

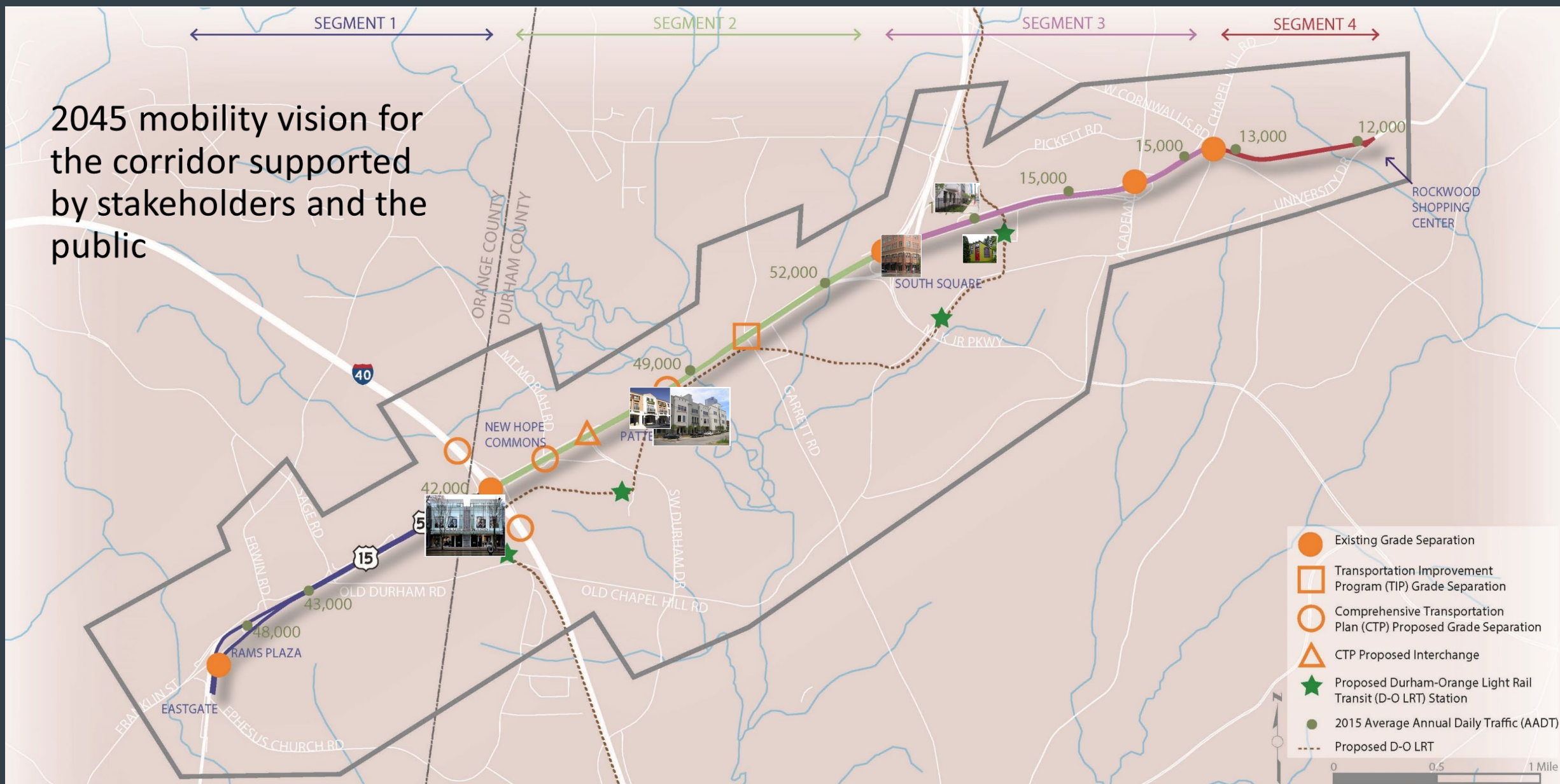
REIMAGINING 15-501 CORRIDOR STUDY

DCHC MPO Presentation

October 24, 2018



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



AGENDA

