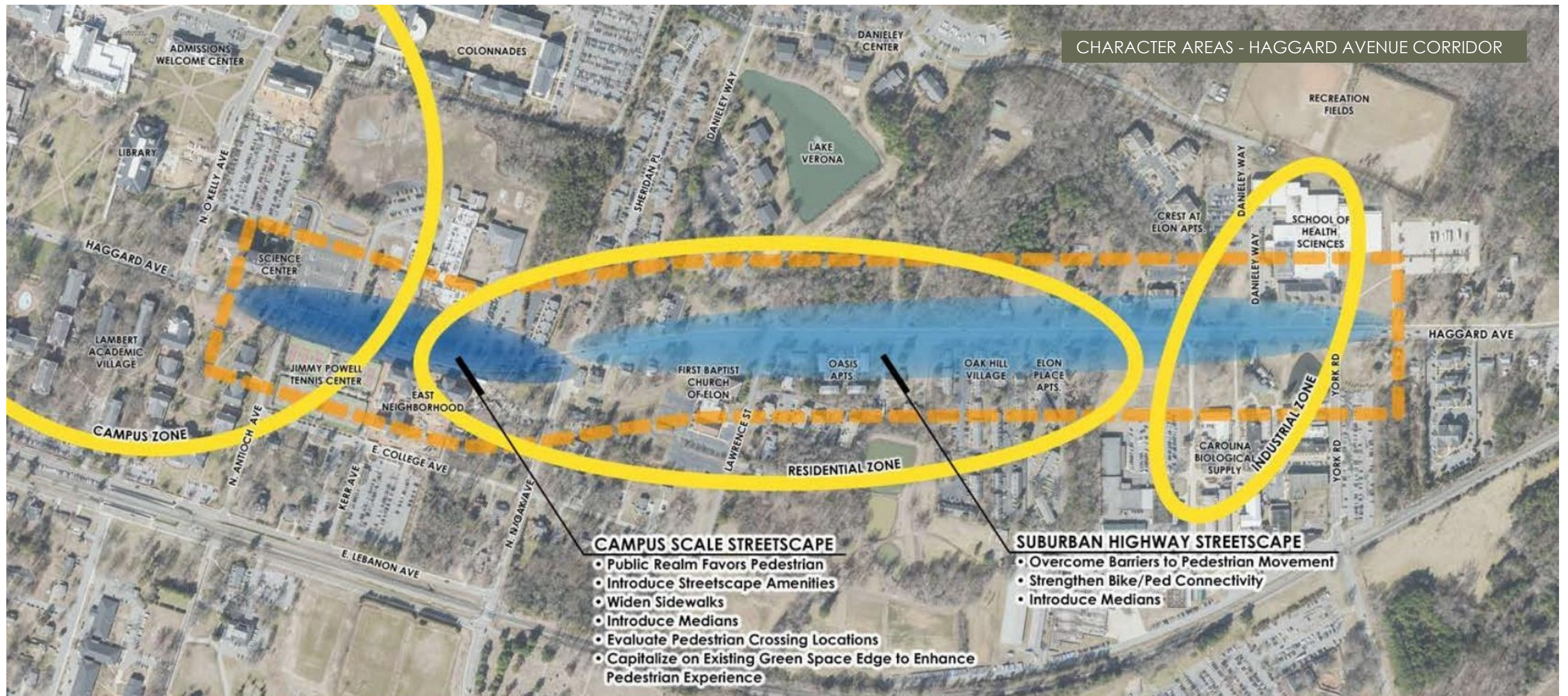


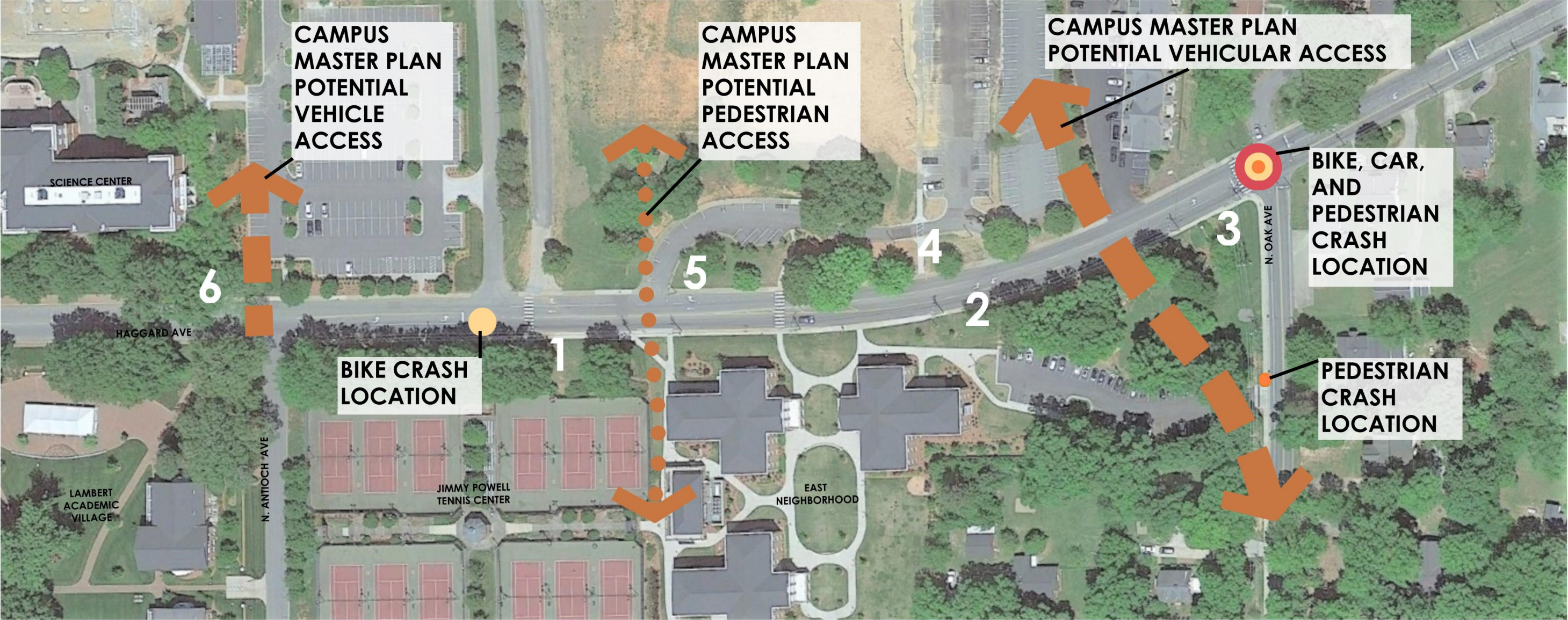
03 Proposed Schematic Design

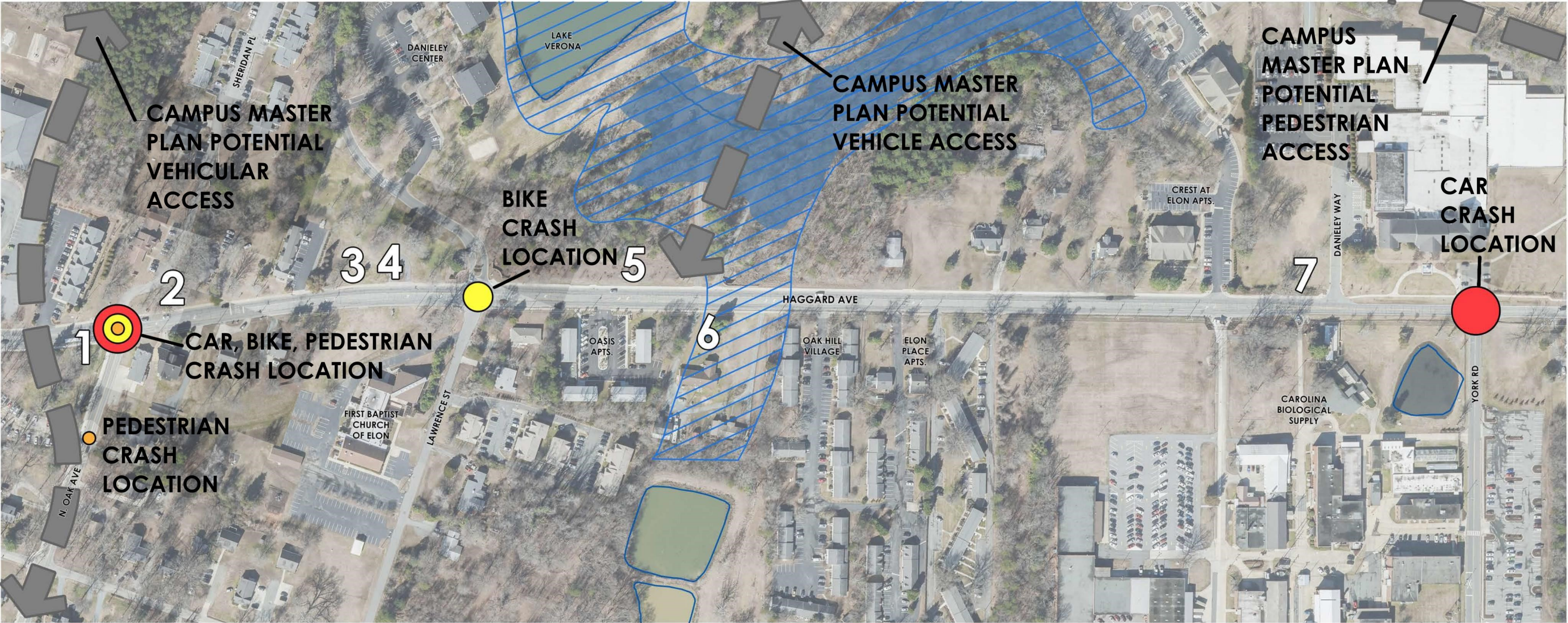
3.1. Character Areas

General character areas for the Phase 1 corridor were presented to the Stakeholders at the Phase 1 Design Charette to provide guidance for different applications of streetscape elements [See Character Areas Diagram below]. The existing, varying character along the corridor relates to the surrounding land uses and roadway design and provides a framework for the scale and location of streetscape elements (as shown

on the Existing Mobility Conditions Maps on the next pages). In Phase 1, the ±0.75-mile corridor from N. Antioch Avenue to York Road, we have identified two general character areas designated as Campus Scale and Suburban Highway. These descriptions refer to the character and scale of the streetscape and can accommodate a variety of design elements, respond to future development, and provide flexibility in the strategies to improve the multi-modal environment.







Within the character areas, there are existing zones that further define the corridor, based on patterns of movement and current and proposed land use. These include a Campus Zone, Residential Zone, and Industrial Zone [See Character Areas Diagram].

A transition between each of these zones would better define the pedestrian, bicycle, and vehicular paths of travel by considering the volume of each mode of travel within and between each zone.

