

Enterprise GIS for Title VI, Environmental Justice (EJ), Compliance and Reporting

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Agenda

- Title VI – Basics
- EJ Background
- GIS Data and Analysis for Title VI and EJ Reporting
- DCHC MPO Title VI and EJ Reporting Final Outcomes

What is Title VI?

- Federal law from The Civil Rights Act of 1964 that states:
 - 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.
- Nondiscrimination in the Federal-Aid Program

What is Discrimination?

- Federal Highway Administration (FHWA):
 - That act (action or inaction), whether intentional or unintentional, through which a person in the United States solely because of **race, color, national origin, sex, age, or disability** is subjected to disparate treatment or impact, in any program or activity **receiving** Federal financial assistance from FHWA.



Why do MPOs have to follow Title VI?

- 1987 Civil Rights Restoration Act
 - Title VI includes all programs and activities of Federal-aid recipients and contractors whether federally funded or not
- Any subrecipient of NCDOT must abide by Title VI
- Local, state- or federally-assisted activities of federal-aid MPOs



Other Nondiscrimination Acts/Orders

- ***Related*** Nondiscrimination Authorities include:
 - The Civil Rights Act of 1964 (race)
 - 1973 Federal-aid Highway Act (sex)
 - Age Discrimination Act of 1975 (age)
 - Section 504 of the 1973 Rehabilitation Act and Americans with Disabilities Act (ADA) of 1990 (disability)
 - Uniform Act of 1970 (persons displaced or property acquired)
 - Executive Order 12898 on Environmental Justice (EJ)
 - US DOT Order 5610.2a and FHWA Order 6640.23A
 - Executive Order 13166 on Limited English Proficiency (LEP)
 - US DOT LEP Guidance
- Title VI Implementing Regulations:
 - 49 C.F.R. 21 – US Department of Transportation (DOT) Title VI Regulation
 - 23 C.F.R. 200 – FHWA Title VI Regulation

Title VI Nondiscrimination Program

- Race
- Color
- National Origin
- LEP
- Low Income
- Color
- Creed/Religion
- Sex
- Age

Title VI - Responsibilities

- FHWA
 - Provides stewardship and oversight
 - Approves Implementation Plans and conducts process reviews
 - Provide policy and technical assistance training
- State DOTs
 - Perform required actions under 23 C.F.R. Part 200
 - Submit annual Plan, assurances, and Report to FHWA Division
 - Conducts internal and external reviews
 - Process and investigate complaints against subrecipients
- Local Agency Recipients
 - Conform to State DOT Implementation Plan, including: Collection and analysis of demographic data, complaint procedures, training requirements and LEP, submit annual assurances to State DOT and use contract inserts, submit reports on demographic data requested from State DOT

Title VI Program Plan Sections

Sections

1. Policy Statement and Notice of Nondiscrimination
2. Standard USDOT Title VI Assurances
3. Organization & Staffing
4. Environmental Justice
5. Data Collection/Analysis/Reporting
6. Limited English Proficiency (LEP)
7. Dissemination of Information
8. External Discrimination Complaints
9. Review of Organization Directives
10. Title VI Training
11. Compliance & Enforcement Training Procedures

Section 6: Safe Harbor Threshold

- 5% or 1,000 persons, whichever is less
 - Margin of Error
- “Limited ability” means ***less than very well*** (U.S. Census)
- Free written translation of vital documents for each eligible LEP population
- **5% and < 50** LEP persons (written notice of **free** oral interpretation services)

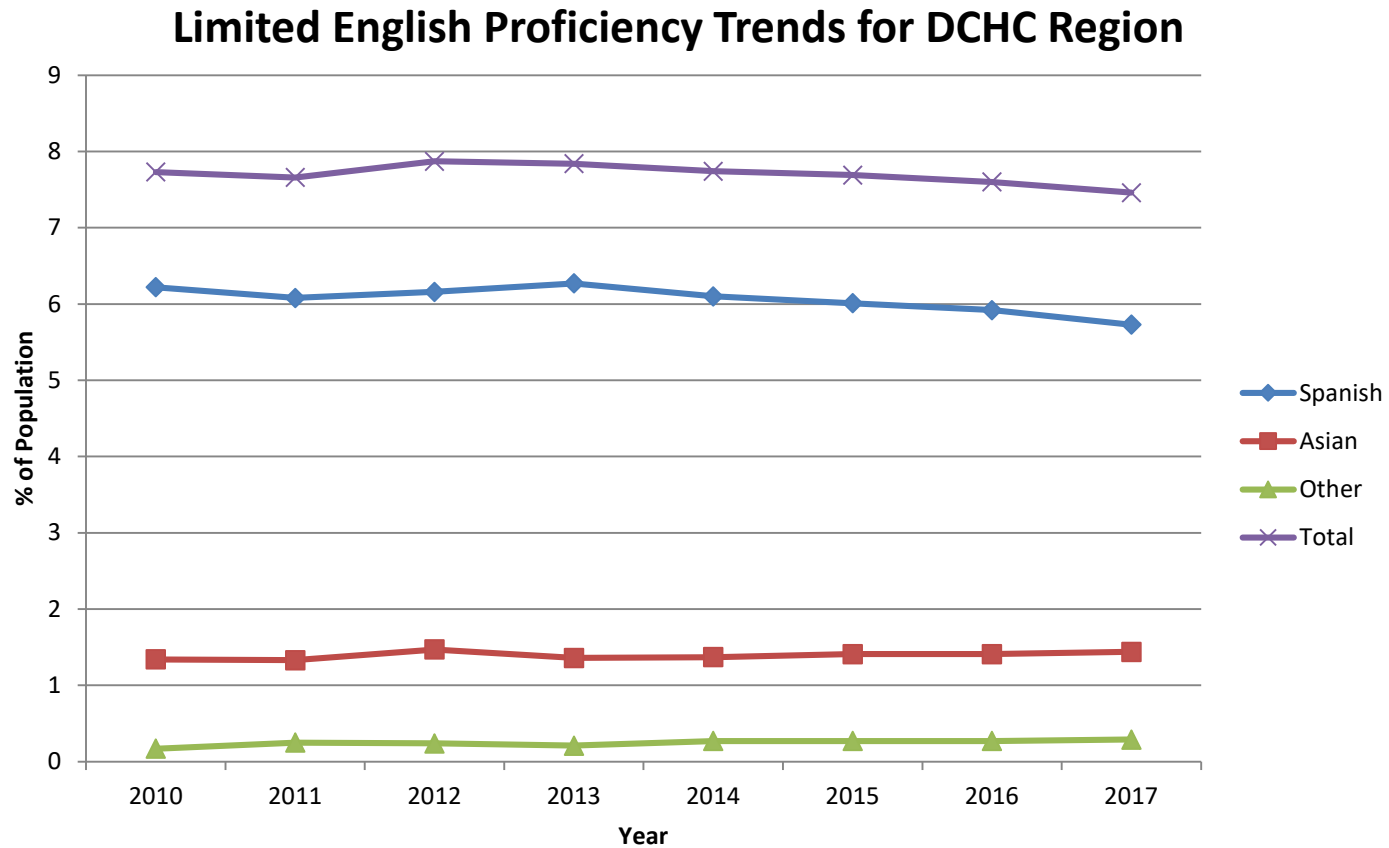
GIS Analysis, Charting and Mapping for Title VI and EJ

GIS Data and Analysis for Title VI

GIS Data for Title VI:

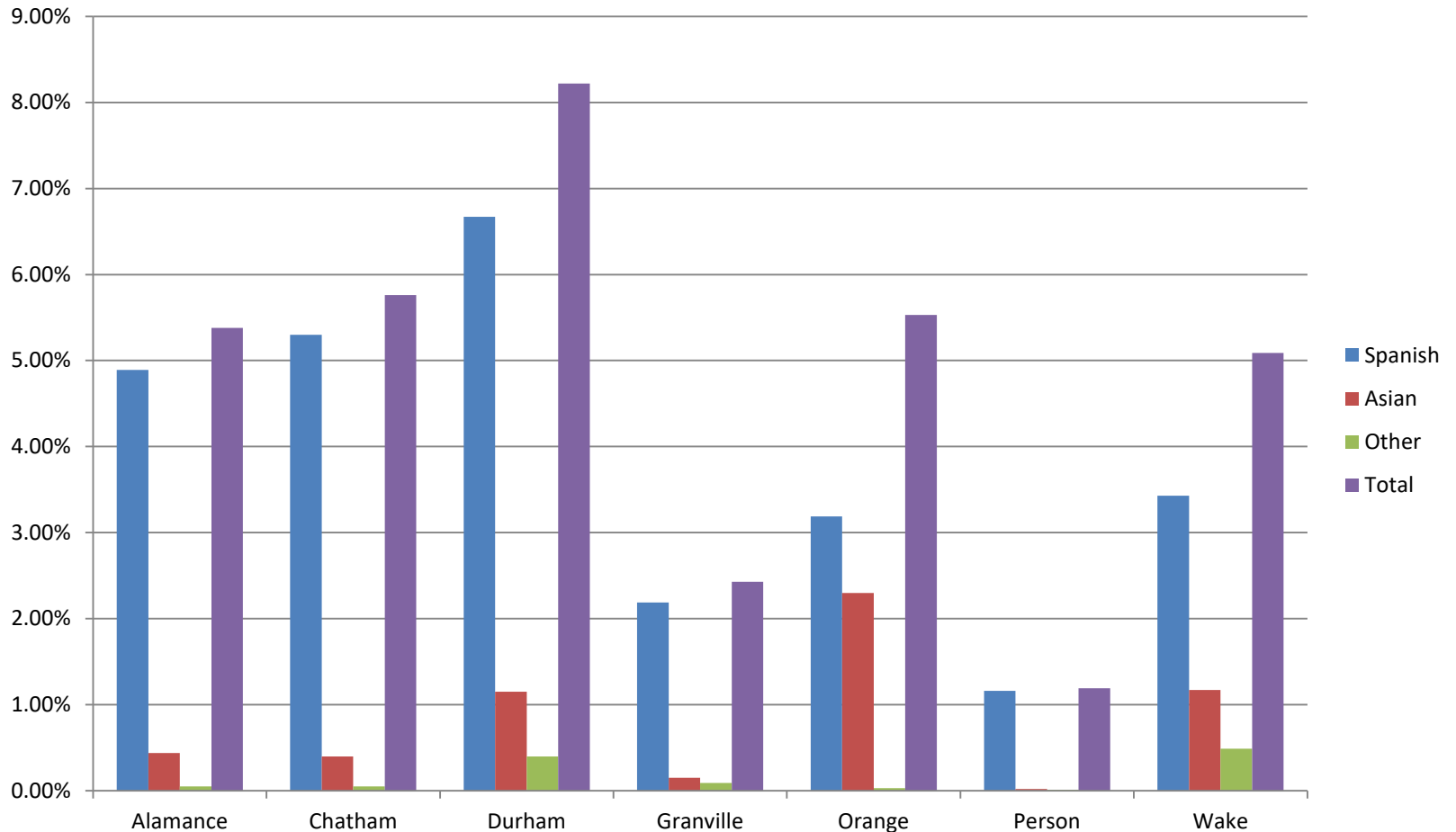
- Population
 - Age and Sex
 - Race and Ethnicity
- Household Income
- Poverty
- Disability
- Limited English Proficiency