Study Overview

Key Themes from Community and Travel Profile

Visioning

Alternative Strategies

Discussion



STUDY OVERVIEW

PROCESS





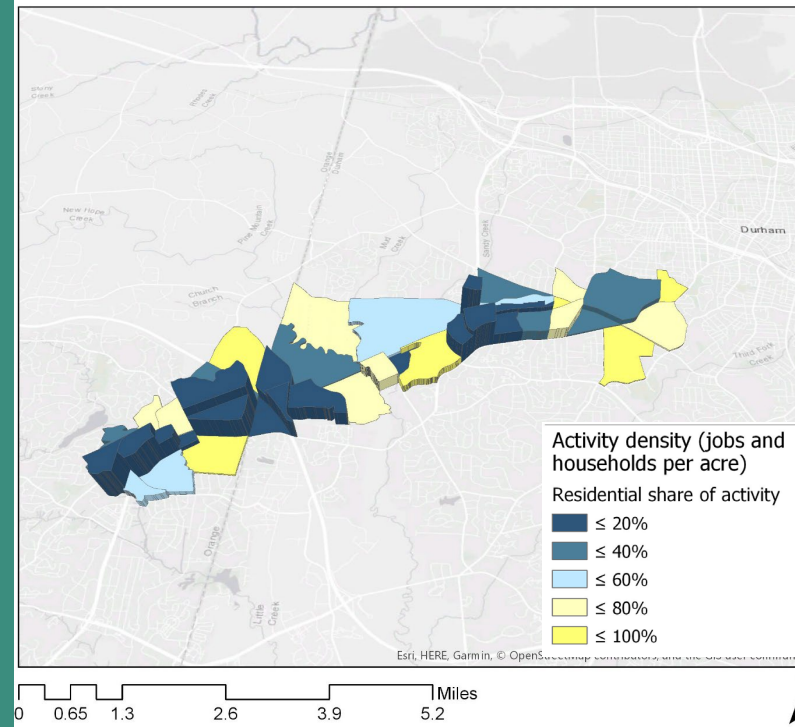
COMMUNITY AND TRAVEL PROFILE

