US 64 – NC 49 CORRIDOR STUDY

PRESENTED BY:

TEAM PBS&J

Study Area


US 64
NC 49
Corridor Study
Winston-Salem
Greensboro
High Point
Burlington
Graham
Hillsborough
Durham
Chapel Hill
Carrboro
Mocksville
Welcome
Lexington
Statesville
Salisbury
Asheboro
Randleman
Siler City
Pittsboro
Cary
Raleigh
Apex
Mooresville
Rockwell
Denton
Kannapolis
Concord
Mount Pleasant
Richfield
Hunterstown
Albemarle
Biscoe
Sanford
Charlotte
Locust
Pinehurst
Southern Pines
YADKIN
DAVIE
DAVIDSON
ROWAN
RANDOLPH
ALAMANCE
ORANGE
DURHAM
WAKE
CHATHAM
LEE
MOORE
CABARRUS
STANLY
MONTGOMERY

Corridor Development Team

- NCDOT Transportation Planning
- NCDOT Roadway Design
- NCDOT Traffic Engineering
- NCDOT Project Development
- NCDOT Program Development
- Capital Area MPO
- Town of Cary
- Town of Apex
- Wake County
- Town of Siler City
- Chatham County
- Town of Pittsboro
- Piedmont Triad RPO
- NW Piedmont RPO
- Lake Norman RPO
- Cabarrus-Rowan MPO
- Mecklenburg-Union MPO
- Triangle Area RPO
- Rocky River RPO
- Federal Highway Administration

Study Goals

"To develop a transportation system consistent with the Strategic Highway Corridors concept definition that will serve the mobility needs of people and freight to and through Central North Carolina while addressing the environmental and economic development opportunities"

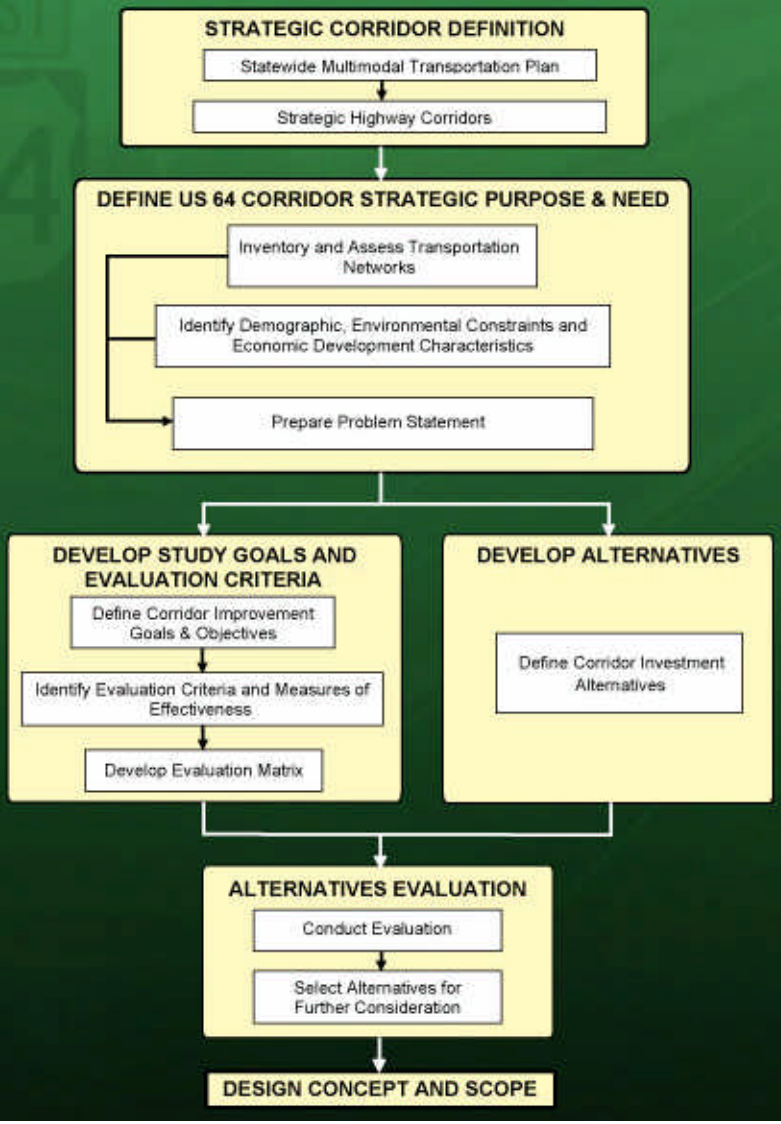
Study Objectives

- Enhance transportation connectivity and mobility
- Serve as a reliever to I-85 and I-40
- Improve safety
- Support regional and local transit plans

Study Objectives

- Support economic development
- Support local land use plans
- Optimize costs and benefits to system users and funding agencies
- Be sensitive to environmental and social factors

Alternatives Evaluation Process



Alternatives Evaluation Process

STRATEGIC CORRIDOR DEFINITION

Statewide Multimodal Transportation Plan

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Strategic Highway Corridors

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Alternatives Evaluation Process

DEFINE US 64 CORRIDOR STRATEGIC PURPOSE & NEED

- Inventory and Assess Transportation Networks
- Identify Demographic, Environmental Constraints and Economic Development Characteristics
- Prepare Problem Statement

Transportation Profile

- Inventory of existing facilities and services.
- Description of existing system usage

Highway System Inventory

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Existing AADT Volumes

US 64 NC 49 Corridor Study

Existing Level of Service

Existing Truck Percentage of Daily Volume

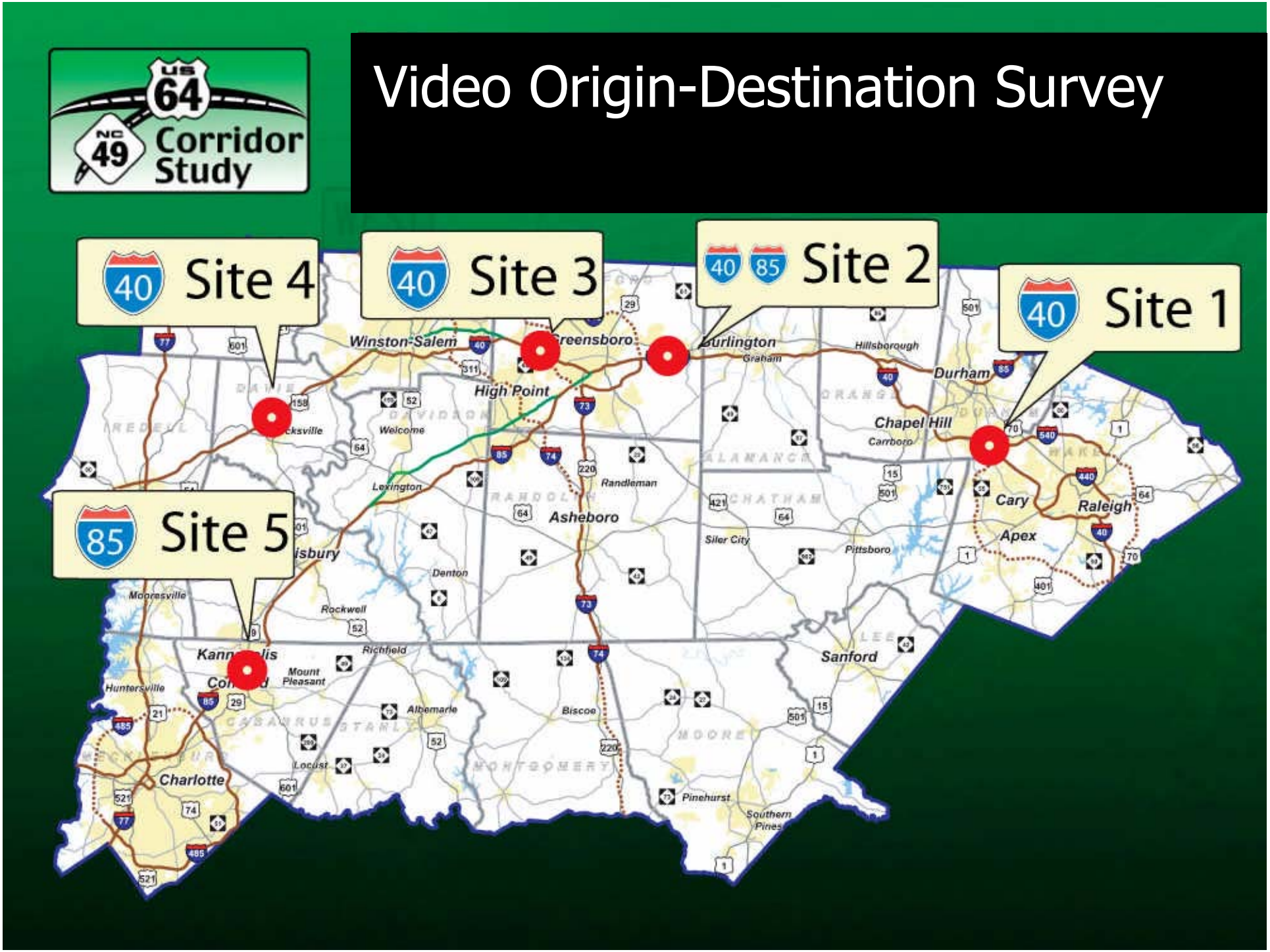
US 64 NC 49 Corridor Study

2000 Census Inter-county Work Trips

Travel Surveys

- Video Origin-Destination Surveys on I-40 and I-85.
- Postcard Survey of vehicles passing Video Survey Station #2.
- Roadside Origin-Destination Surveys on US 64 and NC 49.
- Travel Time Surveys on I-40, I-85, US 64 and NC 49.