LEP Trends for DCHC MPO



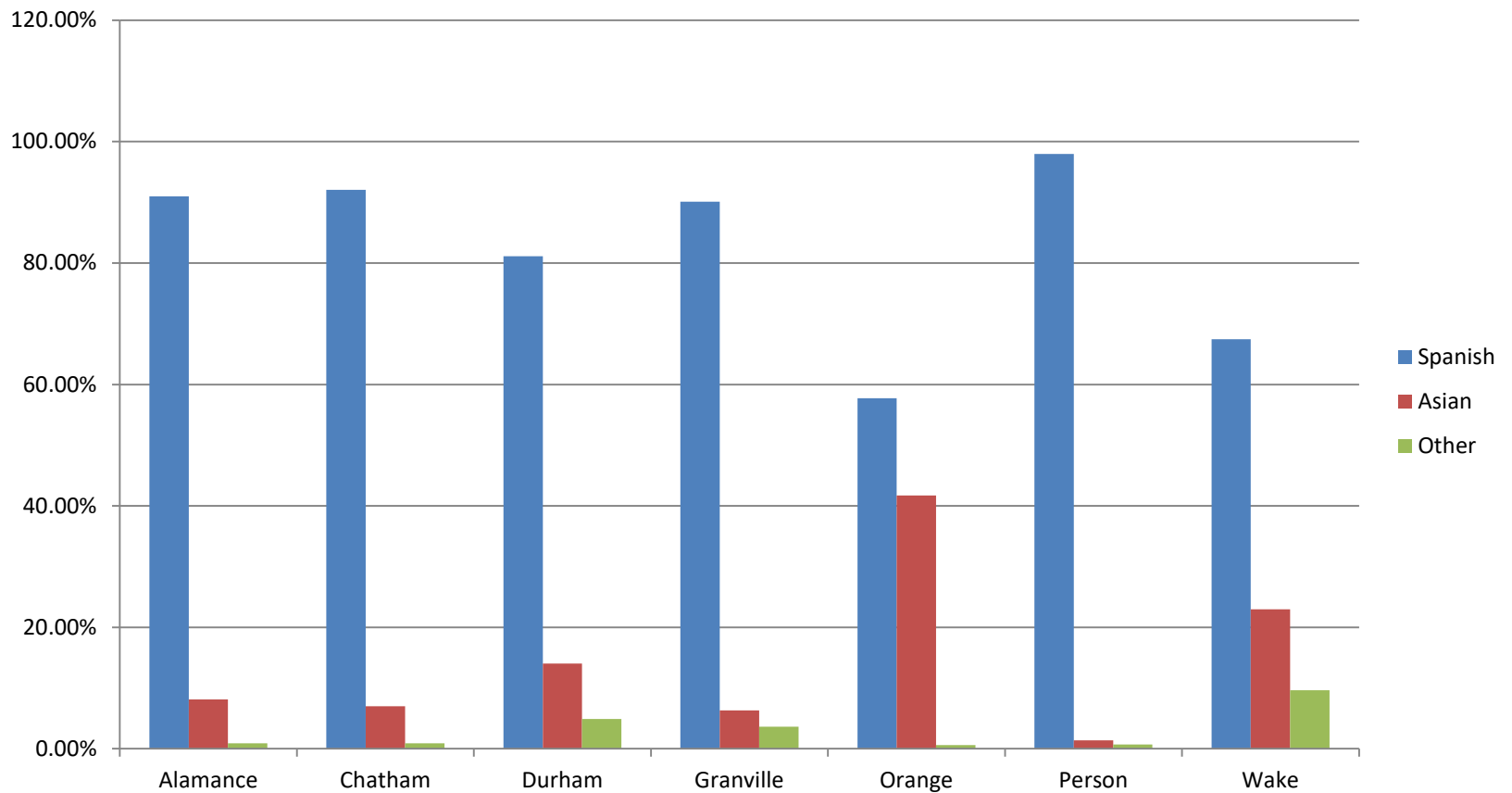
LEP for DCHC MPO

Limited English Proficiency, as % of Total Population



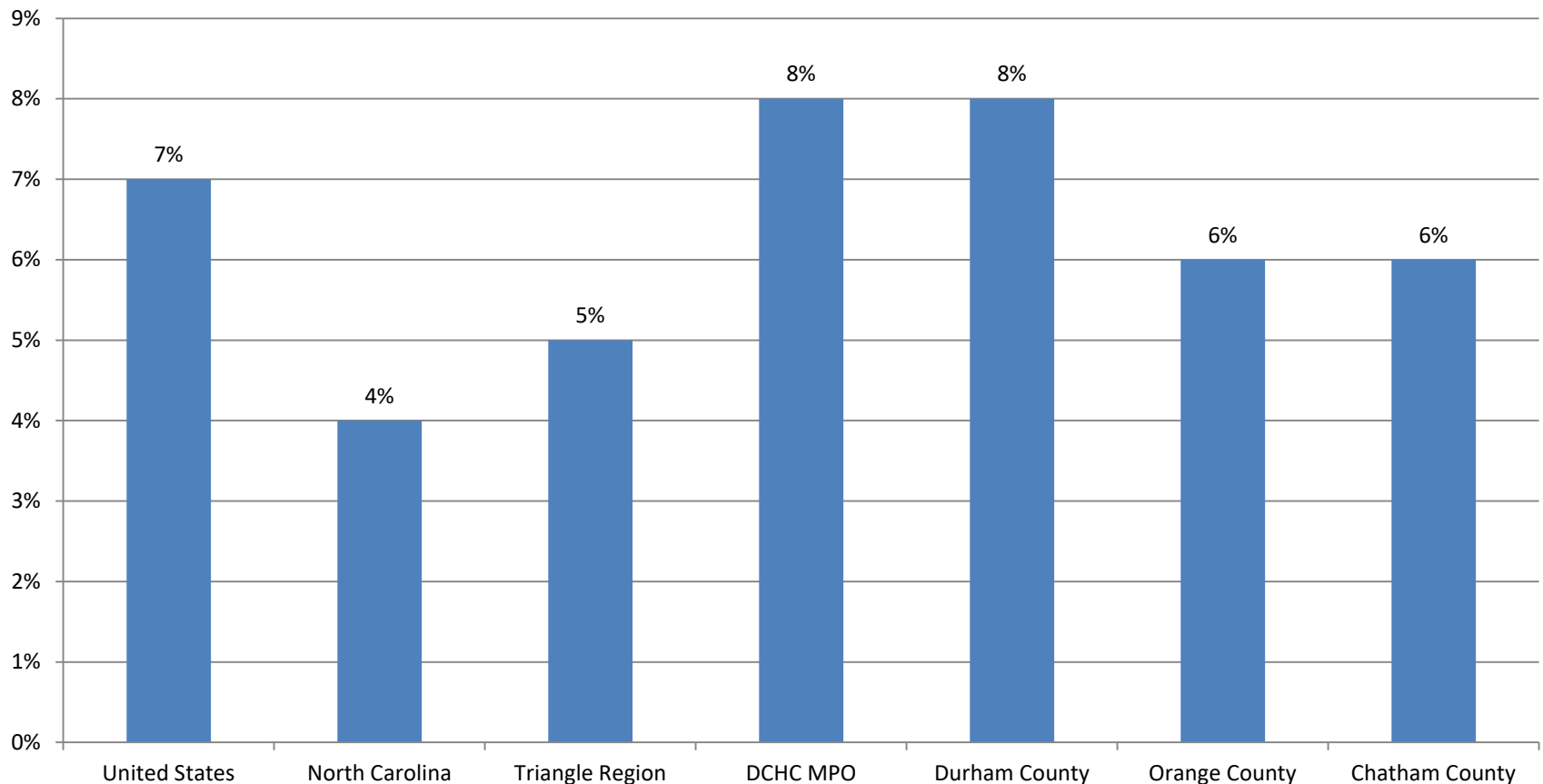
LEP for DCHC MPO

Limited English Proficiency, as % of LEP Population

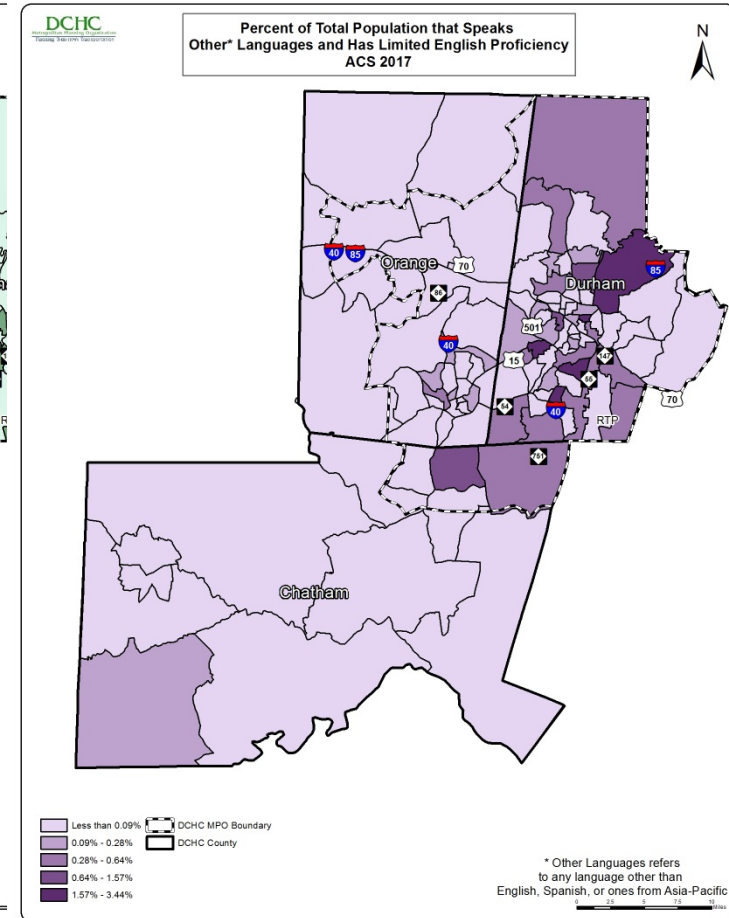
