Step 1.	Step 2.	Step 3.	Step 4.	Step 5.	Step 6.
Initial Mapping	Key Informant Interview	Focus Groups	Analysis Of Outreach	Map Revisions	Process Integration

Identifying Transportation Disadvantaged Populations

Practitioner Guide

Practitioner Guide Outline: Identifying Transportation Disadvantaged Populations
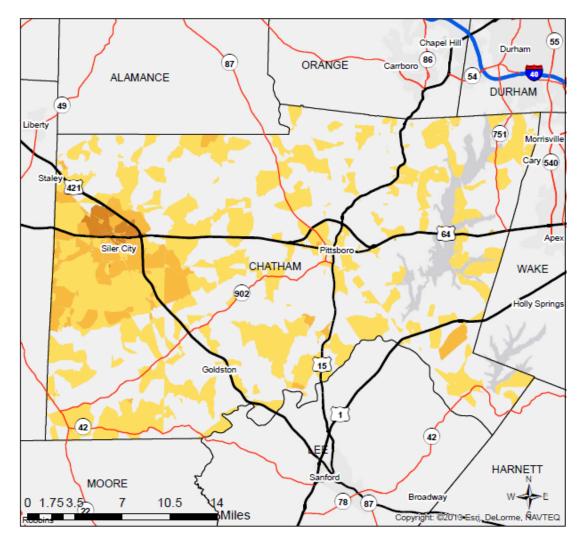
Step 1: Initial Mapping

- **Locate census data** based on transportation disadvantaged indicators that emerged during the literature review:
    - Low-income households
    - Households with mobility impaired individuals
    - Households with youth of non-driving age
    - Households with seniors
    - Ethnic minority households
    - Low English Proficiency (LEP) households

- **Determine thresholds of analysis** for each indicator.
    - These thresholds will be used as parameters to generate **two map types**.
        - One map type is a **compilation map**, which displays all transportation disadvantaged population (TDP) indicators on one map. This map is essential for practitioners, because it displays all TDP indicators to the extent of their thresholds.
        - The second map type (optional) displays one TDP indicator. These **individual indicator maps** are optional for practitioners because they only show one indicator or "one piece of the puzzle."

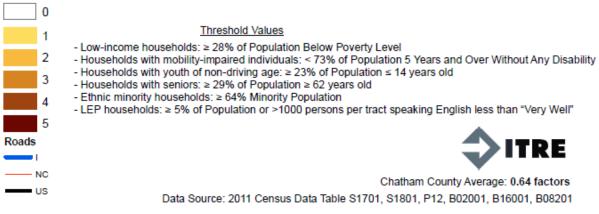| Map type	Thresholds (Mapping Parameters)
Compilation	**> 2 standard deviations of the county average for each indicator** • Low-income households: > 28% of Population Below Poverty Level • Households with mobility impaired individuals < 73% of Population 5 Years and Over Without Any Disability • Households with youth of non-driving age: > 23% of the population < 14 years old • Ethnic minority households > 64% Minority Population • Low English Proficiency (LEP) households > 8% of Population Speaking English less than "Very Well"
Individual Indicator	**Threshold values are stratified as follows:** • Less than county average • County average up to one standard deviation • One standard deviation up to two standard deviations of county average • Greater than or equal to two standard deviations of county average For instance, Percentage of Population Below Poverty Level: • NC County Average = 18% (SD 5%) • Maps of <18%, 18%-22.99%, 23%-27.99%, and ≥ 28%

- **Generate initial compilation map** that displays the degree to which all transportation disadvantaged indicators are present within a county (see page 2)
    - A practitioner will require familiarity with ArcGIS to map indicators and their corresponding thresholds. (Instructions for the ArcGIS practitioner will be included in an appendix of the Practitioner Guide).
    - As indicators and their corresponding thresholds are mapped in aggregate, the composite risk of transportation disadvantage in a county will become present.
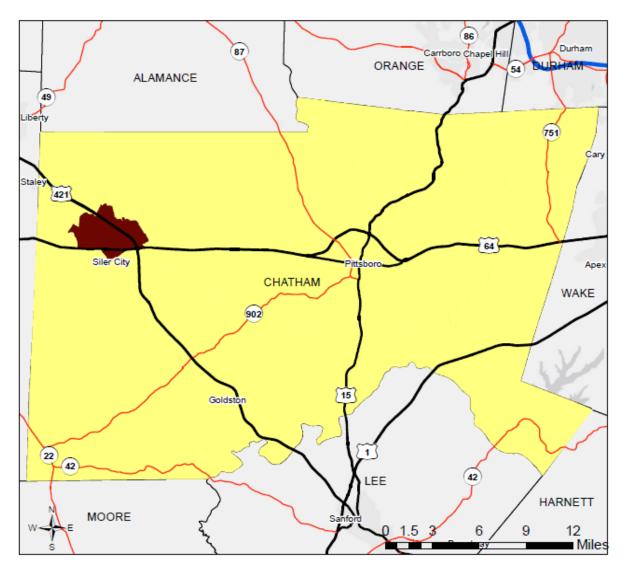   - The map will display the number of indicators that exceed their corresponding thresholds.

