

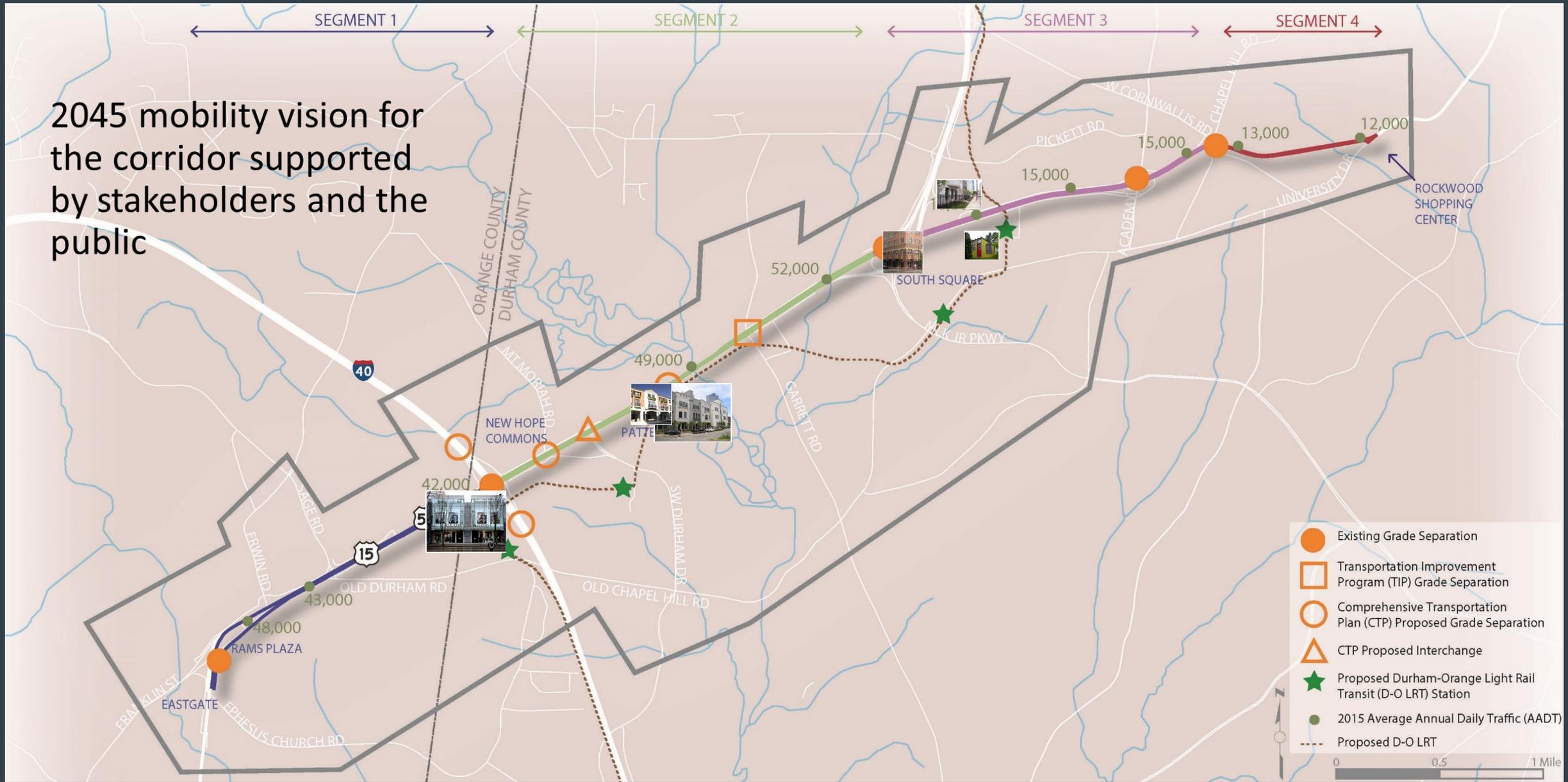
# REIMAGINING 15-501 CORRIDOR STUDY

## DCHC MPO Presentation

October 24, 2018



# 2045 mobility vision for the corridor supported by stakeholders and the public



- Existing Grade Separation
- Transportation Improvement Program (TIP) Grade Separation
- Comprehensive Transportation Plan (CTP) Proposed Grade Separation
- △ CTP Proposed Interchange
- ★ Proposed Durham-Orange Light Rail Transit (D-O LRT) Station
- 2015 Average Annual Daily Traffic (AADT)
- Proposed D-O LRT

