APPENDICES

Engagement Summary

Safety Summit Summary

Safety Project Recommendations from Prior Studies

- Riverside Drive
- Piney Forest Road
- Piedmont Drive
- US 29
- Franklin Turnpike
- Kentuck Road

VDOT HSIP Expanded Systemic Program Countermeasure Reference Sheets

South Main Street Pedestrian Road Safety Assessment

Self-Certification Checklist

Engagement Summary

Engagement Summary

DANVILLE MPO SAFE STREETS AND ROADS FOR ALL ACTION PLAN

Introduction

The project team used a public and stakeholder engagement process and data analysis to develop the Safe Streets and Roads for All Action Plan for the Danville MPO.

This Engagement Summary documents the engagement activities, which include the Project Working Group, stakeholder discussions, online survey, and pop-events.

Project Working Group

The Project Working Group consists of 22 members selected from various local agencies and organizations working on different roadway safety and equity elements. The table below shows a full list of Working Group members.

Name	Organization
Lee Vogler	City of Danville
Vic Ingram	Pittsylvania County
Marc Adelman	Danville Transit
Maggie Richardson	The Health Collaborative
Diana Schwartz	River District Association
Chris Wiles	City of Danville Police Department
Chris Key	Pittsylvania County
Adam Jones	The Brick Running and Tri Store
Tim Searce	Danville Public Schools
Carol Tuning	Disability Rights and Resources Center
Winfred Fallen	Ballou Recreation Center
Joe Bonanno	Danville MPO
Chris Winstead	VDOT – Lynchburg District
Carston Eckhardt	VDOT – Lynchburg District
Rick Youngblood	VDOT – Lynchburg District
Brian Dunevant	City of Danville
Johnny Mills	Danville Life Saving Crew
Brittny	Virginia Rural Health
David Whitley	City of Danville Police Department
Bryan Price	Virginia Rural Health

The Working Group provided input on the outreach strategy and key stakeholders, served as project ambassadors, and reviewed crash data. As the planning process progresses, this group will weigh in on project and policy recommendations and will be critical for supporting plan implementation. Summaries of each of the meetings follow.

Meeting #1

The first Project Working Group meeting was held on January 10, 2024, and served as an introduction to the Safety Action Plan and Safe Systems Approach. This included a description of the grant program, elements of a safety action plan, the project schedule, and working group roles.

The Working Group brainstormed transportation safety concerns that should addressed. The following list includes the overarching themes that resulted from this discussion.

- Pedestrian safety
- Speeding
- Redlight running
- Access to transit
- Distracted driving
- Drivers Education

Meeting #2

The second Project Working Group meeting was held on June 7, 2024. The meeting included a preliminary review of crash data and the current community engagement results. The group confirmed the approach for engagement for the survey and identified additional ways to inform people about it. Lastly, leadership commitment and the safety summit in the Fall were discussed.

Meeting #3

The third Project Working Group meeting was held on October 9, 2024. The meeting included a review of the materials and results from the Safety Summit activities. The group broke into two groups to solidify the detailed actions created during the Safety Summit. Lastly, the group was presented with an outline of the action plan and the timeline for completing the plan.

Meeting #4

The fourth and final Project Working Group met January 29, 2025. The group discussed the final updates to the Action Plan, reviewed implementation requirements, and reviewed plan recommendations. The group discussed additional strategies to implement the plan's recommendations and focused on the priority corridors.

Stakeholder Discussions

Throughout the summer of 2024, the SS4A team met with different stakeholders for one-on-one discussions about traffic safety issues in the Danville area. The SS4A team held these discussions for a wide-ranging perspective on safety issues and to target specific groups not reached during the engagement process. The team spoke to the Danville River District, the Disability Rights and Resources Center, Danville Transit, and the Virginia Department of Transportation.

Public Survey

The study team developed an online interactive survey using Social Pinpoint to understand current safety concerns. An analog version of the online survey was created with a large map for use at pop-up events. The survey introduced the public to the project, solicited feedback on safety concerns, and collected information about the respondents themselves (optional). The survey was open for responses from April 17-July 10, 2024. Over 100 people responded to the online survey and more than 150 interacted with the project team at pop-up events.

Survey Advertising and Pop Up Events

The survey was advertised through multiple different outlets. Flyers and social media graphics were provided to the West Piedmont Planning District Commission, City of Danville, and Pittsylvania County for posting on their websites and social media accounts. Flyers were posted in the following locations:

- **Pittsylvania County Public Library;** Mount Hermon & Brosville, VA
- **Piedmont Access to Health Services (PATHS);** Chatham, VA
- **CVS Pharmacy;** Chatham, VA
- **White Oak Worship Center;** Blairs, VA
- **Mount Hermon Community Shredding Event;** Mount Hermon, VA
- **Danville Public Library;** Danville, VA
- **Danville Transit Headquarters;** Danville; VA

The Project Working Group was also asked to advertise the survey through their networks and social media accounts. The pop-up events were also a form of advertising for the online version of the survey. One poster had a QR code and link to the survey and the project website.

The study team conducted 6 pop-up events between April 17 and June 29, 2024, at various regional locations to collect feedback from traditionally underrepresented populations. The purpose of these events was to promote the online survey and gather feedback in real-time. The table set up included a poster-sized flyer, which included QR codes to the project website and the survey, brochures on safe driving from the Virginia Department of Motor Vehicles, and raffle tickets for a $50 visa gift card for those who filled out the survey at the event. During some events, a laptop with the survey was available for community members to use. A large map was available for people to share their safety concerns on-site.

The study team interacted with about 150 people at these events. While most did not complete the survey on-site, nearly all shared at least one safety concern in the region. Dates/times of these events are listed below:

Event	Location	Date	Time

City of Danville Employee and Retiree Health and Wellness Fair	Community Market	April 17, 2024	7:30 am to 2 pm
Danville Farmers' Market	Community Market	June 1, 2024	8 am to 11 am
Bridge Street Food Truck Rodeo	Bridge Street	June 1, 2024	12 pm to 6 pm
Health Collaborative - Pittsylvania County Chapter Meeting	Chatham Community Center	June 18, 2024	9 am to 11 pm
Juneteenth Block Party	Ballou Park	June 18, 2024	10 am to 1 pm
Latino Health Fair	Nueva Vida con Pathway Church	June 29, 2024	10 am to 2 pm

Safety Concern Themes from Engagement

Speeding Concerns

Speeding appeared to be a primary concern for community members. The following roadways and intersections were frequently cited for routine speeding:

- Piney Forest Road
- Halifax Road
- Westover Drive
- Main Street
- Craghead Street
- Piedmont Drive
- Riverside Drive

Community members identified multiple reasons for speeding including traffic control, lack of driver education, lack of enforcement, and frustration about traffic congestion. Additionally, multiple concerns were raised around work zones. Public Works employees mentioned speeding through work zones and not feeling safe on roadway projects.

Traffic Control Concerns

Red light running was frequently cited as a critical safety concern. Community members identified specific intersections, such as Riverside Drive, S. Boston Rd (light at Kentuck), Memorial Drive, Piney Forest , and others. Many of these same intersections were also identified as having speeding problems. Community members thought this was because people do not want to wait at the red light and/or do not have enough time for traffic to travel through the intersection before the light turns red again. There were also a few comments about stop signs running in the Downtown area and the lack of stop signs throughout residential neighborhoods. There were also concerns about busy roads only having stop signs on to major roadways, like Route 29.

Pedestrian Safety

Community members identified specific locations where it feels unsafe to be a pedestrian. The most common include:

- Main Street
- School Zones
- Shopping Centers
- Piney Forest Road
- Halifax Road
- Piedmont Drive

Other pedestrian safety concerns include narrow sidewalks, no crosswalks, speeding traffic, poor lighting at night, and traffic not stopping for pedestrians. From the driver's perspective, community members mentioned not being able to see people walking across or on the street at night. The Downtown area is where most community members walk. However, community members felt that if they felt safe walking in other places, they would. Some community members pointed out that they do not have access to a car and cannot walk safely to important destinations, like the grocery store or work.

Community members would like to see more pedestrian facilities around schools, shopping centers, and major employment locations.

Distracted driving

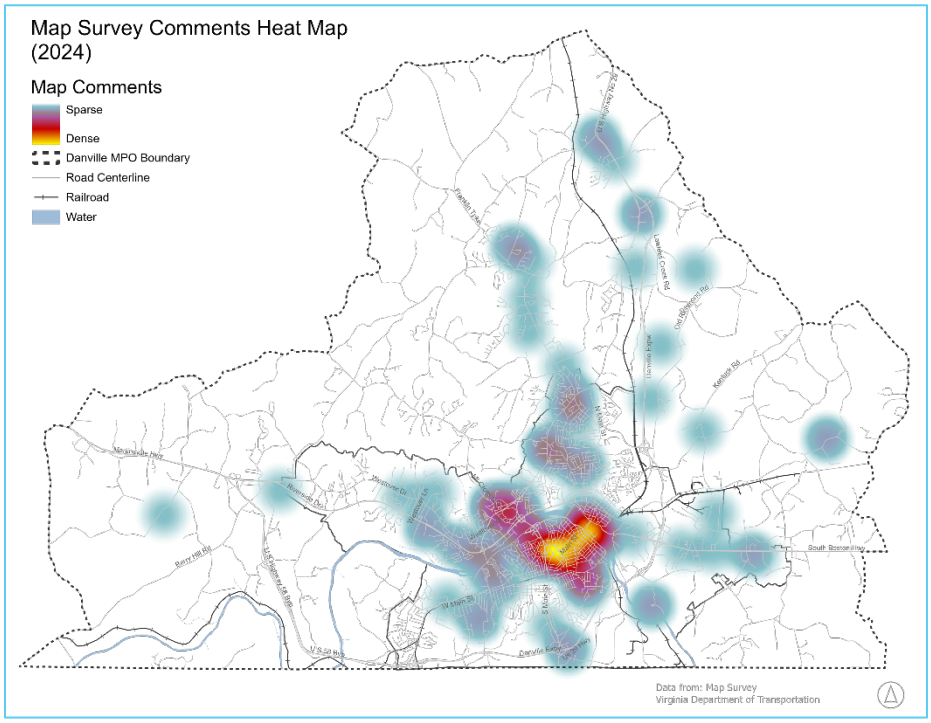
Community members raised concerns about distracted driving and lack of enforcement. They stated that distracted driving is a common concern and that there is no enforcement for bad driving behavior. This behavior was also mentioned often, along with speeding concerns.

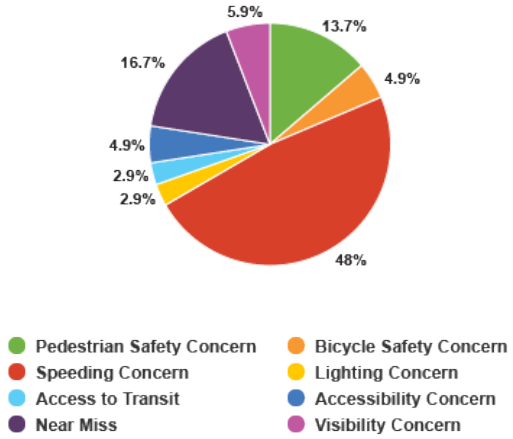
Roadway Maintenance

Community members identified potholes and poor roadway conditions as safety concerns.

Online Map Comments

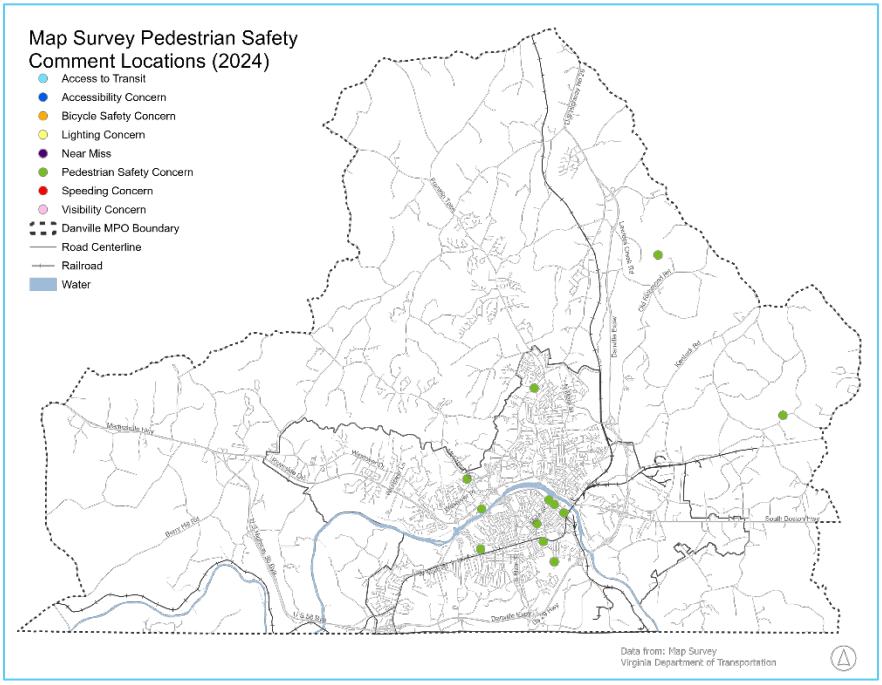
The online mapping tool captured roadway safety concerns that might not be available via crash data. The marker types used were pedestrian safety concern, bicycle safety concern, speeding concern, lighting concern, access to transit, accessibility concern, near miss, and visibility concern.





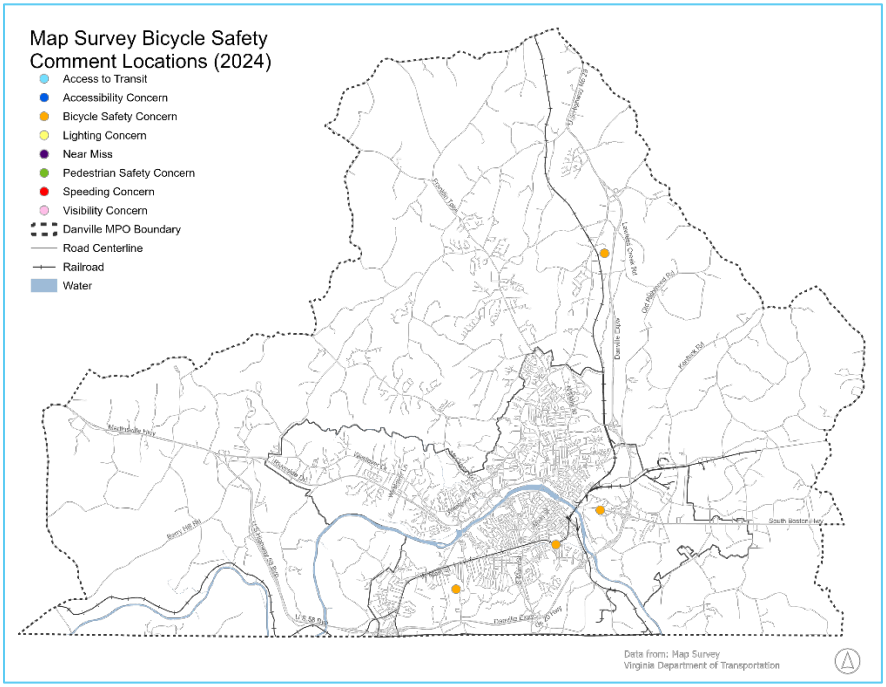
The online survey received 102 comments in total. The most common safety concerns were speeding, followed by near misses and pedestrian safety concerns. Most comments were placed within the City of Danville, localized along Main Street, Westover Dr, Mount Cross Rd, Riverside Dr, and Central Boulevard.

Pedestrian Safety Concerns



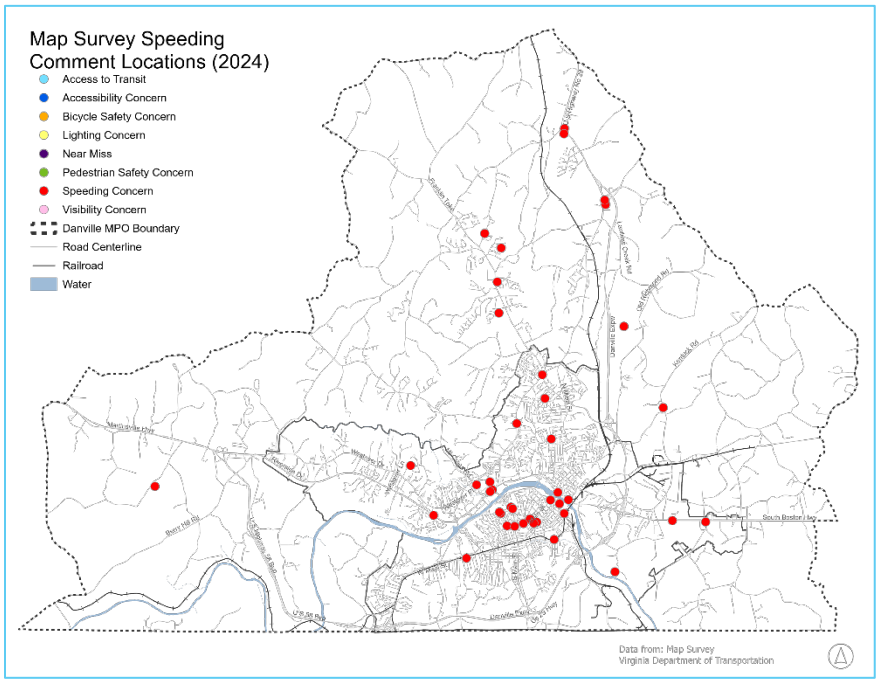
- Need pedestrian safety throughout the whole area
- Nelson Ave & Nor-Dan Dr
- Pedestrians walking to stores on Piedmont Dr with no sidewalks or crossings
- Riverwalk Trail stops at Commerce St and users half to walk in the road to get to where it starts again
- No crosswalk buttons at Park Ave & W Main St
- Near miss on Green St from someone speeding
- No crosswalk on Industrial Ave near Jefferson St – maybe flashing lights like at the fountain
- Almagro area needs sidewalks
- Residents on Craghead St use Community Market Lot and need crossing at Deboe St
- Cars do not yield to pedestrians Craghead & Loyal St
- People driving the wrong way on Market St

Bicycle Safety Concerns



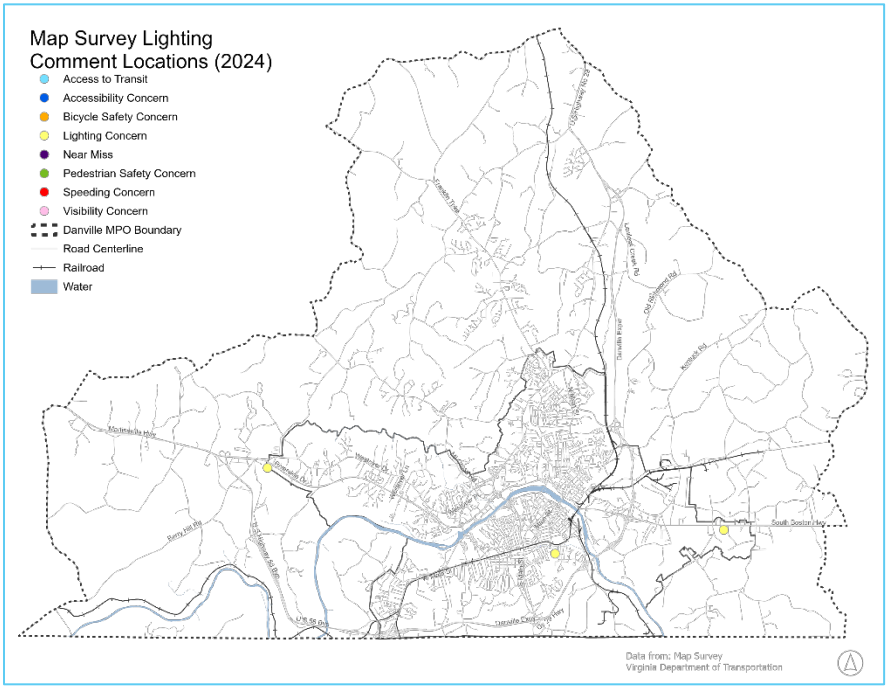
- Wide shoulders would help rural biking
- Bikers on South Boston Rd without bike lanes
- Bikers on Industrial Ave without bike lanes
- Drivers need education on bike laws for biker safety

Speeding Concerns



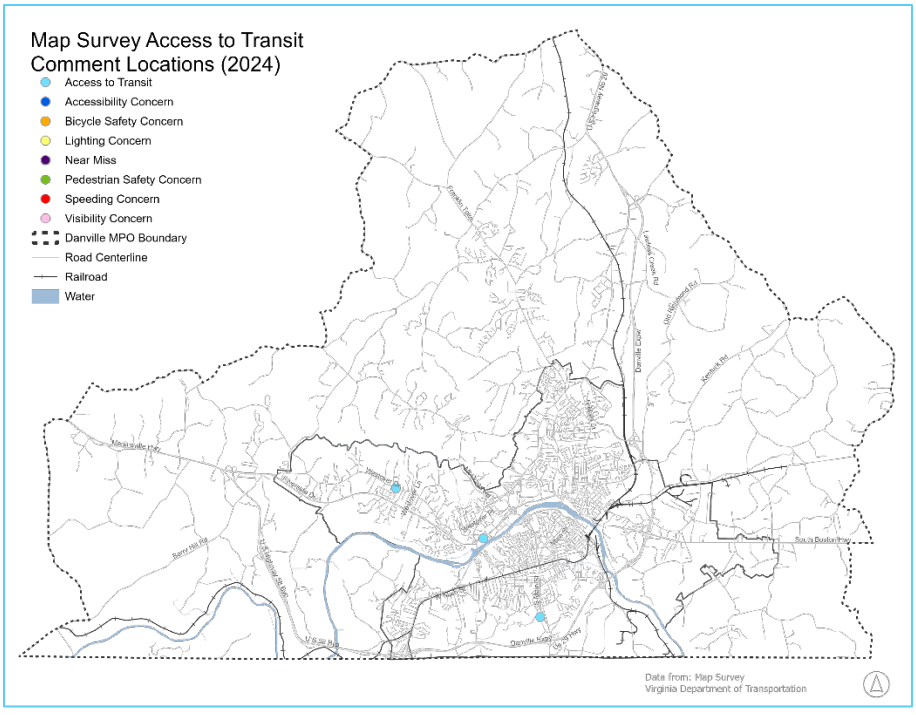
- Horseshoe Rd between Ed Hardy Rd & Martinsville Hwy
- Riverside Dr- people do not lower to 40 mph
- Schoolfield Dr & neighborhood
- Need law enforcement and police presence everywhere
- Franklin Turnpike from Piney Forest Rd to Mt Hermon Baptist Church
- Dry Bridge Rd – too narrow as well
- R&L Smith Dr
- Route 29
- Kentuck Rd
- South Boston Rd
- Traffic lights might cause speeding; do not facilitate flow and people feel inclined to speed through red lights
- Industrial Ave – unsafe for children walking to Gibson Elementary School
- Main St
    - Down Sutherlin Ave to skip red light
    - Red light running
    - At Central Blvd
    - At River St
- Craghead
- River St
- Green St
    - Go through stop signs
- Central Ave
- Canterbury

Lighting Concerns



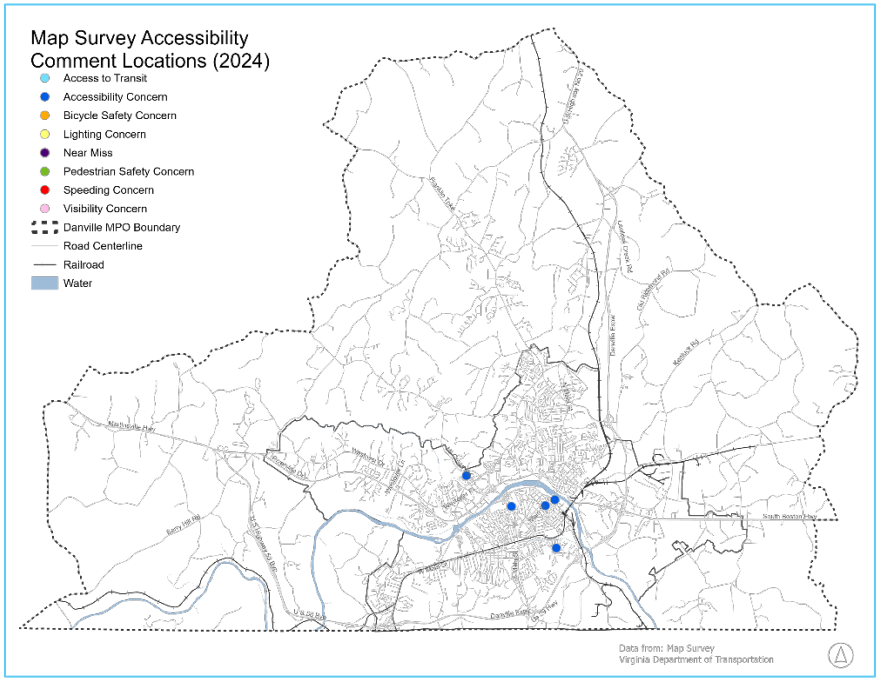
- Riverside Dr – gets dark when leaving the city on a turn in the road
- Walter Mills Rd & other residential streets in Almagro are used as pedestrian routes to avoid Industrial Ave. Dark at night.
- Light at South Boston Rd & Cane Creek Rd is hard to see from the rising sun in the morning.