Generally, the Campus Zone is heavily pedestrian-focused, the Residential Zone balances all modes of travel, and the Industrial Zone remains more vehicle-focused. In the Campus Scale streetscape, which generally extends along the corridor from N. Antioch Avenue to N. Oak Avenue, the public realm favors the pedestrian. The primary land uses along this segment are University-owned, and are a combination of student housing, recreational facilities (tennis courts), and academic buildings. The University's Campus Master Plan shows additional development of housing, and support services in this area. The existing condition generates a high volume of pedestrians moving along and crossing the road, and with the future planned development at the former Elon Elementary school site, that volume is anticipated to increase. The existing sidewalks are narrow and placed directly at the back of curb; the combination of which creates a generally inhospitable environment for pedestrians. Currently, there are no designated on-street bike lanes, and the volume of bicyclists is low. This could be attributed to the fact that safe access for bicyclists is not available. There are opportunities to widen sidewalks, introduce medians and plant material, and enhance the users' experience in all modes of travel within the ±60-foot-wide existing right-of-way.



An evaluation of the current pedestrian crosswalk locations compared to future development plans can be beneficial in consolidating crossings and improving safety and connectivity.

The Suburban Highway streetscape, which generally overlays the corridor from N. Oak Avenue to York Road, is vehicle-focused, with a wider roadway pavement section, higher vehicular speeds, and narrow sidewalks located at the back of curb, where present. The variety of land uses along this segment heavily influence the character and pedestrian environment, including single- and multi-family residential, religious institutions, vacant land, University-owned support services, and industrial uses. The pedestrian environment in this segment continues to be inhospitable, not ADA compliant, with a narrow sidewalk that has numerous obstructions within the path of travel, including utility poles, fire hydrants, and trash receptacles. There are opportunities to strengthen pedestrian and bicycle connectivity, to enhance the users' experience, and reduce the speed of vehicular traffic within the varying ±65-75-foot-wide existing right-of-way.

To reinforce the character of the zones and establish the framework for more detailed design, a schematic (or conceptual) design was developed by the SEPI Team. The intent of this phase of design is to create a general description of the proposed spatial arrangement and functions of corridor elements, and overall aesthetics. The Schematic Designs presented herein include general recommendations that address vehicle-pedestrian conflicts, calm vehicular traffic, and enhance the user experience in the corridor.

3.2. Visual Preference Survey

During the Phase 1 Charette, a series of images containing various streetscape elements were used to engage with the stakeholders and begin to understand the various design elements that could be incorporated into Phase 1 of the corridor plan. The images presented can be grouped into the following general categories: Crosswalks, Wide Sidewalks / Multiuse Path, Separation of Pedestrian, Bike Lanes, Green Stormwater Infrastructure, and Median Plantings. The imagery was presented on display boards and participants identified images as 'favored' or 'not favored' by using green or red stickers, respectively.

The presence of crosswalks in the imagery was favored, and overwhelmingly so when the image included elements of pedestrian refuge, speed tables, and differentiation in pavement color to distinguish the pedestrian crossing area. Additionally, the use of bollards to identify the threshold between the vehicular travel lane and the pedestrian crosswalk was a generally favored element.

Responses overwhelmingly favored a widened linear path to accommodate more people. There was a clear preference for a widened sidewalk for pedestrians or a multi-use path for pedestrians and bicycles in the Campus Scale Area. However, a multiuse path was also favored for the Suburban Highway Area between N. Oak Avenue and York Road.

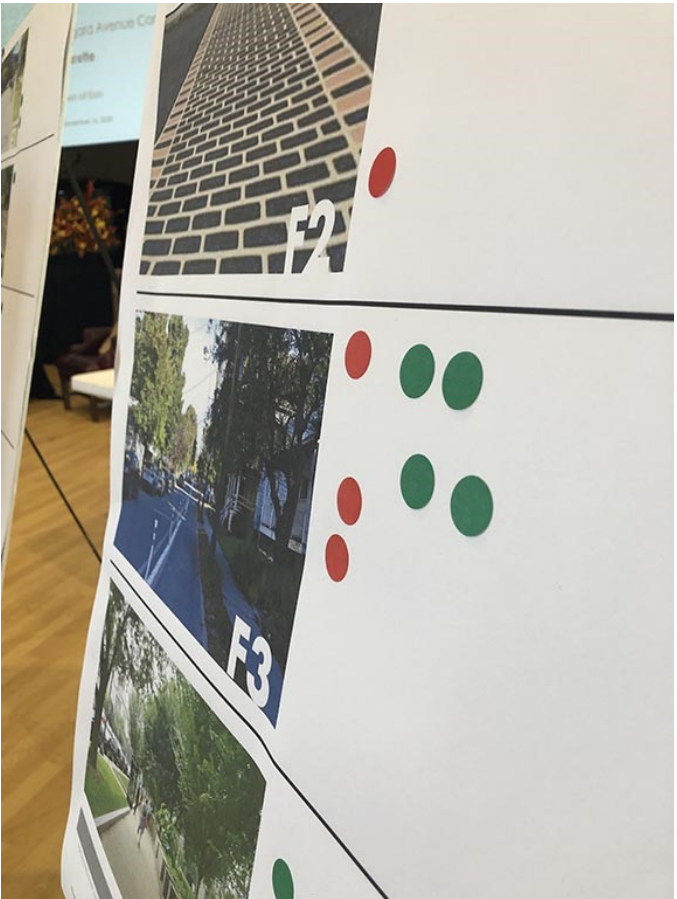
Feedback about the images showing the pedestrian separated from other modes of travel was generally positive, particularly in instances where a planting area created the separation.

Separate bike facilities are favored, however preference varied between on-street bike lanes and a multiuse path depending on the character area of the corridor. Generally, an on-street, designated bike lane was preferred in the Suburban Highway segment between York Road and N. Oak Avenue, whereas in the Campus Scale segment between N. Antioch Avenue and N. Oak Avenue, participants favored

the use of an on-street bike lane or a multiuse path separated from the vehicular lane equally. In either instance, participants strongly favored situations where there was a clear distinction for modes of travel.

Imagery showing Green Stormwater Infrastructure (GSI) was generally favored, particularly when located in medians. Some varying opinion cited concerns with maintenance which can significantly impact functionality and aesthetics.

Median plantings were generally favored, particularly when used to create pedestrian refuge at crossings, as a device for traffic calming, and, combined with various landscape plantings, to reinforce the transitions between character areas along the corridor. Material and specifications for medians still needs to be determined. Medians can be concrete, mountable, or vegetation. Median breaks will be determined by a further traffic study.



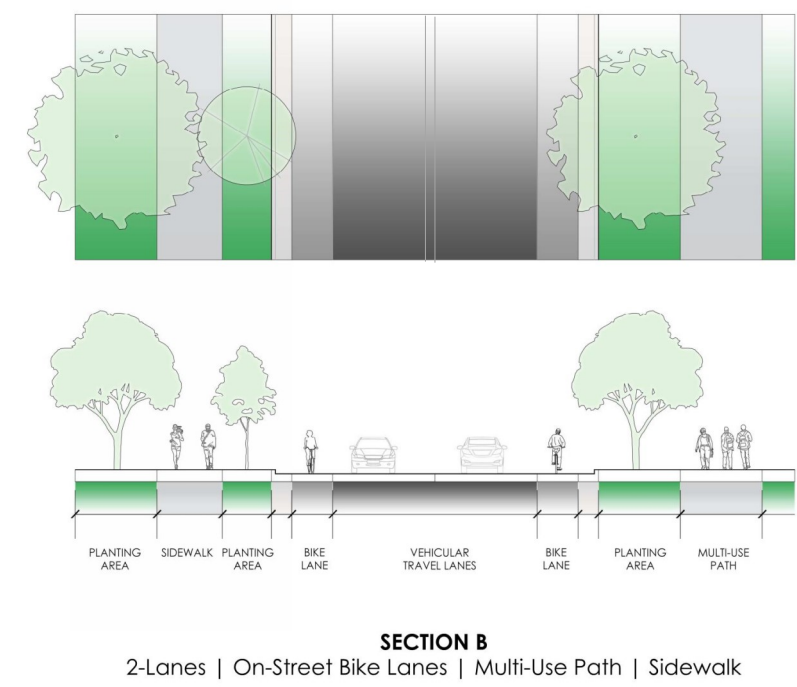
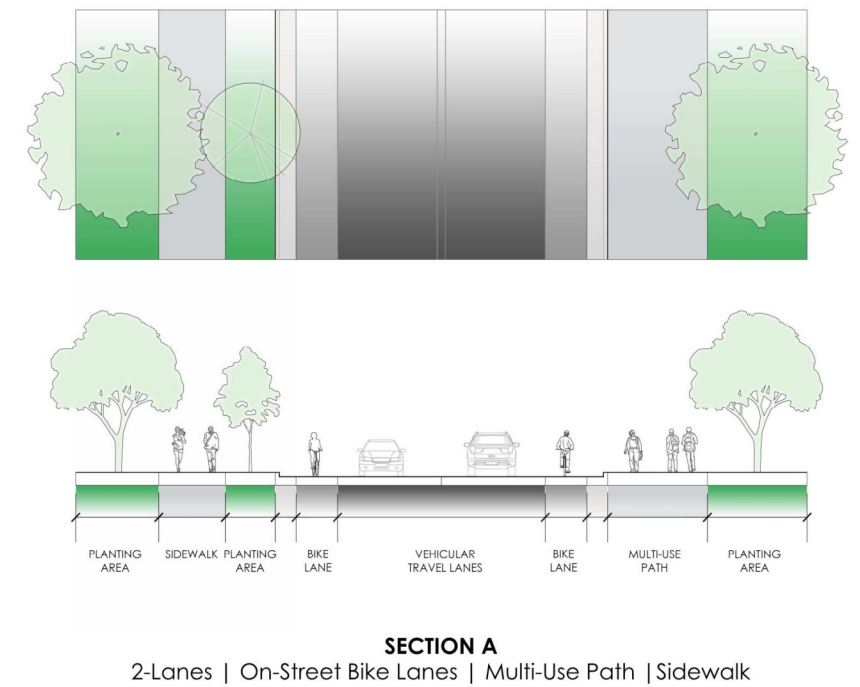
3.3. “Kit of Parts” | Schematic Applications

As a final component of the Charette, the Design Team further engaged the stakeholders with an exercise that translated the existing conditions analysis and input from the Visual Preference activity into schematic applications for this phase of the corridor. Building upon the idea that the character along the corridor varies, the design solutions for improving safety and multi-modal access would similarly vary along the corridor. Key design elements, or “parts” were considered in a variety of combinations to achieve the desired pedestrian environment. The design elements, or “parts”, shown in the various combinations included: sidewalk, multiuse path, median, planting area with trees, planting area with low shrubs, planting area with lawn, on-street bike lane, and vehicular travel lanes.