# AGENDA

Study Overview

Key Themes from Community and Travel Profile

Visioning

Alternative Strategies

Discussion



# **STUDY OVERVIEW**

# PROCESS



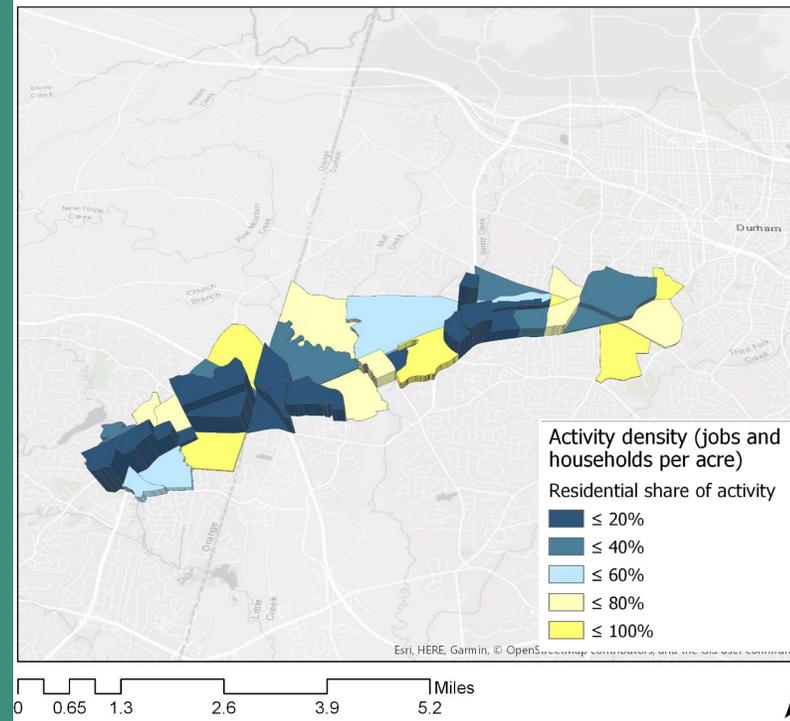
# COMMUNITY AND TRAVEL PROFILE

Key Themes

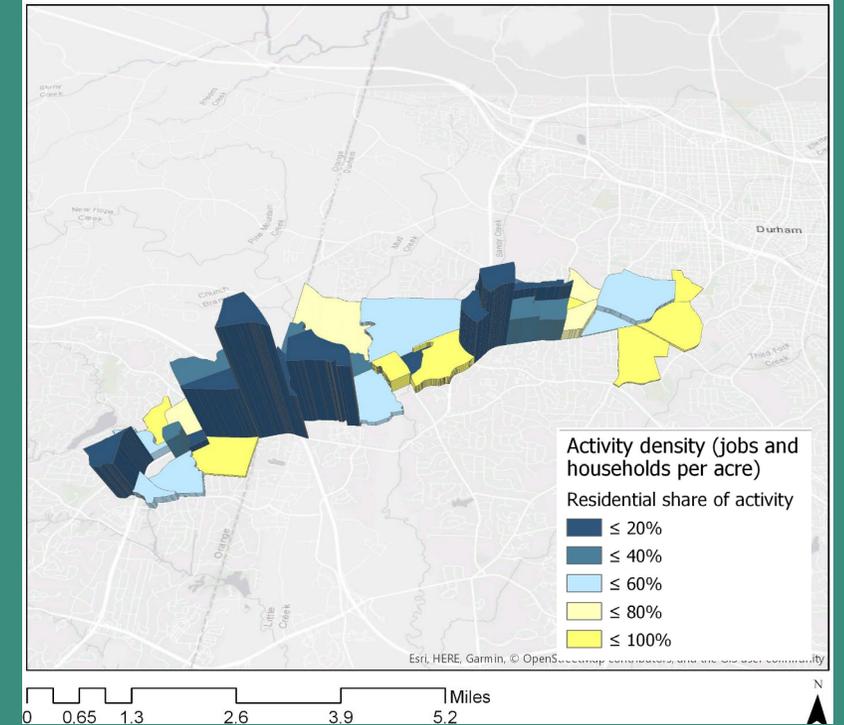
# JOBS AND HOUSING

- ▶ Substantial growth in jobs and housing
- ▶ Growth primarily focused on D-O LRT station areas
- ▶ Mixed-use high density
  - Greater internal trip capture
  - Transit supportive
  - Facilitates active transportation

