



US 15-501 CORRIDOR STUDY REPORT SUMMARY

The US 15-501 Corridor Study is a long term plan, with the goal to Reimagine US 15-501 as a integrated, multimodal corridor.

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STUDY OVERVIEW

US 15-501 between the City of Durham and the Town of Chapel Hill is an auto-centric arterial highway that is in stark contrast to the vibrant multimodal downtowns that anchor the facility on either end.

The goal of this study is to Reimagine US 15-501 as an integrated, multimodal corridor informed by a community vision and goals, and supported by strategies that lead to the implementation of that vision.

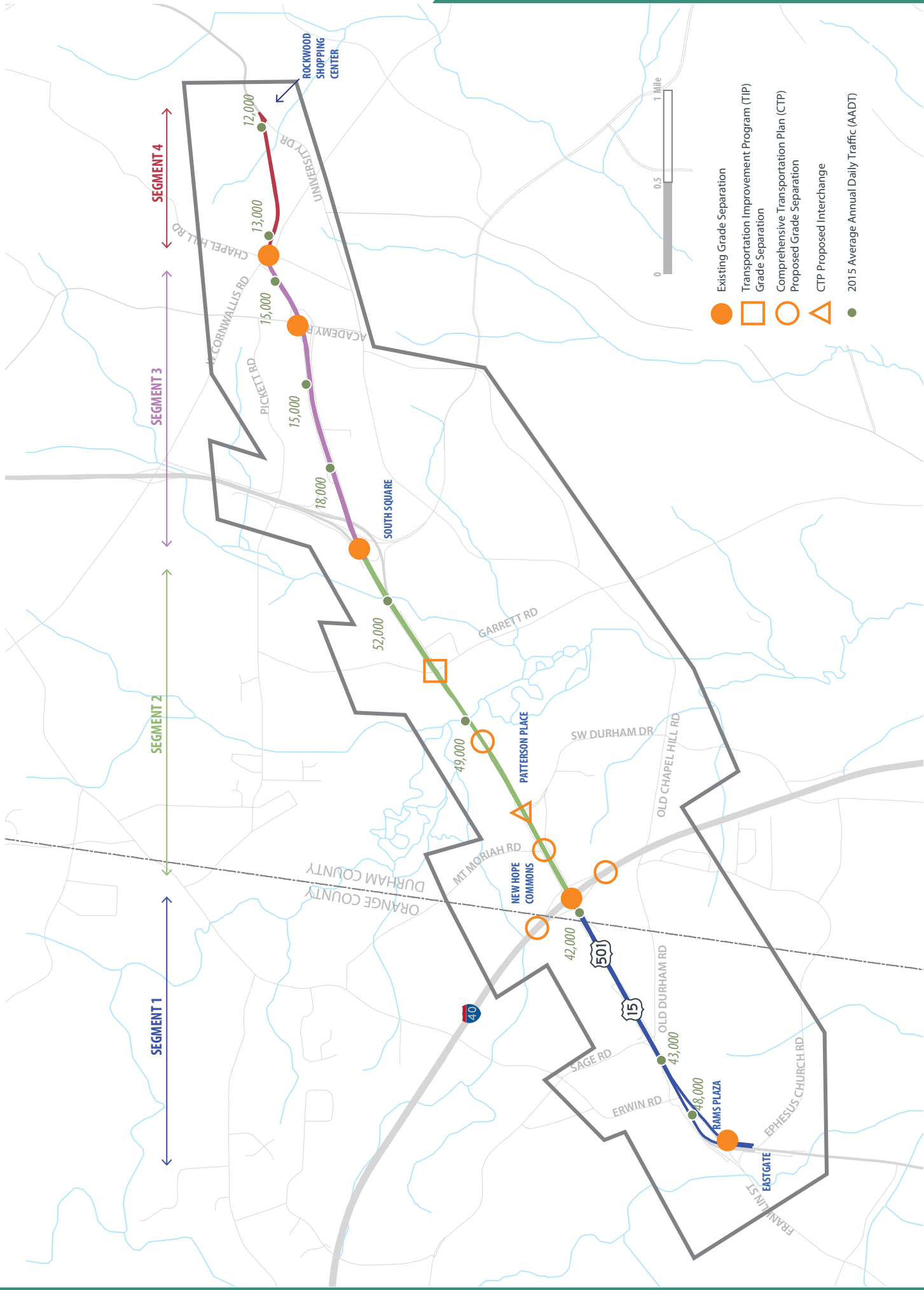


The Study Corridor

For analysis purpose and due to the differing nature of the corridor, the study broke the corridor into segments:

- ▶ **Segment 1:** Ephesus Church Road to I-40 Interchange
- ▶ **I-40 Quadrant:** I-40 Interchange and surrounding quadrants
- ▶ **Segment 2:** I-40 to US 15-501 Bypass
- ▶ **Segment 3:** US 15-501 Bypass to Chapel Hill Road
- ▶ **Segment 4:** Chapel Hill Road to University Drive





- Existing Grade Separation
- Transportation Improvement Program (TIP) Grade Separation
- Comprehensive Transportation Plan (CTP) Proposed Grade Separation
- △ CTP Proposed Interchange
- 2015 Average Annual Daily Traffic (AADT)



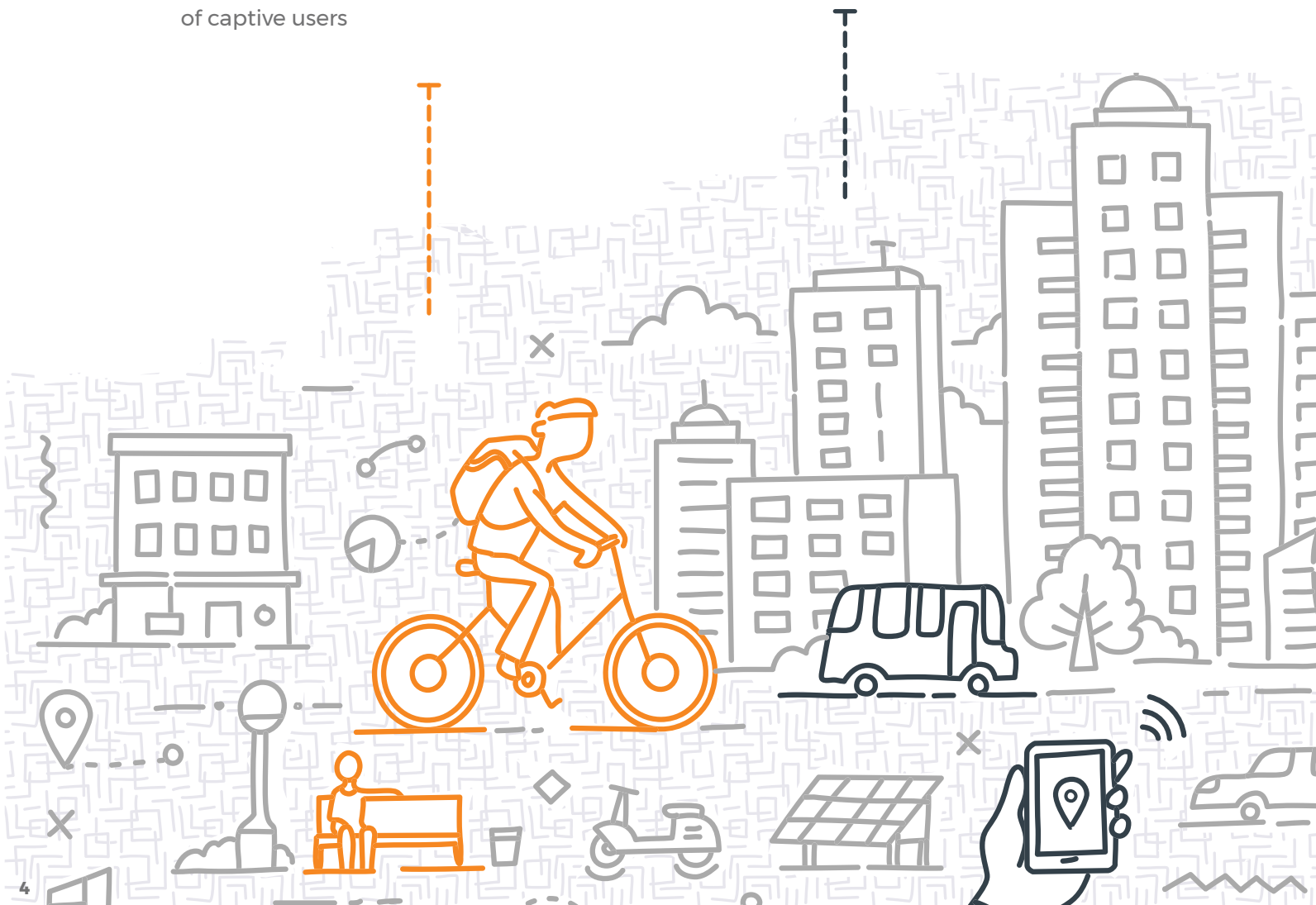
COMMUNITY AND TRAVEL PROFILE (KEY THEMES)

