



# East Greensboro Greenway **FEASIBILITY STUDY**

CTT Trail Forum Presentation

December 5, 2024



Integrated **Mobility** Division  
N.C. DEPARTMENT OF TRANSPORTATION



MCADAMS



- **Introductions**
- **Project Introduction**
  - History of greenways in Greensboro
  - Evolution of the East Greensboro Greenway
- **Study Development**
  - NCDOT Paved Trail Feasibility Studies Program
- **Ensuring Equity**
  - Engagement Approach
  - Lessons Learned
- **Pursuing Funding**
  - Active Transportation Infrastructure Investment Program (ATIIP)
- **Closing/Questions**





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Senior Planner, Greensboro Parks &  
Recreation



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## Systemwide Overview:

- 41.5 miles greenway
- 68.12 natural surface trails

## Significant Greenways:

- Atlantic & Yadkin Greenway
- Downtown Greenway





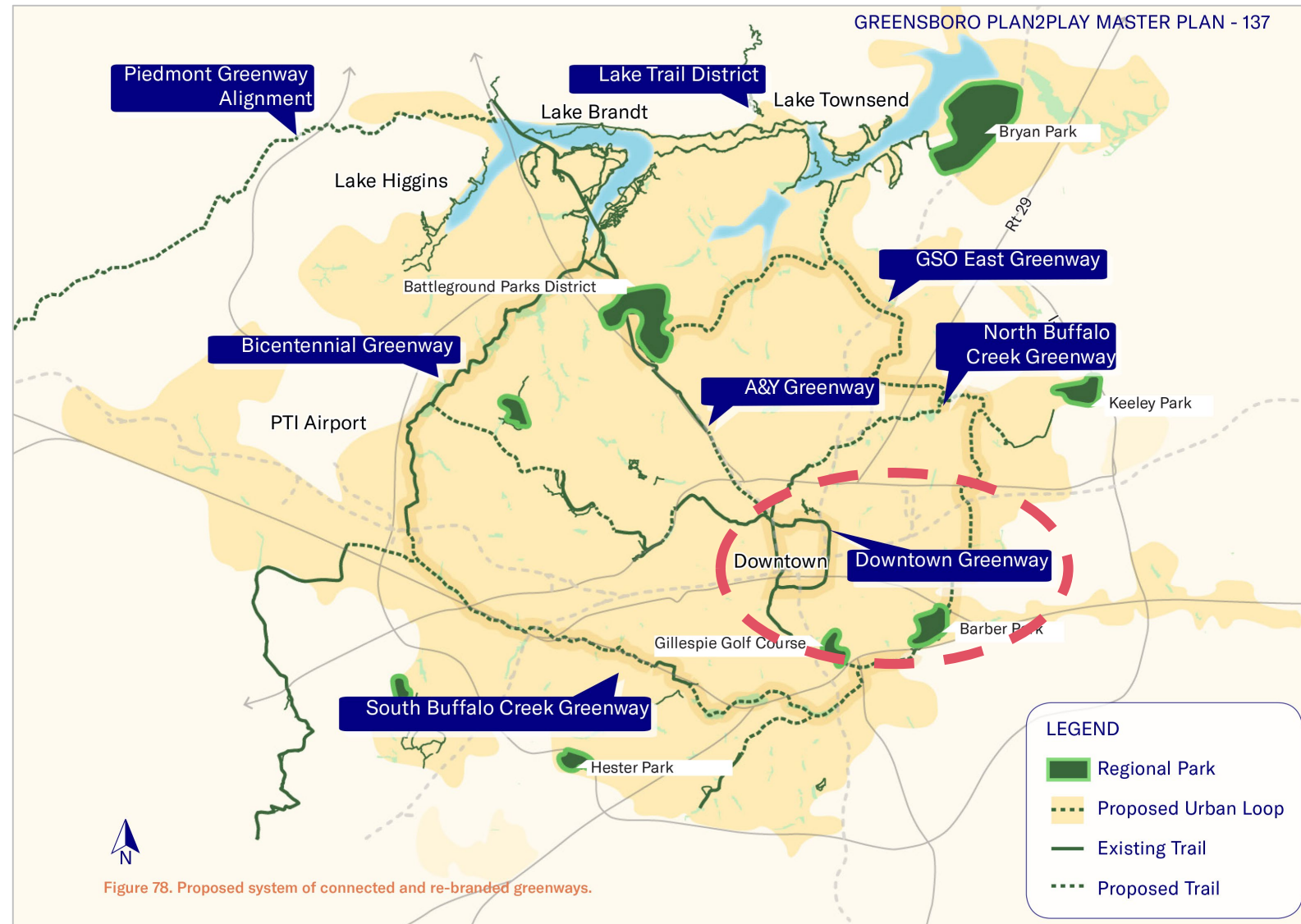
## Plan2Play:

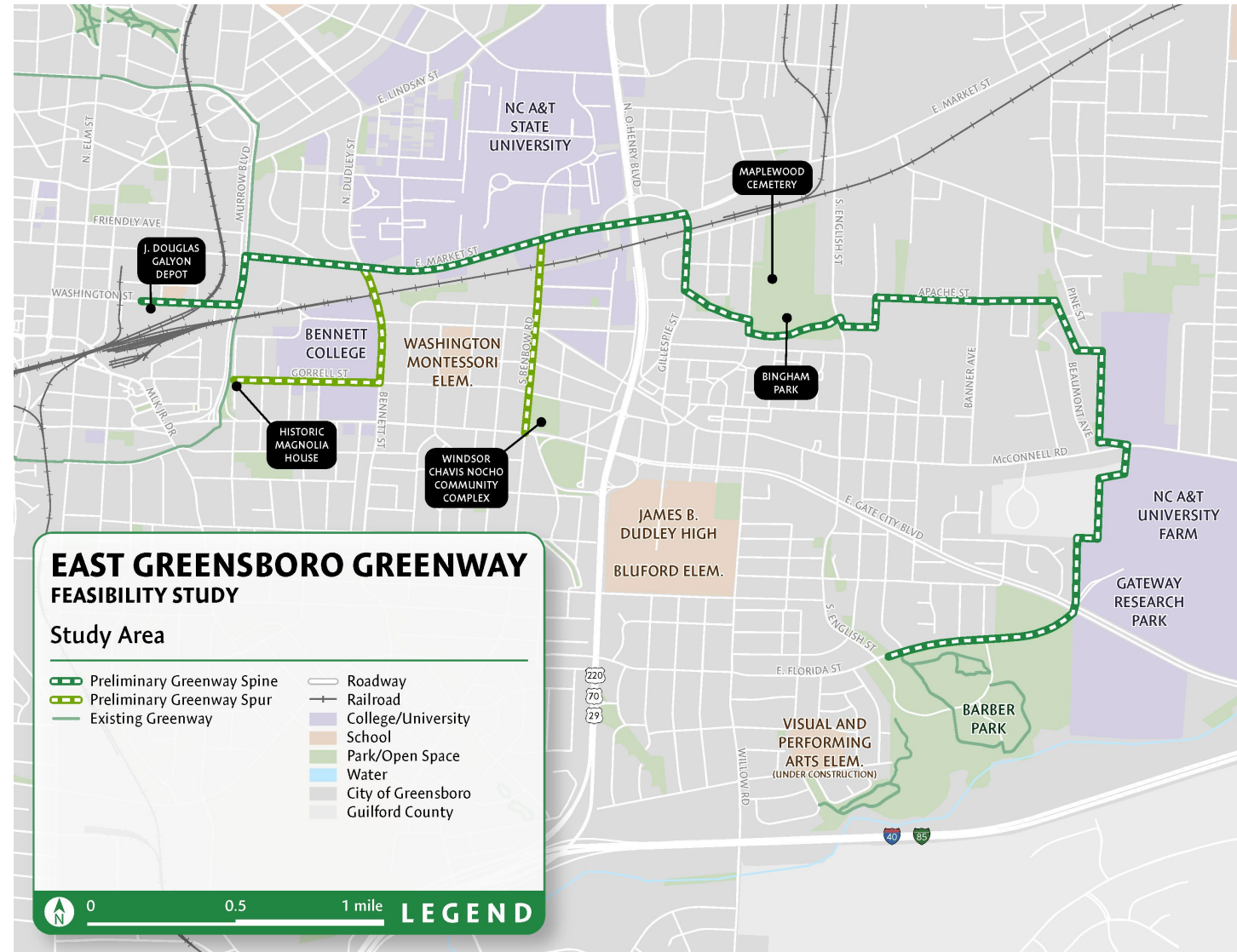
- "While currently there is a significant amount of trail mileage, mapping of existing trail networks illustrates that trails are not evenly distributed."