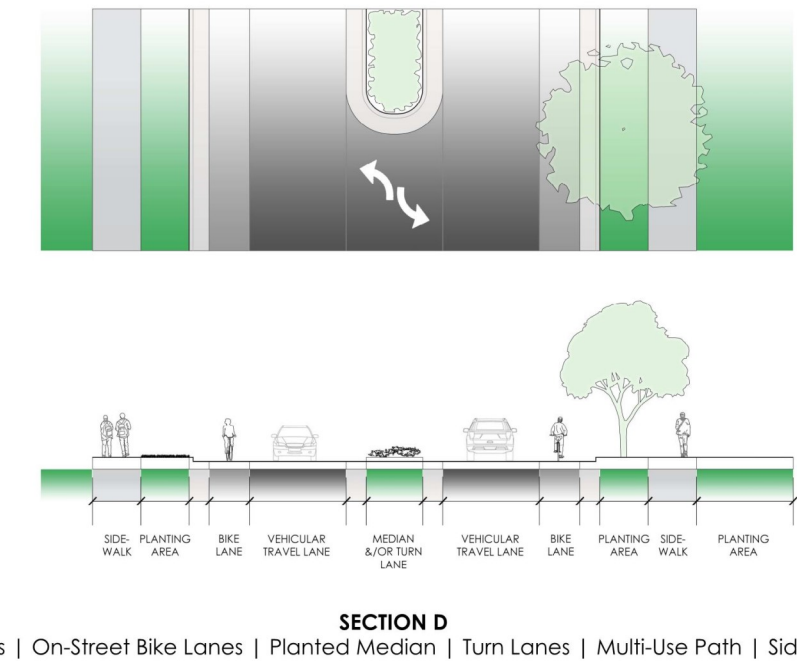
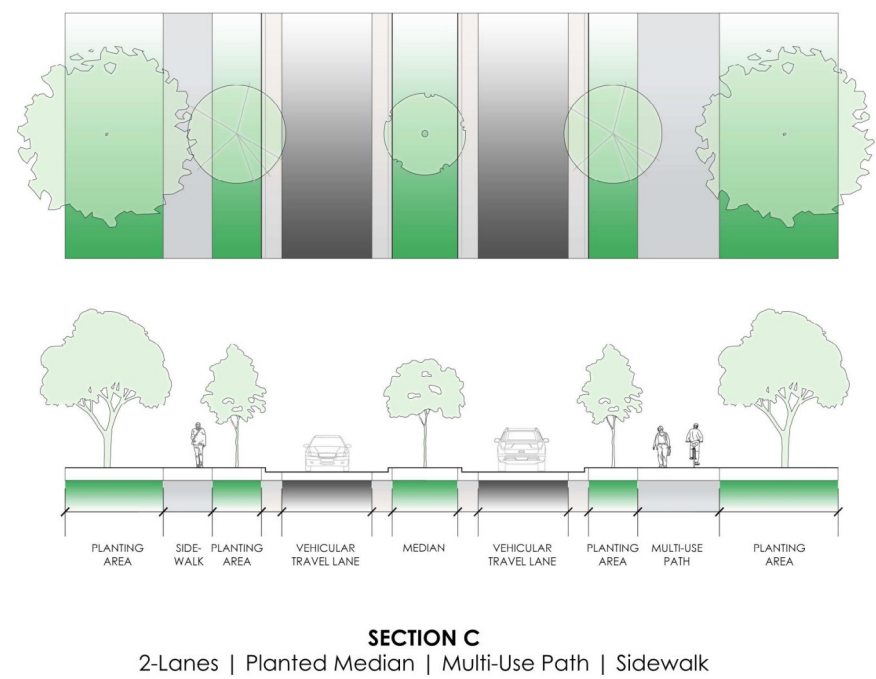
Conceptual roadway sections with different combinations of these design elements were used to illustrate the various ways the elements can be combined. [see Conceptual Sections A, B, C, D to the right]

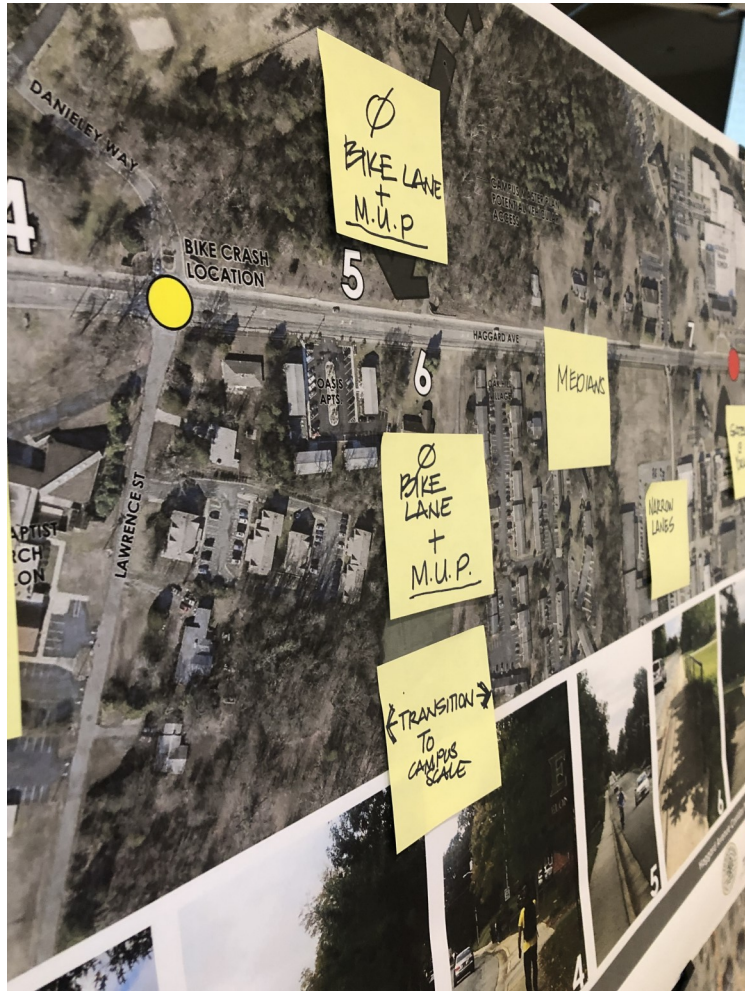
In addition, the imagery from the Visual Preference activity informed preferred combinations of elements, including materials and placement of modes of travel. Specific imagery from the Visual Preference boards was identified by participants for application at certain locations. The participants discussed the schematic section drawings, but specific sections were not assigned to segments of the roadway. [See Visual Preference Boards on next page]

In general, the group supported the concept of reinforcing the character of the zones within the corridor by transitioning from a car-oriented to a pedestrian-oriented roadway between York Road to N. Antioch Avenue, respectively. From a design standpoint, this transition can be communicated with the use of plantings, the location of the sidewalk/multiuse path and bike lanes, and by introducing medians. Additionally, participants agreed that the intersections at York Road and N. Oak Avenue could be considered ‘gateways’ into town, and the campus area, respectively. The way to distinguish a gateway could incorporate signage, lighting, banners, landscape plantings, or a different roadway configuration. An opportunity for a potential traffic circle at the intersection of N. Oak Avenue was generally favored, with acknowledgement that needs further consideration and study by roadway and traffic engineers.



Conceptual Roadway Sections





Further discussion revealed strong support for a clear delineation between vehicular and pedestrian movement, achieved with the use of medians with pedestrian refuge islands, bollards, and planting areas between the curb and sidewalk. Participants expressed considerable concern about the speed of vehicular traffic along the roadway and for the safety of all users. The use of traffic calming techniques was overwhelmingly favored, particularly the use of raised crosswalks and curb bump-outs in Campus Scale area, and medians to replace the center turn lane in the Suburban Highway area.

SCHEMATIC DESIGN PLAN NOTES: The potential roadway and streetscape improvements shown herein are conceptual in nature based on current information and will require more detailed roadway design, transportation engineering, environmental analysis and traffic/crash studies in the future. Additionally, to accomplish some of the recommended configurations, right-of-way acquisition from property owners along the corridor may be required. This detailed information is not available at this time, but will be developed once the project is approved and funded by NCDOT for construction. Some of the information that will be developed during those future NCDOT evaluations include updated traffic volumes, safety/crash details, detailed intersection operations and specific safety issues in need of correction (such as insufficient pedestrian guardrails over a creek crossing). Also to be addressed at that time will be optimal median break locations, locations of turn-around bulbs, optimal intersection designs (e.g., roundabout versus traditional) and traffic controls (stop, signalized, roundabout, etc.), minimization of property and public vehicle access impacts, and avoidance and mitigation of the project's human and environmental impacts.

3.4. Schematic Design

To reinforce the character of the zones and establish the framework for more detailed design, a schematic (or conceptual) design was developed by the SEPI Team. The intent of this phase of design is to create a general description of the proposed spatial arrangement and functions of corridor elements, and overall aesthetics. The Schematic Designs presented herein include general recommendations that address vehicle-pedestrian conflicts, calm vehicular traffic, and enhance the user experience in the corridor.

Overall Corridor Themes

The Haggard Avenue corridor was studied as three phases with two distinct character areas, however a street should be considered as part of a cohesive network in addition to the value of its parts. Overall schematic design themes emerged from discussions with the public and stakeholders, which form the basis of the following design recommendations, including:

- Pedestrian facilities on both sides of the corridor throughout the entire study area
- Bicycle facilities that are consistent in design to minimize user confusion, with physical separation from the roadway for enhanced user safety. A multiuse path is recommended on either side of the road throughout the corridor to serve bicyclists and pedestrians of all ages and abilities.
- On-street bike lane only in a small section by campus where space is limited.
- Enhanced crosswalks and multi-modal crossings throughout the corridor.
- Opportunities to optimize parking in three key areas:
 - ⇒ Rego Industries
 - ⇒ Town Green and Downtown Elon
 - ⇒ On campus during student move-in / move-out

3.4.1 University Drive to Manning Avenue (Phase 2, Area 1)

The recommended schematic design for the far west end of the project, from University Drive to Manning Avenue, includes embracing the Suburban Highway character while decreasing vehicle-pedestrian conflicts and providing multi-modal facilities. This portion of the roadway has a 35-mph posted speed limit and is maintained by NCDOT, and all improvements will require their approval.

