

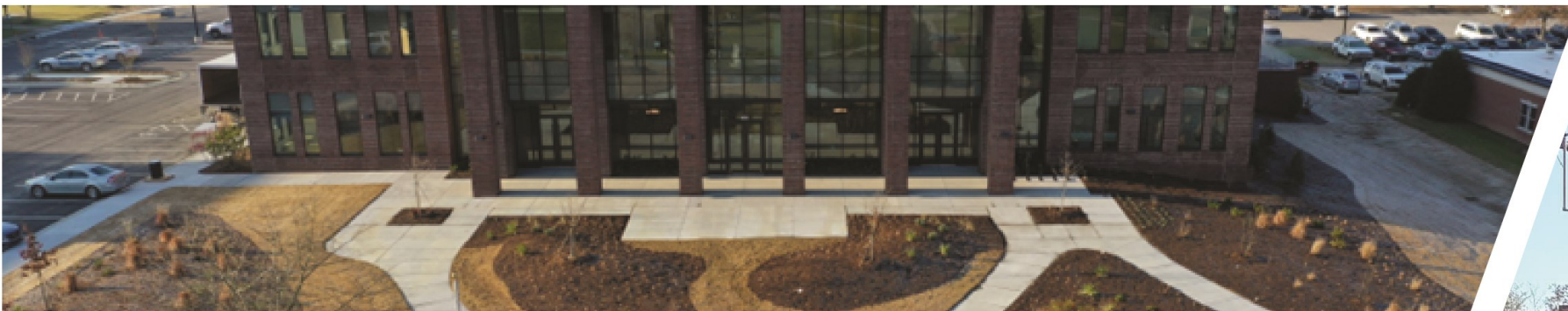


# U.S. 401 CORRIDOR STUDY

Wake County / Fuquay-Varina  
Harnett County / Lillington

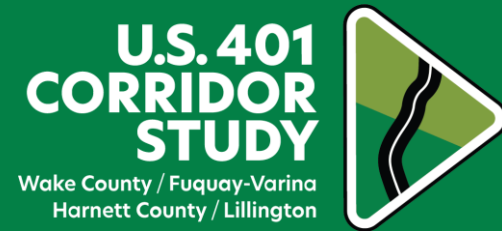


# US 401 Corridor Study Public Presentation October 2023

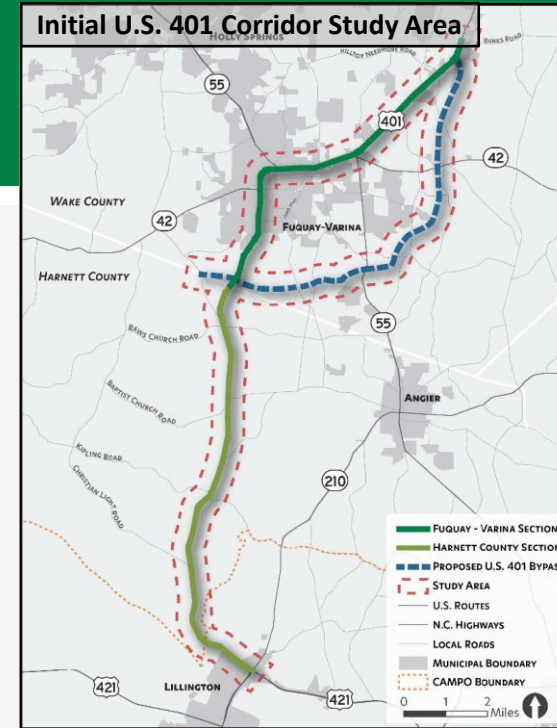


Stewart  
HR&A Advisors  
Spanish Speaking

# Presentation Summary

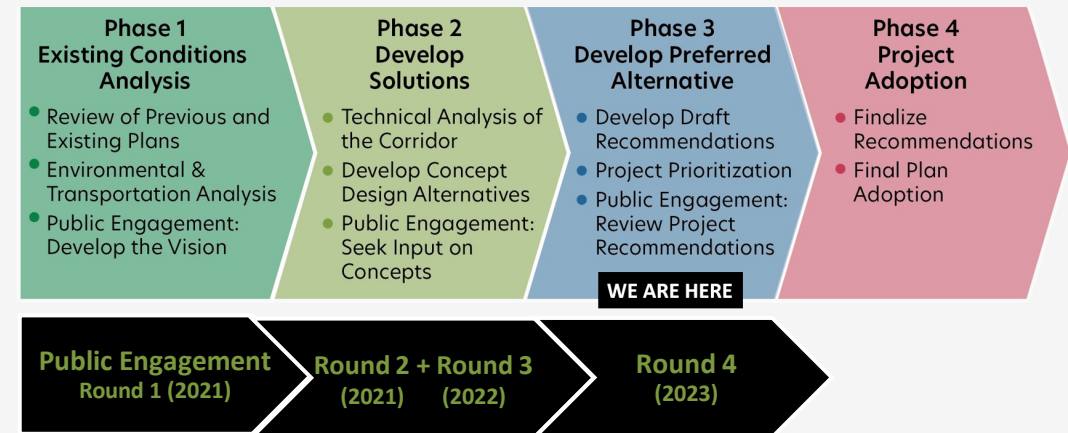


- This Corridor Study is in the Recommendations & Preferred Alternative Phase (Phase 3 of 4),
  - The next, final, phase is Endorsement/Approval of the Study's recommendations by the CAMPO Executive Board
- Significant Analysis conducted over 2 years
- This is the 4<sup>th</sup> of 5 rounds of Public Engagement
  - 5<sup>th</sup> (final) round is Public Hearing/Comment Period for Final Report and Board Action listed in bullet 1 above



- **Important Recommendation:**

**Improvements to Existing U.S. 401 and existing area roadways will be prioritized** for short and mid-term implementation – to occur **before the long-term** recommendation for a new roadway, known as “Future U.S. 401”.



# Agenda

- **Project Recap** (History, Corridor conditions, Future alignment discussions, etc.)
- **Existing U.S. 401 in Wake County Recommendations**
- **Existing U.S. 401 in Harnett County Recommendations**
- **N.C. 55, Angier Bypass, and N.C. 210**
- **Future/Long term U.S. 401 Alignment Recommendation**
- **Next Steps**
- **Questions?**



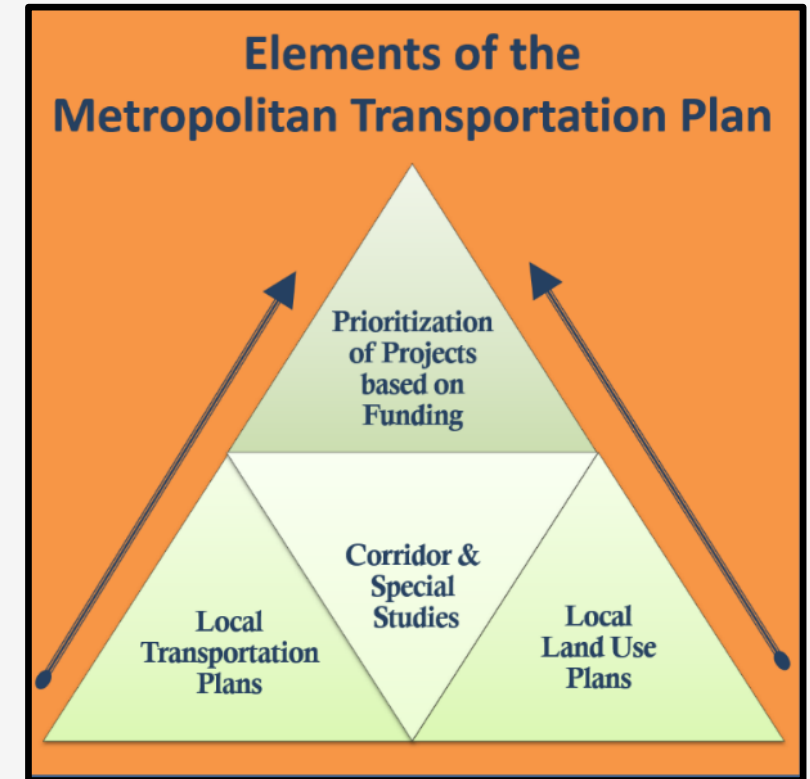
# Project Recap

# Planning Activities that feed into the MTP



## Metropolitan Transportation Plan (MTP) = Triangle Region's Long-Range Transportation Plan

- Large Area Studies
- **Corridor Studies**
- Hot Spot Studies
- Other Special Studies (modal studies)
- Local Land Use and Transportation Plans
- Transit Plans (i.e. Wake Transit Plan)

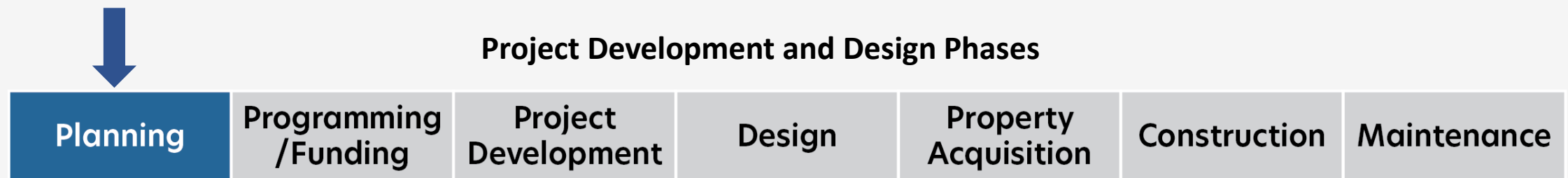


**MTP: Every four years**



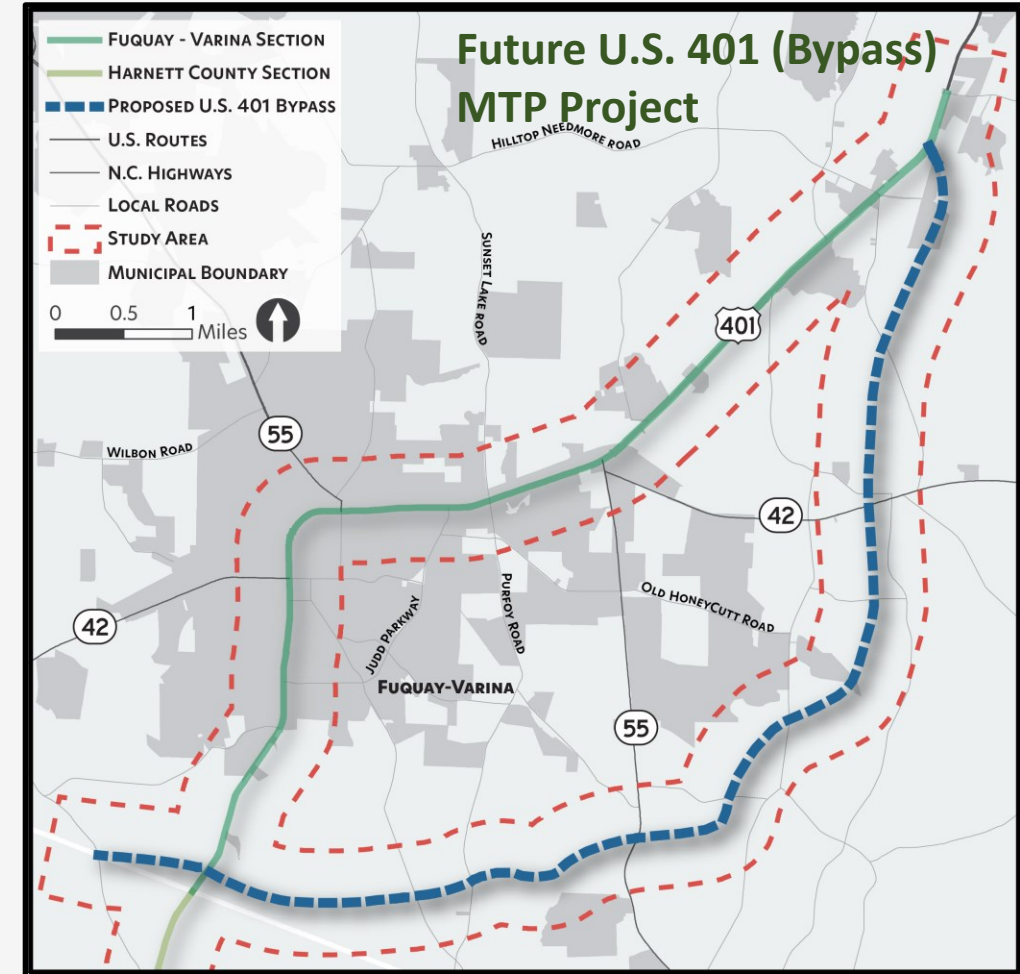
# What is a Corridor Study

- Focuses attention on a single corridor to resolve specific issues
- Is the **initial step of planning** for corridor improvements.
- Preferred improvements or new alignments recommended from a Corridor Study often still require additional refinement during the Project Development and Design phases. The U.S. 401 Corridor Study is a “**Planning Phase**” study.



# U.S. 401 Corridor Study Background

- Initial alignment (blue line on the map) for Future U.S. 401 (Bypass) was adopted by Board of Transportation on March 10, 1997.
  - Revised alignment approved on May 7, 1999.
- Project/alignment included in 2050 MTP (latest)
- Absent a Future U.S. 401 alignment decision, the 2050 MTP project alignment shown will remain.
- **This study focused on improving Existing U.S. 401 and exploring alternative alignments for the Future U.S. 401.**



# U.S. 401 Corridor Study

**U.S. 401  
CORRIDOR  
STUDY**

Wake County / Fuquay-Varina  
Harnett County / Lillington



## Outcomes



PLANNING AND  
DESIGN



VISION



SHORT- AND LONG-  
TERM SOLUTIONS



IMPLEMENTABLE  
PROJECTS

## Goals



Reduce congestion and  
increase transportation  
capacity and safety



Encourage economic  
development



Incorporate public and  
stakeholder input



Accommodate appropriate  
modes of travel (transit,  
bicycle, pedestrian, freight)



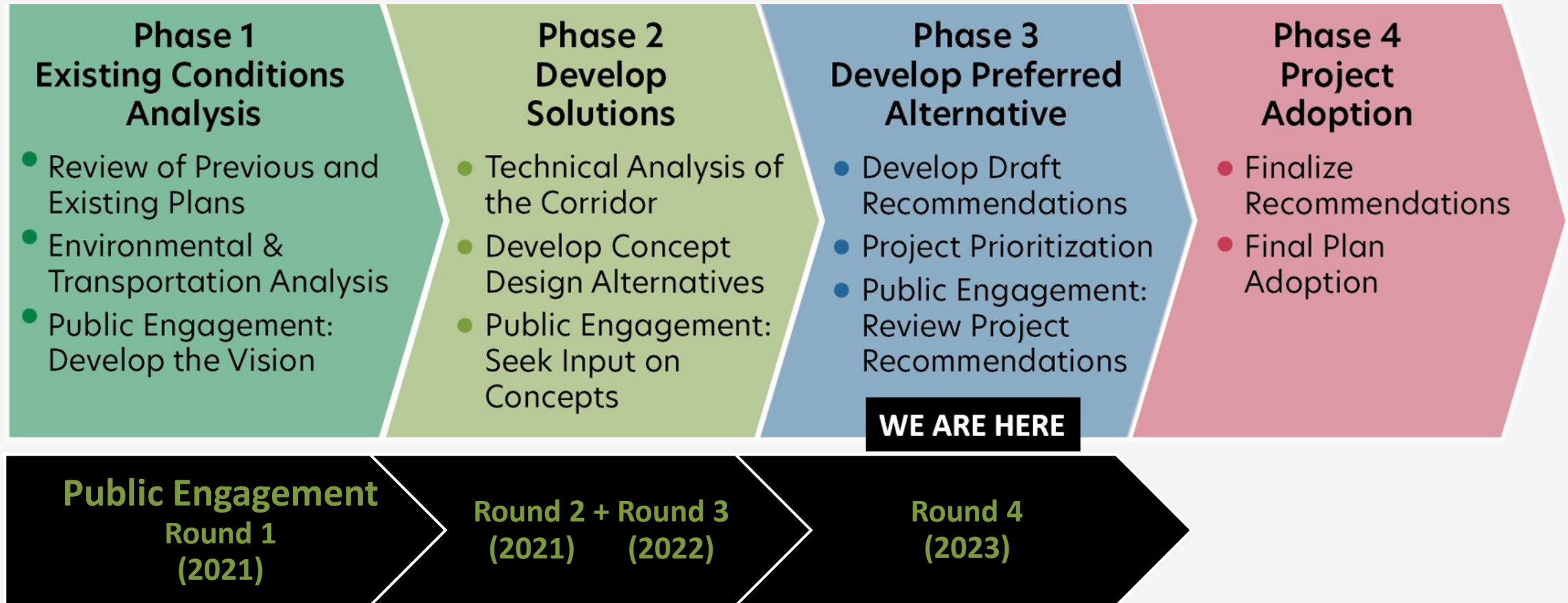
[www.US401CorridorStudy.com](http://www.US401CorridorStudy.com)