JOB AND HOUSING ACTIVITY 2013 | US 15/501 STUDY AREA

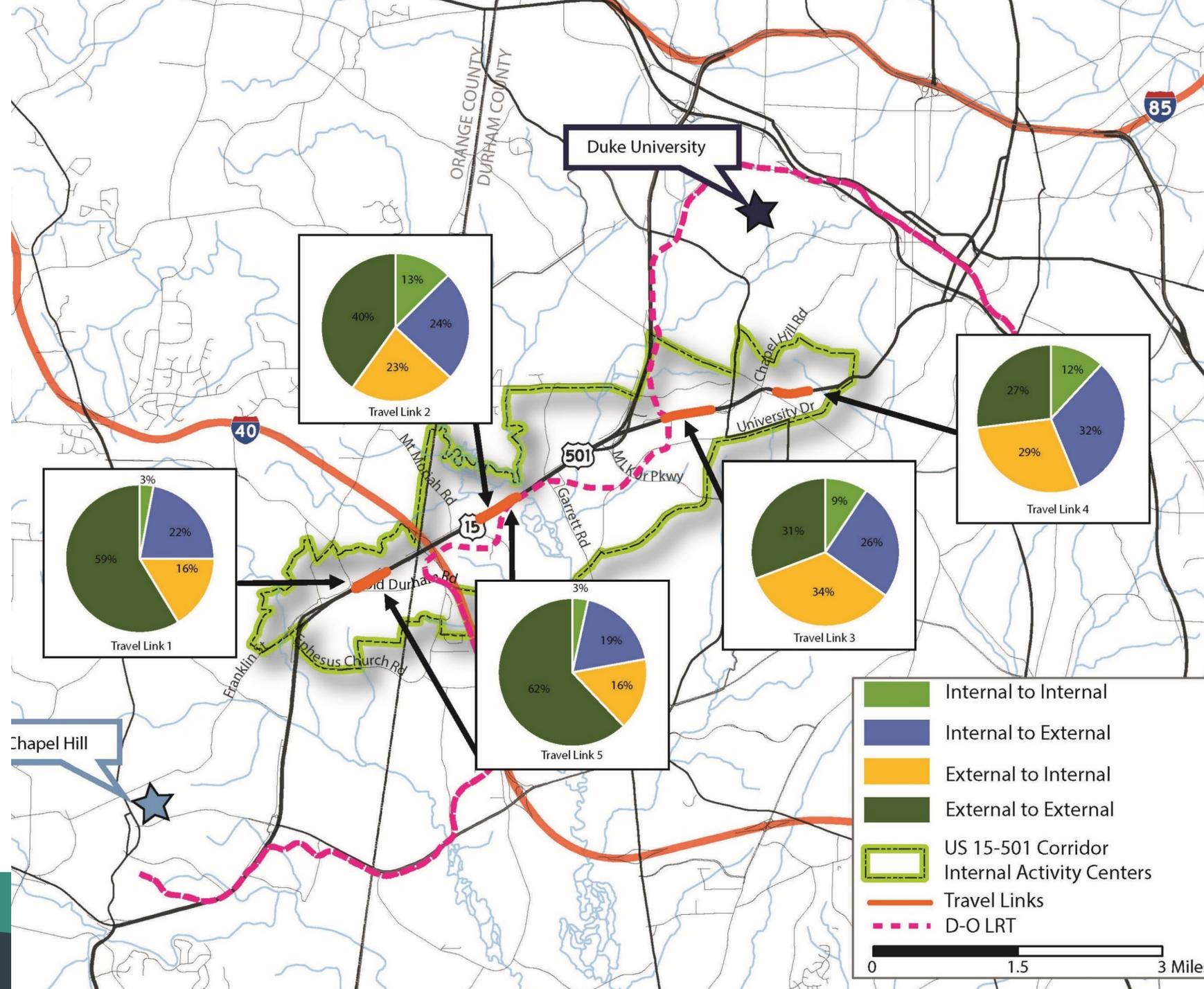


JOB AND HOUSING ACTIVITY 2045 | US 15/501 STUDY AREA



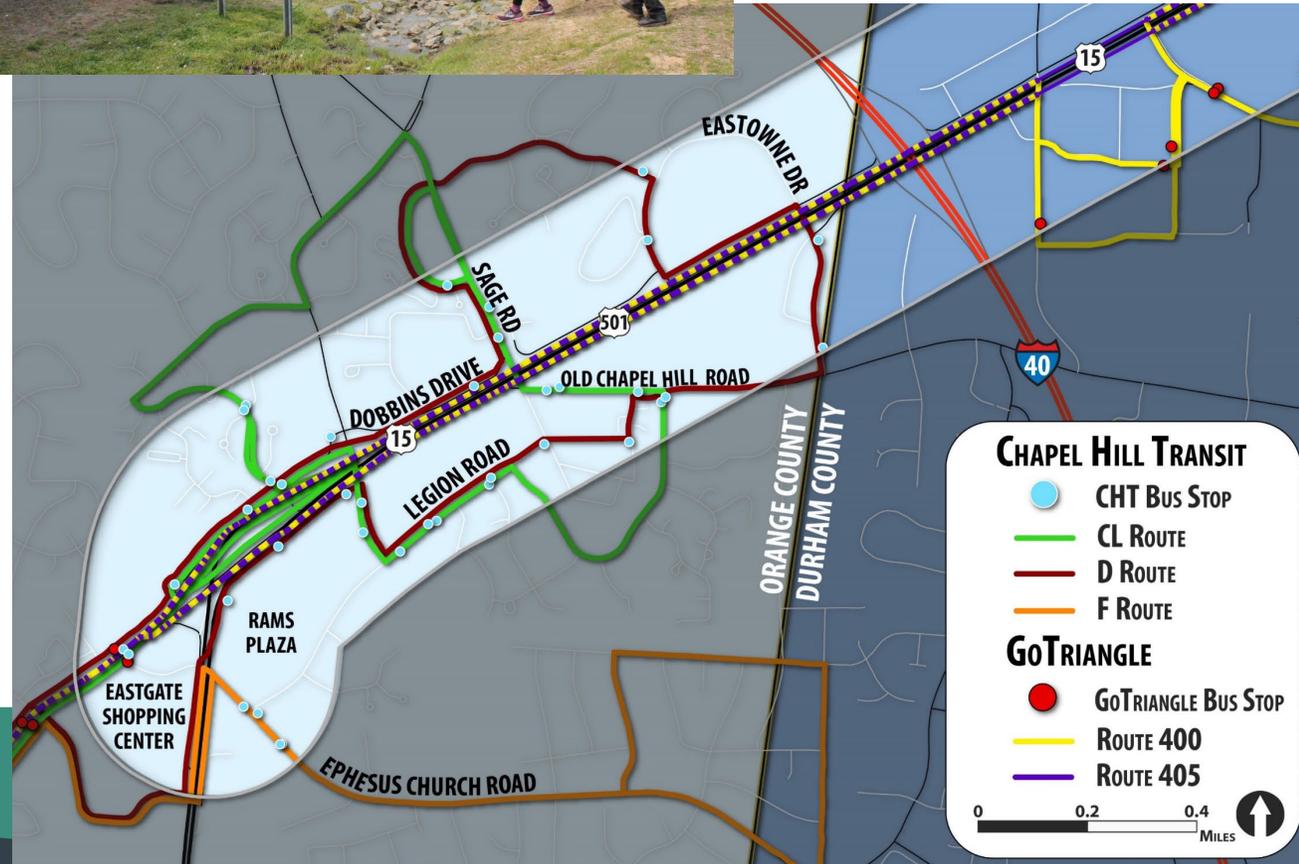
# HIGHWAY

- ▶ US 15-501 is a gateway to the region
- ▶ Demand local and regional
- ▶ High conflict between “to” and “through” travelers
- ▶ New development patterns should increase internal trip capture
- ▶ Attractive destination for travelers outside the study area
- ▶ High congestion impacts safety