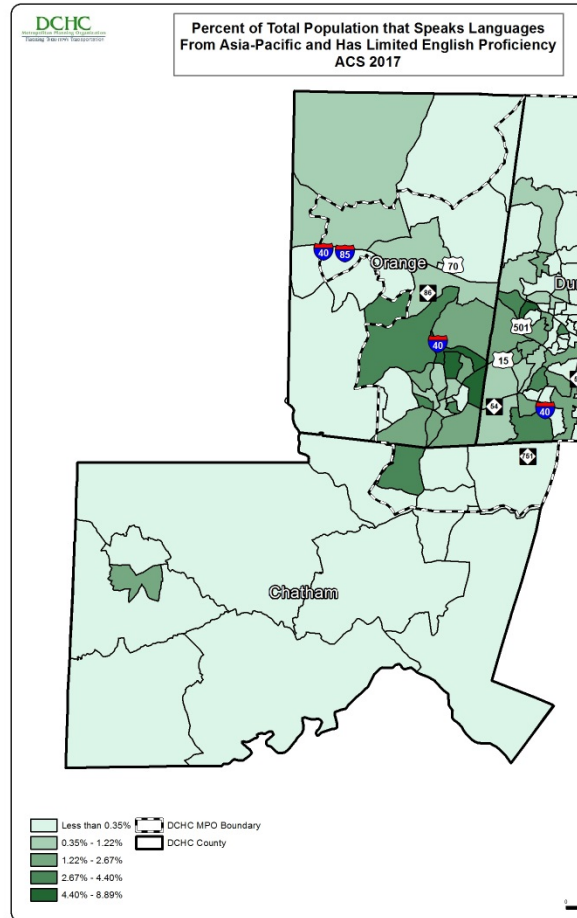
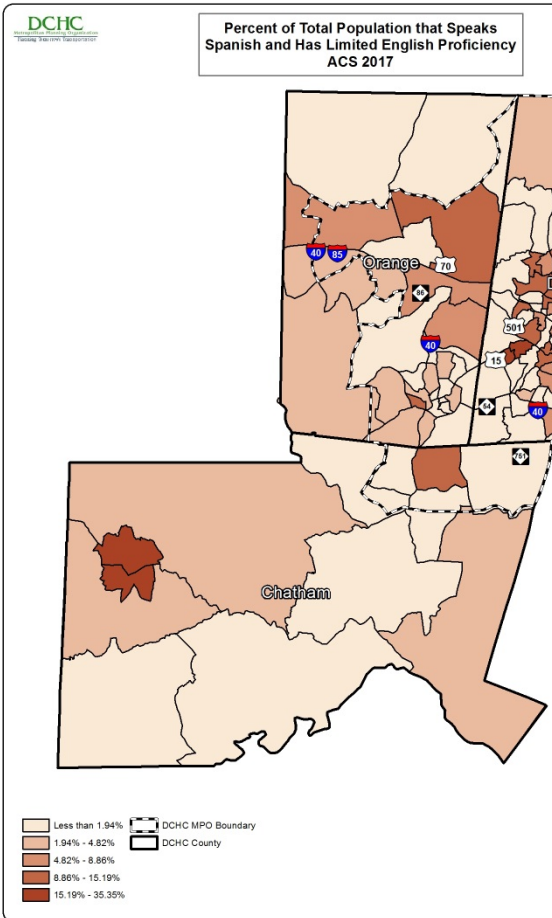


LEP for DCHC MPO

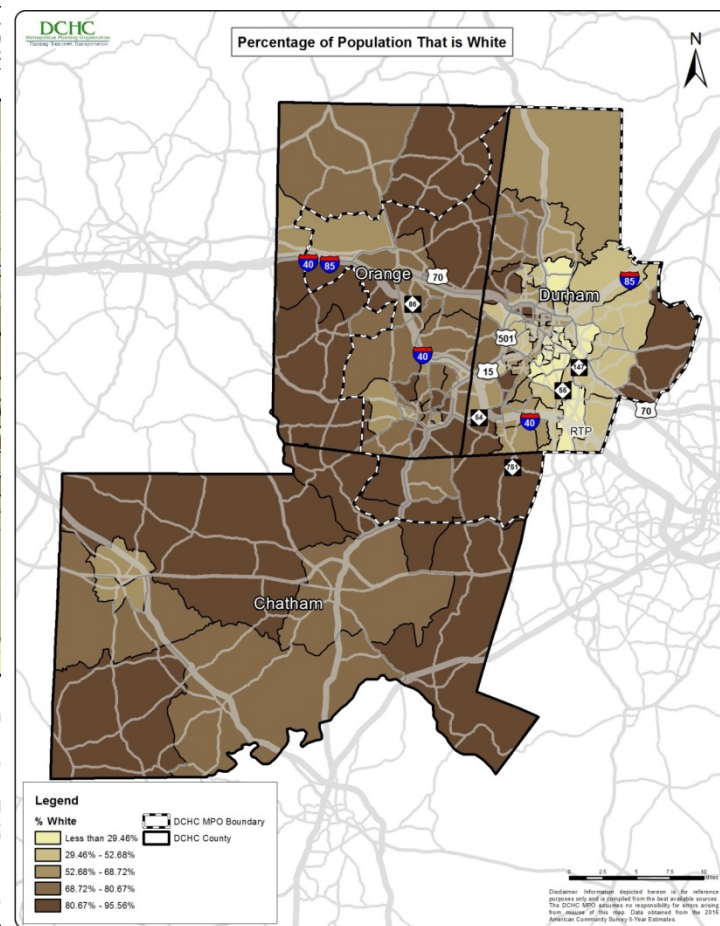
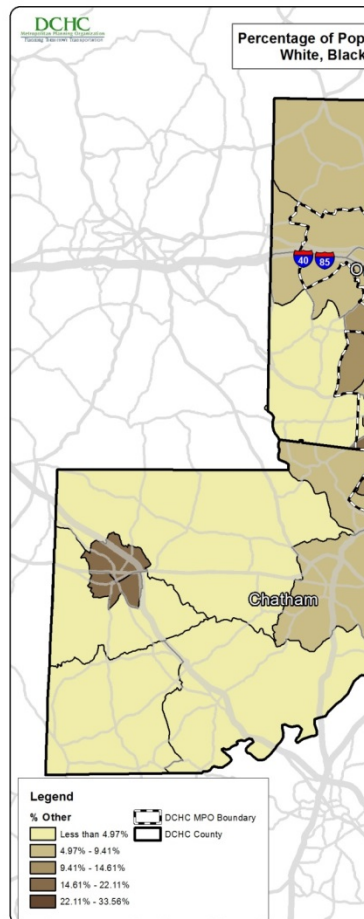
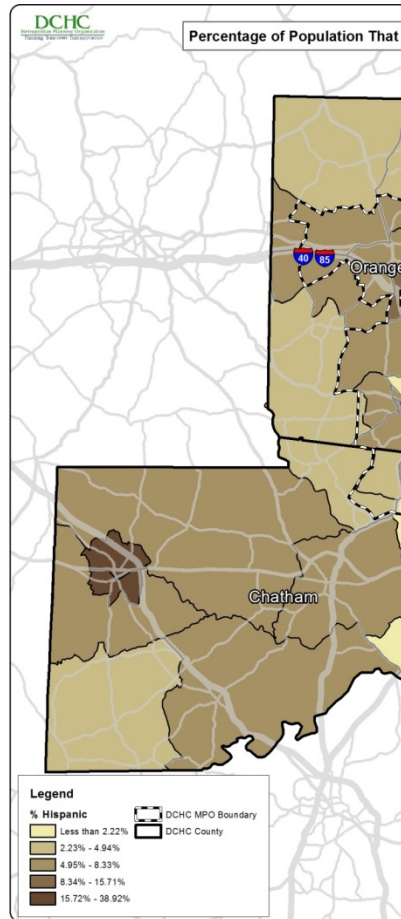
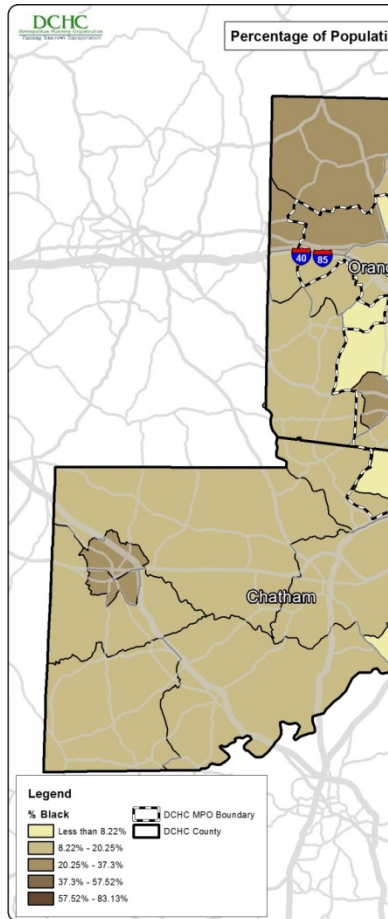
Share of LEP Speakers