#US401CorridorStudy



# U.S. 401 Corridor Study Schedule



# Segment 1: Future U.S. 401



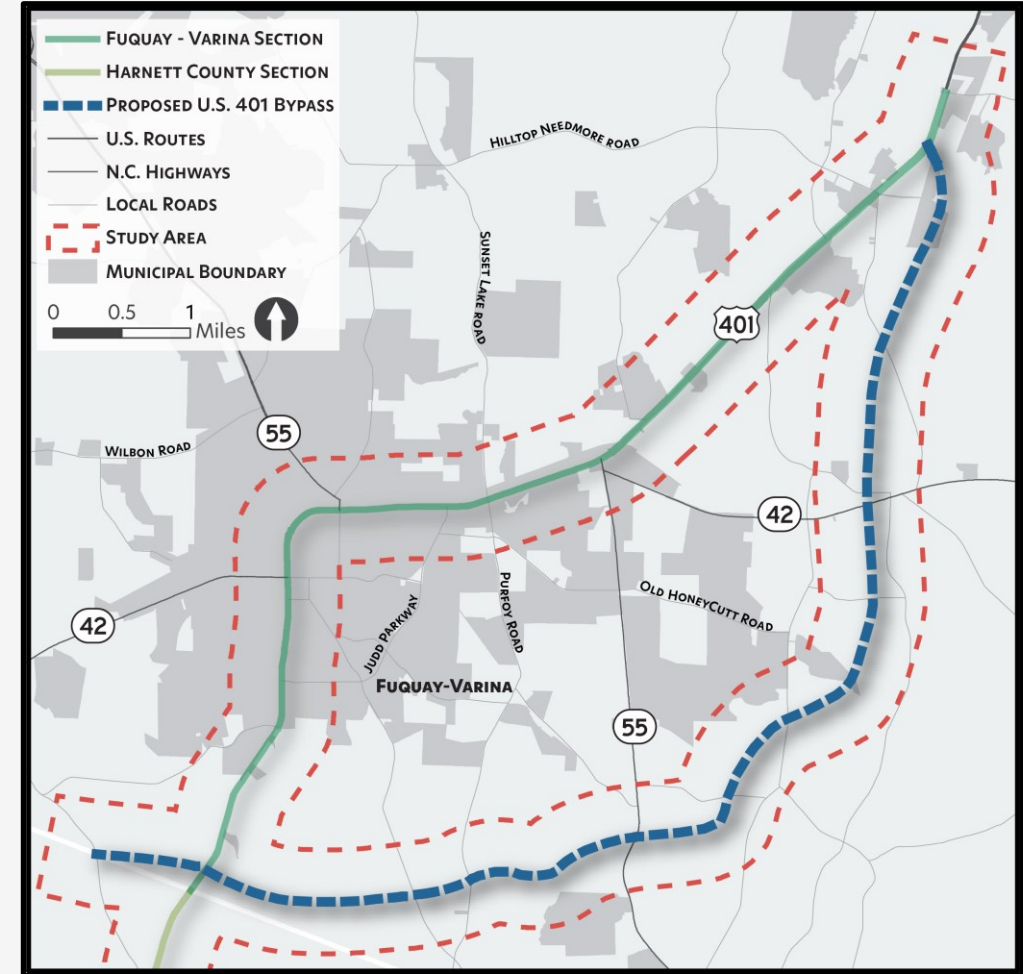
Determine the alignment considering existing/future land uses & environmental constraints



Verify the type of roadway - Access controlled, Parkway or Boulevard



Determine the intersection/interchange configurations



# Segment 2: Fuquay-Varina Section



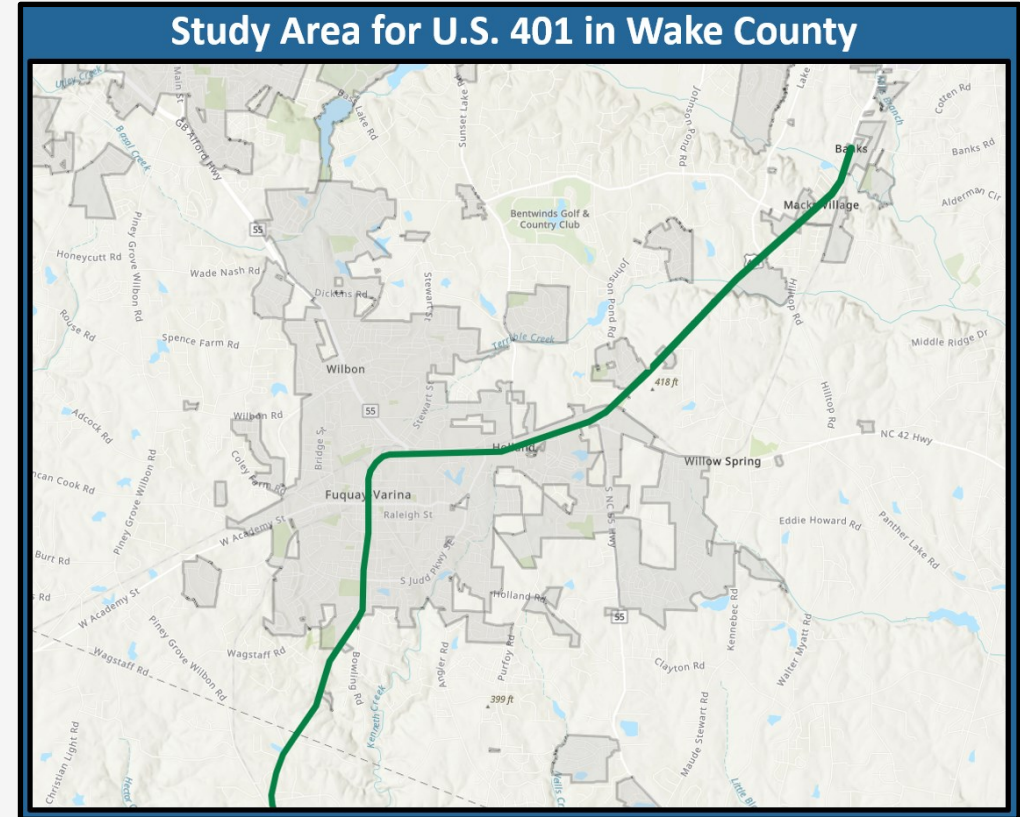
Improve safety  
along the segment  
and review access  
management



Implement  
NCDOT's Complete  
Streets guidelines  
to improve bicycle,  
pedestrian and  
transit based  
mobility



Intersection  
improvements at  
key locations



# Segment 3: Harnett County Section

**U.S. 401  
CORRIDOR  
STUDY**

Wake County / Fuquay-Varina  
Harnett County / Lillington



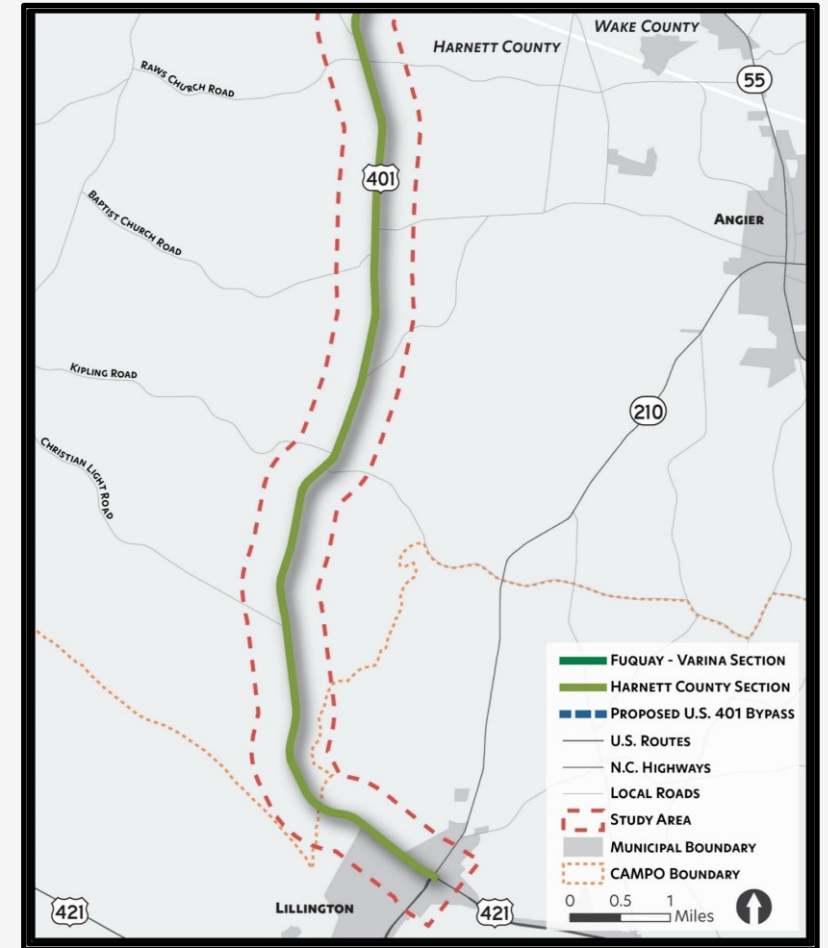
Provide regional  
connectivity



Improve safety  
around railroad  
crossings



Prepare the  
corridor for future  
growth



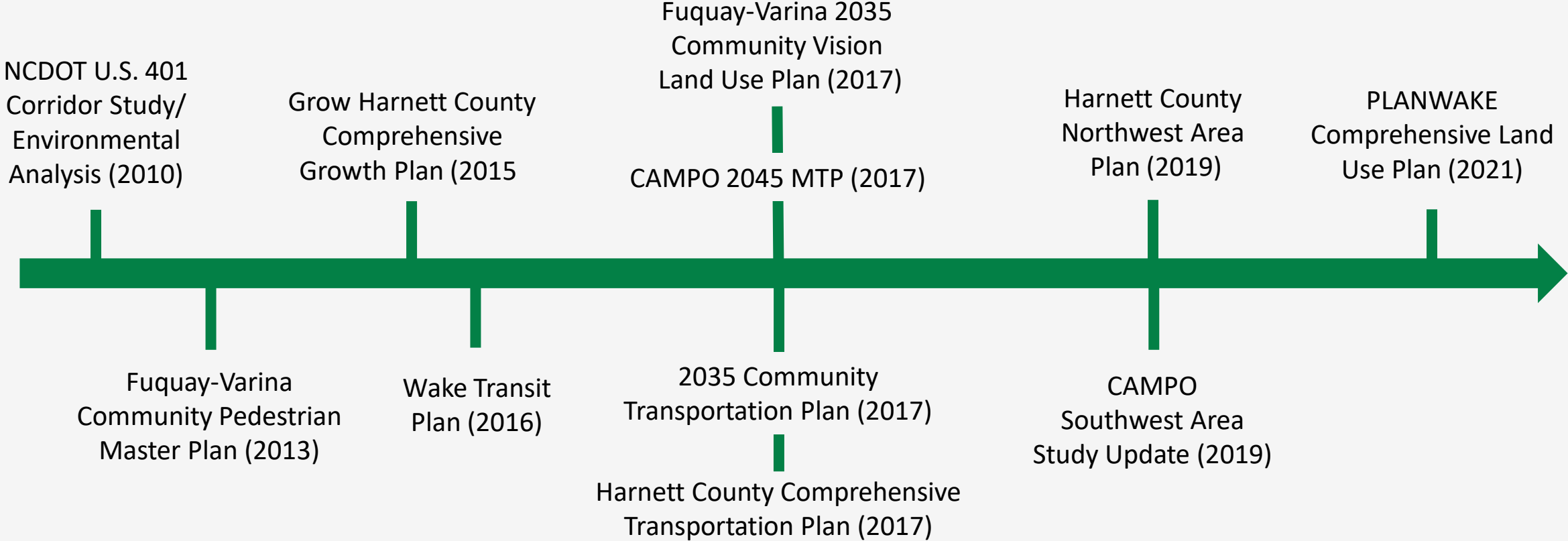
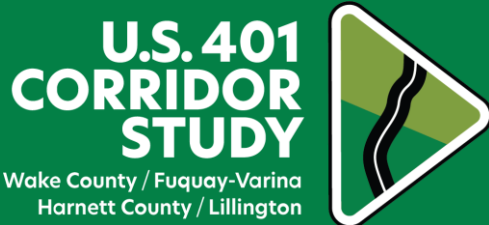
[www.US401CorridorStudy.com](http://www.US401CorridorStudy.com)



#US401CorridorStudy

Analysis:  
Current & Future  
Conditions along  
U.S. 401

# Review of Previous Studies



# Significant Growth with Impacts

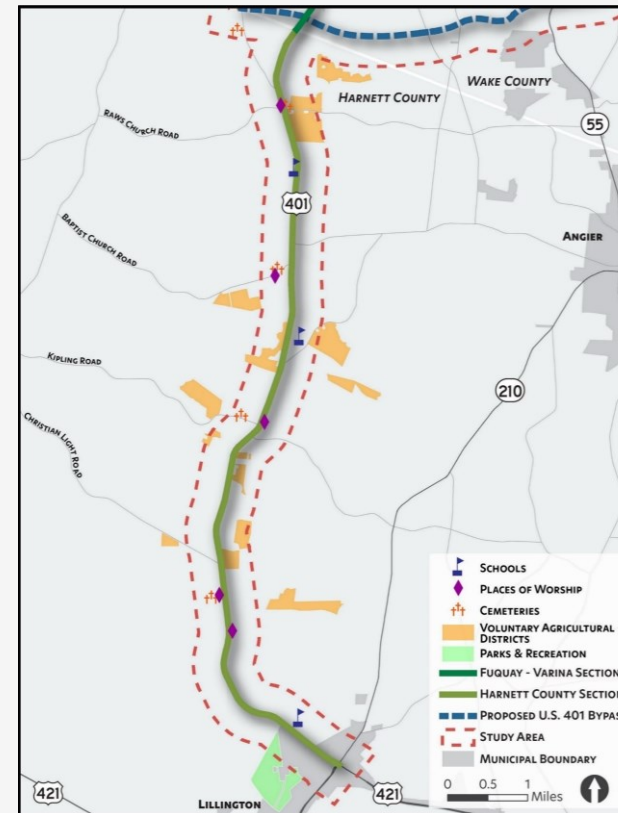
## Forecasted Increases in

- Population
- Employment
- Traffic Congestion – AM, PM, All-Day

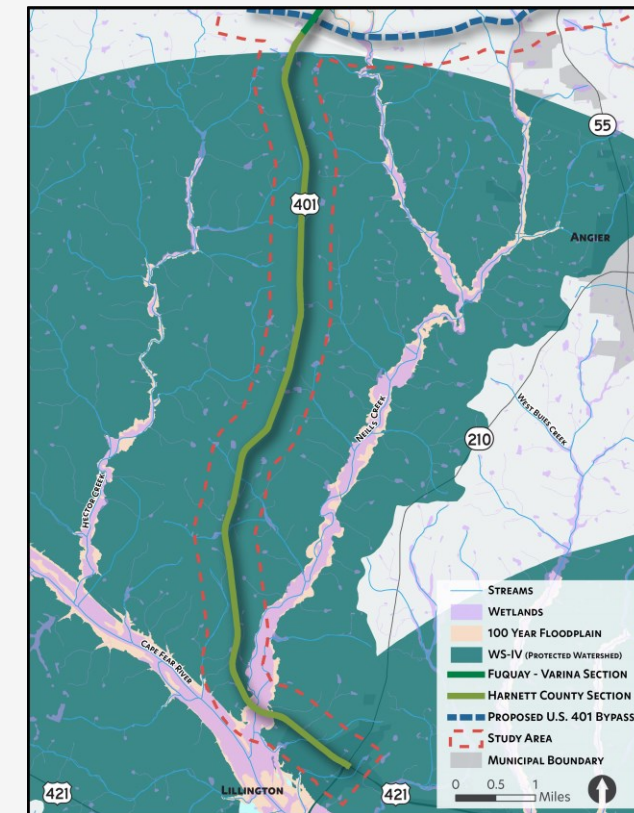
## Current & Future Impacts

- Safety
- Natural & Community Resources
- Gaps in Bicycle/Pedestrian Facilities

## Example Inventories: Community Resources



## Streams & Wetlands



# Area Projects in 2050 MTP

(Adopted Dec. 8, 2021)

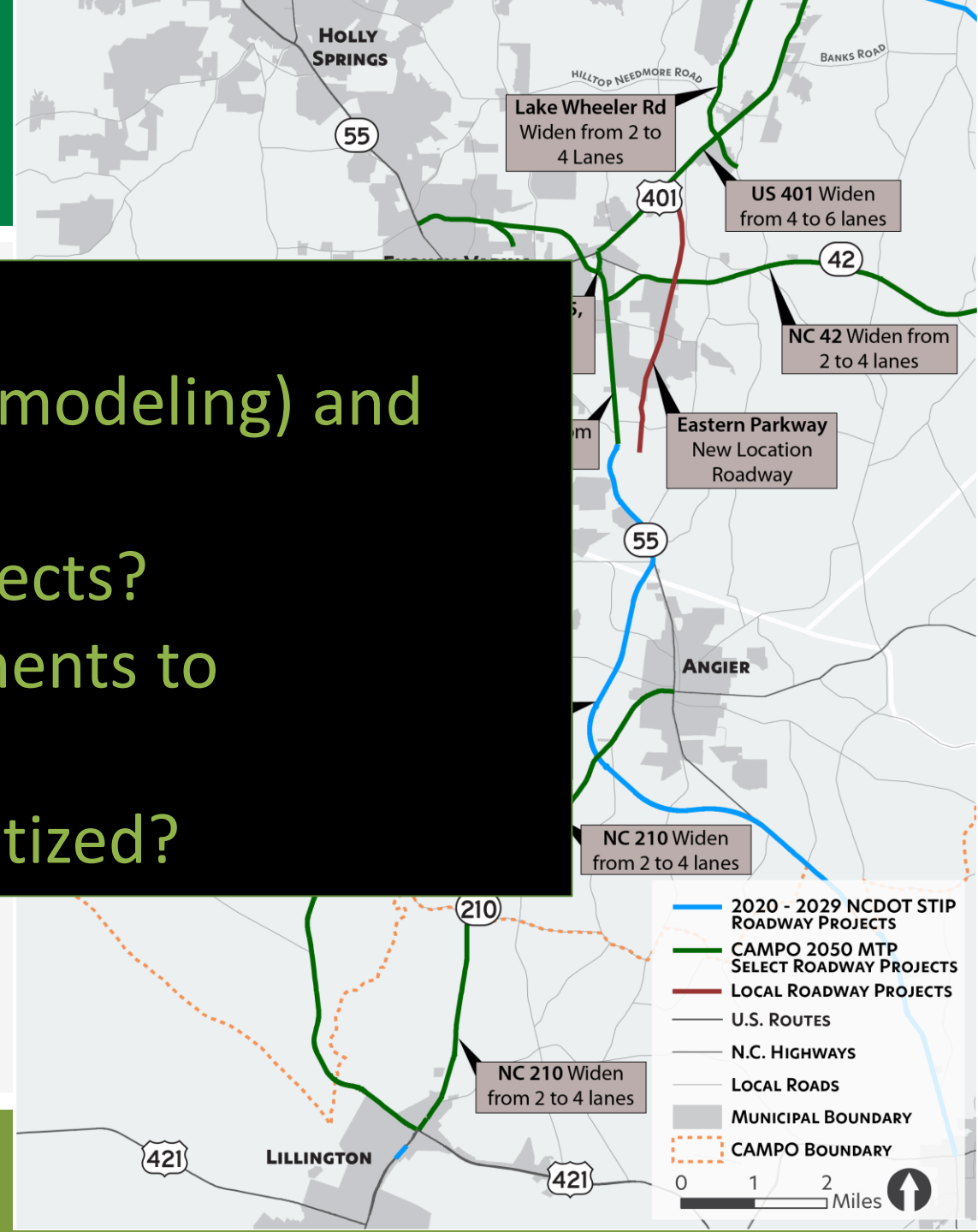
- Hilltop R
- Widen N
- N.C. 55 a
- 401; Nor
- Widen N
- Fuquay-V
- Western
- Widen U
- Widen N.C. 210 to 4 lanes

## Study Questions:

Based on analysis (including modeling) and public feedback...