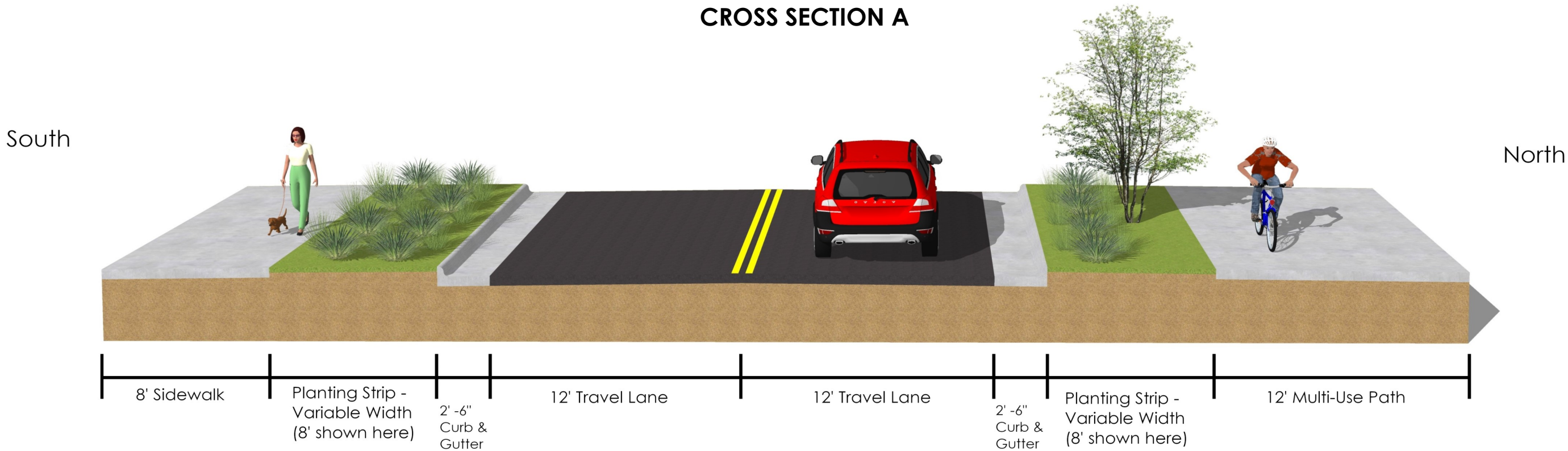
During the second (Phases 2 & 3) Design Charette, members of the stakeholder group expressed interest in connecting the proposed pedestrian facilities on Haggard Avenue with the existing sidewalk along University Drive, thereby extending the pedestrian network south to connect with communities such as the Twin Lakes Retirement Community in Burlington (2 miles). Indicated in the *Phase 2.1 Schematic Drawing* on the following page, an 8 ft sidewalk is proposed along the interior of the University Drive ramp, connecting its existing sidewalk with the proposed multiuse path on Haggard Avenue.

A 12 ft wide multiuse path (MUP) is proposed on the north side of W. Haggard Avenue on this Suburban Highway segment. Responses from the Ph 2-3 Public Meeting indicated that bicycle traffic would be relatively low here, allowing bicycles and pedestrians to share the MUP with

minimal conflicts. An 8 ft wide sidewalk is proposed on the south side of the corridor so that pedestrians are served on both sides, in compliance with the National Association of City Transportation Officials (NACTO) Urban Street Design Guide and the 2019 Complete Streets Policy discussed in Section 2.1. A sidewalk is also recommended on the south side to minimize potential impacts on existing land uses, including the parking lot of Rego Industries. 8 ft planting strips are recommended on both sides on the roadway to provide safe separation between motor vehicle traffic and active transportation facilities. As discussed in Section 2.1.1, the term active transportation refers to any mode of travel that requires exercise, usually bicycle and pedestrian movement.

New crosswalks are recommended at the following W. Haggard Avenue intersections: University Drive, St. John's Street, and Church Street. University Drive is an existing signalized intersection, so updating the signal timing to accommodate a pedestrian phase is recommended along with the crosswalk implementation. After University Drive, vehicular traffic flow on Haggard Avenue corridor is uninterrupted until the traffic signal at Williamson Avenue, maintaining the Level of Service priority of the Suburban Highway segment. Crosswalks at St. John's Street and Church Street are recommended to provide pedestrian access to Fat Frogg from College Station and other student residences. These crosswalks could be considered

CROSS SECTION A





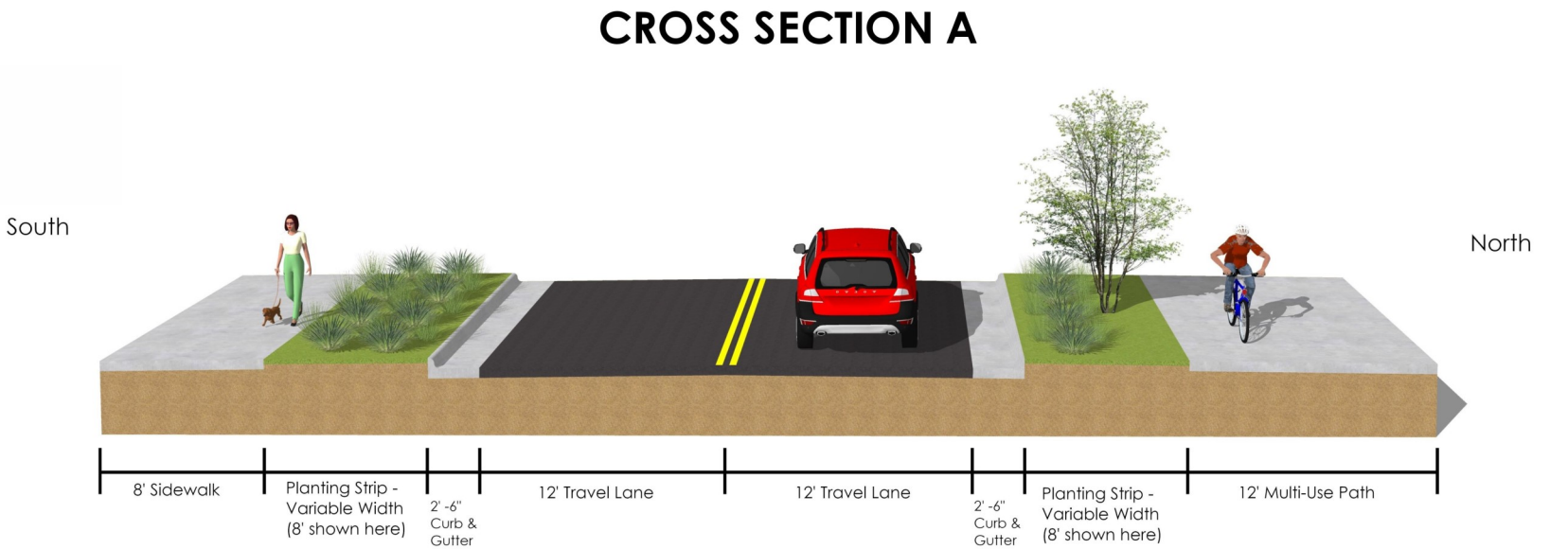
PLAN LEGEND

- HAGGARD AVENUE
- WIDEN EXISTING SIDEWALK
- 12' NEW MULTI-USE PATH
- PROPOSED CROSSWALK
- EXISTING CROSSWALK
- EXISTING ROADWAY
- EXISTING SIDEWALK CONNECTION
- RIGHT OF WAY
- INTERSECTION IMPROVEMENTS
- PLANTING STRIP
- EXISTING LAND USE
- ELON UNIVERSITY PROPERTY
- EXISTING TRAFFIC LIGHT
- PROPOSED SIDEWALK

PHASE 2: AREA 1

PLAN NOTES

- 1 MAINTAIN EXISTING PARKING AT REGO INDUSTRIES
- 2 TRAFFIC CAPACITY ANALYSIS RECOMMENDED TO DETERMINE TURN LANE NEEDS
- 3 WIDEN EXISTING SIDEWALK TO 8'





Rectangular Rapid Flashing Beacons
Pedbikeimages.org / Toole Design Group

“midblock crossings,” as through traffic on W. Haggard Avenue would be required to yield to pedestrians. Driver sight distance along the horizontal curve in the roadway at this section could be a safety concern, resulting in a failure to yield and potential vehicle-pedestrian conflicts. It is therefore recommended that a pair of Rectangular Rapid Flashing Beacons (RRFB) be installed at the St. John’s Street and Church Street crossings. RRFB’s will alert drivers to pedestrians when crossing, while allowing traffic flow to be uninterrupted when pedestrians are not present.

The *Phase 2.1 Schematic Drawing* highlights a proposed multi-modal crossing at the intersection of W. Haggard Avenue and Manning Avenue. The intersection currently has only one painted crosswalk, making it insufficient in its current state. At this intersection, bicycle traffic will be redirected from the north side of the corridor to the south side using in favor of a multiuse path in the Downtown Elon zone. This will avoid impacts to the Park Place Apartment Building, as well as the existing seating and streetscape.

Recommended multimodal intersection crossing features include enhanced modal and wayfinding signage, green pavement marking and/or raised pavement to highlight bicycle crossing, or another pavement striping/marketing delineation as noted in the NACTO Design Guide. Intersection crossing markings raise awareness for bicyclists, motorists, and pedestrians of potential conflict areas and reduce confusion.

3.4.2. Manning Avenue to Williamson Avenue (Phase 2, Area 2)

The corridor segment from Manning Avenue to Williamson Avenue is considered as part of Downtown Elon and located east of Phase 2, Area 1. As a gateway to Elon University, this section falls within the Campus Scale character area, though the roadway currently has three traffic lanes. Zoning in this area consists of mostly Commercial (including the Mediterranean Deli, Skid’s, Elon Community Church), and Residential land uses, emphasizing the importance of pedestrian facilities for local trips. This portion of the roadway has a posted speed limit of 35 mph and is maintained by NCDOT, and all improvements will require their approval. It is recommended that the NCDOT consider reducing the posted speed limit to 25 mph throughout the Downtown Elon commercial district.

A road diet is recommended in this section to increase safety, calm traffic and decrease pedestrian crossing distance by reducing motor vehicle travel from 3 lanes to 2 lanes. The face of the Park Place at Elon (the former Mediterranean Deli) building is set approximately 15’ from the edge of the roadway, so it is recommended that future improvements maintain the northern curb line and focus improvements to the south. One aspect of the road diet includes the addition of a 6’ median, with breaks to allow for access to adjacent properties. The second aspect of the road diet requires shifting the curb line on the south towards the centerline of the roadway by approximately 6 ft. This shift allows more of the existing right-of-way to be rededicated to the pedestrian realm, allowing a 12 ft multiuse path and 8 ft planting strip to be implemented on the south side of the corridor with minimal impacts to surrounding properties.

The Manning Avenue to Williamson Avenue segment of the corridor, as demonstrated by the *Existing Conditions Map* (on page 14), currently features sidewalks on both sides of the roadway. The sidewalk on the north edge is 8 ft and the sidewalk on the south edge is 5 ft. Though currently serving pedestrians to some degree, these sidewalks are located at the back of the existing curb with no buffer area between the vehicle lane and pedestrian facility, increasing the likelihood of vehicle-pedestrian conflict. It is recommended that the sidewalk in front of the Park Place building remain unaltered to allow for the existing outdoor seating.