## Goals:

- Grow the Trail System
- Improve Connectivity to Parks

PLAN2PLAY









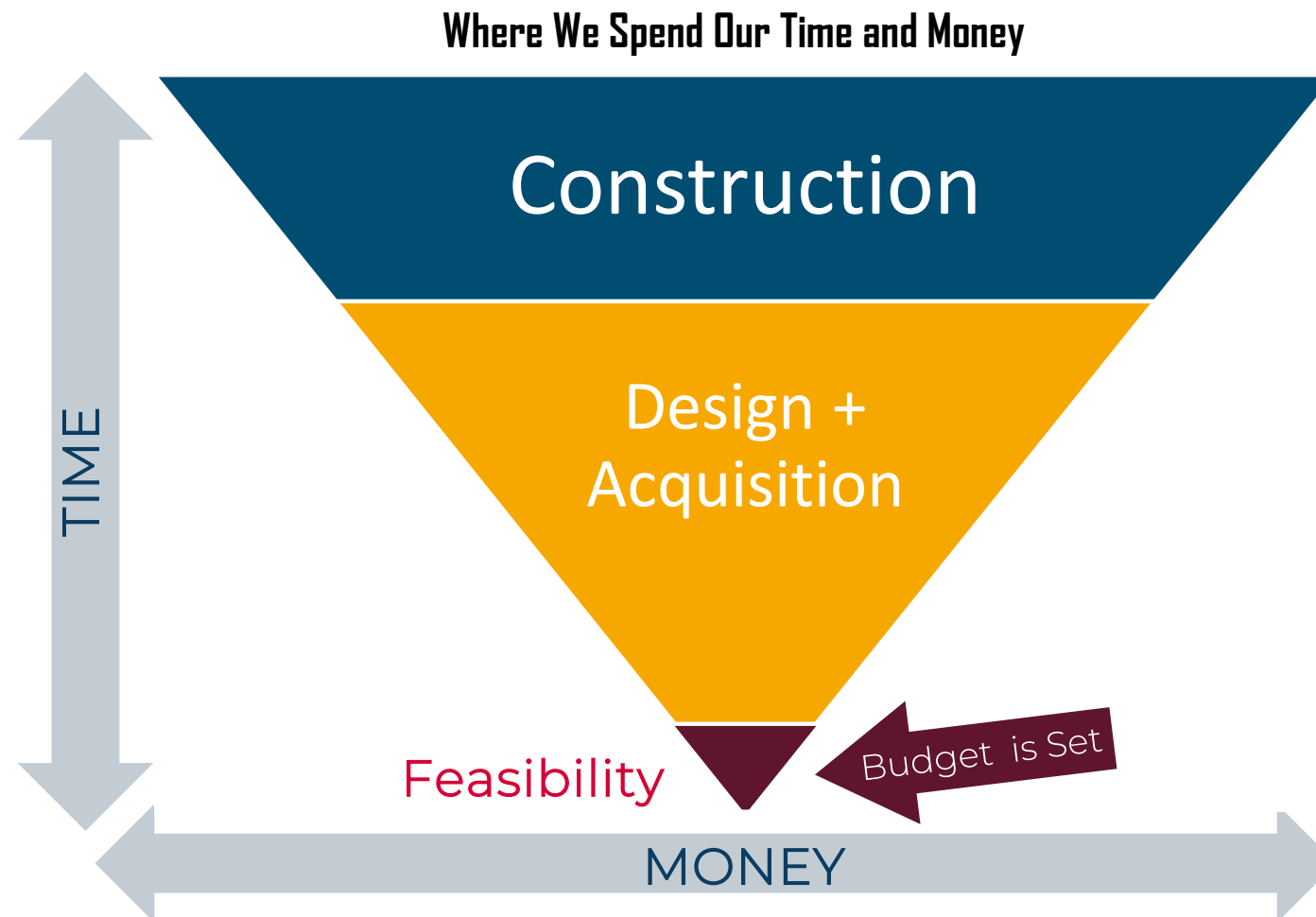
## Windsor Chavis Nocho

### Community Complex:

- \$75m investment in community services in east Greensboro
  - Library
  - Recreation Center
  - Park



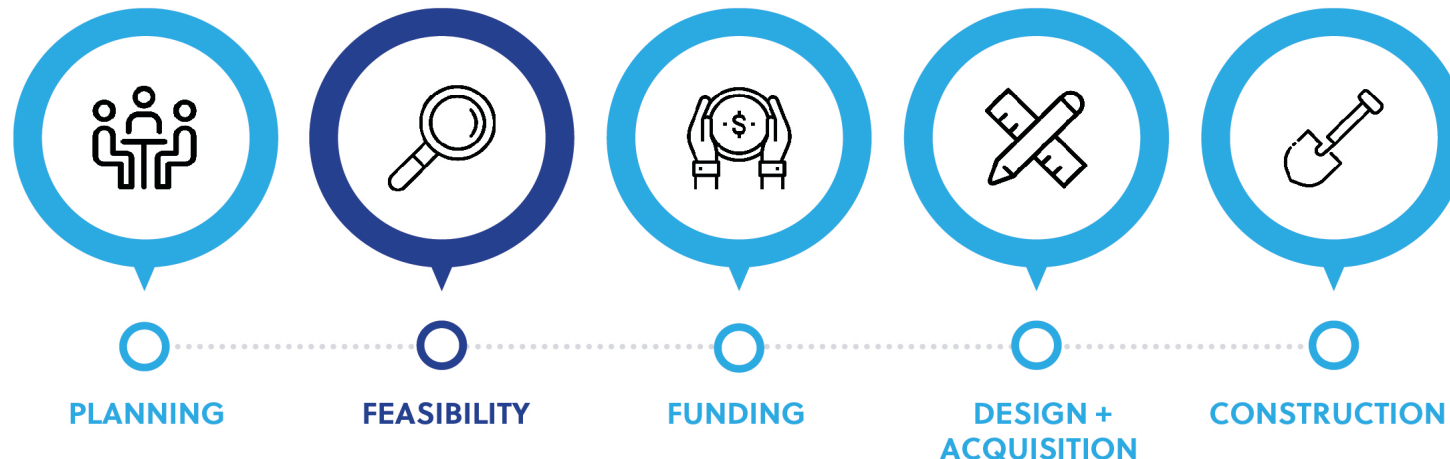
## IMPORTANCE OF FEASIBILITY STUDIES





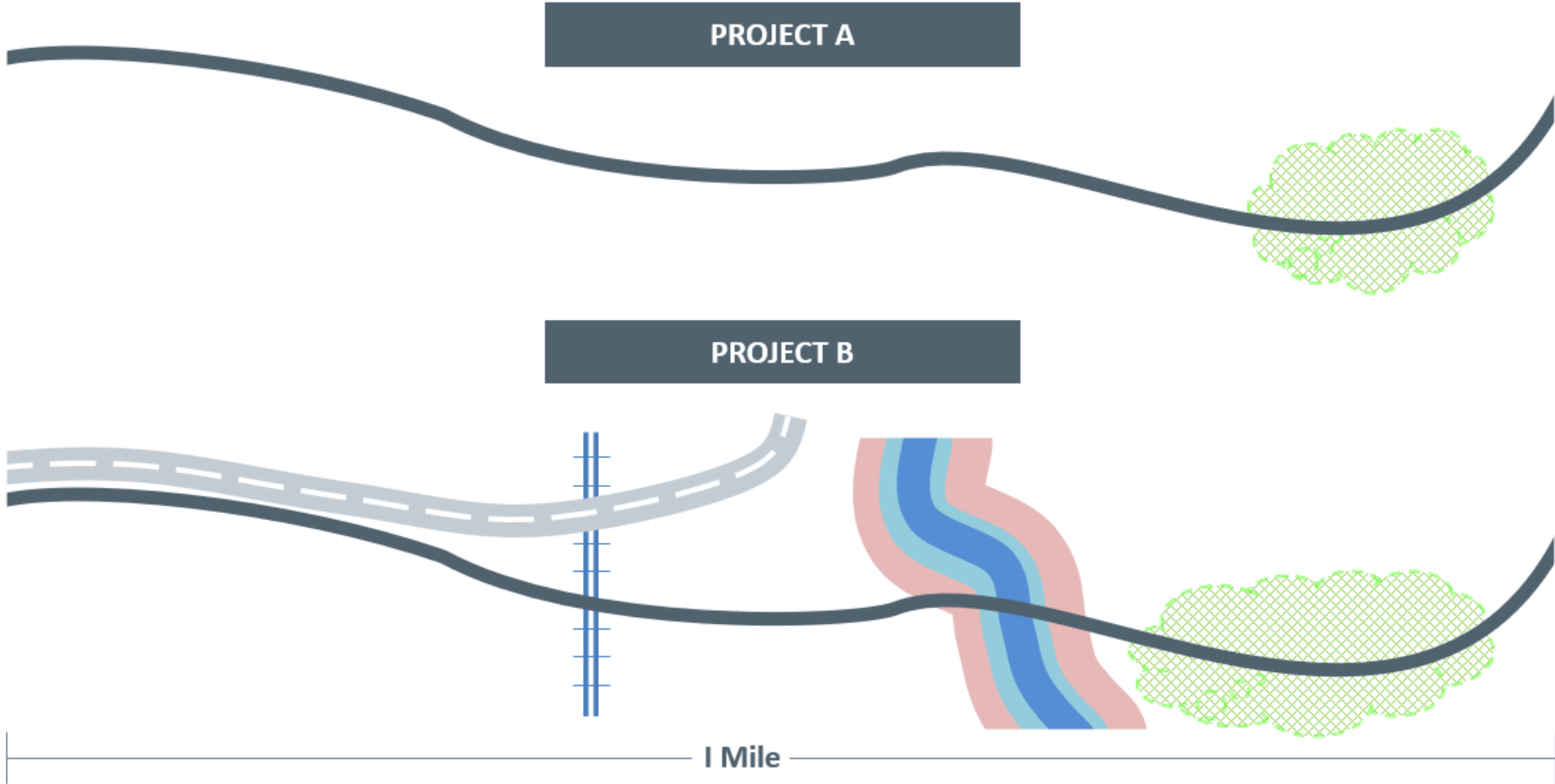
## Paved Trails and Sidewalks Feasibilities Studies Program Purpose

- In July 2022, NCDOT was allocated \$2 million in one-time funding from the North Carolina General Assembly to establish a feasibility study program for paved trails.
- The purpose of the Paved Trails and Sidewalks Feasibility Studies Grant Program is to improve the pipeline of bicycle and pedestrian projects accessing state and federal funding, resulting in successful implementation of projects led by communities prioritizing multimodal infrastructure.





WHY A FEASIBILITY STUDY?





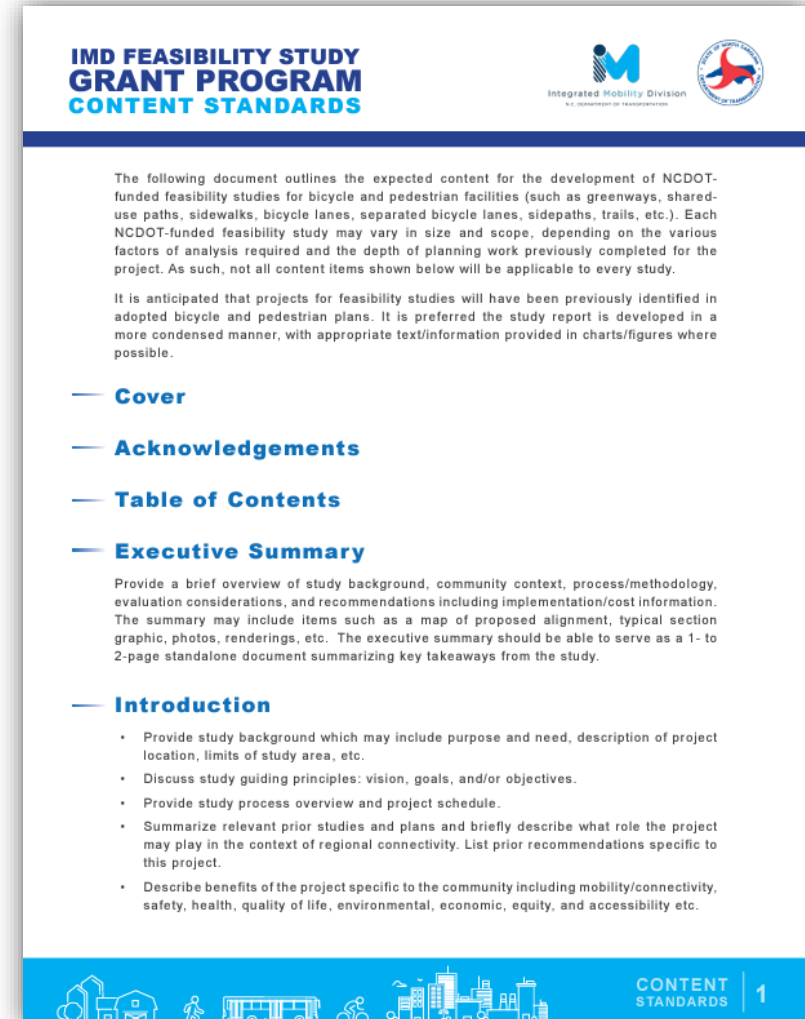
## IMPORTANCE OF FEASIBILITY STUDIES

- Comprehensively evaluate design alternatives
- Engage public / landowners / stakeholders early
- Detailed cost development to avoid underfunding
- Understand implementation