Access to Transit



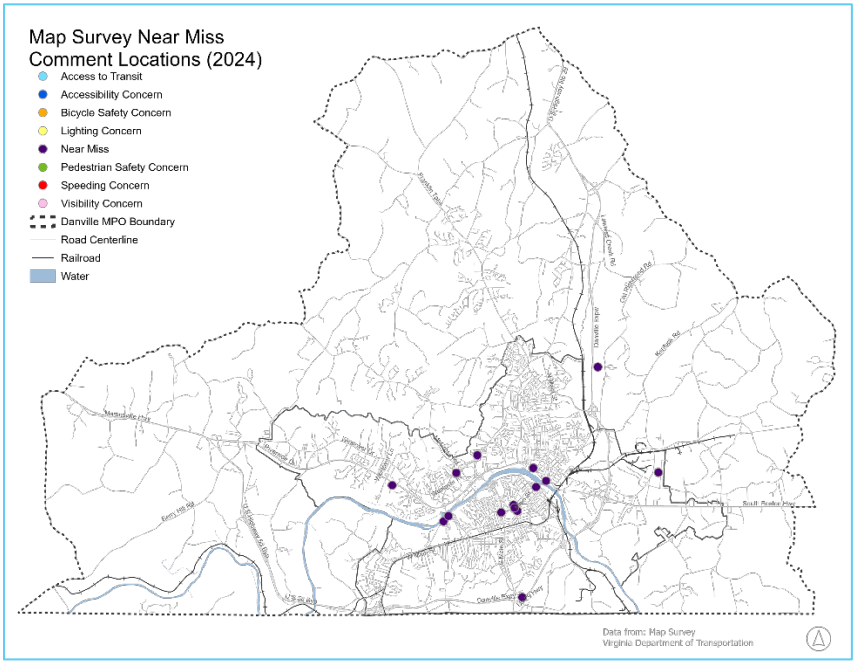
- Access to public transportation is lacking throughout, but especially on Westover Dr and Piney Forest Rd.
- Need better shelters and route timing for the housing on College Park Dr.
- Need routes on Riverside for workers and as more businesses open.

Accessibility Concerns



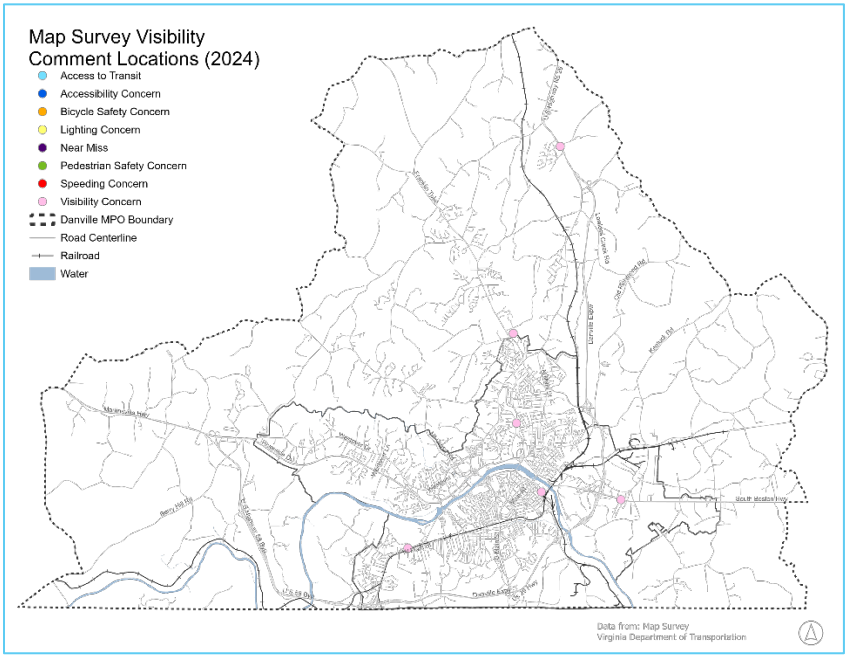
- The bus stop on Blaine Street caters to older adults who need seating and shelter. People have been seen walking further to Bibleway to sit down.
- Patton St sidewalks are narrow, making the library inaccessible to wheelchair users.
- Spectrum Medical Building on Bridge Street. The road is brick, and the driveway is steep, making it difficult to cross the road to get to the building in a wheelchair.

Near Misses



- Access management
  - Collins Dr
  - Riverside Drive westbound at the intersection of 58 goes from 40 mph to 55 mph and makes accessing businesses dangerous
- Red light running/stop signs
  - Memorial Dr & Robertson Bridge
  - Mount Cross & Piedmont Dr
  - Central Blvd & Main St
  - Holbrook Ave & Magruders Alley
  - Holbrook Ave & Green St
- Congestion
  - Turning to and from Bishop Rd & Memorial Dr difficult from congestion
  - River St to towards downtown
  - Near rear end from drivers turning left from Riverside Dr to Highland Ct
  - Orphanage Rd & Route 41 difficult to turn from Orphanage rd onto 41/crossing traffic
- Education/Behaviors
  - People drive down Chambers St the wrong way
  - Incorrect lane changing at Main St & Memorial Dr
  - 58-260 West traffic existing onto 29 South not yielding to divers who maybe exiting onto 58-360 east

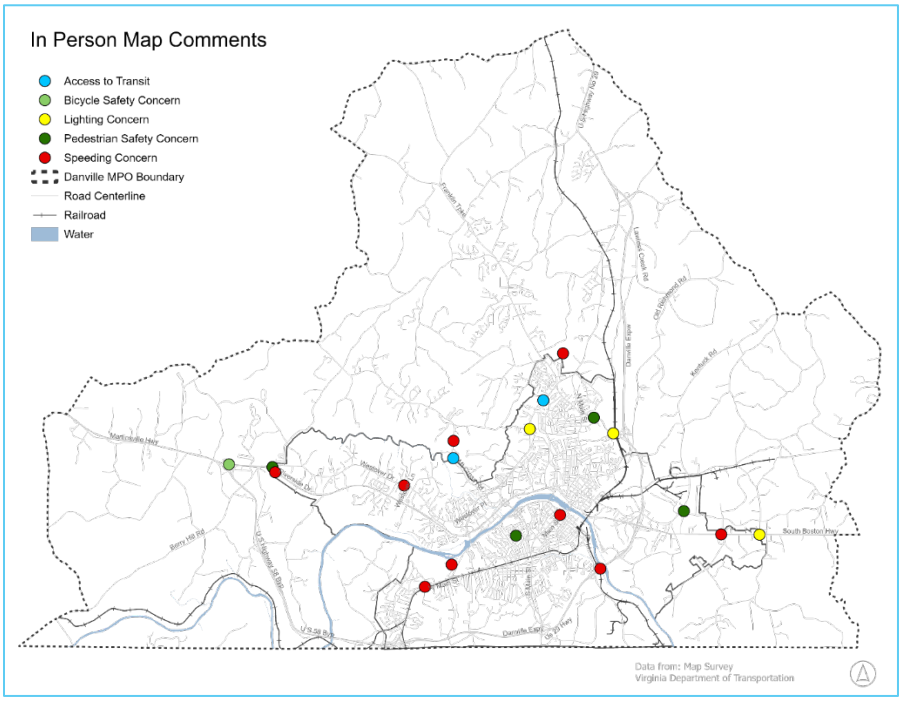
Visibility Concerns



- Congestion
    - Difficult to crossover 29N to median to access 29S
    - Turnpike Townhomes turning left onto Franklin Turnpike
- Wendell Scott Dr & Arnett Blvd
- Street parking blocks view of exit from Community Market onto Craghead St
- Williamson Rd onto South Boston Rd heading east
- Edgewood Dr onto Main St – curve in road

In-Person Map Comments

During each pop-up event, community members could leave comments on a hard copy version of the online map survey. Community members were asked to place the corresponding dot color for each safety concern category. The categories were Pedestrian Safety Concern, Bicycle Safety Concern, Speeding Concern, Speeding Concern, Lighting Concern, Access to Transit, and Accessibility Concern. The following is a digitized version and a summary of the comments received. (Note: The dot colors were slightly modified from the online survey due to available materials. Also, some map comments were included in the pop-up event notes and were not noted with a number).

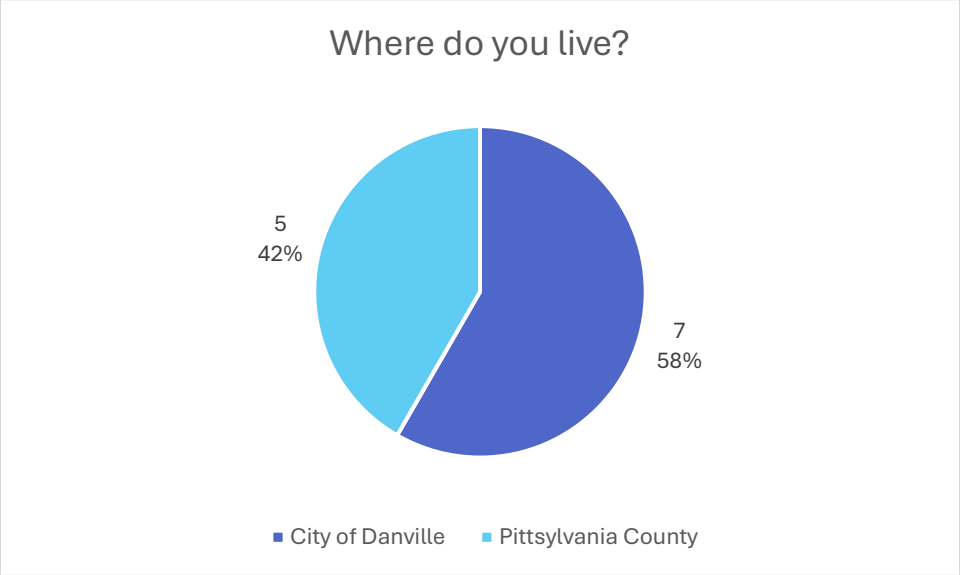


- W Main St & Memorial Dr – people run red lights and speeding
- Bradley Rd & White St – curvy back roads, forested area, poor lighting at night
- More bike lanes needed connecting Martinsville to Danville and green space
- Westover Dr – speeding
- Mount Cross - Speeding

Demographics (optional)

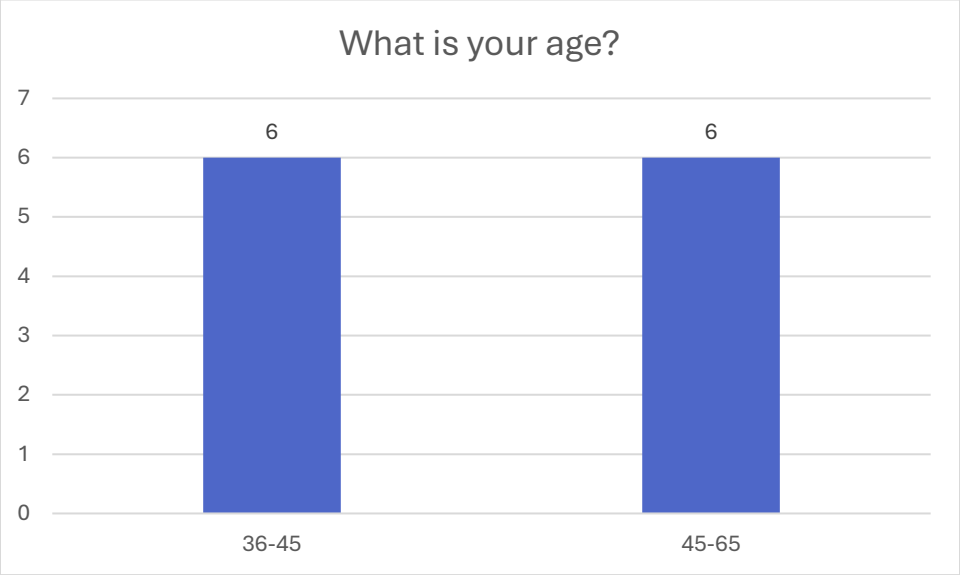
Survey respondents had the option to complete a demographic questionnaire. This helps identify safety concerns for different population groups within the Danville area, improving engagement, and ensuring that everyone has a voice throughout the planning process. For this optional survey we received 12 responses.

Where do you live?



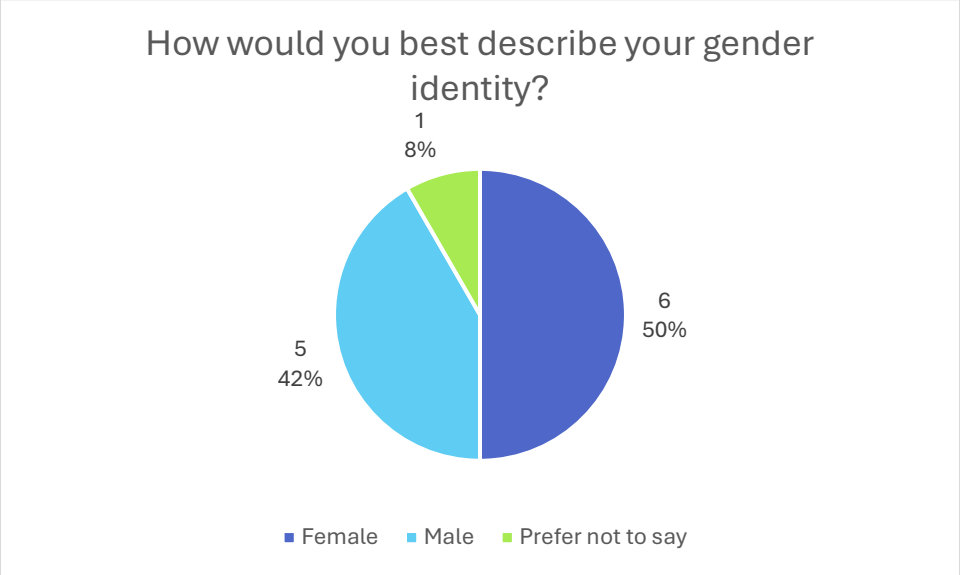
The majority (7) of respondents live in the City of Danville and 5 live in Pittsylvania County.

Age



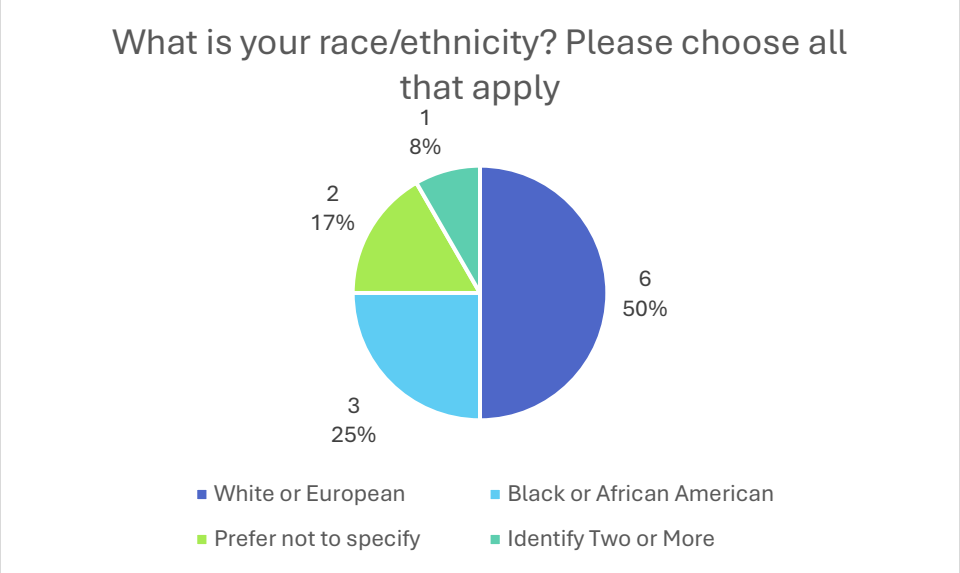
All respondents fell in the middle age bracket, half ranging from 36 to 45 and the other half ranging from 45 to 65.

Gender



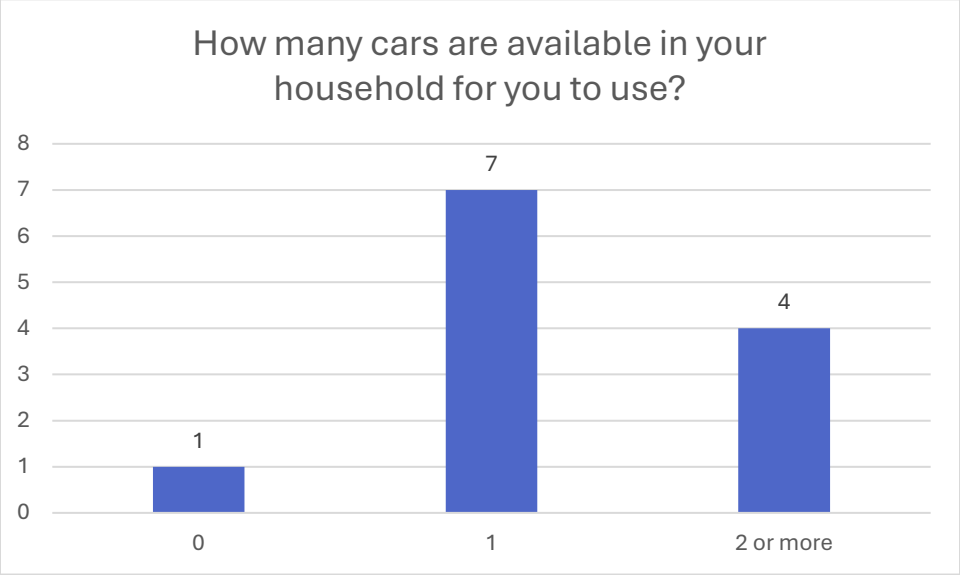
The majority of respondents identified as female, 5 identified as male, and one respondent preferred not to say.

Race/Ethnicity



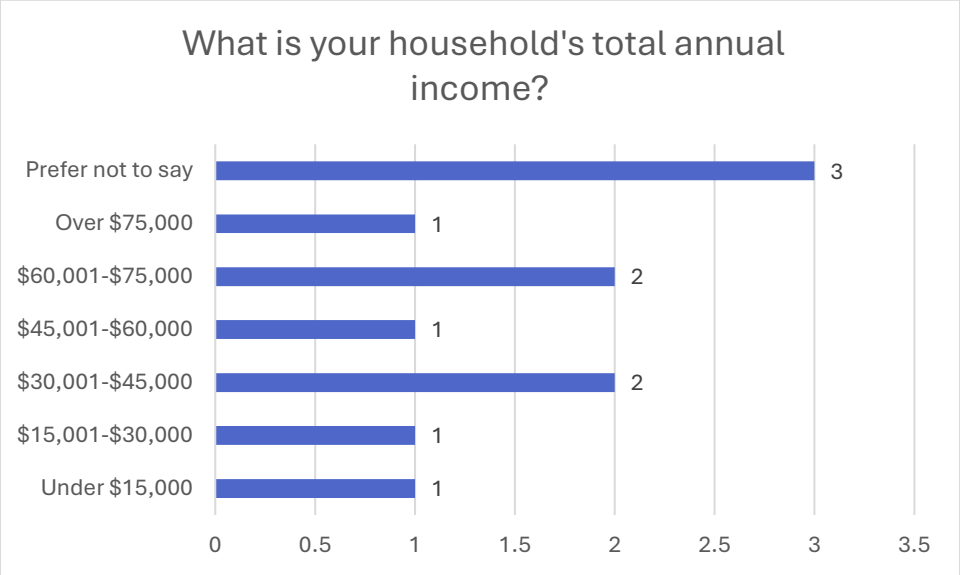
The majority (6) of respondents identified as white or European, 3 identified as Black or African American, 1 identified with two or more race/ethnicity categories, and 2 preferred not to specify.

Car Access



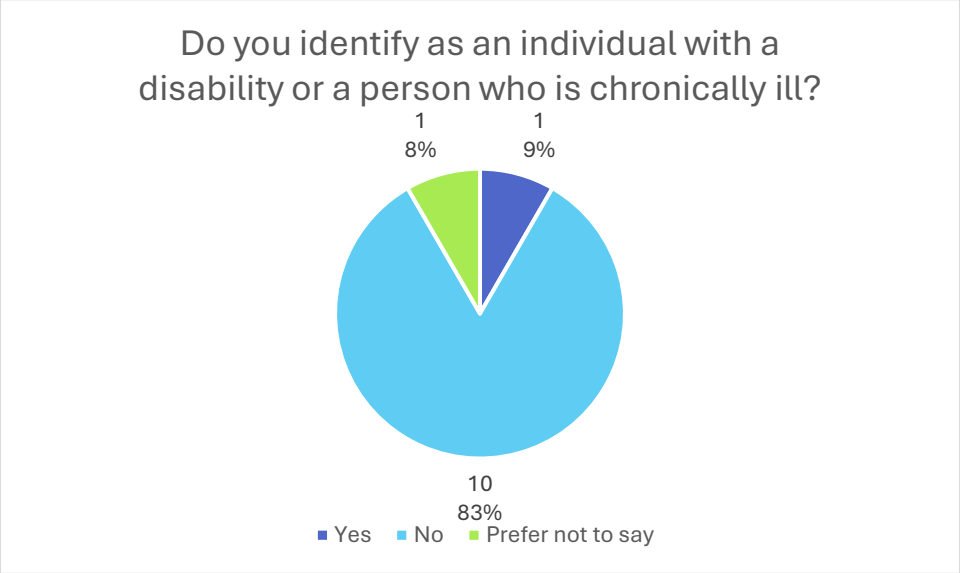
The majority (7) of respondents' households have access to one car to use, 4 stated they have 2 or more cars to access and 1 respondent said they do not have access to a car.

Annual Income



2 respondents annual income ranged from under $15,000 to $30,000, 3 respondents annual income ranged from $30,001 to $60,000, and 3 respondents annual income ranged from $60,001 to over $75,000. 3 respondents said they preferred not to say.

Disability or Chronically Ill



1 individual identified as an individual with a disability or a person who is chronically ill, 1 person preferred not to say, and the rest did not identify with a disability or chronic illness.

Safety Summit

On September 20, 2024, the Danville MPO held a Safety Summit to gather input from stakeholders and residents to inform the recommendations in the Safety Action Plan. The participants reviewed the findings from an analysis of crash data and results from the public input. Summit attendees then participated in several facilitated activities to gather input for the Safety Action Plan.

Mapping Activity to Identify Roads with Greatest Safety Needs

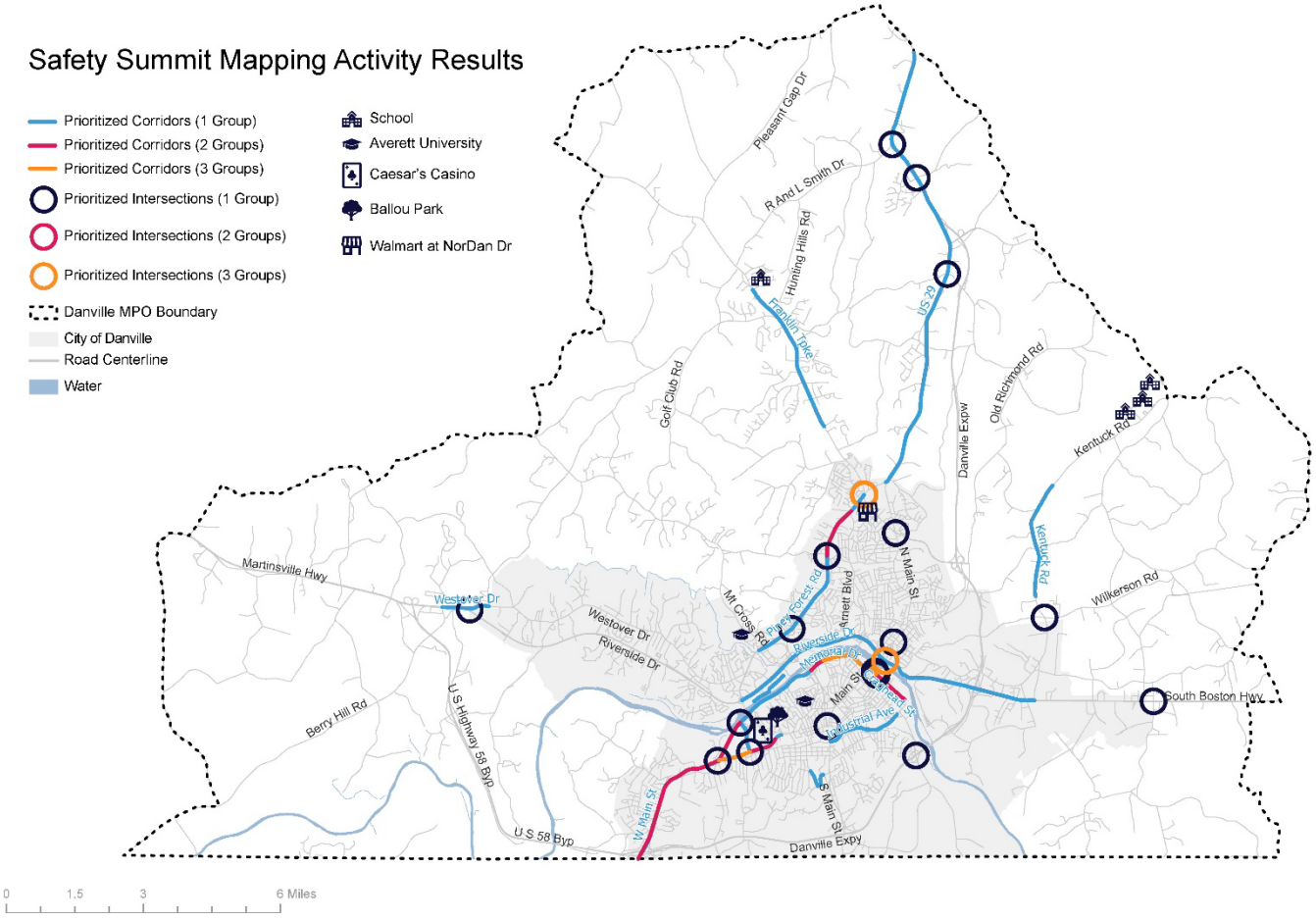
First, participants were asked to take part in a mapping activity in five separate groups to identify and prioritize corridors that have the greatest safety needs. Each group was asked to review information presented in four separate maps:

1. The High Injury Network
2. Public engagement results
3. Existing plans and studies
4. Disadvantaged census tracts from US DOT's Equitable Transportation Community Explorer.