There are a total of six indicator thresholds that can be mapped (see the map below for a compilation map of Chatham County).

Compilation of Disadvantaged Population Factors - Chatham County

Number of Factors Exceeding Threshold (6 Total)

- 0
- 1
- 2
- 3
- 4
- 5

Roads
- I
- NC
- US

Threshold Values

- Low-income households: ≥ 28% of Population Below Poverty Level
- Households with mobility-impaired individuals: < 73% of Population 5 Years and Over Without Any Disability
- Households with youth of non-driving age: ≥ 23% of Population ≤ 14 years old
- Households with seniors: ≥ 29% of Population ≥ 62 years old
- Ethnic minority households: ≥ 64% Minority Population
- LEP households: ≥ 5% of Population or >1000 persons per tract speaking English less than "Very Well"

ITRE

Chatham County Average: 0.64 factors

Data Source: 2011 Census Data Table S1701, S1801, P12, B02001, B16001, B08201

- **(Optional Step)** **Generate Individual Indicator Maps** based on their corresponding thresholds of analysis. Indicators and their corresponding threshold values can be mapped to geographically display the degree to which an indicator is present within a county (see map below).

Low Income Distribution - Chatham County

Percentage Below the Poverty Line

- < 18%
- 18% - 22.99%
- 23% - 27.99%
- ≥ 28%

Roads
- NC
- US
- I

Data Source: 2011 Census Data Table S1701

Step 2: Key Informant Interviews

- **Identify key informants** who have differing perspectives and expertise related to transportation disadvantage. Informants include but are not limited to:

  - *Government Officials:*
    Director of Planning
    Director of Transportation Planning
    Director of Transportation Operations
    Director of Public Health
    Director of Emergency Management
    Director of Social Services
    Director of Senior Services
    City Manager
    County Manager

  - *Elected Officials:*
    City Council Mayor
    Mayor
    County Commissioner

  - *Community Leaders Involved With:*
    Regional COGs
    CDCs
    Non-profits serving disadvantaged members of the community
    Education
    Community Health Clinics
    Faith-based Groups

- **Determine if key informant is a good source** for determining transportation disadvantage by asking him/her to answer initial questions about transportation disadvantage subject matter. If the informant is knowledgeable, continue to the bullet points below. If not, seek out another key informant.
  - Ask questions about **transportation supply**, **demand**, the possible existence **transportation deserts**, and **demographic factors** that attribute to transportation disadvantage within the county.
    - Sample questions from the interviews will be included in the Practitioner Guide.
  - Take thorough notes. Begin to look for common themes that emerge during interviews.
  - Multiple key informant interviews will strengthen the validity of information provided.

- **Discuss the initial compilation map** that was developed in Step 1.
  - Describe the indicators and thresholds to the key informant.
  - Ask the key informant whether the map reflects his/her understanding of the community.
  - Take notes on areas where the initial maps may need to be reconciled and why they need to be reconciled.

- Ask key informant for good **local contacts to help organize focus groups**.