Video Origin-Destination Survey

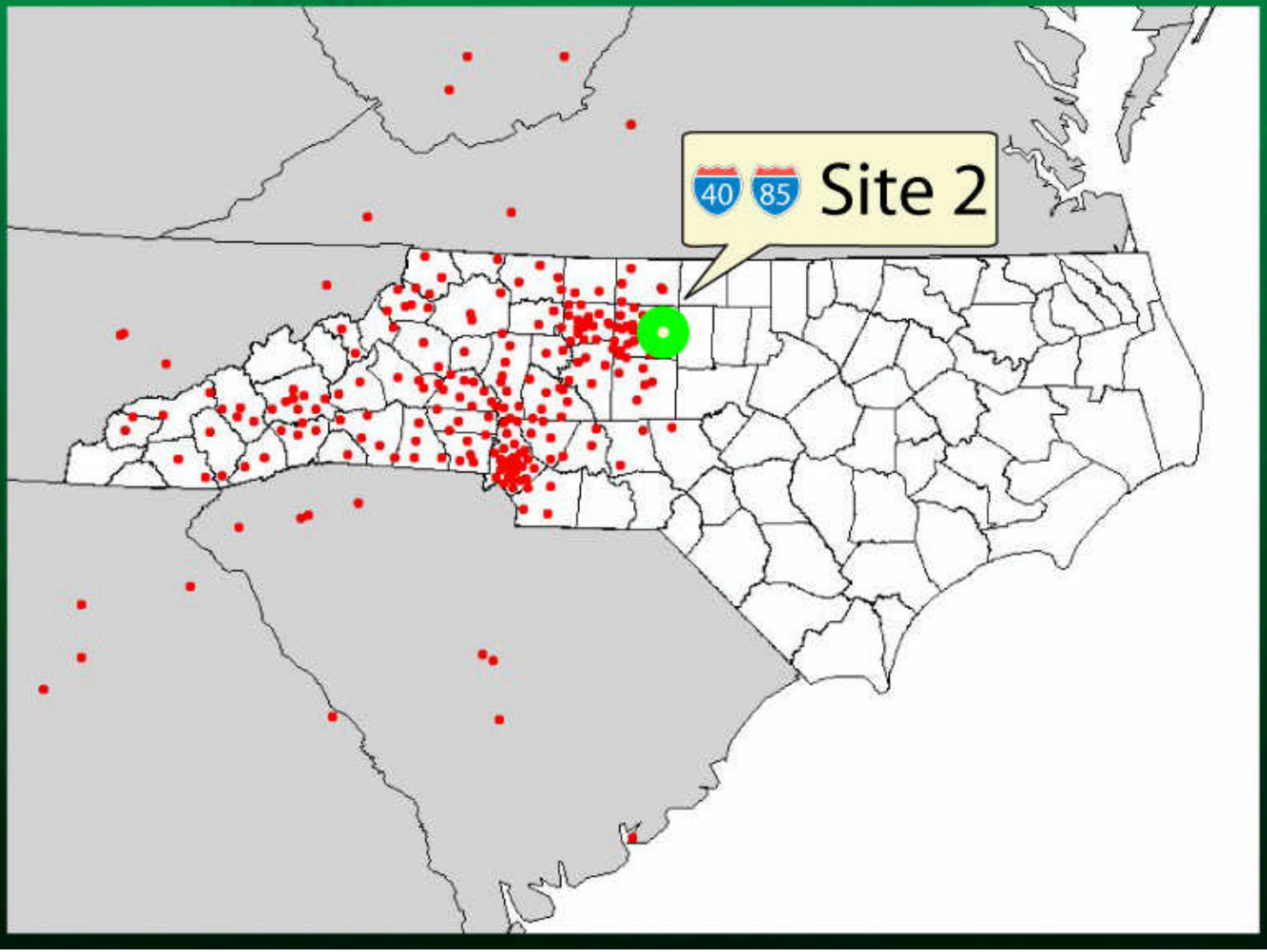


Video Origin-Destination Survey

Site 1: I-40 Westbound

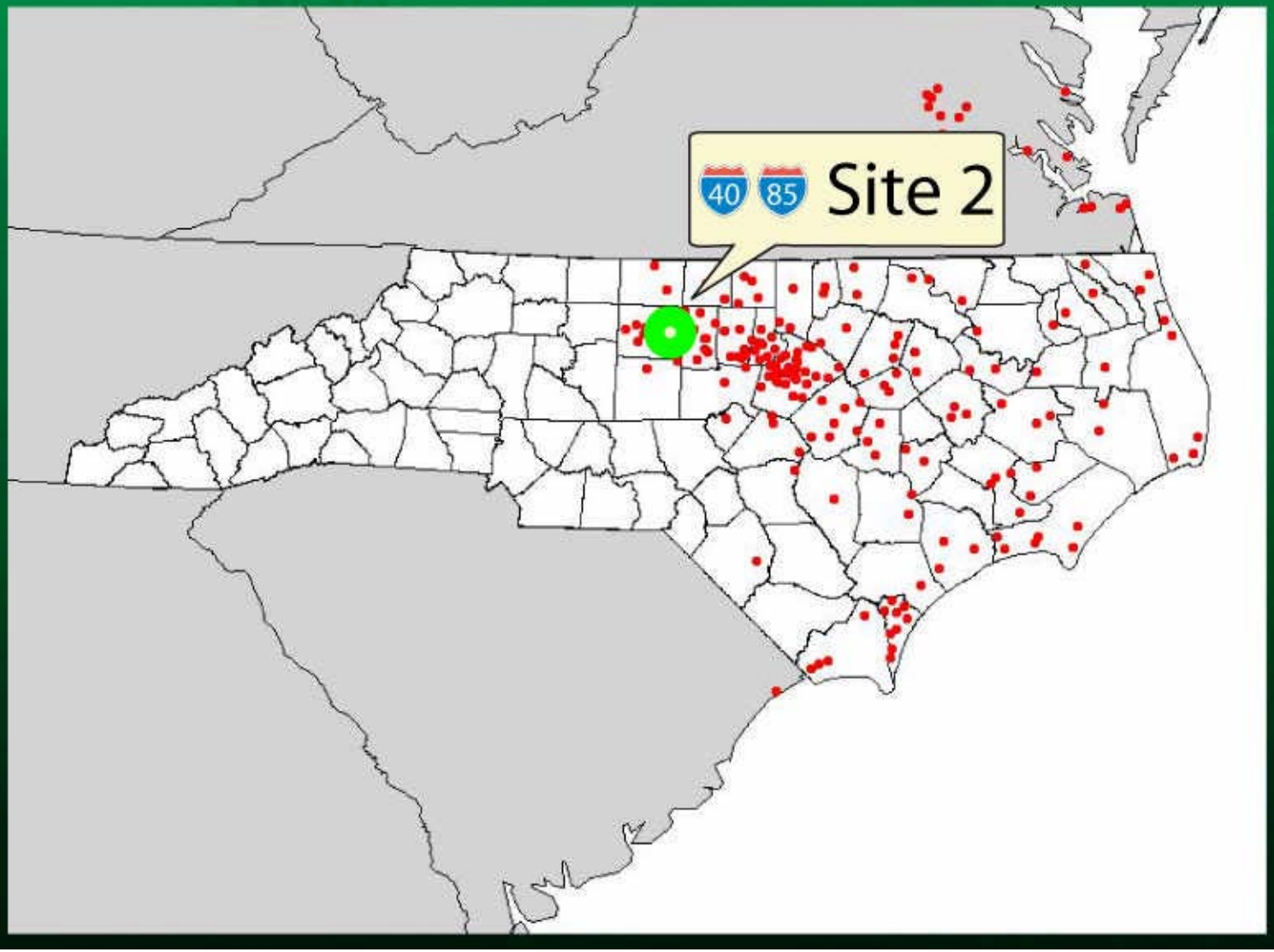
Postcard Survey

Eastbound Origins

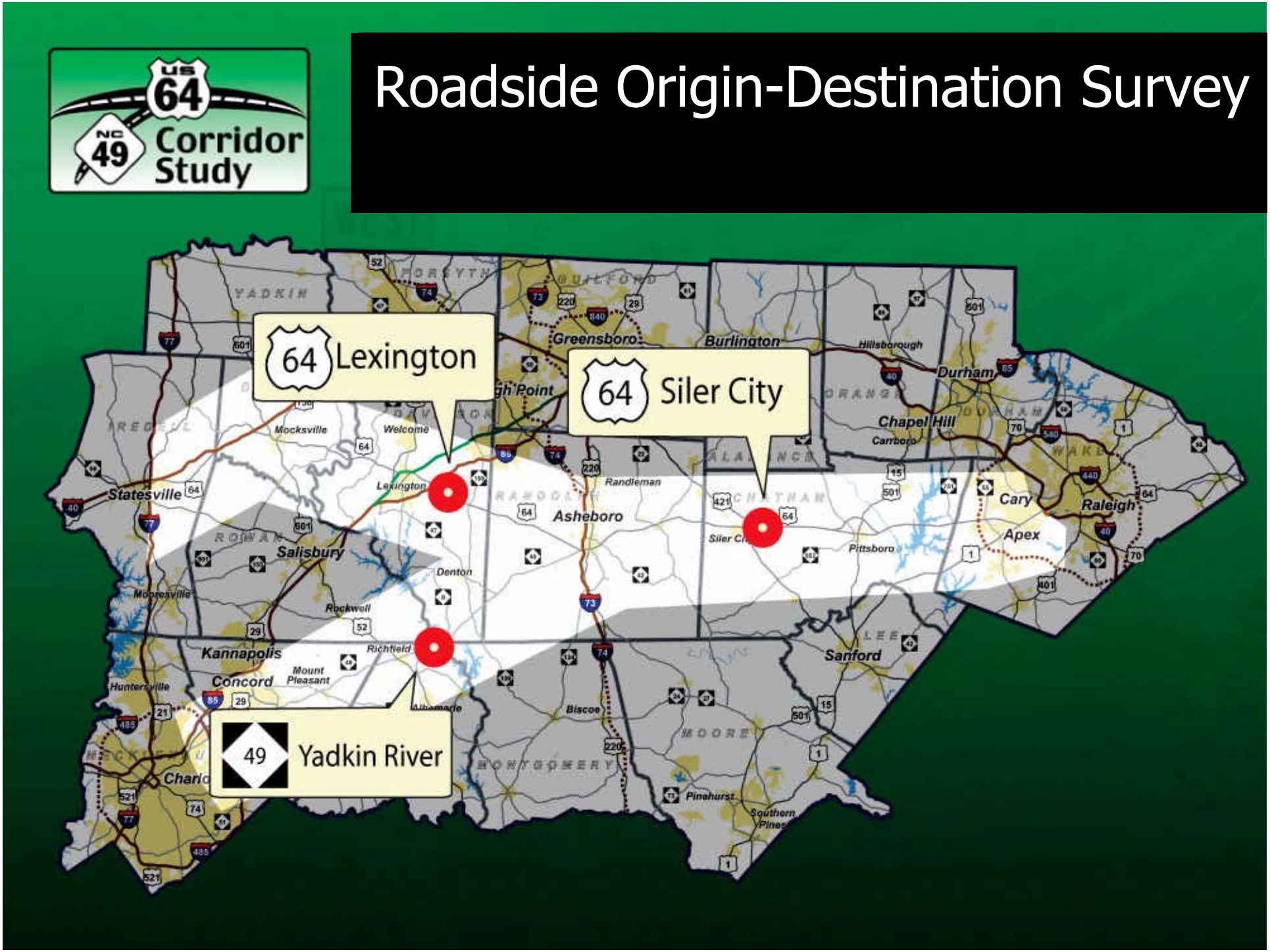


Postcard Survey