After reviewing these four maps, each group identified five priority corridors on a blank map and explained why each corridor should be prioritized on a flipchart.

Mapping Activity Results

The map below shows the locations the groups identified in a combined summary map.



The priority corridors and locations identified include:

- Piney Forest Rd and Franklin Turnpike (Group 2)
- Franklin Turnpike and Piney Forest Rd (Group 5)
- Piney Forest Rd from Franklin Turnpike to Mt Cross Rd (Group 3)
- Riverside Drive from Piedmont Dr to Kentuck Rd (Group 3)
- Beavers Mill Rd and Piney Forest (Group 4)
- Franklin Turnpike (Group 2)
- Westover Dr & Riverside Dr (Group 1: D)
- Route 58 from Berry Hill Rd to Moorefield Bridge Rd (Group 4)
- Route 29 from Spring Garden Rd to R & L Smith Dr (Group 1: B)
- Route 29 and Lawless Creek Rd (Group 1)
- US 29 from Northern MPO Boundary to Lawless Creek Rd (Group 3)
- Route 29 from N Main St to Lawless Creek Rd (Group 4)
- N Main St Bridge (both ends) (Group 2)
- N. Main St and Riverside Dr (Group 5)
- N Main St and East Franklin Turnpike (Group 2)
- Keen St and N Main St (Group 1: A)
- Kentuck Rd (Group 2)
- West Main St from NC Stateline to Park Ave (Group 3, Group 1 extra)
- Craghead Rd/Memorial Dr from Industrial Ave to Central Blvd (Group 3)

- Memorial Dr – from W Main St to Main St (Group 4)
- Memorial Dr from Cleveland Rd to Craghead (Group 1: C)
- Memorial Dr and W Main St (Group 5)
- S. Main St and Central Blvd (Group 5)
- Central Blvd and Piedmont Dr (Group 5)
- Trade St (Group 5)
- South Ridge Street (Group 3 extra)

Several key themes are present in the reasons the groups noted for choosing the priority corridors, including:

- Pedestrian safety concerns
- Unsafe intersections
- Increasing multimodal and private vehicle traffic in the downtown area
- Speeding
- High-injury crashes

Action Brainstorming and Prioritizing

Following the mapping activity, participants were asked to brainstorm actions to achieve each of the four goals individually. Participants read their action ideas out loud, and facilitators placed them under the respective goal. Then, participants were given five dot stickers to vote on their top five actions out of all the actions. This activity identified and prioritized potential actions for the following action detailing activity.

Action Selection and Refinement

The final activity during the Safety Summit was the action selection and refinement activity. After brainstorming and prioritizing actions, participants broke out into four groups - one group for each goal. Participants in each group selected and refined the top actions for that goal based on the results from the action prioritization activity.

After selecting a specific action, participants rewrote the action, if needed, to be Specific, Measurable, Achievable, Relevant, and Time-bound (SMART). Participants then wrote why the action is important, more information on what the action is, and next steps to achieve the action.

Key themes that emerged during this activity included developing a way to prioritize specific projects through data, funding availability, and departmental and organizational partnerships to achieve each of these actions. Additionally, participants recommended committee development and ensuring community buy-in to improve safety throughout the Danville area.

Safety Summit Summary

Danville MPO
Safety Summit Summary

September 20, 2024 | 9:00 AM to 12:00 PM | Pepsi Building, Danville, VA

Participants

Jason Bookheimer, Danville Parks and Recreation

Mattie Carter, Westmoreland Neighborhood Organization (WNO)

Tameka Coles, Regional Engagement to Advance Community Health (REACH) Partnership

Robert Coles, Danville Resident

Paul Deel, Danville Police Department, Captain of Patrol

Brian Dunavan, Danville Traffic Engineering

Carson Eckhardt, VDOT Lynchburg District

Lashawn Farmer, River District Association

Ryan Gatewood, LE&D Professionals, PC

Lori Gardener, DRRC

Kelly Hitchcock, Lynchburg TPO

Sam Howarth, Danville Parks and Recreation

Chris Key, Pittsylvania County Public Safety

Eben Leigh, United Way DPC

Kitt Mayo, Danville Chapter, the Health Collaborative

Kearston Moore, Disability Rights and Resource Center (DRRC)

Shannon Moretz, The Health Collaborative

Roshay Richardson, Plan Danville, Health Collaborative, Virginia Rural Health Association (VRHA)

Carol Tuning, DRRC

David Whittley, Danville Police Department, Assistant Chief

Shanika Williams, Danville Planning

Chris Winstead, VDOT Lynchburg District

Sonya Wolen, Dan River Basin Association

Brenda David, Project Imagine, Communities in Schools

SS4A Facilitation Team

Joe Bonanno, West Piedmont Planning District Commission (WPPDC), Danville Metropolitan Planning Organization (MPO)

Jessica Dimmick, EPR

Nancy Etro, EPR

Hannah MacKnight, EPR

Amanda Poncy, EPR

Bill Wuensch, EPR

Lynette Wuensch, EPR

SAFE STREETS AND ROADS FOR ALL (SS4A) SAFETY ACTION PLAN OVERVIEW

The Danville MPO is developing a Safety Action Plan to reduce the number of traffic fatalities and serious injuries in the urbanized area in and around Danville, Virginia. Every year, 11 people are killed and 82 people are seriously injured in traffic crashes, on average. The Safety Action Plan will identify recommendations in the form of projects, programs, and strategies, and will position the Danville MPO to apply for implementation funding to pursue the recommendations. The Danville MPO is developing the Safety Action Plan with Federal funding through the Safe Streets and Roads for All (SS4A) grant program.

The Safety Action Plan will work towards four goals, shown on the next page. These goals were developed through analysis of crash data, community engagement, and collaboration with an SS4A Working Group representing a variety of perspectives.

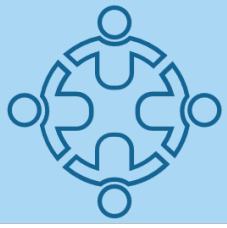
Danville MPO SS4A Safety Action Plan Goals

1

Seek opportunities to **improve our streets and roads** to be safer for all users and for safer speeds.

2

Create a safety culture that recognizes traffic safety as a public health issue and acknowledges the dangers of speeding and distracted and impaired driving.



3

Seek opportunities to **provide connected networks** with safer facilities **for walking, rolling, and bicycling** throughout the urbanized area, including to public transit.

4

Continue to improve and maximize the effectiveness of **emergency response and post-crash care**.

SAFETY SUMMIT PURPOSE

On September 20, 2024, the Danville MPO held a Safety Summit to gather input from stakeholders and residents to inform the recommendations in the Safety Action Plan. The participants reviewed the findings from an analysis of crash data and results from the public input. Summit attendees then participated in several facilitated activities to gather input for the Safety Action Plan. This summary documents the input generated during the summit activities.

Mapping Activity to Identify Roads with Greatest Safety Needs

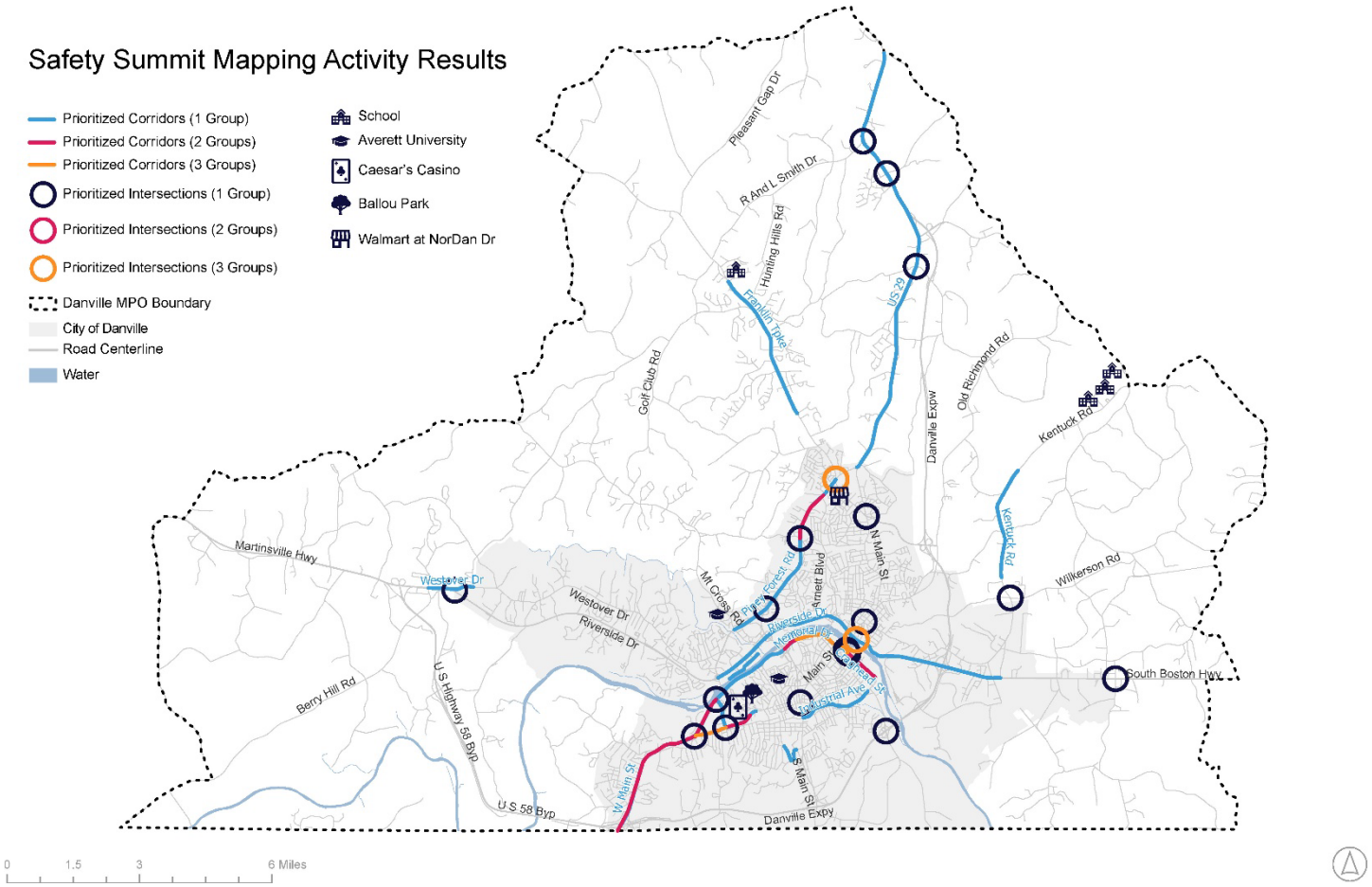
First, participants were asked to take part in a mapping activity in five separate groups to identify and prioritize corridors that have the greatest safety needs. Each group was asked to review information presented in four separate maps:

1. The High Injury Network
2. Public engagement results
3. Existing plans and studies
4. Disadvantaged census tracts from US DOT's Equitable Transportation Community Explorer.

After reviewing these four maps, each group identified five priority corridors on a blank map and explained why each corridor should be prioritized on a flipchart.

Mapping Activity Results

The map below shows the locations the groups identified in a combined summary map. The following bullets identify each location and provide reasons why the groups selected each location.



Priority corridors and locations identified:

- Piney Forest Rd and Franklin Turnpike (Group 2)
  - Congestion
  - Near misses
  - Safety
- Franklin Turnpike and Piney Forest Rd (Group 5)
- Piney Forest Rd from Franklin Turnpike to Mt Cross Rd (Group 3)
  - High crashes
  - Already been studied
  - Community concerns
  - Part of disadvantaged census tract
- Riverside Drive from Piedmont Dr to Kentuck Rd (Group 3)
  - High volume of traffic
  - High density of high-injury intersections
  - In a disadvantaged area
  - Lots of pedestrians, no sidewalks or crosswalks
- Beavers Mill Rd and Piney Forest (Group 4)
  - Yielding at the stop light - Drivers making the turn don't yield to oncoming traffic
- Franklin Turnpike (Group 2)
  - Lighting
  - Pedestrian improvements

    - Speeding
- Westover Dr & Riverside Dr (Group 1: D)
    - Crashes do not happen here often but when they do, they are bad
- Route 58 from Berry Hill Rd to Moorefield Bridge Rd (Group 4)
    - Lighting, speeding, and pedestrian concern
    - On HIN
    - No studies
    - Equity Area
- Route 29 from Spring Garden Rd to R & L Smith Dr (Group 1: B)
    - Not enough room for turning in the median
    - Unsafe intersections
    - Head on crash from R&L onto 29 going the wrong direction
- Route 29 and Lawless Creek Rd (Group 1: E)
    - Locally referred to as the "Death Zone"
- US 29 from Northern MPO Boundary to Lawless Creek Rd (Group 3)
    - Multiple high injury crash intersection
    - Transportation insecurity - no public transit
    - Don't know status of funded projects, still problematic areas.
- Route 29 from N Main St to Lawless Creek Rd (Group 4)
    - Part of the HIN but currently no studies
    - Future development – new school
- N Main St Bridge (both ends) (Group 2)
    - Wrong way drivers
    - Poor signage
    - Left turn restrictions at Memorial Drive
- N. Main St and Riverside Dr (Group 5)
- N Main St and East Franklin Turnpike (Group 2)
    - Confusing /hard to navigate
    - Near misses
    - Pedestrians
- Keen St and N Main St (Group 1: A)
    - Pedestrian safety
    - Speeding off highway
    - Triangle intersection
- Kentuck Rd (Group 2)
    - 2 lane, high speed
    - Limited enforcement
    - Speeding
    - 3 schools
- West Main St from NC Stateline to Park Ave (Group 3, Group 1 extra)
    - Casino will exacerbate existing safety issues
    - Part of W Main is already high injury
    - High speeds coming from NC
    - Community concerns about speeding, near miss, and poor visibility
- Craghead Rd/Memorial Dr from Industrial Ave to Central Blvd (Group 3)
    - Pedestrian safety issues may not be reflected in current data. Future development, community activity center will generate more pedestrian activity.
    - Food pantry, park, playground, apartment complex are already here. Unsafe to cross the street
- Memorial Dr – from W Main St to Main St (Group 4)
    - New development and parking garage

    - Difficulty crossing at White Mill and park
    - Drivers cross over centerline
- Memorial Dr from Cleveland Rd to Craghead (Group 1: C)
    - Pedestrian traffic
    - Future development, new school
- Memorial Dr and W Main St (Group 5)
- S. Main St and Central Blvd (Group 5)
- Central Blvd and Piedmont Dr (Group 5)
- Trade St (Group 5)
    - Need pedestrian connection for Riverwalk Trail but there is no sidewalk
- South Ridge Street (Group 3 extra)
    - Homeless shelter, public library
    - People in wheelchairs have trouble getting on the sidewalk.
- Downtown area (Group 4, see smaller HIN network on poster)
    - Drivers don't stop at stop signs
    - Narrow roads
    - Visibility concerns
- Group 4 wrote this in blue, but not sure where this is on the map:
    - Lack of studies
    - Many concerns
    - In equity areas
    - More development and future activity

Key Themes

Several key themes are present in the reasons the groups noted for choosing the priority corridors, including:

- Pedestrian safety concerns
- Unsafe intersections
- Increasing multimodal and private vehicle traffic in the downtown area
- Speeding
- High-injury crashes

Action Brainstorming and Prioritizing

Following the mapping activity, participants were asked to individually brainstorm actions to achieve each of the four goals. Participants read their action ideas out loud, and facilitators placed the action ideas under the respective goal. Then, participants were given five dot stickers to vote on their top five actions out of all the actions. This activity identified and prioritized potential actions for the following action detailing activity.

The EPR team provided additional actions for each goal to facilitate the action brainstorm and the following detailing activity. These actions are highlighted in light blue in the following section.

Action Brainstorming and Prioritizing Results

Goal 1: Seek opportunities to improve our streets and roads to be safer for all users and for safer speeds.	
Votes	**Action Brainstorming**
10	Install more elevated pedestrian walkways
5	Get the project recommendations already identified in the funded studies. Develop a funding plan/schedule that slots these projects into available funding applications.
5	Identify systemic improvements to reduce common crash types that can be implemented within existing routine maintenance programs and/or align with VHSIP local and VDOT systemic initiatives. Identify them, then implement them.
3	Implement high-visibility crosswalks at all pedestrian crossings
3	Create an infrastructure committee that focuses on streets, roads, highways, signage, policies, and advocacy
3	Install more illuminated stop signs
2	Identify opportunities for converting high crash intersections into roundabouts
1	Identify new federal or other funding programs that projects already identified in studies may be candidates for.
1	Apply for SS4A implementation funding for existing project recommendations. Modify the project scope to align with the SS4A implementation funding requirements, if needed.
1	Retime the traffic signals with slower vehicle progression speeds.
1	Install median barriers to avoid head-on collisions
1	Improve pedestrian/vehicle interaction at S. Main/Watson/Central Blvd
0	Reduce speed limits to 25 mph in Downtown Danville
0	Implement photo enforcement in school zones and work zones as state code allows.
0	Adopt a Complete Streets policy with associated street design guidelines.
0	Identify reasons why projects already identified in studies were not successful in previous applications.
0	Apply for funding from the MPO or other sources to conduct a study of Route 58 east of Main Street to identify project improvements at the high crash areas.
0	Develop a design concept for North Main Street to slow traffic speeds and provide better accommodations for pedestrians and bicyclists, which could include a road diet to add bike lanes and installing marked crosswalks with curb bump-outs.
0	Change the lanes on the highest speed roads to narrow the lanes and make it harder to go fast.
0	Pursue funding for lighting improvements
0	Create better drainage systems to prevent high flood areas that affect traffic flow
0	New Roadway contractor for potholes (reoccurring problem in the same areas)
0	Implement focused traffic safety enforcement based on data to ensure effective police resource management and program effectiveness. Make program quarter based, in conjunction with current motor unit, and change current police culture

Goal 2: Create a safety culture that recognizes traffic safety as a public health issue and acknowledges the dangers of speeding and distracted and impaired driving.	
Votes	**Action Brainstorming**
16	Focus group with disability community
9	Host driving safety classes in high school classrooms that communicate the dangers of distracted and impaired driving and the importance of wearing a seat belt.
4	Conduct an educational campaign on social media, TV, and radio on the dangers of driving distracted.
4	Social Media Campaign focus
3	Develop more intensive driver training programs for teen and new drivers and senior license renewals
3	Include physical driver training on now to drive on roundabouts and other innovative intersections
2	Implement safe routes to school program for education
1	Regularly present regional traffic safety statistics to elected and appointed officials in a variety of disciplines (health, police, government, schools, transit, etc).
1	Require an annual driving test for ages 65+
1	Collaborate with local health organizations (Health Collab, PALHS, etc.) to advocate and educate community members
0	Develop a speed management program
0	Host speed symposiums as community events to get people talking about the issues and what they can do. Provide food and other incentives to entice people to attend.
0	Advocate to the VA General Assembly to change the Code of Virginia to allow use of speed cameras.
0	Seek dedicated funding for automated enforcement to address red-light violations. Reinvest revenue generated from automated enforcement into Safety Action Plan projects.
0	Develop a tag line like “Vision Zero” to describe the roadway safety action plan and goal to reduce fatalities and serious injuries. Develop a course for City organizations on this effort.
0	Utilize funds from photo enforcement initiatives to implement regional traffic safety education
0	Establish a Safety Committee with representation from 4E’s to oversee plan implementation and annually monitor crash data
0	Teen and new driver input
0	Quarterly focus group meetings – by area of focus
0	Visit community group meetings to continue education with aging road users about safety
0	Educate younger school-aged kids on safe walking and biking practices
0	Implement comprehensive driver education programs for teen drivers

Goal 3: Seek opportunities to provide connected networks with safer facilities for walking, rolling, and bicycling throughout the urbanized area, including to public transit.	
Votes	**Action Brainstorming**
7	Implement crosswalks for hearing and visual impaired that have voice and flashing light signs
6	Install pedestrian-specific signals in traffic lights at high pedestrian areas
2	Provide more crosswalks and put pedestrian hybrid beacons and other crosswalk protections in to provide more dedicated places for pedestrians to cross the street.
2	Adopt/implement a Complete Streets policy/design guidelines.
2	Utilize Riverwalk Master Plan and update to connect neighborhoods and existing trails and sidewalks
1	Create more pedestrian and bike lanes in high traffic area
0	Install “buffers” between sidewalks and traffic as needed (example – Piney Forest Rd)
0	Improve crosswalks at critical locations and identify new crosswalk locations based on pedestrian activities
0	Utilize funds from photo enforcement to support infrastructure improvements that improve safety for people walking, biking, rolling
0	Update the 2018 West Piedmont Regional Bicycle Plan to identify an “all ages and abilities” bicycle network on a map with specific facility recommendations.
0	Install pedestrian counters on key pedestrian corridors to determine where people are moving

Goal 4: Continue to improve and maximize the effectiveness of emergency response and post-crash care.	
Votes	**Action Brainstorming**
4	More medical training opportunities in schools, community, higher education (@ DCC and Averett), for EMT, paramedics, nurses, and doctors. More fire training opportunities in schools. We need more personnel in fire and EMS departments that are paid and volunteer. Need more personnel interested in police work and education in schools.
2	Conduct an educational campaign on how, when, and why to pull over in emergency situations, and what your responsibilities are.
1	Meet with emergency service providers to identify challenges and ideas.
1	Upgrade the traffic signal equipment to install emergency vehicle pre-emption and other telecommunication devices.
0	Evaluate current response times for emergency personnel that respond to traffic crashes
0	Consider implementing traffic signal priority improvements for emergency response vehicles.
0	Increase access to air medical transportation (advocacy and political pressure)
0	Assistance with purchasing modern equipment and tools and vehicles (police cars, fire trucks, ambulances)
0	Create an emergency response app to help the citizens of Danville communicate with one another on city updates and emergencies
0	Improve critical care access and services at hospitals (advocacy and political pressure)

Key Themes

For Goal 1, participants focused primarily on pedestrian safety and installing infrastructure, like lighting and medians, to improve roadway safety, as well as intersection safety improvements.

For Goal 2, key themes included creating roadway safety educational programs and training for target road users.

Participants suggested actions involving multimodal infrastructure improvements, updating and implementing plans, and identifying funding for Goal 3.

Lastly, key themes that emerged for Goal 4 included upgrading emergency response equipment and improving education programs and training for emergency response.

Action Selection and Refinement

The final activity during the Safety Summit was the action selection and refinement activity. After brainstorming and prioritizing actions, participants broke out into four groups - one group for each goal. Participants in each group selected and refined the top actions for that goal based on the results from the action prioritization activity.

After selecting a specific action, participants rewrote the action, if needed, to be Specific, Measurable, Achievable, Relevant, and Time-bound (SMART). Participants then wrote why the action is important, more information on what the action is, and next steps to achieve the action. The following tables provide the results of this activity for each goal.

Action Selection and Refinement Results

Goal 1: Seek opportunities to improve our streets and roads to be safer for all users and for safer speeds.		
Specific Action	Why is this important? What is it?	Next steps
Install more drastic pedestrian crosswalk protections, which could include raised crosswalks, speed tables at intersections, and elevated pedestrians walkways.	Drivers do not obey existing crosswalks, even with flashing beacons. It is not safe to cross the street.	Create a prioritized list based on pedestrian and vehicle volumes where these treatments should be installed. Install temporary raised crosswalks as demonstration projects.
Get the project recommendations already identified in studies funded. Develop a funding plan/schedule that slots these projects into available funding applications.	Studies have already been conducted on Riverside Drive and Piney Forest Road. These improvements will improve pedestrian safety and are much needed.	Include the projects in City budgeting and share costs amongst different sources. Use casino revenue to fund the projects. Collaborate with other organizations who may have similar goals and additional funding. Explore grant opportunities for the recommendations

		Phase these projects so they don't have to be funded all at once; break into components for easier implementation. Tailor project descriptions to better match individual grant requirements.
Install more illuminated stop signs, especially downtown	Especially in downtown, it's often hard to perceive if you need to stop (visual clutter). Needed to improve driver and pedestrian safety.	Identify intersections most needed: • Sight distance issues • Visual clutter • Crash data • Violations • Community feedback

Goal 2: Create a safety culture that recognizes traffic safety as a public health issue and acknowledges the dangers of speeding and distracted and impaired driving.		
Specific Action	Why is this important? What is it?	Next steps
Conduct a community-wide campaign on the dangers of distracted, drunk, impaired, and reckless driving	Campaign is community wide Engages a range of users Printed and social media and in-person engagements To create positive systemic change that permeates throughout the community Data tips Be present at community gatherings and talk to people (drive time) from Richmond Drunk driving and distracted driving simulations. – Drivers ed teachers need to be on-board	Find funding for campaign. Driver time has funding, brochures, reps for demonstration. Need community buy in (see partners) Social media could begin with in 30 days – data, tips, benefits. Contact Mark C Riverside TV Some young drivers are driving without license (permit only) Partners • Sheriff's dept. • Police dept. • DMV and Drive Time • Libraries • Insurance agencies • US DOT • Schools • DPSS – Danville Pittsylvania Com. Service • Local colleges and universities • Mark @ Riverside TV Station , weekly interviews • Local health organizations
Conduct a focus group with disability community. **DRCC to lead**	Many locations are not accessible and we need to understand what the issues and barriers – particularly as they relocate to the # IN	

	(maybe goes into Goal 1 or 3)	

Goal 3: Seek opportunities to provide connected networks with safer facilities for walking, rolling, and bicycling throughout the urbanized area, including to public transit.		
Specific Action	Why is this important? What is it?	Next steps
Prioritize existing infrastructure through an inventory and build connections between existing facilities • **Priorities – maps used in mapping activity**	Organized approach to implementation Know where to assign change with limited resources	Make sure location inventory is up to date Set priorities Communicate schedule with the public Engage all departments • Public works • Community development • Council and city manager • The public Funding: depends on size of project

Goal 4: Continue to improve and maximize the effectiveness of emergency response and post-crash care.		
Specific Action	Why is this important? What is it?	Next steps
Implement additional training and employment opportunities for emergency services, included in the local schools	Shortage in personnel Increased response time Shortage in hospital care Result increased deaths	Economic relief Need instructors Outreach to HS, college, community colleges Incentives Funding opportunities
Develop a public safety app to allow citizens to communicate about emergencies, traffic incidents, etc.	Provide weather alerts Provide crash site Community information (events)(construction) Map feature/ interactive	Committee Funding Town Council/ Board Approval
Provide additional equipment to assist departments in responding to incidents	Shortage in equipment Funding shortage Modernizing equipment Outdated equipment Tools don't cut through new metals in cars	Funding Grants Someone to write grants and follow through (admin person) Maybe a regional person to cover several areas

Key Themes

Key themes that emerged during this activity included developing a way to prioritize specific projects through data, funding availability, and departmental and organizational partnerships to achieve each of these actions. Additionally, participants recommended committee development and ensuring community buy-in to improve safety throughout the Danville area.

