicators

**In a deviation from DCHC:**

- **Individual Poverty Status instead of Median Household Income (MHI) (with additional 60 percent reduction factor)**

**Why?**

**All the other measures are based on individuals or households; MHI does not lend itself to our custom geography—calculating the regional base requires some crazy mathematics**



# Step 2: Define Indicators

So gender is a protected class. Where is it?

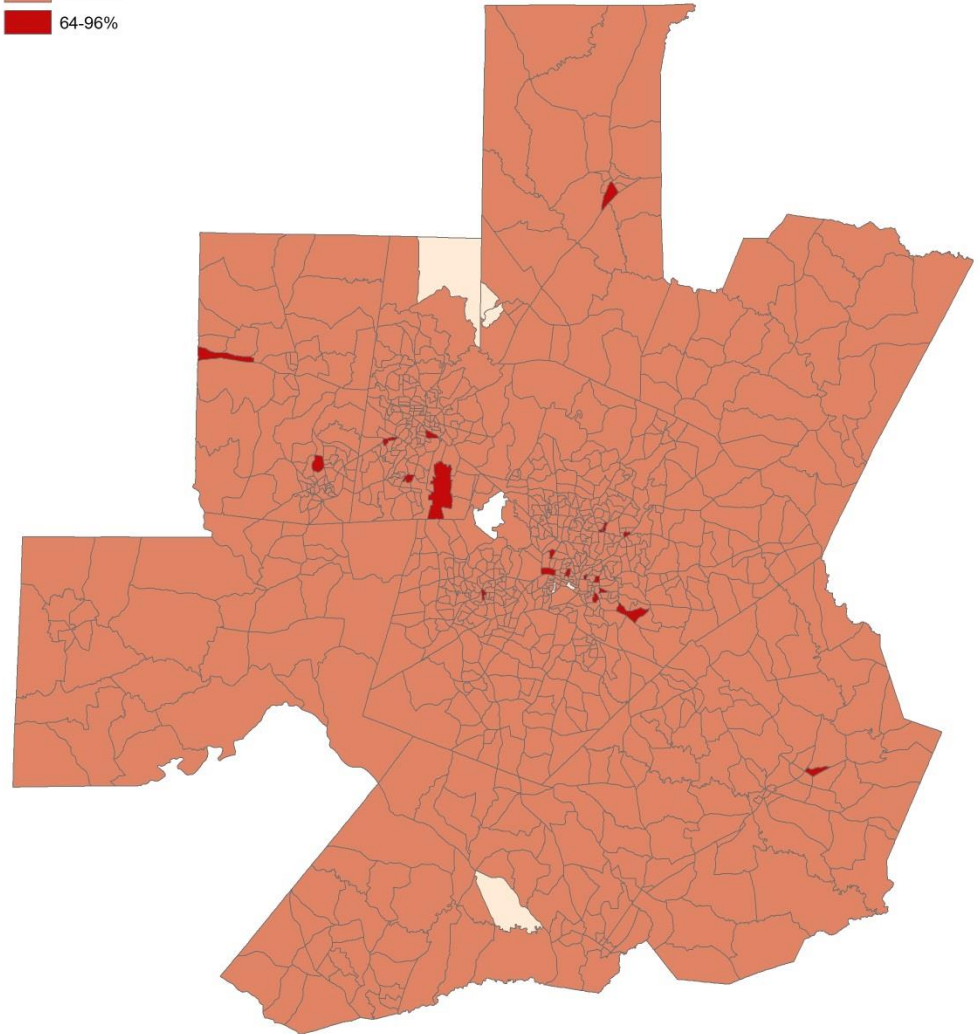
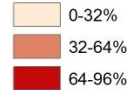
While not completely true, most clusters for gender are group quarters like college dorms or prisons.

Outside of those, the distribution is even and not useful for identifying concentrations/clusters.

## DISTRIBUTION OF FEMALE POPULATION CAMPO & DCHC COUNTIES

ACS\_2014\_5YR\_BG\_37\_NORTH\_CAROLINA

SEX BY AGE: Female: Total population -- (Estimate) / SEX BY AGE: Total: Total population -- (Estimate)



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25

Miles



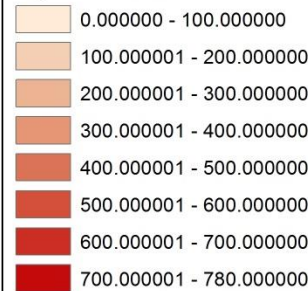
# Step 2: Define indicators

- Age has an even spatial distribution (other than NC Chatham)
- Introduces statistical “noise” by its lack of clustering