Biking and Walking

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

Transit

- ▶ Gaps in the existing system
- ▶ Corridor served by multiple transit agencies
- ▶ Difficult to efficiently serve existing development from US 15-501
- ▶ Challenging to provide local service along the corridor
- ▶ Bus operations impacted by congestion and delay



Highway

- ▶ US 15-501 is a gateway to the region
- ▶ High conflict between “to” and “through” travelers
- ▶ New development pattern should increase local trips within developments
- ▶ Attractive destination for travelers outside the study area
- ▶ Traffic crash patterns reflect high congestion levels

Environmentally Sensitive Areas

- ▶ New Hope Creek corridor
- ▶ Natural Heritage Area in the NW quadrant of I-40 and US 15-501

Jobs and Housing

- ▶ Study area will experience substantial growth in jobs and housing over the 30-year planning horizon
- ▶ Growth is primarily focused around the I-40 interchange, Blue Hill District, Gateway, and South Square area
- ▶ Proposed new development will be mixed-use high density which has several benefits, including:
 - A greater number of trips are made internal to the development
 - More transit supportive
 - Encourages active transportation



VISIONING



The purpose of the first public meeting was to create a corridor vision and corridor goals for US 15-501. The meeting aimed to present existing conditions to clarify why the study is being conducted, verify what will be achieved when the plan is implemented, and reflect the thinking of diverse groups in the community.





Visioning Process

- ▶ Conducted a mobile tour
- ▶ Visioning exercise with tour participants
- ▶ Visioning exercise with citizens and at public workshops
- ▶ Received comments from online comment map



Key Themes Emerging from the Visioning Process

- ▶ Multimodal
- ▶ Connectivity
- ▶ Mobility

Corridor Vision

- ▶ By 2045, US 15-501 between Durham and Chapel Hill will be a key multimodal transportation corridor, that will complement and support high capacity transit 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.