Eastbound Destinations



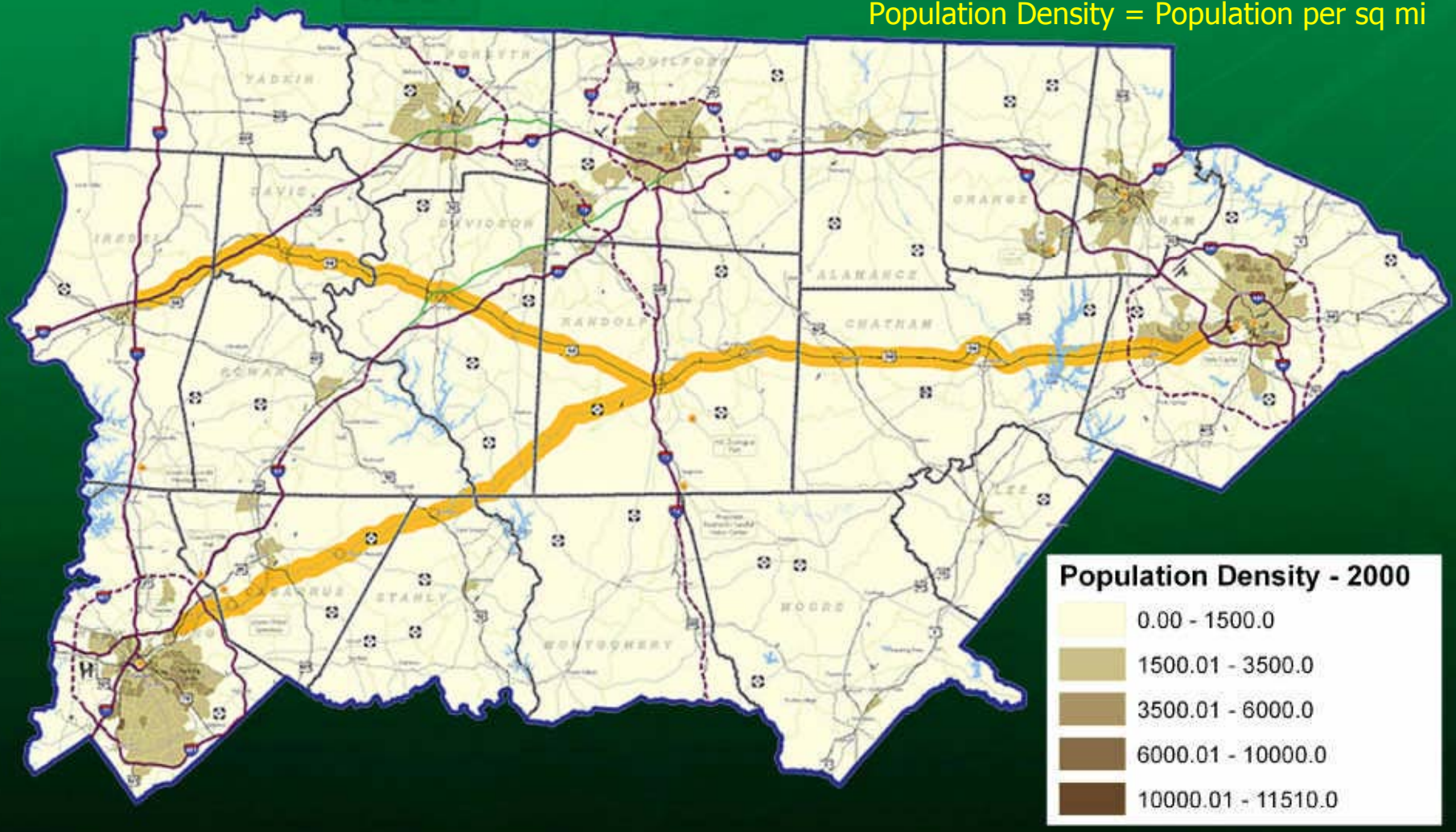
Roadside Origin-Destination Survey



Demographics – Pop. Density 2000

US 64 / NC 49 Corridor Study

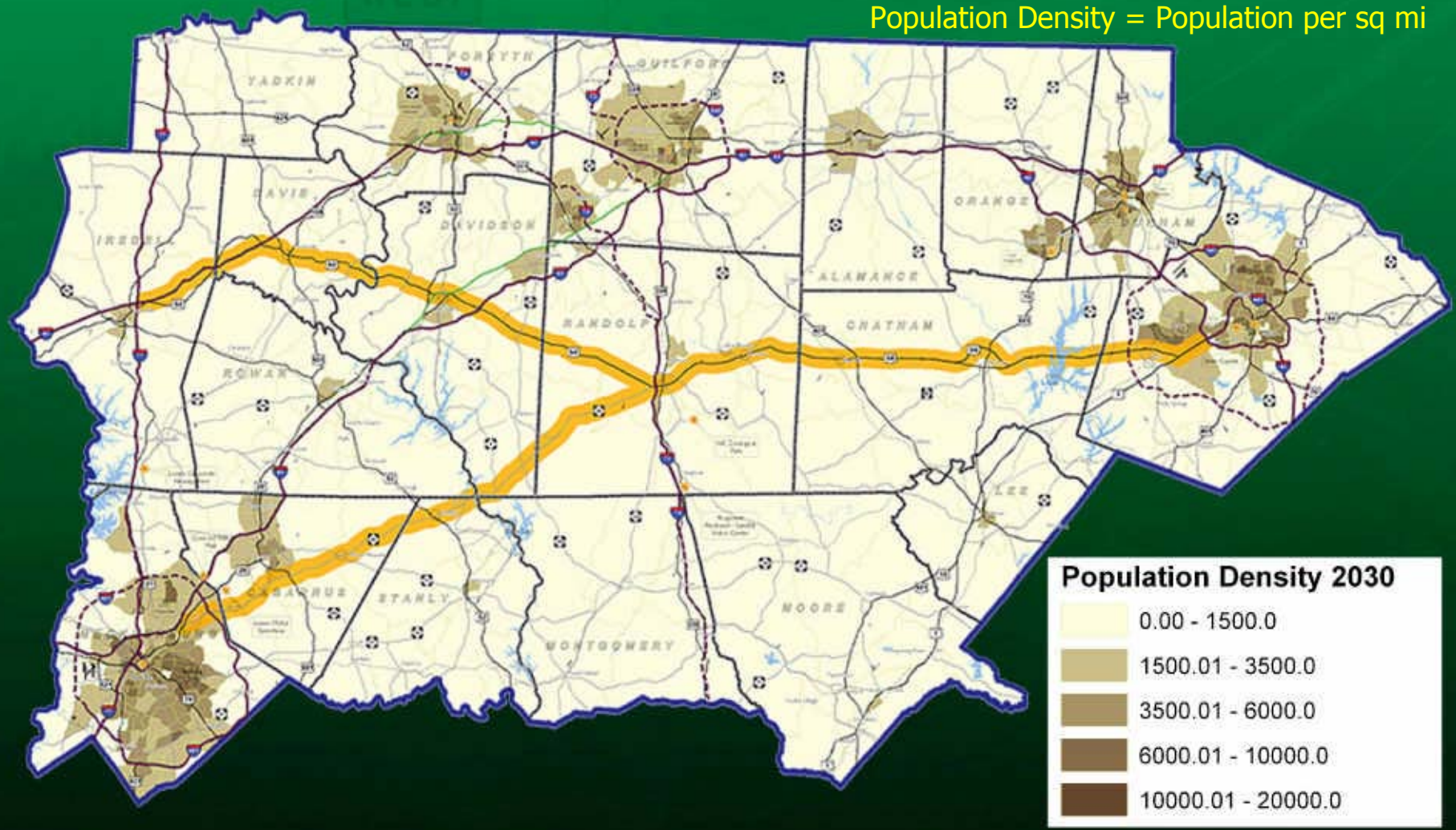
Population Density = Population per sq mi