Why Age is So Different for Region vs DCHC only

NE Chatham is an outlier

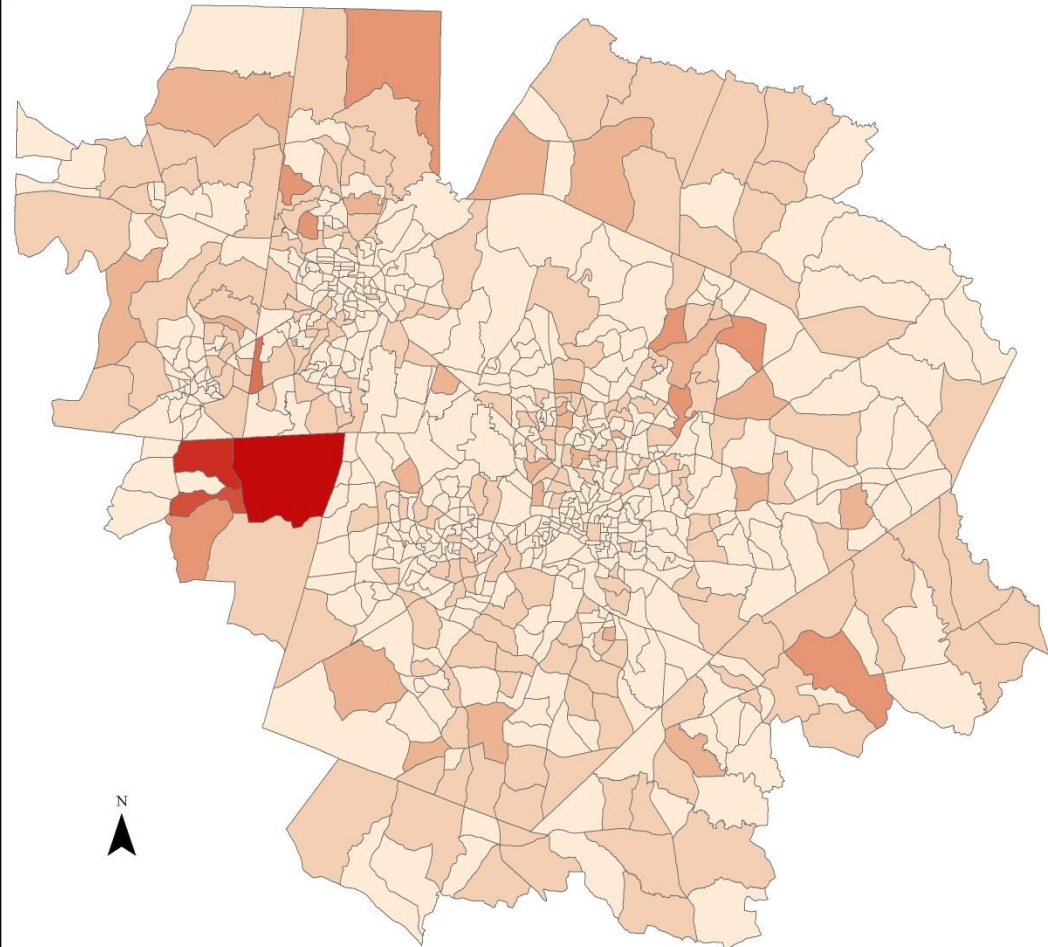
Age65YrsPlus











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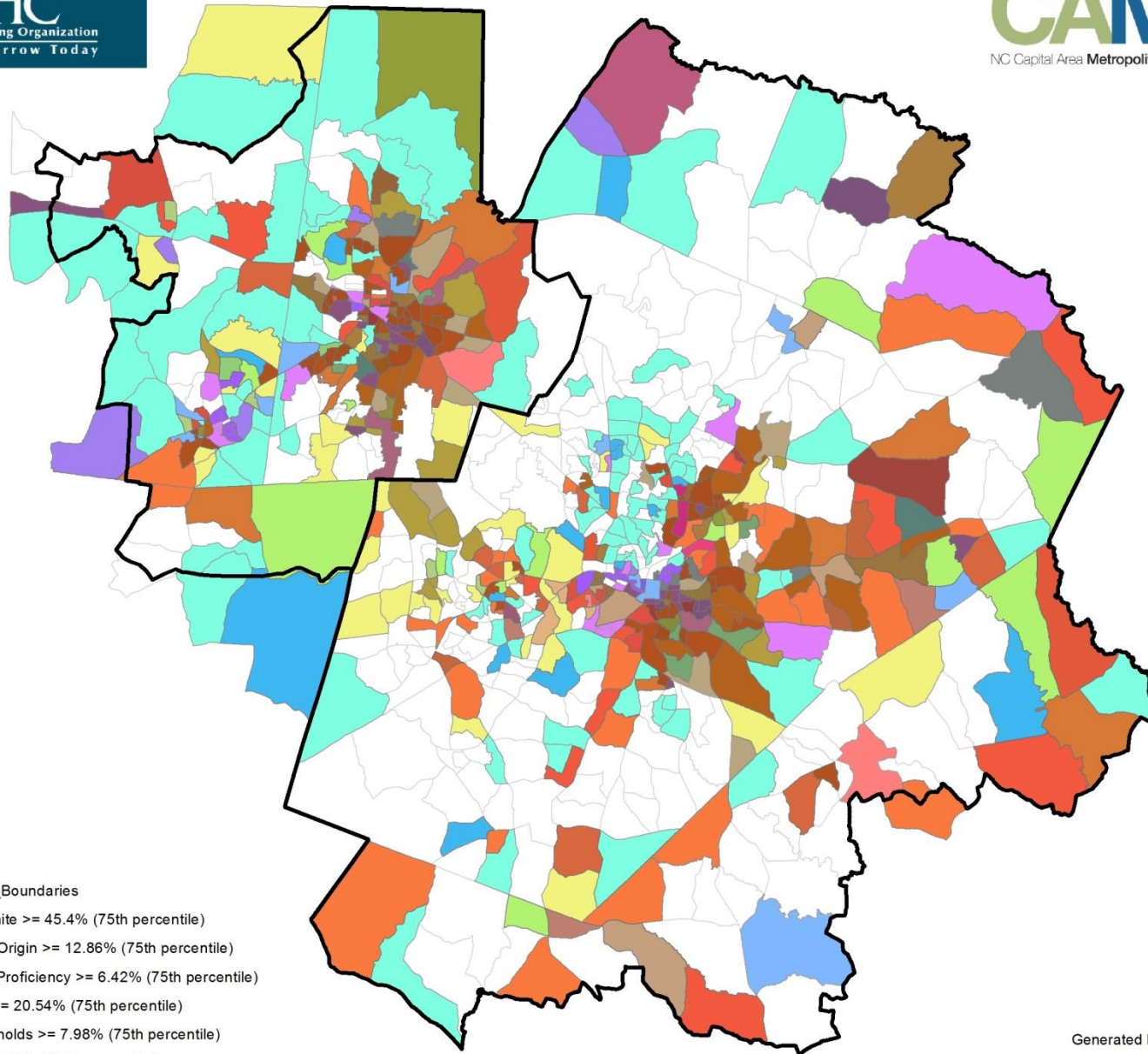
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Miles



# CAMPO/DCHC Region Count of How Many of the 6 Title VI/EJ Measures Trigger

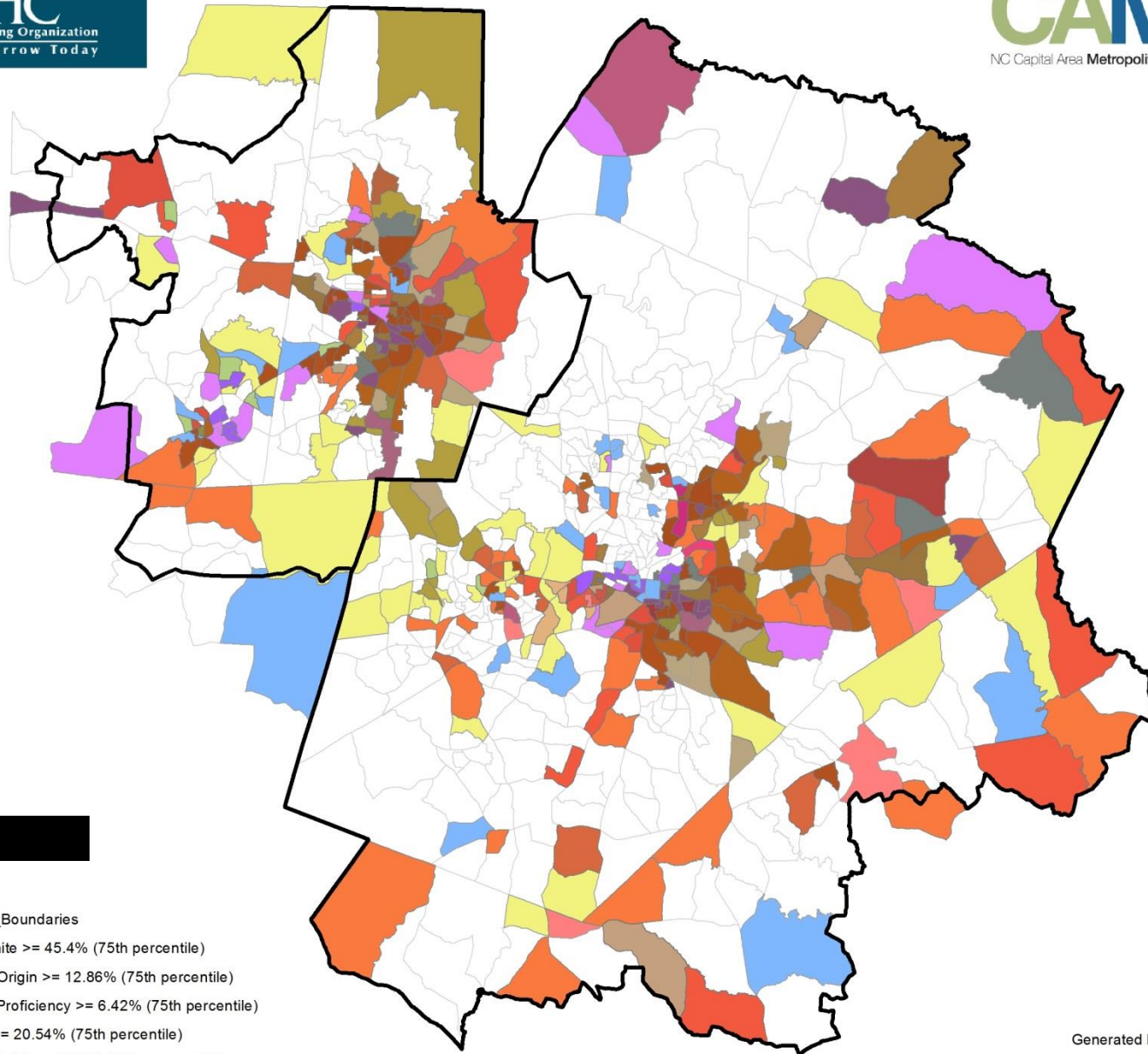
-  CAMPO/DCHC\_Boundaries
-  Minority Non-White  $\geq 45.4\%$  (75th percentile)
-  Hispanic/Latino Origin  $\geq 12.86\%$  (75th percentile)
-  Limited English Proficiency  $\geq 6.42\%$  (75th percentile)
-  Poverty Status  $\geq 20.54\%$  (75th percentile)
-  Zero Car Households  $\geq 7.98\%$  (75th percentile)
-  Over Age 65  $\geq 6.12\%$  (75th percentile)
-  All Region Block Groups



Generated by CAMPO on: 6/30/2016

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Miles



Age removed



# Our Survey Says...

- August 2<sup>nd</sup> the regional group met and decided on 6 variables:
  - Minority race
  - Hispanic/Latino origin
  - “Near Poverty” (<150% of poverty level)
  - Zero-Car Households
  - Linguistic Isolation
  - Age 70 and Over

# Step 3: Choose How To Measure

- Mean, median, mode
- Percentiles, Quartiles





# What is an optimal amount of the region to trigger as special?

- We should not trigger so much of the region that it does not give us a meaningful evaluation tool (at the regional scale).
- Be as inclusive as possible in light of the above; we do not want to leave anyone out without good reason
- The final analysis should identify clustered patterns that allows for targeted outreach
- The methodology should be efficient and respectful of limited staff resources

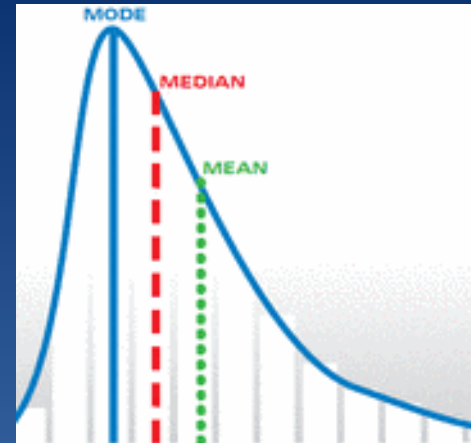
# What is an optimal amount of the region to trigger as special?

- The working hypothesis: No more than 60% of block groups should trigger
- Basis:
  - Other plans
  - Yields a reasonably tight clusters with the variables we use
- If not 60%, what is better and why?
  - (consensus was we didn't have a better target)

# The Mean vs. the Median

As measures of central tendency, the mean and the median each have advantages and disadvantages. Some pros and cons of each measure:

- The median may be a better indicator of the most typical value if a set of scores has an **outlier**. An outlier is an extreme value that differs greatly from other values.
- However, when the sample size is large and does not include outliers, the mean score usually provides a better measure of central tendency.



Michael Jordan

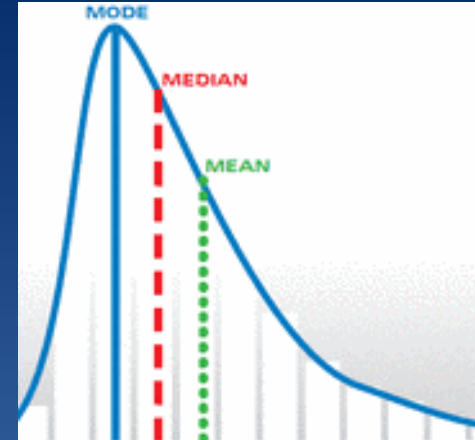


## To Illustrate

There's an old story about 1984 University of North Carolina geography graduates earning average salaries of over \$1,000,000 right out of college. That must be one awesome program!

Alas, it turns out that one of those graduates was Michael Jordan, whose geography knowledge came in handy when having to travel to the cities of the NBA.