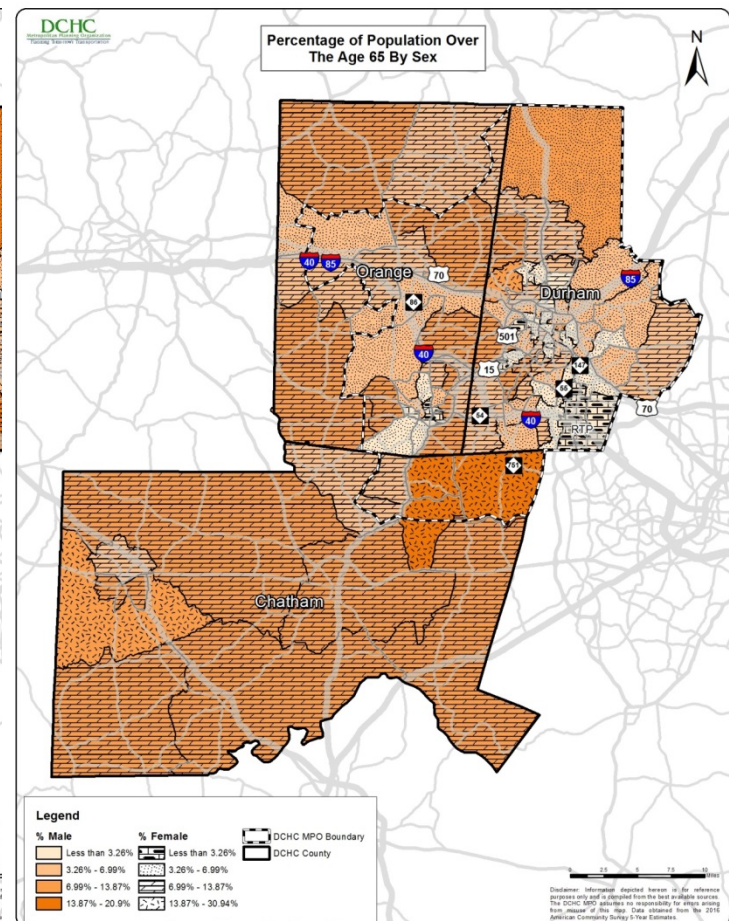
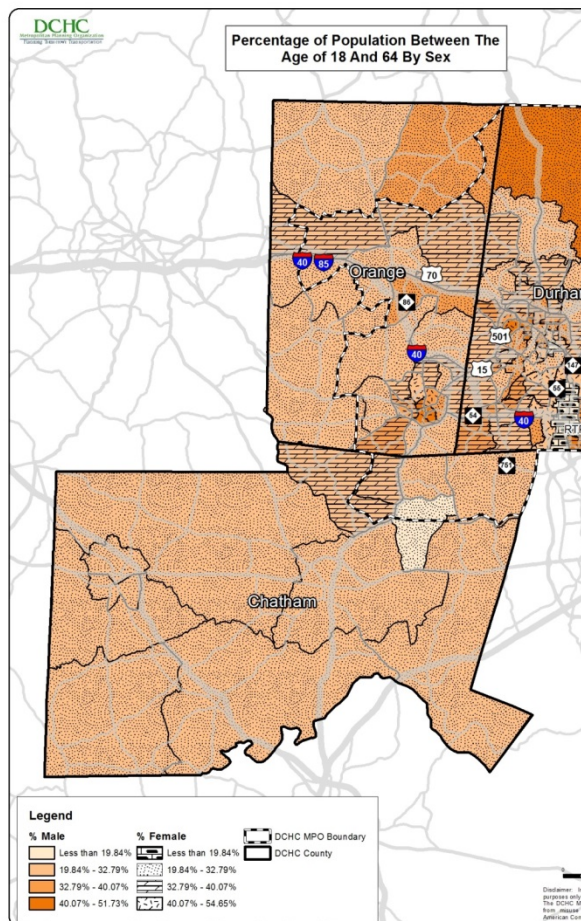
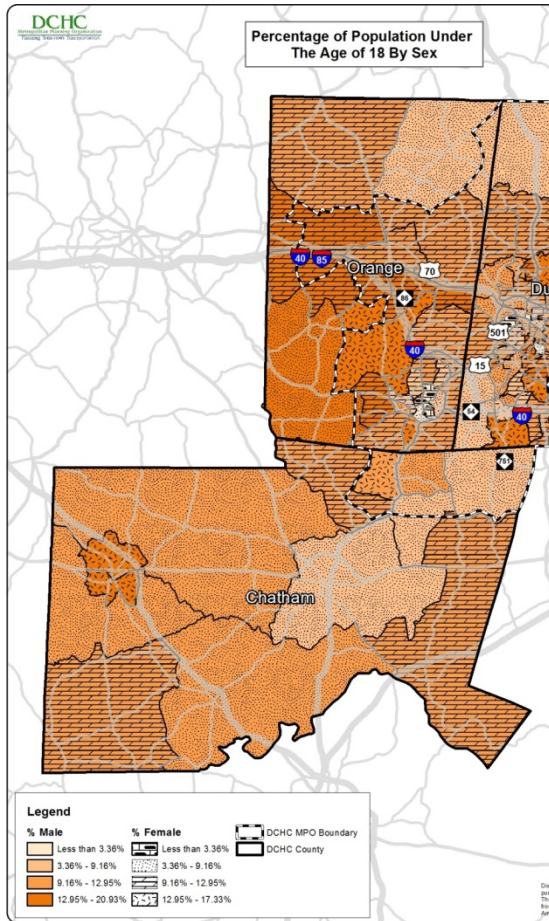
LEP Distribution in DCHC MPO Region