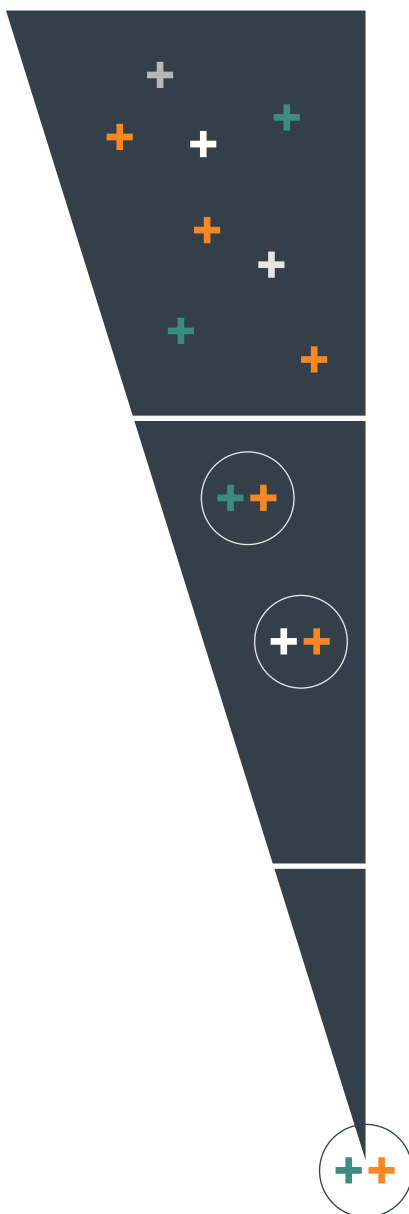
Corridor Goals

- ▶ 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

IMPROVEMENT STRATEGIES

A range of improvement strategies and ideas were captured from the following:

- ▶ Online comment map
- ▶ Public workshop
- ▶ Project Steering Committee
- ▶ Corridor analysis



Tier 1 Qualitative Screening

This screening evaluated strategies against a rubric designed to evaluate and score each strategy against the study goals and objectives.

- ▶ Safety, multimodal network connections, accessibility, equity, environment, health, community, and economy.

Multimodal Alternatives

Tier 1 screening resulted in a reduced number of multimodal strategies that were combined into complimentary packages of multimodal alternatives that were further evaluated by the Project Team, Project Steering Committee and vetted by the public and MPO Policy Board, resulting in two final alternatives.

Tier 2 Quantitative Screening

This screening involved a detailed evaluation of the alternatives and the development of conceptual designs. Input was received from the public and Project Steering Committee on the conceptual designs.



Durham-Orange Light Rail Transit (D-O LRT)

- ▶ Prior to the completion of this study, a decision was made by the governing bodies to discontinue work on D-O LRT.
- ▶ The Project Steering Committee and MPO Board directed the Project Team to develop a third alternative that could help achieve the goal of linking Chapel Hill and Durham with fast, frequent, and reliable transit service.
- ▶ Alternative 3 mirrors Alternative 2 in every way except for the addition of dedicated bus lanes within the study area between Ephesus Church Road and the US 15-501 Bypass.

The purpose of the **second public meeting** was to allow the public to review and comment on proposed concepts for addressing future transportation challenges. This meeting helped guide the project team in selecting concepts to be studied in detail.



The purpose of the **third public meeting** was to allow the public to review the final three proposed recommendations for addressing future transportation challenges. This meeting helped guide the project team in selecting the final preferred alternative for the study.



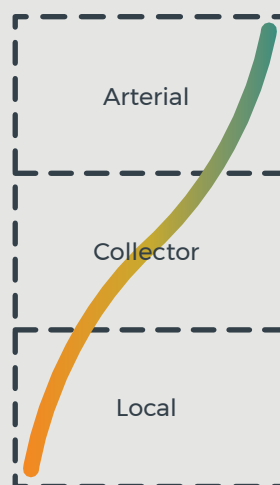
RECOMMENDED ALTERNATIVE

The recommended alternative aims to provide a comprehensive multimodal alternative for the entire corridor.

In Segment 1 the focus is on trying to find a balance between the conflicting priorities of accessibility and mobility with a design that improves the flow of through traffic, but also provides tools for creating a more urban environment through reduced travel speeds, increasing the number and safety of crossing locations for bicyclists and pedestrians, and streetscaping to provide a more urban feel. **In Segment 2**, the focus is on mobility with a design that focuses on multimodal grade separations, while recommending local street networks within developments adjacent to the corridor for local traffic and bicycle and pedestrian movements along the corridor. High capacity transit service along Segments 1 and 2 is prioritized with the inclusion of a bus only lane. **In Segments 3 and 4**, the recommended alternative aims to provide a more urban cross section that reduces the speed of vehicles and provides a more pedestrian friendly environment with bicycle and pedestrian facilities and land use closer to the corridor. For the entire corridor, capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design.

Mobility vs. Accessibility

The ideal use of a corridor designed for **accessibility** is the ease with which people can reach an activity.