Key Themes

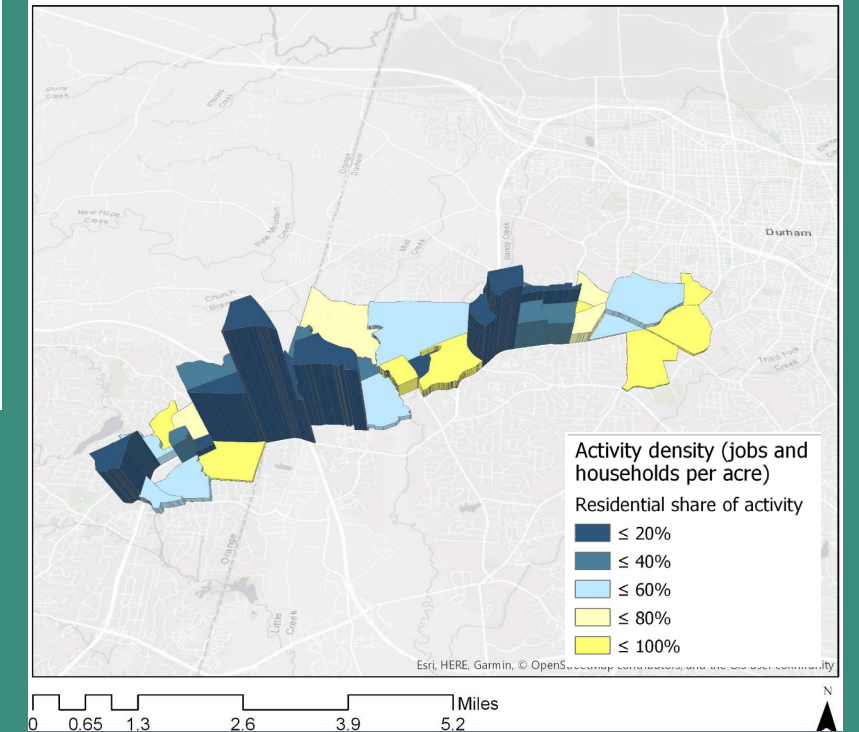
JOBS AND HOUSING

- ▶ 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

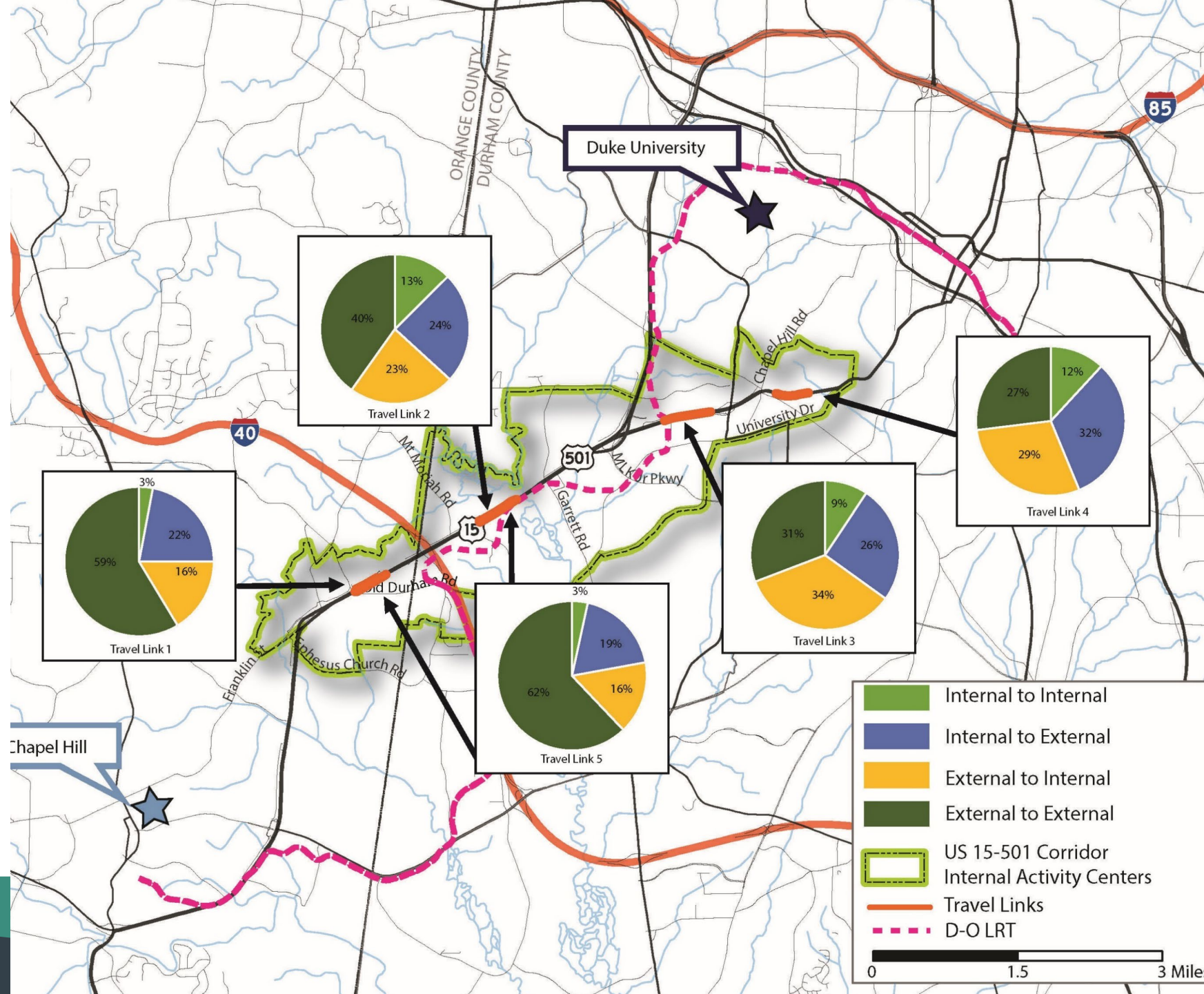