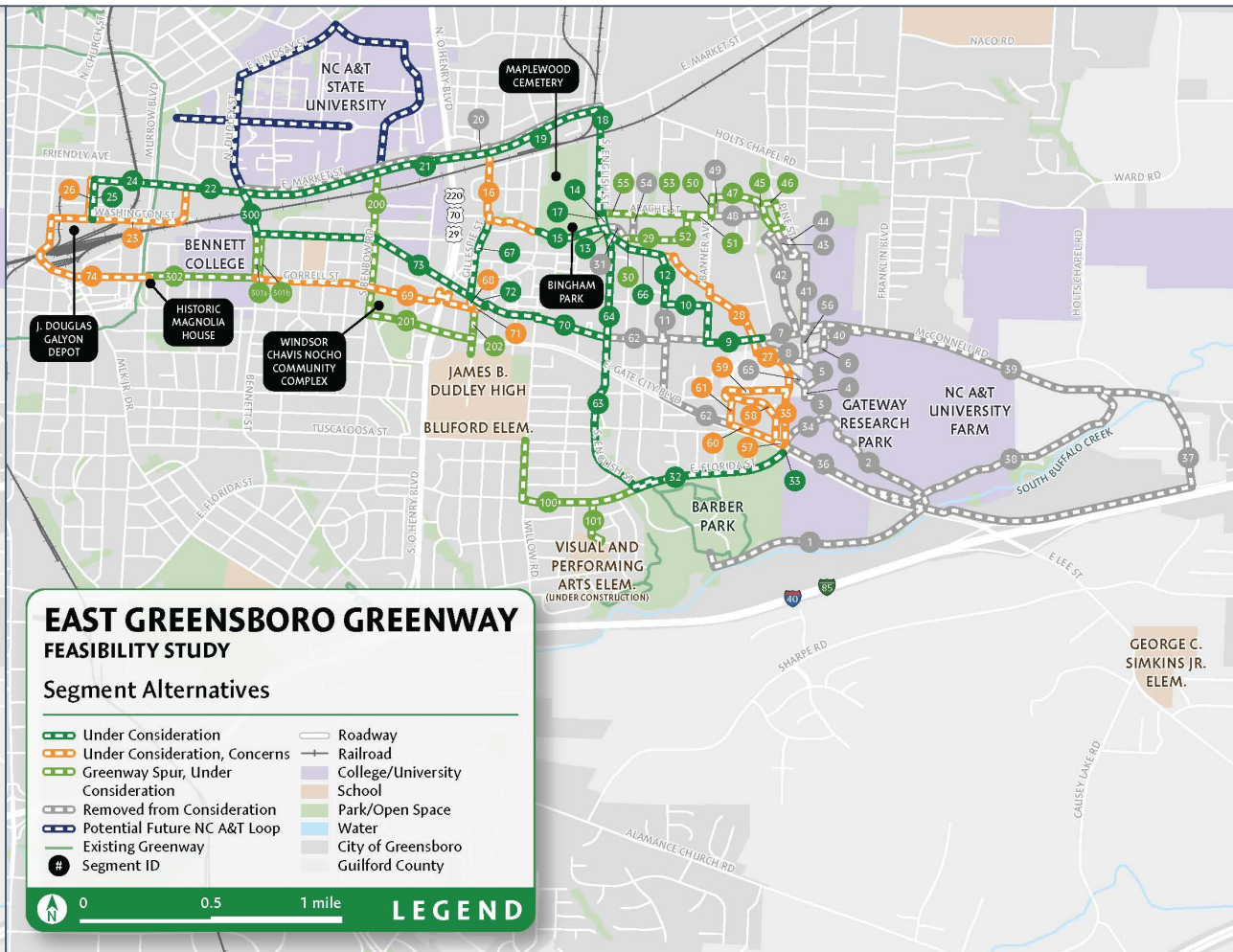
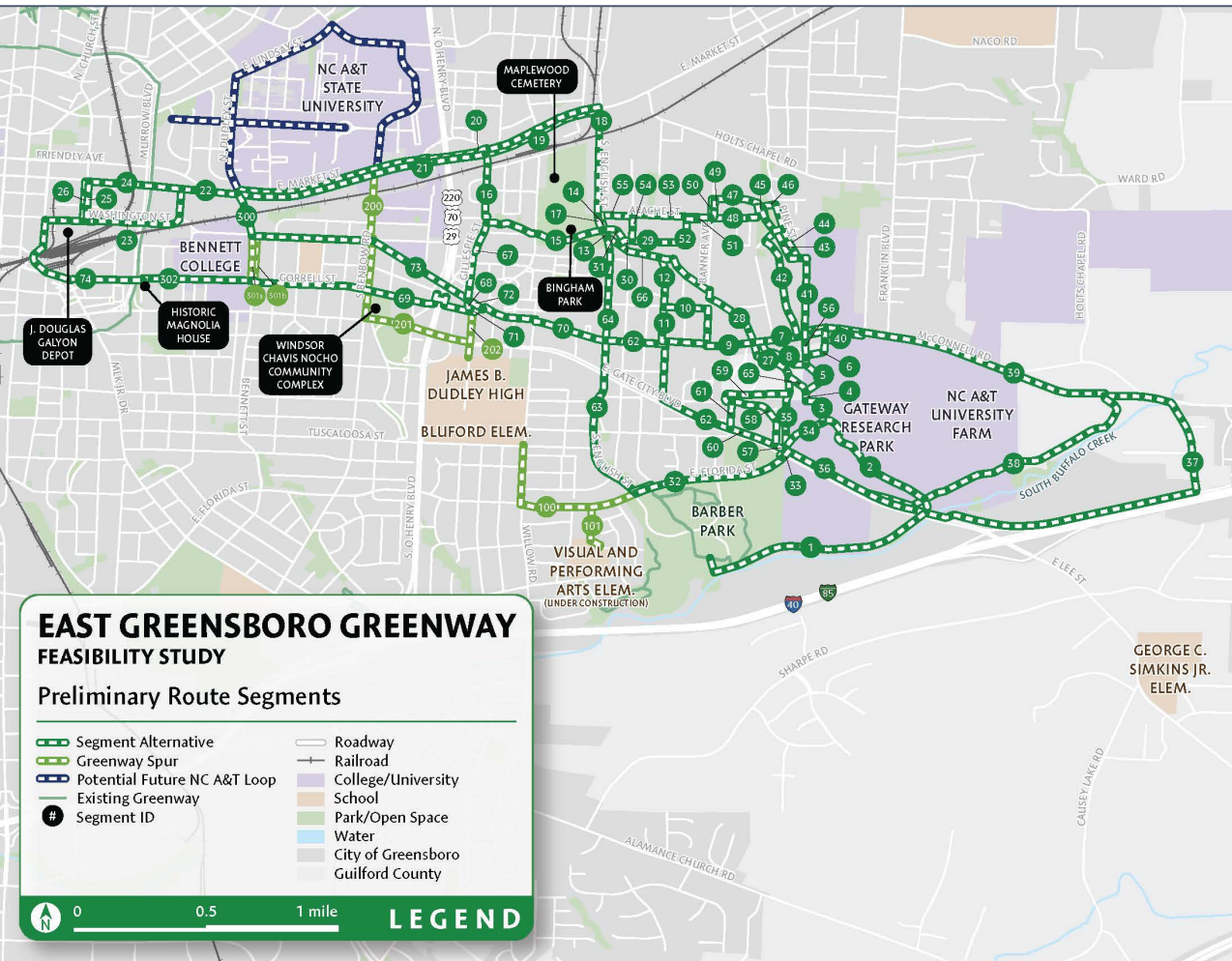


## CONTENT STANDARDS

- Cover
- Acknowledgements
- Table of Contents
- Executive Summary
- Introduction
- Study Considerations & Alternatives Development
- Community Involvement
- Evaluation & Recommendations
- Implementation
- Appendices









# STUDY OUTCOMES

## Chapter 2: Study Considerations + Alternatives Development

EAST GREENSBORO GREENWAY FEASIBILITY STUDY

CH 2. STUDY CONSIDERATIONS + ALTERNATIVES DEVELOPMENT

ID	MODELED	DESCRIPTION	LENGTH (MI)	OPPORTUNITIES	CONSTRAINTS	PARCEL IMPACTS	STIP/SPOT PROJECT IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
Segment 31	No	Along north side of creek heading west towards S. English St	0.09	User experience, connectivity to Hampton Elementary School and Bingham Park sites	Topography, floodway impacts, existing utilities	3 Parcels (3 Owners, 1 publicly-owned)		Removed from Consideration	Concerns with impacts to private property, interaction with existing sanitary sewer infrastructure, and challenging topography.	
Segment 32	Yes	Along south side of E. Florida St from S. English St to E. Gate City Blvd	0.50	Trail visibility, park and transit connectivity, publicly-owned land adjacent, connects to existing at-grade signalized roadway crossings at E. Florida St and E. Gate City Blvd	N/A	1 Parcel (1 Owner, publicly-owned)		Under Consideration		Hayes-Taylor YMCA, NCDOT
Segment 33	No	Crossing of E. Gate City Blvd into Gateway Research Park	0.05	Utilizes existing at-grade signalized roadway crossings, connection to Gateway Research Park	Lengthy at-grade roadway intersection crossings, crossing at high-volume and high-speed intersection	Predominantly within right of way, 1 parcel (1 owner)	HL-0046	Under Consideration		Hayes-Taylor YMCA, NC A&T, NCDOT
Segment 34	No	Along north side of E. Florida St (private)	0.15	Trail visibility, connection to Gateway Research Park	N/A	1 Parcel (1 Owner, publicly-owned)		Removed from Consideration	Biosecurity concerns with NC A&T farm property	NC A&T
Segment 35	Yes	Follows western parcel boundary of Gateway Research Park from E. Florida St heading north	0.22	Publicly-owned land	Steeper trail profile required due to topography, lack of trail visibility due to existing wall	1 Parcel (1 Owner, publicly-owned)		Under Consideration - Construction & Maintenance Concerns	Concerns with presence of existing wall that would limit trail visibility and steep topography. Biosecurity concerns with NC A&T farm property.	NC A&T
Segment 36	Yes	Along north side of E. Gate City Blvd from E. Florida St to South Buffalo Creek	0.53	Trail visibility, publicly-owned land, connection to Gateway Research Park, utilizes existing at-grade signalized roadway crossing at E. Florida St and E. Gate City Blvd	Floodplain impacts	Predominantly within right of way, 1 parcel (1 owner)		Removed from Consideration	Biosecurity concerns with NC A&T farm property	NC A&T, NCDOT