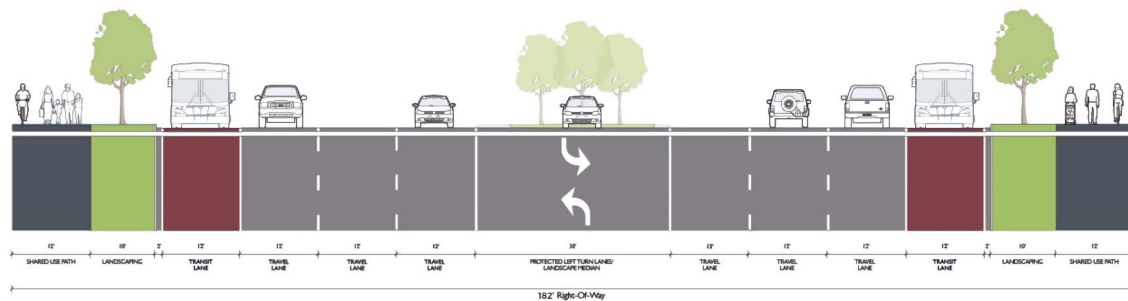
The ideal use of a corridor designed for **mobility** is to move people and goods from place to place.

Focusing solely on one will come at the expense of the other, so a key challenge of this corridor is trying to create a balance between mobility and accessibility.

Key features of the recommended alternative for each segment include the following:

Segment 1

- ▶ Convert US 15-501 to a Reduced Conflict Intersection design (aka Superstreet) to improve safety and to better balance accessibility and mobility. To encourage a more urban design, signals will be timed to slow the progression of traffic, pedestrian crossings will be provided at intersections and at midblock U-turns, and streetscaping is encouraged
- ▶ Provide bicycle and pedestrian connections throughout Segment 1, both along and across US 15-501, including a grade separated pedestrian crossing at Eastowne Drive
- ▶ Connect Legion Road to Old Durham Road
- ▶ Implement local street network as proposed by Blue Hill District TIA
- ▶ Provide outside running bus only lane



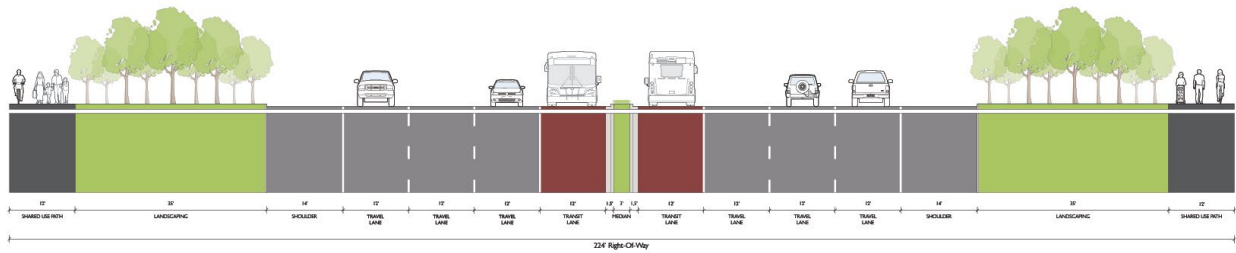
Segment 1 conceptual cross section

I-40 Quadrant

- ▶ Redesign I-40 interchange to improve safety and operations (diverging diamond), with addition of pedestrian facilities on the bridge across I-40
- ▶ Grade separated bicycle and pedestrian facility across I-40 connecting New Hope Commons to Eastowne Drive
- ▶ Grade separated 2-lane roadway with bicycle and pedestrian facilities across I-40 connecting Patterson Place to Gateway