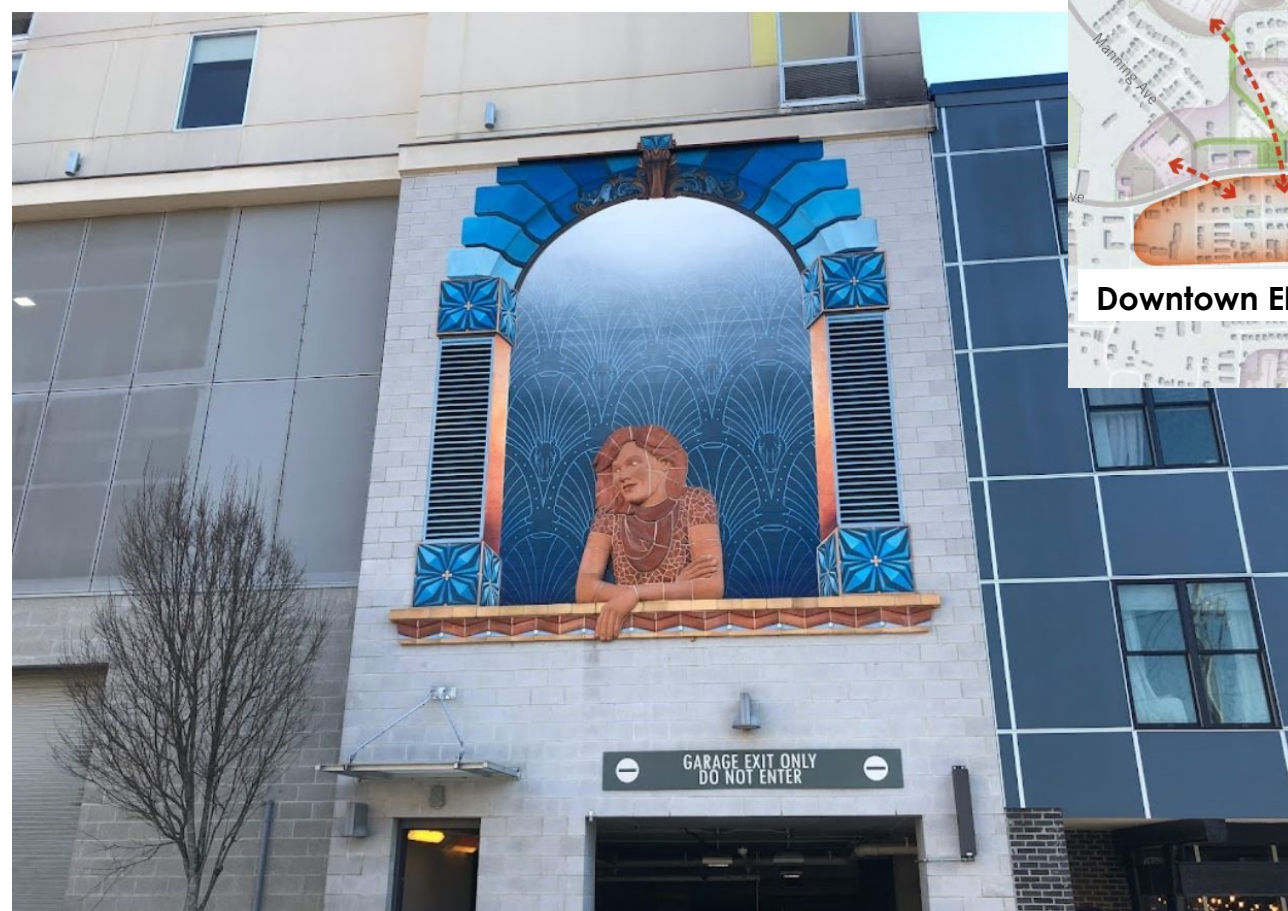
Midblock crosswalks are recommended at the W. Haggard Avenue intersections with Lee Street and N. Holt Avenue. The crossing at Lee Street will tie into the proposed sidewalk along that street that is funded as NCDOT project EB-5988. The N. Holt Avenue crosswalk is proposed to tie into the existing sidewalk on the west side of N. Holt Ave. and accommodate Downtown Elon pedestrian traffic to Park Place (former Med Deli), the Schar Convocation Center, and the Oaks.



It is recommended that bicycles be directed to the south side of the roadway on this segment, as noted in the multimodal crossing intersection paragraph of the previous section. Bicycles and pedestrians will share a right-of-way on the proposed 12 ft multiuse path, offset from the roadway by an 8 ft planting strip where feasible. The multiuse path will accommodate both eastbound and westbound bicycle and pedestrian traffic and connect to the proposed multimodal crossing at N. Williamson Avenue.

During the Phases 2 /3 Design Charette, the possibility of on-street parking in this area was discussed with stakeholders. With limited right-of-way availability and concerns of conflicts with cyclists, the group decided that parking needs would be better met elsewhere. The Town acknowledged that the lot in between Park Place and Skid's Chargrill Restaurant is remanent right-of-way for N. Holt Avenue. If this lot were redesigned to efficiently accommodate the Downtown Elon parking needs, the surrounding district could be pedestrian-oriented, promoting shopping, dining, and other commercial activity. A Downtown parking deck could serve additional traffic for events hosted on the Town Green.

Inspirational images for this project area are shown on this page, including: the Biltmore Avenue parking deck in the City of Asheville, which features artwork and supports the City's commercial core (to left); and a hydroponic wall on a parking deck in Irvine, California, which creates a stunning and environmentally -friendly placemaking feature (below).



Google 2022.

It is recommended that the existing signalized intersection of N. Williamson and Haggard Avenue (presently with crosswalks on all four quadrants) be upgraded to accommodate bicycle traffic. A traffic study (including capacity analysis) is recommended for the entire corridor to determine turn lane storage and signal timing demands for all travel modes. Possible multi-modal improvements include green painted bike boxes that accommodate bicycle turning movements and raise awareness of potential bicycle-vehicle conflict points. The recommended design requires westbound bicycle traffic to cross on the south side, so clear signage will be imperative to the efficacy of the design. This intersection also marks the transition between the W. Haggard Avenue and E. Haggard Avenue, as well as the western entrance into Elon University.

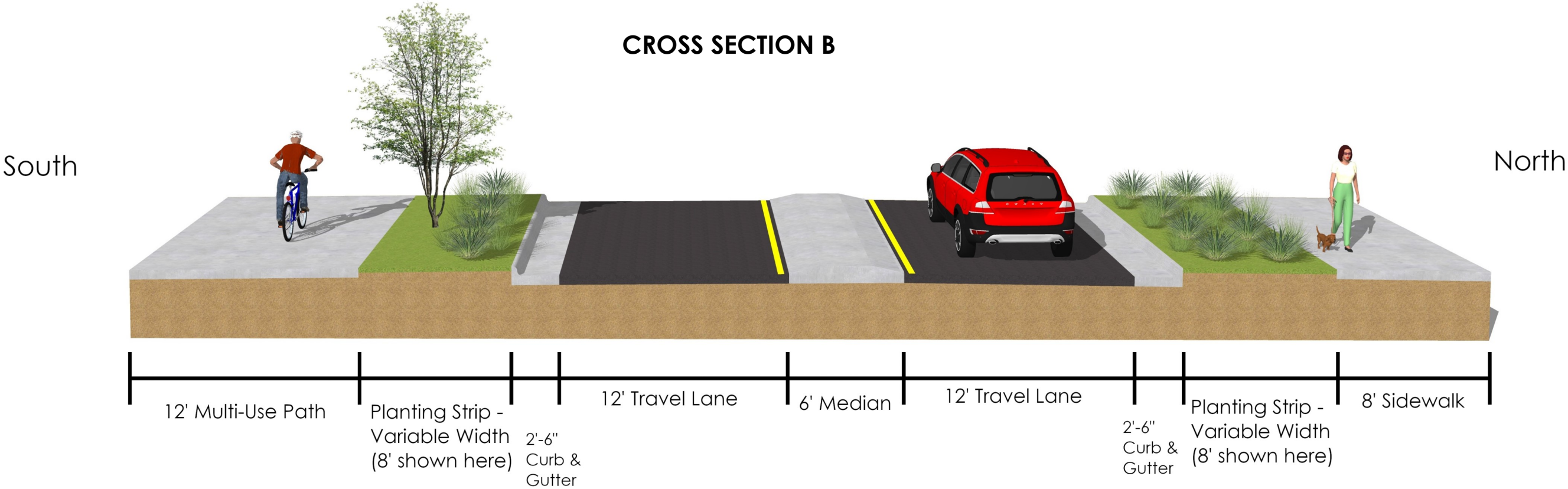
Below, Cross Section B shows the recommended streetscape along Haggard Avenue in the Downtown Elon section. To maintain the existing design language of the corridor, brick pavers can be substituted for the concrete features shown: multiuse path, median, and/or sidewalk. Median breaks will be determined by the future traffic study.

3.4.3. Williamson Avenue to N. Antioch Avenue (Phase 2.2)

The segment of the corridor between N. Williamson Avenue and N. Antioch Avenue falls within the Campus Scale character area. The existing travel lanes are very wide, with approximately 39 ft of existing pavement, allowing some of the existing motor vehicle space to be retained in this section, with some traffic calming provided by the reduced lane width from 18 ft to 12 ft. This portion of the roadway is maintained by the Town of Elon, and all improvements will require their approval.

A historic brick wall lines the E. Haggard Avenue corridor to the south, with a few feet separating the existing curb line and the face of the wall. Stakeholder feedback at the Phases 2/3 Design Charette directed the design team to restrict project work to the north of the wall and to not disturb the historic feature. A proposed 5 ft sidewalk is recommended to be installed in front of the wall, with the existing curb line shifted to north to accommodate the sidewalk width. A 1'6" curb and gutter is recommended to separate the sidewalk from a proposed on-street bike lane.