NEXT STEPS

The SS4A team will incorporate the input provided during the Safety Summit into the Safety Action Plan.

The Project Working Group will continue to refine the selected actions for each goal, which will become recommendations in the Safety Action Plan.

Participants interested in joining the Project Working Group can email Joe Bonanno at jbonanno@wppdc.org to request to join. The next meeting of the Project Working Group will be held on October 9, 2024 from 1:00 PM to 3:00 PM over Zoom.

Safety Project Recommendations from Prior Studies

Riverside Drive

Corridor Improvement Study - Project Summary Sheets

Westover Drive to Mount Cross Road

Recommended Improvements | Project 1 of 7

Conceptual Illustration

Location

Recommended Improvements

New Sidewalks

1. Construct new sidewalks across both sides of Riverside Drive from Westover Drive to Mount Cross Road. Construct sidewalks across entrances at grade to provide a designated path for pedestrians.
2. Construct new pedestrian bridges on both sides of Riverside Drive across the Sandy River.

Sidewalks and the new pedestrian bridge on the south side of the Riverside Drive between Old Riverside Drive and Mount Cross Road could be constructed as a separate second phase if funding is limited.

Westover Drive

3. Demolish the existing westbound right turn lane, and replace it with a new right turn lane closer to the intersection. Relocate the signal pole and mast arm for the southbound approach. Widen the southbound approach lanes to 12-feet wide.
4. Install crosswalks and pedestrian countdown signals across all four intersection legs with median refuges across Riverside Drive.
5. Construct a bus bay and shelter at the Hardee's bus stop. Close the Hardee's entrance closest to the intersection. Enhance the remaining easterly entrance with a median separator.

Old Riverside Drive

6. Convert intersection to a signalized Restricted Crossing U-Turn intersection. Install crosswalks and pedestrian countdown signals. Replace the existing traffic signal to accommodate two signal controllers. Pole replacement may be necessary.

Commerce Street

7. Convert intersection to an unsignalized Restricted Crossing U-Turn intersection.

Mount Cross Road

8. Replace the existing traffic signal and install crosswalks and pedestrian countdown signals across all four intersection legs.
9. Convert the second westbound left turn lane to a through lane and provide a full-length westbound right turn lane that extends to the Central Boulevard off-ramp. Modify the median nose on the western leg to transition the westbound lanes across the intersection.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

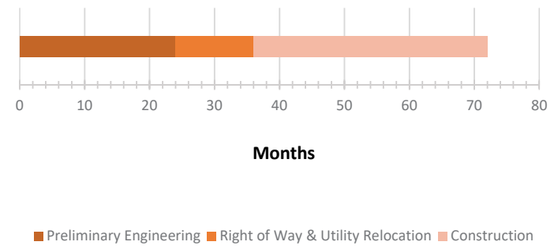
Intersection	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Westover Dr	290	Improve at-grade crossing	0.85	44
Old Riverside Dr	145	Signal control to signalized RCUT	0.80	29
Commerce St	50	Two-way stop control to RCUT	0.65	18
Mount Cross Rd	340	New Turn Lane (none present)	0.85	51

Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

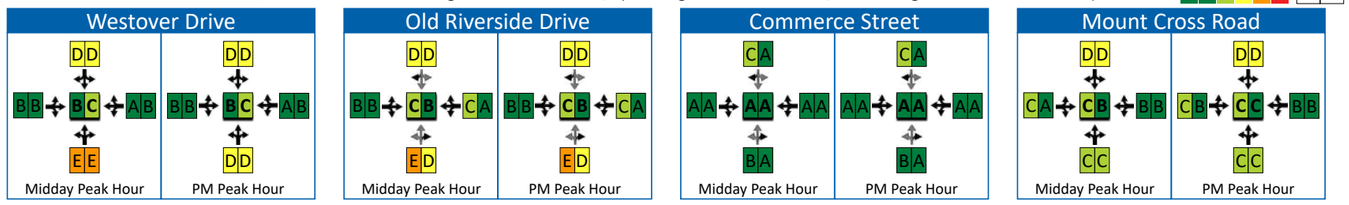
Phase	Cost Estimate
Preliminary Engineering	$2,019,000
Right of Way & Utility Relocation	$411,000
Construction	$13,118,000
Total Cost Estimate	**$15,548,000**



Traffic Operations Results

In addition to the recommended improvements described to the left, the yellow and all-red phase times were recalculated for each signalized intersection, cycle lengths were extended, and the signal coordination was optimized.

LOS by Approach and Overall Intersection: A B C D E F | No-Build | Build



Sidestreet delays at Old Riverside Drive could further decrease with an additional signal controller, which is recommended. The results here represent only one controller.

VDOT Virginia Department of Transportation | Danville Virginia | West Piedmont Planning District Commission | STARS Strategically Targeted and Affordable Roadway Solutions

Piney Forest Road to Audubon Drive

Recommended Improvements | Project 2 of 7

Conceptual Illustration

Location

Recommended Improvements

New Sidewalks

1. Construct new sidewalks across both sides of Riverside Drive from Piney Forest Road to Audubon Drive.

   Construct sidewalks across entrances at grade to provide a designated path for pedestrians.

Piney Forest Road

2. Install crosswalks and pedestrian countdown signals across all four intersection legs with median refuges across Riverside Drive.

Courtland Street

3. Close the existing median opening and convert to right-in/right-out only access.

Neal Court

4. Convert intersection to an unsignalized Restricted Crossing U-Turn intersection. Install a crosswalk across Riverside Drive with a pedestrian hybrid beacon.

Camelot Court Exit

5. Close the existing median opening and convert to right-in/right-out only access. Realign Camelot Ct exit and install new stop sign to improve driver line of sight.

Camelot Court Entrance

6. Convert intersection to an unsignalized Restricted Crossing U-Turn intersection. Install a crosswalk across Riverside Drive with a pedestrian hybrid beacon.

Courtyard Entrance

7. Close the existing median opening and convert to right-in/right-out only access.

Audubon Drive

8. Install crosswalks and pedestrian countdown signals across all four intersection legs.
9. Construct a bus bay and shelter at the Biscuitville bus stop.
10. To address safety issues, construct a new westbound right turn lane. This configuration would eliminate parking in front of the existing businesses and eliminate the conflicts from vehicles backing out of parking spaces.
11. A sidewalk connection to the Riverwalk trail is recommended.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

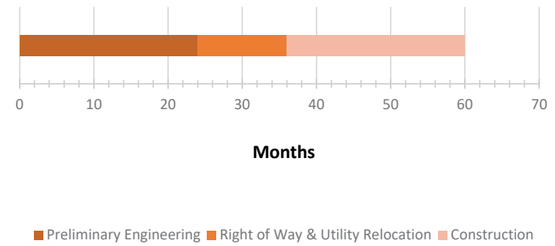
Intersection	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Piney Forest Rd	270	Improve At-Grade Crossing	0.85	41
Courtland Street	25	Close median opening (allow right-in/right-out only)	0.40	15
Neal Court	95	Two-way Stop Control to RCUT	0.65	33
Camelot Ct exit	20	Close median opening (allow right-in/right-out only)	0.40	12
Camelot Ct entrance	10	Two-way Stop Control to RCUT	0.65	4
Audubon Drive	310	Reduce Driveway Density (Eliminate/Close)	0.70	93

Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

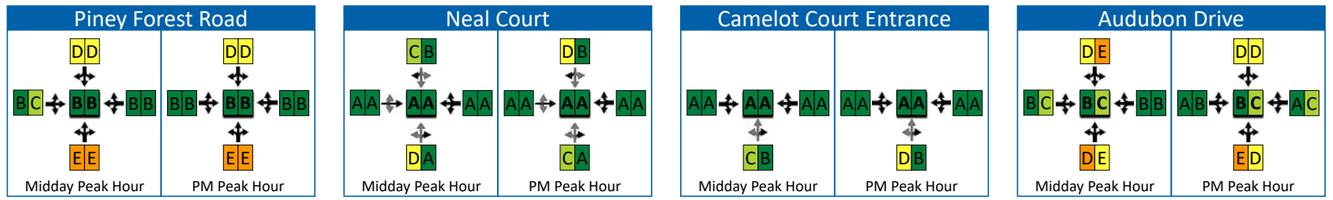
Phase	Cost Estimate
Preliminary Engineering	$1,136,000
Right of Way & Utility Relocation	$1,006,000
Construction	$7,377,000
Total Cost Estimate	**$9,519,000**



Traffic Operations Results

In addition to the recommended improvements described to the left, the yellow and all-red phase times were recalculated for each signalized intersection, cycle lengths were extended, and the signal coordination was optimized.

LOS by Approach and Overall Intersection: A B C D E F | No-Build | Build



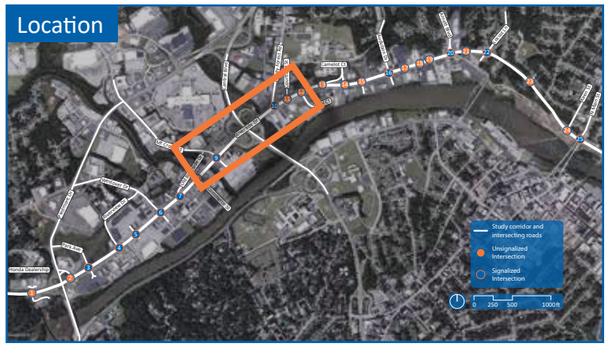
Delays on Piney Forest Road and Audubon Drive could slightly increase from longer cycle lengths, but the overall intersection operations would remain at LOS C or better.

Central Boulevard Interchange Area

Recommended Improvements | Project 3 of 7

Conceptual Illustration

Location



Recommended Improvements

New Sidewalks

1. Construct sidewalks along the north side of Riverside Drive through the Central Blvd interchange area from Mount Cross Road to Piney Forest Road.

The bridge across the Sandy Creek has a shoulder on the north side that can accommodate pedestrians without bridge widening. Providing sidewalks on the south side of Riverside Drive would require bridge work and significantly increase construction costs.

New Signal & Ramp Realignment

2. Realign the southbound Central Blvd ramp to intersect with westbound Riverside Drive at a new signal. Eastbound traffic will remain unsignalized. Construct a second southbound approach lane with 300-feet of storage.

Crosswalks & Flashing Beacons

3. Install crosswalks and rectangular rapid flashing beacons across the Central Boulevard on- and off-ramps.

Sandy Creek Bridge Railings

4. Install new railings between the new sidewalk and vehicle travel lanes on the bridge across Sandy Creek. Replace the existing exterior railings to meet height requirements.

Tower Drive Connector Road

5. Close the entrance to the connector road to Tower Drive to address the access spacing deficiency.

Advance Warning Signs

6. Install advance pedestrian warning signs on the ramp connecting northbound Central Boulevard to westbound Riverside Drive.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

Location	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Southbound Central Blvd off-ramp intersection	5	New Signal - Convert stop/ yield control to signal	0.65	2
Westbound segment between Piney Forest Rd and southbound Central Blvd off-ramp	25	Add sidewalk	0.90	3

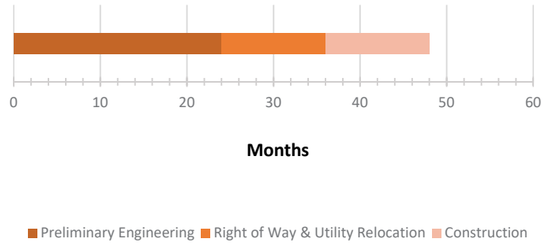
Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

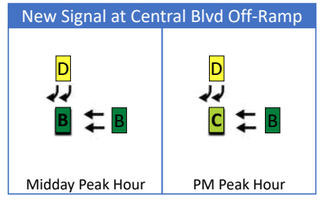
Phase	Cost Estimate
Preliminary Engineering	$534,000
Right of Way & Utility Relocation	$33,000
Construction	$2,775,000
Total Cost Estimate	**$3,342,000**

Costs are based on Preliminary Engineering in 2024, Right of Way and Utility Relocation in 2028, and Construction in 2030.



Traffic Operations Results

LOS by Approach and Overall Intersection: A B C D E F



The recommended configuration for the new signal consists of two westbound approach lanes on Riverside Drive and two southbound approach lanes from the Central Boulevard off-ramp. The single off-ramp lane will widen to two southbound approach lanes at the new signal, with 300 feet of storage on the second lane. This configuration prevents the westbound queues from exceeding 200 feet and avoids interfering with the upstream weave area to the east.

Park Avenue to Westover Drive

Recommended Improvements | Project 4 of 7

Conceptual Illustration

Location

Recommended Improvements

New Sidewalks

1. Construct new sidewalks across both sides of Riverside Drive from Park Avenue to Westover Drive.

   Construct sidewalks across entrances at grade to provide a designated path for pedestrians.

   Crosswalks and other intersection improvements at the Westover Drive intersection are included in Project #1.

Park Avenue

2. Install crosswalks and pedestrian countdown signals across all four intersection legs with median refuges across Riverside Drive.

   The crosswalks and curb ramps on the southeast quadrant should be designed to easily connect to the Riverwalk Trail through the old ramp that is no longer in use.

Riverview Drive/Wild Wings Lane

3. Convert the intersection at Riverview Drive/ Wild Wings Lane to a signalized Restricted Crossing U-Turn intersection. Traffic approaching the intersection from Riverview Drive and Wild Wings Lane must turn right onto Riverside Drive and can U-turn at the next intersection.

   Install crosswalks and pedestrian countdown signals.

Riverside Center Entrance

4. Convert the intersection at the Riverside Center entrance and Kmart entrance to a signalized Restricted Crossing U-Turn intersection. Traffic exiting the shopping centers must turn right onto Riverside Drive and can U-turn at the next intersection.

   Install crosswalks and pedestrian countdown signals.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

Intersection	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Park Ave	120	Improve at-grade crossing	0.85	18
Riverview Drive	55	Signal control to signalized RCUT	0.80	11
Riverside Center	190	Signal control to signalized RCUT	0.80	38

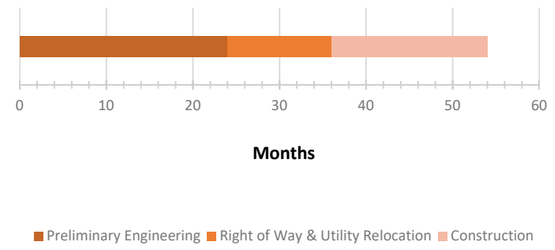
Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

Phase	Cost Estimate
Preliminary Engineering	$954,000
Right of Way & Utility Relocation	$1,397,000
Construction	$6,195,000
Total Cost Estimate	**$8,546,000**

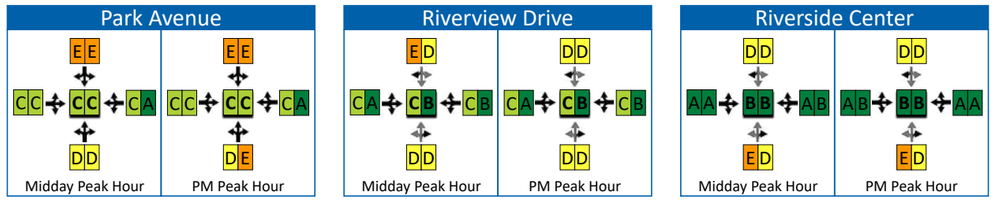
Costs are based on Preliminary Engineering in 2024, Right of Way and Utility Relocation in 2028, and Construction in 2030.



Traffic Operations Results

In addition to the recommended improvements described to the left, the yellow and all-red phase times were recalculated for each signalized intersection, cycle lengths were extended, and the signal coordination was optimized.

LOS by Approach and Overall Intersection: A B C D E F | No-Build | Build

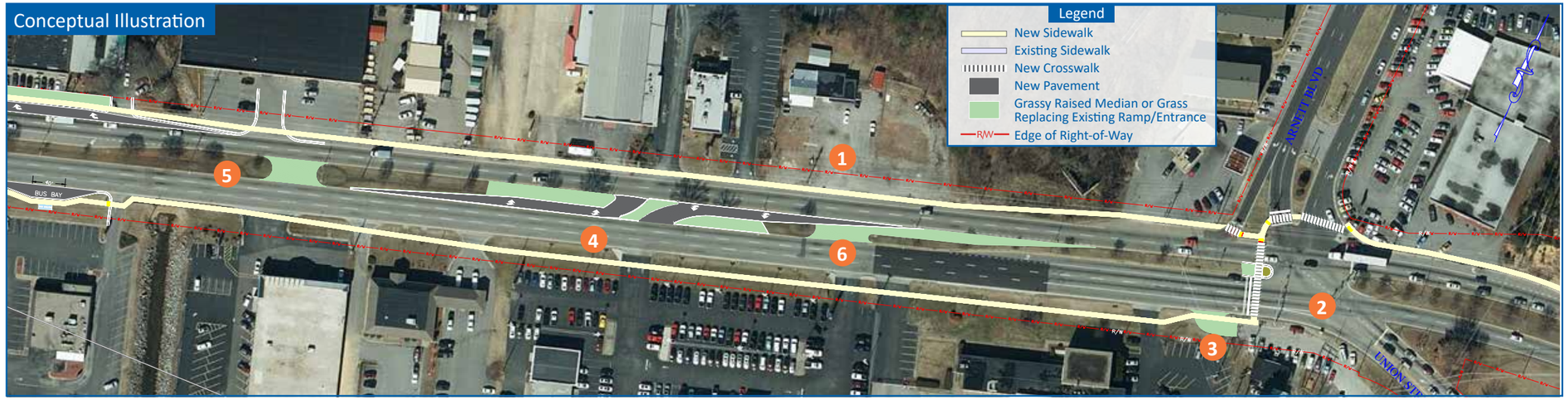


The traffic operations were modeled with one signal controller at each RCUT location (Riverview Drive and Riverside Center) without an overlap for the side-streets. It is recommended the signals at these intersections be modified with an additional controller to allow the eastbound and westbound directions to operate independently. This will improve operations more than indicated in the results displayed here.

Audubon Drive to Arnett Boulevard

Recommended Improvements | Project 5 of 7

Conceptual Illustration



Location

Recommended Improvements

New Sidewalks

1. Construct new sidewalks across both sides of Riverside Drive from Audubon Drive to Arnett Boulevard.

   Construct sidewalks across entrances at grade to provide a designated path for pedestrians.

   Intersection improvements at the Audubon Drive intersection, including crosswalks, bus bay, and new westbound right turn lane, are included in Project #2.

Arnett Boulevard

2. Install crosswalks and pedestrian countdown signals across the western and northern intersection legs at the intersection of Riverside Drive and Arnett Boulevard.
3. Close the entrance to the former Heartline Restaurant to address the access spacing deficiency.

   Remove the No U-Turn sign along the eastbound approach to allow passenger cars to make eastbound-to-westbound U-turns

Riverside Drive Median Openings

4. Convert the middle median opening at Los Mariachi's to an unsignalized Restricted Crossing U-Turn intersection.
5. Close the western median opening in front of NAPA Auto Parts to address the access spacing deficiency and eliminate conflict points.
6. Close the eastern median opening in front of Riverside Produce to address the access spacing deficiency and eliminate conflict points.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

Intersection	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Arnett Blvd	115	Improve at-grade crossing	0.85	17
Median Opening at NAPA Auto Parts	5	Close median opening (allow right-in/right-out only)	0.40	3
Median Opening at Los Mariachi's	25	Two-way stop control to RCUT	0.65	9
Median Opening at Riverside Produce	5	Close median opening (allow right-in/right-out only)	0.40	3

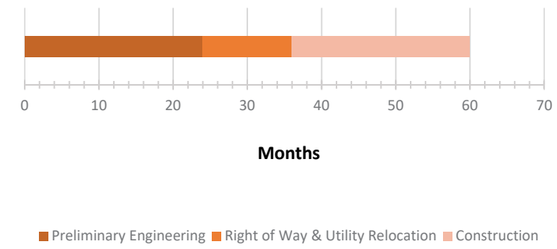
Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

Phase	Cost Estimate
Preliminary Engineering	$596,000
Right of Way & Utility Relocation	$229,000
Construction	$3,873,000
Total Cost Estimate	**$4,698,000**

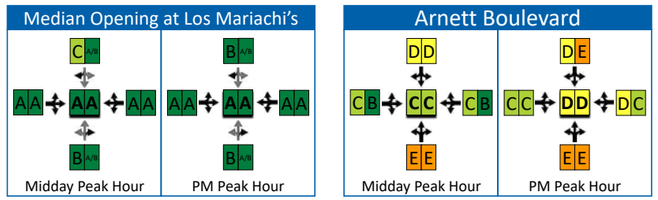
Costs are based on Preliminary Engineering in 2024, Right of Way and Utility Relocation in 2028, and Construction in 2030.



Traffic Operations Results

In addition to the recommended improvements described to the left, the yellow and all-red phase times were recalculated for each signalized intersection, cycle lengths were extended, and the signal coordination was optimized.

LOS by Approach and Overall Intersection: A B C D E F | No-Build | Build

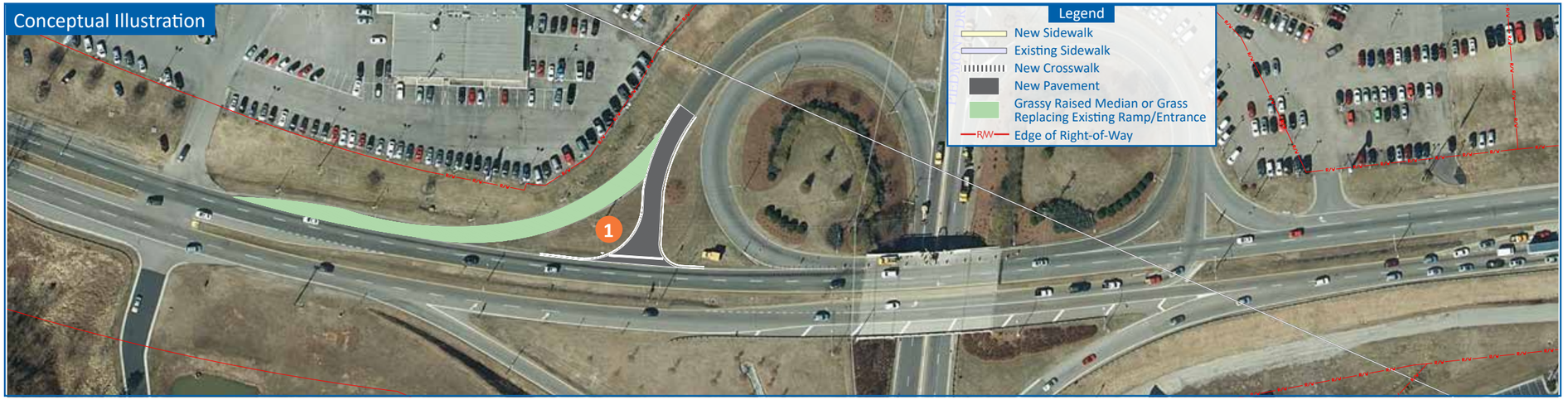


Delays on Arnett Boulevard could slightly increase from longer cycle lengths, but the overall intersection operations would not change significantly.

Piedmont Drive Ramp Realignment

Recommended Improvements | Project 6 of 7

Conceptual Illustration



Location

Recommended Improvements

Piedmont Drive Southbound Ramp

1. Realign the ramp from southbound Piedmont Drive to westbound Riverside Drive to intersect at 90 degrees. Install a STOP sign and stop bar for ramp traffic.

   This improvement will improve the spacing between the off-ramp and the median opening and business entrances to the west. It will also improve the line of sight for vehicles exiting the ramp.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

Location	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Southbound Piedmont Drive off-ramp intersection	0	New Signal - Convert stop/ yield control to signal	0.65	0

None of the crashes that occurred within the off-ramp merge area between 2013 and 2017 resulted in a fatality or injury. The recommended improvement is expected to reduce crashes, however this is not reflected in the SMART SCALE CMF methodology.

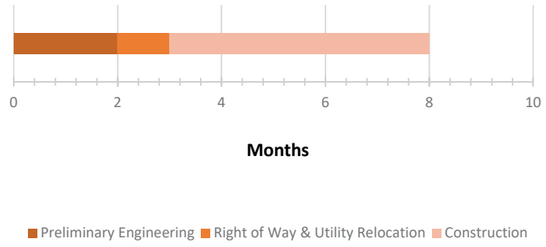
Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

Phase	Cost Estimate
Preliminary Engineering	$339,000
Right of Way & Utility Relocation	$0
Construction	$1,099,000
Total Cost Estimate	**$1,438,000**

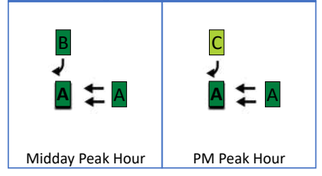
Costs are based on Preliminary Engineering in 2024, Right of Way and Utility Relocation in 2028, and Construction in 2030.