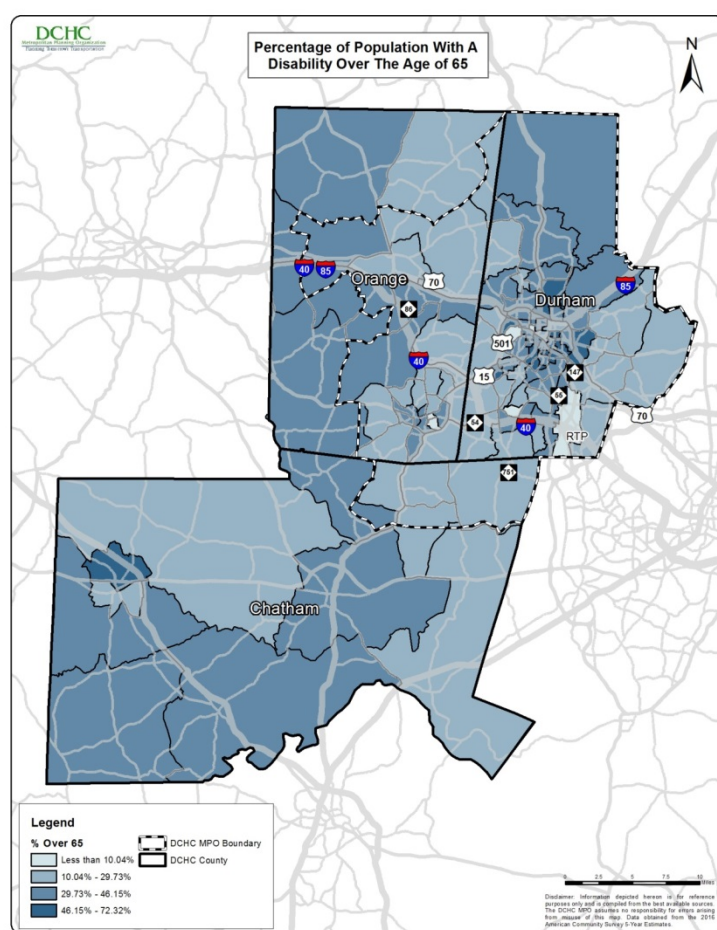
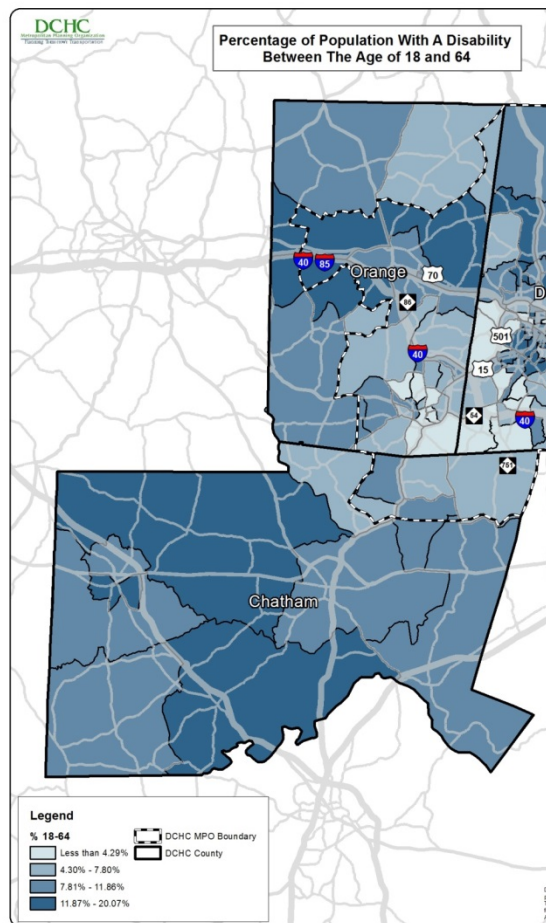
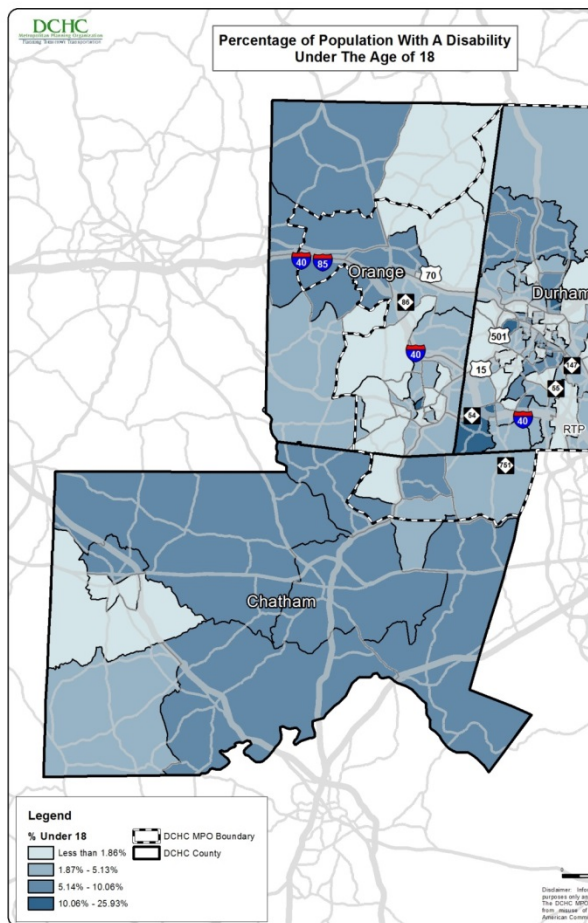
Race and Ethnicity



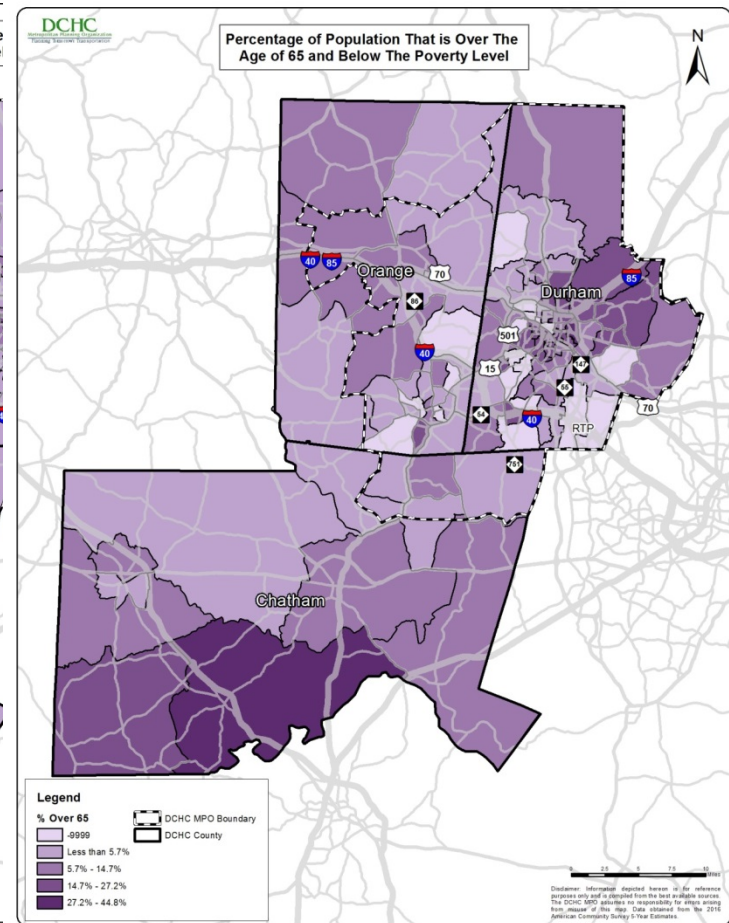
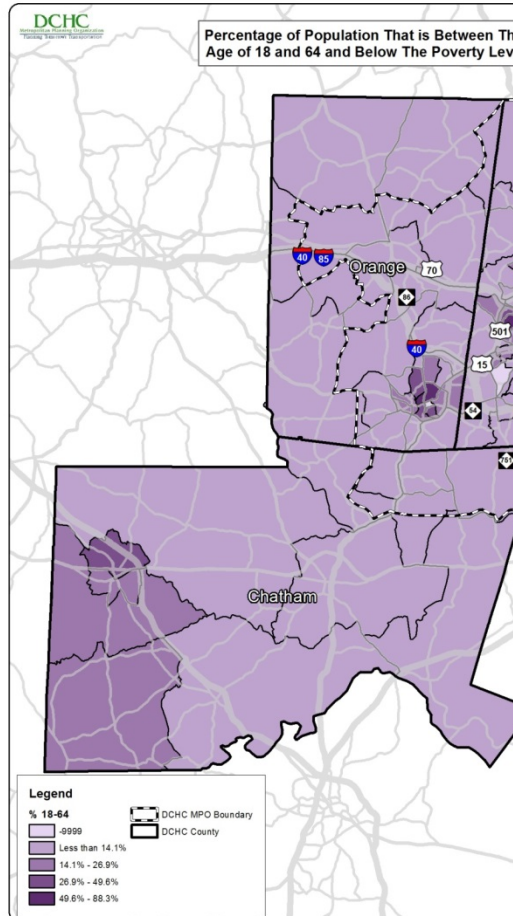
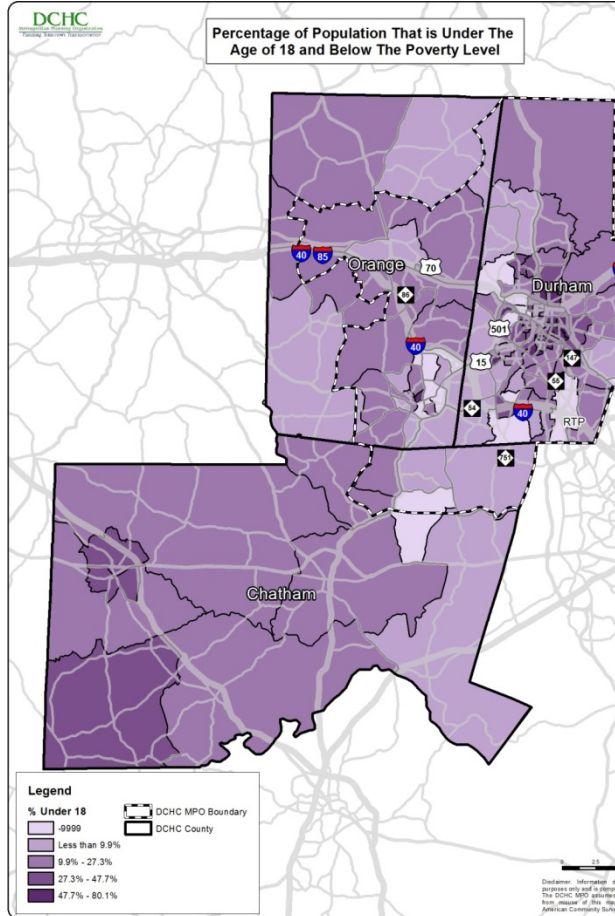
Age and Sex