# East Greensboro Greenway FEASIBILITY STUDY

## Alternative #1

### Length

Mainline: 3.65 miles

Spurs: 2.27 miles

### 2024 Base Construction Opinion of Probable Cost

Mainline: \$6.790 million

Spurs: \$4.503 million





# East Greensboro Greenway FEASIBILITY STUDY

## Alternative #2

### Length

Mainline: 3.08 miles

Spurs: 2.13 miles

### 2024 Base Construction

### Opinion of Probable Cost

Mainline: \$5.755 million

Spurs: \$3.764 million





## Alternative #3

### Length

Mainline: 2.77 miles

Spurs: 3.01 miles

### 2024 Base Construction Opinion of Probable Cost

Mainline: \$5.162 million

Spurs: \$5.467 million



## Alternative #4

### Length

Mainline: 3.98 miles

Spurs: 1.48 miles

### 2024 Base Construction

### Opinion of Probable Cost

Mainline: \$6.899 million

Spurs: \$2.913 million



# STUDY OUTCOMES

## Route Alternatives Evaluation

Key:

High =  
Most  
Desirable

Low =  
Least  
Desirable

ROUTE ALTERNATIVE SELECTION CRITERIA	EAST GREENSBORO GREENWAY FEASIBILITY STUDY			
	ALT 1	ALT 2	ALT 3	ALT 4
Accessibility + User Experience	Med	Med	High	Med
Community Priorities	High	Med	High	High
Physical Feasibility + Constructability	Med	High	High	Med
Desired Connectivity	High	High	Med	High
Economic Development + Placemaking	High	High	Med	High
Potential Funding Opportunities	Med	High	High	Low
Property Impacts	Med	High	High	Med
Traffic Impacts	High	Med	Med	Med
Environmental Impacts	Med	High	High	Med
Leadership Support	High	Med	High	Med
Implementation Timeframe	Low	Low	High	Low
Cost Effectiveness	Med	High	High	Med



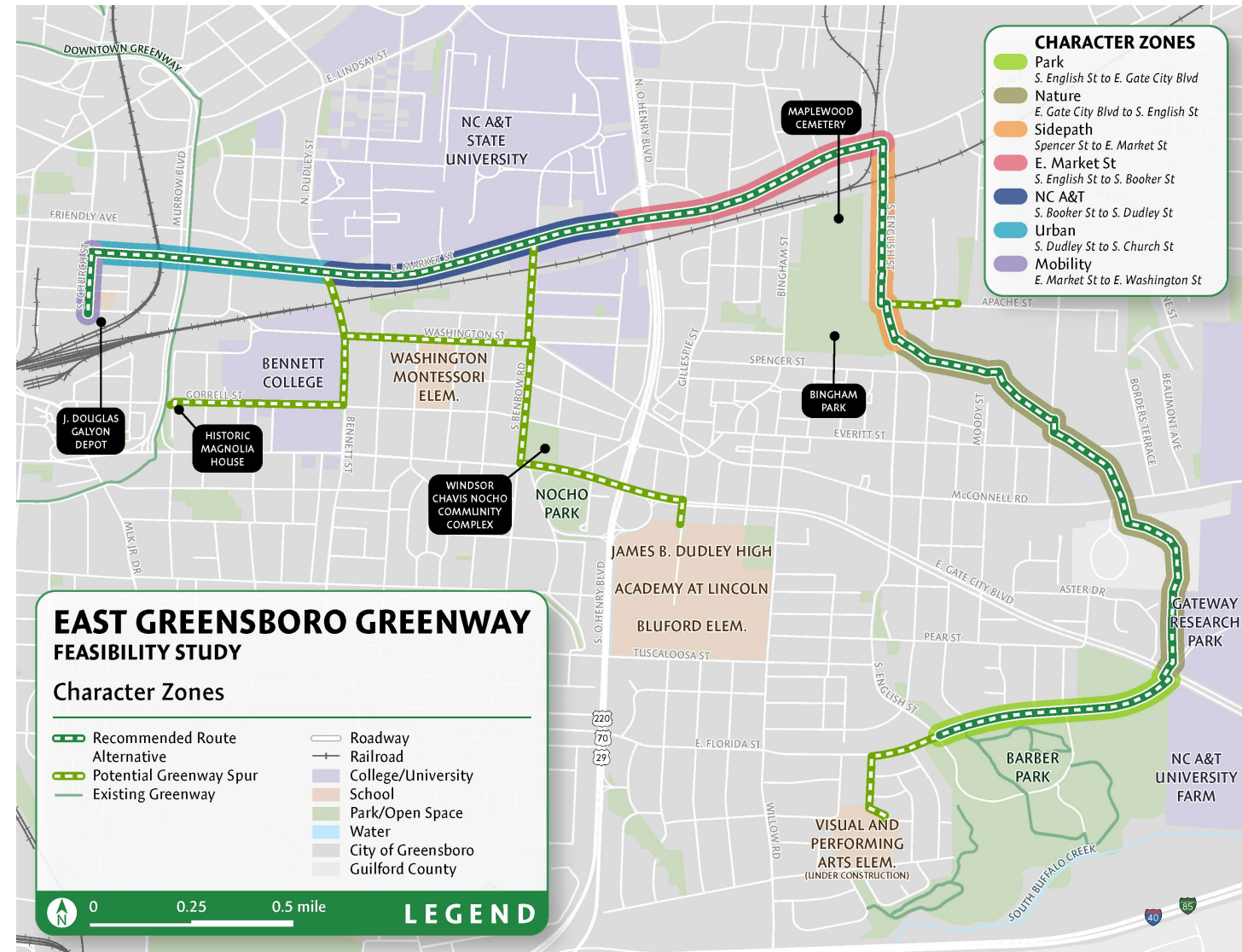
RECOMMENDED ALIGNMENT

- 4-mile mainline trail
- 2.5 miles potential spurs



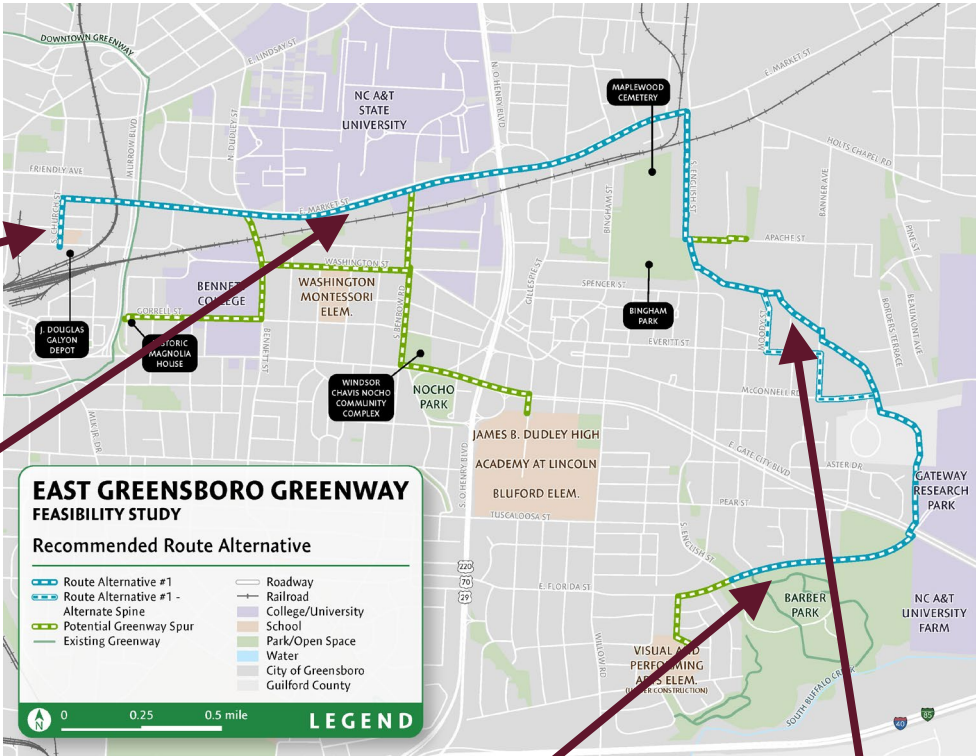
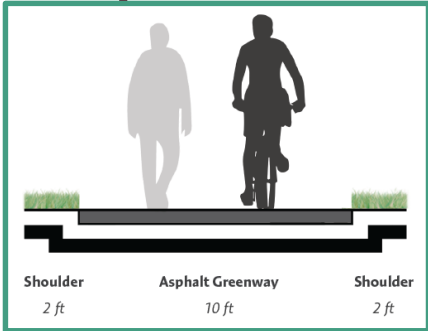
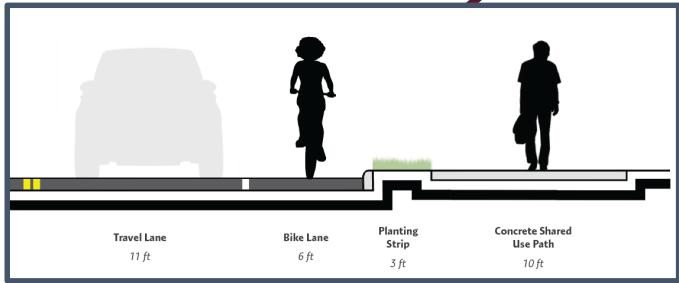
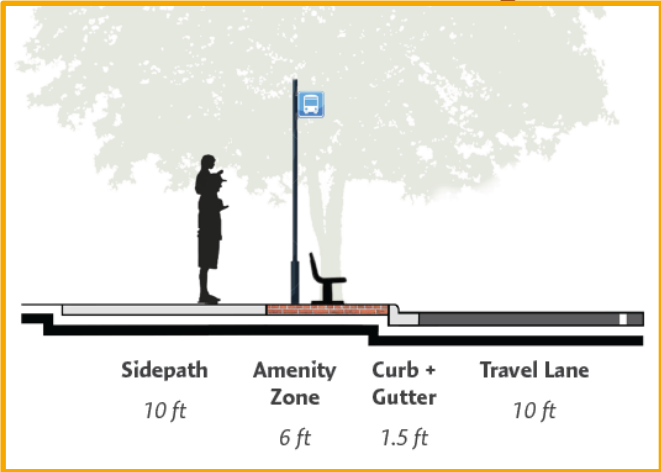
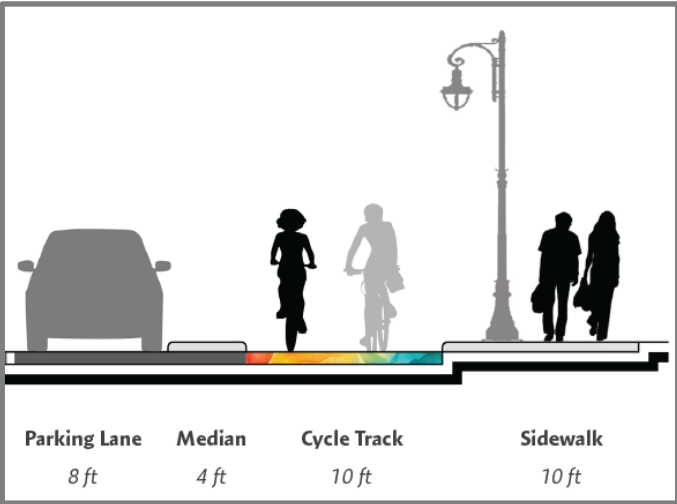
## MAINLINE CHARACTER ZONES