Step 3: Focus Groups

- **Organize materials and questions** for focus groups.
  - **Prepare blank county maps** for mapping exercise
    - Participants will sketch out and describe their daily travel patterns.
  - **Prepare anonymous, but useful, socio-demographic questions** that will be answered during the mapping exercise (i.e. household size, number of children and adults, age of participant, and language spoken at home).
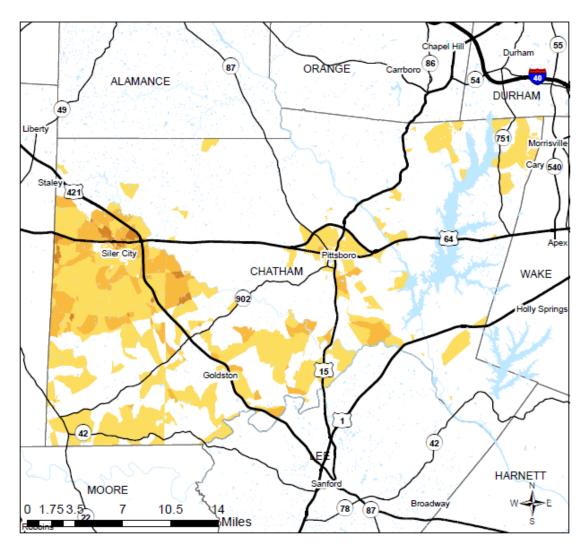
- o **Prepare questions** to ask focus group participants **about weekly travel behaviors** (including their transportation supply and demand). Questions should bring to light both personal and environmental factors that cause transportation disadvantage.

- **Hold one or more focus groups**, depending on the number of key-subgroups identified in the key informant interviews.
  - o When organizing focus groups consider location, day and time, and participant recruitment.

- **Undergo mapping exercise with focus group**.
  - o Participants will sketch out and describe their daily travel patterns and provide anonymous but useful socio-demographic data (see first bullet point in Step 3).

- **Ask focus group questions** about daily travel patterns.
  - o **Audio record** or take notes on focus group responses.

Step 4: Analysis of Outreach

- **Identify common themes that emerged during interviews and focus groups.**
  - o Review interview and focus groups notes.
  - o Determine the common themes that emerge. (Common themes that emerged during focus groups will be included in the Practitioner Guide)

- **Consolidate findings into a brief memo or outline** of unique features in the community.

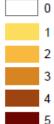- **Use findings to guide GIS map revisions** for Step 5.

Step 5: Map Revisions

- Go over consolidated memo/outline from Step 4 and **determine if any additional indicators need to be mapped or existing indicator thresholds need to be adjusted.** (See step 1 for a review of indicators and thresholds).
  - o For example, a key informant interview in Chatham County demonstrated that there is a prevalence of high-income, senior households. Since, the advantages of being high-income offset the disadvantages of being a senior household (or any household for that matter), a negative factor of one was used to revise the Chatham County map in areas where high-income households were predominantly located.
  - o See how the Chatham County Map on page 2 compares to the revised map on page 6.

- Make map adjustments

- **Confer with key informant(s)** to see if the revised map accurately depicts transportation disadvantage in the county.
  - o If the map is sufficient, the process can be concluded through Step 6.
  - o If the map requires further revisions, repeat steps 2-5.

Compilation of Disadvantaged Population Factors - Chatham County

Number of Factors Exceeding Threshold (6 Total)

	0
	1
	2
	3
	4
	5

Threshold Values
- Low-income households: ≥ 28% of Population Below Poverty Level
- Households with mobility-impaired individuals: < 73% of Population 5 Years and Over Without Any Disability
- Households with youth of non-driving age: ≥ 23% of Population ≤ 14 years old
- Households with seniors: ≥ 29% of Population ≥ 62 years old
- Ethnic minority households: ≥ 64% Minority Population
- LEP households: ≥ 5% of Population or >1000 persons per tract speaking English less than "Very Well"
- High-income households: <8% of Population Below Poverty Level (Negative Factor)

Chatham County Average: **0.40 factors**
Data Source: 2011 Census Data Table S1701, S1801, P12, B02001, B16001, B08201

Step 6: Decision Integration

Step 6 Background: The completion of steps 1-5 results in quantitative and qualitative data that show which areas in a county are predisposed to transportation disadvantage. Step 6 describes how practitioners can use the data to enhance their current decision-making processes.

Practitioners can use the TDP maps and qualitative data to do the following:

- Inform the Comprehensive Transportation Plan (CTP) Process specifically the Needs Assessment (CTP 2) and Alternatives Analysis (CTP 3) steps and
- Environmental Review Process including Community Characteristics Report (CCR) and Community Impact Assessments (CIA)

The Practitioner Guide will provide key questions and suggestions for how the TDP maps and qualitative data can be utilized to better incorporate transportation disadvantaged populations considerations into planning studies and project development evaluations.