Without Jordan, the mean salary was probably closer to \$25,000. This shows the effect that an outlier—an extreme value not in the general pattern of the data—can have on measures of center.



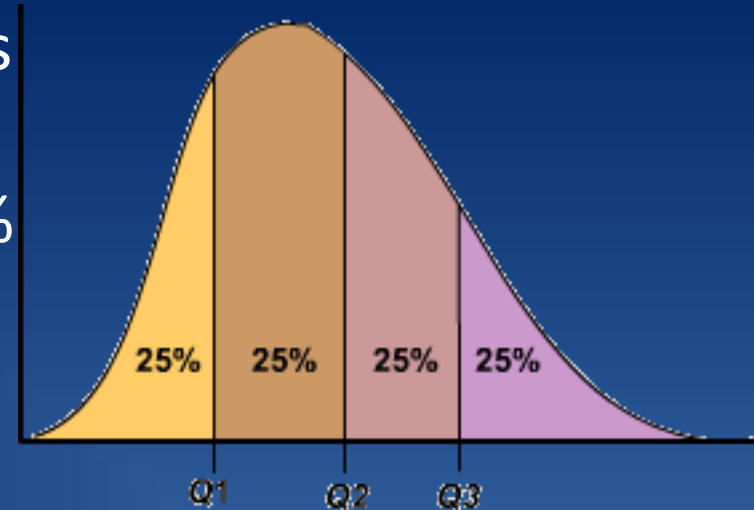
Typical UNC Geography Graduate



# So, Quartiles?

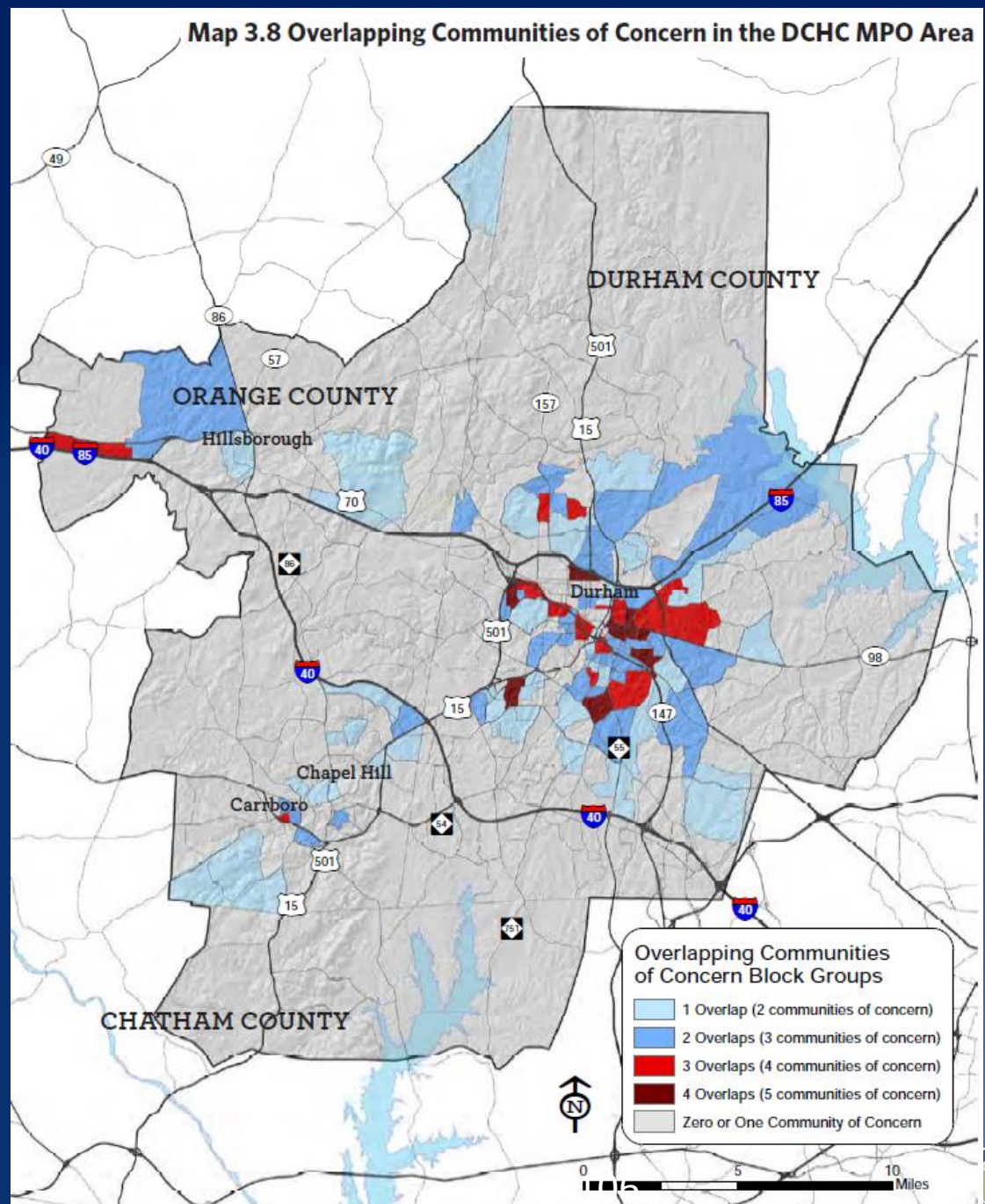
- Give flexibility to look at other thresholds than the central value
- Can look at higher or lower values on your spectrum
- They are symbolically like the 25% and 75% equivalents of the median (if the median were 50%)

(Aside--Can also be done as percentiles as any break point along your spectrum, just not quartiles anymore—say the 65<sup>th</sup> percentile)

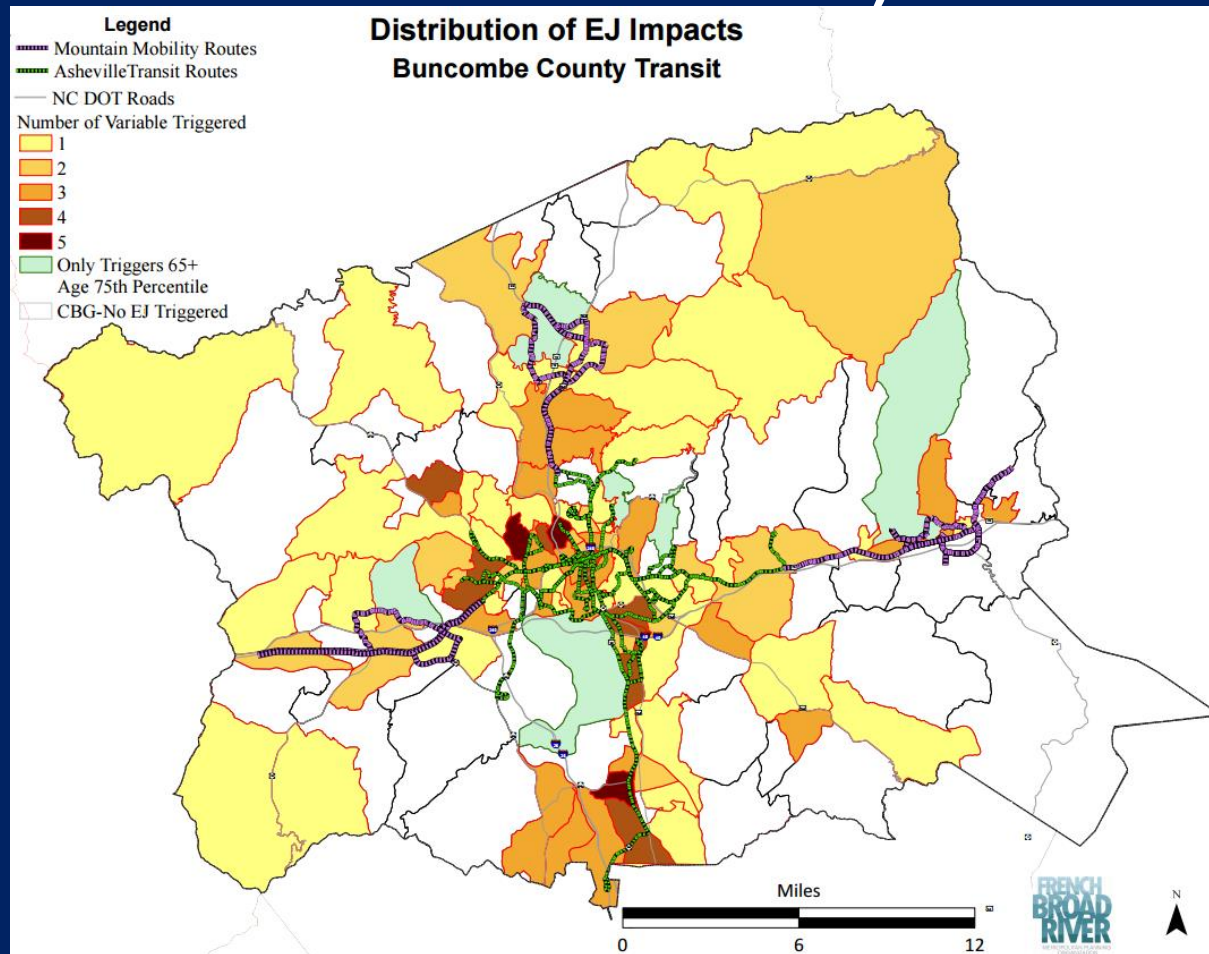




So we can  
use the  
mean, but  
only count  
if there are  
at least 2  
indicators  
present  
(DCHC)

