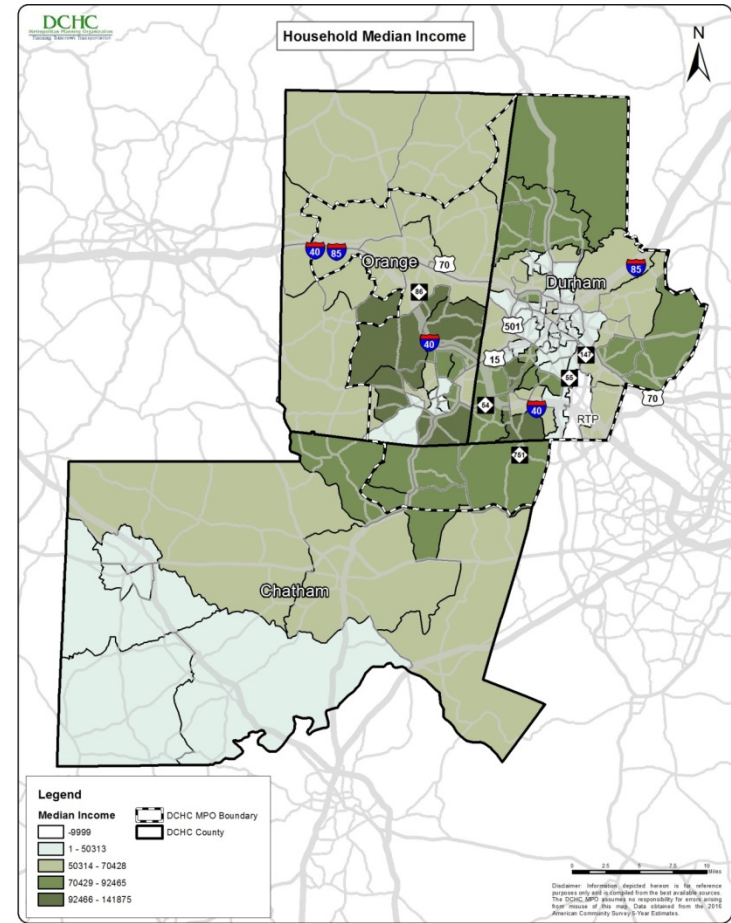
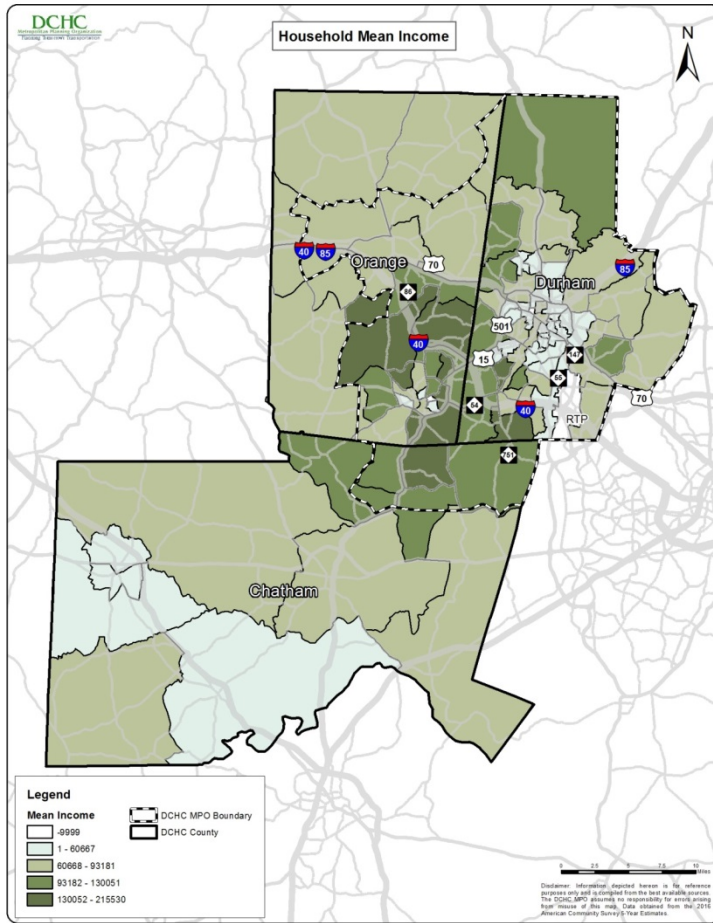
Disability



Poverty



Household Income





Environmental Justice (EJ)

- Every four years, review of MPO planning processes
- **EJ Plan** includes:
 - Policy statement
 - Goals and objectives
 - Demographic profile
 - Overlays of demographic information on defined past, future, and planned projects
 - Measures for identifying burdens and benefits of the MPO's transportation system
 - An analysis of identified burdens and benefits
 - Public involvement strategies to engage minority and low-income populations
- Upcoming review May 2019

Core Principles of Environmental Justice

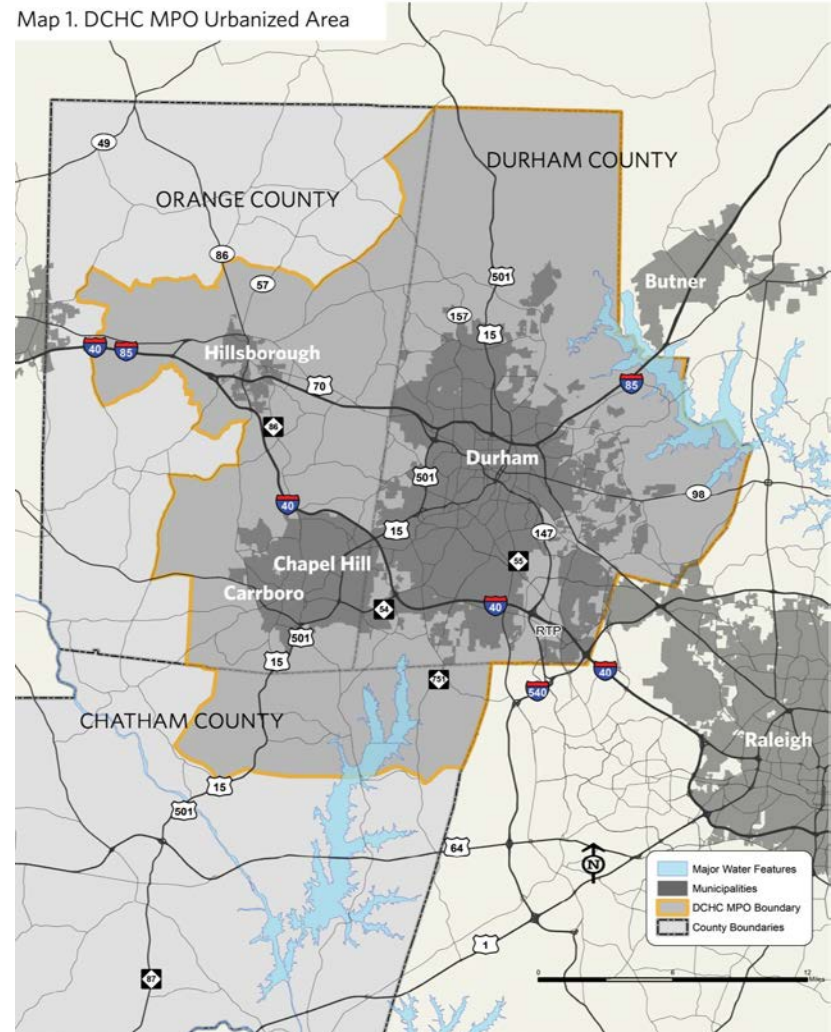
The DCHC MPO's policy is based on the **three core principles of EJ** set forth by the Federal Highway Administration and Federal Transit Administration:

Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.

Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Map 1. DCHC MPO Urbanized Area



GIS Data and Analysis for Environmental Justice Reporting

GIS Data for EJ:

- Demographic information at block group level
- Population
- Minority Population
- Household Income
- Block groups
- Limited English Proficiency
- No Access to Vehicle: Smart Location Database, EPA

GIS Data and Analysis in Title VI and Environmental Justice Reporting

Project Information with associated financial data:

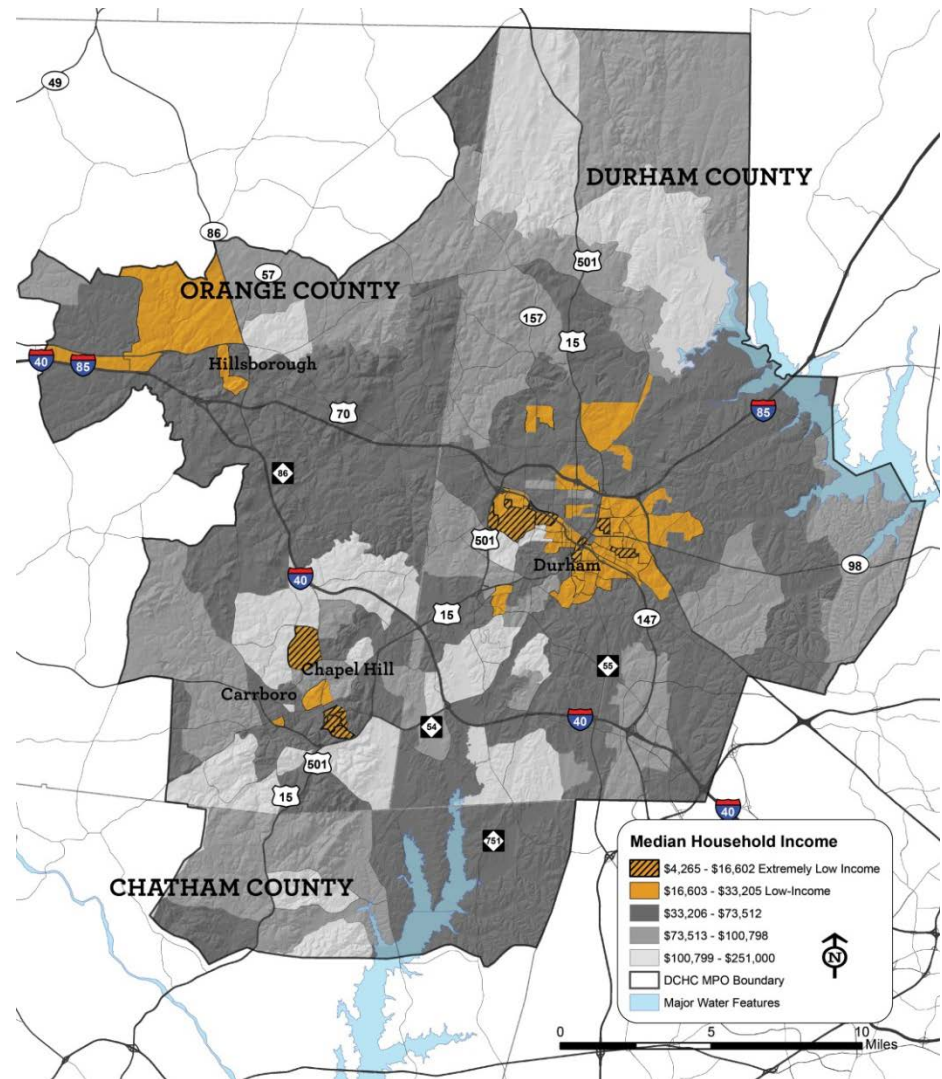
- Metropolitan Transportation Plan Projects
 - Highway
 - Intersection
 - Bicycle and Pedestrian
 - Others (Bridges etc.)
- Transportation Improvement Program Projects
 - Highway
 - Intersection
 - Bike and Pedestrian
 - Others (Bridges etc.)