Segment 2

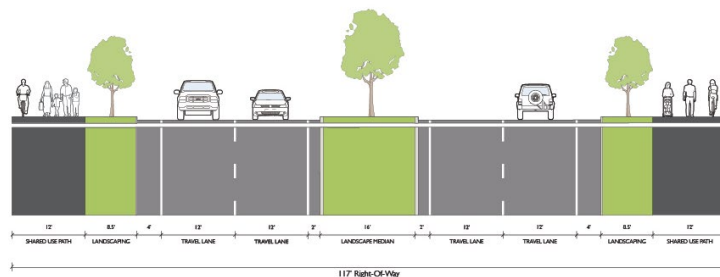
- ▶ Grade separate Mt Moriah Road and provide bicycle and pedestrian facilities on bridge
- ▶ Urban interchanges at SW Durham Drive and Garrett Road
- ▶ Implement Patterson Place and New Hope Commons local street network
- ▶ Provide bicycle and pedestrian connections throughout Segment 2, both along and across US 15-501
- ▶ Provide multimodal connectivity between Sandy Creek Drive, Chapel Hill Blvd Service Road, and Garrett Road



Segment 2 conceptual cross section

Segment 3

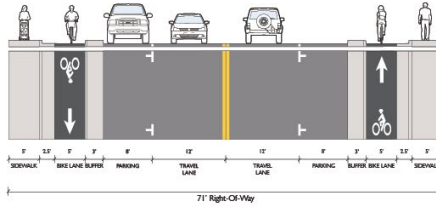
- ▶ Reduce the footprint of the current cross-section to implement a fully multimodal 4-lane urban cross-section with landscaped median
- ▶ Add roundabouts at key locations to improve connectivity and to further slow traffic and create a more urban environment
- ▶ Implement better street connectivity (future focus on an urban grid system) to the north and south of US 15-501 Business
- ▶ Redesign Academy Road and Chapel Hill Road interchange to better reflect urban design



Segment 3 conceptual cross section

Segment 4

- ▶ Implement 2-lane urban cross-section with landscaped median, consolidated driveways, and roundabouts at key intersections
- ▶ Provide sidewalks, bike lanes, and parking on both sides of the roadway
- ▶ Redesign University Drive intersection as a Roundabout with bicycle and pedestrian facilities



Segment 4 conceptual cross section

Land Use Strategies for the Corridor

- ▶ Follow framework strategies established in the appropriate Comprehensive Plans, Ephesus Church Road-Fordham Boulevard Small Area Plan, and Patterson Place Design District.
- ▶ Utilize the flexibility offered by the various Design Districts to encourage innovative design and architecture, and create a mix of uses with an urban fabric supportive of multimodal travel.
- ▶ Where appropriate, encourage designs that change the form of the corridor with buildings fronting the street and parking behind or to the side, and sidewalks to provide connectivity.
- ▶ Create areas of transition between more intense development nodes and commercial and residential areas.
- ▶ Respect environmentally sensitive areas.

IMPLEMENTATION

The US 15-501 Corridor Study is a long term plan, with the goal to Reimagine US 15-501 as a integrated, multimodal corridor. Due to the long term nature of this plan, the implementation of recommendations documented in this plan have been broken into three phases:



Along with differing timeframes for the recommendations, implementation will be overseen by different entities. Major roadway projects, like new interchanges, will be funded and built by the North Carolina Department of Transportation (NCDOT) and will include bicycle and pedestrian facilities. Standalone bicycle and pedestrian improvements or smaller roadway projects, could be funded by local municipalities like the Town of Chapel Hill or City of Durham. Developers may also be responsible for constructing new streets or bicycle and pedestrian facilities on parcels as they redevelop.

With all the stages of implementation, there is a recognition that more detailed level analysis and design will be completed. At this time, more context sensitive details, like final placement of crosswalks or streetscaping will be determined. See for example the aerial photo below that shows an illustration of how a Reduced Conflict Intersection design can be implemented within an urban corridor with high pedestrian activity. (photo is East Grand River Avenue, East Lansing, Michigan)



Example Reduced Conflict Intersection Urban Design

PROJECT DETAILS

This US 15-501 Corridor Study Report Summary, is meant to provide an overview of the corridor study. For more detailed information on the study process, recommendations, and implementation plan please visit the project website: <https://reimagining15501.com/>

For more information on the study, please visit:

Durham-Chapel Hill-Carrboro MPO

<http://www.dchcmpo.org/>

Or visit the project website

<https://reimagining15501.com/>

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