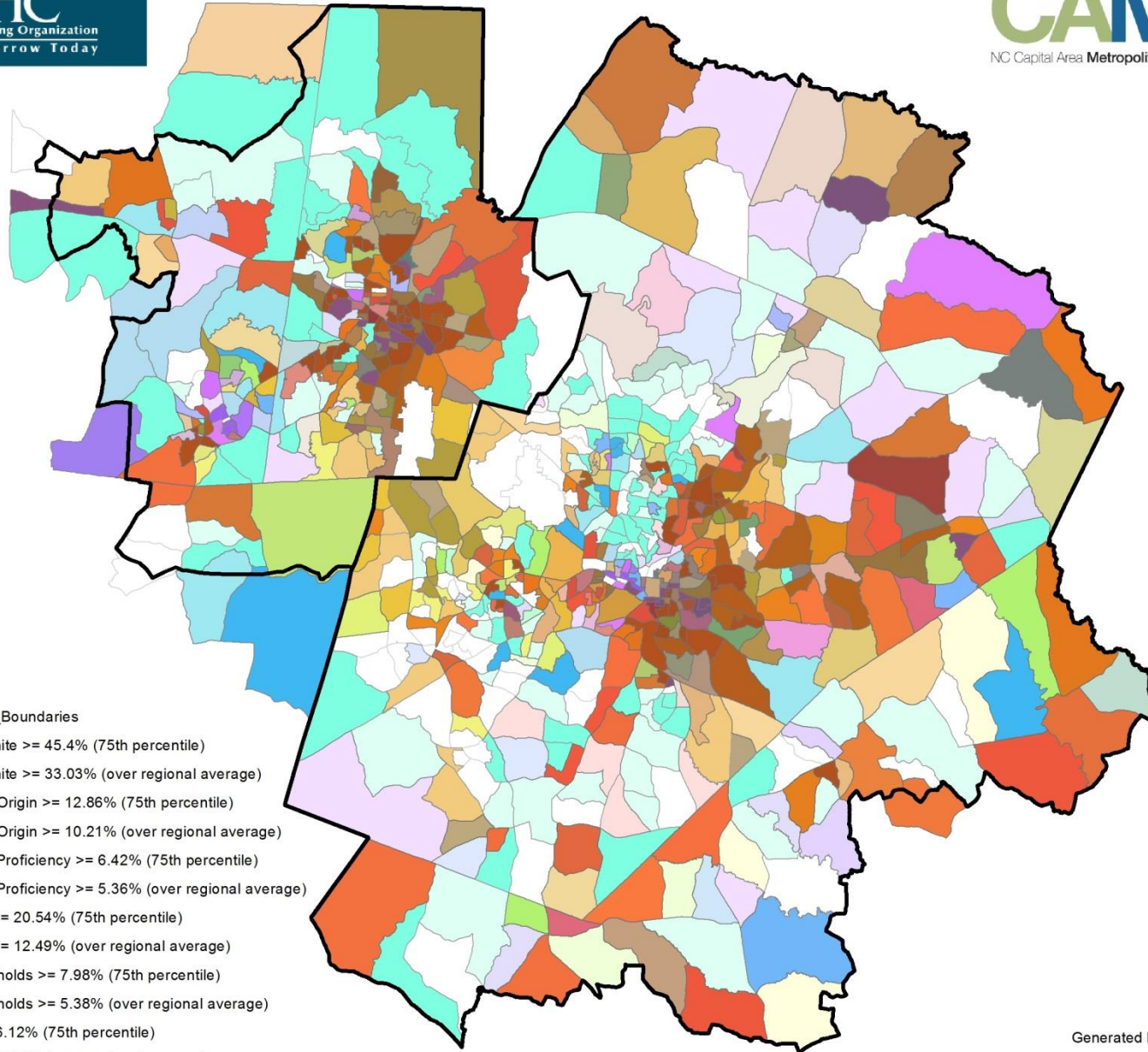
# Or just set a higher threshold (FBRMPO 2040 MTP)





# CAMPO/DCHC Region Count of How Many of the 6 Title VI/EJ Measures Trigger

-  CAMPO/DCHC\_Boundaries
-  Minority Non-White >= 45.4% (75th percentile)
-  Minority Non-White >= 33.03% (over regional average)
-  Hispanic/Latino Origin >= 12.86% (75th percentile)
-  Hispanic/Latino Origin >= 10.21% (over regional average)
-  Limited English Proficiency >= 6.42% (75th percentile)
-  Limited English Proficiency >= 5.36% (over regional average)
-  Poverty Status >= 20.54% (75th percentile)
-  Poverty Status >= 12.49% (over regional average)
-  Zero Car Households >= 7.98% (75th percentile)
-  Zero Car Households >= 5.38% (over regional average)
-  Over Age 65 >= 6.12% (75th percentile)
-  Over Age 65 >= 4.08% (over regional average)
-  All Region Block Groups











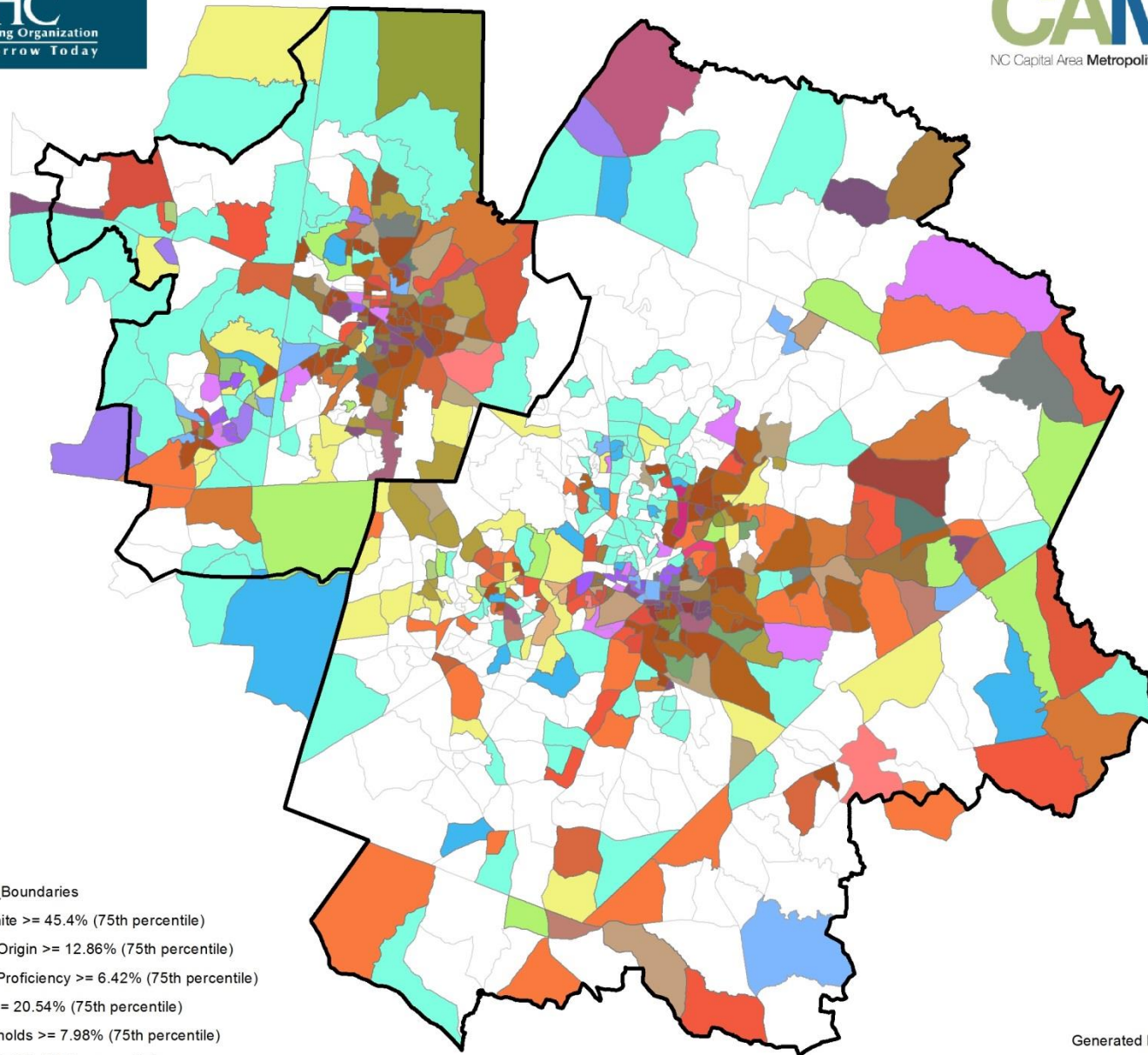
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10

Miles

# CAMPO/DCHC Region Count of How Many of the 6 Title VI/EJ Measures Trigger

-  CAMPO/DCHC\_Boundaries
-  Minority Non-White  $\geq 45.4\%$  (75th percentile)
-  Hispanic/Latino Origin  $\geq 12.86\%$  (75th percentile)
-  Limited English Proficiency  $\geq 6.42\%$  (75th percentile)
-  Poverty Status  $\geq 20.54\%$  (75th percentile)
-  Zero Car Households  $\geq 7.98\%$  (75th percentile)
-  Over Age 65  $\geq 6.12\%$  (75th percentile)
-  All Region Block Groups