Traffic Operations Results

LOS by Approach and Overall Intersection: A B C D E F

New Stop Sign at Piedmont Dr Off-Ramp



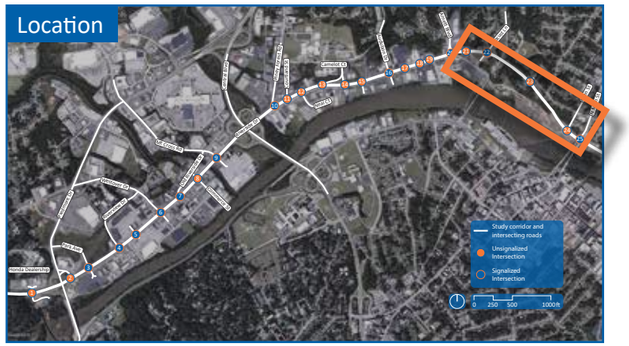
The analysis indicates vehicles coming from the off-ramp will find an acceptable gap in less than 20 seconds after coming to a stop, even in the peak hours.

Arnett Boulevard to Main Street

Recommended Improvements | Project 7 of 7

Conceptual Illustration

Location



Recommended Improvements

New Sidewalks

1 Construct new sidewalks on the north side of Riverside Drive east of Arnett Boulevard and tie them into the existing sidewalks just west of Keen Street.

Crosswalks and other intersection improvements at the Arnett Boulevard intersection are included in Project #5.

Locust Lane

2 Install crosswalks and pedestrian countdown signals on all four legs of the intersection of Riverside Drive at Locust Lane.

Move the stop bars on the eastbound and westbound approaches back to accommodate the new crosswalks. Move the stop bar on the southbound approach forward to improve sight distance.

Highland Court

3 Install a median barrier to prohibit left turns onto Highland Court and convert the intersection to right-in/right-out only. Install flexible delineators as a temporary solution.

A longer term solution would involve widening the road and constructing a concrete median separator.

Keen Street

4 Construct a new eastbound turn lane for left turns and U-turns to allow turning vehicles to slow down and wait for a gap in oncoming traffic without blocking through vehicles.

Remove the existing crosswalks across Riverside Drive at Keen Street. Install signage encouraging pedestrians to cross Riverside Drive at the Main Street intersection, which has crosswalks, pedestrian countdown signals, and lighting.

Riverside Drive Median Opening

5 Close the median opening between Arnett Boulevard and Locust Lane to address the access spacing deficiency and eliminate conflict points.

Safety Benefits

The recommended improvements have the following crash modification factors (CMFs), which were selected from the list of SMART SCALE Planning Level CMFs. In accordance with the SMART SCALE scoring methodology, the table below shows the number of fatality (F) and injury (I) crashes, weighted by the "equivalent property damage only" (EPDO) crash value scale, that are expected to be avoided once the recommendations are implemented.

Intersection	2013-2017 EPDO (FI)	CMF Description	CMF	EPDO (FI) Reduction
Median Opening between Arnett Blvd and Locust Ln	5	Close median opening (allow right-in/right-out only)	0.40	3
Locust Lane	50	Improve at-grade crossing	0.85	8
Highland Court	70	Provide median (right-in/right-out only	0.40	42
Keen Street	100	New turn lane (none present)	0.85	15

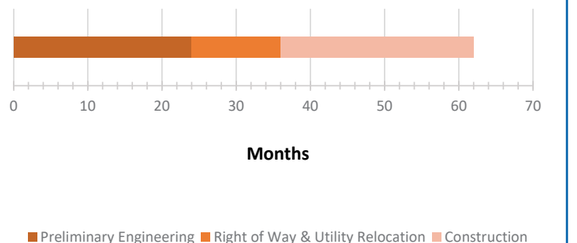
Improvements not listed above do not have applicable CMFs in the list of SMART SCALE Planning Level CMFs, but are expected to improve safety in other ways, as explained in the study report.

Project Schedule & Preliminary Cost

The project schedule and preliminary cost estimates shown below represent planning level estimates based on information available at the time of the study. The schedule and cost estimates should be reassessed prior to submitting funding applications.

Phase	Cost Estimate
Preliminary Engineering	$1,270,000
Right of Way & Utility Relocation	$1,697,000
Construction	$8,244,000
Total Cost Estimate	**$11,211,000**

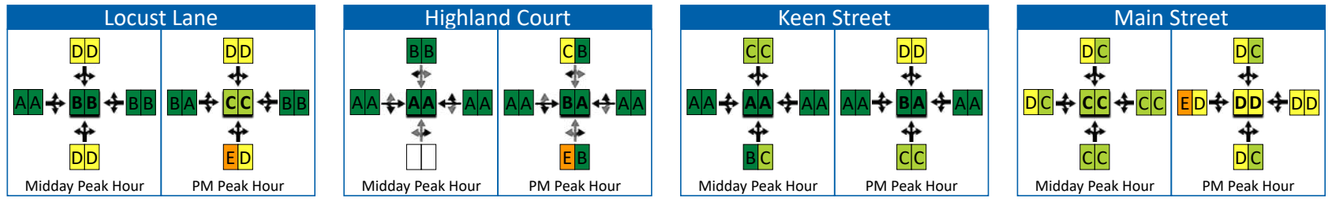
Costs are based on Preliminary Engineering in 2024, Right of Way and Utility Relocation in 2028, and Construction in 2030.



Traffic Operations Results

In addition to the recommended improvements described to the left, the yellow and all-red phase times were recalculated for each signalized intersection, cycle lengths were extended, and the signal coordination was optimized.

LOS by Approach and Overall Intersection: A B C D E F | No-Build | Build



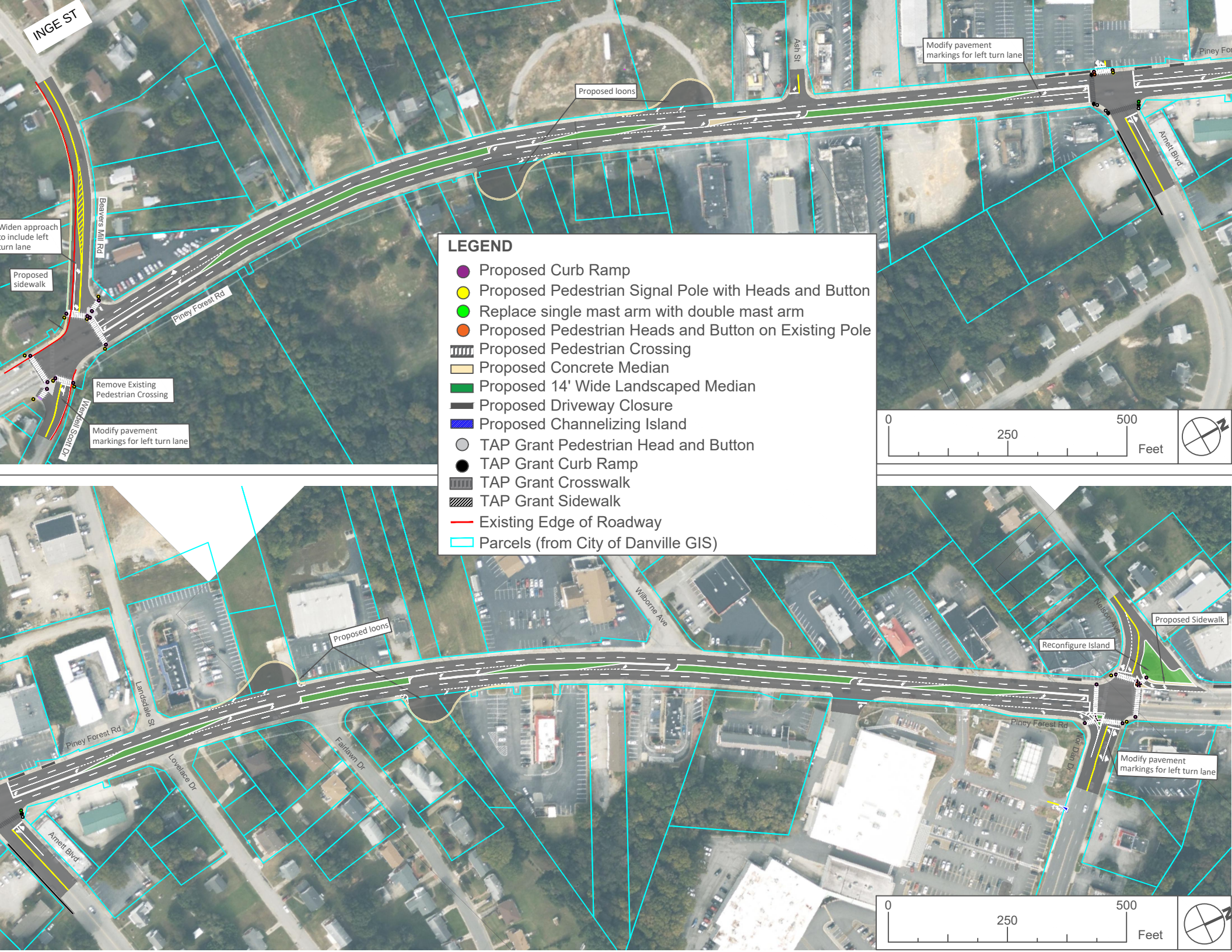
Piney Forest Road

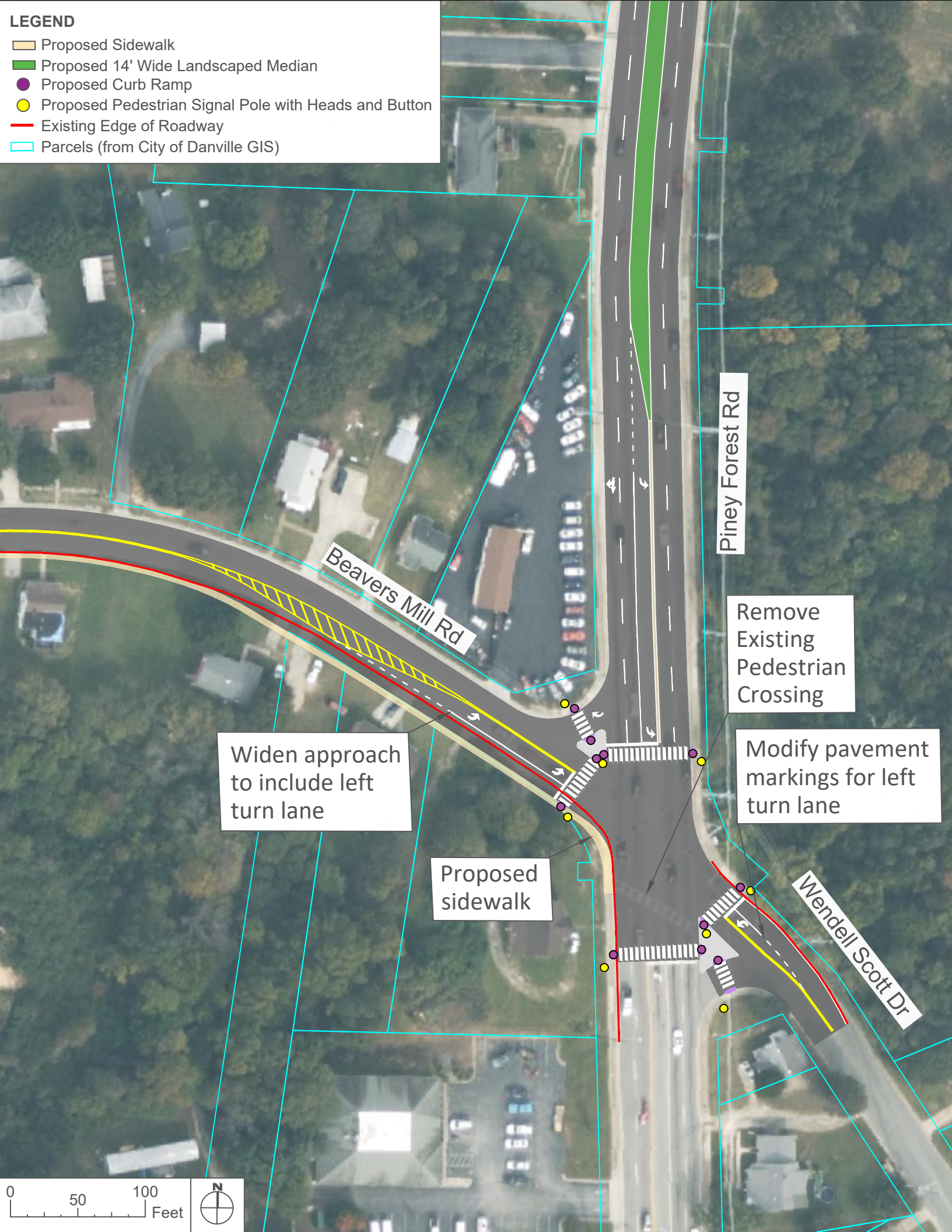
Piney Forest Road Funded Project

Piney Forest Road Corridor Study Unfunded Project

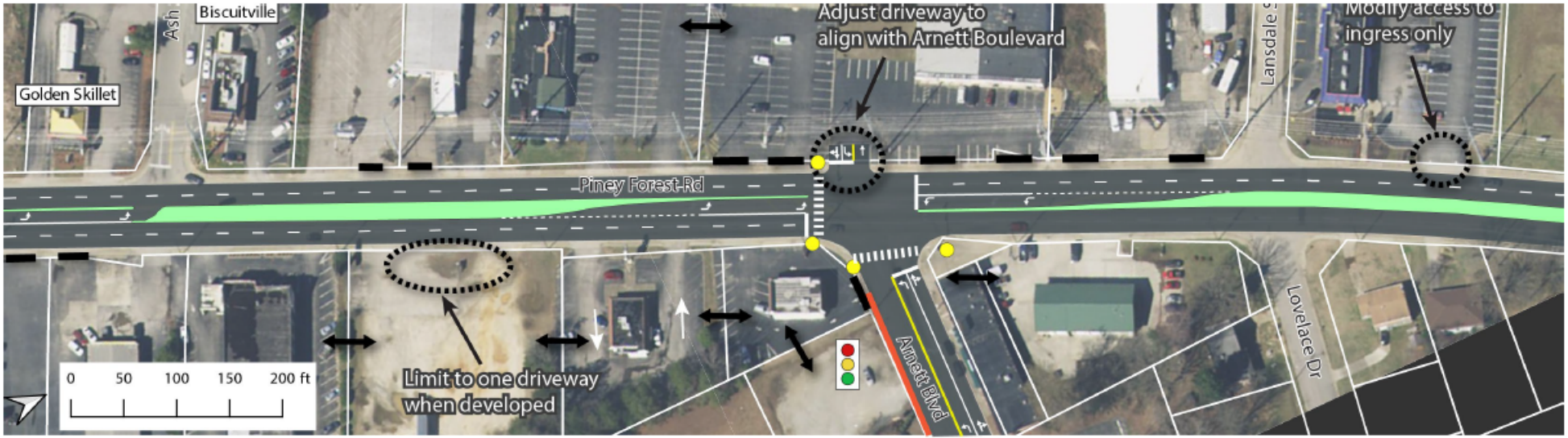
Piney Forest Road Funded Project

This project includes the removal of 0.9 mile of continuous center turn lane and construction of a raised 14' wide landscaped median between Beavers Mill Road and Nor Dan Drive. Unsignalized turn lanes would be constructed at various intersecting roadways without allowing for crossover movement. Four loons are also proposed at various points within the corridor to provide adequate U-turn areas for passenger vehicles and trucks. Install/upgrade crosswalks and pedestrian signals at all three signalized intersections along the corridor. A traffic signal will be added to the existing signalized intersection at Arnett Boulevard to control shopping center traffic. Construction work includes pavement removal, curb installation, storm drain, median landscaping, asphalt milling & resurfacing of the entire corridor, pavement striping, and signs.


INGE ST
Ash St
Proposed loons
Modify pavement markings for left turn lane
Piney Forest Rd
Arnett Blvd
Beavers Mill Rd
Widen approach to include left turn lane
Proposed sidewalk
Piney Forest Rd
Remove Existing Pedestrian Crossing
Wyndell Scott Dr
Modify pavement markings for left turn lane
LEGEND
Proposed Curb Ramp
Proposed Pedestrian Signal Pole with Heads and Button
Replace single mast arm with double mast arm
Proposed Pedestrian Heads and Button on Existing Pole
Proposed Pedestrian Crossing
Proposed Concrete Median
Proposed 14' Wide Landscaped Median
Proposed Driveway Closure
Proposed Channelizing Island
TAP Grant Pedestrian Head and Button
TAP Grant Curb Ramp
TAP Grant Crosswalk
TAP Grant Sidewalk
Existing Edge of Roadway
Parcels (from City of Danville GIS)
0
250
500
Feet
Proposed loons
Wilborne Ave
Nelson Ave
Proposed Sidewalk
Reconfigure Island
Piney Forest Rd
Landsdale St
Fairlawn Dr
Lovelace Dr
Arnett Blvd
Joy Dell Dr
Modify pavement markings for left turn lane
0
250
500
Feet


LEGEND
Proposed Sidewalk
Proposed 14' Wide Landscaped Median
Proposed Curb Ramp
Proposed Pedestrian Signal Pole with Heads and Button
Existing Edge of Roadway
Parcels (from City of Danville GIS)
Beavers Mill Rd
Piney Forest Rd
Wendell Scott Dr
Remove Existing Pedestrian Crossing
Modify pavement markings for left turn lane
Widen approach to include left turn lane
Proposed sidewalk
0
50
100
Feet
N