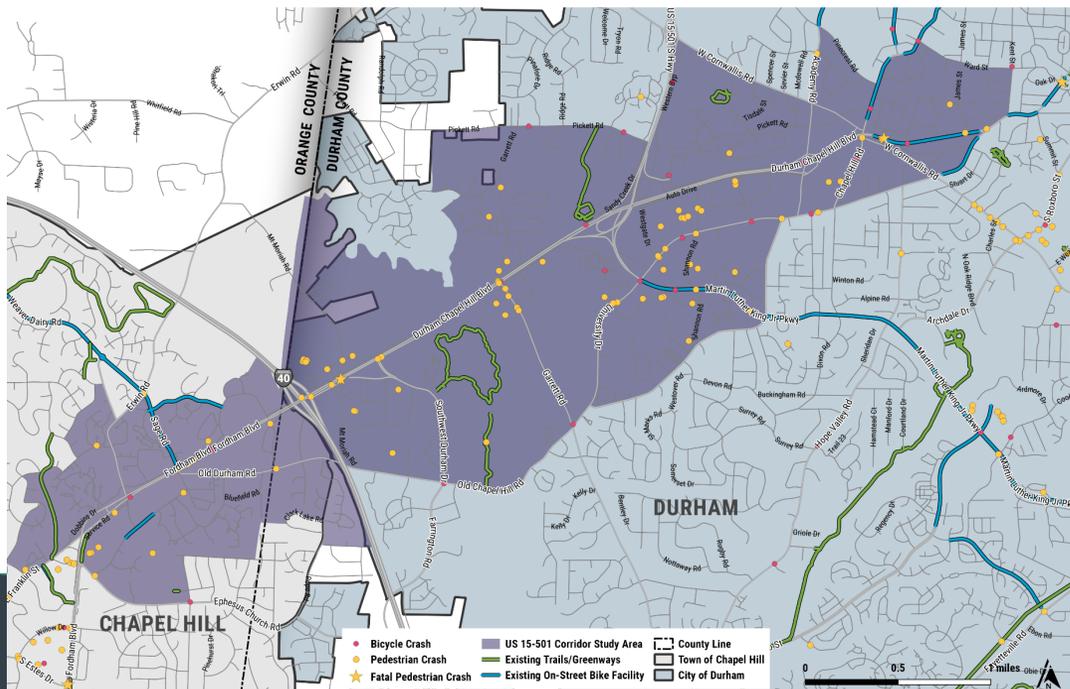
# TRANSIT

- ▶ Gaps in the existing system
- ▶ Difficult to efficiently serve existing development
- ▶ Challenging to provide service along the corridor
- ▶ Challenges with congestion and delay



# ACTIVE TRANSPORTATION

- ▶ Lack of connectivity between activity centers
- ▶ Few facilities along the corridor
- ▶ Concentrated demand
- ▶ Several areas with high concentrations of captive users