- Define areas where the trail has a unique relationship to the surrounding land use and transportation network.
- Seven (7) character zones for the recommended route alternative:
  - Park
  - Nature
  - Sidepath
  - E. Market St
  - NC A&T
  - Urban
  - Mobility



Cross-sections

- 10 unique cross sections





Trailhead Typologies

- Major Trailhead
- Gateway Trailhead
- Decision/Confirmation Wayfinding

AMENITY TYPE	MAJOR TRAILHEAD	GATEWAY TRAILHEAD	DECISION/ CONFIRMATION WAYFINDING
Public Parking	Yes		
Restrooms	Yes		
Rest Area (shade, seating)	Yes	Yes	
Mapping/Wayfinding	Yes	Yes	Yes
Parklets	Yes	Yes	
Public Art	Yes	Yes	Yes
Greenway Branding	Yes	Yes	Yes







Parking areas at Major Trailhead areas should provide accessible entrances to the greenway.  
*Abersham Park - Davidson, NC*



Major Trailheads attract high volumes of users and shelters can provide shaded gathering areas.  
*Abersham Park - Davidson, NC*



Providing restroom access along the greenway route is a key function of Major Trailheads, along with large wayfinding map installation.  
*West Branch Rocky River Greenway - Davidson, NC*

AMENITY TYPE	MAJOR TRAILHEAD	GATEWAY TRAILHEAD	DECISION/ CONFIRMATION WAYFINDING
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Shade, seating, and water fountains are key elements for Gateway Trailheads which enhance user experience.  
*Irwin Creek Greenway - Charlotte, NC*



Gateway Trailhead amenities can often fit into compact spaces at a transition point in the greenway.  
*Antiquity Greenway - Cornelius, NC*



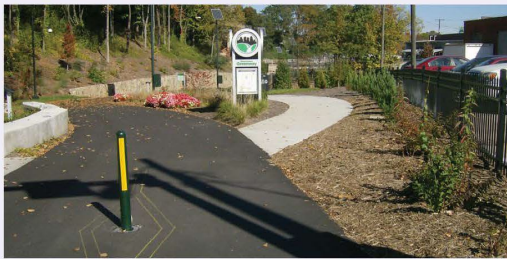
Greensboro is a leader in the state of North Carolina for incorporation public art into Gateway Trailheads.  
*Downtown Greenway - Greensboro, NC*



Map installations orient greenway users.  
*Caldwell Station Creek Greenway - Cornelius, NC*



Wayfinding installations can include smaller public art pieces as additional right of way allows.  
*Downtown Greenway at Grove Quest Way - Greensboro, NC*



Wayfinding installations do not take up much extra space and generally fit within the right-of-way needed for the greenway.  
*Downtown Greenway - Greensboro, NC*



## Crossing Treatments - 40 Total

- Major Crossings
- Minor Crossings
- Driveway Crossings





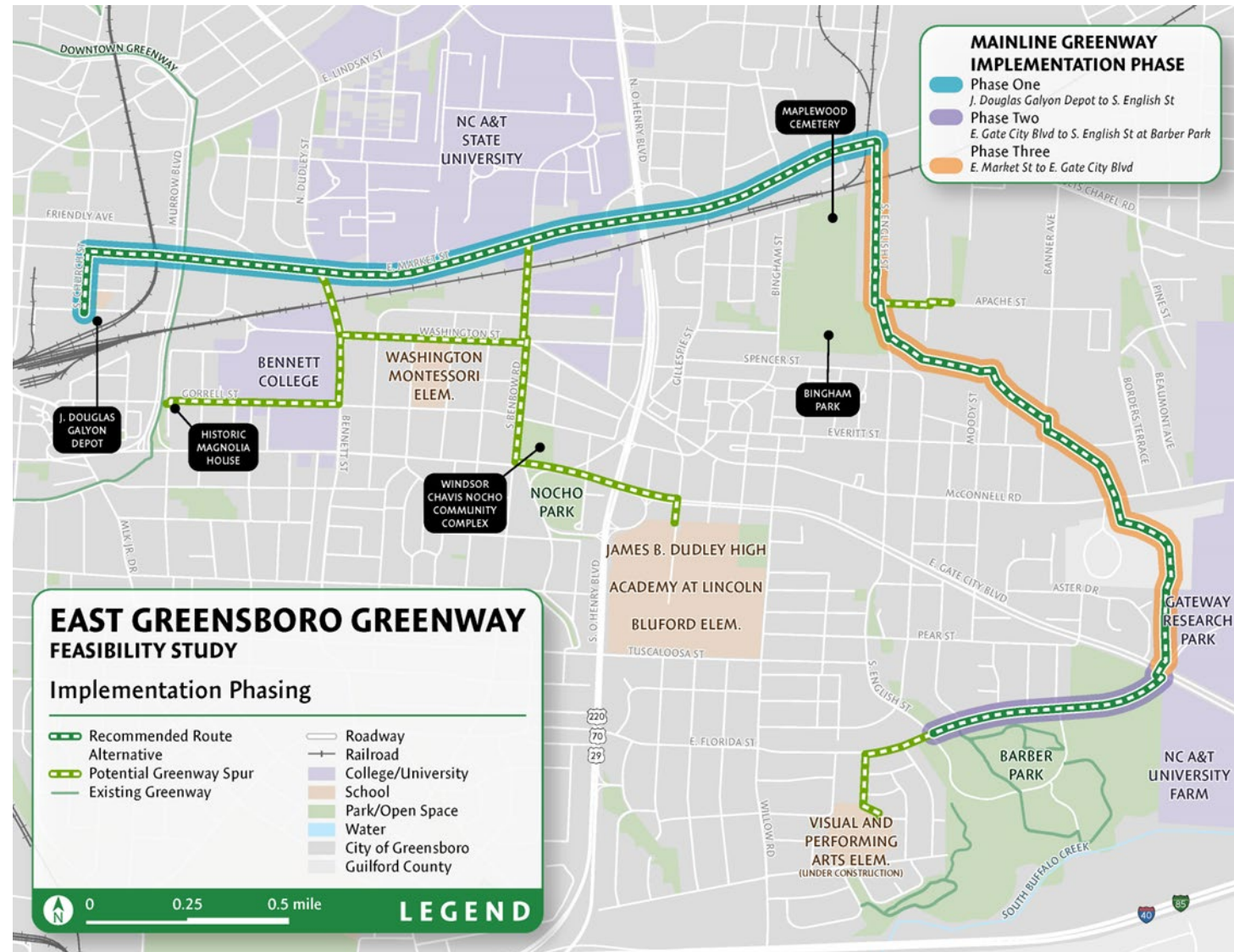
## Crossing Treatments - 40 Total

- Major Crossings
- Minor Crossings
- Driveway Crossings



## PHASING CONSIDERATIONS

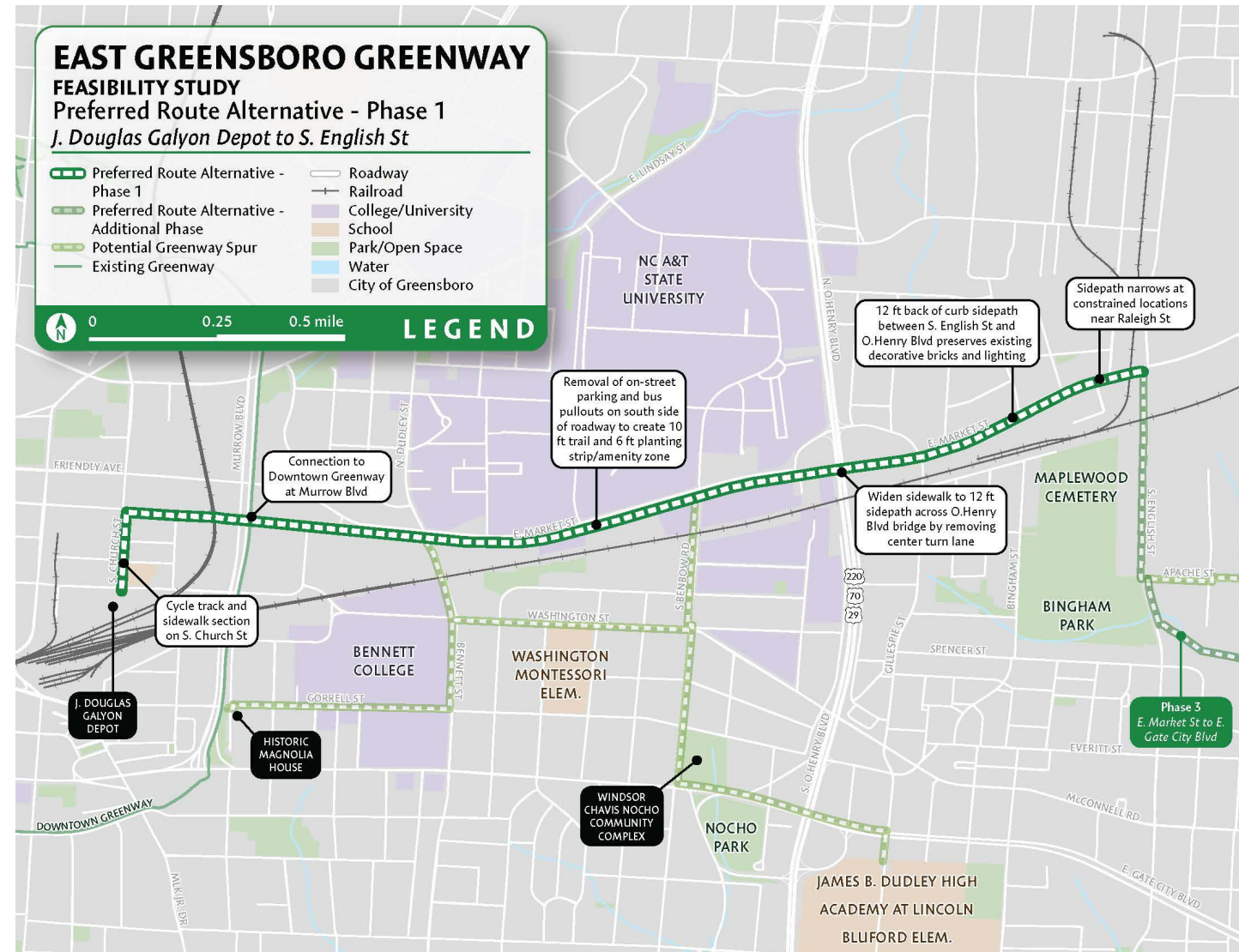
- **Destinations and Connectivity**
  - Building on the existing network
  - Major destinations accessible
- **Leveraging other projects for implementation**
  - Investments already in the pipeline
- **Barriers to Implementation**
  - Minimal right-of-way acquisition
- **Fundable Projects**
  - Segments that score competitively for grant funding