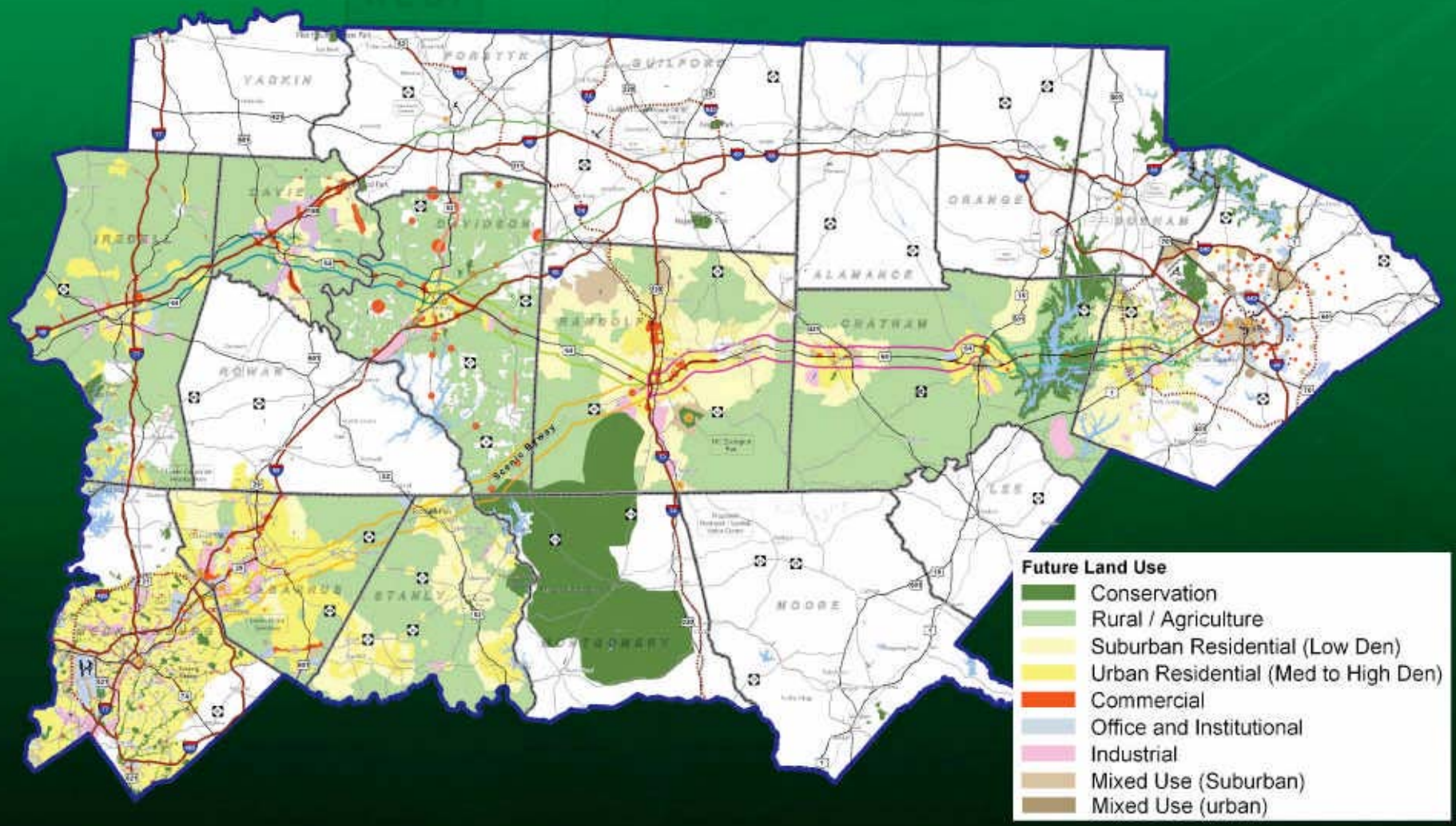
Demographics – Pop. Density 2030

US 64 / NC 49 Corridor Study

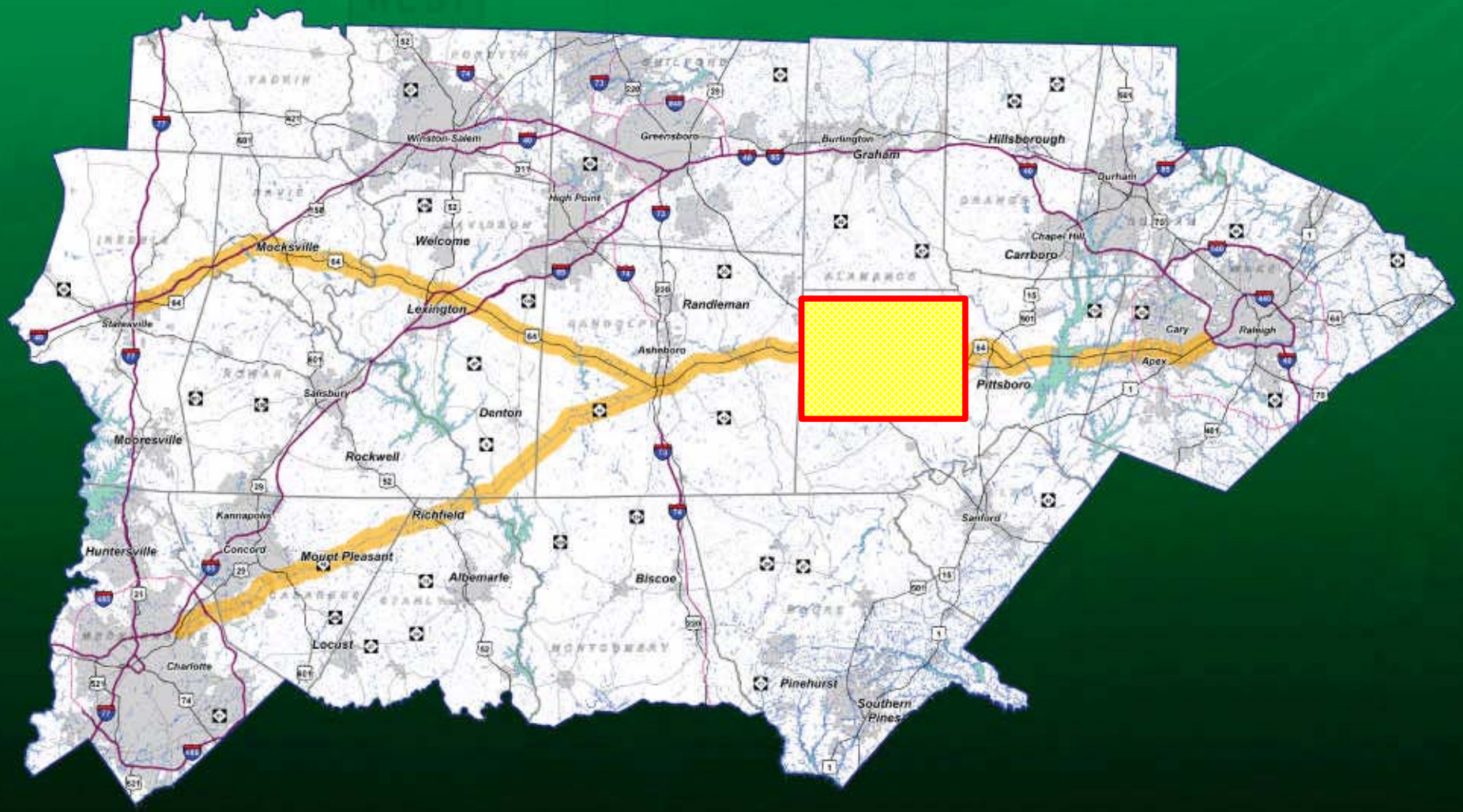
Population Density = Population per sq mi



Land Use – Future



Wetlands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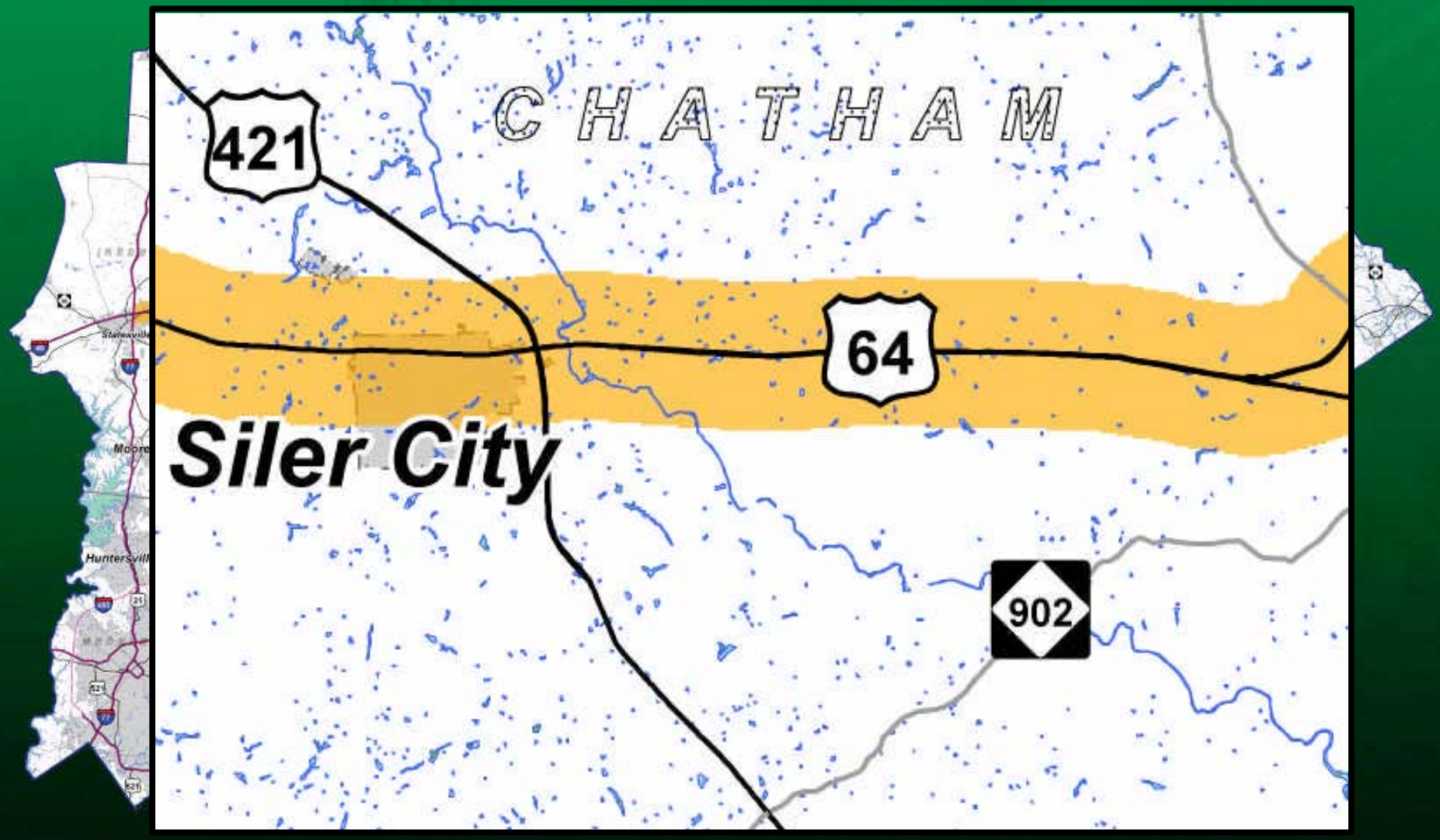
Wetlands