Arnett Boulevard



Signalized Intersection

Shared access opportunity

Close driveway

Modify driveway

Existing median

Proposed median

Proposed Pedestrian Signal

Submitted FY23 TAP Sidewalk Project

Signalized Intersection

Shared access opportunity

Close driveway

Modify driveway

Existing median

Proposed median

Proposed Pedestrian Signal

Piney Forest Road Corridor Study Unfunded Project

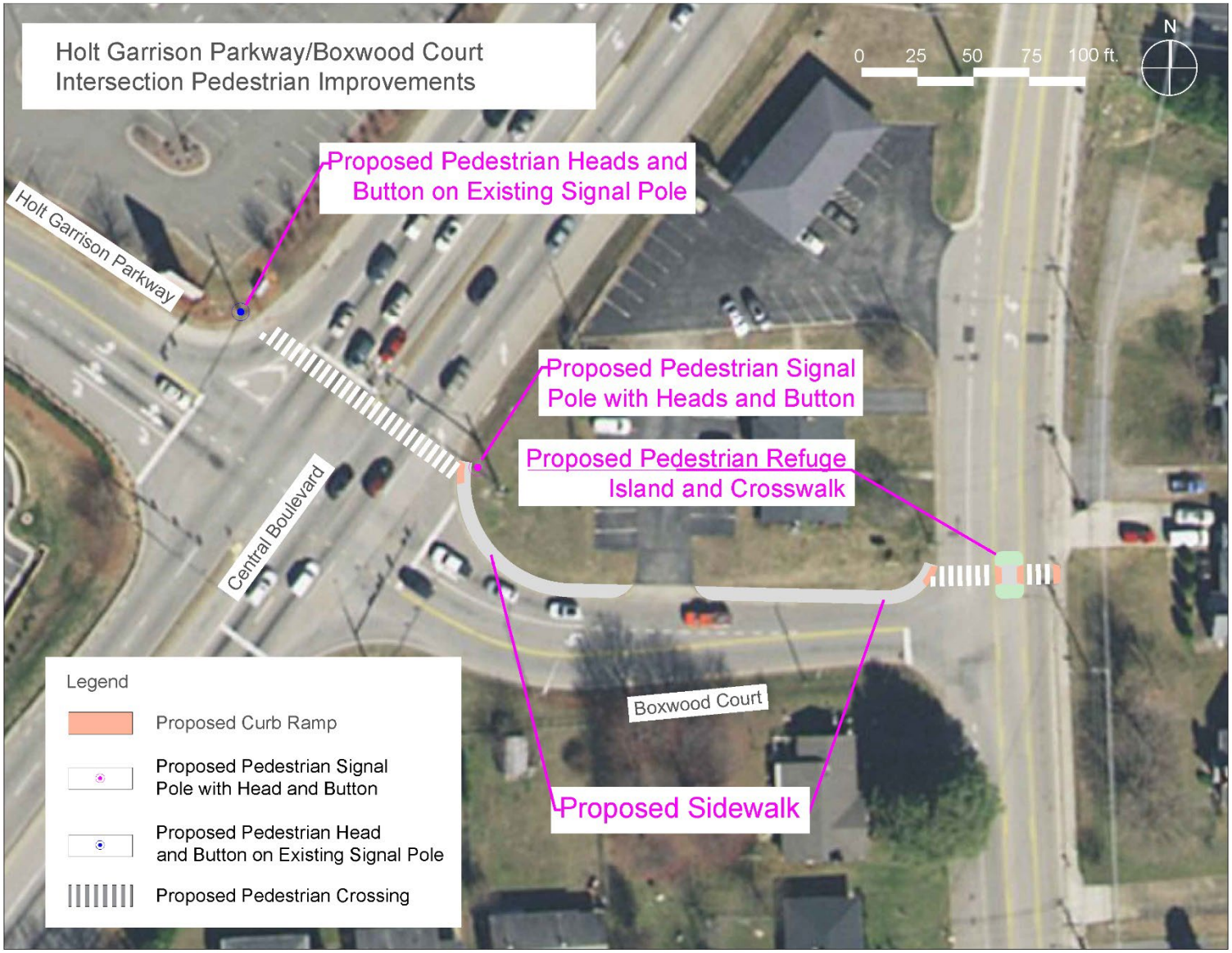


FIGURE 40: BOXWOOD COURT AND HOLT GARRISON PARKWAY PEDESTRIAN IMPROVEMENTS

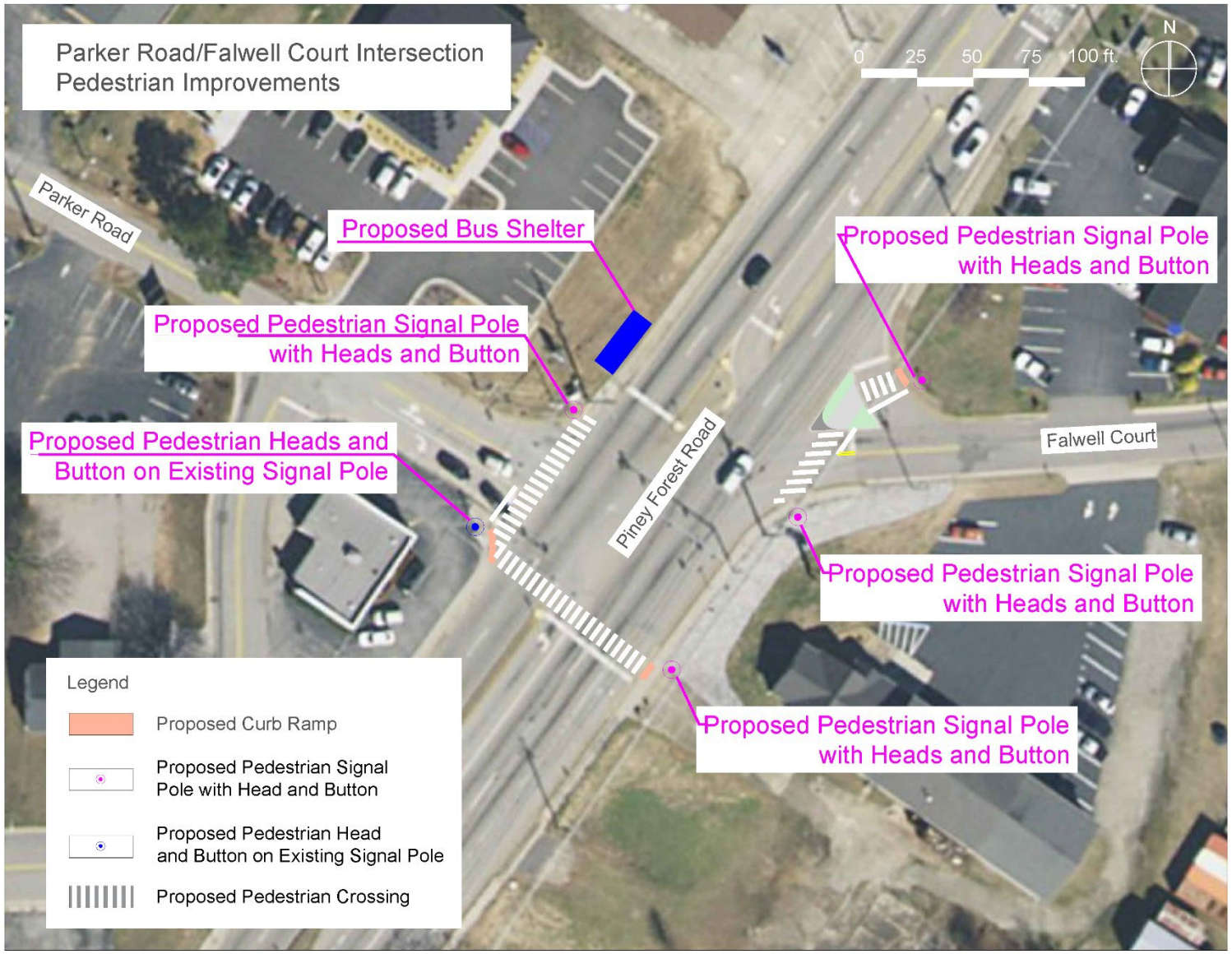


FIGURE 41: PARKER ROAD INTERSECTION PEDESTRIAN IMPROVEMENTS

FIGURE 42: AUDUBON DRIVE INTERSECTION PEDESTRIAN IMPROVEMENTS

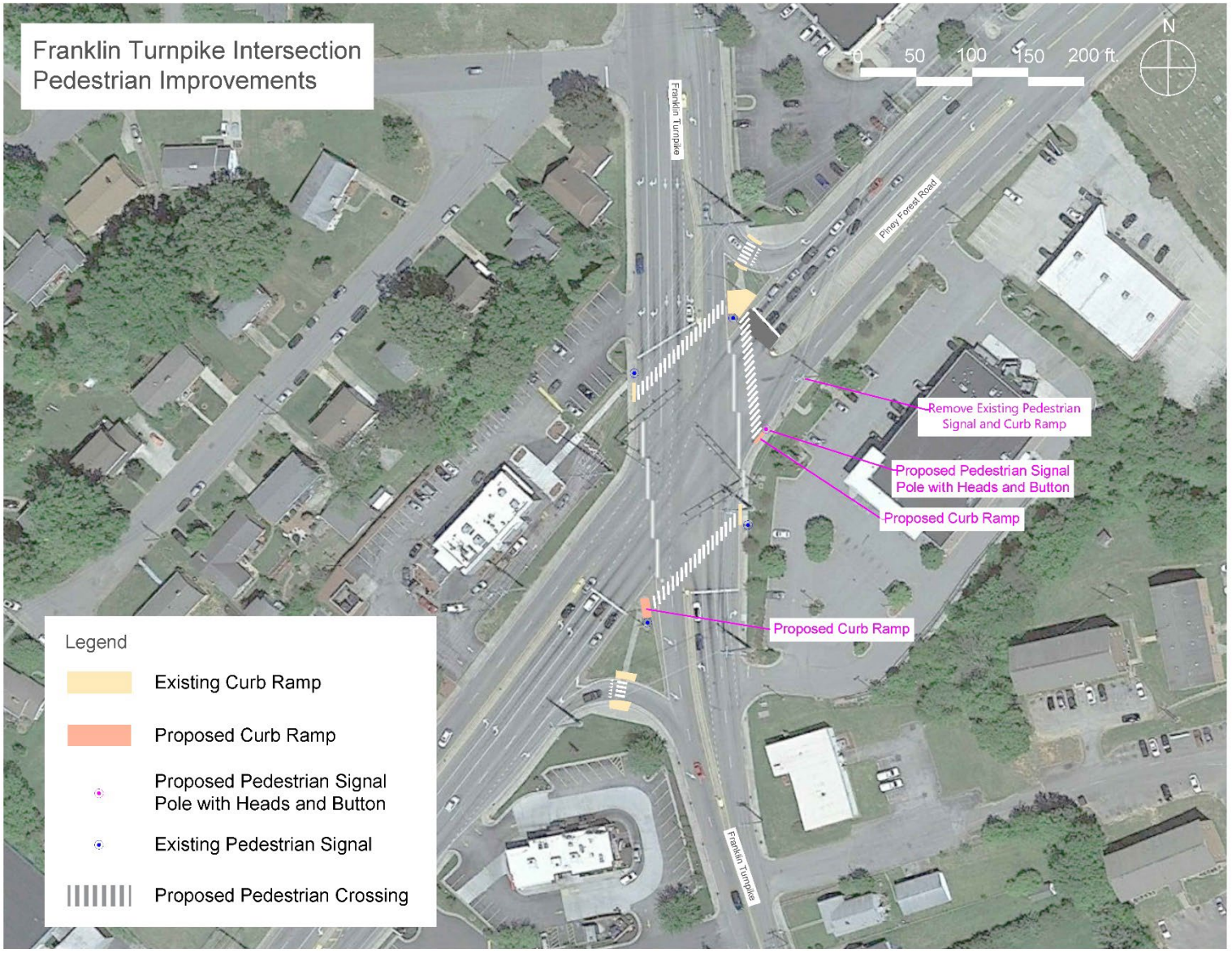


FIGURE 43: FRANKLIN TURNPIKE INTERSECTION PEDESTRIAN IMPROVEMENTS

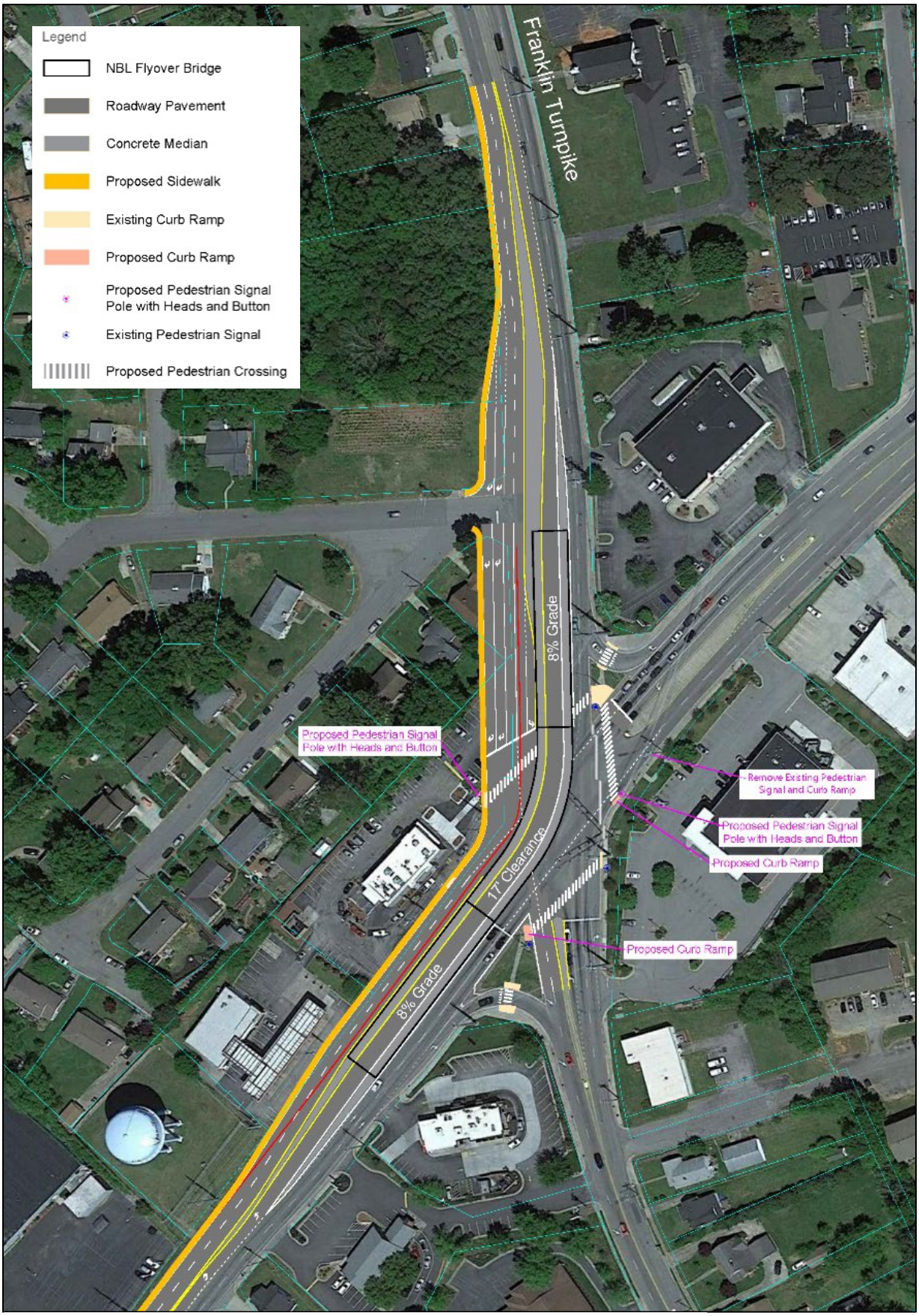


FIGURE 49: FRANKLIN TURNPIKE INTERSECTION FLYOVER RAMP IMPROVEMENT

Piedmont Drive

Pedestrian Accommodations - Funded recommendations from the Route 29 BUS / Piedmont Drive LY01 Project Pipeline Study

VDOT Virginia Department of Transportation | PROJECT PIPELINE | RK&K

Route 29 Bus./Route 3772 (Piedmont Dr.)

Exhibit 1: Sidewalk Improvements From Executive Dr. to Lowes Dr.

07-05-2022

Legend

- Proposed Overlay
- Proposed Concrete Median/Sidewalk
- Proposed Grass Area
- Existing Right of Way
- Proposed Right of Way Line
- Proposed Constr. Easement
- Signal
- Proposed Wall

Parcel	Owner	PID	Total Take (YES/NO)	Zoning	Area (ac)	R/W Take (SF)	Temp Easement (SF)
1	WAL-MART REAL ESTATE BUSINESS TRUST	72431	NO	PSC Planned Shopping Center	19.531	2378.2265	1560.3742
2	WINTER PROPERTIES PARTNERSHIP LLP	72432	NO	HRC Highway Retail Comm	7.147	18.4939	113.3661
3	M & J PROPERTIES OF DANVILLE LLC	78308	NO	HRC Highway Retail Comm	1.48		142.1982
4	AMERICAN NATIONAL BANK & TRUST COMPANY	72433	NO	HRC Highway Retail Comm	2.23	814.1604	965.4097
5	DANIEL GROUP INC	60000	NO	HRC Highway Retail Comm	2.028		3051.5035
6	HC HOLDING LLC	59216	NO	HRC Highway Retail Comm	1.182		141.2101
7	DANIEL GROUP INC	59222	NO	HRC Highway Retail Comm	1.118	1741.394	1845.1981
8	CENTRA HEALTH INC	60001	NO	HRC Highway Retail Comm	1.07	1105.6367	1325.6366
9	DANVILLE MALL LLC	59212	NO	PSC Planned Shopping Center	34.04		5015.4734
10	TRIPPS PROPERTIES III LIMITED PARTNERSHIP	77751	NO	PSC Planned Shopping Center	1.34	173.332	460.4158
11	T H L LLC	77870	NO	PSC Planned Shopping Center	1.26	730.5676	1567.1104
12	GDC PROPERTIES I LLC	72436	NO	PSC Planned Shopping Center	10.793	1644.8513	846.5869
13	BRANCH BANKING AND TRUST COMPANY	78168	NO	PSC Planned Shopping Center	3.236	1066.3153	1699.3214
14	VF3 SDC LLC	60567	NO	PSC Planned Shopping Center	0.851		278.1383
15	DANVILLE MALL LLC	59212	NO	PSC Planned Shopping Center	34.04		1111.2726
16	TMB DANVILLE LLC	72442	NO	PSC Planned Shopping Center	14.253	614.2889	1193.9062
Source:	Danville City tax data	https://danvillegis.maps.arcgis.com/home/index.html					

Existing Sidewalk
Prop. TCE
Prop. RW
Existing Curb
Prop. 4' Offset
Prop. 5' Sidewalk
(Typical All)
Relocate Signal Pole
Relocate Signal Pole
Relocate Signal Pole
Replace Block Ret. Wall (in kind) L=125' +/-

WALMART SUPERCENTER
WINTER STORAGE
M&J PROPERTIES
AMERICAN NATIONAL BANK & TRUST COMPANY
PIEDMONT INTERNAL MEDICINE
BIG LOTS
EXECUTIVE DR.
HIBACHI GRILL SUPREME BUFFET
PIEDMONT DR.
3772
AARON'S FURNTURE STORE
BOJANGLES
SANDY CT.
DOMINO'S PIZZA
SANDY RIVER
BOOST MOBILE
MT. CROSS RD
MT. CROSS RD
GOODYEAR AUTO SERVICE
CROWN DR.
KICKBACK JACK'S
OUTBACK STEAKHOUSE
MED EXPRESS URGENT CARE
DANIEL GROUP INC.
CENTRA HEALTH INC.
DANVILLE MALL LLC
CHECKERED PIG BBQ AND RIBS
OLD MT. CROSS RD.
GDC PROPERTIES I LLC
APPLEBEE'S
OLIVE GARDEN
STARBUCKS
BB&T
COLLINS DR.
FIRST CITIZENS BANK
LOWES DR
HOBBY LOBBY
PETSMART
RED LOBSTER
3772
PIEDMONT DR.

North Arrow & Scale

N

SCALE 0 100' 200'

Project Location

Danville City
Pittsylvania County

Contact Information

Project Manager Name
Project Manager
Virginia Department of Transportation
1401 East Broad Street
Richmond, Va 23219

Project UPC# 119942
Danville, Virginia
These plans are unfinished and unapproved and are not to be used for any type of construction or the acquisition of right of way. Additional easements for utility relocations may be required beyond the proposed right-of-way shown on these plans.

US 29

US Route 29 at Malmaison Road Roundabout

US 29 at Lawless Creek Road

US Route 29 at Spring Garden Rd Turn Lane Improvements

US Route 29 at Malmaison Road Roundabout

Convert the existing median opening just south of the US Rte 29/Malmaison Rd intersection to a left-in only onto Belle Oak Court. Install a single-lane roundabout at US Rte 29 and Malmaison Rd.

This project is not currently funded.

5/16/2020
3:41:09 PM

Malmaison
Plotted By: Raina.Rosado

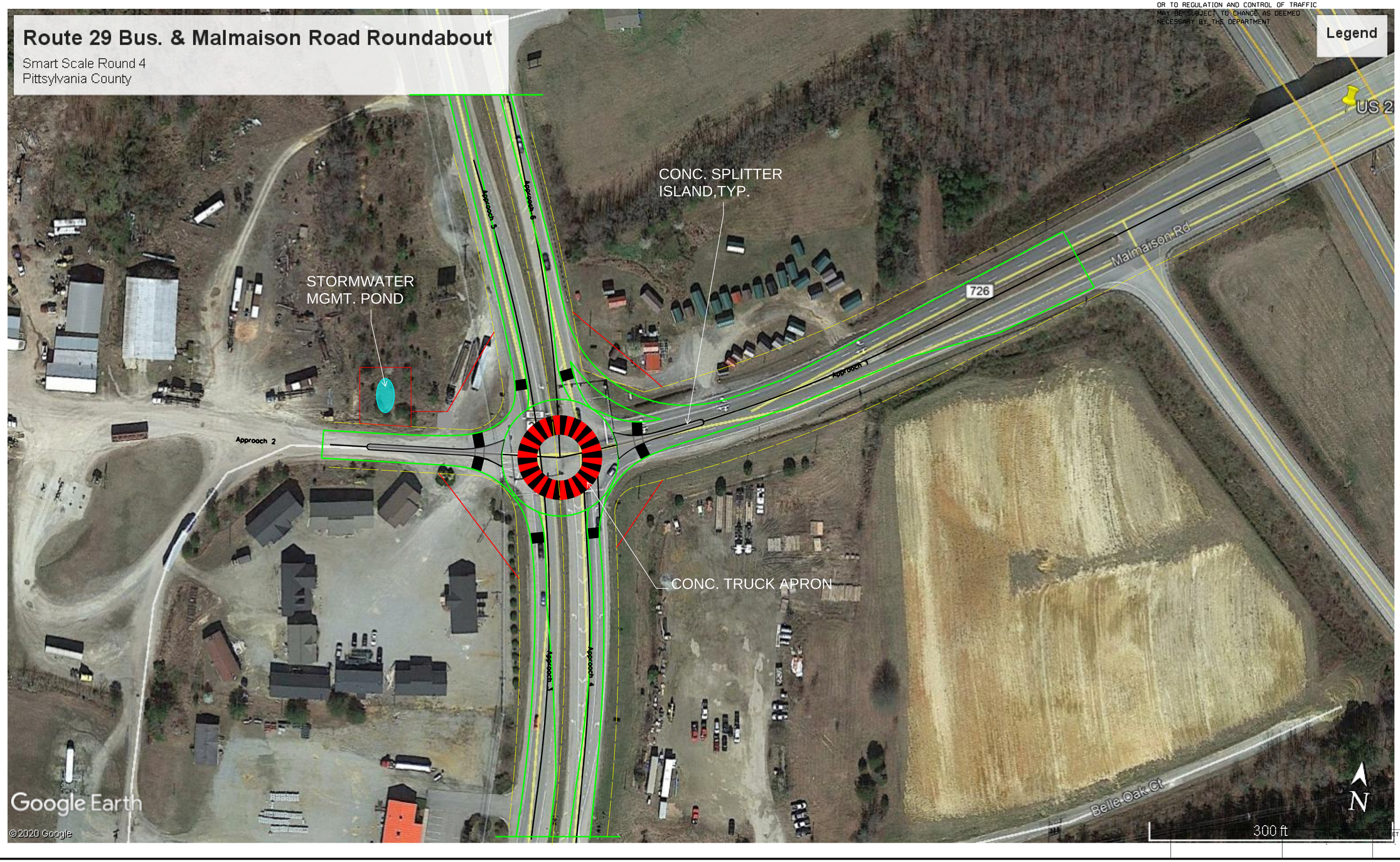
PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.			

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Route 29 Bus. & Malmaison Road Roundabout

Smart Scale Round 4
Pittsylvania County



SHEET NO.

US 29 at Malmaison Road - Long Term Roundabout Concept

US 29 at Lawless Creek Road

Install a single-lane roundabout at US 29 and Lawless Creek Rd.

This project is not currently funded.

5/16/2020
2:22:49 PM

lawless
Plotted By: Raina.Rosado

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	.	.	.

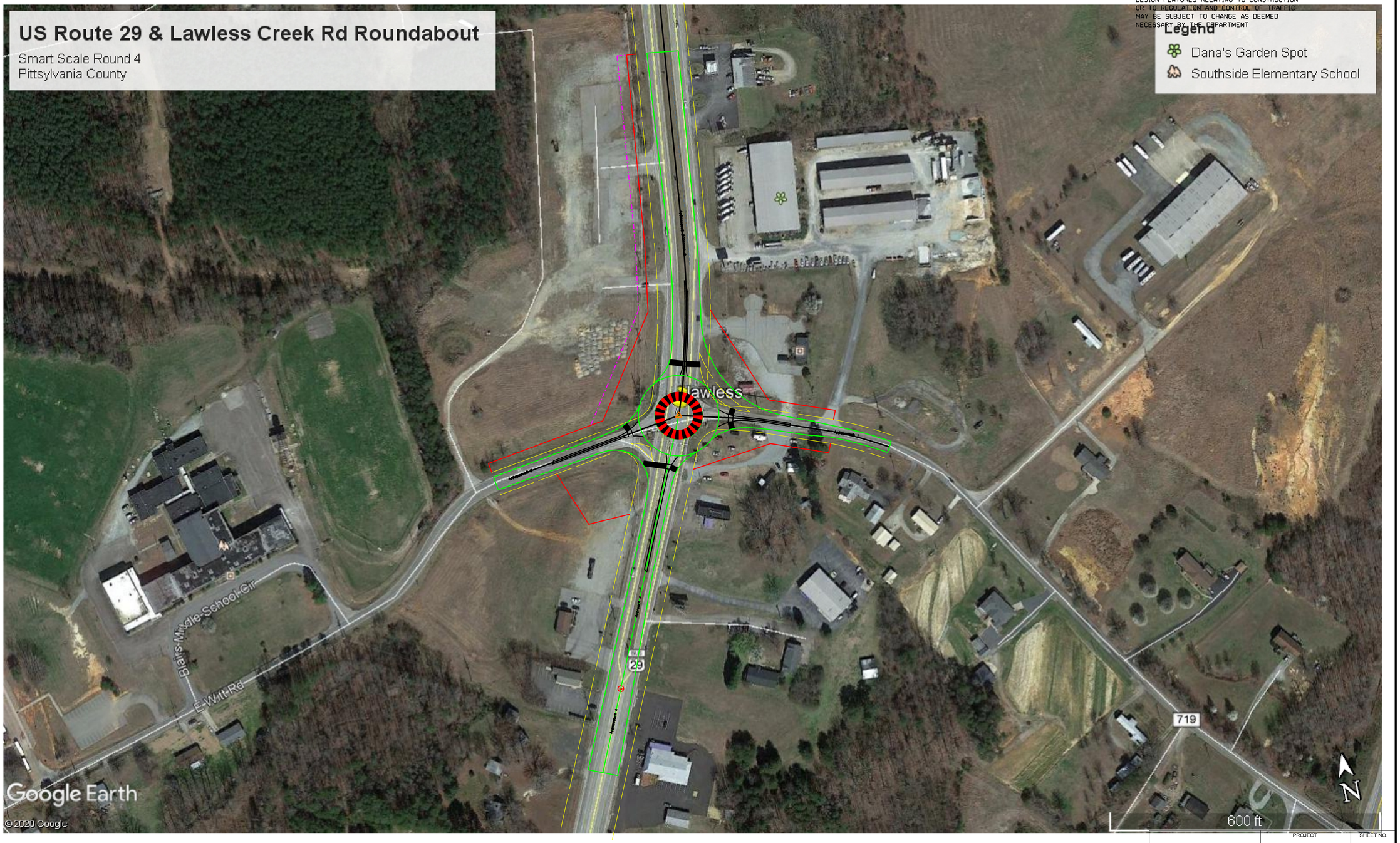
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

US Route 29 & Lawless Creek Rd Roundabout

Smart Scale Round 4
Pittsylvania County

Legend

- Dana's Garden Spot
- Southside Elementary School



		PROJECT	SHEET NO.
		.	.

US 29 at Lawless Creek Road - Long Term Roundabout Concept

US Route 29 at Spring Garden Rd Turn Lane Improvements

Extend the northbound right-turn lane, install a northbound left-turn lane, and extend the southbound left turn lane on US 29 at Route 640 (Spring Garden Road/Woodcrest Drive).

This project was awarded SMART SCALE Round 5 funding.

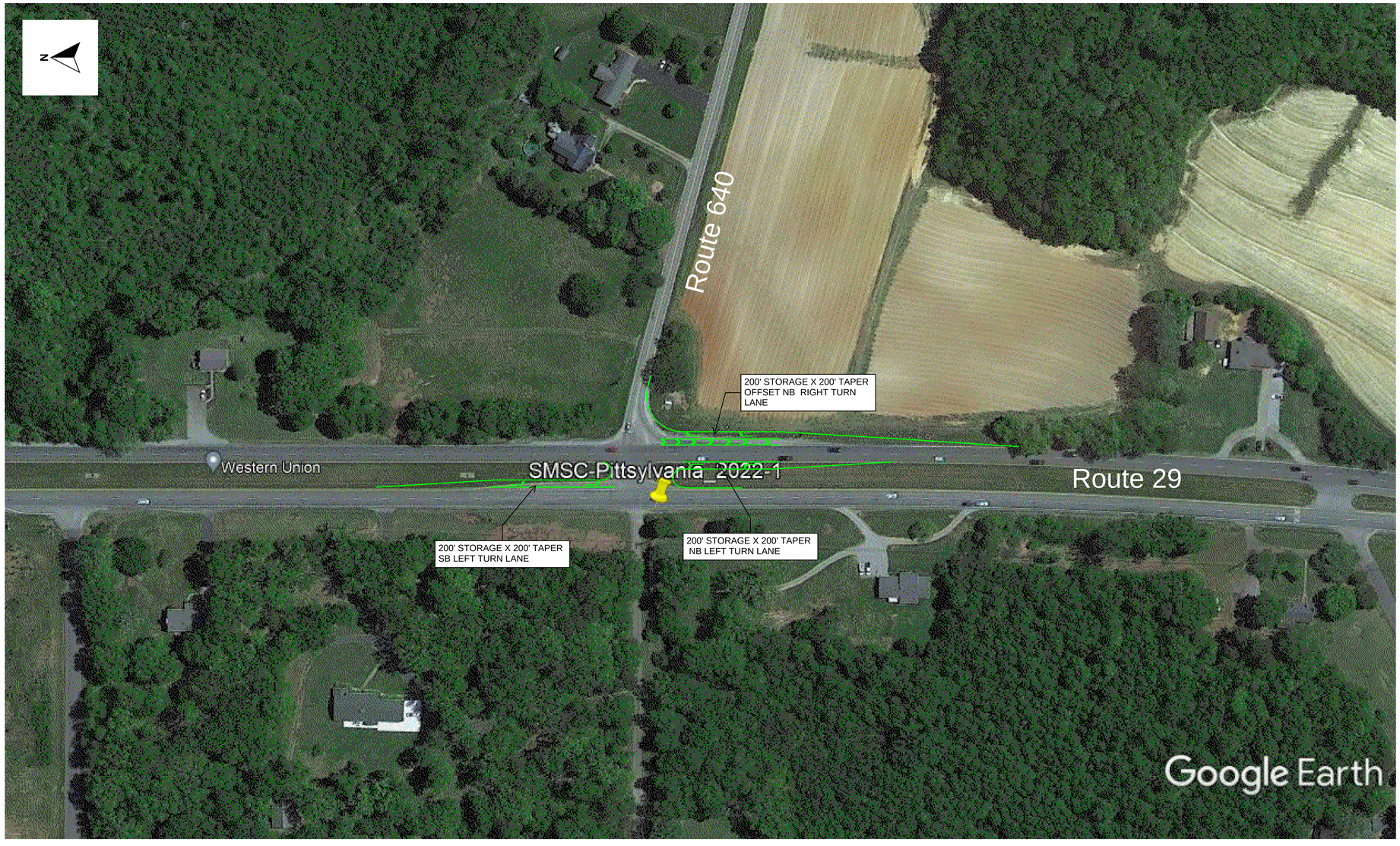
3/31/2022
5:47:03 PM

lawless
Plotted By: Raina Rosado

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	.	.	.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	PROJECT	SHEET NO.
	.	.