JOB AND HOUSING ACTIVITY 2045 | US 15/501 STUDY AREA



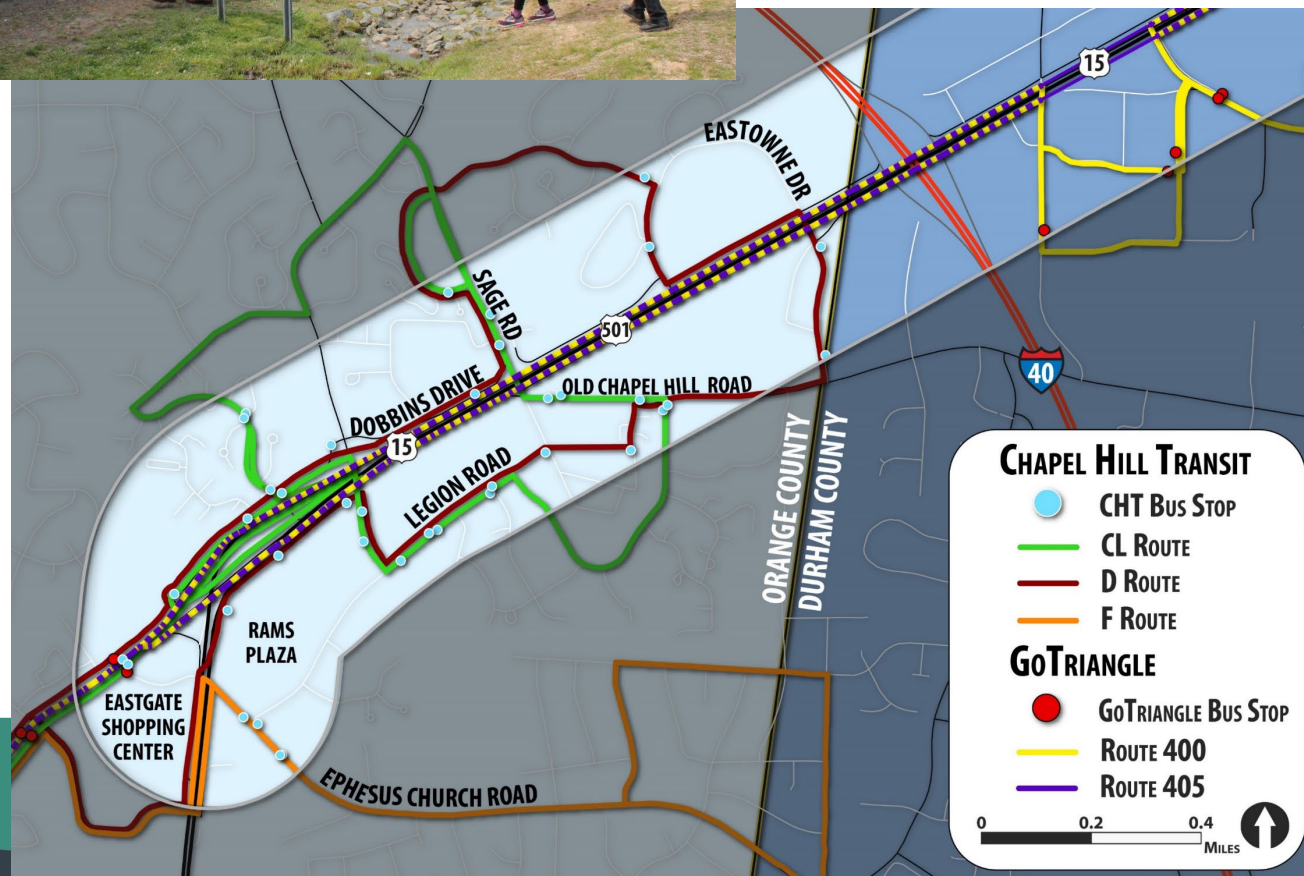
HIGHWAY

- ▶ 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



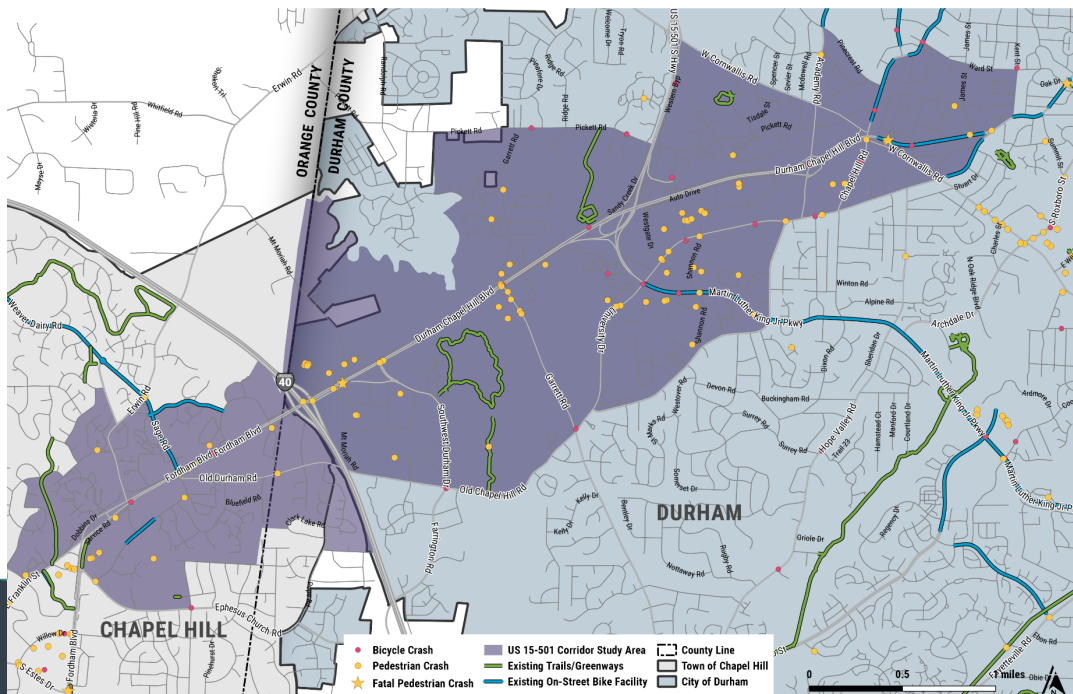