Generated by CAMPO on: 6/30/2016

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Miles

# So What's the Issue?





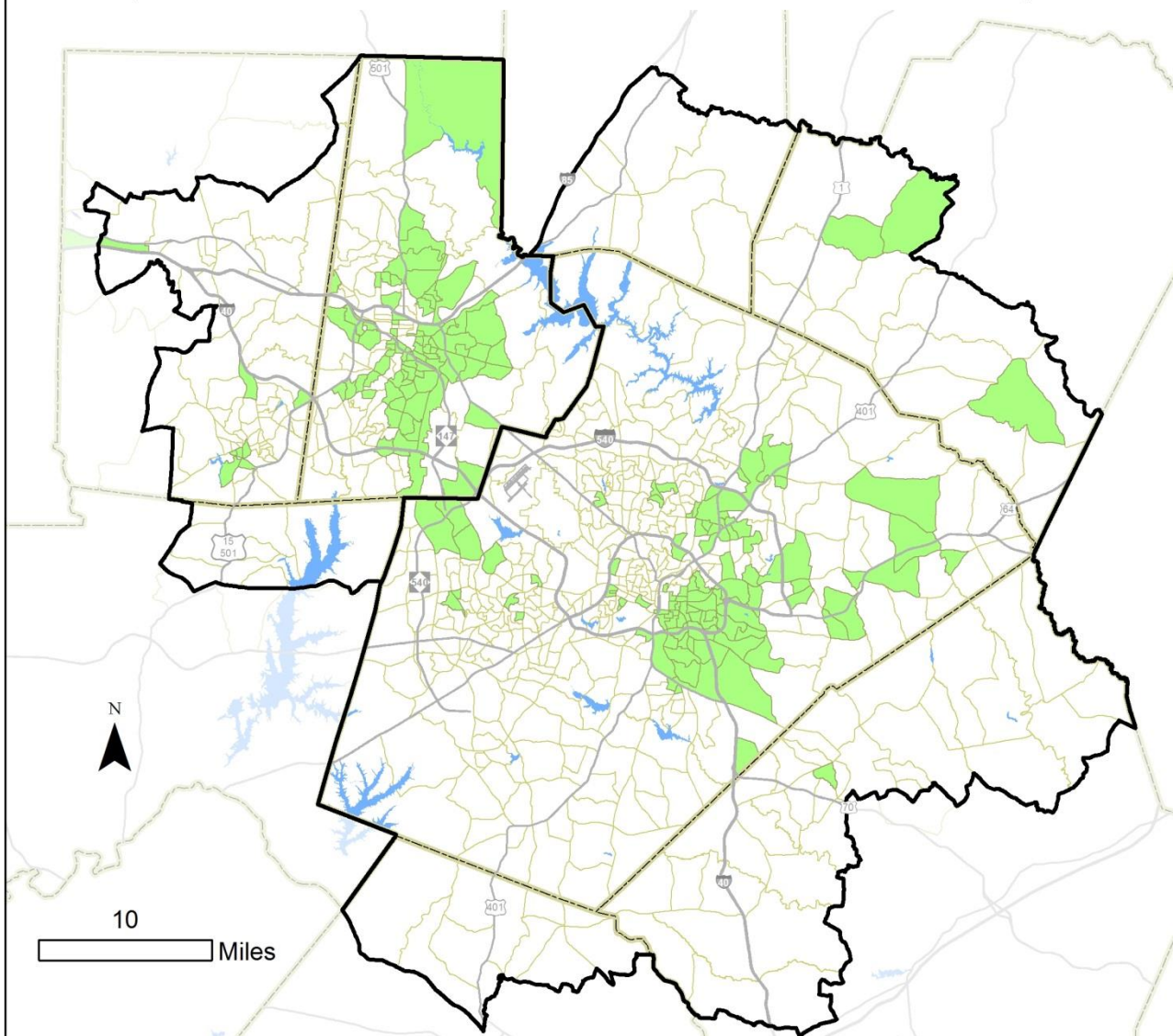
# How Did We Do?

- Using a threshold near the middle yields too many block groups after six variables (92%). This makes targeted outreach or analyzing our investments difficult since “everyone’s special”
- This is offset by requiring more than one indicator be present, potentially missing groups specifically called out in Title VI
- The 75<sup>th</sup> percentile (top quintile) creates a higher threshold for inclusion, but only one trigger is required & balancing “everyone’s special”
- Yields around 64% of the region—close enough to the 60% target to be acceptable

# Our Survey Says...

- August 2<sup>nd</sup> the DCHC MPO, CAMPO, NCDOT, and FHWA regional group met and chose the 75<sup>th</sup> percentile for the six variables.
- Summary: Higher threshold for each variable than DCHC MPO, but Communities of Concern don't need to overlap to be considered significant.

# Top 25% of Non-White Race Census Block Groups

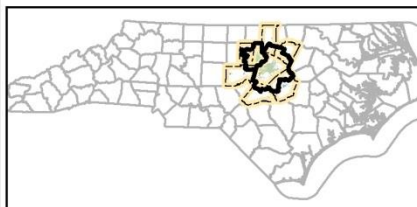


This map shows where concentrations of populations of non-white race exist in the region at or above the 45.4% threshold. The threshold represents block groups where 45.4% of the people living there identify as a non-white race for the Census.

45.4% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed (usually just the Airport).

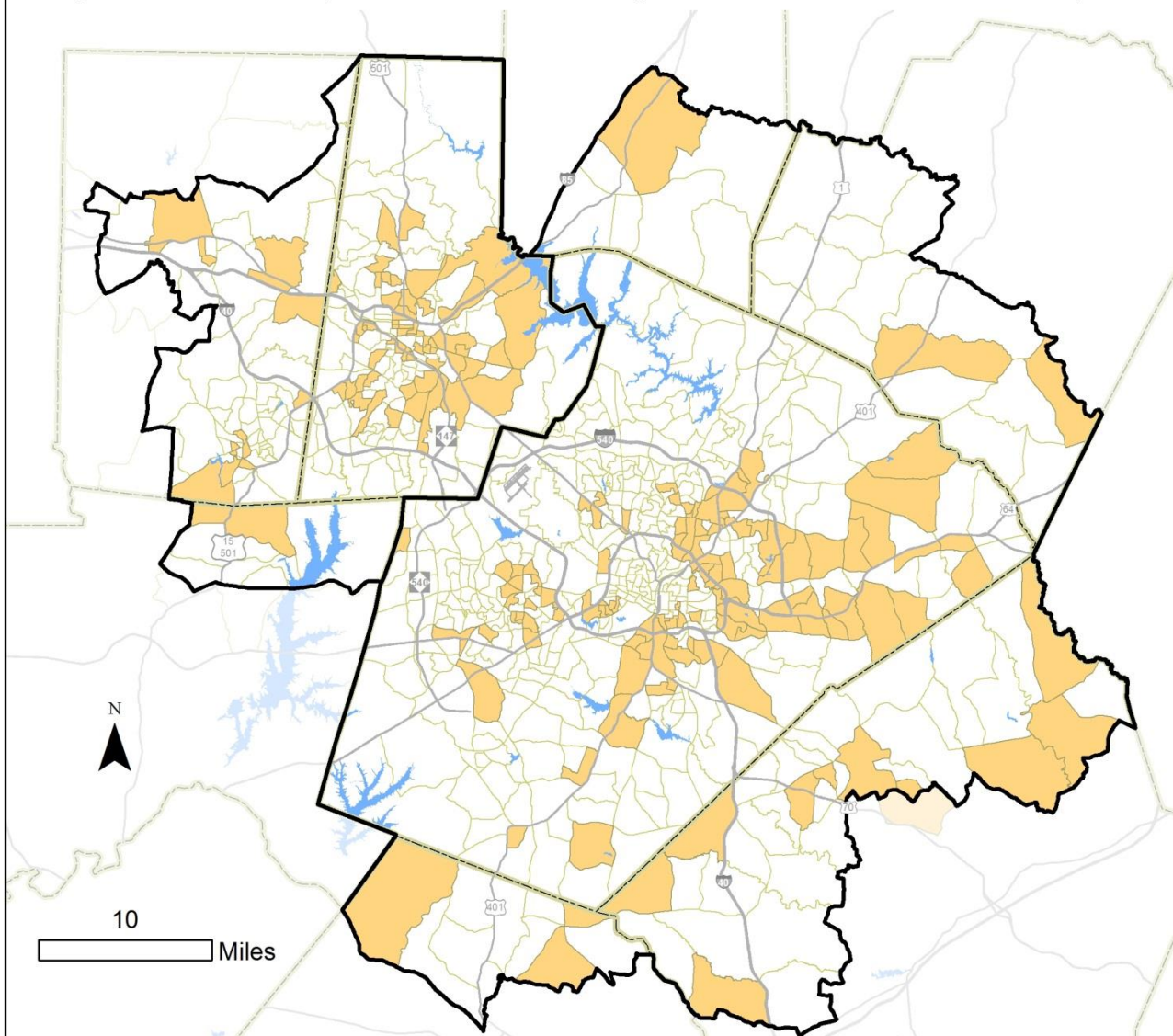
- RDU Airport
- CAMPO/DCHC\_Boundaries
- Interstate
- US Route; NC 147 & NC 540
- Counties in 2-MPO Region
- Lakes
- MinorityNonWhite 45.4%
- Other Block Groups

The Capital Area Metropolitan Planning Organization, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the Region. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the database may be reflected in the map and/or data supplied. The user must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data.





# Top 25% of Hispanic/Latino Origin Census Block Groups

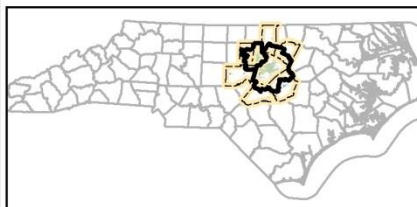


This map shows where concentrations of populations of Hispanic/Latino origin exist in the region at or above the 12.86% threshold. The threshold represents block groups where 12.86% of the people living there identify as a non-white race for the Census.