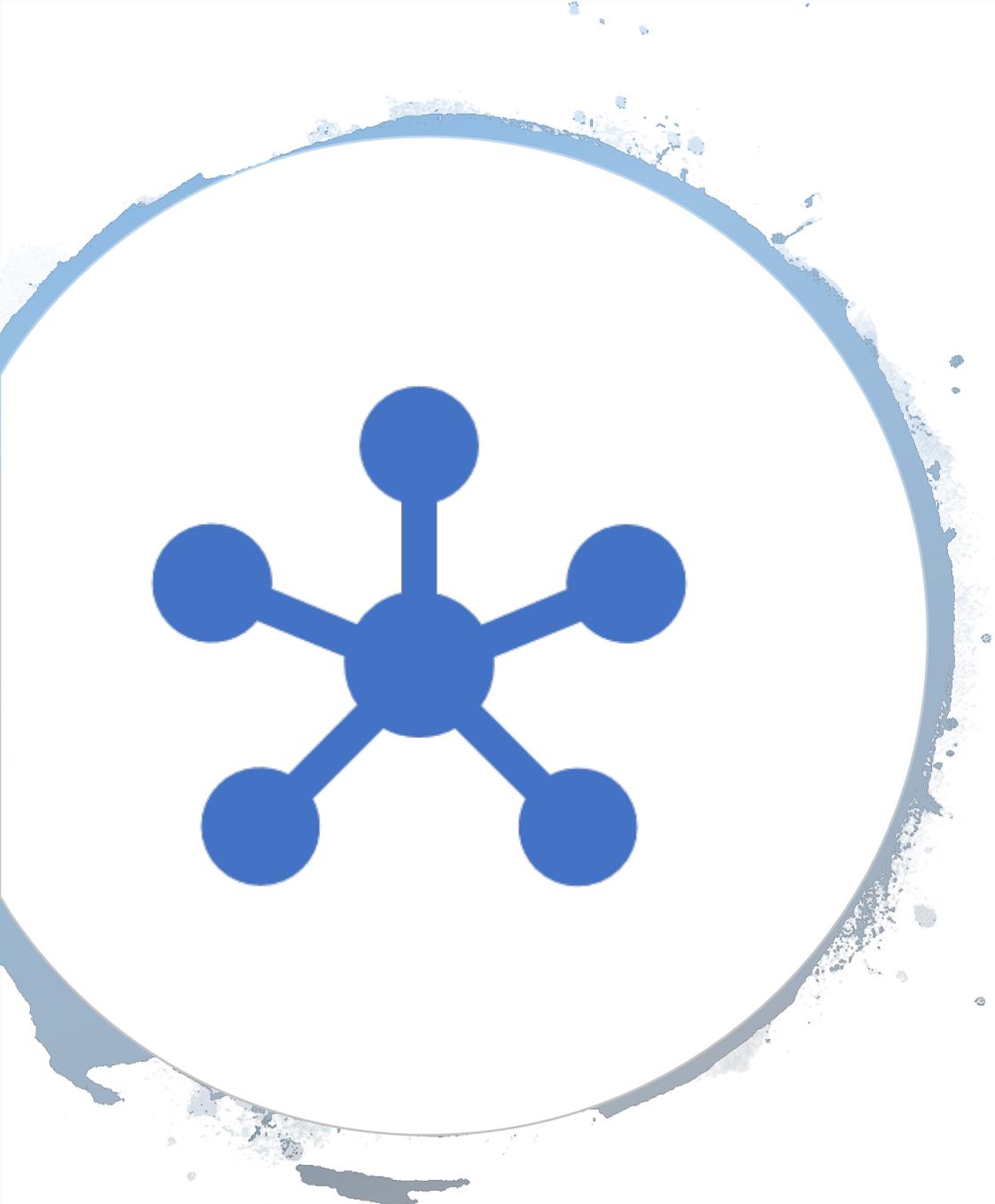


**VISIONING**

# Visioning Process

- Mobile Tour
- Visioning Exercise with Tour Participants
- Visioning Exercise with Citizens at Public Workshop
- Online Crowdsourcing Map





# Key Themes

- Multimodal
- Connectivity
- Mobility

# Vision Statement

By 2045, US 15-501 between Durham and Chapel Hill will be a key multimodal transportation corridor, that will complement and support the Durham-Orange Light Rail and the adjacent, mixed use, and multimodal supportive development. The corridor will provide for the safety, mobility, and accessibility of all users, including motorists, pedestrians, bicyclists, and public transportation users; including connections across and through the corridor.