TRANSIT

- ▶ 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



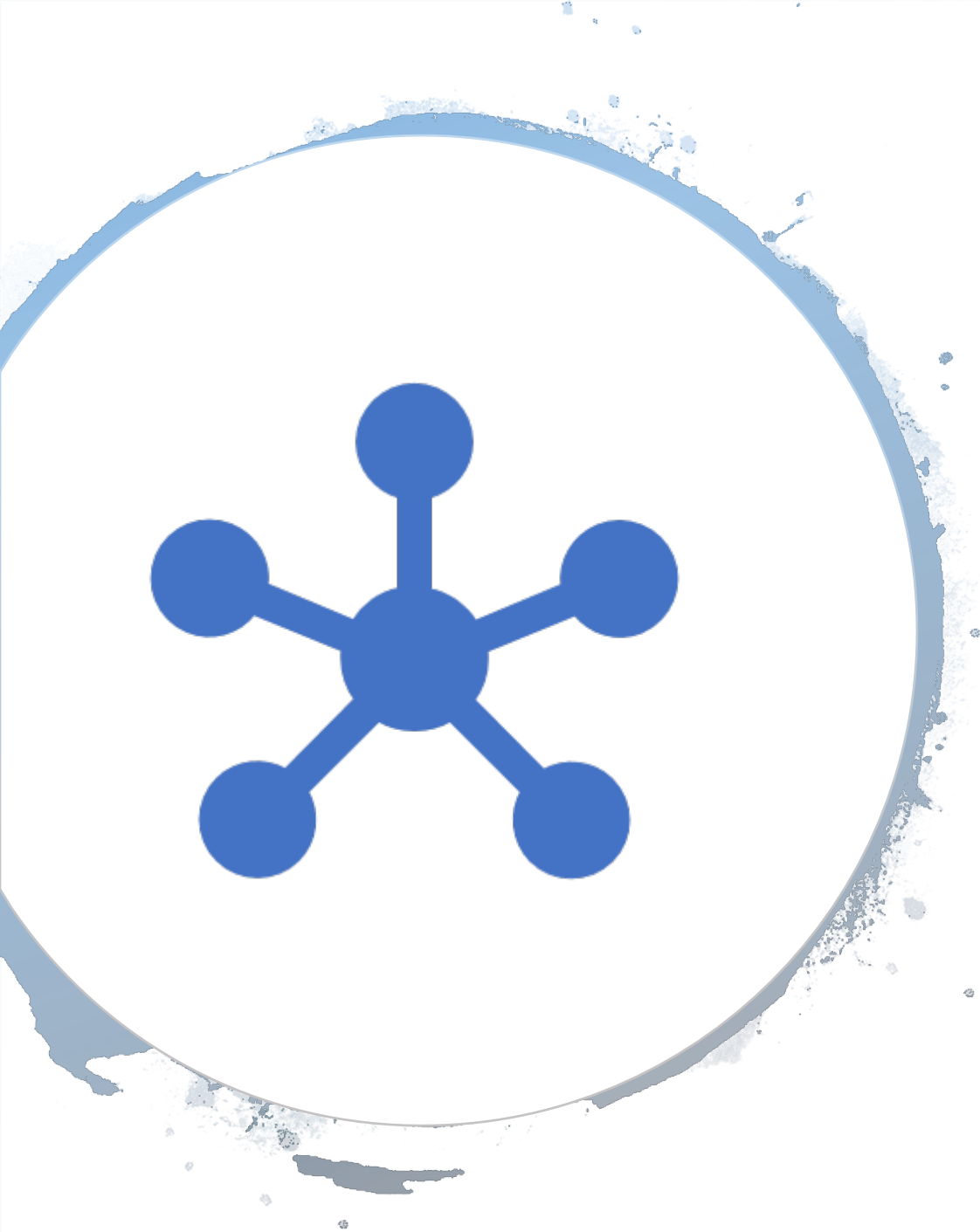


VISIONING

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.