12.86% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed (usually just the Airport).

- RDU Airport
- CAMPO/DCHC\_Boundaries
- Interstate
- US Route; NC 147 & NC 540
- Counties in 2-MPO Region
- Lakes
- Hispanic/Latino 12.86%
- Other Block Groups

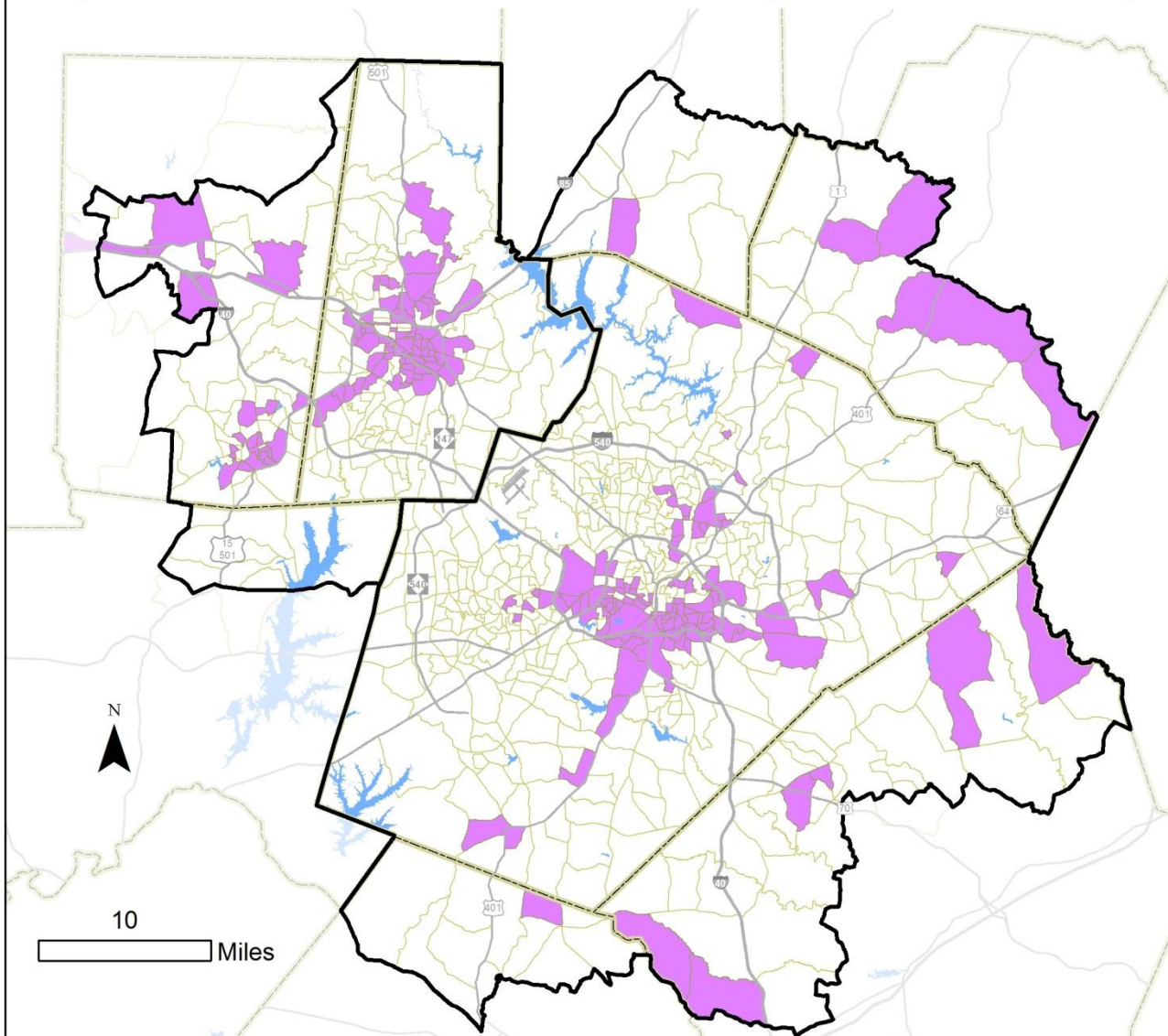
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# Top 25% of Individuals Below 150% Poverty Census Block Groups

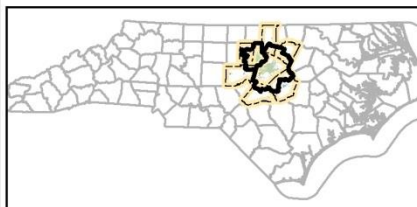
This map shows where concentrations of populations of individuals making below 150% of the poverty line exist in the region at or above the 34% threshold. The threshold represents block groups where 34% of the people living there identify as a non-white race for the Census.

34% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed



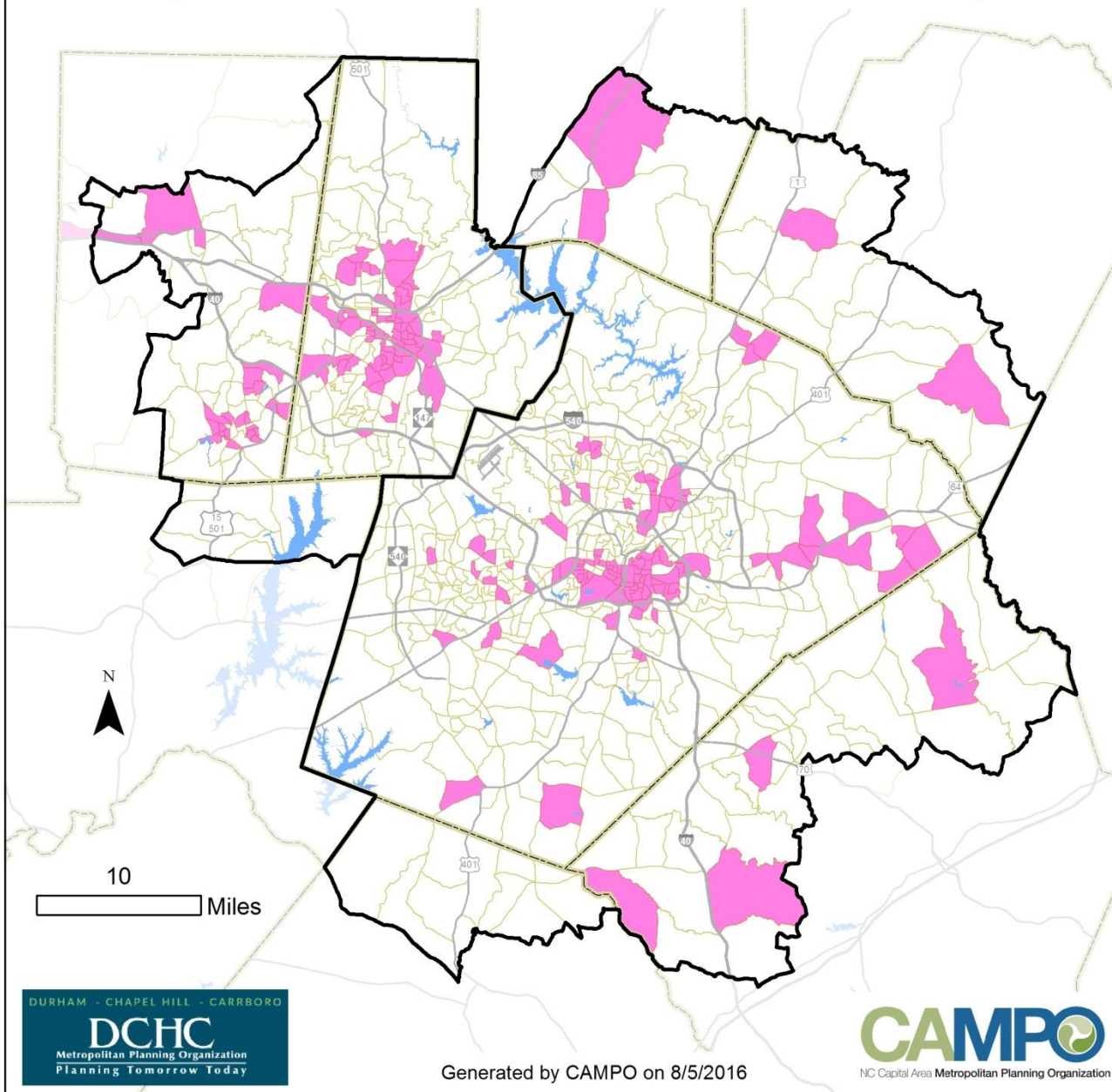
- RDU Airport
- CAMPO/DCHC\_Boundaries
- Interstate
- US Route; NC 147 & NC 540
- Counties in 2-MPO Region
- Lakes
- Below 150% of Poverty 75th
- Other Block Groups

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# Top 25% of Zero-Car Household Census Block Groups

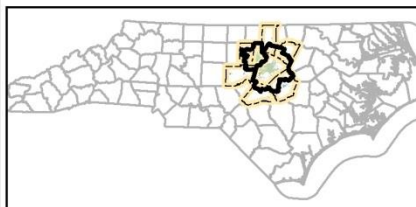


This map shows where concentrations of populations of households with no automobile transportation exist in the region at or above the 7.98% threshold. The threshold represents block groups where 7.98% of the people living there identify as a non-white race for the Census.