GIS Analysis

- Standardize/QA/QC of datasets based on the GIS standards established at DCHC MPO
- Extract data sets based on DCH MPO boundary using Clip tool and selection tools
- Map population in DCHC MPO boundary and derive population density per acre in block group level to spotlight denser population areas (provide insights for population needing transportation services)
- Compute minority population as sum of Black, American Indian and Pacific Islander populations in the MPO region and deriving minority population percentage by dividing total population in DCHC MPO area
- Compute minority population over 65 is derived as sum of age over 65 to 80 and percentage is found by dividing DCHC MPO total minority population
- Determine Percent of Household poverty level is determined by number of household income in the past 12 months below poverty level divided with total MPO household.
- Compute Limited English Proficiency as the sum of Spanish, Other Indo-European, Asian and Pacific, and Other language speakers with no one 14 and over speaks English only or speaks English "Very well".
- Populate/Update metadata for the critical layers and migrate into enterprise GIS database
- * No vehicle access information is readily available with the values for zero auto owners within block group in EPA smart location database

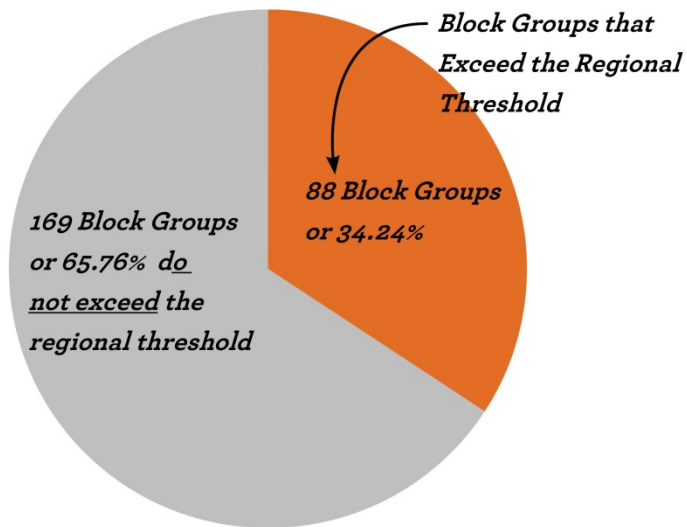
Locating EJ “Communities of Concern”

1. Interrelate the datasets
2. Merge the EJ indicators
3. Dissolve & aggregate
4. Join!
5. Merge to create new composite layer
6. Python scripting to identify overlapping areas
7. New GIS layer is generated which combines the selected block group that exceeds the threshold value

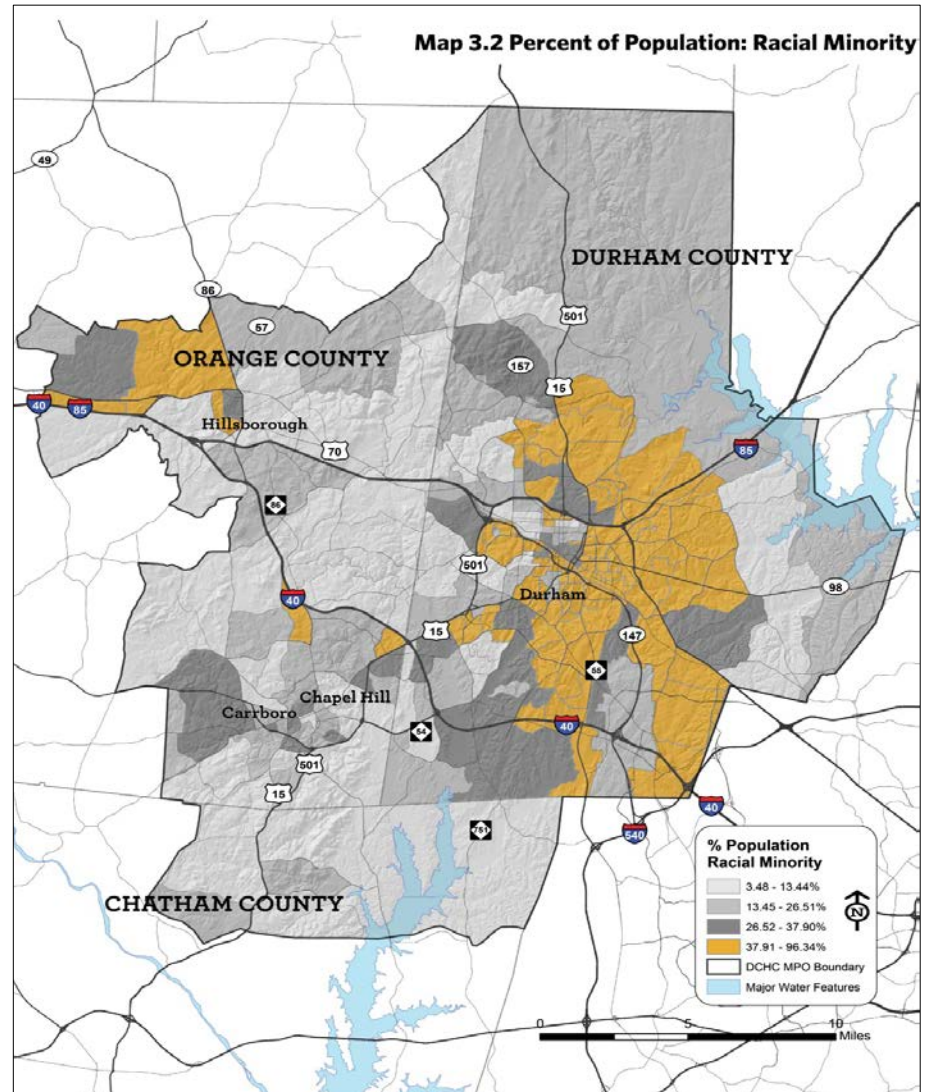


EJ Demographic Profiles

Chart 1: Block Groups that Exceed the Regional Threshold for Racial Minority Populations



There are 257 total Block Groups in the DCHC MPO area.

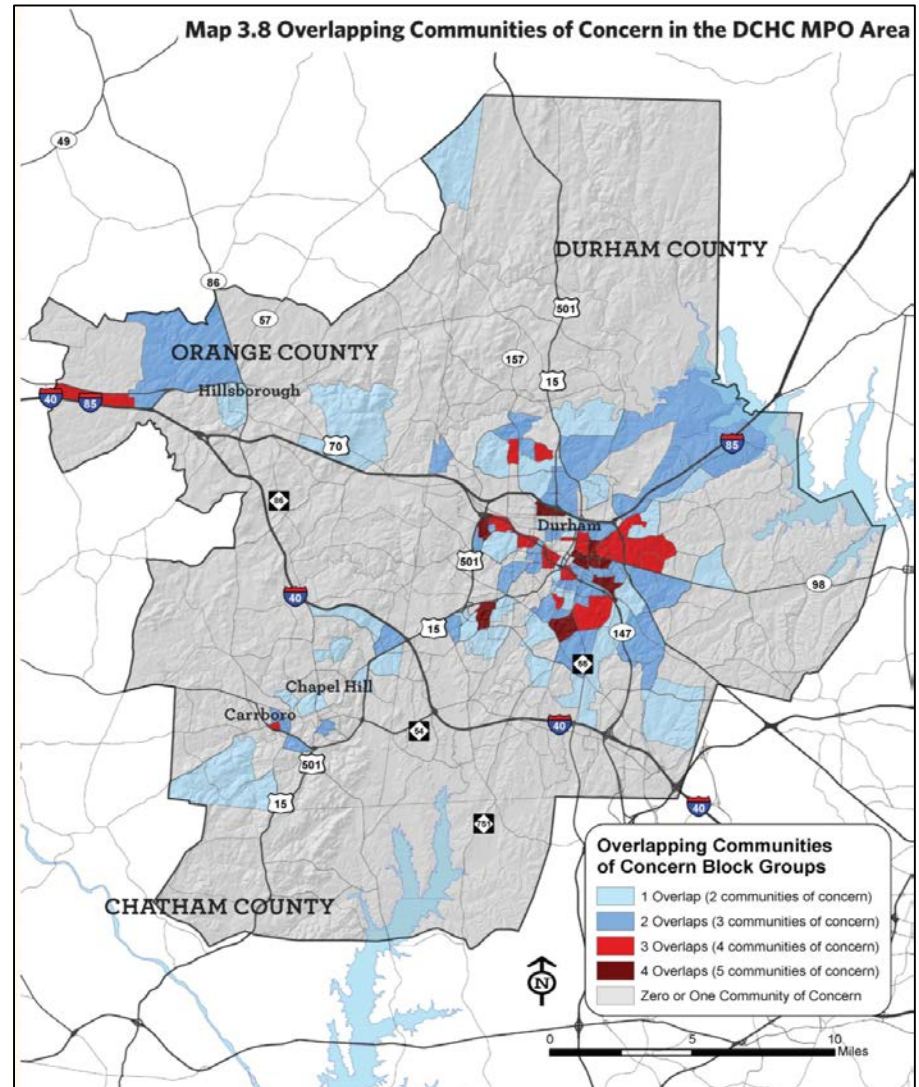


Overlapping EJ Block Groups

Many block groups had more than one EJ community of concern living there.