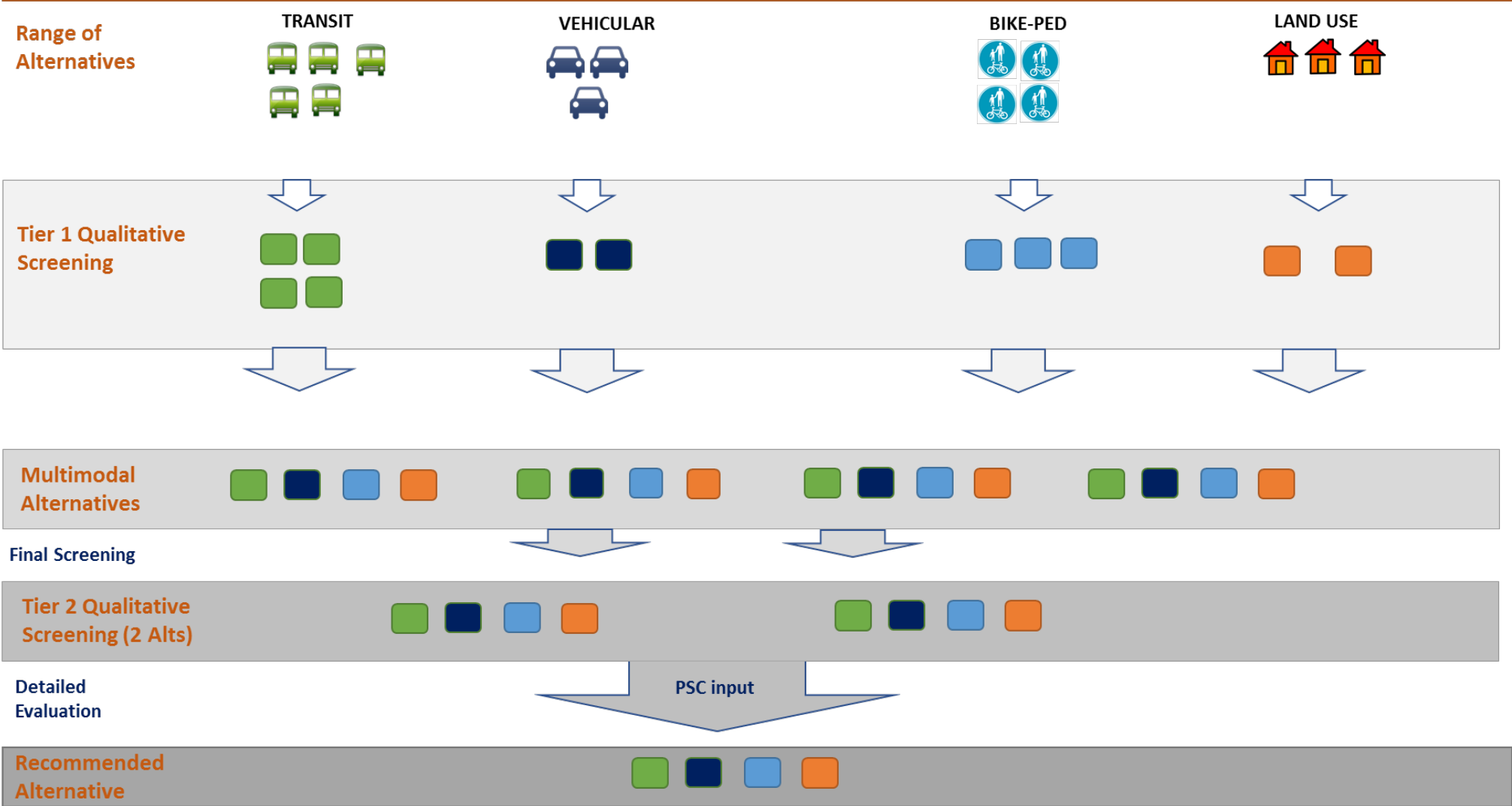
Goals

- 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

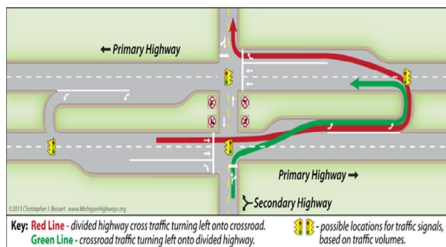
Multimodal Alternatives Process





US 15-501 SEGMENT ONE STRATEGIES

Ephesus Church Rd to I-40



8-lane Median Divided Facility



Grade-separated Pedestrian Crossing

OPTION ONE

OPTION TWO

OPTION THREE

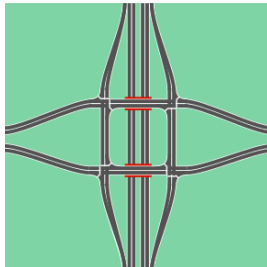
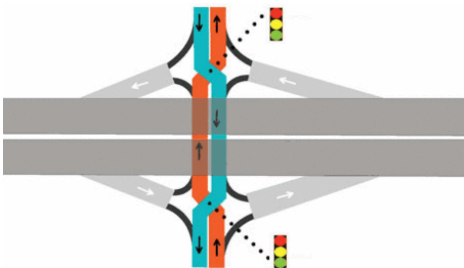
Widen US 15-501 from a 4-lane median divided to 6-lane median divided superstreet facility (including elimination of service roads and channelization); provide painted pedestrian crosswalks		Widen US 15-501 to an 8-lane median divided facility with traditional intersections; provide painted pedestrian 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		