An on-street buffered bike lane (defined in Section 2.2) is recommended along the south side of



SCHEMATIC PLAN - PHASE 2.2, DOWNTOWN ELON - MANNING AVENUE TO WILLIAMSON AVENUE



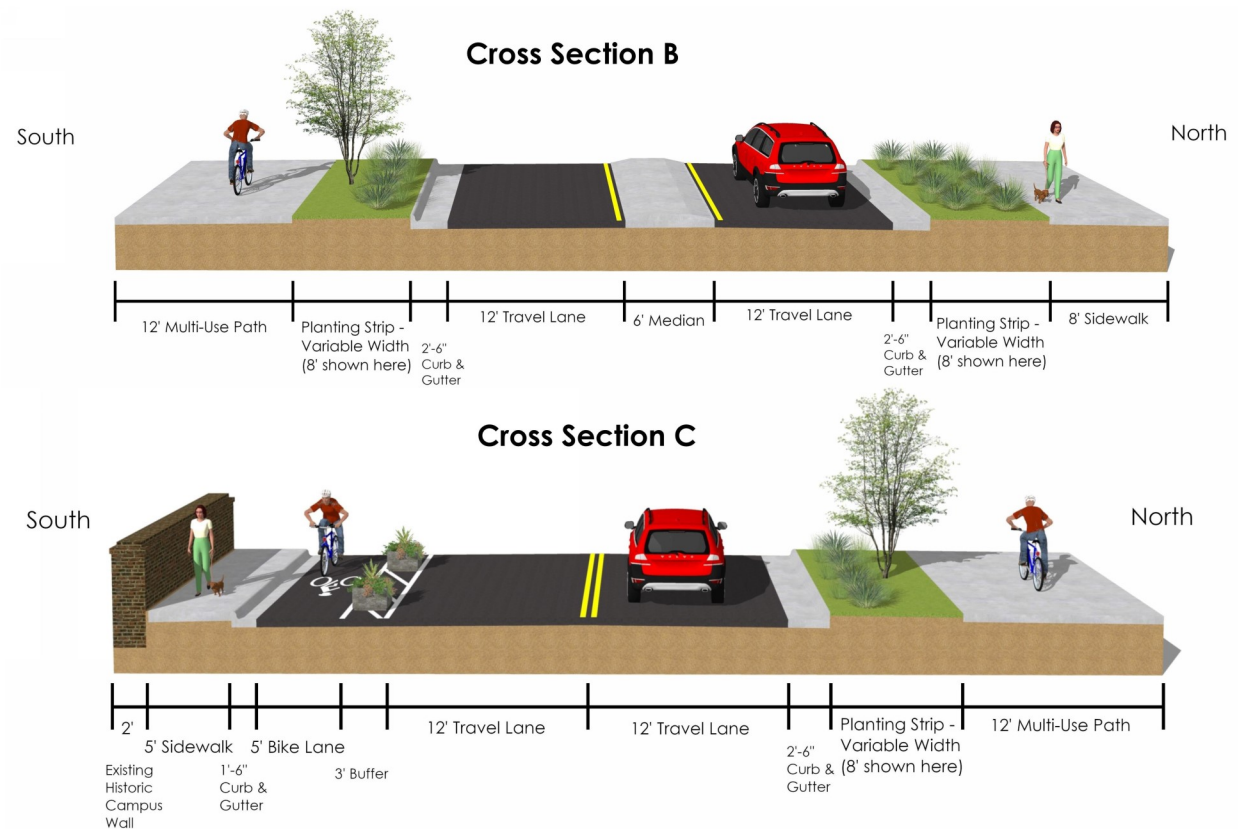
PLAN LEGEND

- HAGGARD AVENUE
- WIDEN EXISTING SIDEWALK
- NEW MULTIUSE PATH
- BUFFERED BIKE LANE
- PROPOSED CROSSWALK
- EXISTING CROSSWALK
- EXISTING ROADWAY
- EXISTING SIDEWALK CONNECTION
- RIGHT OF WAY
- INTERSECTION IMPROVEMENTS
- PLANTING STRIP
- EXISTING LAND USE
- ELON UNIVERSITY PROPERTY
- EXISTING TRAFFIC LIGHT
- PROPOSED SIDEWALK

PHASE 2: AREA 2

PLAN NOTES

1. CONSIDER ADDITIONAL PARKING ON TOWN-OWNED LOT
2. SHIFT ALIGNMENT ABOUT 6' NORTH TO AVOID MUP IMPACTS TO SOUTH
3. BIKES DIRECTED TO MULTIUSE PATHS UNLESS INDICATED DIFFERENTLY
4. TRAFFIC CAPACITY ANALYSIS RECOMMENDED TO DETERMINE TURN LANE NEEDS
5. HISTORIC WALL (DO NOT DISTURB)
6. BIKE LANE CAN BE TEMPORARILY CLOSED FOR PARKING/STUDENT MOVE-IN
7. IMPLEMENT ROAD DIET AND DECREASE TO 2 LANES
8. CONNECT TO PROPOSED SIDEWALK PROJECT EB-5988





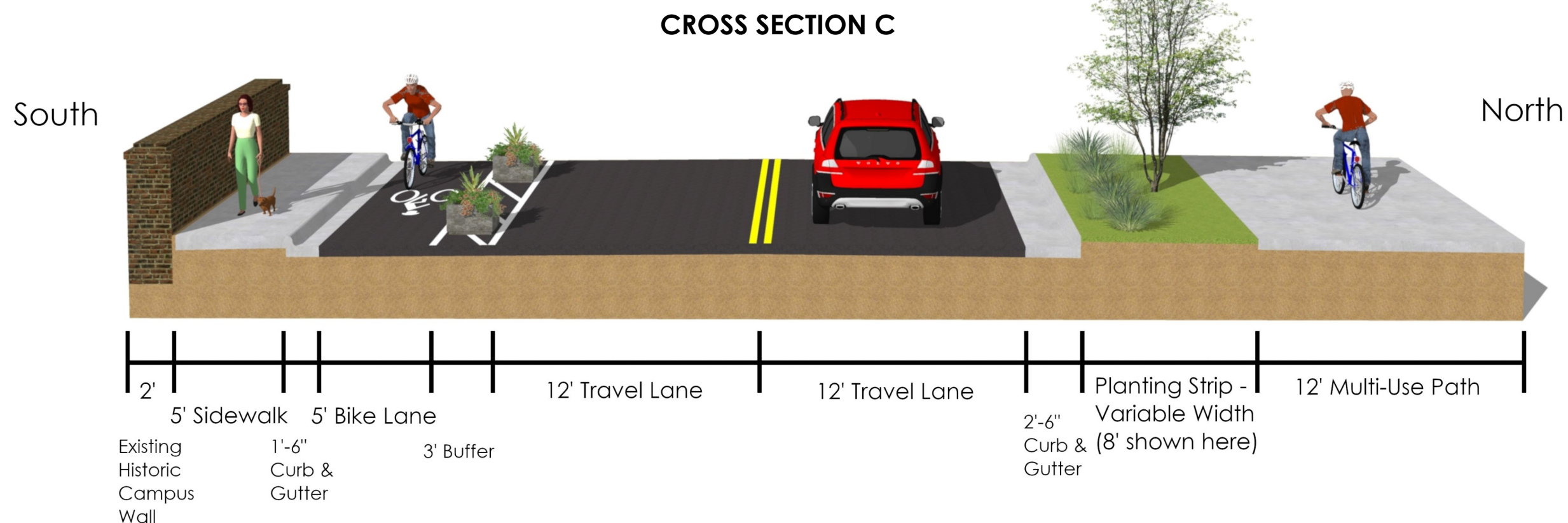
the Haggard Avenue corridor to accommodate eastbound bicycle traffic. Wayfinding signage is recommended at the beginning of the bike lane for direction and safety education, with an example from the City of Charlotte, NC provided in the graphic to the left.

During the September 2021 stakeholder meeting, 67% of committee felt it would not be necessary to separate bicycles from pedestrians in this area, but there was concern for bicycle-pedestrian conflicts. *The Phase 2/3 Public Survey* results indicated that the greatest bicycle traffic volume is anticipated through the Campus Scale section, increasing the need for directional separation to minimize conflicts. Directing eastbound bicycle traffic to the on-street bike lane will also add capacity for increased bicycle volume and minimize bicycle-pedestrian conflicts on the multiuse path, which handles a substantial amount of campus pedestrian traffic. The bike lane is proposed as 5 ft wide with a 3 ft diagonally striped buffer to increase safety and visibility. Removeable bollards or planters could be considered in the buffer to provide a physical barrier between the bicycle and motor vehicle traffic. It is recommended that the buffered bike lane is temporarily closed during the student move-in period and any physical barrier removed. With a total width of 9 ft including the gutter, the bike lane area can be used for additional on-street parking during

this period.

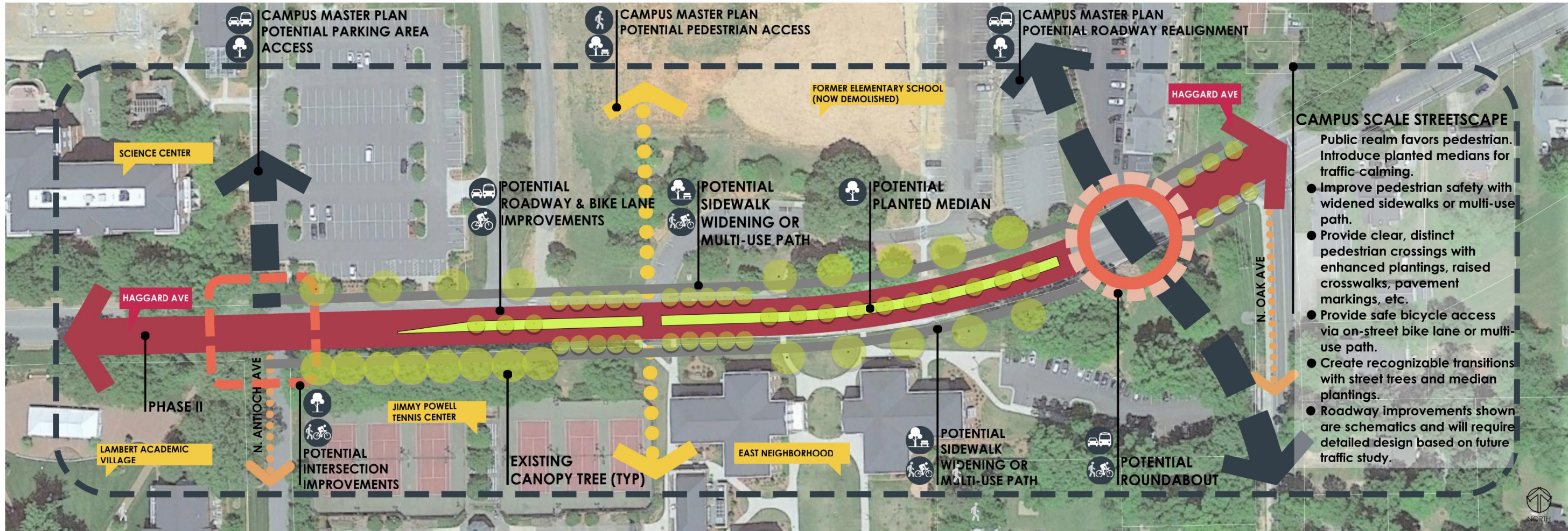
On the north side of the corridor, an 8 ft planting strip and 12 ft multiuse path are recommended. To remain consistent with Elon University's design language, this segment is recommended to be constructed with brick pavers. . Due to the proposed horizontal shift and possible right turn lane, the multiuse path east of Williamson Avenue is proposed to detour around the Elon University gateway sign and expand on the existing sidewalk alignment. Wayfinding and multi-modal educational signage are recommended on the north and south sides of the corridor. To decrease conflicts and increase capacity, signing should designate the multiuse path for pedestrians and westbound bicycle traffic only, directing eastbound bicycles to the bike lane.

Multi-modal enhancements are recommended at the signalized intersection with N. O'Kelly Avenue, including bike boxes for left turn movements (see Section 2.2). The three existing raised midblock crosswalks in this section are hard to see given worn striping and should be retained with improved pavement marking, along with enhanced street lighting to increase pedestrian visibility. A pair of Rectangular Rapid Flashing Beacons (RRFB) could be considered at the midblock crosswalk south of the Powell Building where multiple pedestrian crashes have occurred.