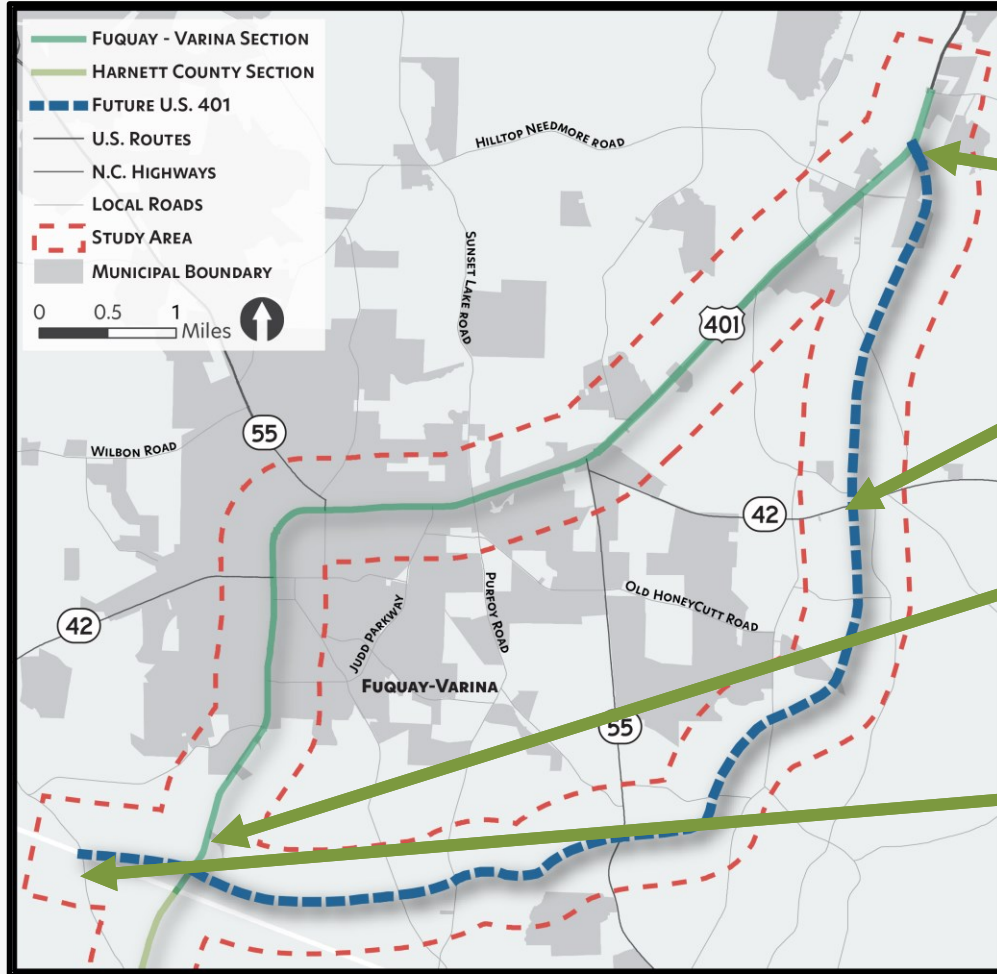
- Is this the right set of projects?
- Are there other improvements to recommend?
- How should they be prioritized?

\*US 401 Bypass MTP project is removed from the map to provide context





# Future U.S. 401 – Exists in 2050 MTP



New alignment starting at U.S 401 south of Banks Rd

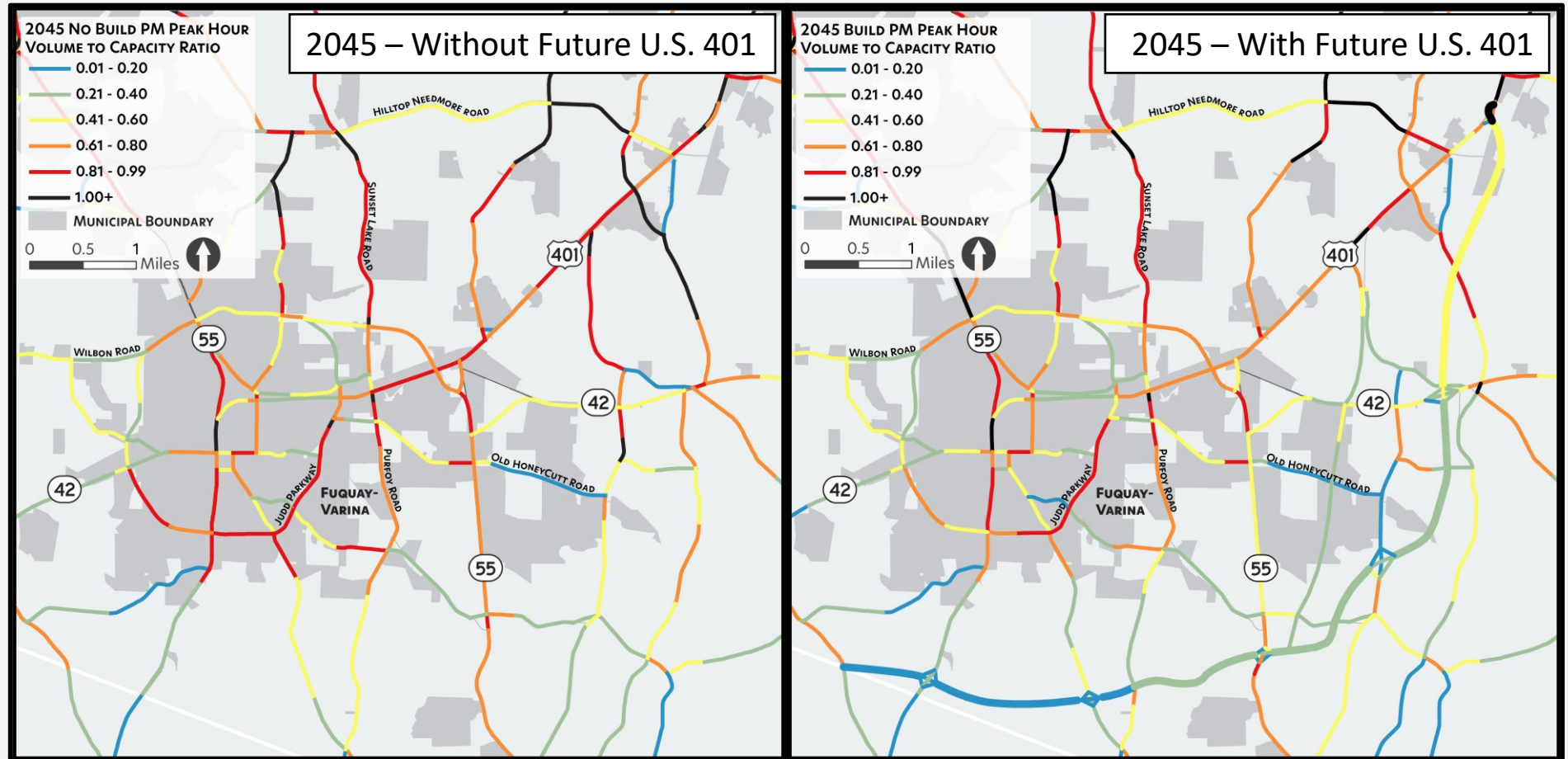
Crossing N.C. 42 and N.C. 55

Terminating at U.S. 401 at Wake/Harnett County line

With a potential extension to Piney-Grove Rawls Rd.

# Future U.S. 401 – Traffic Projections

Future U.S. 401 decreases travel time in the network with an increased growth forecast in this area.



# Future U.S. 401 - Traffic Dispersion

**U.S. 401  
CORRIDOR  
STUDY**

Wake County / Fuquay-Varina  
Harnett County / Lillington



The  
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## **Study Objective:**

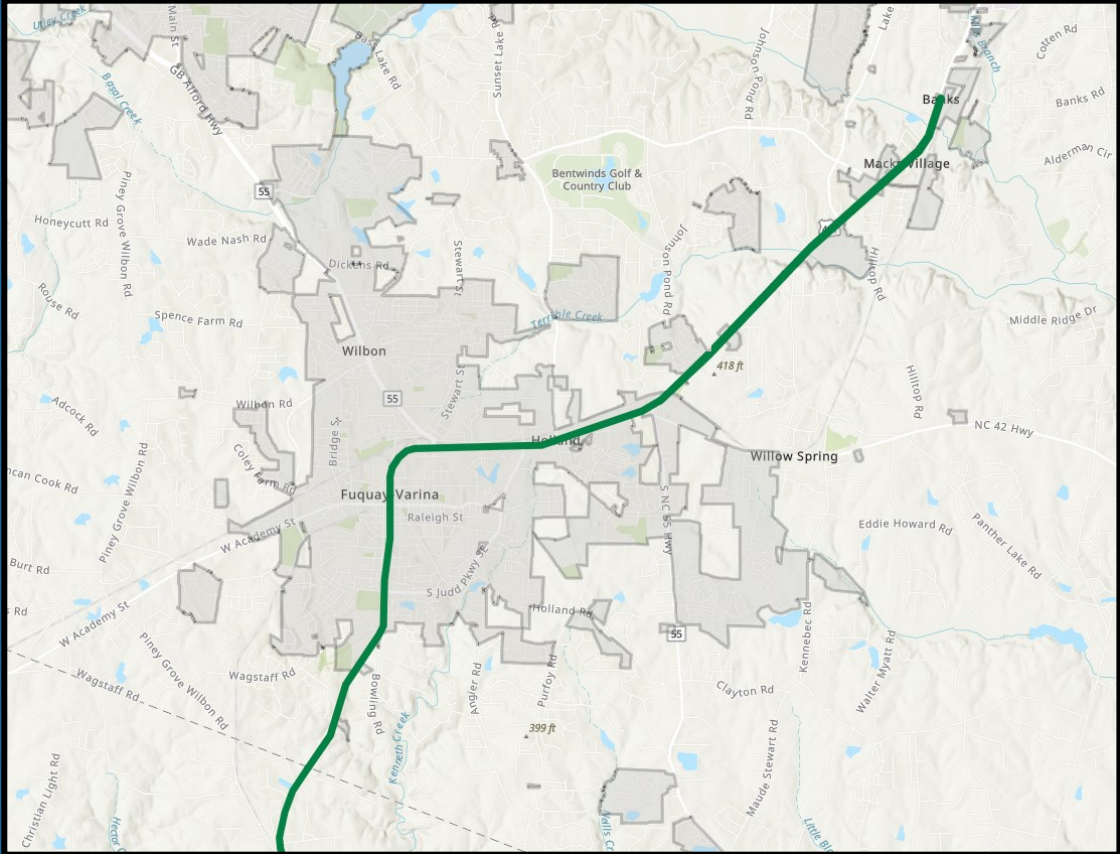
Based on analysis (including modeling) and public feedback...

- Refine the alignment (location) for the Future U.S. 401 roadway for use in future planning efforts, such as the 2055 MTP.



# Recommendations: Existing U.S. 401 in Wake County

Study Area for U.S. 401 in Wake County



# U.S. 401 in Wake County - Sections

**U.S. 401  
CORRIDOR  
STUDY**

Wake County / Fuquay-Varina  
Harnett County / Lillington



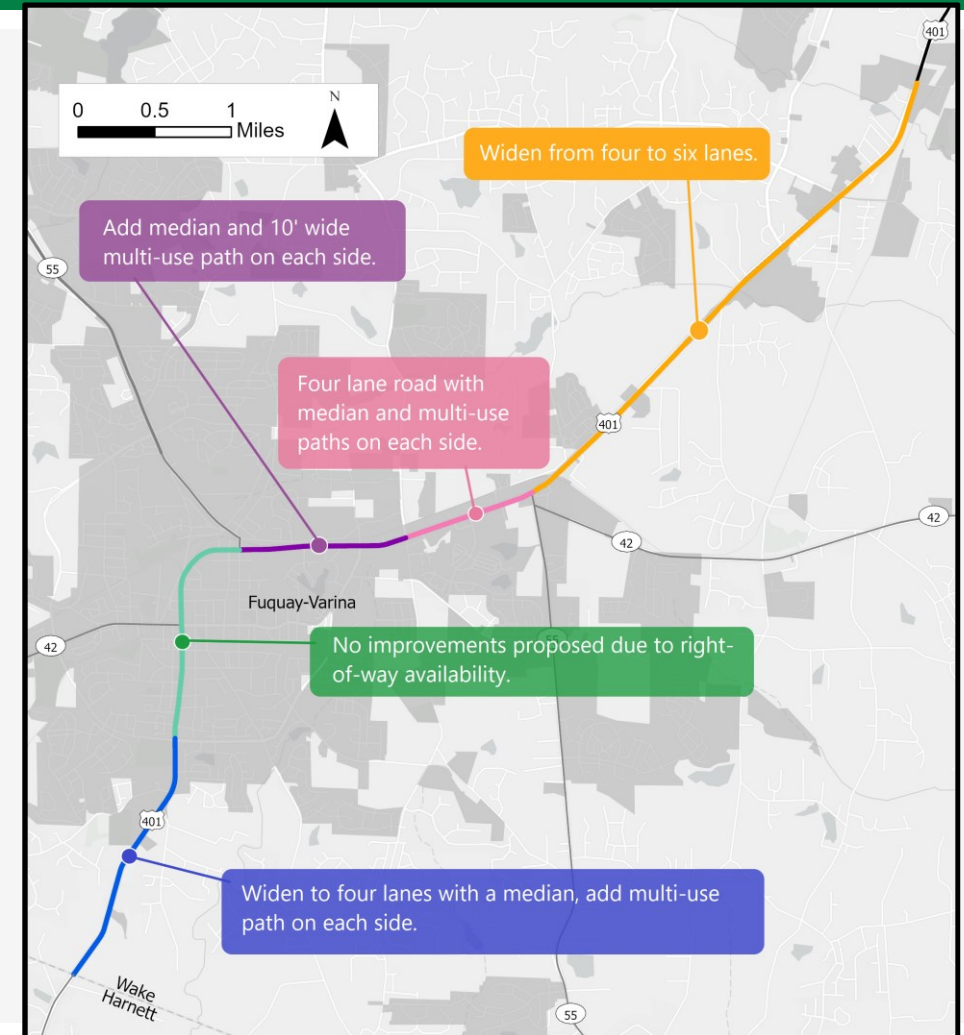
**Banks Road to N.C. 55:** Widen from 4 to 6 lanes. (MTP Project)