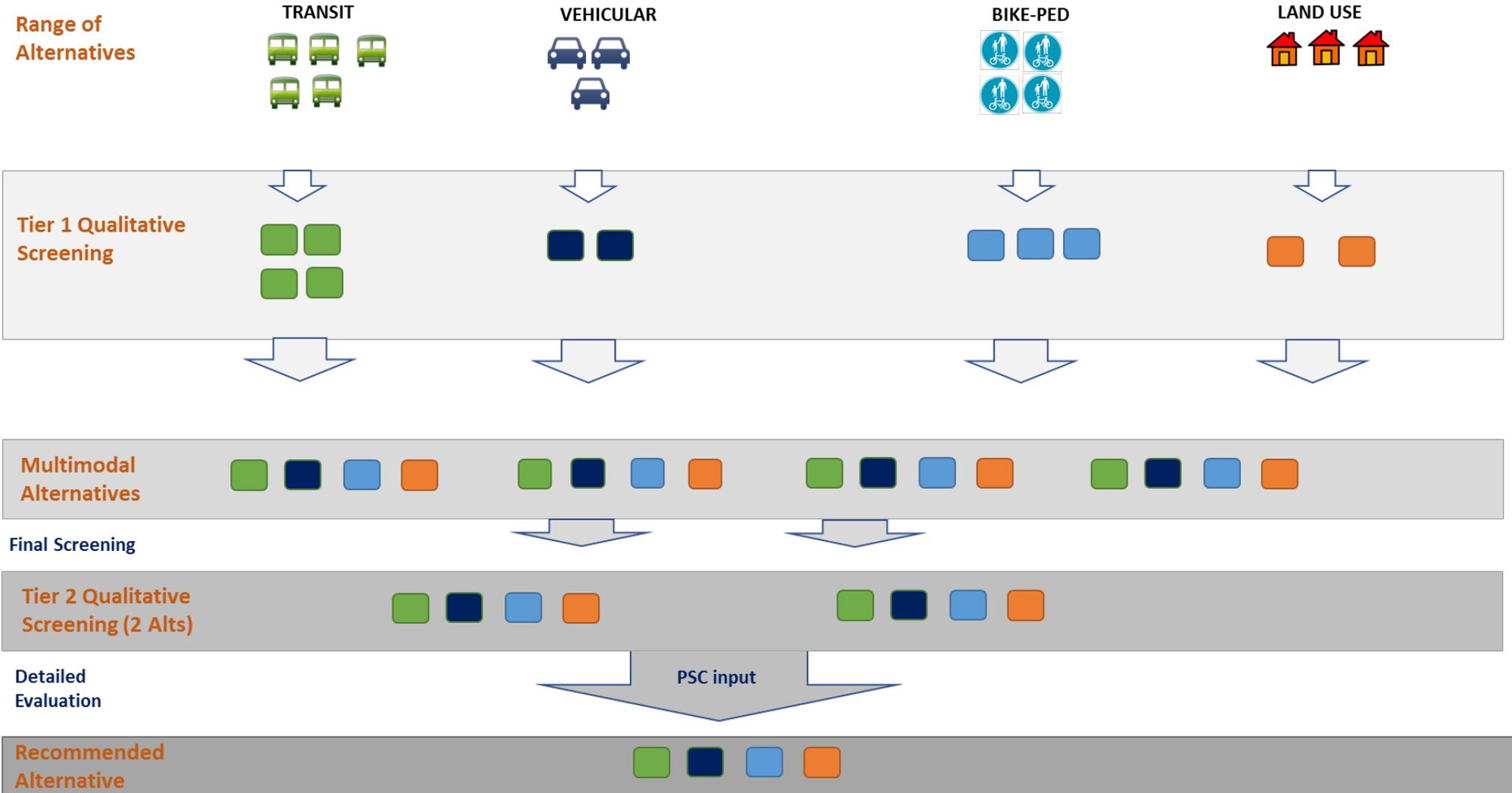
# Goals

- Improve accessibility and connectivity for all modes
- Improve mobility for all users
- Enhance safety and health
- Stimulate land use, community, and market performance vitality
- Protect sensitive environmental lands within the study area



# **ALTERNATIVE STRATEGIES**

# Multimodal Alternatives Process



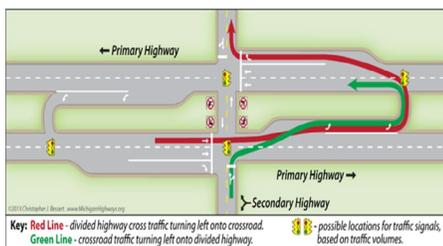


# US 15-501 SEGMENT ONE STRATEGIES

## Ephesus Church Rd to I-40



| OPTION ONE  | OPTION TWO   | OPTION THREE   |
|---|--|--|
| Widen US 15-501 from a 4-lane median divided to 6-lane median divided superstreet facility (including elimination of service roads and channelization); provide painted pedestrian crosswalks |  | Widen US 15-501 to an 8-lane median divided facility with traditional intersections; provide painted pedestrian crosswalks |
| Superstreet intersection at Ephesus Church Road and US 15-501   | Urban interchange at Ephesus Church Road and US 15-501 | No Change from Existing  |
| Connect Legion Road and Old Durham Road   | No Change from Existing                                | Connect Legion Road and Old Durham Road  |
| Urban interchange with bike/pedestrian facilities at Eastowne Drive and US 15-501   |  | Traditional intersection widening with grade separated pedestrian crossing   |
| Connector roads with bike/pedestrian facilities connecting all 4 quadrants of I-40 interchange  |  | Implement bike/pedestrian facilities (see I-40 Segment Boards)   |
| Implement bike/pedestrian facilities for this area as shown in Chapel Hill Mobility Plan  |  |  |
| Implement local street network as proposed by Blue Hill District TIA  |  |  |
| Bus improvements as recommended by Blue Hill District TIA   |  |  |
| Bus stop enhancements   |  |  |
| Land Use: capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design   |  |  |



8-lane Median Divided Facility



Grade-separated Pedestrian Crossing

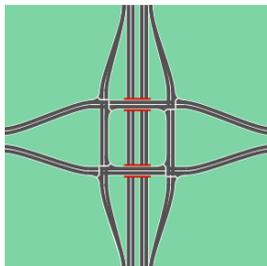
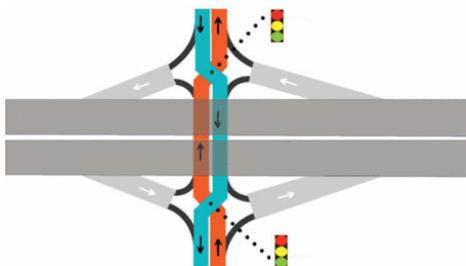