SCHEMATIC PLAN - Phase 1 CAMPUS AREA - N. ANTIOCH AVENUE TO N. OAK AVENUE

*** See Plan Notes on Page 56**



PLAN LEGEND

-  **NEW SIDEWALK**
-  **WIDEN EXISTING SIDEWALK**
-  **HAGGARD AVENUE**
-  **POTENTIAL ROUNDABOUT**
-  **PEDESTRIAN ZONE**
-  **INTERSECTION IMPROVEMENTS**
-  **EXISTING ROADWAY**
-  **POTENTIAL STREET TREES**
-  **DESIGN ELEMENTS ICON**
-  **CAMPUS MASTER PLAN
POTENTIAL ACCESS**
-  **EXISTING LAND USE**
-  **CAMPUS SCALE
STREETSCAPE AREA**

INSPIRATION | IMAGES



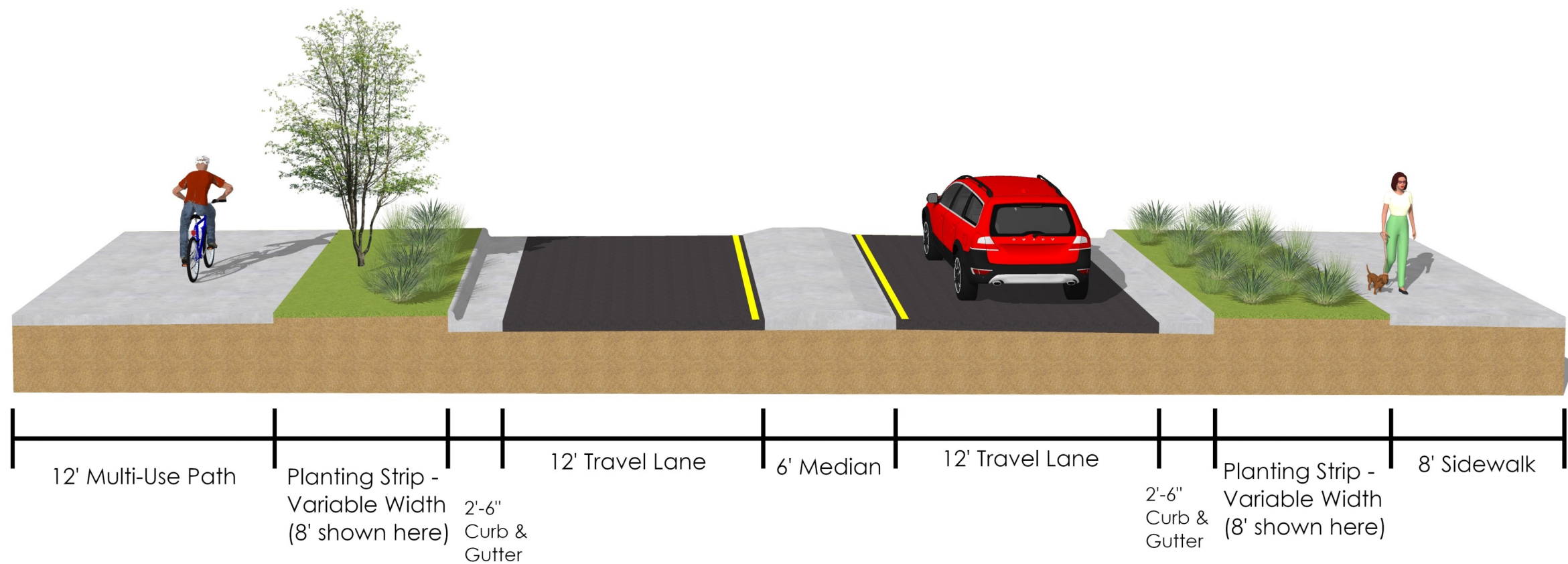
3.4.4. N. Antioch Avenue to N. Oak Avenue (Phase 1)

The recommended schematic design for the Campus Scale area of the corridor between N. Antioch Ave. and N. Oak Avenue included strategies to address vehicle-pedestrian conflicts, reduce crossing distances, calm vehicular traffic, and enhance the pedestrian and bicyclist experience. [see Phase 1 - Schematic Plan - N. Oak Avenue to York Road] This portion of the roadway is controlled by the Town of Elon, and all improvements will require their approval.

The Campus Scale Schematic Design illustrates a planted median to reduce traffic speed and decrease crossing distance with pedestrian refuge at potential mid-block crossings. Medians planted with small trees and low-grading shrubs lend additional spatial awareness for vehicles to reduce speed and increase awareness of other modes of travel. Where mid-block pedestrian crossings occur, plantings, pavement markings, materials changes, and signage can visually indicate the approaching crosswalk. The predictability created with these visual cues can increase pedestrian safety in a subtle but effective manner.

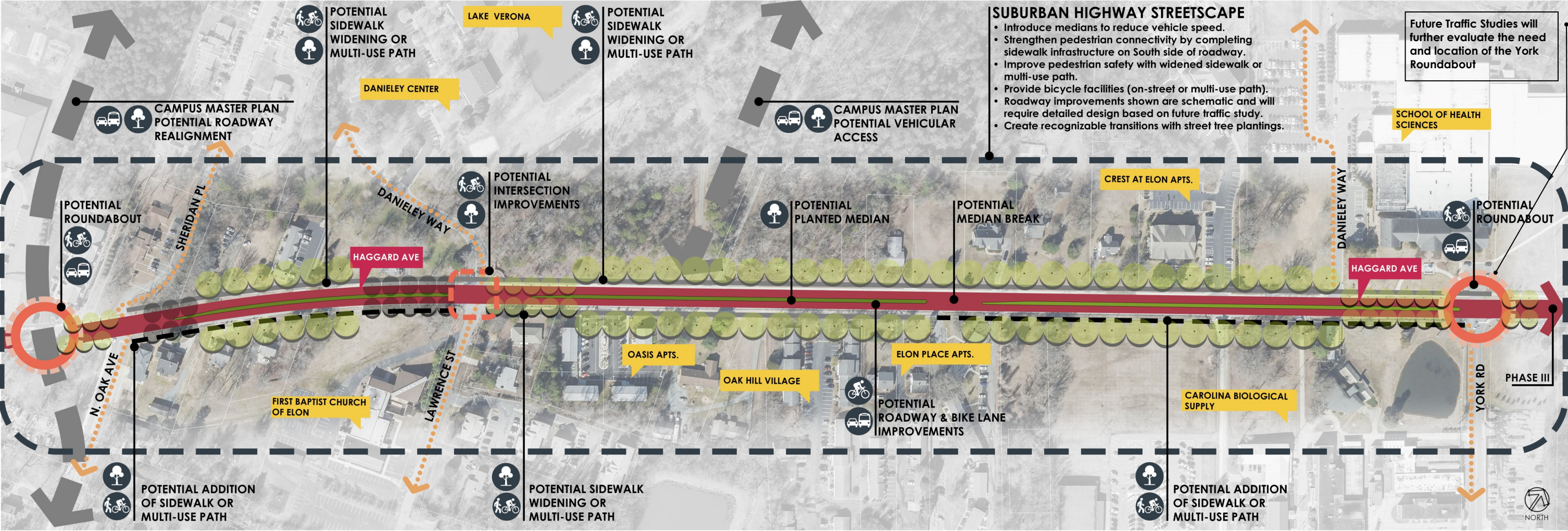
The volume of pedestrian activity in this segment supports the recommendation for widened sidewalks, or a multiuse path. To improve the pedestrian level of service, a wider sidewalk or multiuse path separated from vehicular traffic is recommended. Similar to the Suburban Highway area discussed in the following section, the design suggests improvements for bicycle access via a multiuse path or on-street bike lanes. Additionally, the design illustrates trees along the roadway that vary in size, spacing, and location based on the visual cues desired for users. Where the tree canopy reduces in size, spacing, location, and median plantings change, the intent is to inform users of an upcoming pedestrian crosswalk.

These design plans also denote intersection improvements at Antioch Avenue, which may include roadway modifications such as right and left turn lanes, as well as safe and legible places for pedestrians to be directed along Haggard Avenue towards a major pedestrian crossing planted by Elon University. These design plans also illustrate the proposed realignment of N. Oak Avenue as it crosses Haggard Avenue, extending into Elon University property. This realignment, which is based on the University's Campus Master Plan, would provide an opportunity for a roundabout at the newly created intersection. A potential roundabout would calm vehicular traffic, encourage a reduction in speed, create a transition between character areas, and serve as a gateway for the campus zone.



SCHEMATIC PLAN - Phase 1 SUBURBAN HIGHWAY - N. OAK AVENUE TO YORK ROAD

* See Plan Notes on Page 56



SUBURBAN HIGHWAY STREETSCAPE

- Introduce medians to reduce vehicle speed.
- Strengthen pedestrian connectivity by completing sidewalk infrastructure on South side of roadway.
- Improve pedestrian safety with widened sidewalk or multi-use path.
- Provide bicycle facilities (on-street or multi-use path).
- Roadway improvements shown are schematic and will require detailed design based on future traffic study.
- Create recognizable transitions with street tree plantings.

Future Traffic Studies will further evaluate the need and location of the York Roundabout

PLAN LEGEND

- NEW SIDEWALK
- WIDEN EXISTING SIDEWALK
- HAGGARD AVENUE
- POTENTIAL ROUNDABOUT
- PEDESTRIAN ZONE
- INTERSECTION IMPROVEMENTS
- ... EXISTING ROADWAY
- POTENTIAL STREET TREES
- DESIGN ELEMENTS ICON
- ← CAMPUS MASTER PLAN POTENTIAL ACCESS
- ... EXISTING LAND USE
- SUBURBAN HIGHWAY STREETSCAPE AREA

INSPIRATION | IMAGES

3.4.5. N. Oak Avenue to York Road (Phase 1)

The schematic design for the corridor between N. Oak Avenue to York Road (Suburban Highway area) recommends strategies to address vehicle-pedestrian conflicts, reduce traffic speed, and enhance the pedestrian and cyclist environment (see previous page). This portion of the roadway is maintained by NCDOT, and all improvements will require their approval.

The suburban highway schematic design introduces planted medians as a traffic calming device and proposes a road diet by reducing the existing 3-lane roadway section to a 2-lane section. The introduction of regularly planted street trees of varying canopy heights is intended to provide all users with visual and spatial cues about an approaching decision point. Where the tree canopy reduces both in size and spacing, the intent is to reinforce the presence of an upcoming intersection.

To strengthen pedestrian connectivity and access, the sidewalk on the south side of Haggard Avenue should be completed. Additionally, pedestrian safety and experience along the roadway can be improved by providing a wider sidewalk or multiuse path and by separating the walkway from the vehicular traffic with a planting area between the back of curb and walkway.

The plans suggest intersection improvements at Lawrence Street and York Road to create safe, legible, and predictable places for pedestrian crossings, which may include distinct crosswalks, and/or pedestrian refuge within the proposed median in conjunction with roadway modifications. To provide full multi-modal access, this plan suggests a discernable area for bicyclists, either with an on-street bike lane or via an off-street multiuse path.