**N.C. 55 to Judd Parkway NE:** Add raised median and MUPs. (MTP Project)

**Judd Parkway NE to Ennis Street:** Add raised median and MUPs (no MTP project)

**Ennis Street to Judd Parkway SW:** No roadway improvements.

**Judd Parkway SW to Harnett County:** Widen from 2 to 4 lanes with raised median and MUP.

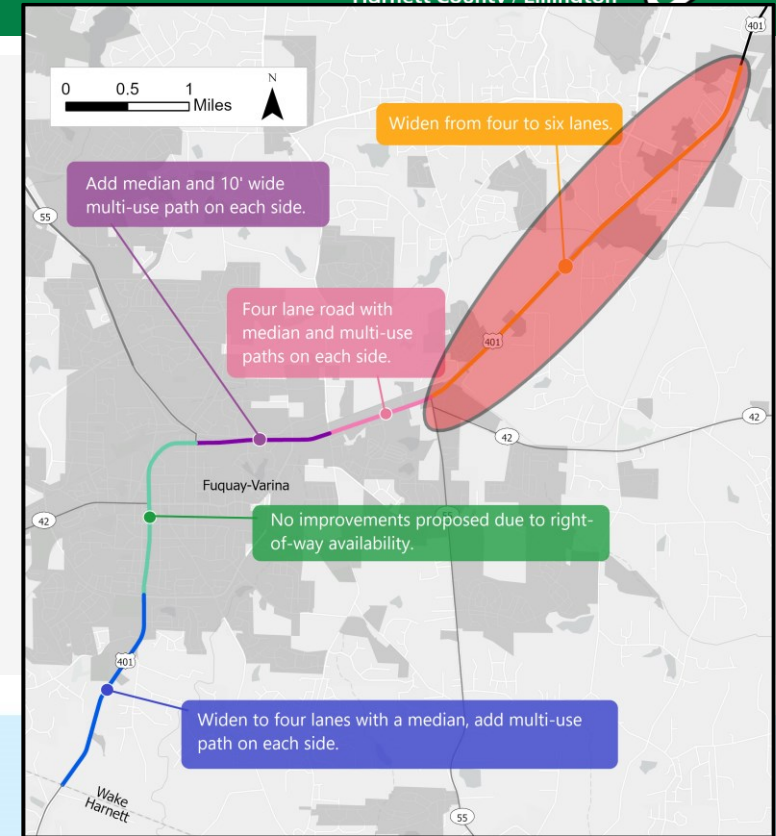


# Banks Road to N.C. 55

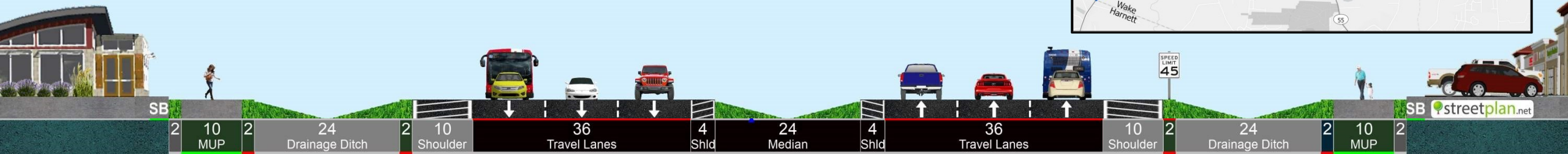
## CAMPO MTP projects -

- Short term (2030) - Convert the portion between Lake Wheeler Road and Hilltop Needmore Road to a **reduced conflict intersection** (Project ID A664a). The horizon year of this project is 2030.
- Widen this segment from 4 to 6 lanes (Project ID A619b). The horizon year of this project is 2050.

Roadway section as referenced in MTP 2050. Can be revised to raised median and curb/gutter.



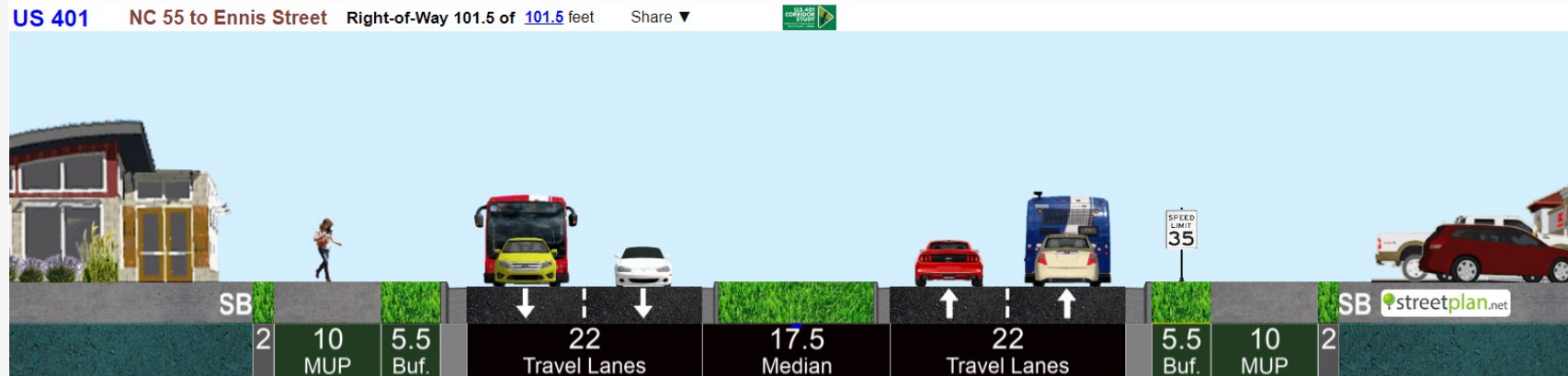
US 401 Banks Road to N.C. 55 Right-of-Way: 204' of 204'



# N.C. 55 to Ennis Street

- MTP project includes adding a **raised median**
- Maintain the number of vehicle lanes, provide some access control in the form of a median, and **provide multi-use paths**

Public and Study  
Team Preference

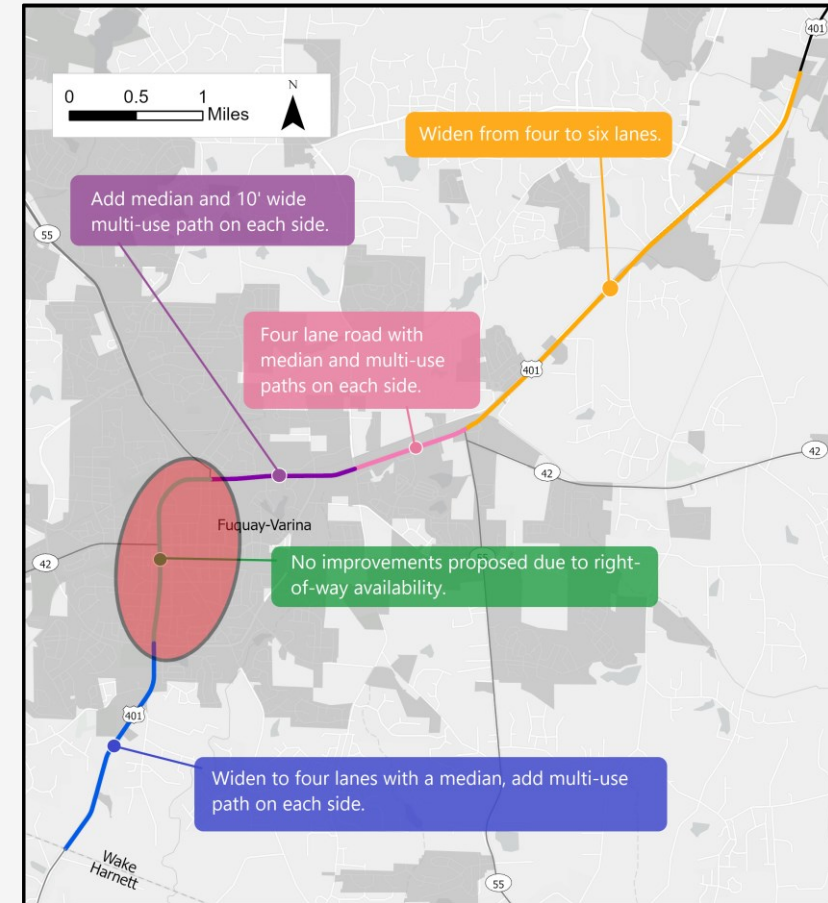
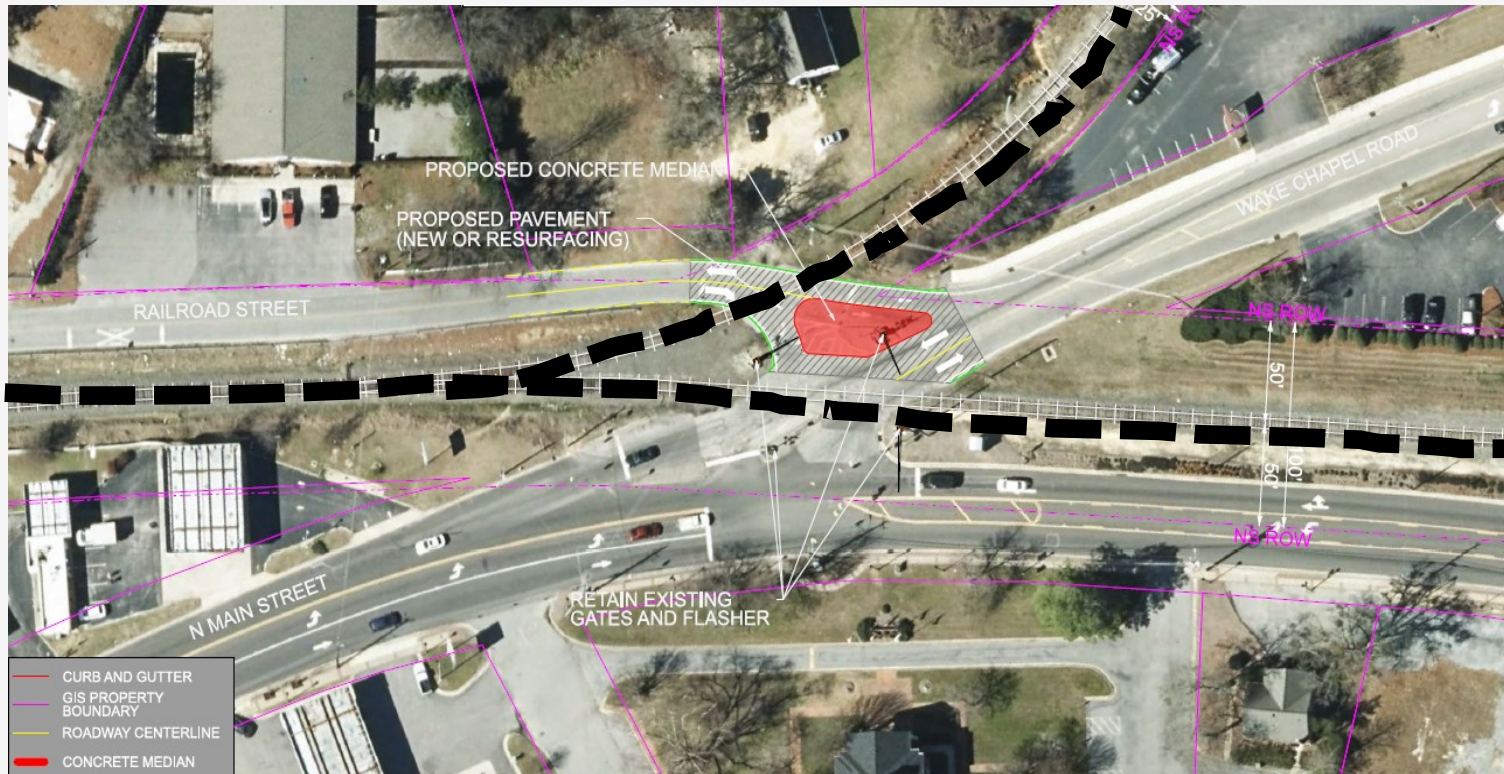


# Ennis Street to Judd Parkway SW



- **Right in/ right out** on Railroad Street with raised island
- No other improvements on U.S. 401 due to **ROW limitations**

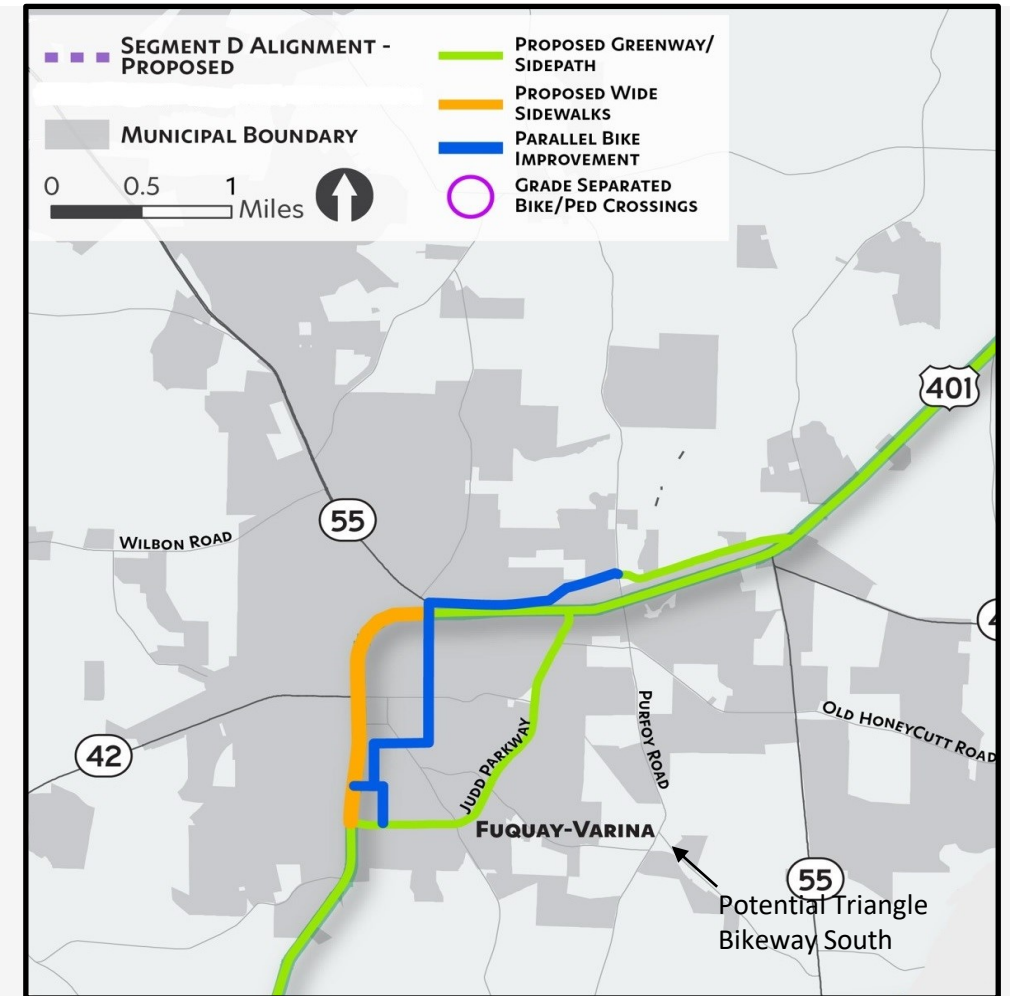
Public and Study Team Preference





# U.S. 401 in Wake County – Bicycle-Pedestrian Facilities

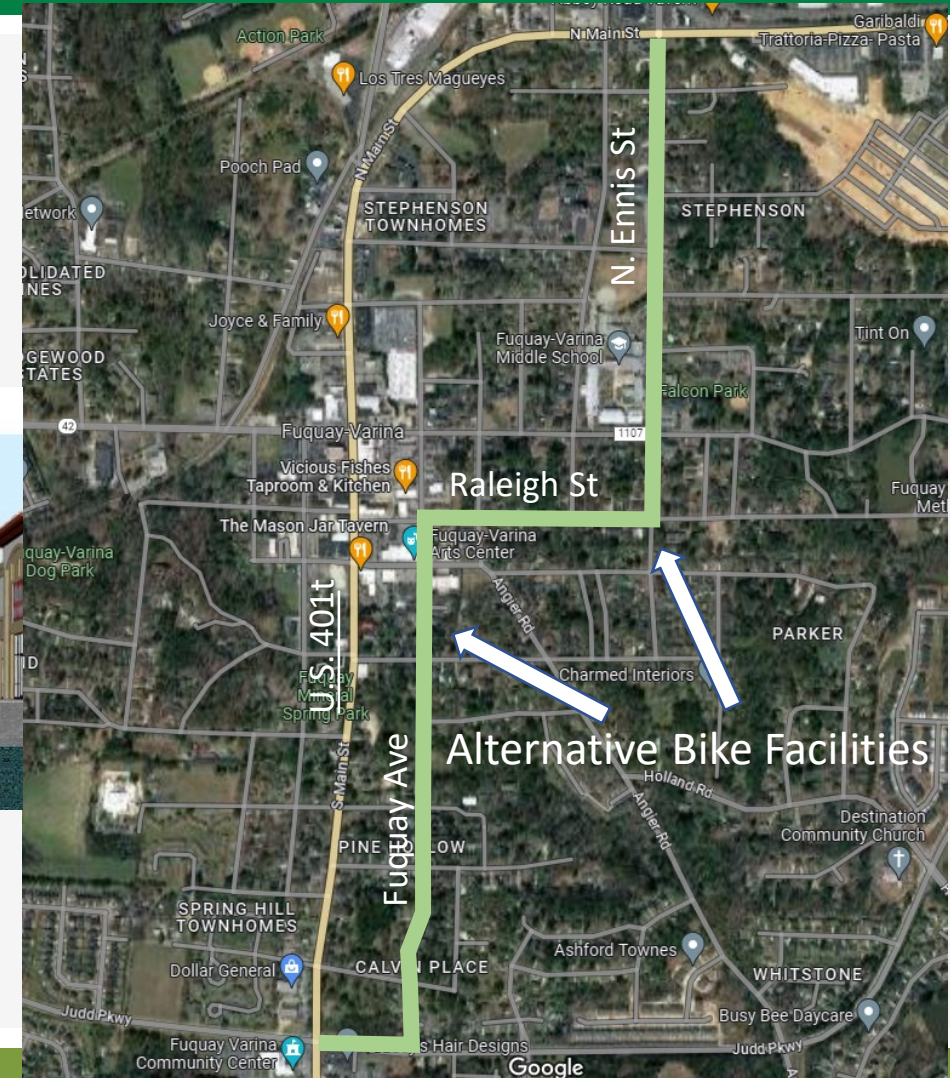
- Multi-use paths (MUP) or sidewalk and bicycle lanes throughout the corridor.
- Wide sidewalks or MUP through Downtown, parallel bike improvements.