### Phase 1 – J Douglas Gaylon Depot to S English St

- Facility Types: 2-way cycle track, Sidepath
- Total Length: 1.84mi
- Greenway Connections: Downtown Greenway
- Destinations
  - Intermodal Depot
  - Downtown Greenway
  - NC A&T Main Campus
  - A&T Four Middle College

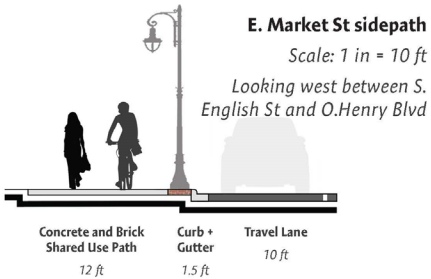




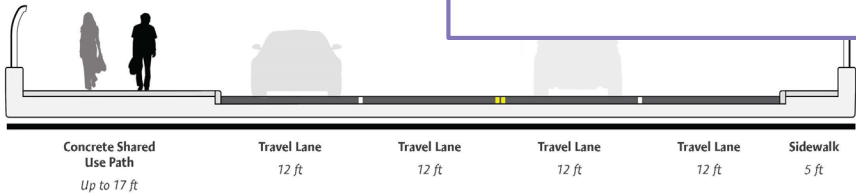
Estimated Project Costs

COST CATEGORY	COST ESTIMATE
2024 Baseline Construction Cost Estimate	\$3,563,000
Design Services Cost Estimate	\$535,000
Escalated Construction Cost Estimate (Build Year 2029)	\$4,550,000
Construction Engineering + Inspection Services	\$410,000
Additional Project Contingency (5%)	\$228,000
Total Recommended Project Budget	\$5,723,000

Primary Typical Sections

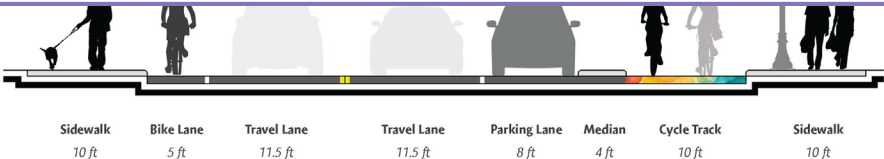


**E. Market St sidepath**  
Scale: 1 in = 10 ft  
Looking west across bridge



Estimated Project Costs

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Additional Project Contingency (5%)	\$228,000
Total Recommended Project Budget	\$5,723,000



- Cost Estimates + Funding Resources
- Key Partners + Roles
- Action Plan
- Safety + Maintenance Guidance



Policy and Planning

TASK #	ACTION	LEAD	PARTNERS	TIMEFRAME
1	Adopt the <i>East Greensboro Greenway Feasibility Study</i> . This action allows the study to become the official planning document for the greenway and demonstrates local intention to support project implementation.	GUAMPO	City of Greensboro	Short-Term
2	Amend the <i>City of Greensboro Parks and Recreation Master Plan</i> as needed to reflect the adopted East Greensboro Greenway alignment.	City of Greensboro		Short-Term
3	Amend the GUAMPO <i>Metropolitan Transportation Plan (MTP)</i> and <i>Comprehensive Transportation Plan (CTP)</i> to include the East Greensboro Greenway as a candidate bicycle/pedestrian project.	GUAMPO	City of Greensboro, NCDOT	Short-Term
4	Include the East Greensboro Greenway alignment in the <i>Guilford County Parks and Recreation Master Plan Update</i> .	Guilford County Parks and Recreation	City of Greensboro	Short-Term

MAINTENANCE TASK	TASK TYPE	RECOMMENDED FREQUENCY
Tree / Bush trimming	Routine	On-going / Annually
Mowing		
Trail sweeping		
Signage / Map / Kiosk Updates / Replacement		
Trash removal / Litter clean-up		
Planting, pruning, landscaping		
Flooding repairs		
Repainting / Restriping		
Minor patching		
Lighting replacement		
Bollard locks / Replacement		
Pest management		
Greenway and sidepath sealcoating	Minor Repairs	Every 5 years
Greenway and sidepath resurfacing:	Major Reconstruction	Every 10-15 years
• Asphalt		Every 20 years
• Concrete		Every 10 years
• Boardwalk	Major Reconstruction	Every 20 years
Complete greenway and sidepath replacement, regrading, and resurfacing		Every 20 years

Source: Best Practices in Trail Maintenance: A Manual by the Ohio River Greenway, Purdue University

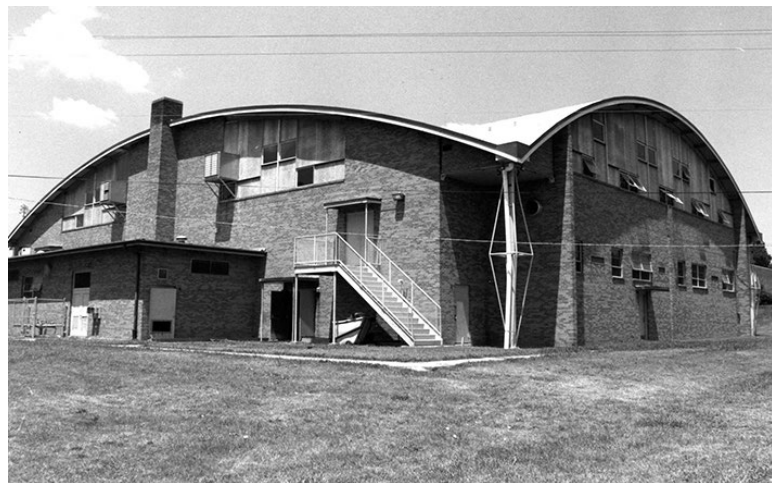
## East Greensboro Greenway FEASIBILITY STUDY

### Reaches key destinations

- J. Douglas Galyon Depot
- Downtown Greenway
- NC A&T State University
- Bennett College
- Windsor-Chavis-Nocho Community Complex
- Dudley HS/Bluford ES
- Bingham Park
- Hampton School redevelopment site
- Barber Park/YMCA







Dudley High School Gymnasium



Windsor Community Center



The Lake at Windsor Community Center



The Greensboro Six



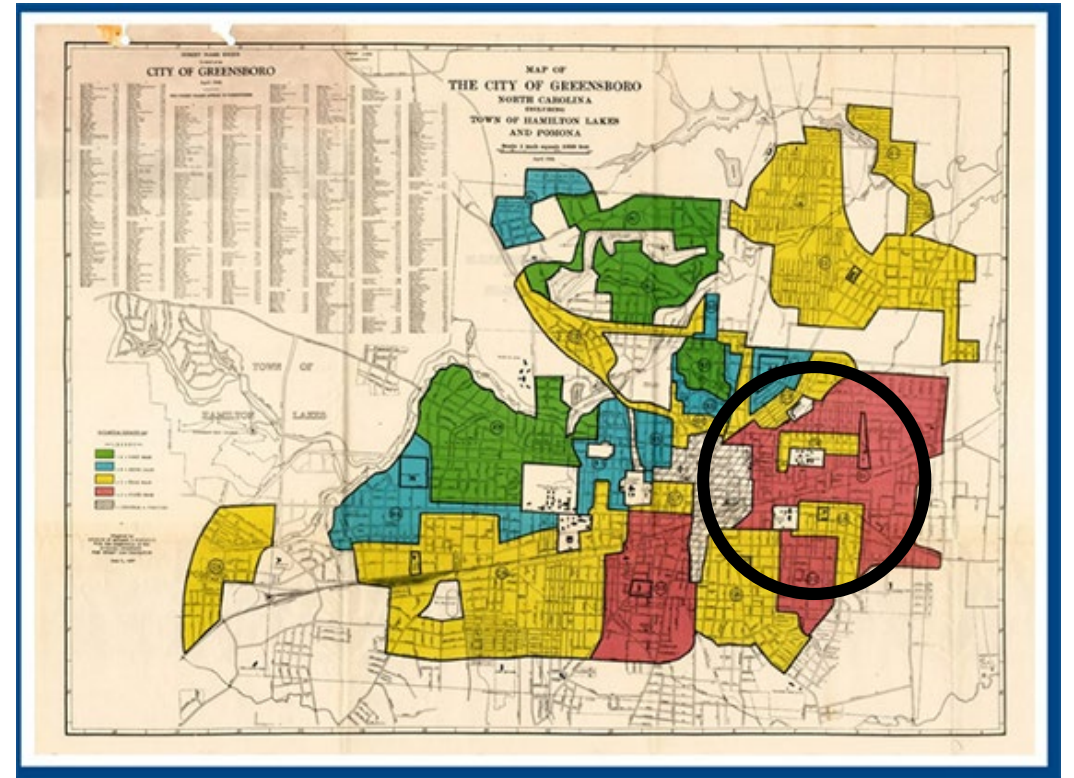
Carnegie Negro Library



Vance Chavis Library

## History of Planning in East Greensboro

- 1930s: Home Owners' Loan Corporation redlining
- 1950s: Public housing
  - Morningside Homes
  - Ray Warren Homes
- 1965: Greensboro first municipality in NC to use federal urban renewal funds







## History of Planning in East Greensboro

- 1953: The Thoroughfare Plan for Greensboro (Babcock Plan)
  - Network of thoroughfares through and around Greensboro
  - D. Henry Blvd (US-29) dedicated in 1957