These plans also specifically illustrate an opportunity for a roundabout at York Road to improve the safety and congestion issues noted at this intersection, as discussed at the July 2020 Project Stakeholder Meeting as well as the Public Meeting in October 2020. A traffic capacity analysis will need to be performed to determine the number of lanes required for a future roundabout. In addition, roundabouts offer an opportunity for placemaking sculptures or cultural art.

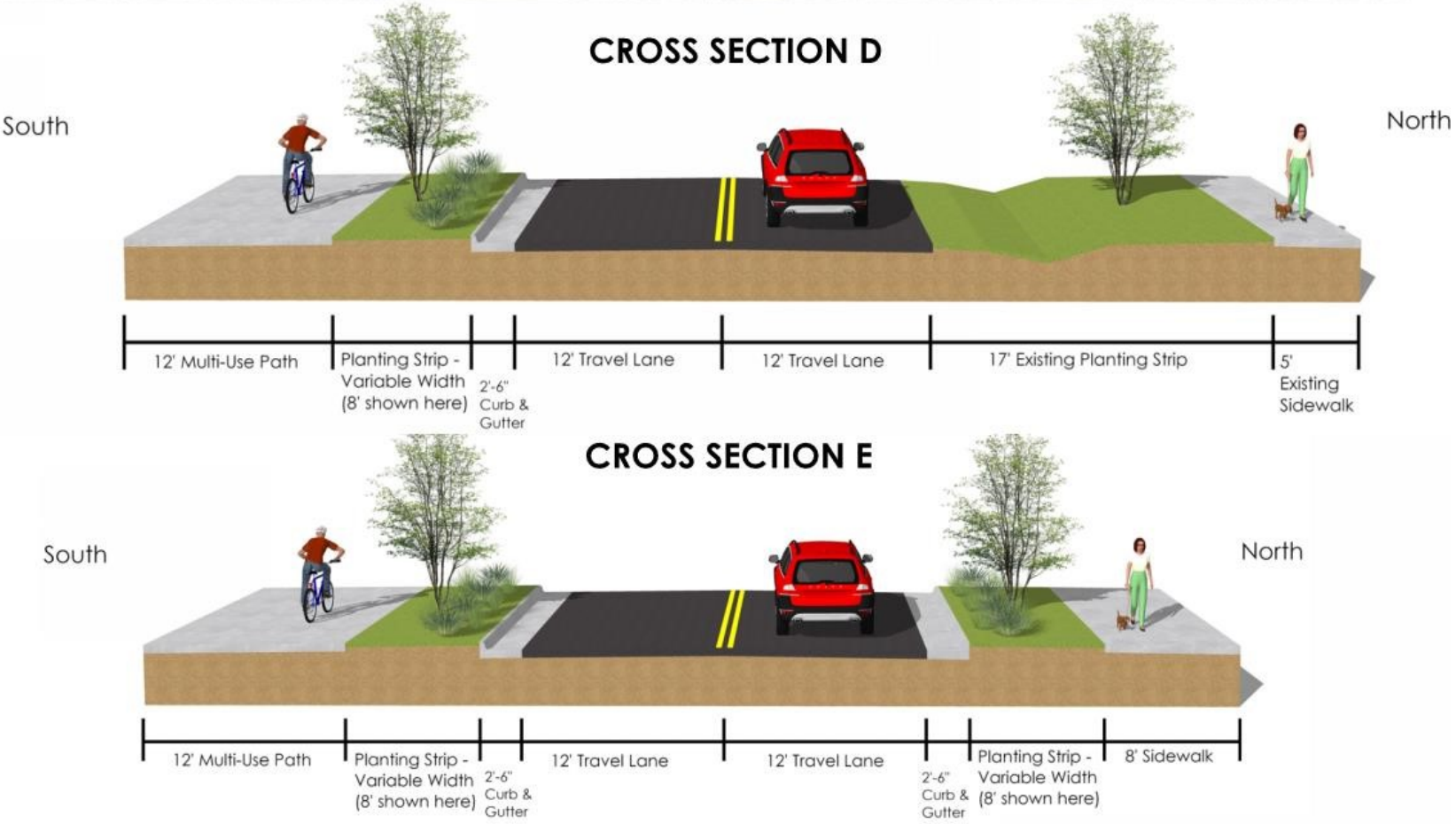
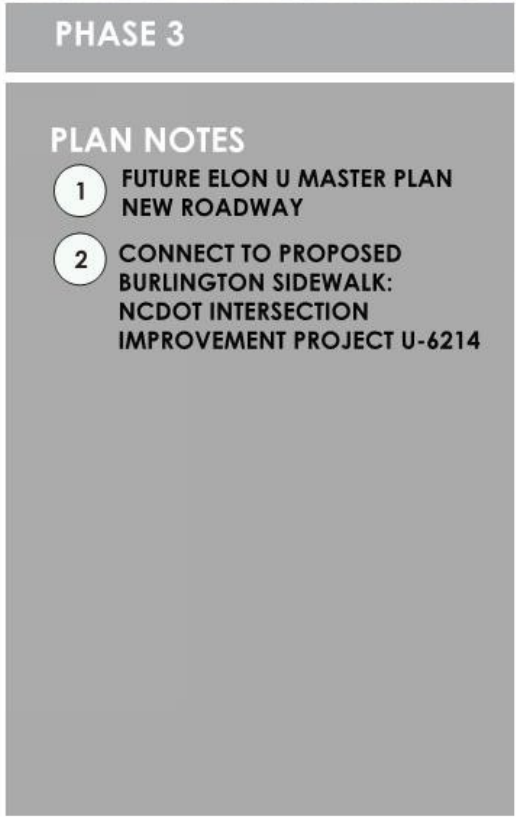


Multimodal Roundabout, Actual lane configuration to be determined in capacity analysis study.



Jorge Blanco, "BRAVO!" sculpture in roundabout with sidewalks.

City of Sarasota



3.4.6. York Road to University Drive (NC 100) / NC 87 / W. Webb Street (Phase 3)

The schematic design for the corridor between York Road and University Drive (NC 100)/NC87/ W. Webb Avenue represents a continuation of the Suburban Highway of the previous Phase 1 segment, reducing potential of pedestrian-vehicle conflict by providing connections in existing sidewalk gaps and enhancing the bicycle environment. This portion of the roadway is maintained by NCDOT, and all improvements will require their approval.

The 2016 Elon University Master Plan shows a future Elon University road and far east Elon University road, pictured left, that will enhance circulation and mobility through campus. By connecting with Danieleley Way, the new road could divert some traffic to E. Haggard Avenue.



Care should be taken to ensure adequate sight distance between Gilliam Road and the far east Elon University road.

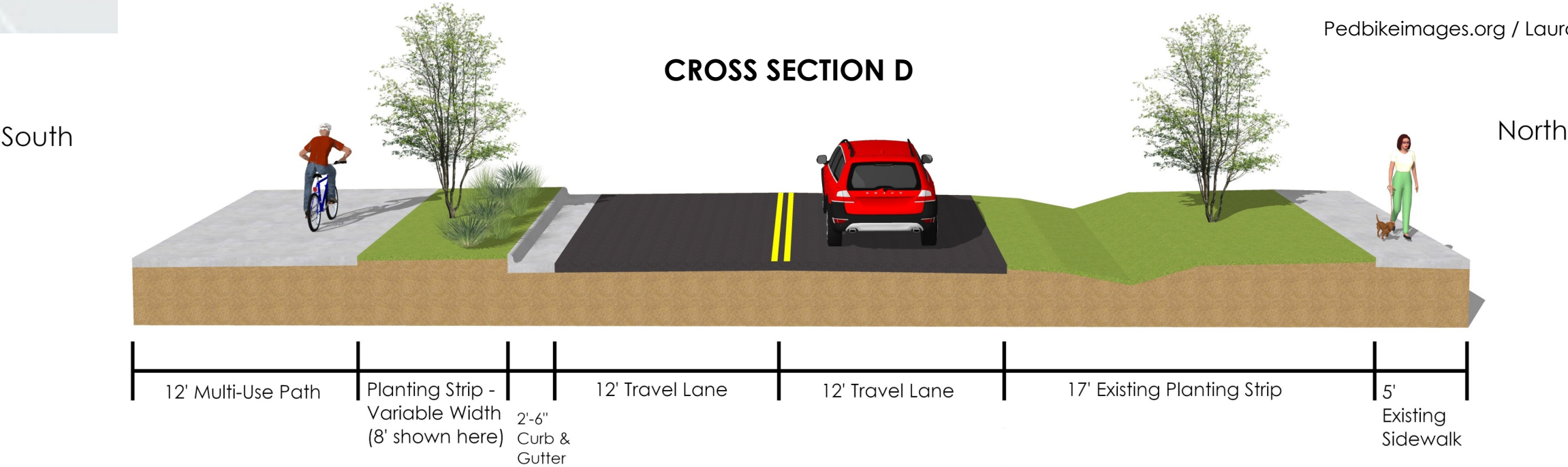
This segment of the E. Haggard Avenue corridor has a posted speed of 35 mph and no existing sidewalks on the south side and only intermittent sidewalks at campus developments on the north. It is recommended that an 8' sidewalk is implemented on the north side to fill in

gaps and connect to existing sidewalks at Gilliam Road and Partners Place Apartments, shown below as “existing planting strip” and “existing sidewalk.” A 12 ft multiuse path is recommended on the south side of E. Haggard

Avenue in this section to provide an additional pedestrian facility and a safe and consistent bicycle and pedestrian facilities for users of all ages and abilities.



RRFB in Davis, CA. Recommended at Gilliam Road
 Pedbikeimages.org / Laura Justine



- NCDOT Current 2020-2029 STIP**
- 2020-2029 STIP Points
- Statewide Highway
 - Regional Highway
 - Division Highway
 - Interstate Maintenance
 - Bridge
 - Transition Highway
 - Other Highway
 - Statewide Aviation
 - Regional Aviation
 - Division Aviation
 - Aviation
 - Regional Ferry
 - Division Ferry
 - Transition Ferry
 - Statewide Rail
 - Regional Rail
 - Division Rail
 - Transition Rail
 - Other Rail
 - Regional Public Transit
 - Division Public Transit



New crosswalks are recommended at the York Road and Gilliam Road intersections. The York Road crosswalk is proposed to give pedestrians safe access to the Frances Center academic building. The crosswalk at Gilliam Road will provide safe crossing between Beer Republic and Phoenix Arms Apartments. A pair of Rectangular Rapid Flashing Beacons (RRFB) are recommended at the Gilliam Road crosswalk to increase driver awareness at the midblock crosswalk in a horizontal curve. Crosswalks and signal timing upgrades are recommended at the intersections of E. Haggard Avenue and University Drive (NC 100) / NC 87 / W. Webb, connecting the Haggard Avenue multi-modal network to a proposed Burlington sidewalk. Improvements to the Haggard Avenue/NC 87/NC 100 intersection are planned and funded as part of the NCDOT STIP project U-6214.