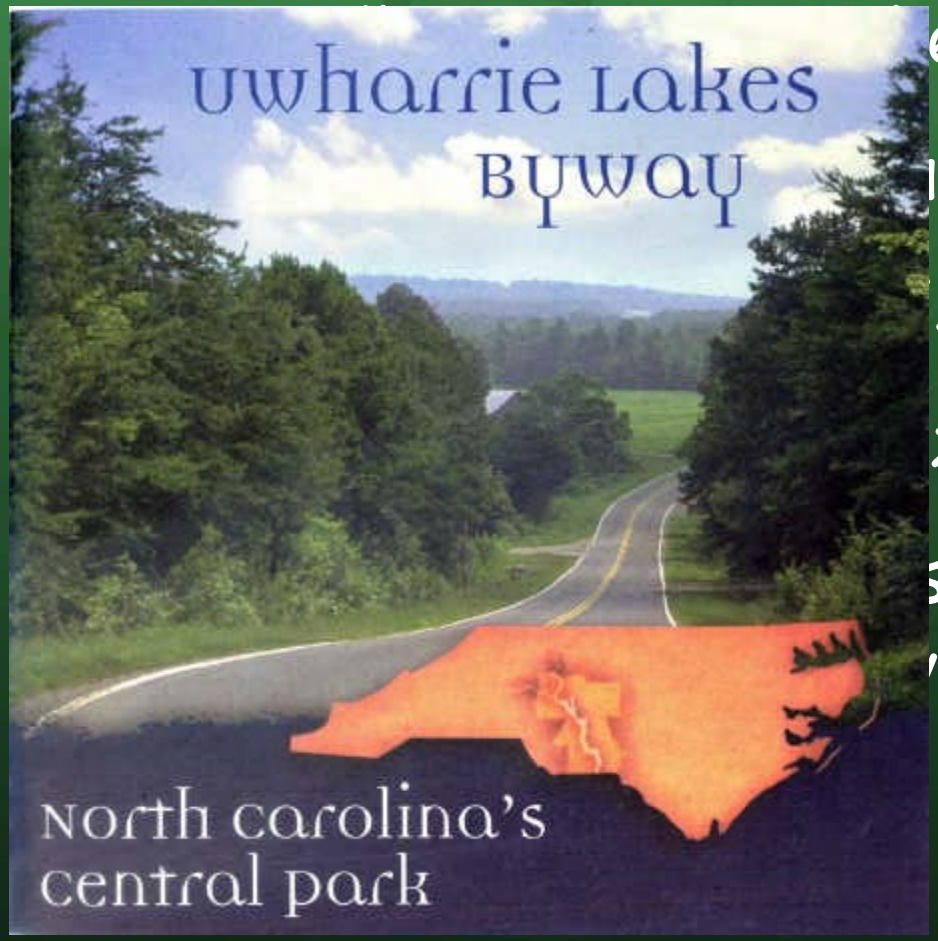


Economic Development

Yadkin-Pee Dee Lakes Project (Central Park)

- "Sustainable" tourism (recreation)
  - Support tourism-related business
  - Supplement existing industries
- Economic success tied to quality of experience (arrival, views)

Economic Development



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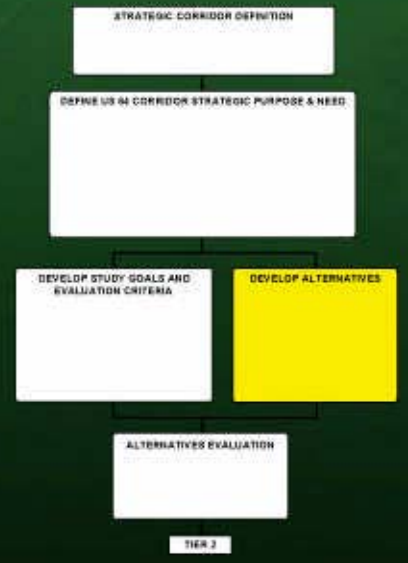
Alternatives Evaluation Process

DEVELOP ALTERNATIVES

Define Corridor Investment Alternatives



Alternatives

- Existing Plus Committed (E+C)
- E+C Enhanced
- Expressway
- Freeway

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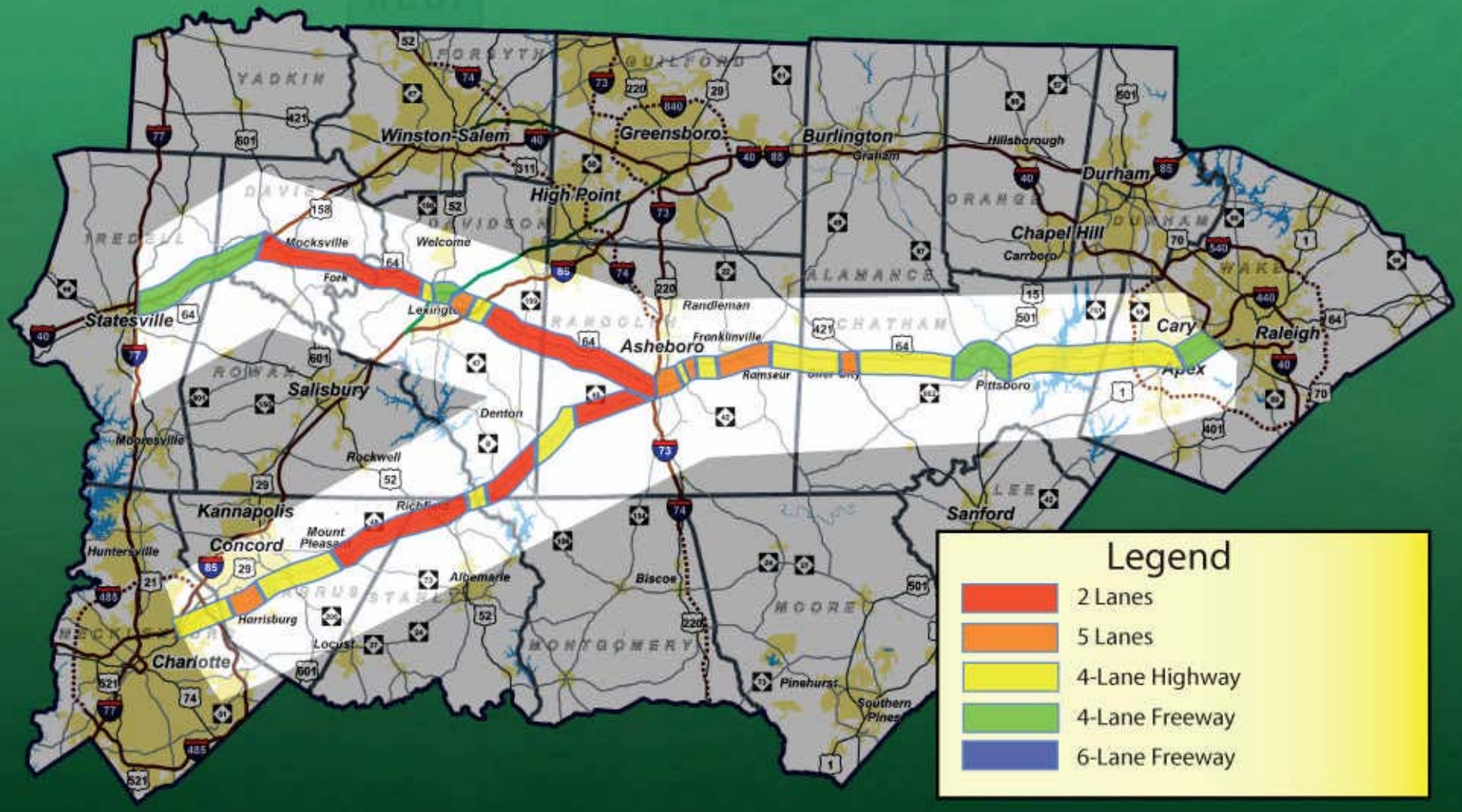
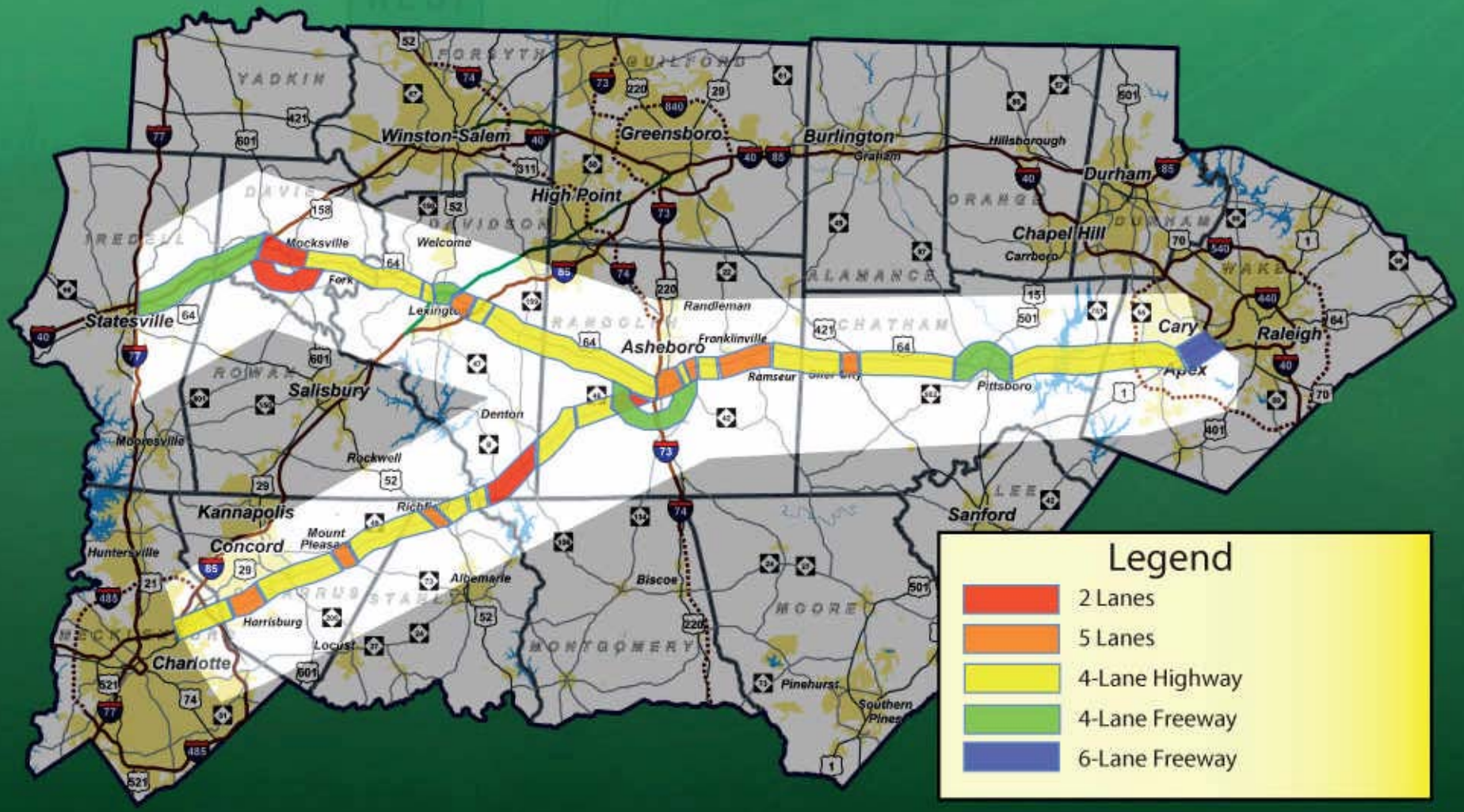
Existing