7.98% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed

- RDU Airport
- CAMPO/DCHC\_Boundaries
- Interstate
- US Route; NC 147 & NC 540
- Counties in 2-MPO Region
- Lakes
- Zero Car HHs 7.98%
- Other Block Groups









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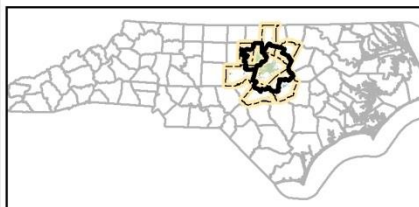
# Top 25% of Linguistically Isolated Census Block Groups

This map shows where concentrations of populations of persons who do not speak English or speak English "less than very well" exist in the region at or above the 6.42% threshold. The threshold represents block groups where 6.42% of the people living there identify as a non-white race for the Census.

6.42% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed (usually just the Airport).

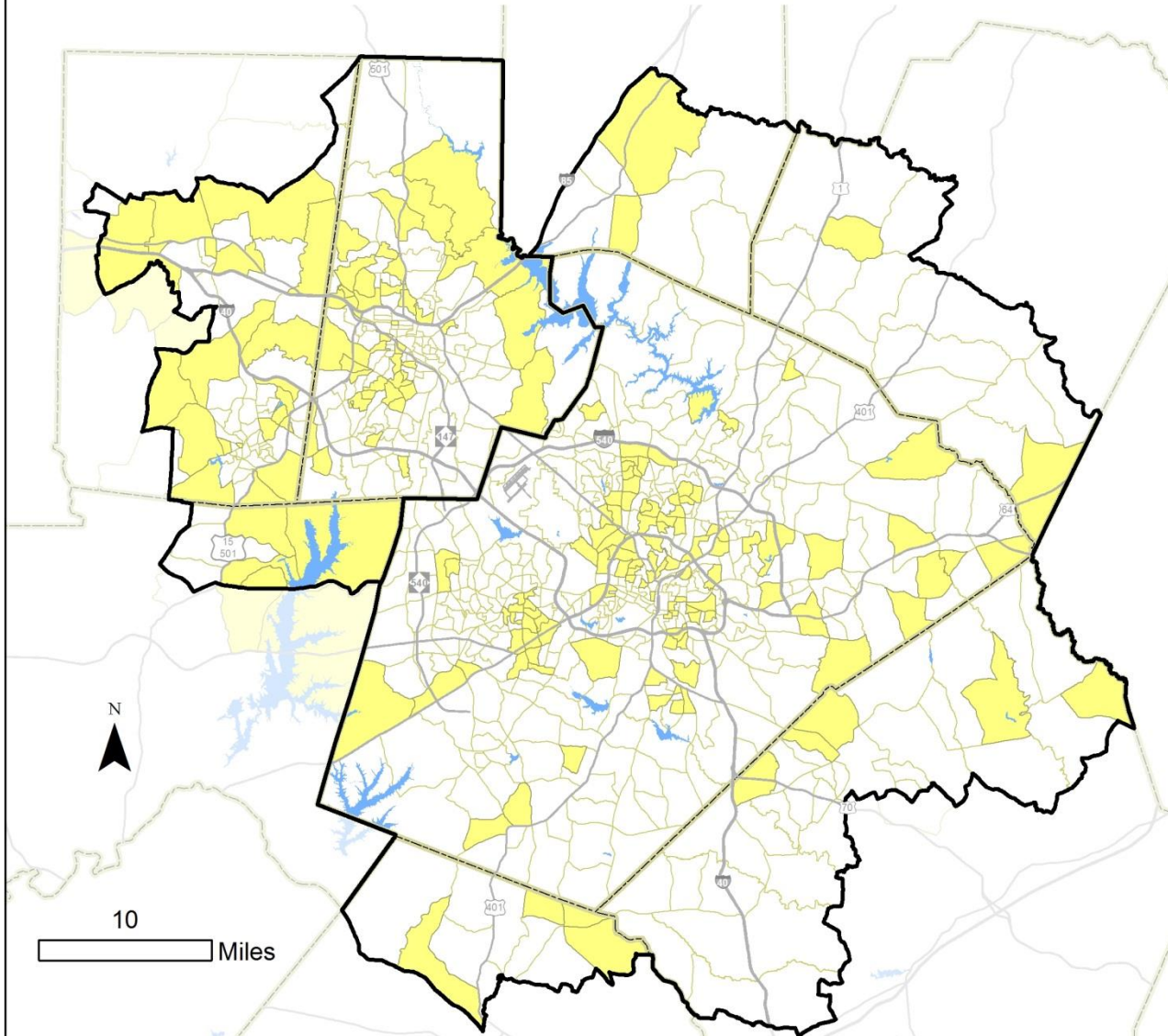
-  RDU Airport
-  CAMPO/DCHC\_Boundaries
-  Interstate
-  US Route; NC 147 & NC 540
-  Counties in 2-MPO Region
-  Lakes
-  Linguistically Isolated
-  Other Block Groups

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



# Top 25% of Age 70 and Over Census Block Groups

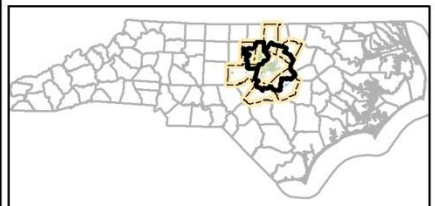


This map shows where concentrations of populations of persons 70 years old and older exist in the region at or above the 9.23% threshold. The threshold represents block groups where 9.23% of the people living there identify as a non-white race for the Census.

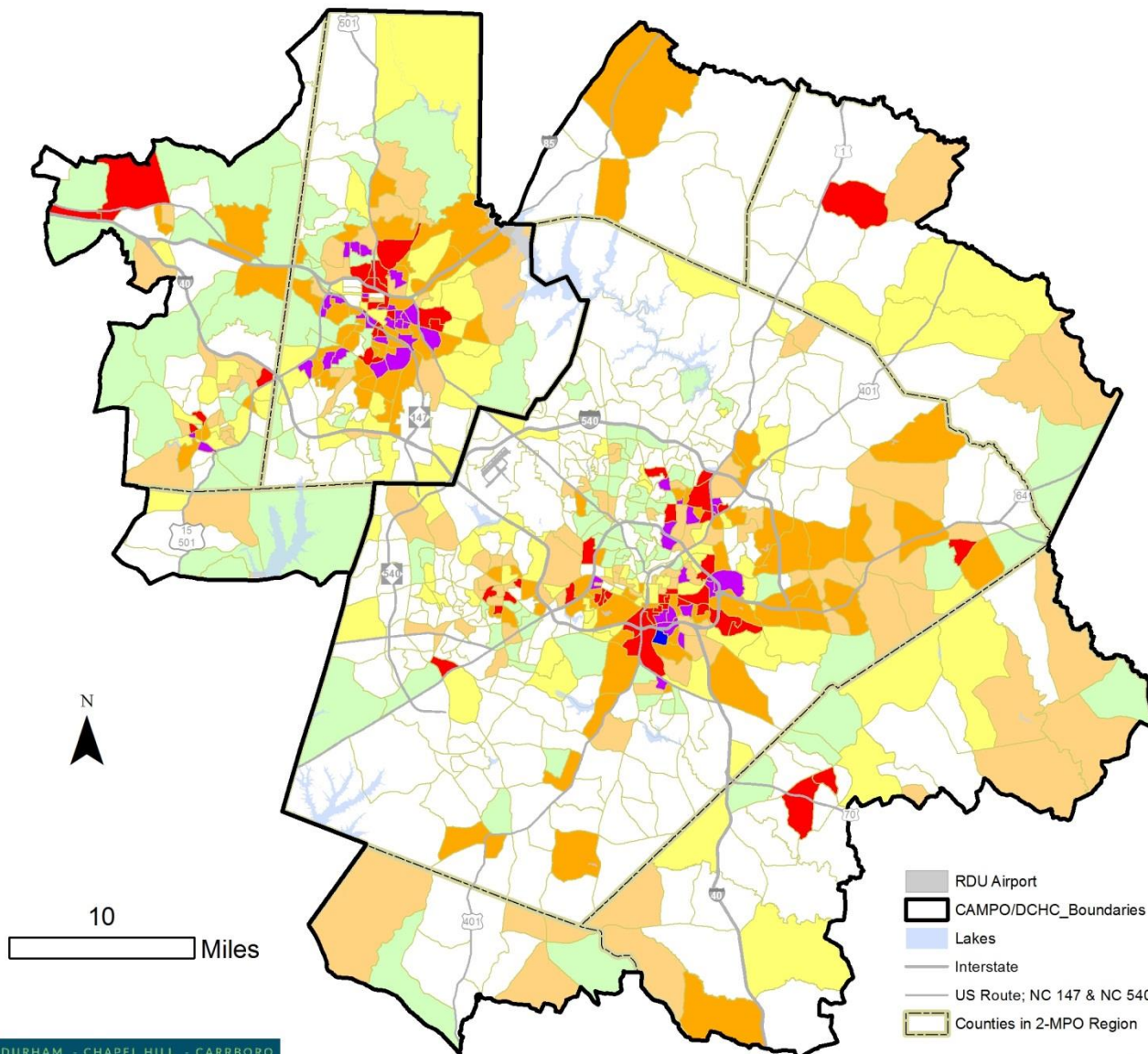
9.23% is the cutoff to be in the highest ranking 188 block groups in the region--the top 25% out of 577 total block groups. Any block groups with zero populations are then removed

-  RDU Airport
-  CAMPO/DCHC\_Boundaries
-  Interstate
-  US Route; NC 147 & NC 540
-  Counties in 2-MPO Region
-  Lakes
-  Age70Plus
-  Other Block Groups

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# Regional 75th Percentile Number of Indicators Overlap

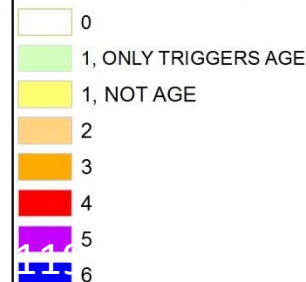


This map is meant to be a regional-scale tool for the MPOs to use in regional-scale planning and regional-scale outreach. It does not identify every community that might meet Title VI protected status, but seeks to identify where there are concentrations of Title VI and other populations subject to protections under the law and associated policies. When working at a more local scale, additional identification may be needed.