# US 15-501 I-40 QUAD STRATEGIES

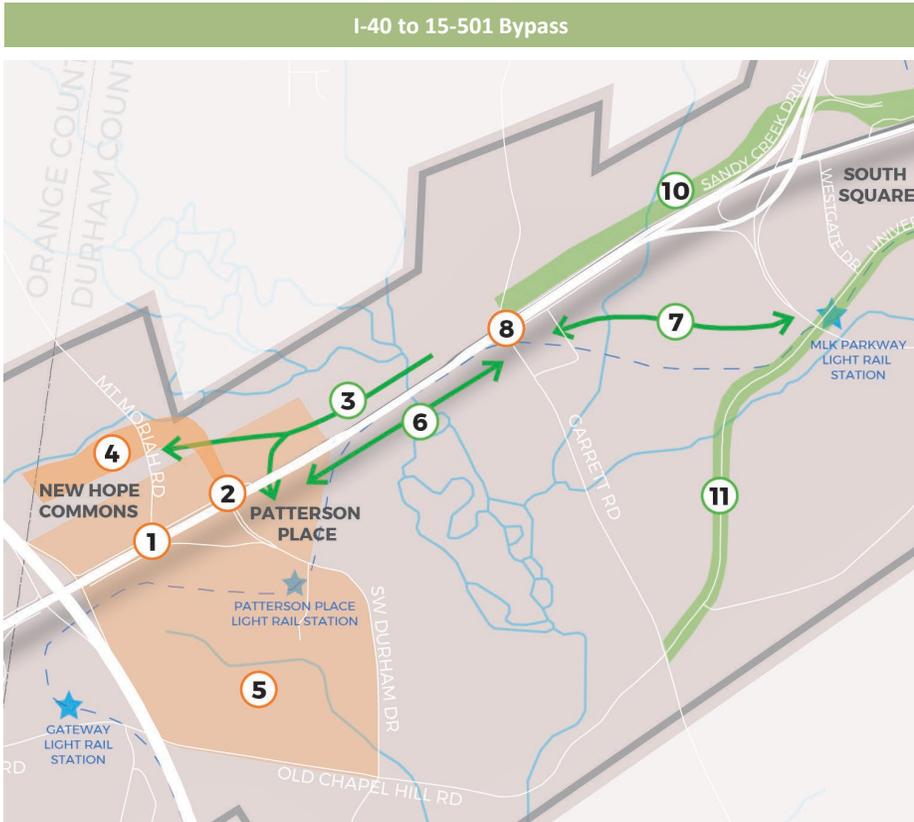


| OPTION ONE   | OPTION TWO   |
|--|--|
| <ul style="list-style-type: none"> <li>Redesign I-40/US 15-501 interchange to improve safety and operations</li> </ul>   | <ul style="list-style-type: none"> <li>Redesign I-40/US 15-501 interchange to improve safety and operations</li> </ul>     |
| <ul style="list-style-type: none"> <li>Grade separated 2-lane roadway with bike/pedestrian facilities across I-40 connecting New Hope Commons to Eastowne Drive</li> </ul> | <ul style="list-style-type: none"> <li>Provide bike/pedestrian facilities within the redesigned interchange</li> </ul>     |
| <ul style="list-style-type: none"> <li>Grade separated 2-lane roadway with bike/pedestrian facilities across I-40 connecting Patterson Place to Gateway Station</li> </ul> | <ul style="list-style-type: none"> <li>Provide for bike/pedestrian facilities within the redesigned interchange</li> </ul> |
| <ul style="list-style-type: none"> <li>Put Durham and Chapel Hill signals on the same system to improve traffic flow</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>Extend GoDurham across I-40 to connect with a transfer point in Chapel Hill (long-term GoDurham to Gateway Station)</li> </ul>      |  |
| <ul style="list-style-type: none"> <li>Extend Chapel Hill transit across I-40 to connect with a transfer point in Durham (near-term CHT to Patterson Place)</li> </ul>     |  |
| <ul style="list-style-type: none"> <li>Implement connecting bus service to Eastowne Drive and New Hope Commons</li> </ul>  |  |

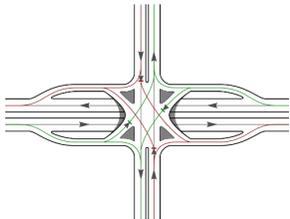




# US 15-501 SEGMENT TWO STRATEGIES

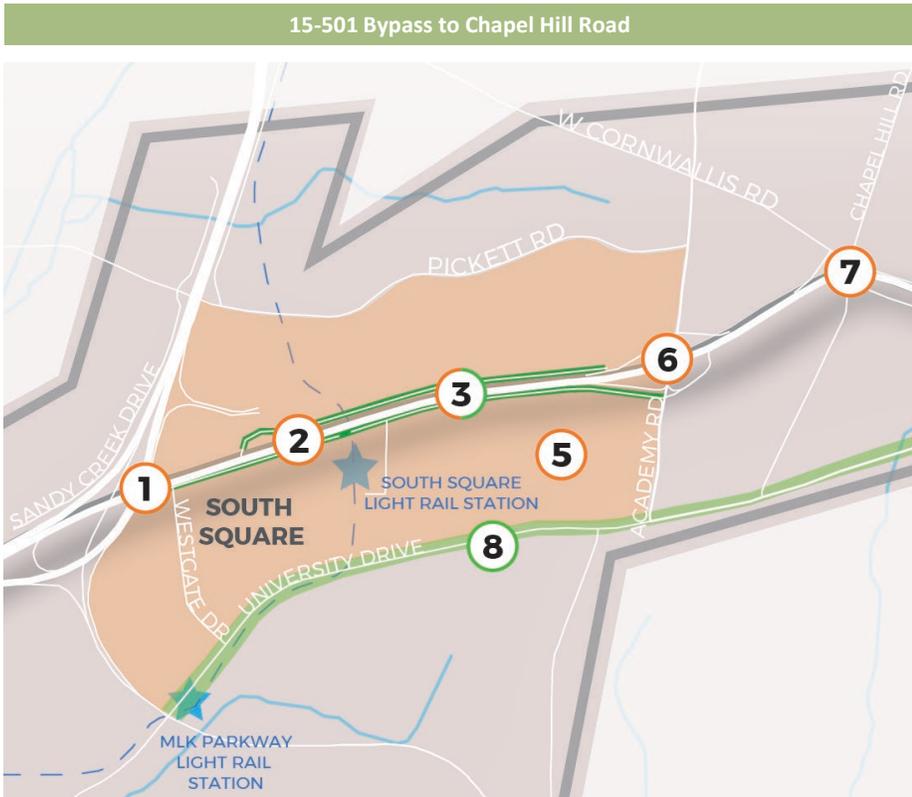


| OPTION ONE   | OPTION TWO   |
|--|--|
| Grade separate Mt Moriah Road and US 15-501, provide bike/pedestrian accommodations on bridge  | Restrict Mt Moriah Road to right in/right out                      |
| Urban interchange at SW Durham Drive and US 15-501   | Traditional intersection widening at SW Durham Drive and US 15-501 |
| Bike/pedestrian underpass at New Hope Creek with off road facilities connecting into New Hope Commons and Patterson Place                |  |
| Extend SW Durham Drive to connect behind shopping center   |  |
| Implement Patterson Place and New Hope Commons local street network (including connections across I-40 and bike/pedestrian improvements) |  |
| Provide bike/pedestrian connectivity between Patterson Place and Garrett Road  |  |
| Provide bike/pedestrian connections from Garrett Road to University Drive  |  |
| Urban interchange at Garrett Road  |  |
| Improve transit access and connectivity to and through the segment   |  |
| Provide bike/pedestrian connectivity between Sandy Creek Drive, Chapel Hill Blvd Service Road, and Garrett Road                          |  |
| Provide bike/pedestrian facilities along University Drive  |  |