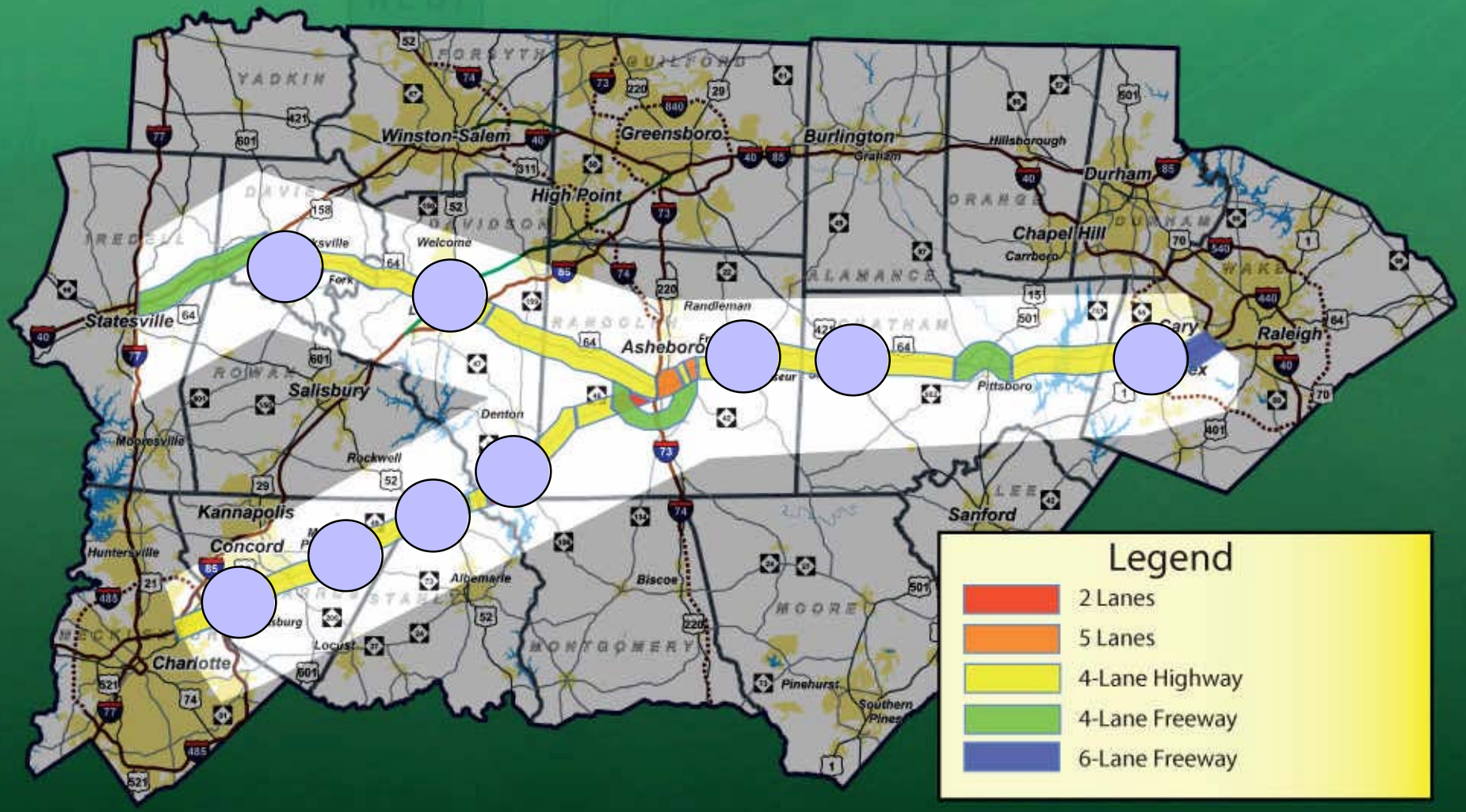


US 64 NC 49 Corridor Study

Existing Plus Committed



E+C Enhanced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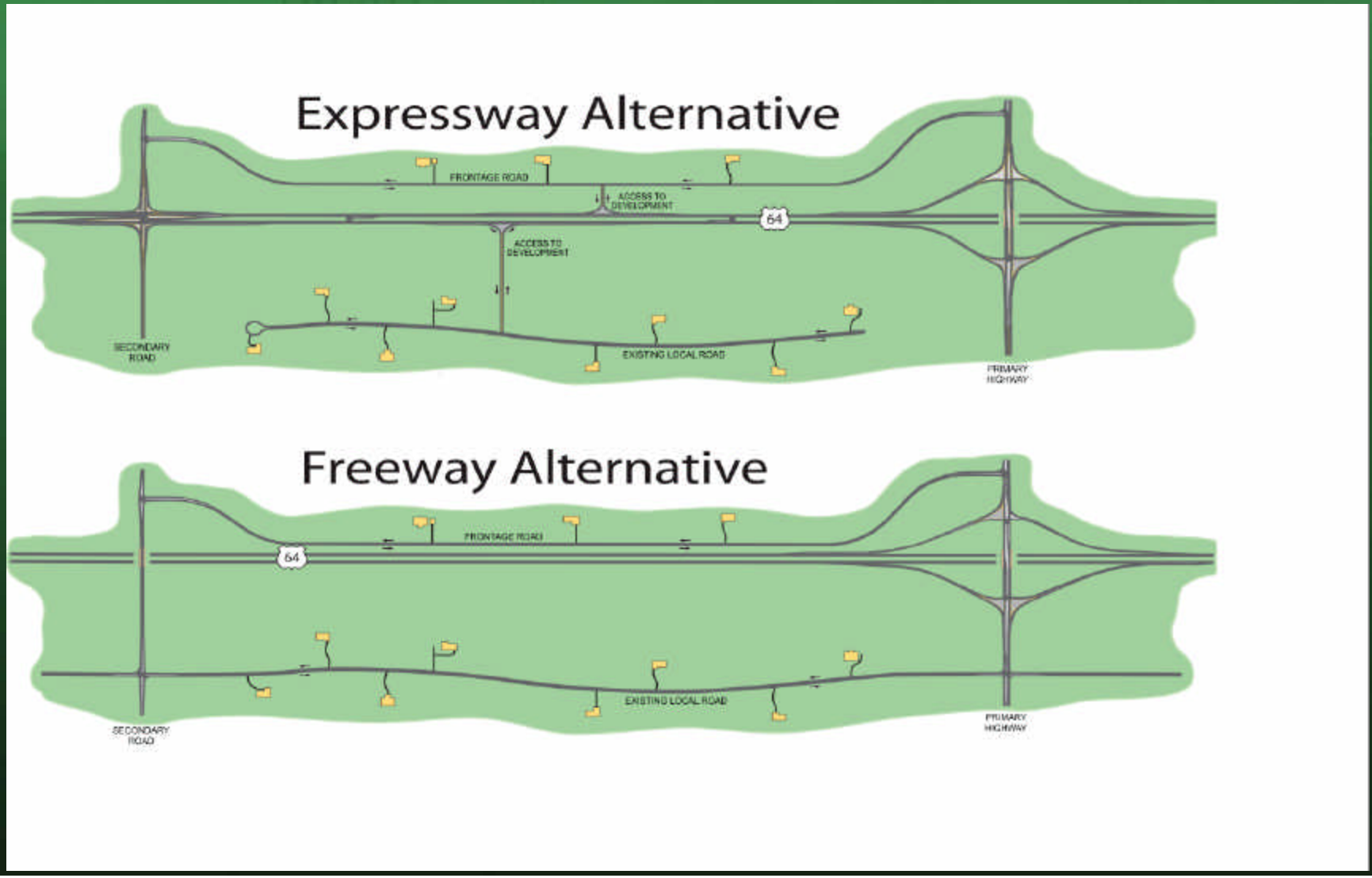
Pinehurst
Southern Pines
Welcome
Locust
Hunters
Legend
2 Lanes
5 Lanes
4-Lane Highway
4-Lane Freeway
6-Lane Freeway

Expressway and Freeway



Alternatives Evaluation Process

DEVELOP STUDY GOALS AND EVALUATION CRITERIA

- Define Corridor Improvement Goals & Objectives
- Identify Evaluation Criteria and Measures of Effectiveness
- Develop Evaluation Matrix

Travel Demand Model

Level of detail- Sketch planning tool to assess alternatives

- Capture intercity movements
  - Entire state represented
  - Highest detail in "core" area
- Estimated Travel Diversion

Evaluation Criteria

Study Objective Category / Evaluation Criteria	Measure of Effectiveness
MOBILITY BENEFITS	
Travel Time Savings	Percent reduction in travel time from Charlotte and Statesville to Raleigh vs. baseline.
Travel Diversion I-85 and I-40	Percent Interstate traffic reduction vs. baseline.
Safety Improvement	Reduction in accidents using National (and/or Statewide) average accident rates by facility type vs. baseline.
Accommodation of Transit Plans	Alternative's potential to facilitate implementation of transit initiatives.

Evaluation Criteria

Study Objective Category / Evaluation Criteria	Measure of Effectiveness
GROWTH MANAGEMENT BENEFITS	
Development Pattern Impacts	Potential to direct growth consistent with locally desired development patterns and policies.

Evaluation Criteria

Study Objective Category / Evaluation Criteria	Measure of Effectiveness
ECONOMIC BENEFITS	
Accessibility Improvement	Percent change in number of jobs or households within specified travel times to specific destinations vs. baseline.
Development Opportunity	Potential for improved access to future development that includes major employers.

Evaluation Criteria

Study Objective Category / Evaluation Criteria	Measure of Effectiveness
ENVIRONMENTAL ISSUES	
Sensitivity to Environmental Factors	Potential for adverse impact based on facility footprint and location.
Sensitivity to Social Factors	Potential for adverse impact based on facility footprint and location.

Evaluation Criteria

Study Objective Category / Evaluation Criteria	Measure of Effectiveness
COST EFFECTIVENESS	
Transportation User Benefits	Travel time, operating, and safety cost savings relative to the baseline.
Capital Cost	Estimate of probable cost.
User Benefits / Capital Cost	Calculated ratio.