# Ennis Street to Judd Parkway SW



- **Bike facilities on nearby local streets** as alternative to N. Main St
- No other improvements on U.S. 401 due to ROW limitations
- Maintain existing U.S. 401 cross-section

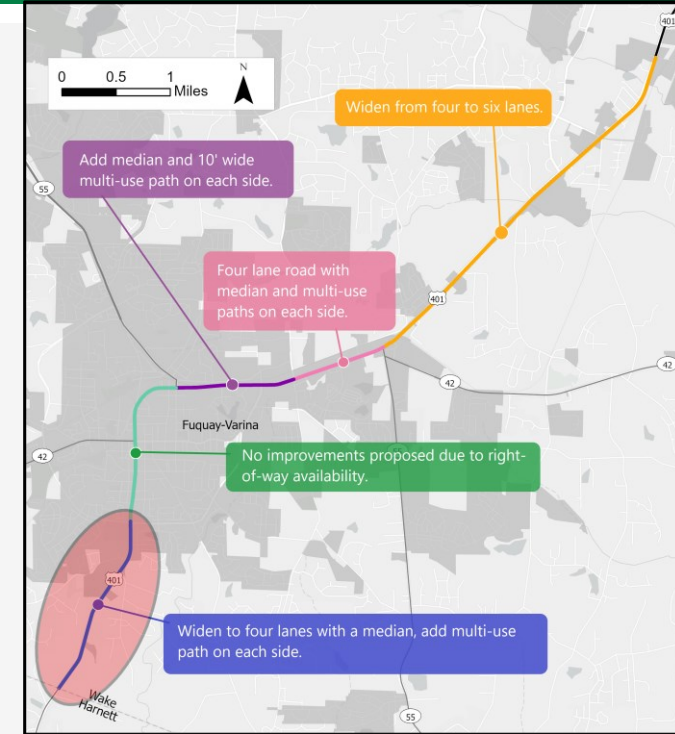
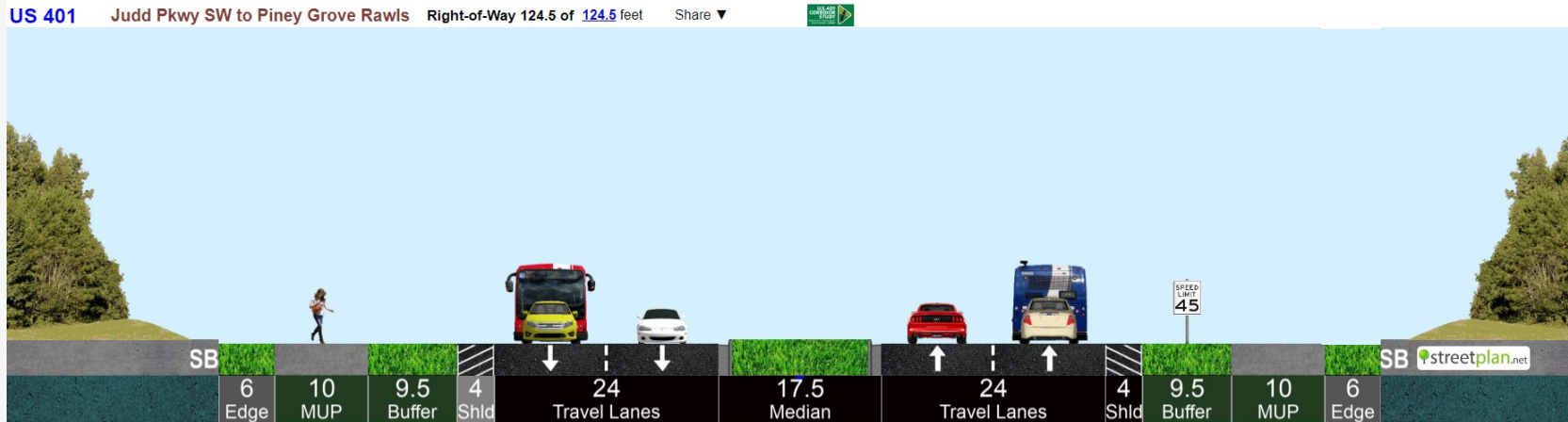


# Judd Pkwy SW to Piney Grove Rawls

CAMPO MTP project: 4-lane median divided roadway with sidewalk on both sides

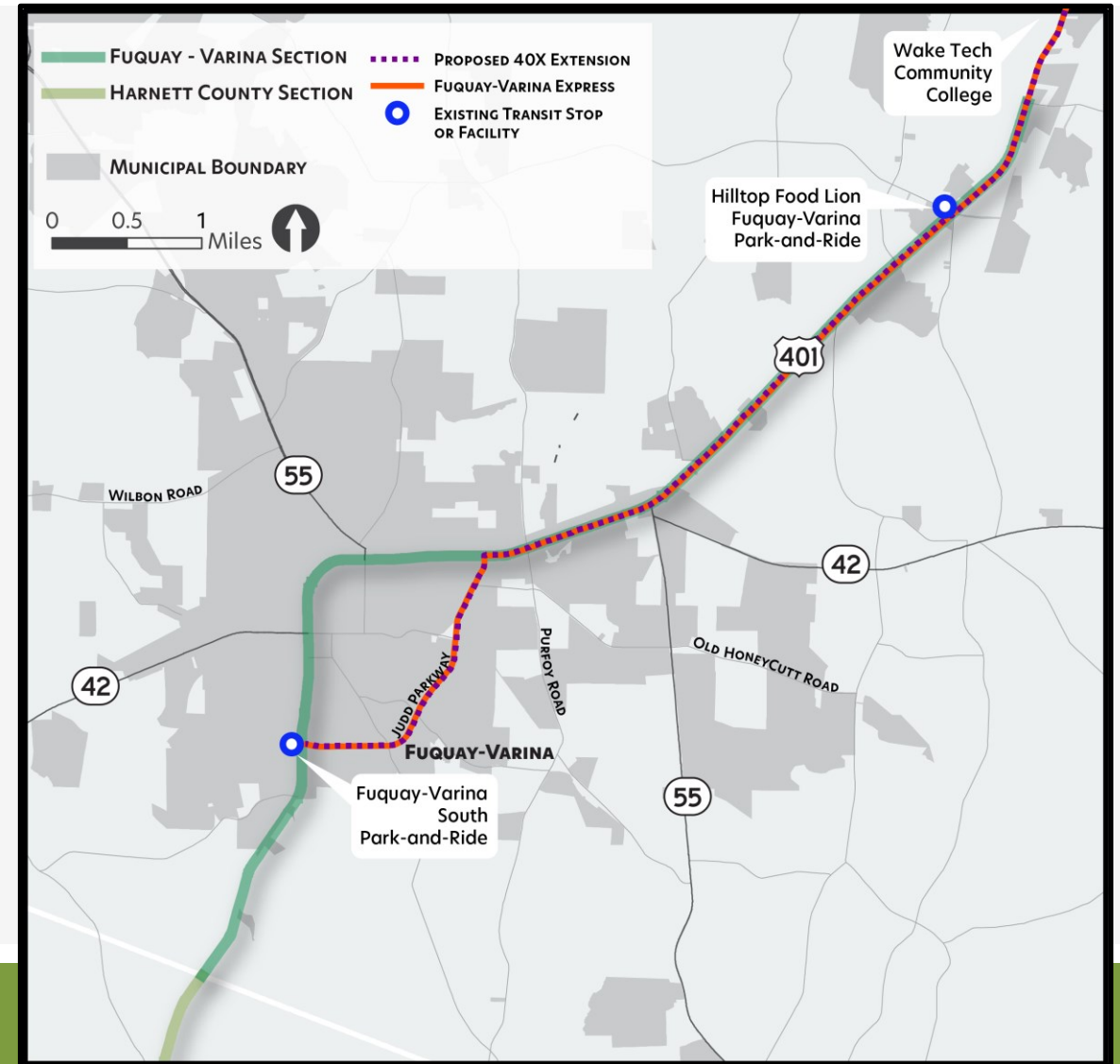
- Propose 4-lane median divided roadway **consistent with MTP**
- Revise MTP project to include a **10' wide multi-use path** on each side

Public and Study Team Preference

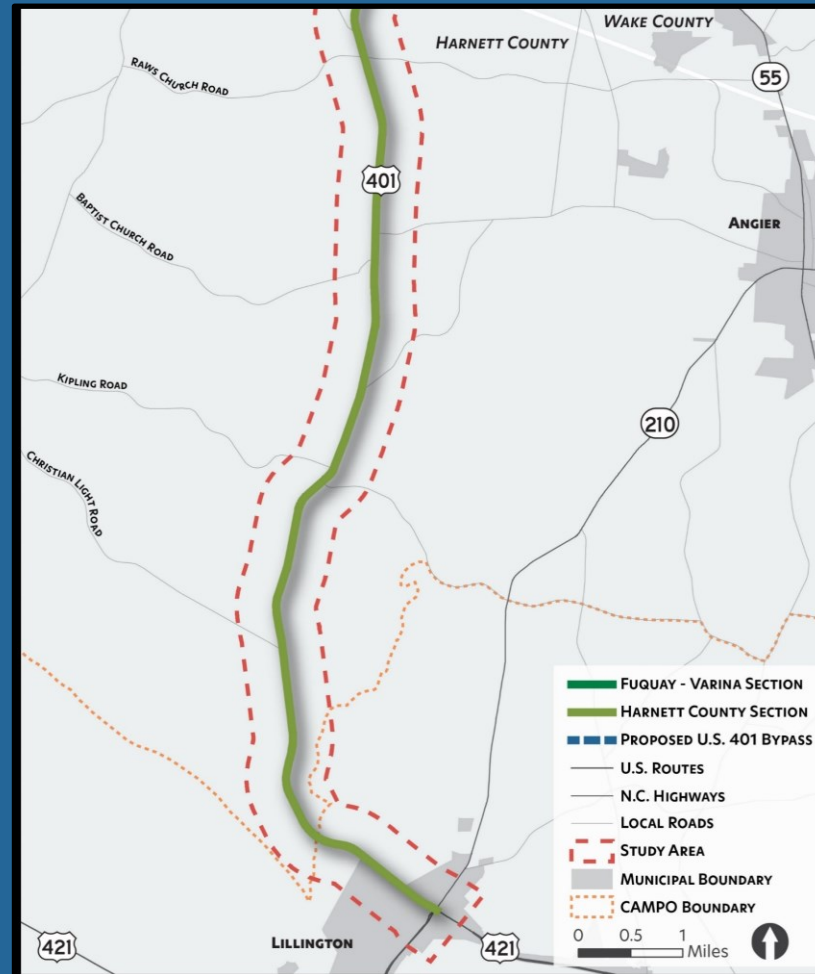


# U.S. 401 in Wake County – Transit

- Strengthen connections to Garner and Raleigh.
- Connections to Holly Springs and Apex may be possible in the future.



# Recommendations: Existing U.S. 401 in Harnett County



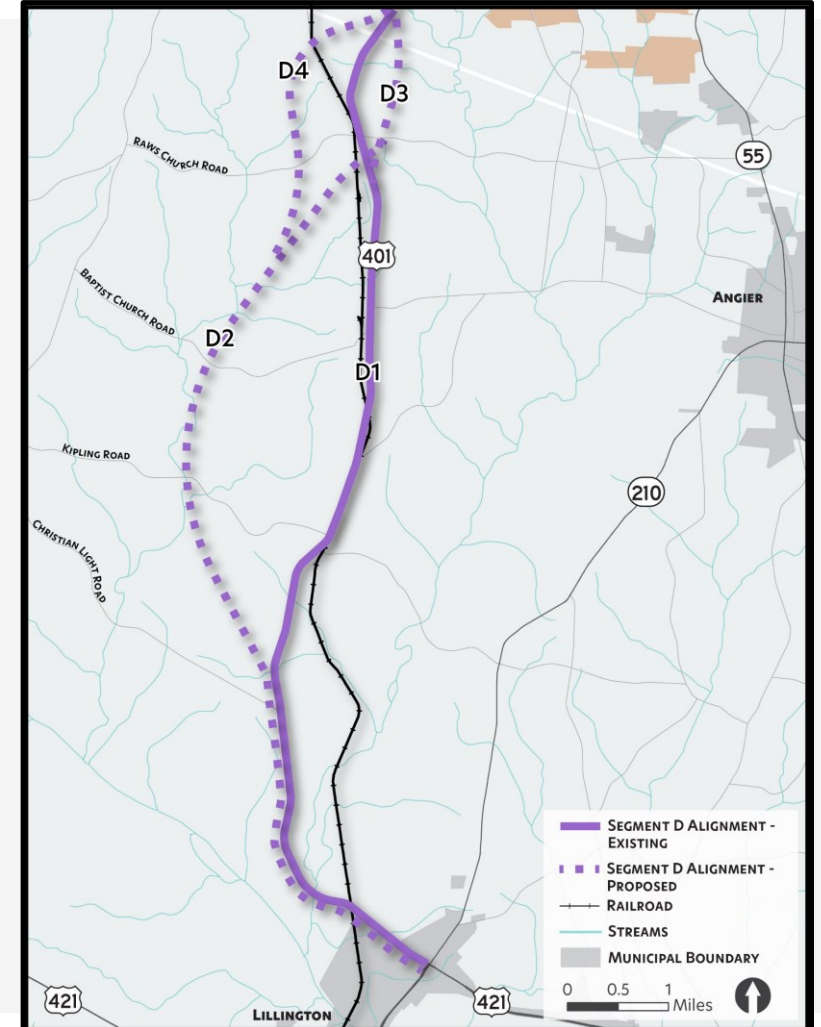
# Harnett County Alignment

## U.S. 401 CORRIDOR STUDY

Wake County / Fuquay-Varina  
Harnett County / Lillington



- Currently 2 lanes at 55mph
- Utilize **existing U.S. 401 alignment** in Harnett County
- Widen to **4 lanes at 45mph**



# Recommendation: Harnett County Section Two Design Concepts

- **Widen entire segment from 2 to 4 lanes**
- **Reduce entire segment to 45 mph**

Where it is a **Narrow** Right of Way (~120'):

- 10' Multi-Use Path (side path) on both sides.
- Applicable where limited ROW is available due to railroad or other sensitive resources.



Where it is a **Wide** Right of Way (~150'):

- 10' Multi-Use Path (side path) on both sides.
- Applicable where ROW is not limited.

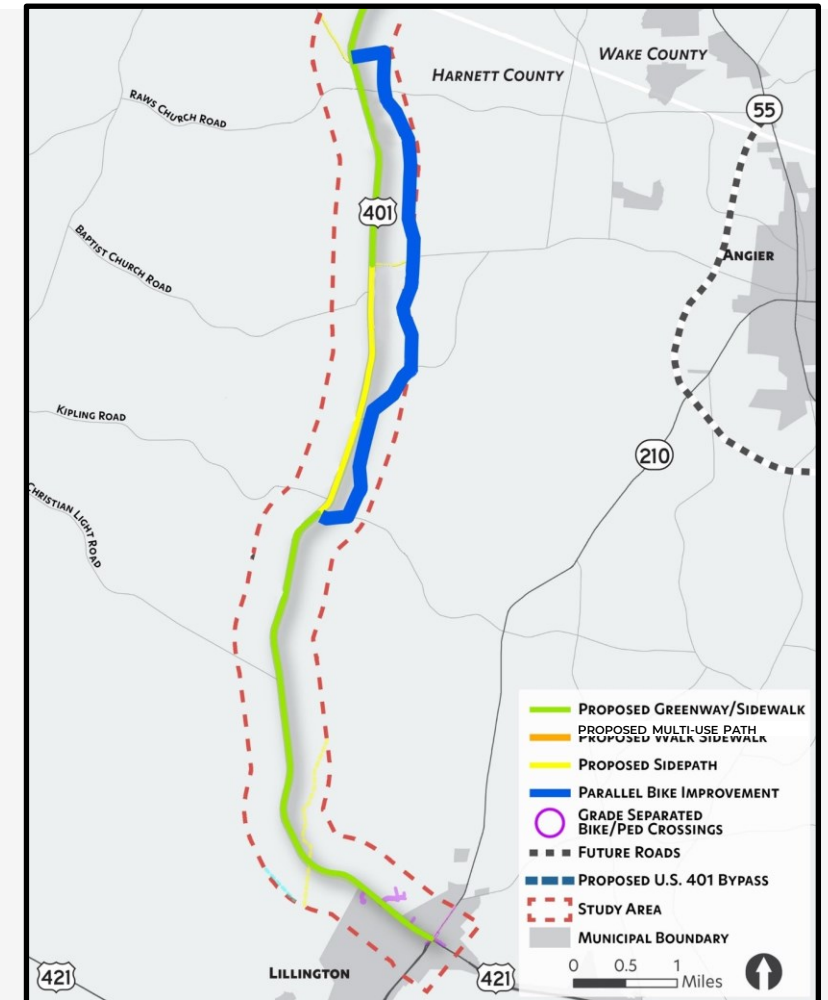


# Bicycle and Pedestrian

Pedestrian and bicycle facilities along  
U.S. 401

AND

Bicycle facilities along collector / local  
streets between Rawls Church Rd and  
Harnett Central Rd constructed as  
development occurs





# Intersection Improvements

**Piney Grove Rawls Rd**

Signalize the intersection.