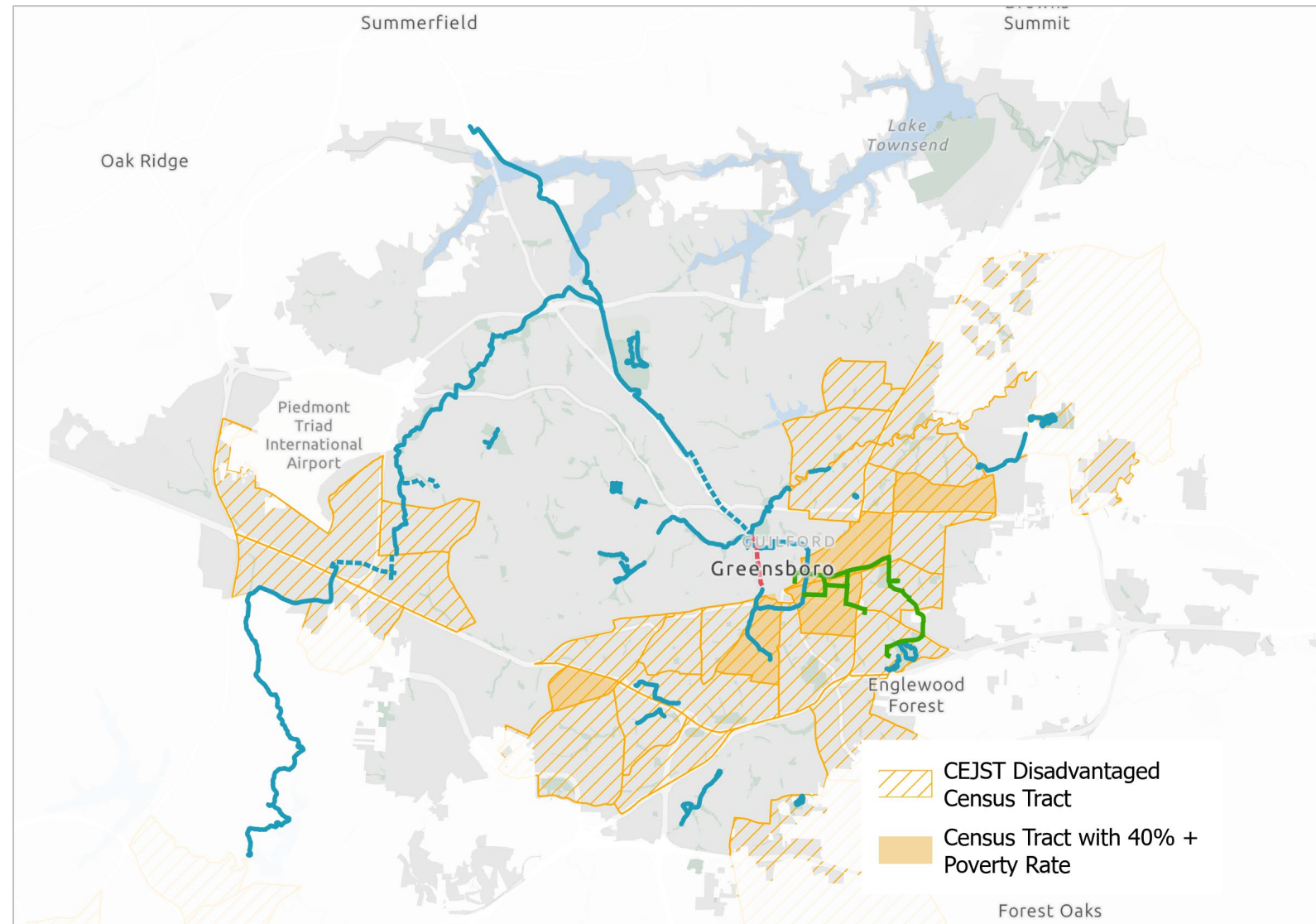
## Parks & Recreation Investments

(2016-2022):

\$10,518,168

-future WCNCC

-future Bingham Park remediation

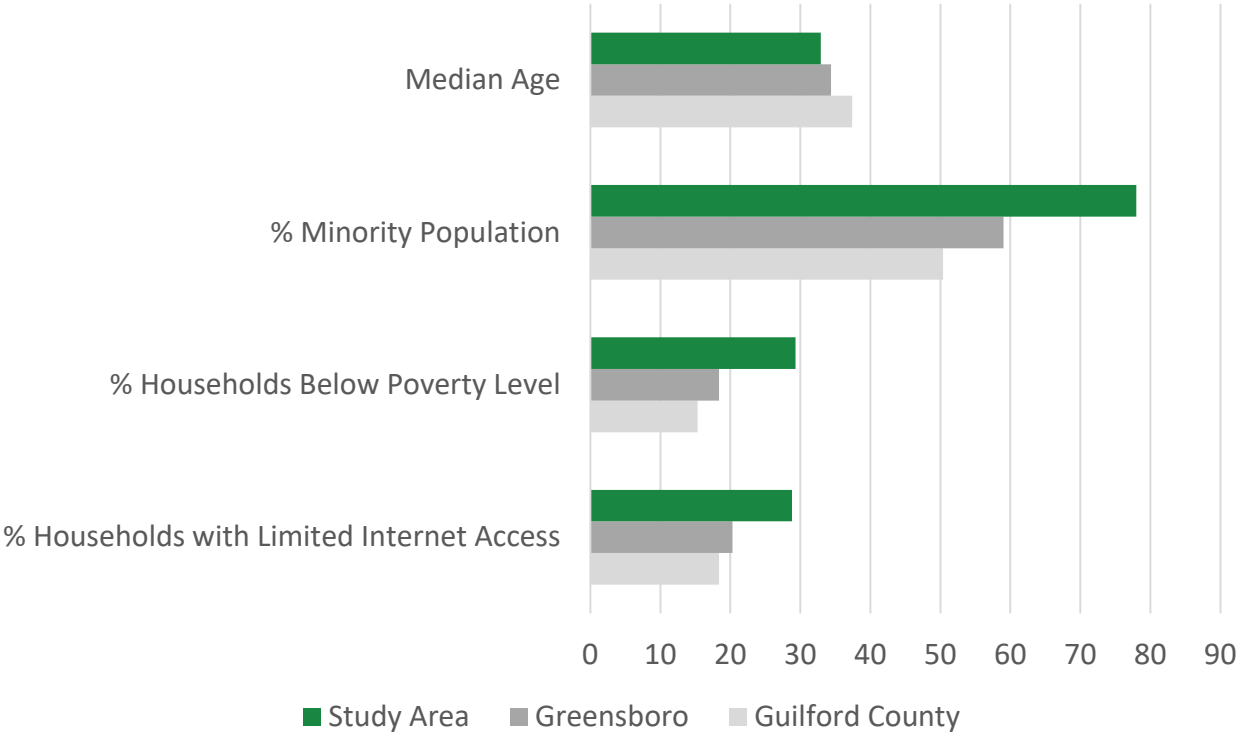




## Demographics

- Lower median age
- High minority population
- Poverty rate of 29.3%, higher than City average (18.4%)
- Households with limited Internet access
- Median household income \$36,640, lower than City (\$49,492)

Selected Demographics





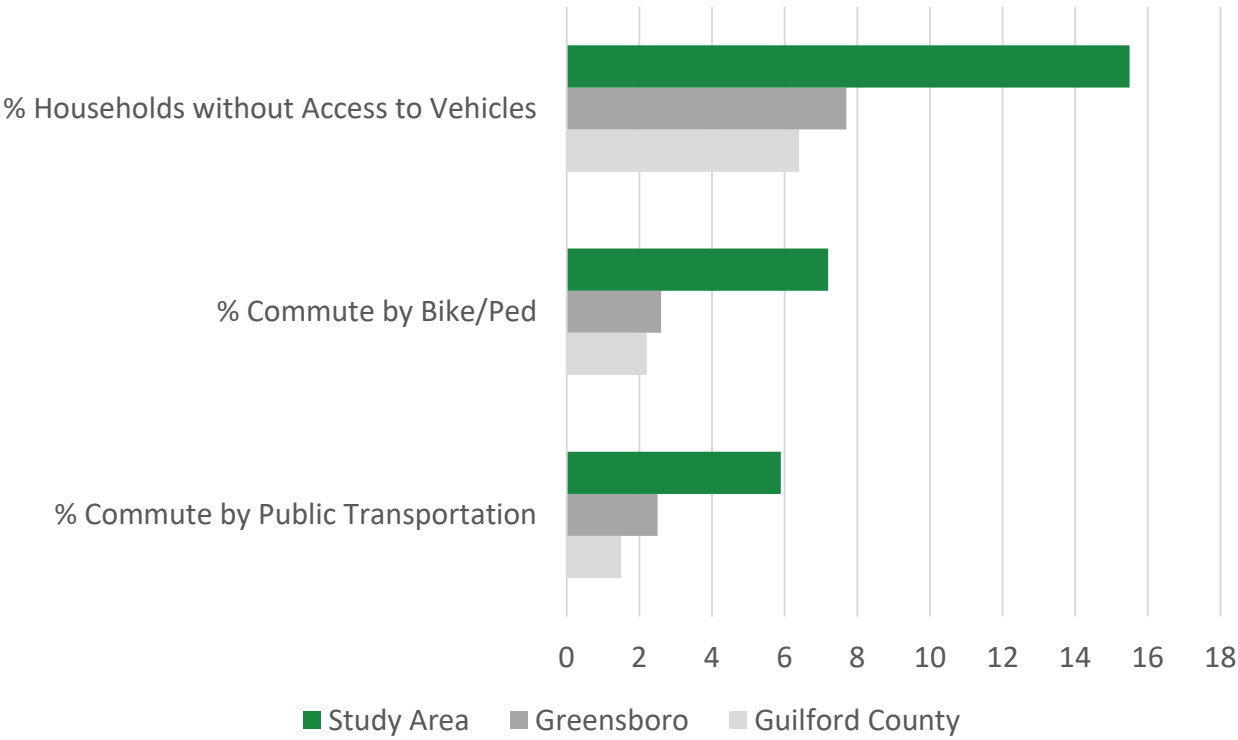
## Commute Mode

- 15.5% of households do not have access to a vehicle
- 7.2% in study area walk and bike, 5.9% take public transportation

**59%** of the DSA's HOUSEHOLDS have ACCESS to **ONE** VEHICLE or LESS



## Transportation Characteristics





## Emphasis on Community-Based Planning

- Need to rebuild community trust and relationships with stakeholders
- A bottom-up process, not top-down
- Listening, not prescribing
- Go beyond traditional public meeting engagement methods



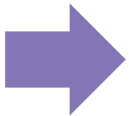
# "A plan for the people, by the people"



## Community and Stakeholder Engagement Approach

### Challenges

- Historically neglected community
  - Harder to reach with traditional engagement methods
  - Distrust of top-down planning processes
- Gain support from key stakeholders and landowners



### Opportunities

- Engage historically under-engaged community
- Variety of outreach methods
- Create a plan that reflects the needs and desires of the community



## Outreach Methods

- Steering Committee
  - 5 meetings with 17 members representing nonprofit, City, and state organizations
- Stakeholder Engagement
  - 5 focus group meetings with NC A&T, City/County staff, community/neighborhood organizations
  - Additional coordination with key institutional stakeholders

### Steering Committee Members

Elizabeth Jernigan, City of Greensboro Parks + Recreation  
Shawna Tillery, City of Greensboro Parks + Recreation  
Johanna Cockburn, City of Greensboro Transportation  
Deniece Conway, City of Greensboro Transportation  
George Linney, Greensboro Transit Agency (GTA)  
Craig McKinney, GUAMPO  
Mary Harward, GUAMPO  
Chad Reimakoski, NCDOT Division 7  
Joseph Furstenberg, NCDOT IMD  
Oliver Thomas, PhD, NC A&T  
Staci Manter, NCIDQ, NC A&T  
James Cox, Greensboro Housing Authority  
Dabney Sanders, Action Greensboro  
Mac Sims, East Greensboro NOW  
Phil Barnhill, East Greensboro NOW  
Nicole Lindahl, BIG (Bicycling in Greensboro)  
Roger Bardsley, Local Greenway Advocate

<b>Steering Committee Meeting #1</b>	<b>Steering Committee Meeting #4</b>
October 5, 2023	July 9, 2024