Evaluation Criteria

●	◒	○
Best	Better	Good

- Degree to which alternative satisfies evaluation criteria.
- Alternatives compared to no-build condition.

Alternatives Evaluation Process

ALTERNATIVES EVALUATION

- Conduct Concept Evaluation
- Select Alternatives for Further Consideration

DESIGN CONCEPT AND SCOPE

Evaluation of Alternatives

ALTERNATIVES EVALUATION MATRIX

Study Objective Category / Evaluation Criteria	Measure of Effectiveness	Alternative			
		E+C	E+C Enhanced	Expressway	Freeway
MOBILITY BENEFITS					
Travel Time	Percent reduction in travel time from Charlotte and Statesville to Raleigh vs. baseline condition.	○	◒	◒	◉
Travel Diversion I-85 and I-40	Percent Interstate traffic reduction from baseline condition.	○	◒	◒	◉
Safety	Reduction in accidents using National (and/or Statewide) average accident rates by facility type vs. baseline condition.	○	◒	◒	◉
Accommodation of Transit Plans	Alternative's potential to facilitate implementation of transit initiatives.	○	○	○	○
GROWTH MANAGEMENT BENEFITS					
Development Pattern Impacts	Potential to direct growth consistent with locally desired development patterns and policies.	◉	◒	◒	○
ECONOMIC BENEFITS					
Accessibility	Percent change in number of jobs or households within specified travel times to specific destinations vs. baseline condition.	○	○	○	○
Development Opportunity	Potential for improved access to future development that includes major employers.	○	●	●	◒
ENVIRONMENTAL ISSUES					
Sensitivity to environmental factors	Potential for adverse impact based on facility footprint and location.	◉	◒	○	○
Sensitivity to social factors	Potential for adverse impact based on facility footprint and location.	◉	◒	○	○
COST EFFECTIVENESS BENEFITS					
Transportation User Benefits	Travel time, operating, and safety cost savings relative to the baseline condition.	○	◒	◒	◉
Capital Cost	Estimate of probable cost.	◉	◒	○	○
User Benefits / Capital Costs	Calculated ratio.	◉	◒	○	◒

Mobility Benefits

Evaluation Criteria	Measure of Effectiveness	E+C	E+C Enh.	Exprswy	Frwy
Travel Diversion From I-85/I-40	Percent Interstate traffic reduction from baseline condition.				

- E+C results in a 2,500 VPD (2%) diversion of traffic from I-40/I-85 west of Raleigh.
- E+C Enhanced results in a 10,800 VPD (8%) diversion of traffic from I-40/I-85 west of Raleigh.
- Expressway results in a 12,600 VPD (9%) diversion of traffic from I-40/I-85 west of Raleigh.
- Freeway results in a 23,000 VPD (17%) diversion of traffic from I-40/I-85 west of Raleigh.

Cost Effectiveness

Evaluation Criteria	Measure of Effectiveness	E+C	E+C Enh.	Exprswy	Frwy
Capital Cost	Estimate of probable cost.				

E+C $550,000,000

E+C Enhanced $1,750,000,000[2]

Expressway $2,340,000,000[1]

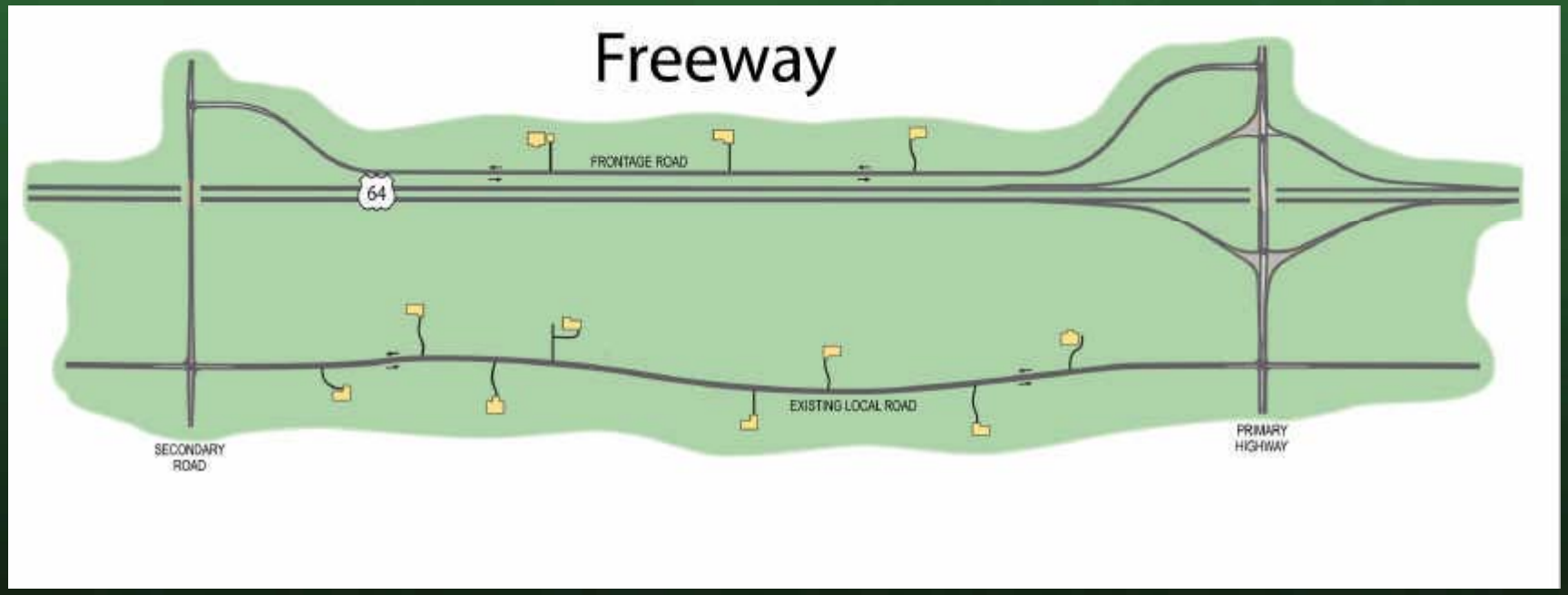
Freeway $2,560,000,000[1]

[1] Includes $210 million of TIP project funds.

[2] Includes $550 million of TIP project funds.