US 15-501 I-40 QUAD STRATEGIES



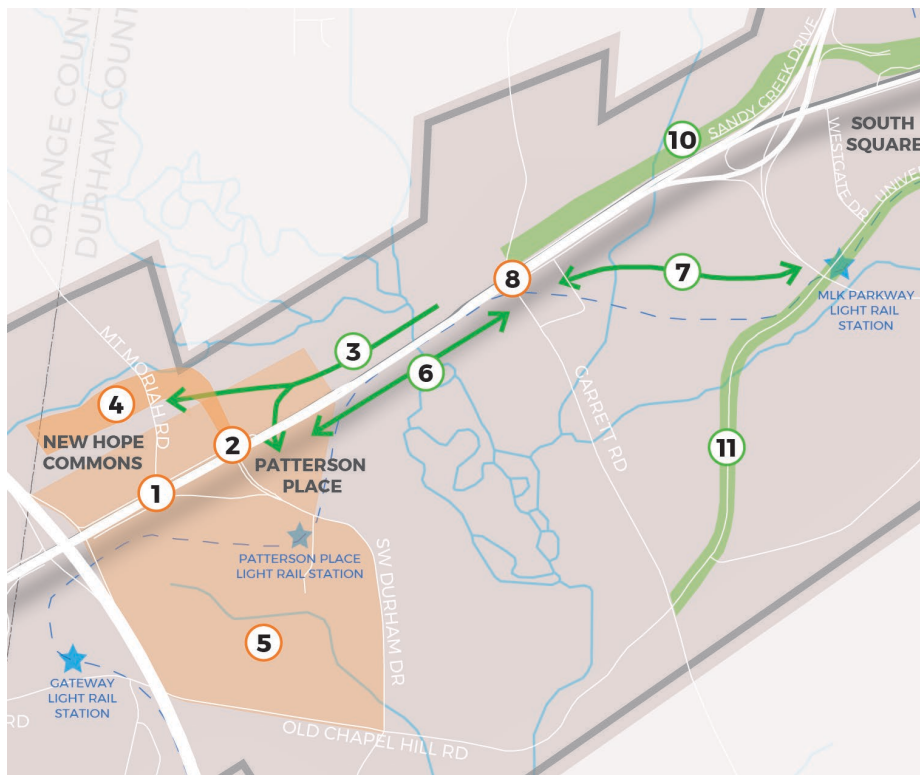
OPTION ONE	OPTION TWO
Redesign I-40/US 15-501 interchange to improve safety and operations	Redesign I-40/US 15-501 interchange to improve safety and operations
Grade separated 2-lane roadway with bike/pedestrian facilities across I-40 connecting New Hope Commons to Eastowne Drive	Provide bike/pedestrian facilities within the redesigned interchange
Grade separated 2-lane roadway with bike/pedestrian facilities across I-40 connecting Patterson Place to Gateway Station	Provide for bike/pedestrian facilities within the redesigned interchange
Put Durham and Chapel Hill signals on the same system to improve traffic flow	
Extend GoDurham across I-40 to connect with a transfer point in Chapel Hill (long-term GoDurham to Gateway Station)	
Extend Chapel Hill transit across I-40 to connect with a transfer point in Durham (near-term CHT to Patterson Place)	
Implement connecting bus service to Eastowne Drive and New Hope Commons	





US 15-501 SEGMENT TWO STRATEGIES

I-40 to 15-501 Bypass



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

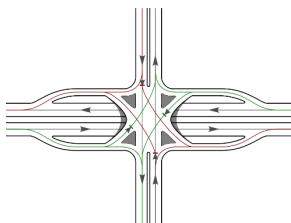
Provide bike/pedestrian connections from Garrett Road to University Drive