Franklin Turnpike

LY-23-09 Project Pipeline Study - Phase 3 Executive Summary

Phase 3 – Preferred Alternative

VA 41 (Franklin Turnpike) & Orphanage Road – Traffic Signal

Project Description

The improvements proposed at this location include:

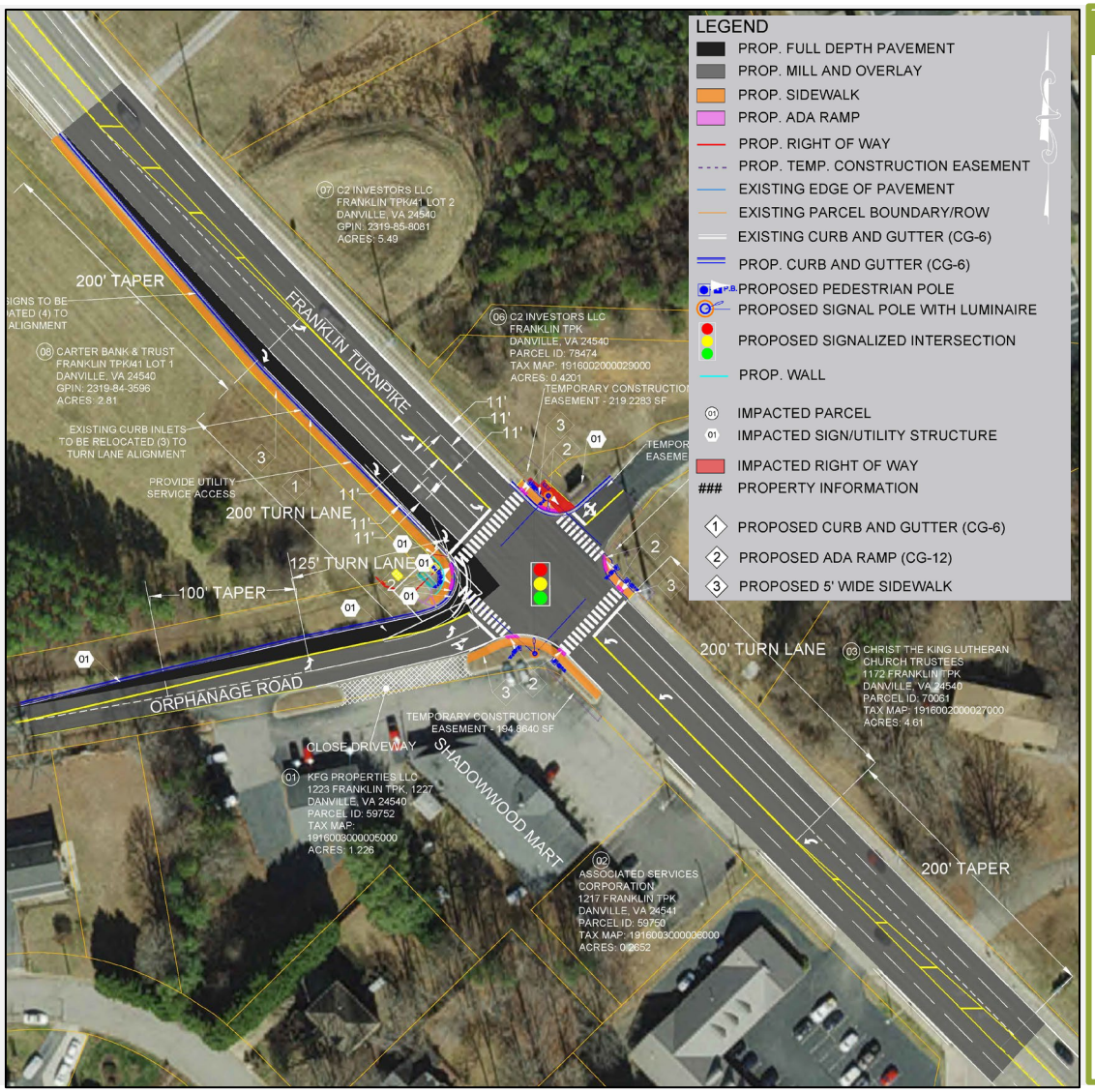
1) **Installation of a Traffic Signal**
2) **Southbound Right Turn Lane**
   - Add a 200-foot lane with a 200-foot taper
3) **Eastbound Left Turn Lane**
   - Add a 125-foot lane with a 100-foot taper
4) **Pedestrian Signals, Crosswalks, and Curb Ramps**
   - Install new crosswalks and curb ramps on all four legs of the intersection
   - Install pedestrian signals with pushbuttons on all for legs of the intersection

Traffic Operations Results

The build conditions analysis results indicate that all movements operate at LOS C or better and the intersection operates at LOS B or better overall during both the AM and PM peak hours.
No build conditions analysis results indicate LOS F on both the eastbound and westbound approaches and delays of nearly ten minutes on the westbound approach during the PM peak hour.

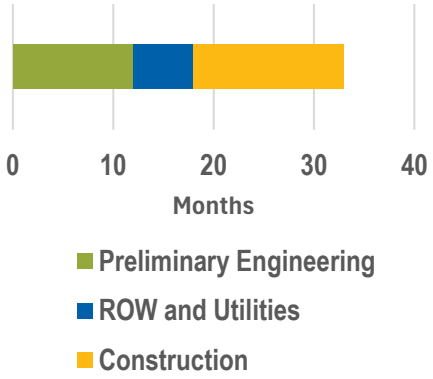
Safety Benefits

Installing a traffic signal will eliminate angle collisions at the intersection, the primary type of collision experienced.



Project Schedule and Preliminary Cost

Project schedules and cost estimates were based on information available at the time of the study and should be reassessed prior to submitting funding proposals.



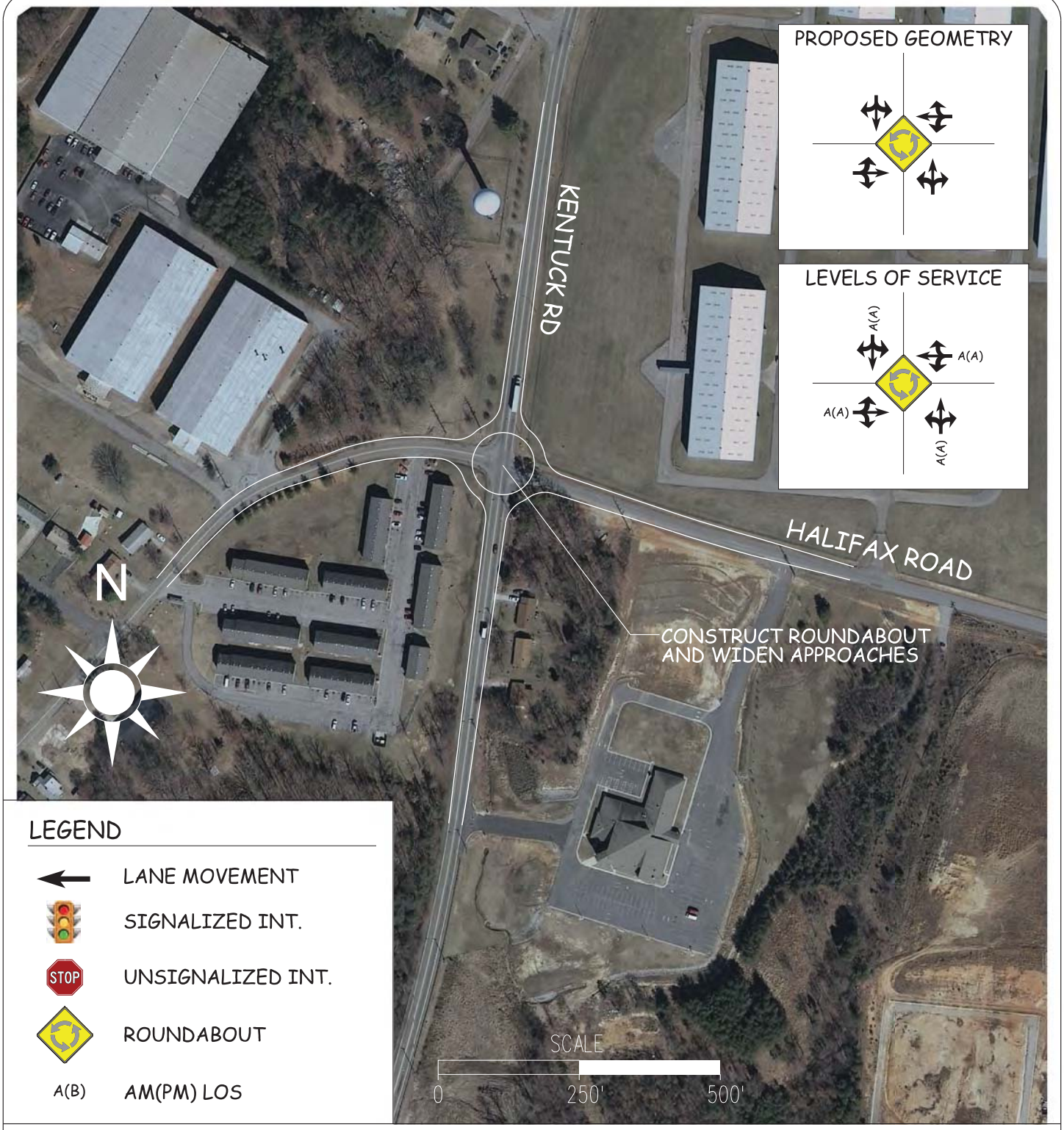
Phase Description	Budget (FY2024)
Preliminary Engineering	$ 453,800
Right of Way and Utility Relocation	$ 1,249,000
Construction	$ 3,246,000
Total Project Budget	**$ 4,948,800**

Kentuck Road

Planning Level Study

Recommended Improvements

1. Kentuck Road and Halifax Road – Install a single lane roundabout with widened approaches on each leg
2. Kentuck Road and Eagle Springs Road – Remove the northbound channelization and add a 100-foot right turn lane on the northbound approach and a 100-foot right turn lane on the westbound approach
3. Kentuck Road and Little Creek/Fall Creek Roads – Shift the alignments of Little Creek Road and Fall Creek Road and install a traffic signal



LEGEND

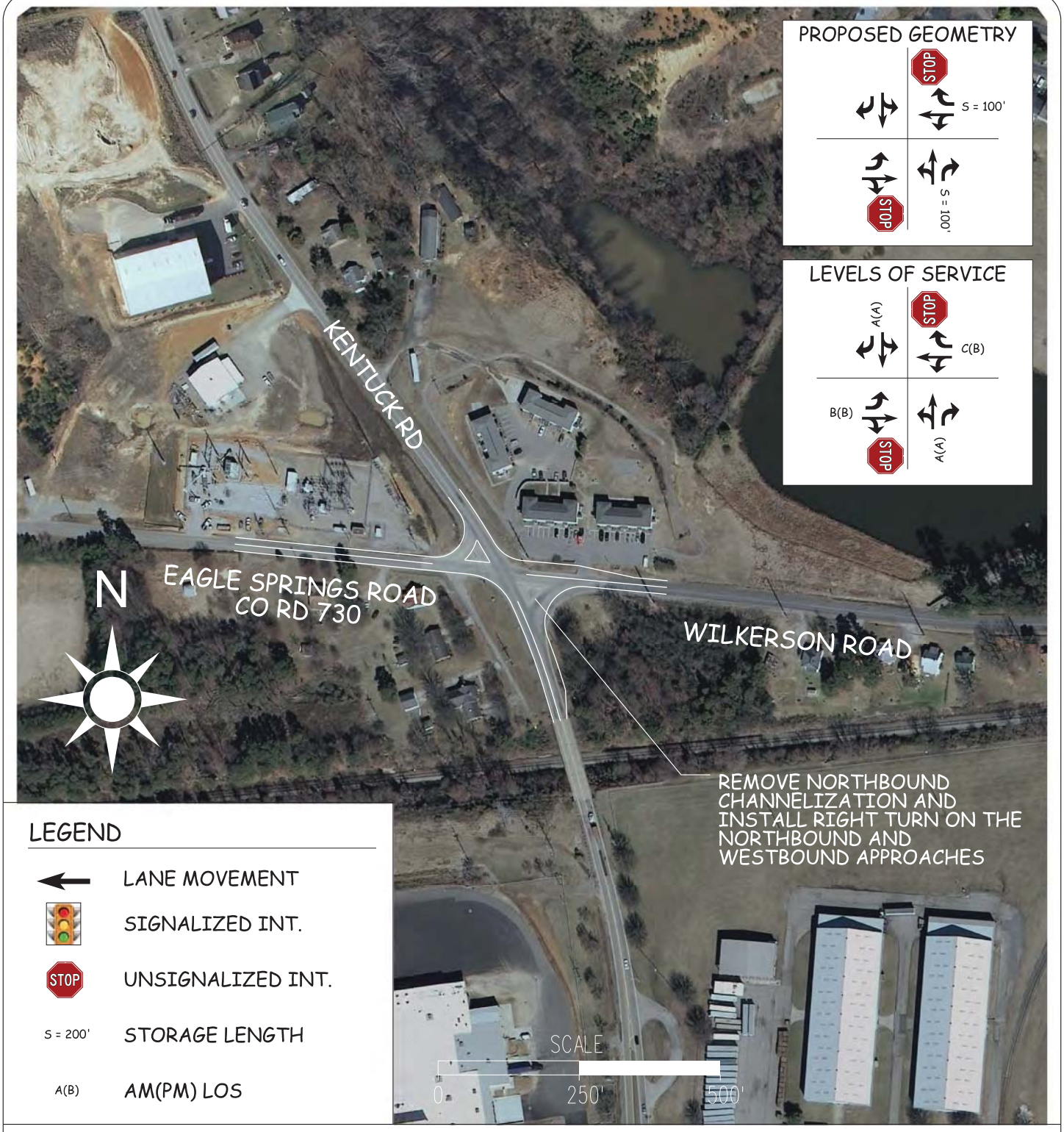
- LANE MOVEMENT
- SIGNALIZED INT.
- UNSIGNALIZED INT.
- ROUNDABOUT
- A(B) AM(PM) LOS

KENTUCK ROAD AND HALIFAX ROAD INTERSECTION ALTERNATIVE 3 IMPROVEMENTS PITTSYLVANIA COUNTY AND DANVILLE, VIRGINIA

Dewberry

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

FIGURE
14

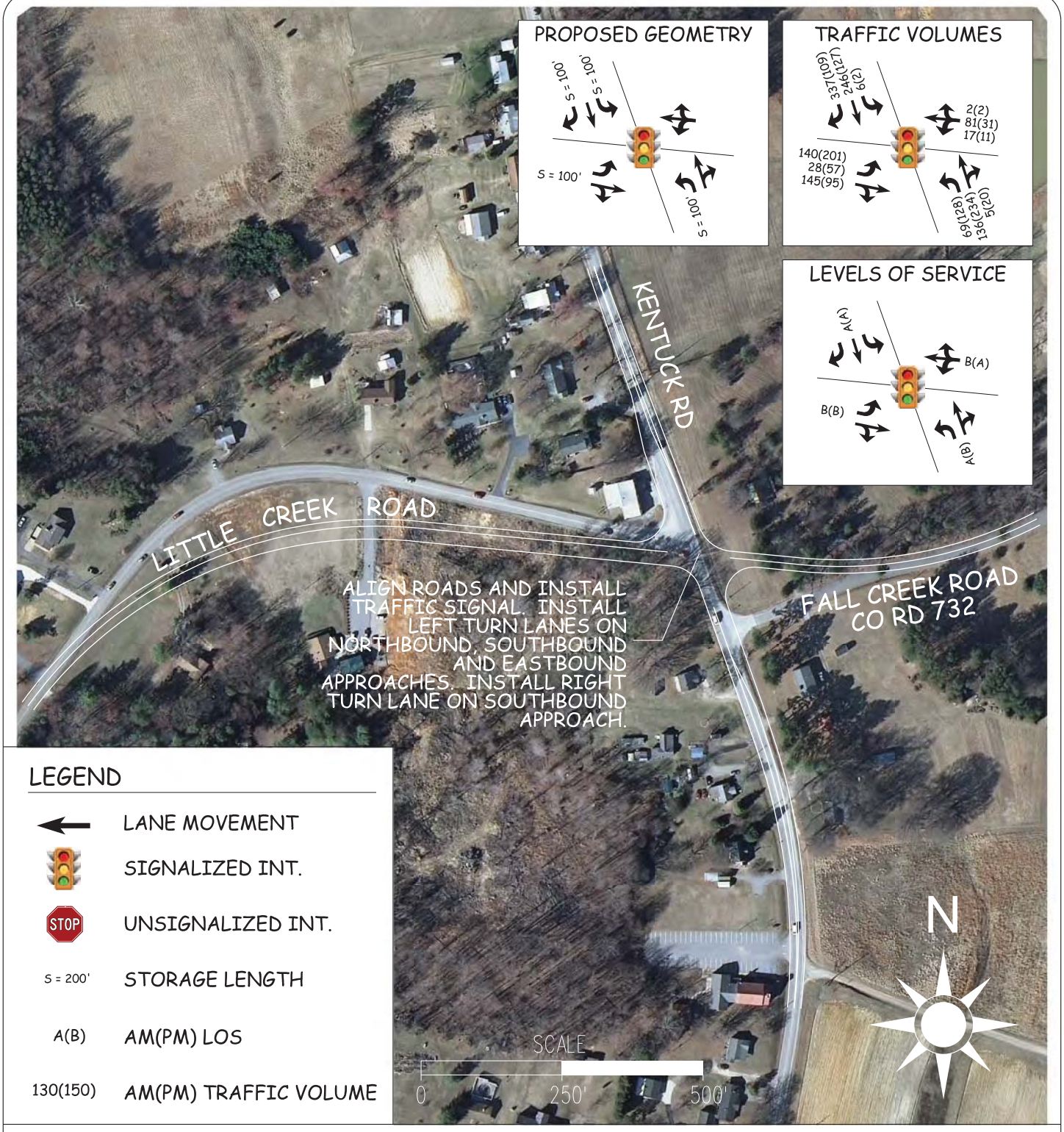


KENTUCK ROAD AND EAGLE SPRINGS ROAD INTERSECTION ALTERNATIVE 2 IMPROVEMENTS PITTSYLVANIA COUNTY AND DANVILLE, VIRGINIA

Dewberry

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

FIGURE
16



KENTUCK ROAD AND LITTLE CREEK/FALL CREEK ROAD INTERSECTIONS ALTERNATIVE 2 IMPROVEMENTS PITTSYLVANIA COUNTY AND DANVILLE, VIRGINIA

Dewberry

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

FIGURE
18

VDOT HSIP Expanded Systemic Program Countermeasure Reference Sheets

Wider Edge Lines Pavement Markings

WHAT: Countermeasure Description

Edge Lines are considered "Wider" when the marking width is increased from the Regular Width Edge Line width (4-inches for two-lane rural roads) to a width of six (6) to eight (8) inches. Installing Wider Edge Lines enhances roadway visibility and increases driver perception of the edge of the travel lane, which can help to reduce roadway departure crashes. Research has shown that Wider Edge Lines are cost-effective in reducing Crash Frequency and Crash Severity, including Fatality and Injury-related crashes on two-lane rural roads.

Wider Edge Line Pavement Markings
(Example Location Source: Texas Transportation Institute

WHERE: Conditions under which this Countermeasure should be Applied

The designer shall follow the general edge line policies and warrants described in Section 3B.06 and Section 3B.07 of the *Virginia Supplement to the MUTCD* when considering Wider Edge Line installation.

- Per MUTCD Notice of Proposed Amendments (NPA), dated December 14, 2020 (FHWA–2020–0001), FHWA proposes to indicate that Wider Edge Lines are to be used for roadways with speed limits greater than 40 mph, and that this change is intended to improve visibility and consistency on ''high speed'' facilities.
- The following describes Wider Edge Line application conditions for three (3) general cases of Wider Edge Line upgrades/installations:
    - *Case 1: Upgrading 4" Regular Width Edge Lines to 6" or 8" Wider Edge Lines*
        - Upgrading to 6" or 8" Wider Edge Lines may be considered for an entire priority segment or along shorter section(s) to address a specific safety issue, based on roadway characteristics and Engineering Judgment.
    - *Case 2: Upgrading 6" Edge Lines to 8" Wider Edge Lines*
        - On two-lane rural roads, upgrading from 6" Edge Lines to 8" Wider Edge Lines may be considered for locations where roadway visibility continues to be a contributing factor in roadway departure related crashes.
    - *Case 3: Installing 6" or 8" Wider Edge Lines along Roadways without Edge Lines*
        - The designer should review the "Warrants for Use of Edge Lines" as described in Section 3B.07 of the *Virginia Supplement to the MUTCD* and also refer to the *"Regular Width Edge Line Pavement Markings"* reference sheet.
        - Installation of *6" or 8" Wider Edge Lines* may be considered along entire priority segments, or short sections within the priority segment, based on roadway characteristics and Engineering Judgment.
        - In the determination of whether to install edge lines, when applying the *Virginia Supplement to the MUTCD* Table 3B-V2, the references to Engineering Study are required for each site. Although the systemic roadway segments already have been identified based on crash risk factors, that alone does not satisfy the site-specific Engineering Study determination in cases noted in this table.

Wider Edge Lines Pavement Markings

HOW: How the Countermeasure is Designed and Implemented

Materials:

- Wider Edge Line pavement markings shall be installed with either Paint (Type A) or Thermoplastic (Type B, Class I) material.

- When upgrading to Wider Edge Lines at locations where existing Edge Lines are present, the designer should review **Tables 1 and 2**, provided below from VDOT IIM-TE-261.1 to determine pavement marking compatibility. The existing material may need to be eradicated before upgrading to Wider Edge Lines.

Table 1. Typical Service Life of Different Marking Materials.

Marking Material	Typical Service Life [1]
Latex Paint	1 Year
Epoxy	3 Years
Thermoplastic	3 Years
Patterned Preformed Tape	6 Years

[1] *From 2001 Virginia Transportation Research Council Report, "Determining the Effectiveness of Pavement Marking Materials" by Cottrell and Hanson.*

Table 2. Pavement Marking Material Compatibility Matrix.

If Existing Material is:	If Desired Material is:			
	Latex Paint	Thermoplastic	Epoxy	B-6 Tape
Latex Paint	Compatible	If existing is 90% removed	If existing is 90% removed	Not Compatible
Thermoplastic	Compatible	Compatible	If existing is 90% removed	Not Compatible
Epoxy	Compatible	Not Compatible	If existing is 90% removed	Not Compatible
B-6 Tape	Compatible	Not Compatible	Not Compatible	Not Compatible

Note: "Not Compatible" means that the desired new pavement marking material cannot be applied unless the existing material is eradicated in accordance with sections 512 and 704 of the VDOT *Road and Bridge Specifications*. "Compatible" implies that the existing pavement marking is still well-adhered to the pavement.

Source: VDOT IIM-TE-261.1

General Notes:

- Initial project costs are increased by installing Thermoplastic (Type B, Class I) pavement markings; however, the Service Life is three (3) times greater (i.e., 3 Years versus 1 Year) and the Retroreflectivity Level is 2-3 times higher than that of Painted (Type A) pavement markings.

- Designer should coordinate with the District to determine if the section of roadway will be paved in the near term (based on District's understanding of paving schedule and pavement condition), to assess potential near-term construction conflicts, coordinate with paving schedules to implement countermeasure with paving, and/or to prevent investment of this countermeasure with HSIP funds for a section of roadway about to be repaved.

Wider Edge Lines Pavement Markings

Typical Applications and Examples (Attached):

- *Figure 1A: Example Design – Signing and Pavement Markings (Plan Sheet)*
- *Figure 1B: Example Design - Signing and Pavement Markings (Quantities Sheet)*

Pay Items & Quantities

Pay Item #	Spec	Description	Unit	Quantity
512SD20-0042	514	ERADICATE LINEAR PVMT MRKG	LF	-
704SD20-0002	704	TYPE A PVMT LINE MRKG 6"	LF	-
704SD20-0003	704	TYPE A PVMT LINE MRKG 8"	LF	-
704SD20-0007	704	TYPE B CLASS I PVMT LINE MRKG 6"	LF	-
704SD20-0008	704	TYPE B CLASS I PVMT LINE MRKG 8"	LF	-

Sign & Seal Requirements: PE sign and seal is not required.