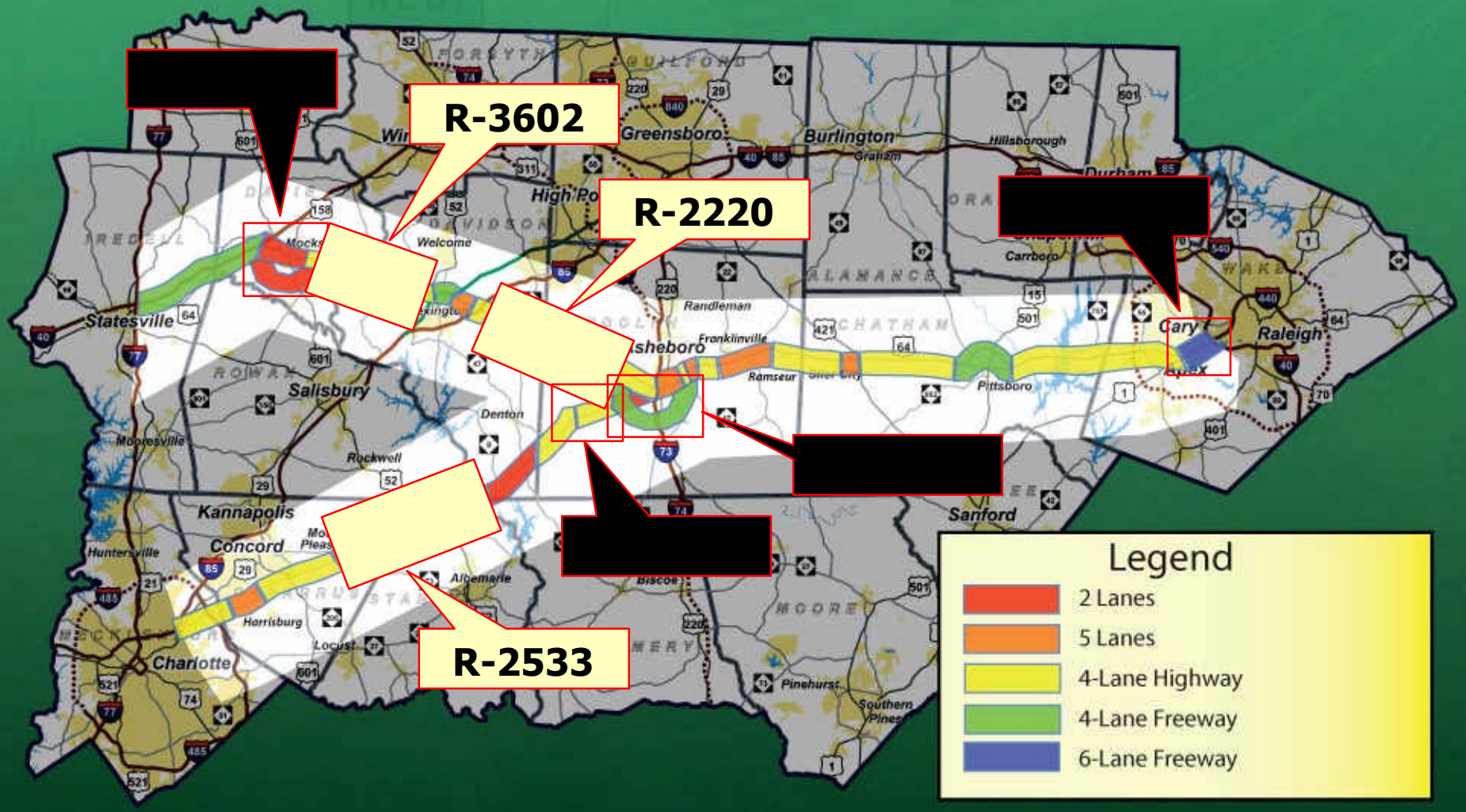
Achieving the Vision

Committed Projects → **Enhanced Projects**



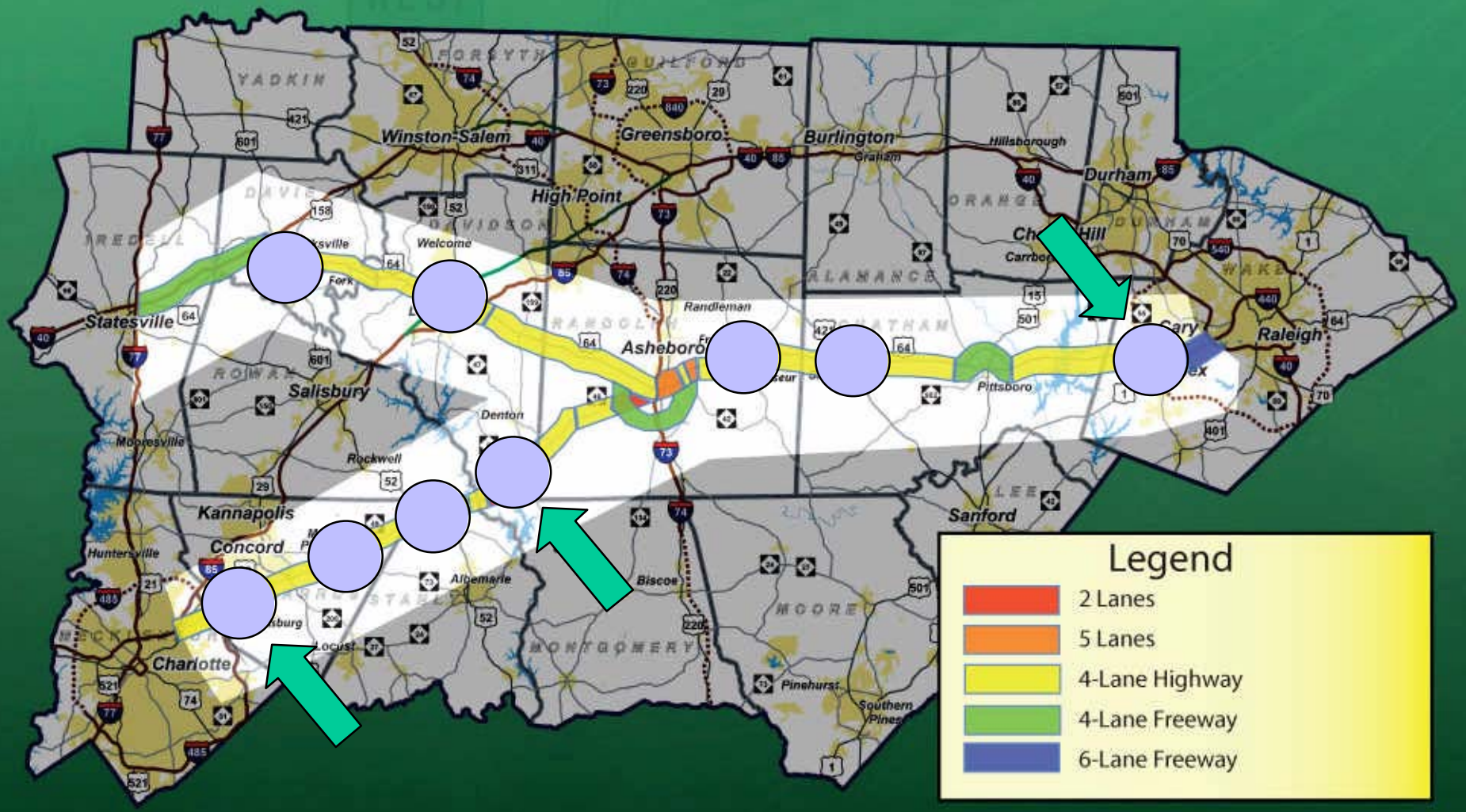
Corridor Vision

Committed Projects



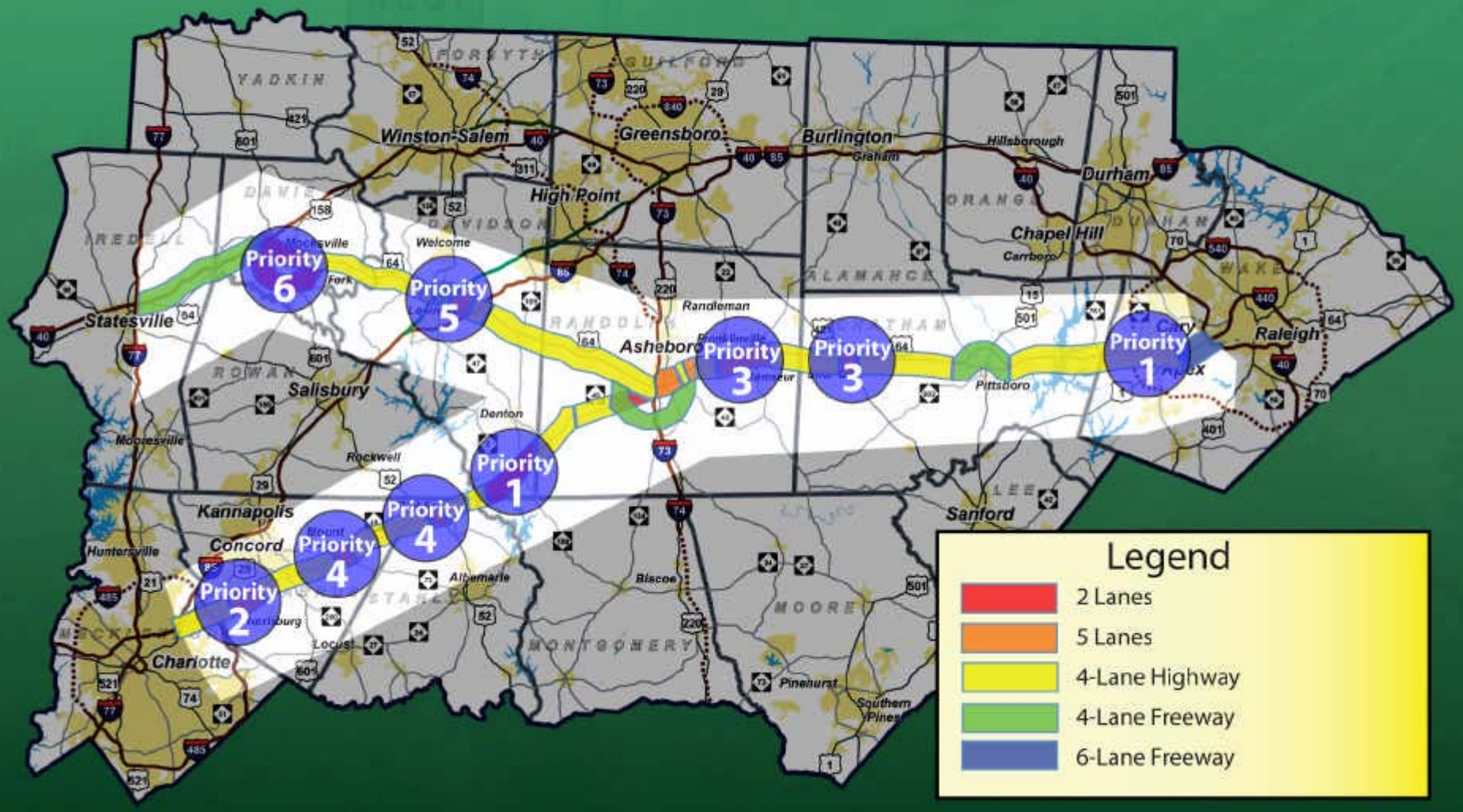
Corridor Vision

Enhanced Projects



Implementing the Vision

Enhanced Projects Priority



Corridor Vision

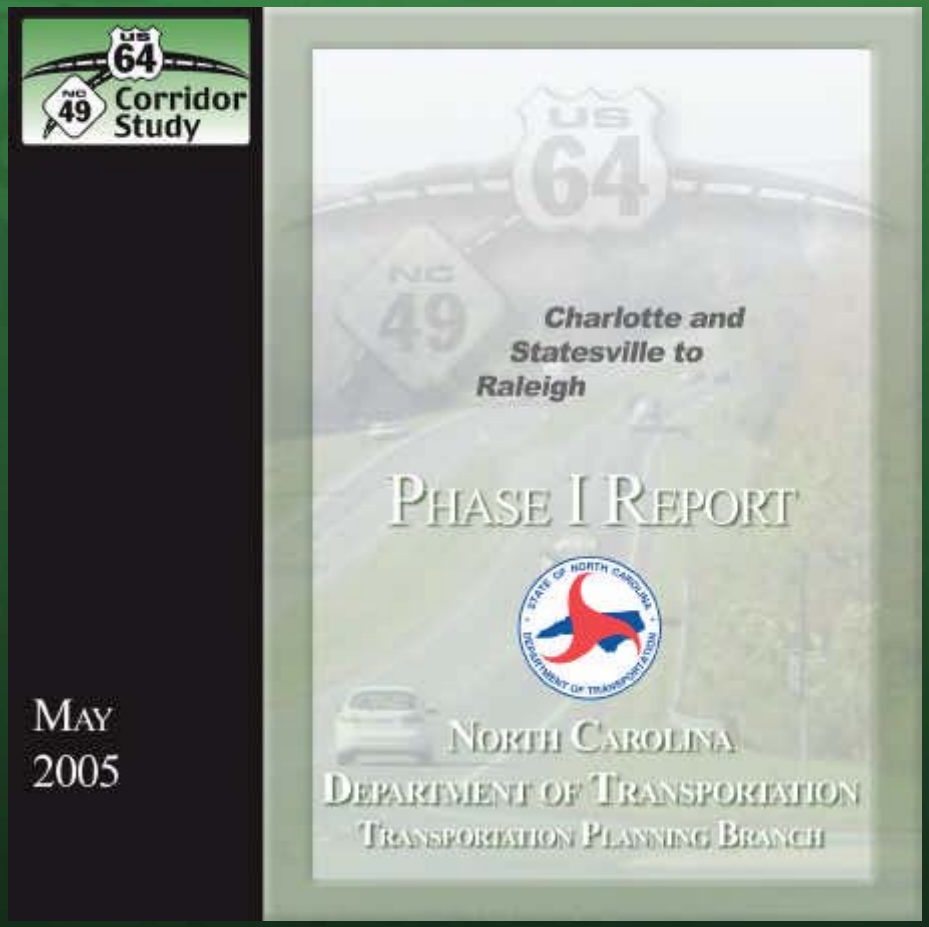
Corridor Vision

Corridor Vision

Other Study Components

- Investigated Corridor Protection Methods
- Developed General Land Use Guidelines for Maintaining Mobility along the Corridor

Questions?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