The map shows the overlap of 6 indicators at the Census Block Group: Non-white race, Hispanic/Latino Origin, Individuals below 150% of the federal poverty threshold, Linguistic Isolation, Zero-car Households, and Age 70 and over. Each indicator has a threshold calculated for the 75th percentile (top 25%), and any Block Group that meets or exceeds the threshold is included.

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## Number of Overlapping Indicators





## 5.7 Wake County Transit Planning Advisory Committee Meeting Schedule, Work Product Deadlines, and Identification of Lead Agencies for TPAC's Responsibilities.



# TPAC Meeting Schedule – Attachment A

- Bylaws require minimum quarterly meetings
- Actual frequency dependent on business volume
- Early stages of implementation → at least once every two weeks
- Little to no business → meetings canceled
- Wednesdays @ 9am
- Sub-Committees meeting minimum of once every two weeks

# TPAC Work Product Deadlines – Attachment B

## Annual Work Plan Delivery Schedule

Fiscal Year	Draft Annual Work Plan	Final Recommended Annual Work Plan
2017 *	November 2016***	December 2016
2018	November 2016	May 2017
2019**	November 2017	May 2018
2020**	November 2018	May 2019
2021**	November 2019	May 2020

## Progress Report Schedule

Report	Report Period Ends	Report Delivery
FY 2017 Annual Report	June 2017	December 2017
FY 2018 First Quarter Report	September 2017	December 2017
FY 2018 Second Quarter Report	December 2017	March 2018
FY 2018 Third Quarter Report	March 2018	June 2018
FY 2018 Annual Report	June 2018	December 2018
FY 2019 First Quarter Report	September 2018	December 2018
FY 2019 Second Quarter Report	December 2018	March 2019
FY 2019 Third Quarter Report	March 2019	June 2019
FY 2019 Annual Report	June 2019	December 2019

\* The 2017 Annual Work Plan will cover from April 2017 through June 2017.

\*\* Schedules shown in FY 2019, FY 2020 and FY 2021 reflect a goal for a consistent and regular schedule.

\*\*\* The quick turnaround for the FY 2017 cycle will limit review time.

# TPAC Responsibilities Lead Agencies– Attachment C

## *GoTriangle – Financial and Regulatory Responsibilities*

- Annual Operating and Capital Budgets and Ordinances
- Annual Tax District Administration Budget
- Templates for Financial/Project Status Reports
- Multi-year Operating Program (Shared with CAMPO)
- Financial Plan/Model Assumptions Update
- Capital/Operating Funding Agreements
- Staffing Model/Expectations Plan (Shared with CAMPO)
- Public Outreach/Participation Strategy (Shared with CAMPO)

# TPAC Responsibilities Lead Agencies– Attachment C

## CAMPO – Administrative/Technical Planning/Prioritization Responsibilities

- Annual Work Plan Consolidation
- Multi-year Operating Program (Shared with GoTriangle)
- Staffing Model/Expectations Plan (Shared with GoTriangle)
- TPAC Administration/Staffing
- Program Management for Community Funding Areas
- Plan Implementation Project Prioritization Policy
- Long-Range Multi-Year Vision Plan
- Decision-Making Strategies for Large Capital Projects
- Public Outreach/Participation Strategy (Shared with GoTriangle)
- Designation of Project Sponsors



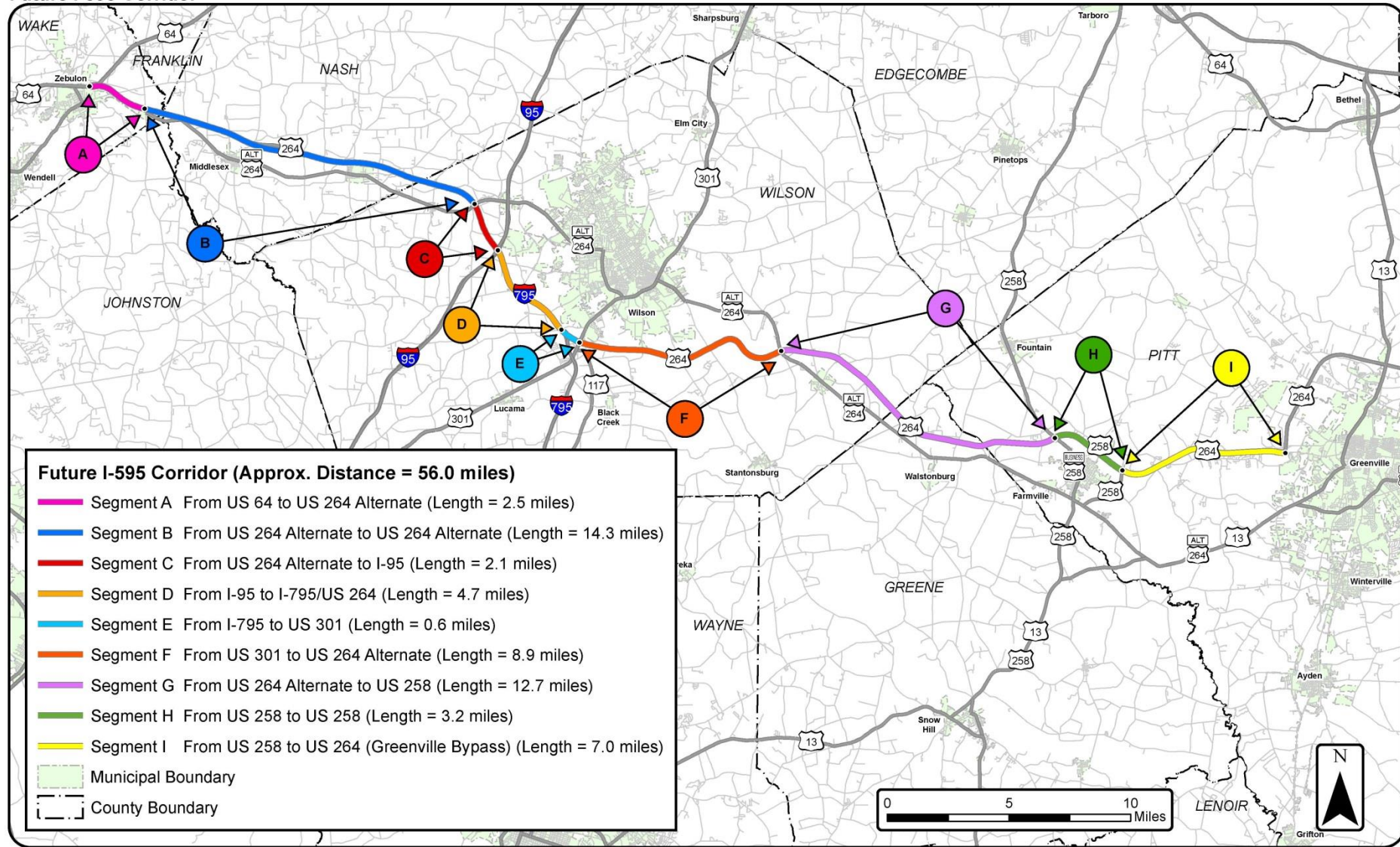
## 5.7 Wake County Transit Planning Advisory Committee Meeting Schedule, Work Product Deadlines, and Identification of Lead Agencies for TPAC's Responsibilities. CONT.

Requested Action: Recommend the Executive Board consider approval of the TPAC's recommended meeting schedule, work product deadlines, and identification of lead agencies for its responsibilities and recommend the Executive Board consider acceptance of the TPAC's responsibilities assigned to CAMPO

## 5.8 Request for Support: Interstate Designation for US 264

- US 264 from Zebulon to Greenville
- Connecting Triangle and Eastern NC to I-95
- Request for support from NCDOT

## Future I-595 Corridor



## Requested Action:

Action Consider recommending the Executive Board to adopt a resolution of support for NCDOT's request to FHWA for future interstate designation for US 264.

## 6. Budget Informational Items

6.1: Operating Budget 2016

6.2: FY 16 Member Shares

**Requested Action:**  
**Receive as information**

## 7. 1 Information Item: Project Updates

- Hot Spot Program
- Transit Systems Planning
- Southeast Area Study
- Regional Freight Plan Study
- LAPP Program
- (SRTS) John Rex Endowment Grant Award Update
- NC Non- Motorized Volume Data Program – Phase II Region Roll-out
- Triangle Tolling Study
- NC 98 Corridor Study
- 2018 Unified Planning Work Program

**Requested Action:**  
**Receive as information**



## 8. Information Item: Staff Reports

- MPO Executive Director, Chris Lukasina
- TCC Chair
- NCDOT Transportation Planning Branch
- NCDOT Division 4
- NCDOT Division 5
- NCDOT Division 6
- NCDOT Rail Division
- NC Turnpike Authority

**Requested Action:**

**Receive as information**

# Upcoming Events

Date	Event
Oct. 19, 2016	Executive Board
Nov. 3, 2016	TCC
Nov. 16, 2016	Executive Board
Nov. 30, 2016	CAMPO & DCHC Joint Meeting

# ADJOURN