**Rawls Church Road**

Signalize the intersection.

**Chalybeate Springs Road**

Signalize the intersection.

**Chalybeate Road**

Signalize the intersection.

**(Northern End)**

Re-evaluate the traffic impacts if southern section is disconnected.

**Chalybeate Road**

Restrict turns at this intersection and, from operations and safety perspective, consider removing this intersection with U.S. 401 altogether.

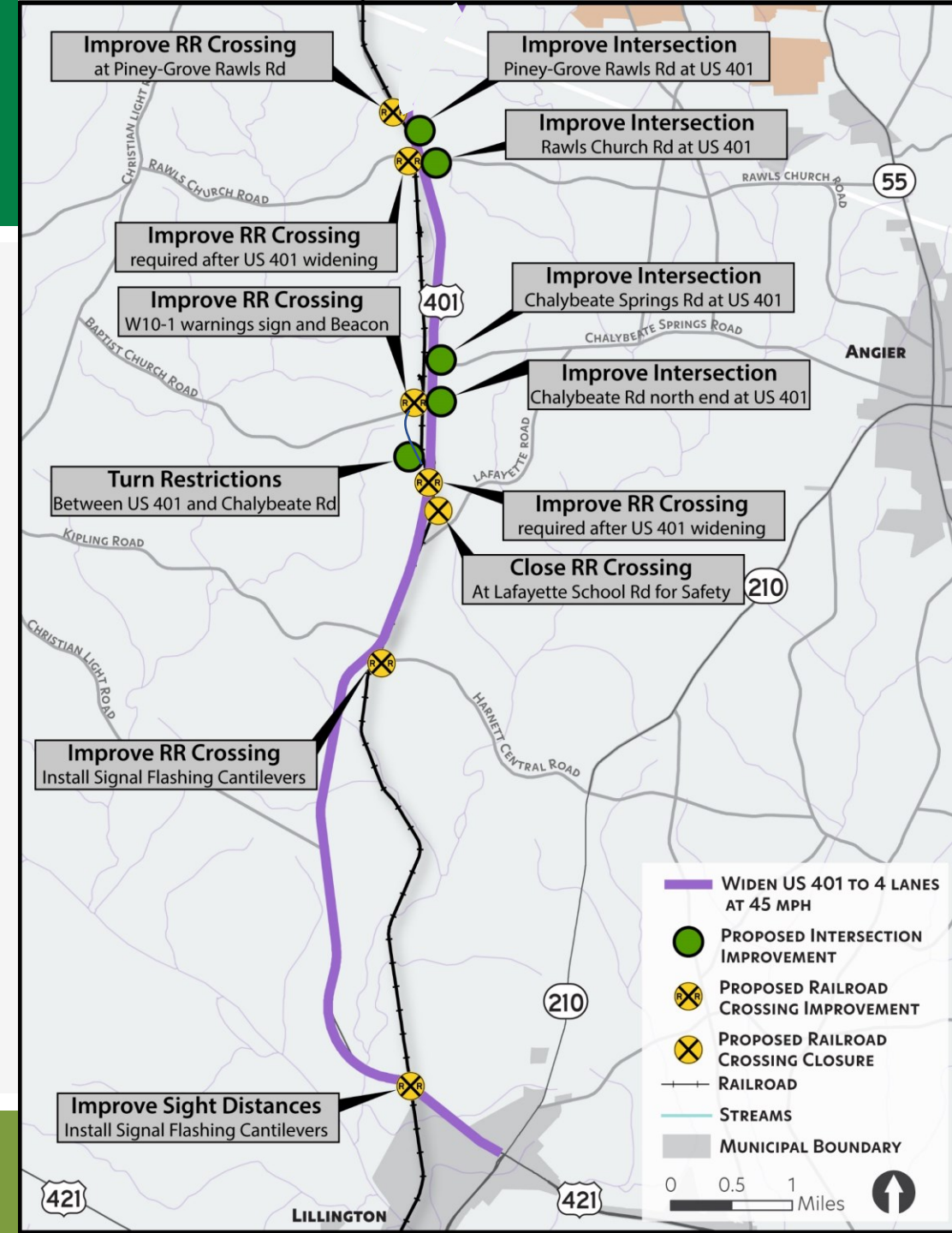
**(Southern End)**

**Lafayette School Road**

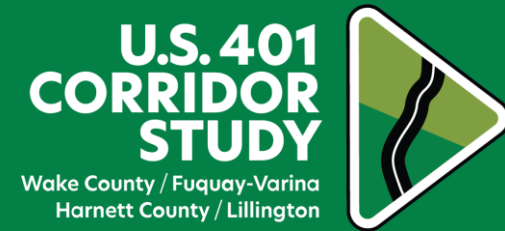
Close the connection to U.S. 401

**Lafayette Road**

Reevaluate the traffic impacts at this intersection.



# U.S. 401 in Harnett County – Railroad Recommendations



- Redesign the railroad crossings along U.S. 401 and other roadways in the study area to accommodate future widening anticipated due to growth in the area.
- Specific improvements recommended for crossings at/near:
  - Matthews Rd
  - Lafayette School Rd
  - Chalybeate Rd – northern and southern ends

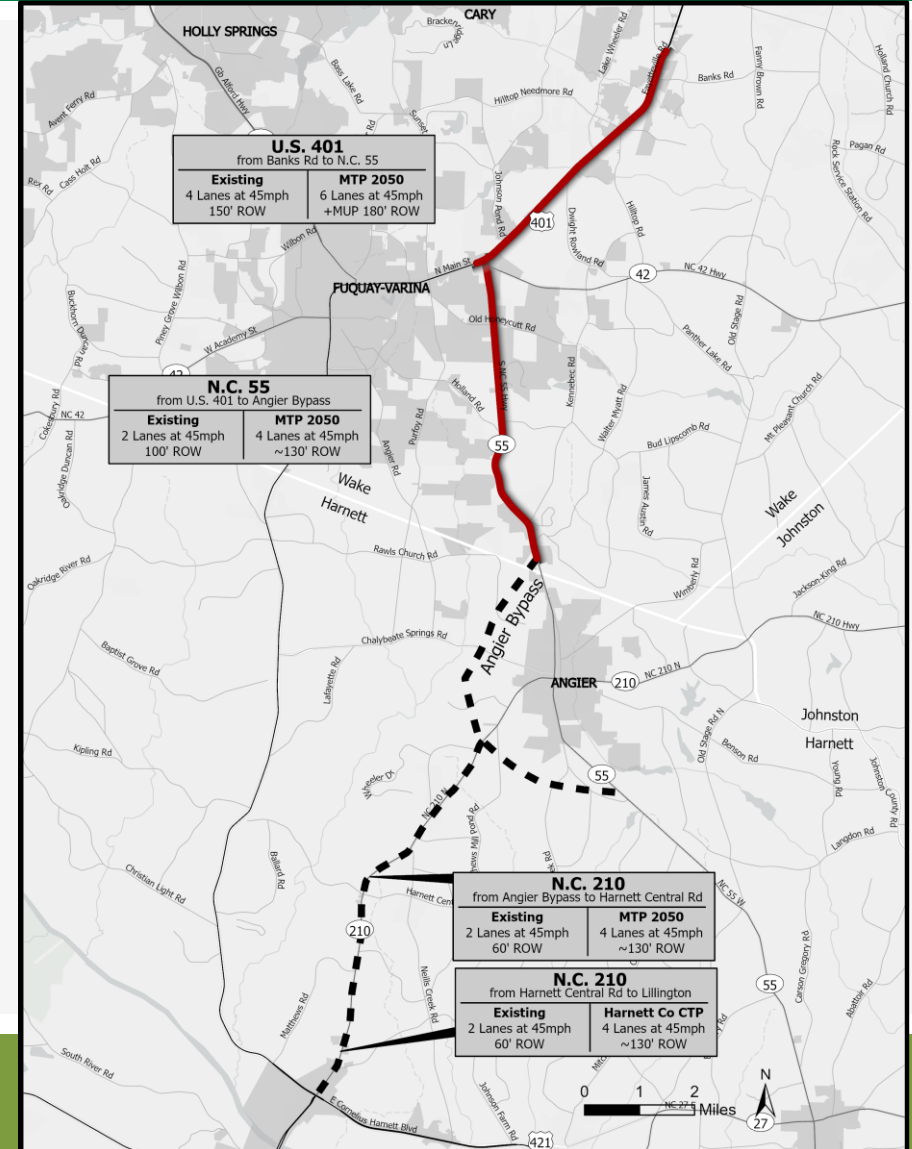


Recommendations:  
NC 55, Angier Bypass, and NC 210

# NC 55, Angier Bypass, NC 210

This set of recommended improvements would piece together to organically form a N-S travel alternative:

- **Widen U.S. 401** from 4 lanes to 6 lanes (2050)
- **Widen N.C. 55** from 2 lanes to 4 lanes
  - Between Jicarilla Lane and Angier Bypass (2030)
  - Between Five Points and Old Honeycutt Road (2040)
  - Between Old Honeycutt Road to Jicarilla Lane (2050)
- **Continuation of Angier Bypass** (2030)
- **Widen N.C. 210** from 2 lanes to 4 lanes (2050)



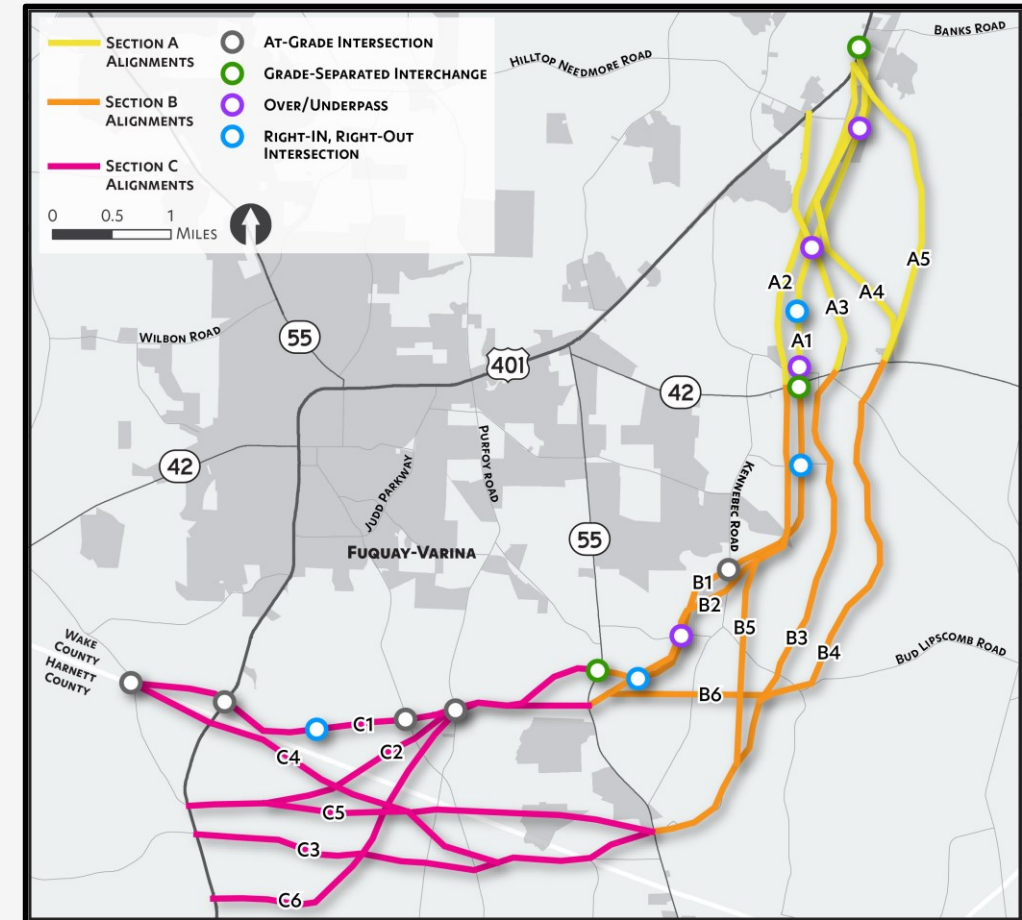
# Future U.S. 401

Process to Produce Recommendation:  
Study's **Initial** Alignment Discussions

# Initial Alignments & Intersections

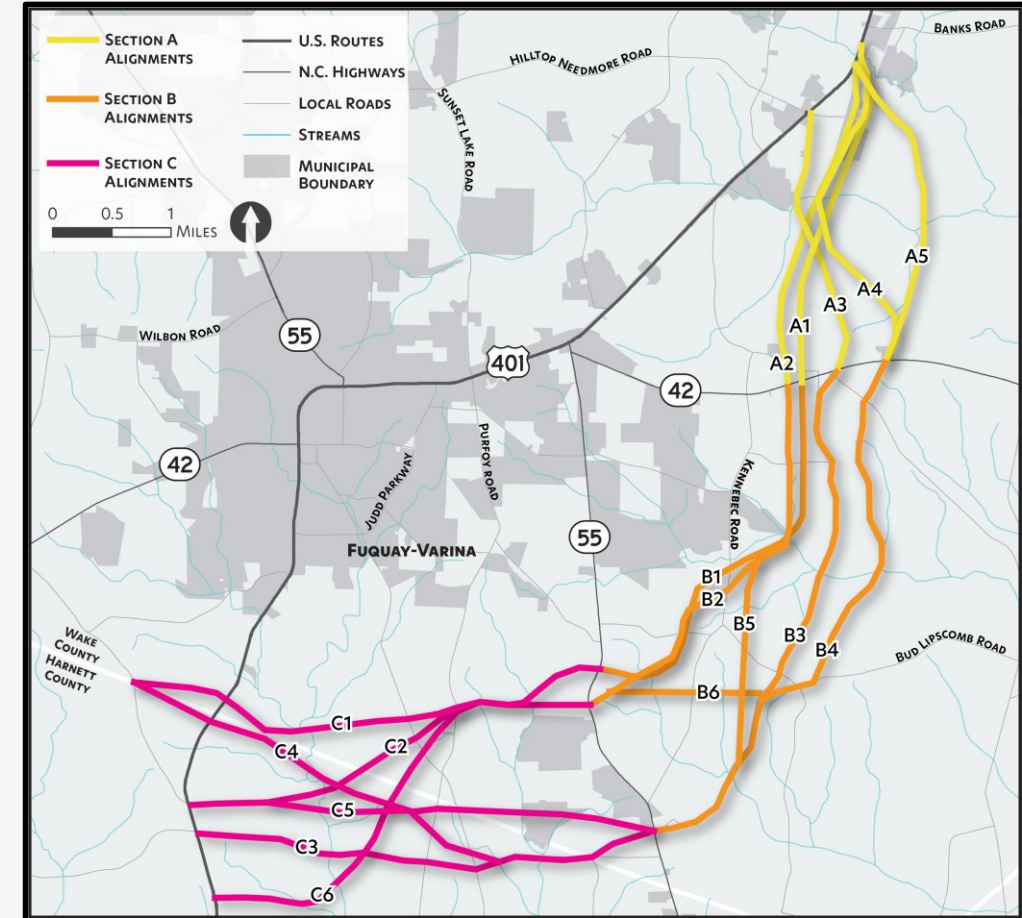
## Three Initial Sections for alignment evaluation

- **Section A** is from U.S. 401 to N.C. 42.
  - **Section B** is from N.C. 42 to N.C. 55
  - **Section C** is from N.C. 55 to U.S. 401 with an option to extend to Piney-Grove Rawls Rd
- Partial-access controlled facility
  - Interchanges at
    - U.S. 401 (near Banks Rd)
    - N.C. 42
    - N.C. 55
  - At-grade Reduced Conflict Intersections (RCIs) to increase safety and traffic flow.
  - Right in- right outs with other major roads
  - Over/Underpasses with other minor roads



# Future U.S. 401 - Tradeoffs

	← Least		Most →
<b>Section A</b>			
Properties Impacted	A2, A4	A1, A3	A5
Agricultural Land Impacted	A3, A5	A2	A1, A4
Environmental Impacts	A3	A2	A1, A4, A5
Project Cost	A2, A3		A1, A4, A5
<b>Section B</b>			
Properties Impacted	B1, B6	B2, B4	B3, B5
Agricultural Land Impacted	B2, B4, B5, B6	B3	B1
Environmental Impacts	B2, B3	B1, B5	B4, B6
Project Cost	B1, B2, B3	B5	B4, B6
<b>Section C</b>			
Properties Impacted	C1, C2, C6		C3, C4, C5
Agricultural Land Impacted	C6	C4, C5	C1, C2, C3
Environmental Impacts	C2, C3	C5	C1, C4, C6
Project Cost	C2	C1, C3, C6	C4, C5