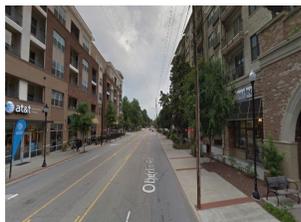


# US 15-501 SEGMENT THREE STRATEGIES



| OPTION ONE  | OPTION TWO   |
|---|--|
| Implement 2-lane roundabout to transition into a more urban street cross section                                      | Implement other traffic calming measures to transition into a more urban street cross section                                    |
| Implement a fully multimodal 4-lane urban cross-section with landscaped median and roundabouts at key locations       | Implement a 4-lane urban cross-section with landscaped median and traditional intersections                                      |
| Remove service roads to provide protected bike lanes and sidewalks from Westgate Drive to Chapel Hill Road            | Convert service roads to linear park   |
| Implement high density mixed use development fronting US 15-501 Business  | Implement high density mixed use development pattern   |
| Implement an urban street grid system to the north and south of US 15-501 Business                                    |  |
| Replace interchange at Academy Road with a 2-lane roundabout to better accommodate urban design and bike/pedestrians  | Redesign Academy Road interchange to better reflect urban design   |
| Replace interchange at Chapel Hill Road with a 1-lane roundabout to better accommodate urban design bike/pedestrians. | Redesign Chapel Hill Road interchange to better reflect urban design   |
| Continue bike/pedestrian improvements along University Drive  | Provide bike/pedestrian facilities outside of the US 15-501 Business corridor, including along University Drive and Pickett Road |

Urban Cross-Section



Urban Cross-Section



park, development facing parking lots



# US 15-501 SEGMENT FOUR STRATEGIES

## Chapel Hill Road to University Drive

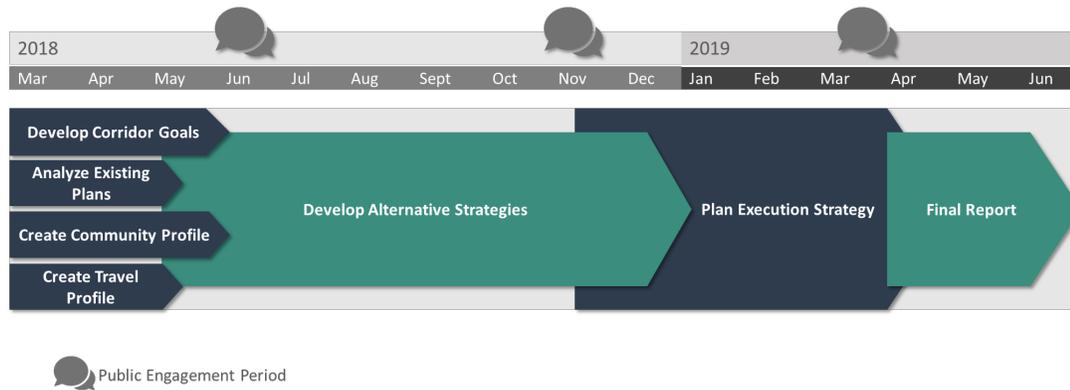


| OPTION ONE | OPTION TWO |
|------------|------------|
|------------|------------|

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Implement a 2-lane urban cross section with roundabouts at key intersections, landscaped median, and consolidated driveways fronting US 15-501 Business</li> </ul>            | <ul style="list-style-type: none"> <li>Implement a 2-lane urban cross section with traditional intersections, landscaped median and consolidated driveways fronting US 15-501 Business</li> </ul> |
| <ul style="list-style-type: none"> <li>Redesign University Drive intersection as a roundabout with a bike/pedestrian facilities connecting to the proposed bike/pedestrian facilities on University Drive</li> </ul> | <ul style="list-style-type: none"> <li>Redesign University Drive intersecion to better accommodate bike/pedestrian travel</li> </ul>  |
| <ul style="list-style-type: none"> <li>Improve connectivity between adjoining neighborhoods and US 15-501 Business using sidewalks or greenways for example</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>Provide a Cycle Track on the south side of US 15-501 Business and sidewalks and parking on the north side</li> </ul>  | <ul style="list-style-type: none"> <li>Provide bike lanes and sidewalks on both sides of US 15-501 Business.</li> </ul>   |
| <ul style="list-style-type: none"> <li>No Change from Existing</li> </ul>  | <ul style="list-style-type: none"> <li>Provide parking on north side of US 15-501 business</li> </ul>   |
| <ul style="list-style-type: none"> <li>Improve transit amenities</li> </ul>  |   |
| <ul style="list-style-type: none"> <li>Pedestrian connection between Chapel Hill Road and US 15-501 Business</li> </ul>  |   |



# Next Steps



- Conduct detailed evaluation on preferred options/strategies
- Develop conceptual designs
- Public engagement of recommended designs
- Finalize recommendations
- Implementation Plan
- Final Report

# DISCUSSION