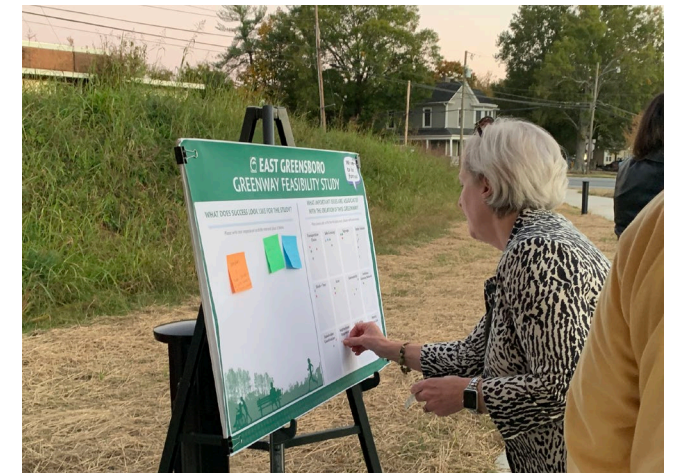
<b>Steering Committee Meeting #2</b>	<b>Steering Committee Meeting #5</b>
December 12, 2023	August 14, 2024

**Steering Committee Meeting #3**  
March 22, 2024



## Outreach Methods

- Community Engagement
  - 3 public surveys
  - 4 pop-up events
    - Cottage Grove Fall Festival
    - An Evening Under the Star
    - Food Lion at S. English St/E. Market St
    - Greensboro Community Bike Shop



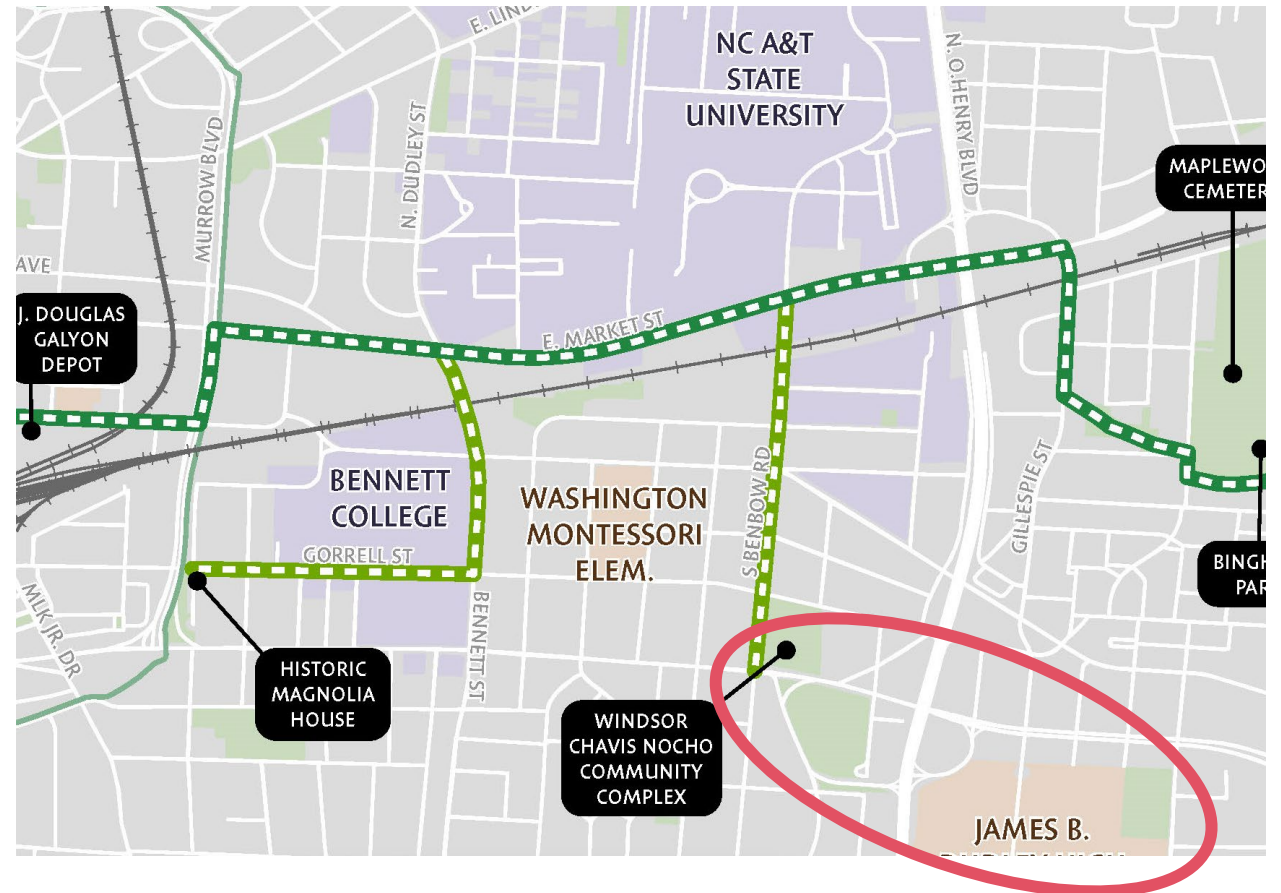
## Survey Findings

- Lack of safe biking and walking connections to and from trails is a major barrier (74% of respondents)
- Need for safety improvements on busy corridors such as E. Market St, where people feel unsafe walking and biking
- Preferred route alternative received greatest public support
- Community has a strong desire to be included in the planning and design process



## Lessons Learned

- **Digital surveys vs. in person engagement**
  - Digital survey not representative of population
- **Listen to the community!**
  - Identify barriers, needs, and desires
  - Shape the direction of the project







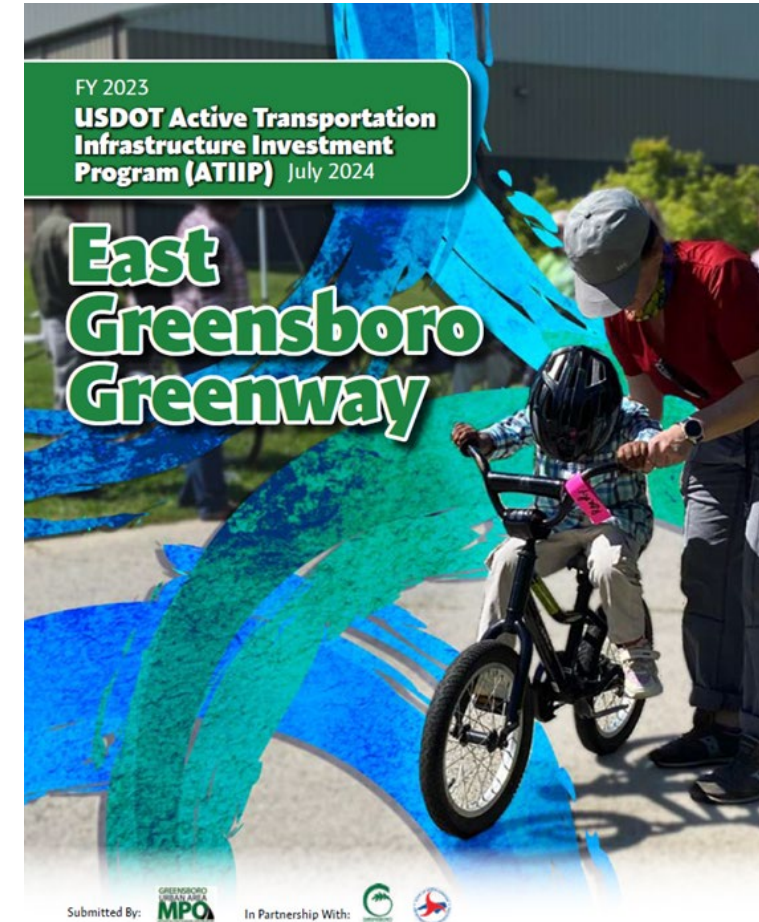
## Active Transportation Infrastructure Investment Program (ATIIP)

- Bipartisan Infrastructure Law program authorized \$200 million investment in active transportation
- \$44.5 million available in FY 2023 for active transportation networks and spines

Safety	Mode Shift	Climate	Equity	Accessibility	Connectivity
<ul style="list-style-type: none"><li>▪ Protect vulnerable users</li></ul>	<ul style="list-style-type: none"><li>▪ Support multimodal transportation</li></ul>	<ul style="list-style-type: none"><li>▪ Reduce GHG emissions</li></ul>	<ul style="list-style-type: none"><li>▪ Underserved/ disadvantaged communities</li><li>▪ Equitable outcomes</li></ul>	<ul style="list-style-type: none"><li>▪ All ages + abilities</li></ul>	<ul style="list-style-type: none"><li>▪ Transit</li><li>▪ Destinations</li></ul>

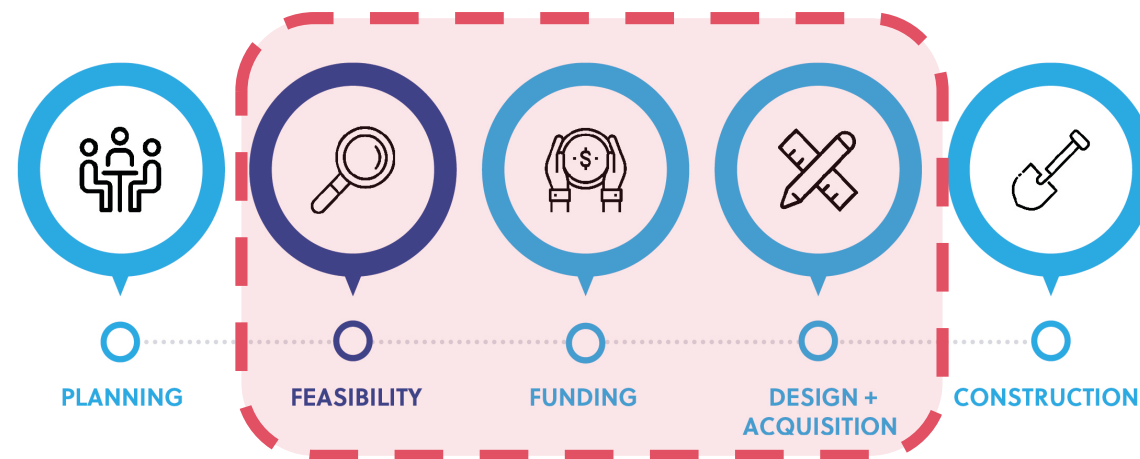
## East Greensboro Greenway and ATIIP

- NCDOT funded completion of application
- East Greensboro Greenway ATIIP request
  - Federal request: \$1,525,600
  - City match (20%): \$381,400
  - Funding use:
    - 100% design
    - Environmental review and permitting
    - Additional community engagement
- Funding awards announced January 2025



## Leveraging Feasibility Studies and Grant Pursuits

- Feasibility study shows commitment to project
- Engage with stakeholders early
- Established organizational framework and institutional knowledge
- Shortens project development process





Thank you!

## QUESTIONS?

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