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

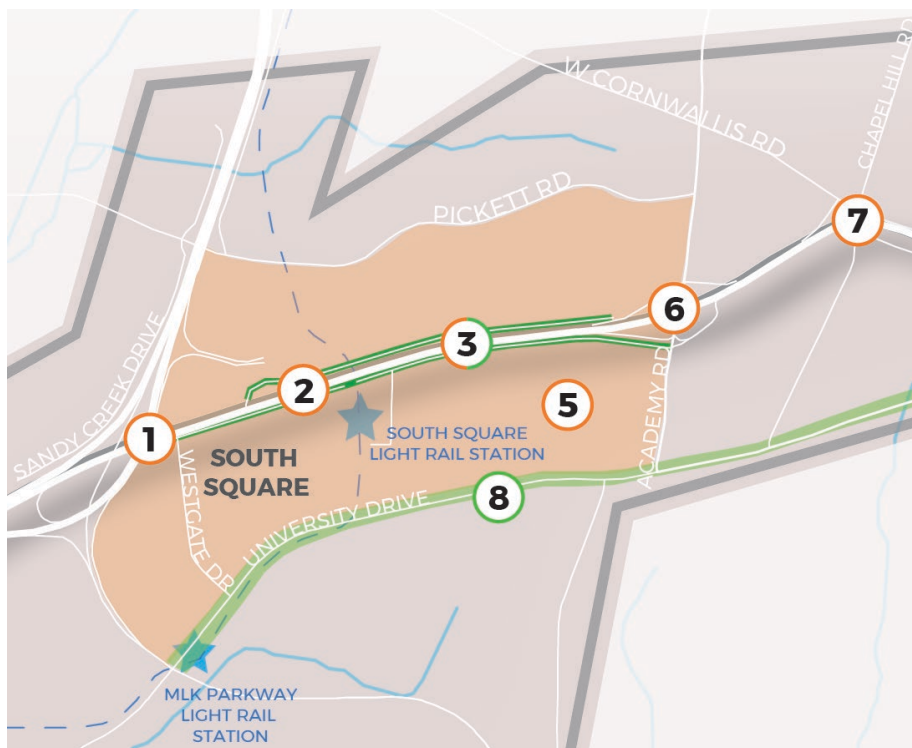
Provide bike/pedestrian facilities along University Drive





US 15-501 SEGMENT THREE STRATEGIES

15-501 Bypass to Chapel Hill Road

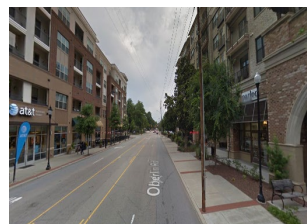


OPTION ONE

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

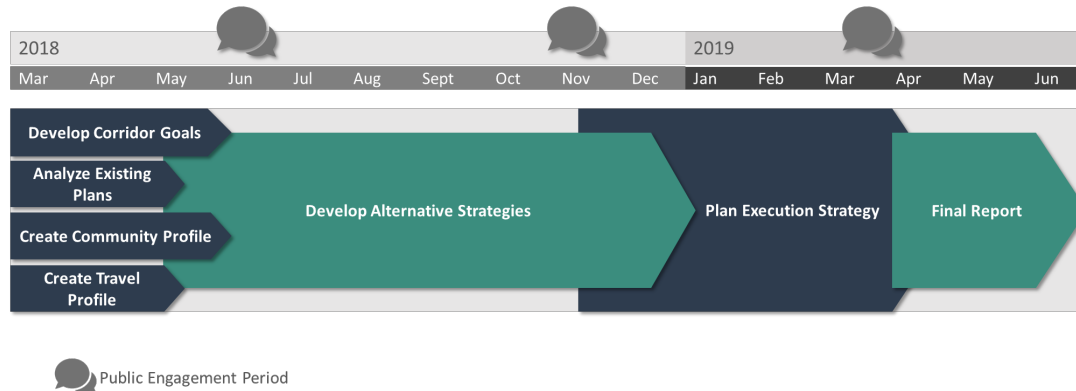


OPTION ONE

OPTION TWO

	Implement a 2-lane urban cross section with roundabouts at key intersections, landscaped median, and consolidated driveways fronting US 15-501 Business	Implement a 2-lane urban cross section with traditional intersections, landscaped median and consolidated driveways fronting US 15-501 Business
	Redesign University Drive intersection as a roundabout with a bike/pedestrian facilities connecting to the proposed bike/pedestrian facilities on University Drive	Redesign University Drive intersection to better accommodate bike/pedestrian travel
	Improve connectivity between adjoining neighborhoods and US 15-501 Business using sidewalks or greenways for example	
	Provide a Cycle Track on the south side of US 15-501 Business and sidewalks and parking on the north side	Provide bike lanes and sidewalks on both sides of US 15-501 Business.
	No Change from Existing	Provide parking on north side of US 15-501 business
	Improve transit amenities	
	Pedestrian connection between Chapel Hill Road and US 15-501 Business	

Next Steps



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



DISCUSSION