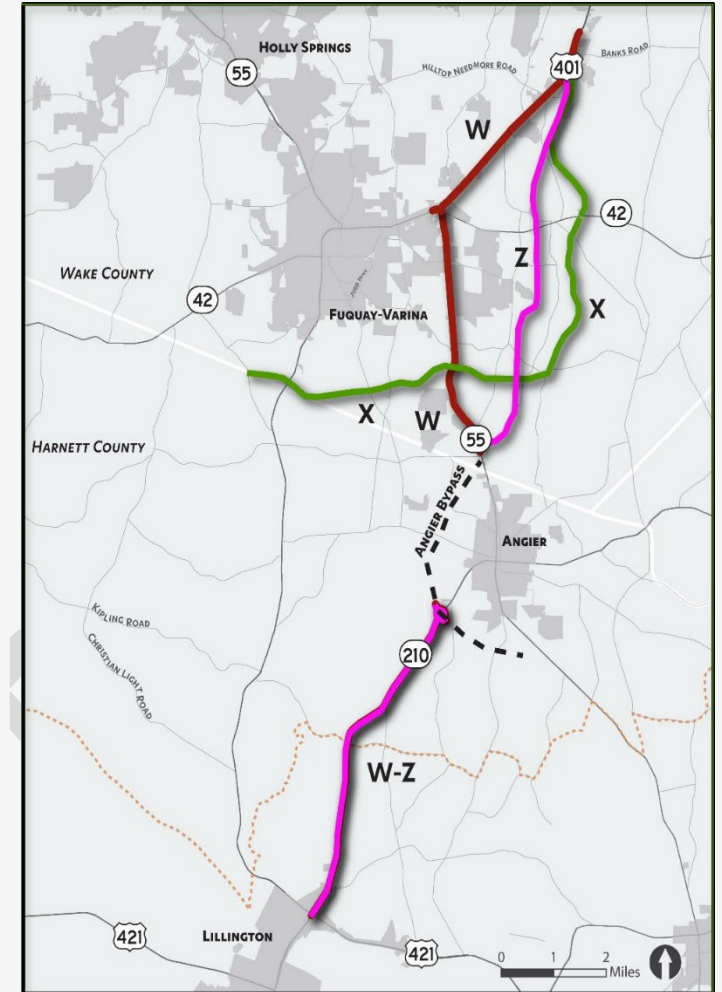
# CAMPO Executive Board Actions re: Future U.S. 401

Based on feedback from the first two rounds of community engagement, desire for additional analysis on:

- A potential alignment further to the east/southeast, and,
- The viability of making improvements to existing U.S. 401 that would serve traffic/have similar impact to a new roadway, eliminating the need for a Future U.S. 401 (bypass).

March 2022 – Study scope adjusted to conduct additional analysis on other alternatives.

December 2022 – Analysis of Alternative Alignments W, X, Z presented to community for feedback and input on tradeoffs





# Public Feedback on Alternative Alignments

(December 2022)

Lower Impact Higher Impact

Combined impacts based on the results of the first round of public engagement



Total Number of Properties Impacted



Number of Commercial/Industrial Properties Impacted



Number of Residential Properties Impacted



Number of Agricultural/Rural Residential Properties Impacted



Number of Buildings Impacted



Impacts to properties identified for economic development



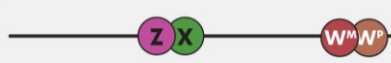
Amount (volume) of traffic served by the Alternative



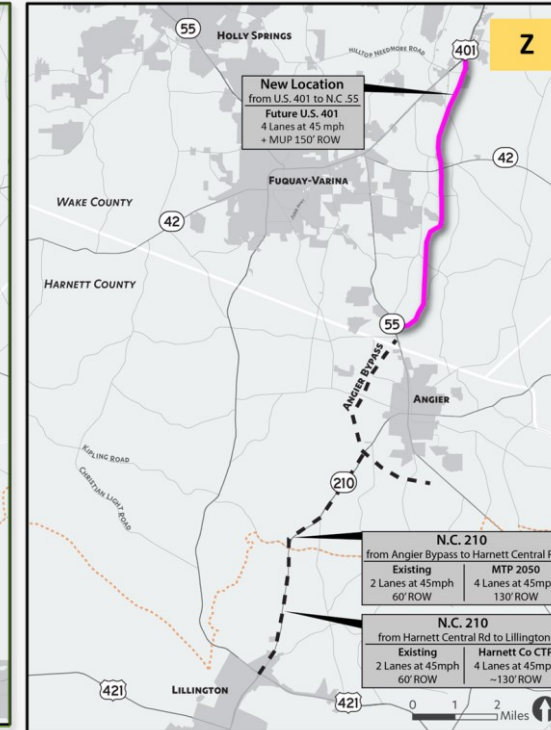
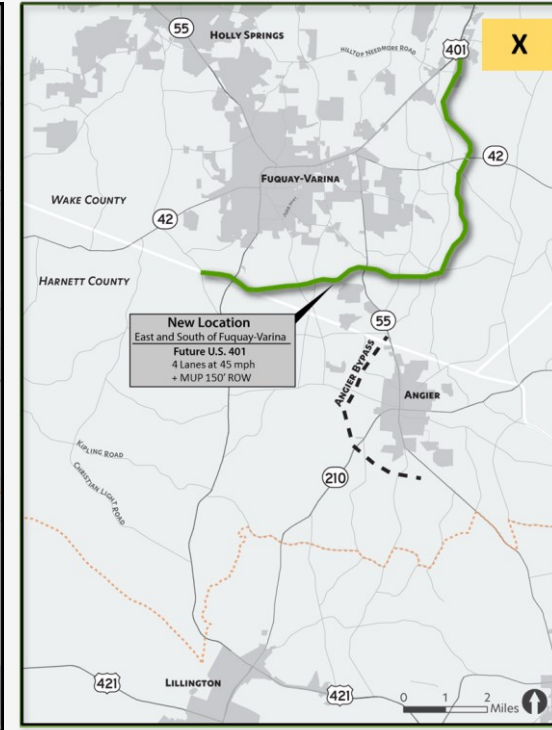
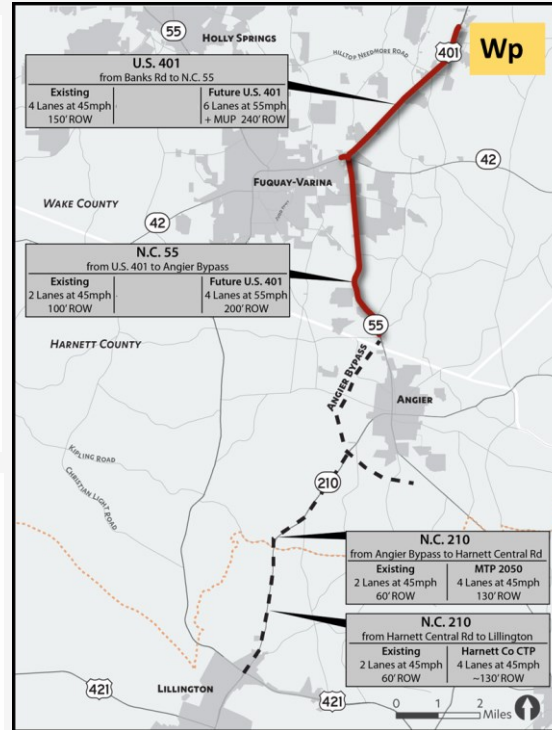
Travel reliability during Peak Hours



Ability to Provide Multimodal (Trail, Sidewalk, Transit) Connectivity to Existing and Proposed Development



Ability to Provide Access to Adjacent Properties



# Feedback Survey – Criteria for Prioritizing Alignments

**Trade-offs** - How important to you are the following project criteria for selecting an alignment for Future U.S. 401? (choose one for each category)

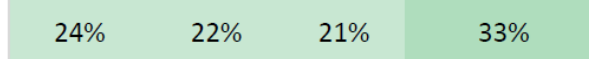
**The Project Should:**

Not a Priority      Low Priority      Medium Priority      High Priority

Accommodate future growth and development occurring across southwest Wake County and Harnett County

Increase the number of properties, neighborhoods, and developments served by sidewalks, trails/ greenways, and transit (527 responses)



Enhance safety for all users of the transportation system (524 responses)



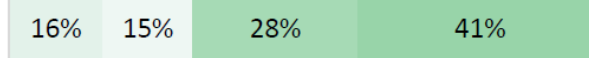
Maintain access to commercial areas and employment opportunities along U.S. 401 and N.C. 55 (533 responses)



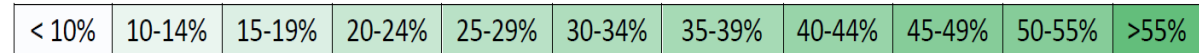
Support future economic development opportunities in southwestern Wake County and in Harnett County (527 responses)



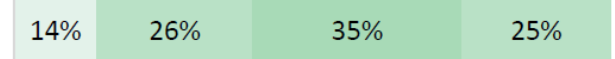
Operate as a regional bypass with focus on improving travel time (533 responses)



Colors Scale:



Provide increased local access and connectivity to adjacent properties, intersecting streets and driveways (524 responses)



Improve traffic conditions and operations by creating alternative travel routes that supplement existing roadways (537 responses)



Improve traffic conditions and operations through continuous widening of existing roadways (550 responses)



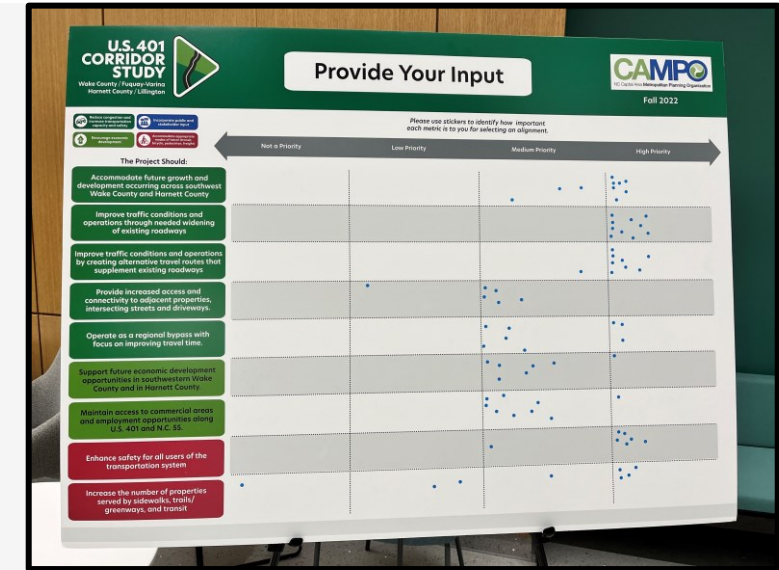
Accommodate future growth and development occurring across southwest Wake County and Harnett County (539 responses)



# Public Engagement Round 3 - Results

## High Priority on:

- Enhancing **safety** for all users (57%)
- Improving traffic conditions and operations through **widening** of existing roads (59%)
- Improving traffic conditions and operations by **creating alternative travel routes** (53%)



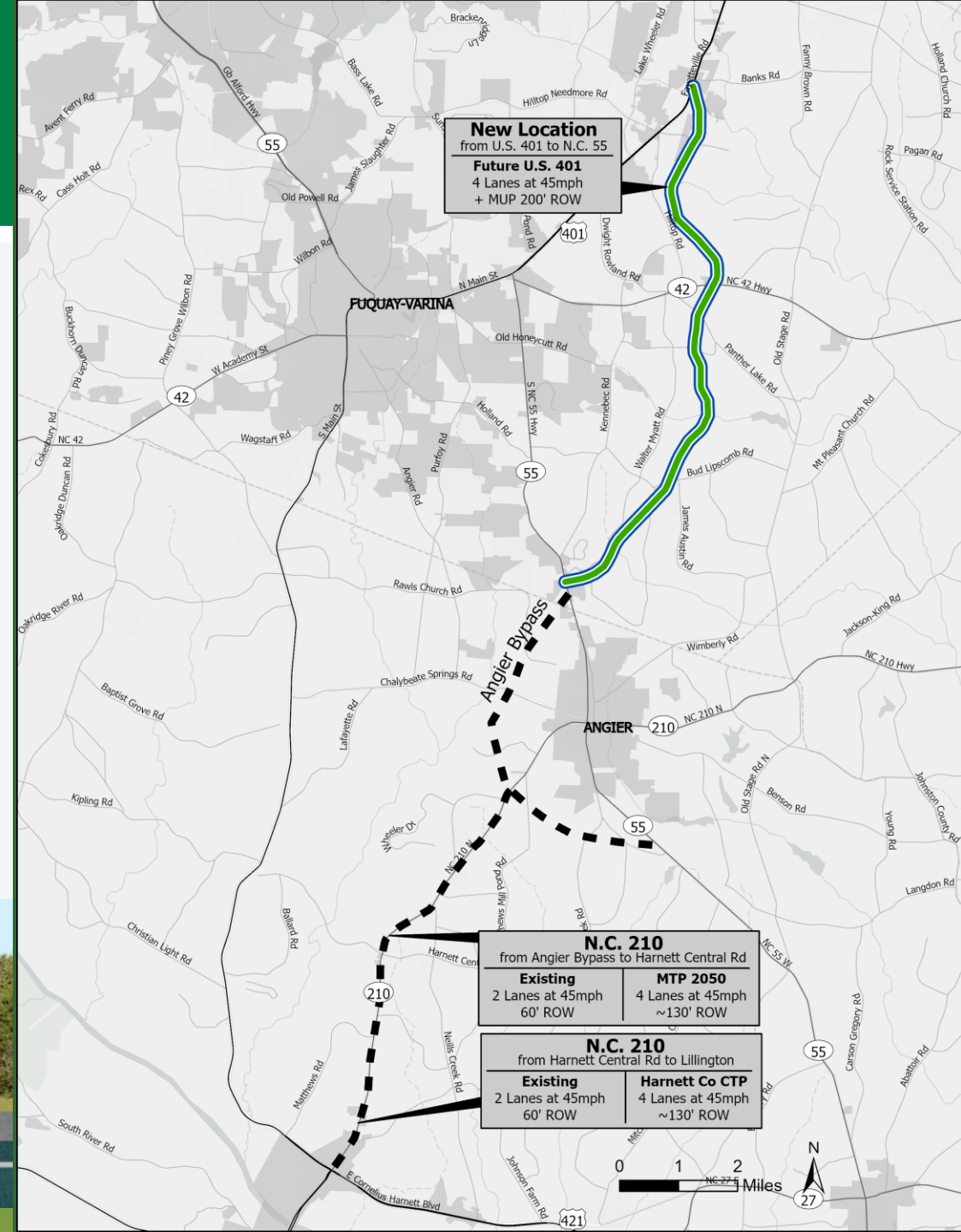
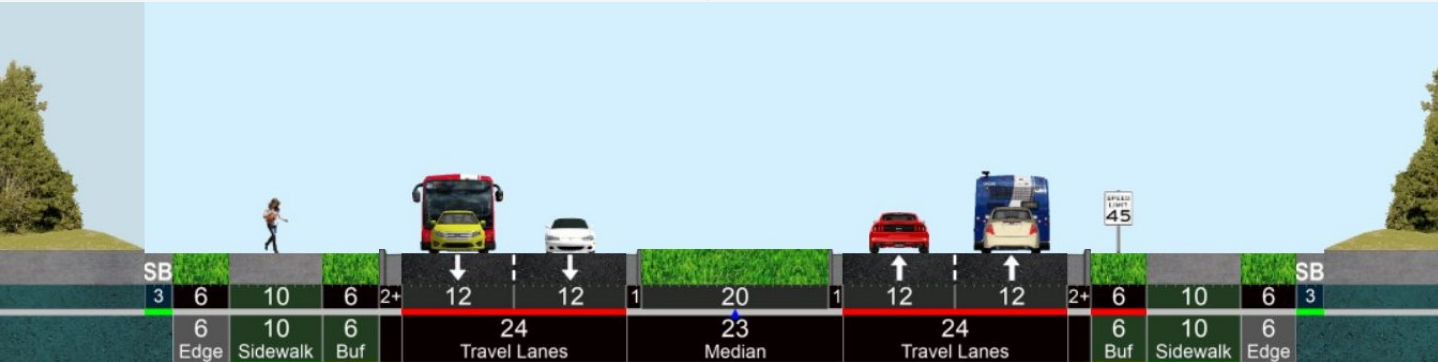
Recommendation:  
Future U.S. 401 Alignment

# Alternative X/Z

Based on the public feedback received, and in collaboration with local jurisdictions and NCDOT, the Study team analyzed one more alternative that includes:

- Alt X on the eastern section
- Alt Z in the southern section
- Connects to Angier Bypass
- “Smoothing” out of connection between Alt Z section and Angier Bypass