The GIS data layer was revised to display the number of EJ communities of concern that live within the same block group.

The greatest number of overlaps in a single block group was four, which means there were five different EJ communities of concern living there.



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>	361		
Averaged Percent of Total Block Groups (sum of Column D ÷ 6)			23%

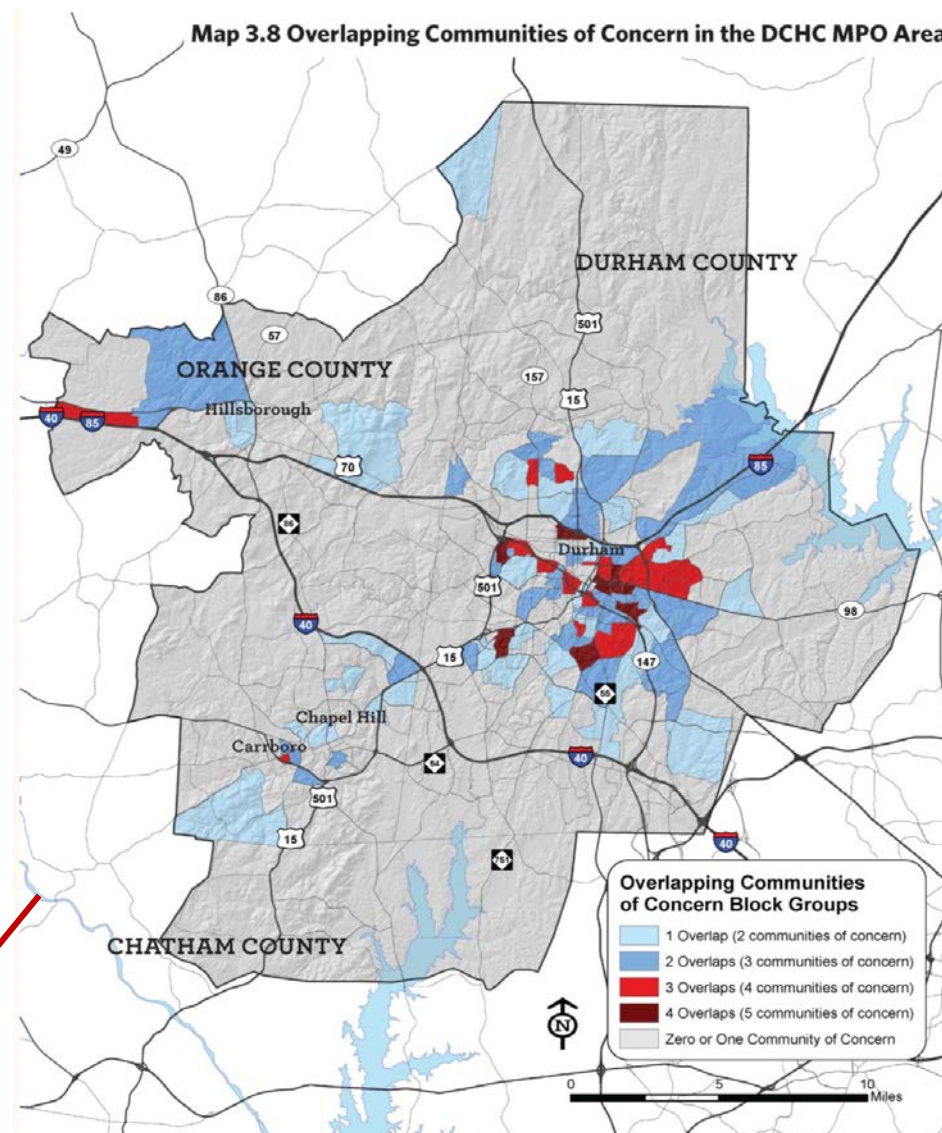


Table 3.3: Summary of Overlapping Communities of Concern Block Groups

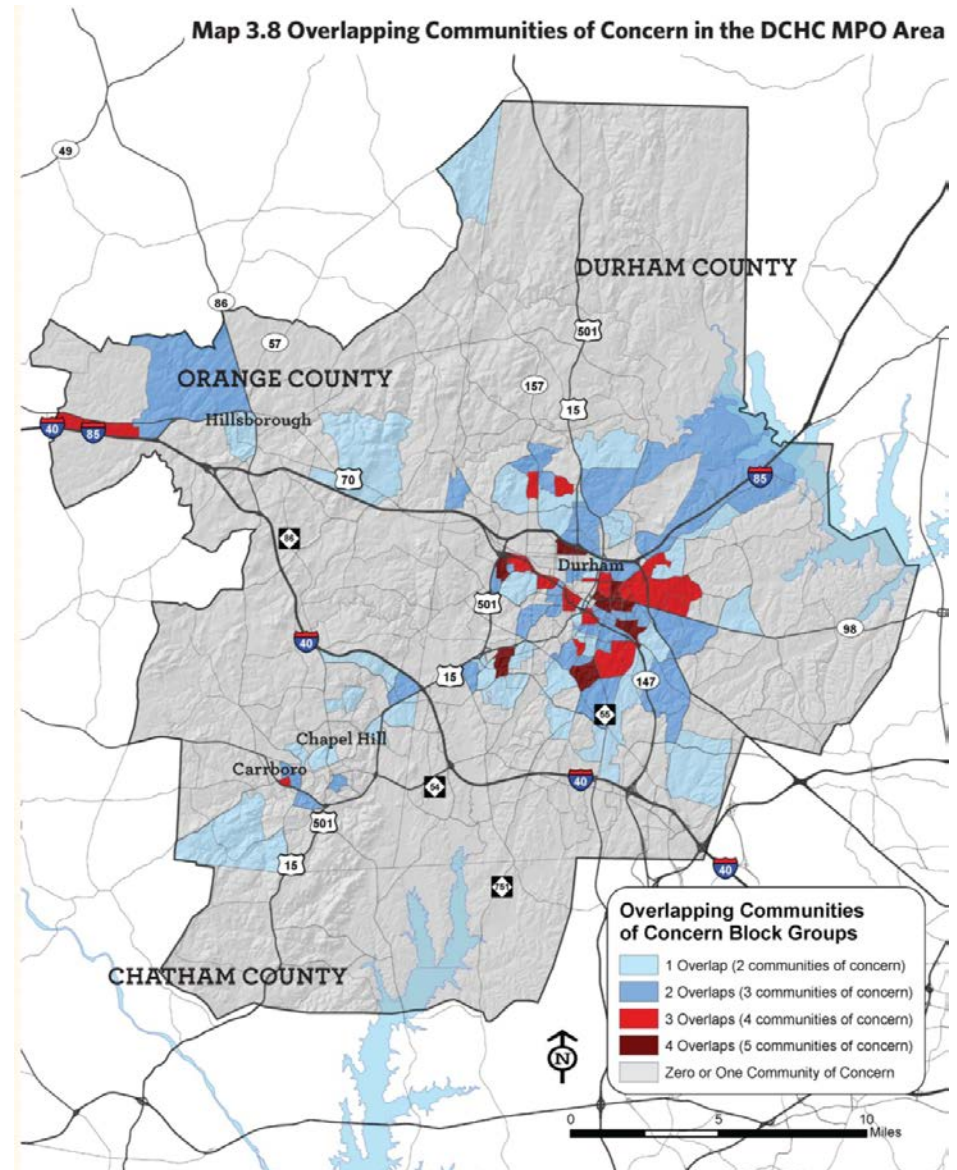
Column A	Column B
# of Overlapping Communities of Concern*	# of Block Groups that contain the # of overlaps in Column A
1 Overlap	35
2 Overlaps	34
3 Overlaps	17
4 Overlaps	9
<i>TOTAL</i>	95

*1 Overlap = 2 communities of concern

2 Overlaps = 3 communities of concern

3 Overlaps = 4 communities of concern

4 Overlaps = 5 communities of concern



Locating MTP & TIP Projects Relative to EJ Communities of Concern

- The MTP and TIP projects were mapped.
- A buffer was applied to mapped highway projects to account for future proposed project area.
- The estimated total project costs and the FY2012-2018 total project costs were distributed by project segment for linear features.
- The segment was split to locate beginning and ending road intersection points.
- The “select by location” tool was used to determine the projects located within overlapping EJ communities of concern.



Title VI and EJ Conclusions

- Title VI EJ Report is a reference for local, regional, state organizations and is a best state-wide best practice example
- MPO received FHWA approval for the report by meeting all FHWA TMA Certification Requirements for EJ
- GIS processing can be speeded up further through collaborative editing using versioning and automation using more scripting
- GIS feature representations can be improved to better delineate and represent projects
- Methodology and GIS processing can be modified to incorporate spatial correlation effects and better cost estimation
- Data can be summarized based on population and better resolution (detailed) and more up-to-date data can be used for



Title VI and EJ Conclusions

- Provide data & maps to MPO members and partners.
- Develop strategic outreach efforts for historically underrepresented populations and update Public Involvement Policy.
- Title VI/EJ Report methodology adjustments as MPO grows and populations transition. These adjustments to the methodology may include:
 - Summary/report on the block group population.
 - Assess projects based on road/project lengths with possible spatial correlation effects on adjacent neighborhoods.
 - Further evaluate potential benefits and burdens related to TIP and MTP project TYPE. Not all project types are beneficial or burdensome to every neighborhood/community.
 - More specific, unique, or customized delineation/geographical representation of project location.
 - Additional indicators for EJ populations



Thank you !!!

- Thank you !!!
- Questions???