Alternative X/Z Cross-Section and Alignment



# Alternative X/Z

Lower Impact

Higher Impact

Combined impacts based on the results of the first round of public engagement



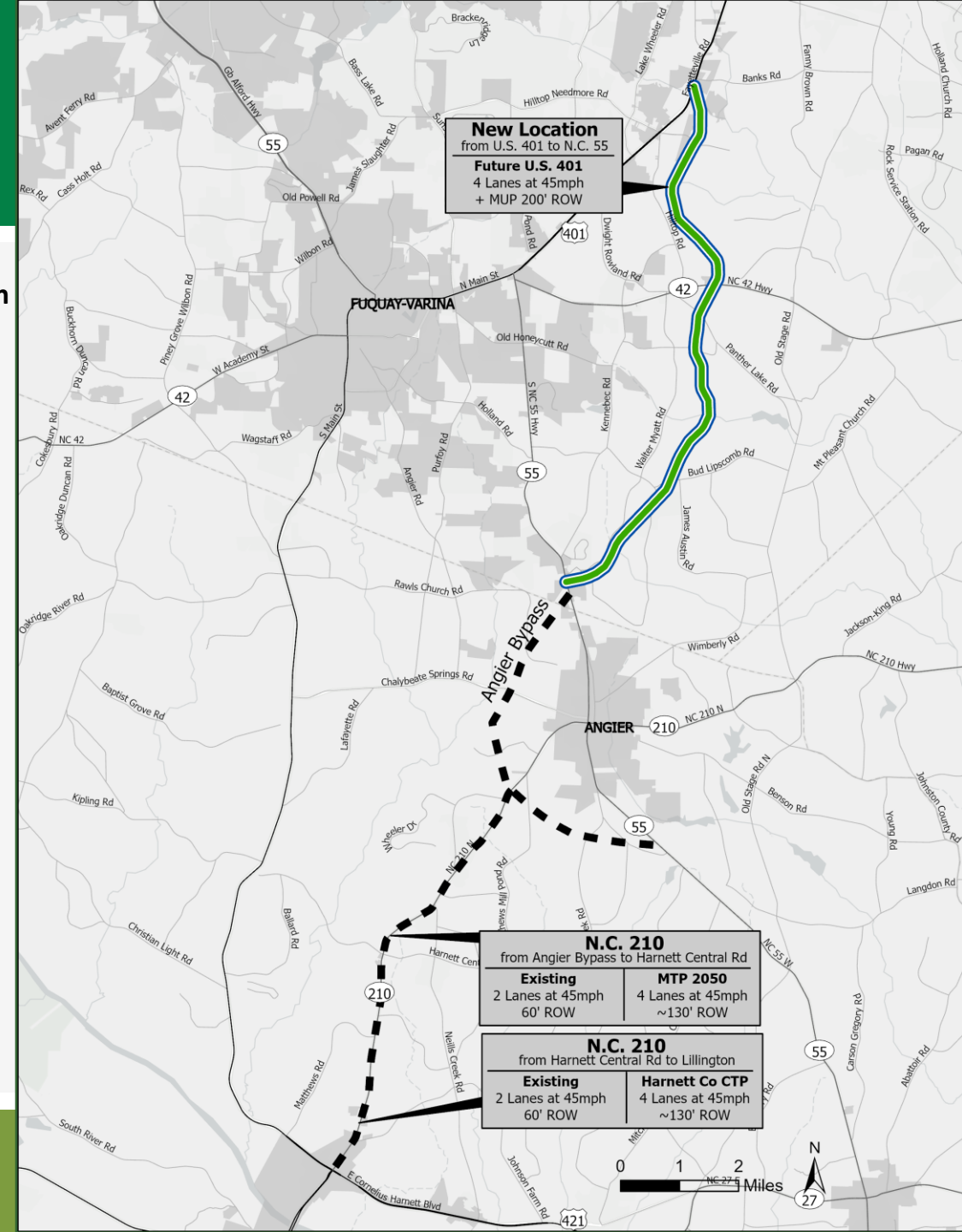
**Alt XZ would rank third on parameters from Round 2**

## Benefits of Alternative X/Z

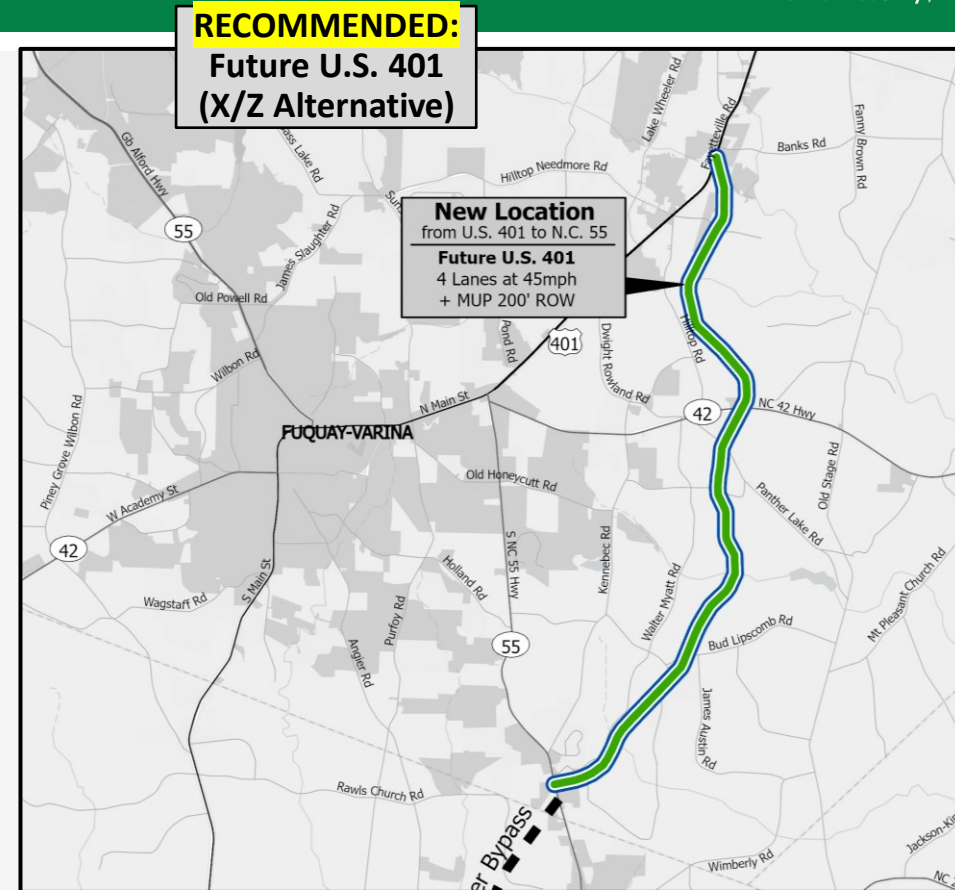
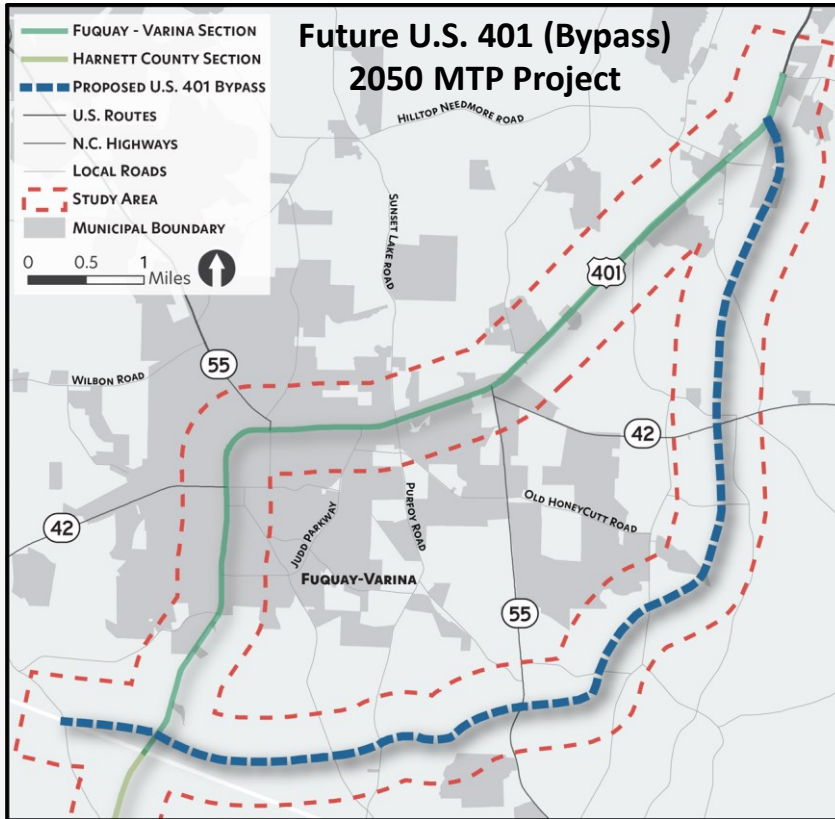
- Connects to Angier Bypass and uses N.C. 210 widening proposed in MTP to accommodate Future U.S. 401
- Enhances existing travel patterns between Lillington and Banks Road
- Can still connect with Southern Parkway section shown in Alt X
- Places an alignment further east to accommodate growth in the area
- While modeled to serve less future traffic than Alt Z, development is quickly pushing east and this alternative would likely see similar traffic to Alt. Z
- Can downgrade Southern Parkway to arterial road with 2/3 lanes at 35 mph

## Challenges of Alternative X/Z

- Requires new Right-of-Way to construct
- Impacts approximately 100 properties; 58% of which are residential and 25% of which are Agricultural



# Existing MTP Alignment vs. X/Z Alternative



X/Z Alignment is 1 to 1.5 miles east of the MTP alignment;  
X/Z Terminates at NC 55 whereas MTP alignment goes further west

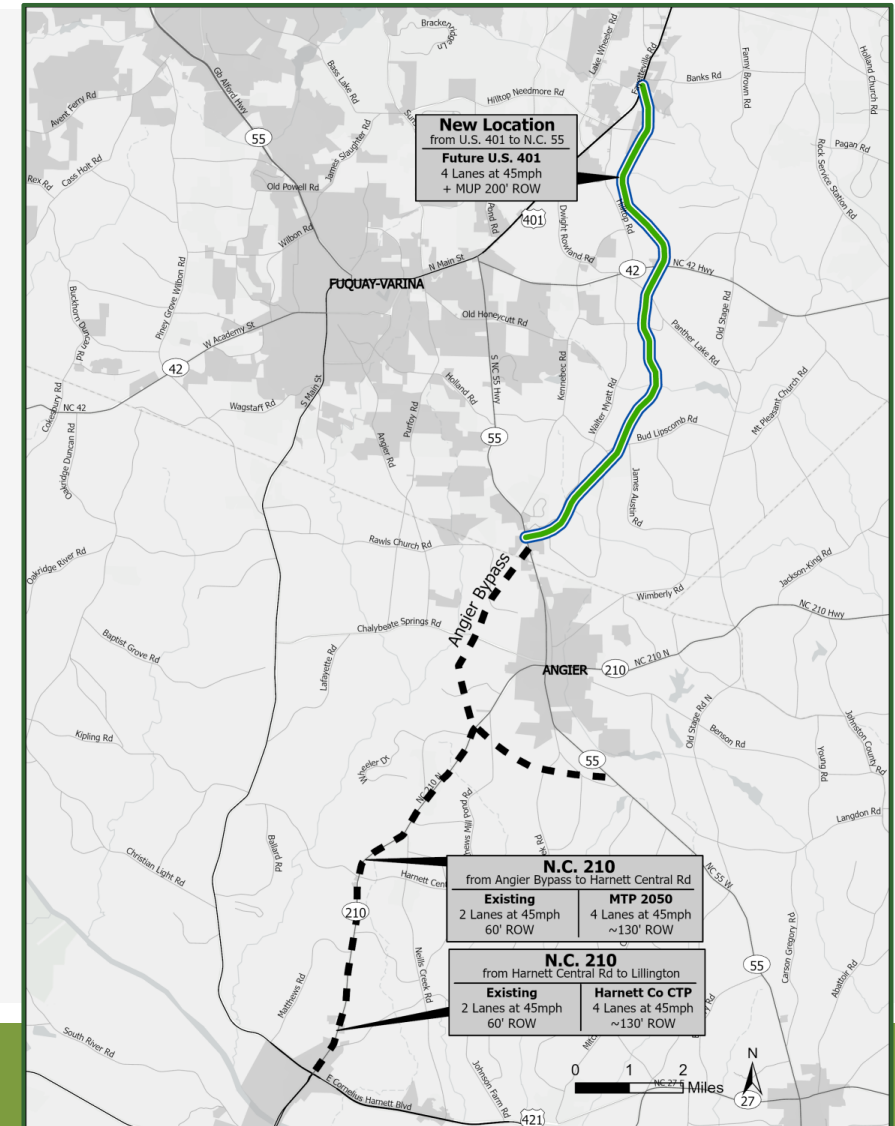
# Future U.S. 401 Recommendations



- Based on:
  - Public feedback on both the alternative alignments and criteria for prioritizing improvement projects,
  - Coordination with the Study's Technical Team, and,
  - Coordination with Stakeholder Jurisdictions

The recommendation is to advance **Alternative X/Z**.

- Alternative X/Z provides a better alignment than the U.S. 401 Bypass currently in the 2050 MTP.
- The project is still in the Planning Phase and is not planned for **construction until 2050**.

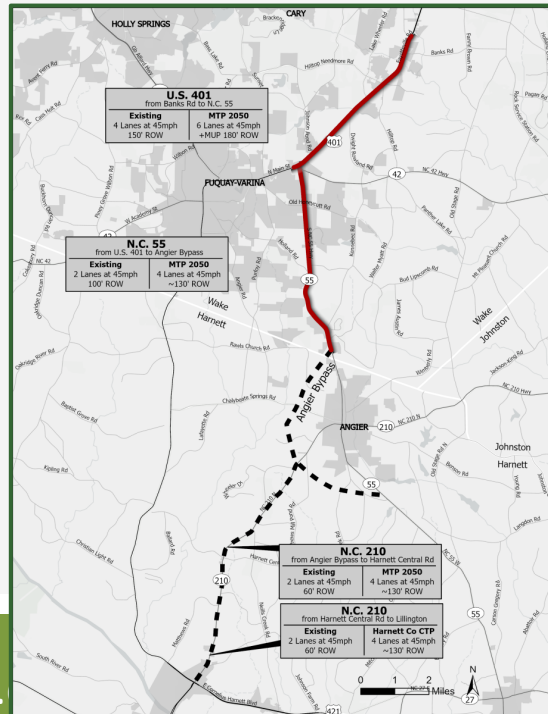




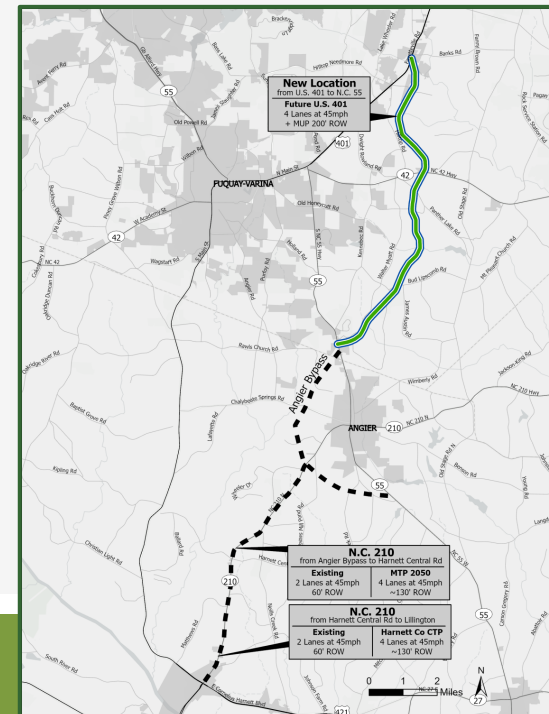
# Recommendations related to a Future U.S. 401 Project

- Recommended projects for Existing U.S. 401 between Banks Road and NC 55, as well as NC 55 between U.S. 401 and Angier Bypass should be elevated to a nearer build year (Sooner).
- Continue to prioritize other roadway and intersection improvement projects in the study area identified in the MTP that can provide a more near-term benefit.

**Sooner**  
(Existing U.S. 401,  
N.C. 55, Angier  
Bypass projects)



**Later**  
(Future U.S. 401)



# Next Steps



# Public Engagement Activities



## In-person Open Houses

**October 17**, 5:30-7:30 p.m.  
Harnett Resource Center & Library  
455 McKinney Pkwy., **Lillington**

**October 23**, 5:00-7:00 p.m.  
Board Room - Byrne Municipal Bldg.,  
134 N. Main St., **Fuquay-Varina**



## Virtual Ask A Planner

**October 26**, 4:00 p.m.  
WebEx link at [US401CorridorStudy.com](http://US401CorridorStudy.com)

**October 3 to November 5**



[US401CorridorStudy.com](http://US401CorridorStudy.com)  
**Website and Toolkit**  
Phase 3 Materials Available



**Survey**  
Online, Text, & Paper Versions



## Popups/Tabling

Oct. 5: Fuquay-Varina Concert Downtown  
Oct. 18: Angier Seniors Health Faire  
Oct. 19: Follow Me to Fuquay  
Oct. 27: Angier Trick or Treat Downtown

Details TBD:  
Vance St. Mercado in Fuquay-Varina  
Other locations, events?



# Next Steps

- Community review of recommendations
- Move to study's final phase:
  - Refine final recommendations and develop final report
  - CAMPO Executive Board considers “Endorsement” of the study's recommendations and report for use in future MPO planning processes, in particular the 10-year Transportation Improvement Program and 2055 Metropolitan Transportation Plan.
    - Includes Public Comment Period and Public Hearing
- MPO, NCDOT, and local jurisdictions work to program the recommended short- and mid-term projects into their next planning and development phases.



# Thank you!