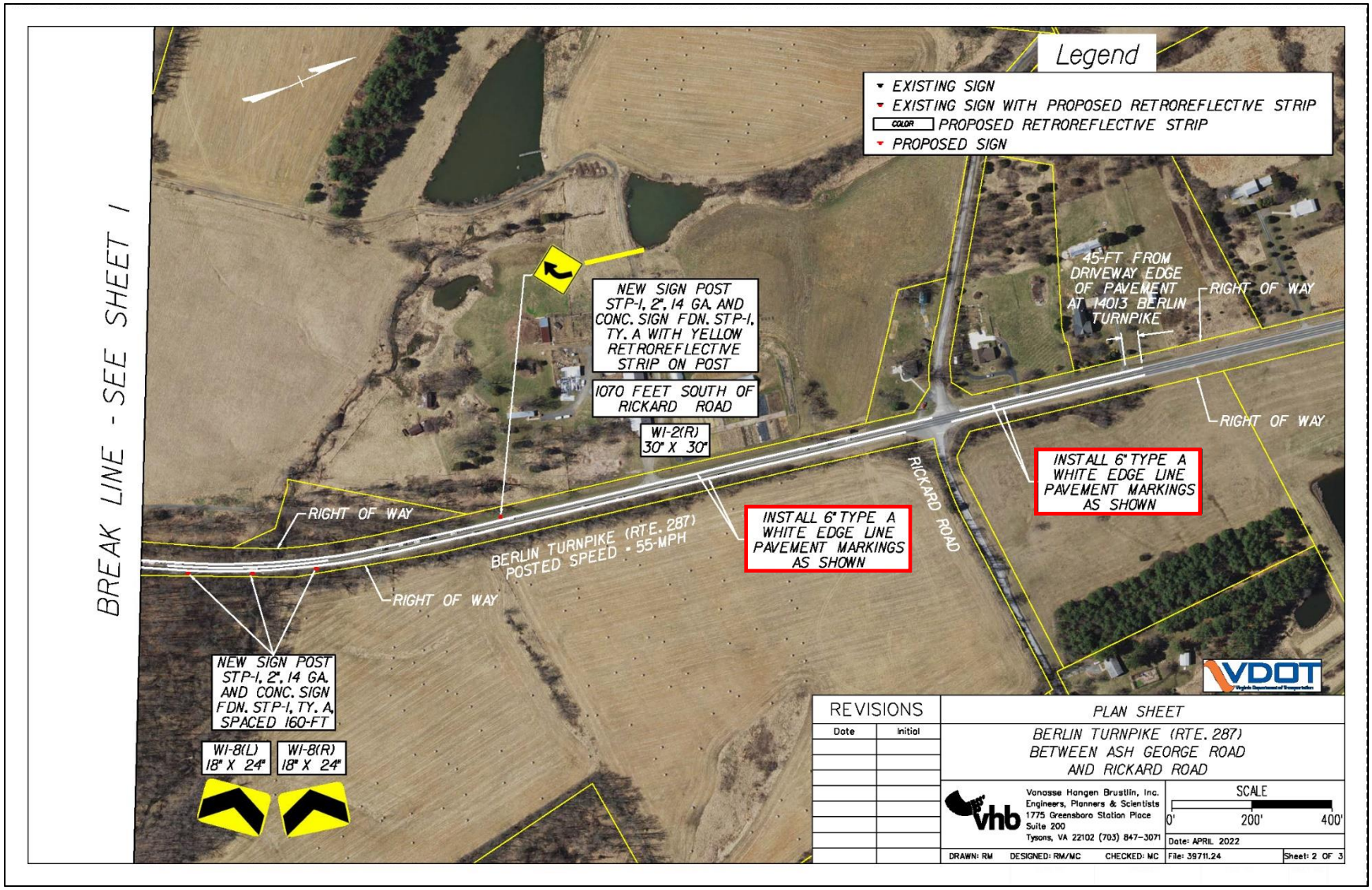
Useful References

1. Carlson, P. and Wagner, J. An Evaluation of the Effectiveness of Wider Edge Line Pavement Markings. https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2012-1.pdf
2. VDOT Standards and Specifications: Pavement Markings. Presentation on November 18th, 2019. http://www.virginiadot.org/business/resources/traffic_engineering/Module_3_Pavement_Markings_FNL.pdf
3. 2011 Virginia Supplement to the MUTCD (Revision 1). https://www.virginiadot.org/business/virginia_mutcd_supplement.asp
4. FHWA Proven Safety Countermeasures. FHWA-SA-21-055. https://safety.fhwa.dot.gov/provencountermeasures/pdf/PSC_New_Wider%20Edge%20Lines_508.pdf
5. VDOT IIM-TE-261.1. https://www.virginiadot.org/business/resources/traffic_engineering/memos/261.1_TypeB_ClassVI_Pavement_Markings.pdf

This Countermeasure Reference Sheet does not represent formal VDOT statewide policy or guidance, and instead is a compilation of preexisting guidelines combined with best practices. This document is a resource for designers to aid in consistent statewide implementation of VHSIP Systemic Phase II improvements.

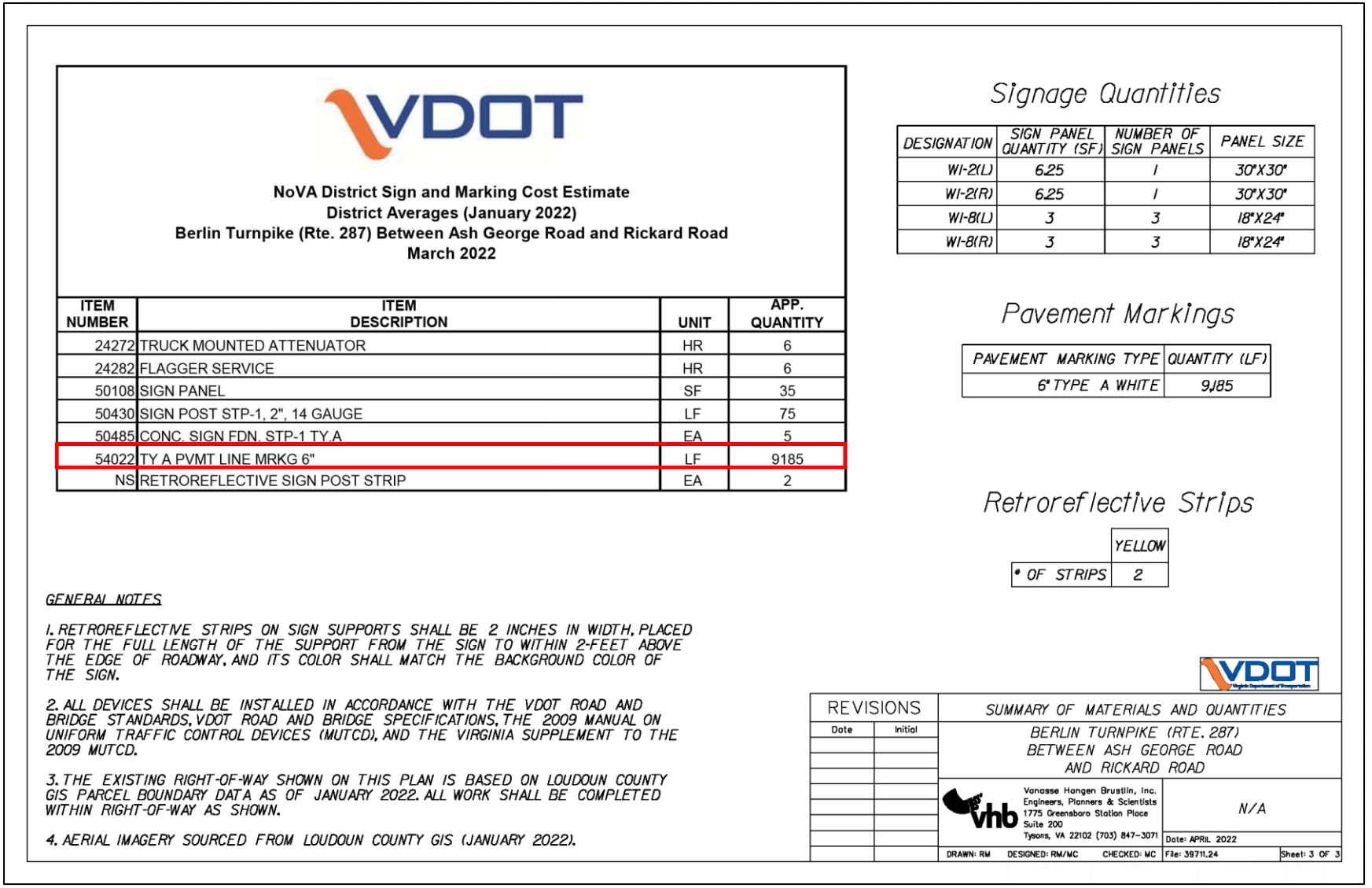
Wider Edge Lines Pavement Markings

***Figure 1A*: Example Design - Signing and Pavement Markings (Plan Sheet)**



Wider Edge Lines Pavement Markings

***Figure 1B*: Example Design – Signing and Pavement Markings (Quantities Sheet)**



VDOT

NoVA District Sign and Marking Cost Estimate
District Averages (January 2022)
Berlin Turnpike (Rte. 287) Between Ash George Road and Rickard Road
March 2022

ITEM NUMBER	ITEM DESCRIPTION	UNIT	APP. QUANTITY
24272	TRUCK MOUNTED ATTENUATOR	HR	6
24282	FLAGGER SERVICE	HR	6
50108	SIGN PANEL	SF	35
50430	SIGN POST STP-1, 2", 14 GAUGE	LF	75
50485	CONC. SIGN FDN. STP-1 TY.A	EA	5
54022	TY A PVMT LINE MRKG 6"	LF	9185
NS	RETROREFLECTIVE SIGN POST STRIP	EA	2

Signage Quantities

DESIGNATION	SIGN PANEL QUANTITY (SF)	NUMBER OF SIGN PANELS	PANEL SIZE
WI-2(L)	6.25	1	30"X30"
WI-2(R)	6.25	1	30"X30"
WI-8(L)	3	3	18"X24"
WI-8(R)	3	3	18"X24"

Pavement Markings

PAVEMENT MARKING TYPE	QUANTITY (LF)
6" TYPE A WHITE	9185

Retroreflective Strips

	YELLOW
# OF STRIPS	2

GENERAL NOTES

1. RETROREFLECTIVE STRIPS ON SIGN SUPPORTS SHALL BE 2 INCHES IN WIDTH, PLACED FOR THE FULL LENGTH OF THE SUPPORT FROM THE SIGN TO WITHIN 2-FEET ABOVE THE EDGE OF ROADWAY, AND ITS COLOR SHALL MATCH THE BACKGROUND COLOR OF THE SIGN.

2. ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE VDOT ROAD AND BRIDGE STANDARDS, VDOT ROAD AND BRIDGE SPECIFICATIONS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND THE VIRGINIA SUPPLEMENT TO THE 2009 MUTCD.

3. THE EXISTING RIGHT-OF-WAY SHOWN ON THIS PLAN IS BASED ON LOUDOUN COUNTY GIS PARCEL BOUNDARY DATA AS OF JANUARY 2022. ALL WORK SHALL BE COMPLETED WITHIN RIGHT-OF-WAY AS SHOWN.

4. AERIAL IMAGERY SOURCED FROM LOUDOUN COUNTY GIS (JANUARY 2022).

VDOT

REVISIONS	
Date	Initial

SUMMARY OF MATERIALS AND QUANTITIES
BERLIN TURNPIKE (RTE. 287)
BETWEEN ASH GEORGE ROAD
AND RICKARD ROAD

vhb Vanasse Hangen Brustlin, Inc.
Engineers, Planners & Scientists
1775 Greensboro Station Place
Suite 200
Tysons, VA 22102 (703) 847-3071

N/A

Date: APRIL 2022

DRAWN: RM DESIGNED: RM/MC CHECKED: MC File: 39711.24 Sheet: 3 OF 3

Center Line Pavement Markings

WHAT: Countermeasure Description

Center Line pavement markings are used to delineate, in yellow, the separation of opposing travel lanes along a roadway.

Center Lines assist drivers in staying on the correct side of the road, avoiding collisions with other vehicles, and providing a preview of changing roadway alignment.

Center Line Pavement Markings (Example Location: Leesburg,

WHERE: Conditions under which this Countermeasure should be Applied

The following considerations should be reviewed when determining the installation of Center Line pavement markings.

- Except on local residential streets, Center Line pavement markings shall be placed based on the following conditions:
  A. All undivided limited access highways.
  B. All bi-directional multi-lane roadways.
  C. All other paved roadways with a pavement width of 18 feet or greater, and traffic volumes equal to or greater than 500 vehicles per day.
- If traffic counts are not available, the ADTs described above may be estimated according to Engineering Judgment.
- Center Line pavement markings may be placed on roadways satisfying Criterion C above, but with fewer than 500 vehicles per day, if an Engineering Study determines that vehicle speeds, crash frequency, or other factors indicate that additional delineation is warranted. Although the systemic roadway segments already have been identified based on crash risk factors, that alone does not satisfy the site-specific Engineering Study determination in cases where the volume is less than 500 vehicles per day.
- Engineering Judgment should be used in determining whether to place Center Line markings on traveled ways that are less than 18 feet wide due to the potential for traffic encroaching on the pavement edges, traffic being affected by parked vehicles, or traffic encroaching into the opposing traffic lane.
- If a relatively short section of roadway requires Center Line pavement markings, but does not meet the requirements above, Center Line pavement markings may be installed on the shorter segment to maintain consistency.
- On roadways without continuous Center Line pavement markings, short sections may be marked with Center Line pavement markings to control the position of traffic at specific locations, such as around curves, over hills, on approaches to grade crossings, at grade crossings, and at bridges.

HOW: How the Countermeasure is Designed and Implemented

Materials:

- Center Line pavement markings shall be installed using Type B, Class I Thermoplastic material.
- Standard width for the Center Line markings is four (4) inches with a 4-inch space between the parallel lines.

- The space between two parallel lines shall be seven (7) inches wide if raised pavement markers are present between the parallel lines.
- A normal broken yellow line for a passing zone includes a 10-foot line and 30-foot spacing.

General Notes:

- Markings typically have a shorter lifespan than many other devices, particularly at curve locations where vehicles tend to cross the lines more frequently. The life-cycle cost of markings should be considered before installing only at curves.
- The addition of Center Line pavement markings should be the first countermeasure considered, at a minimum, when an agency identifies a curved section of roadway as a potential safety concern in locations where Center Lines are not present. When the curve carries a low traffic volume (fewer than 500 vehicles per day), the pavement is less than 18 feet wide, or it is an unpaved road, consider using post delineators, Static Chevron Alignment signs, or Curve Warning signs in lieu of Center Line pavement markings.

Typical Applications and Examples (Attached):

- *Figure 1: Examples of Two-Lane, Two-Way Marking Applications (MUTCD)*
- *Figure 2: Examples of Three-Lane, Two-Way Marking Applications (MUTCD)*
- *Figure 3: Example Design – Signing and Pavement Markings (Plan Sheet)*
- *Figure 4: Standard Drawing*

Pay Items & Quantities

Pay Item #	Spec	Description	Unit	Quantity
704SD20-0006	704	TYPE B CLASS I PVMT LINE MRKG 4"	LF	-

Sign & Seal Requirements: PE sign and seal is not required.

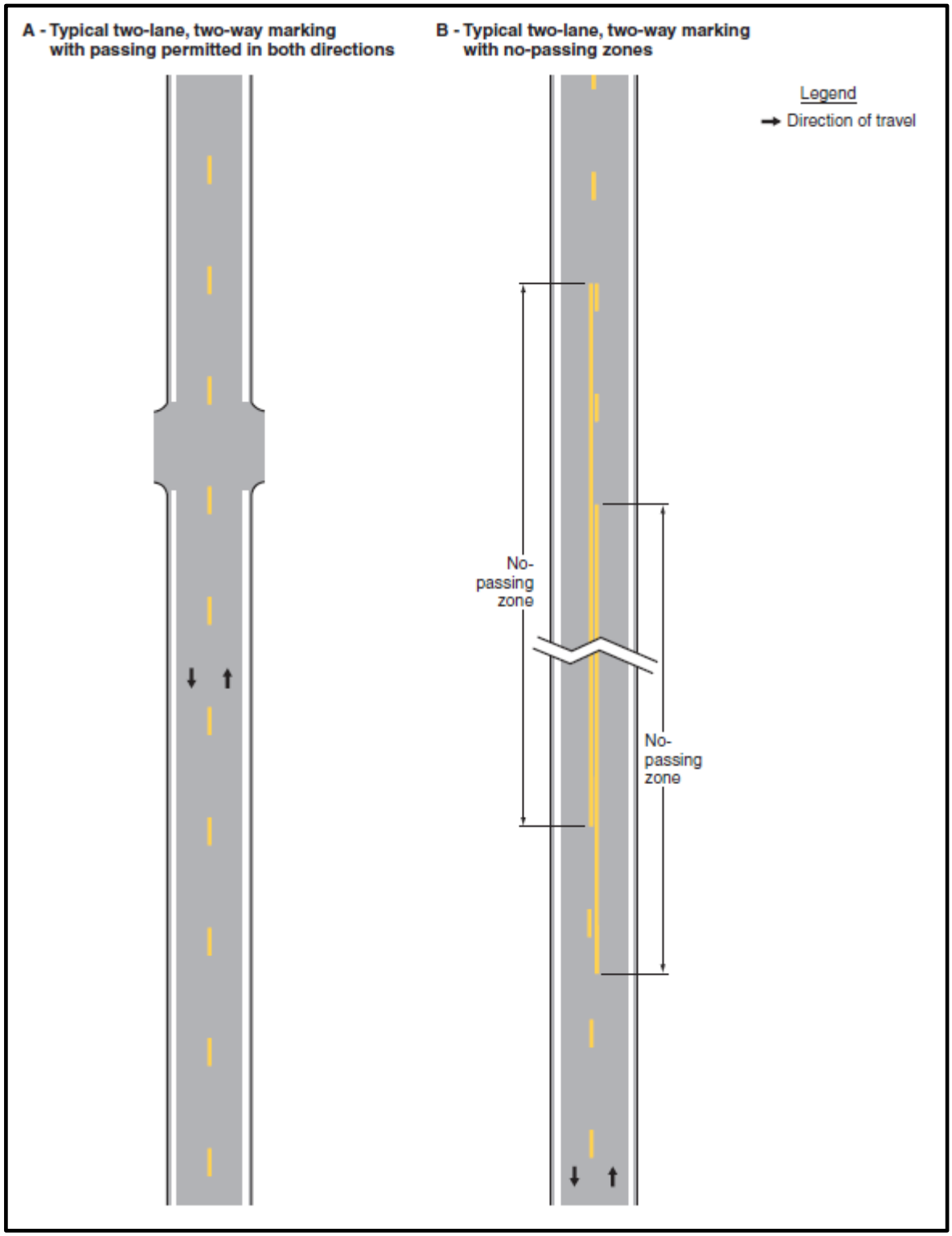
Useful References

1. 2011 Virginia Supplement to the MUTCD (Revision 1) Chapter 3B. Pavement and Curb Markings. https://www.virginiadot.org/business/resources/TED/final_MUTCD/2013_sup/Revision_1_Entire_Supplement.pdf
2. Investigation of the Safety Effects of Edge and Centerline Markings on Narrow, Low Volume Roads. Virginia Center for Transportation Innovation and Research (VCTIR). https://www.virginiadot.org/vtrc/main/online_reports/pdf/14-r3.pdf
3. Low-Cost Treatments for Horizontal Curve Safety 2016, Chapter 3. Markings. https://safety.fhwa.dot.gov/roadway_dept/countermeasures/horicurves/fhwasa15084/ch3.cfm#fig12
4. VDOT 2016 Road and Bridge Standards Section 1300 Traffic Control. https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section1300/CS1300.pdf

This Countermeasure Reference Sheet does not represent formal VDOT statewide policy or guidance, and instead is a compilation of preexisting guidelines combined with best practices. This document is a resource for designers to aid in consistent statewide implementation of VHSIP Systemic Phase II improvements.

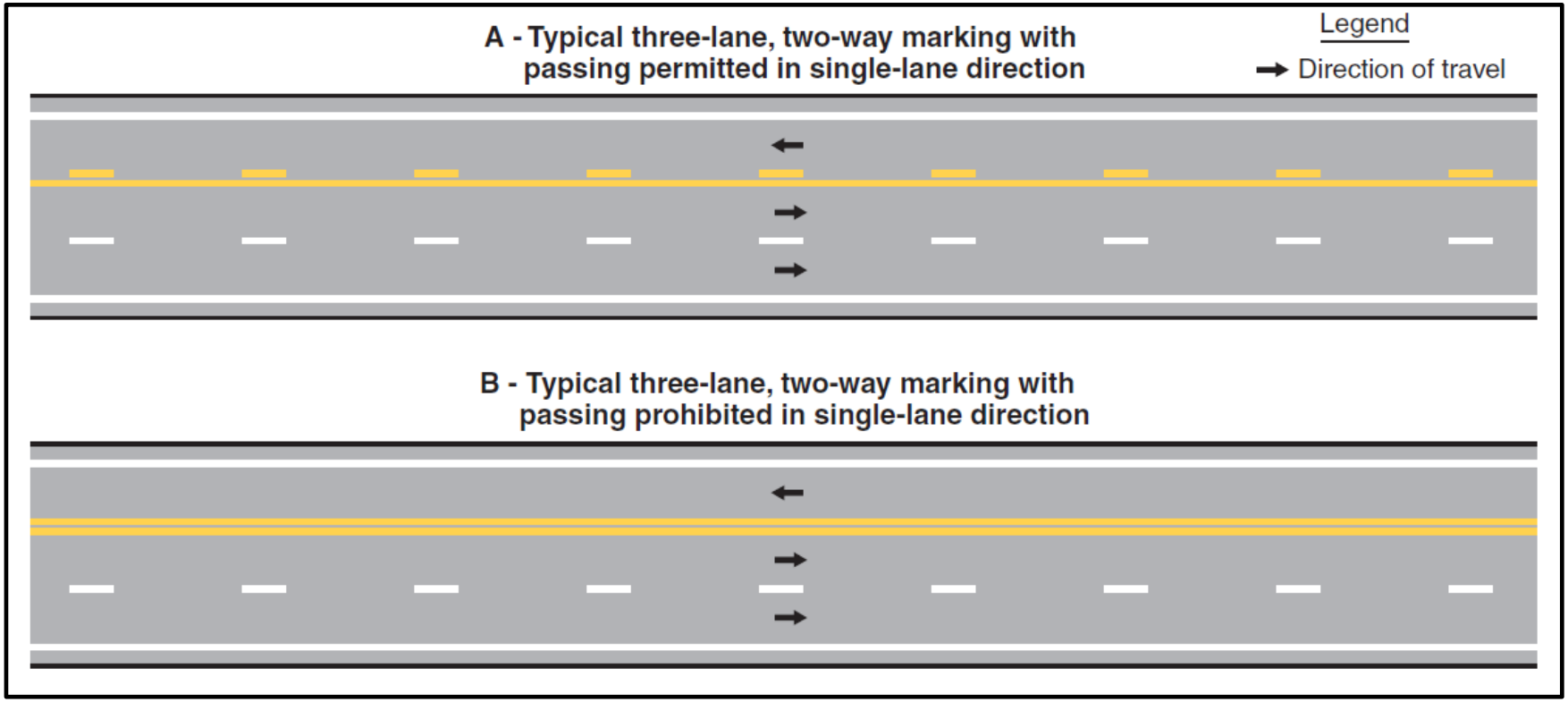
Center Line Pavement Markings

***Figure 1*: Examples of Two-Lane, Two-Way Marking Applications (MUTCD)**



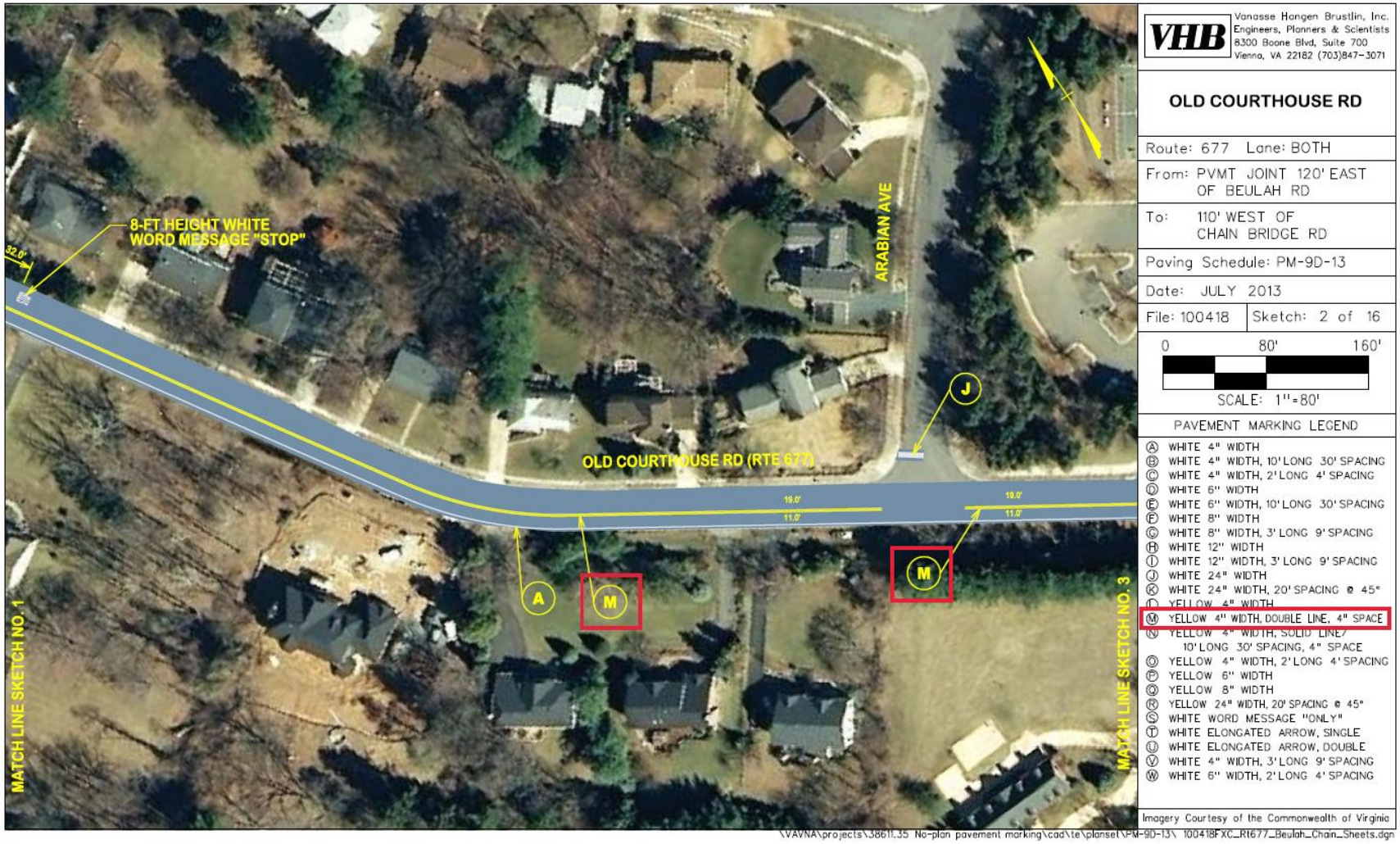
Source: MUTCD, 2009, Edition, Revisions 1 and 2 (Figure 3B-1)

***Figure 2**: Examples of Three-Lane, Two-Way Marking Applications (MUTCD)*



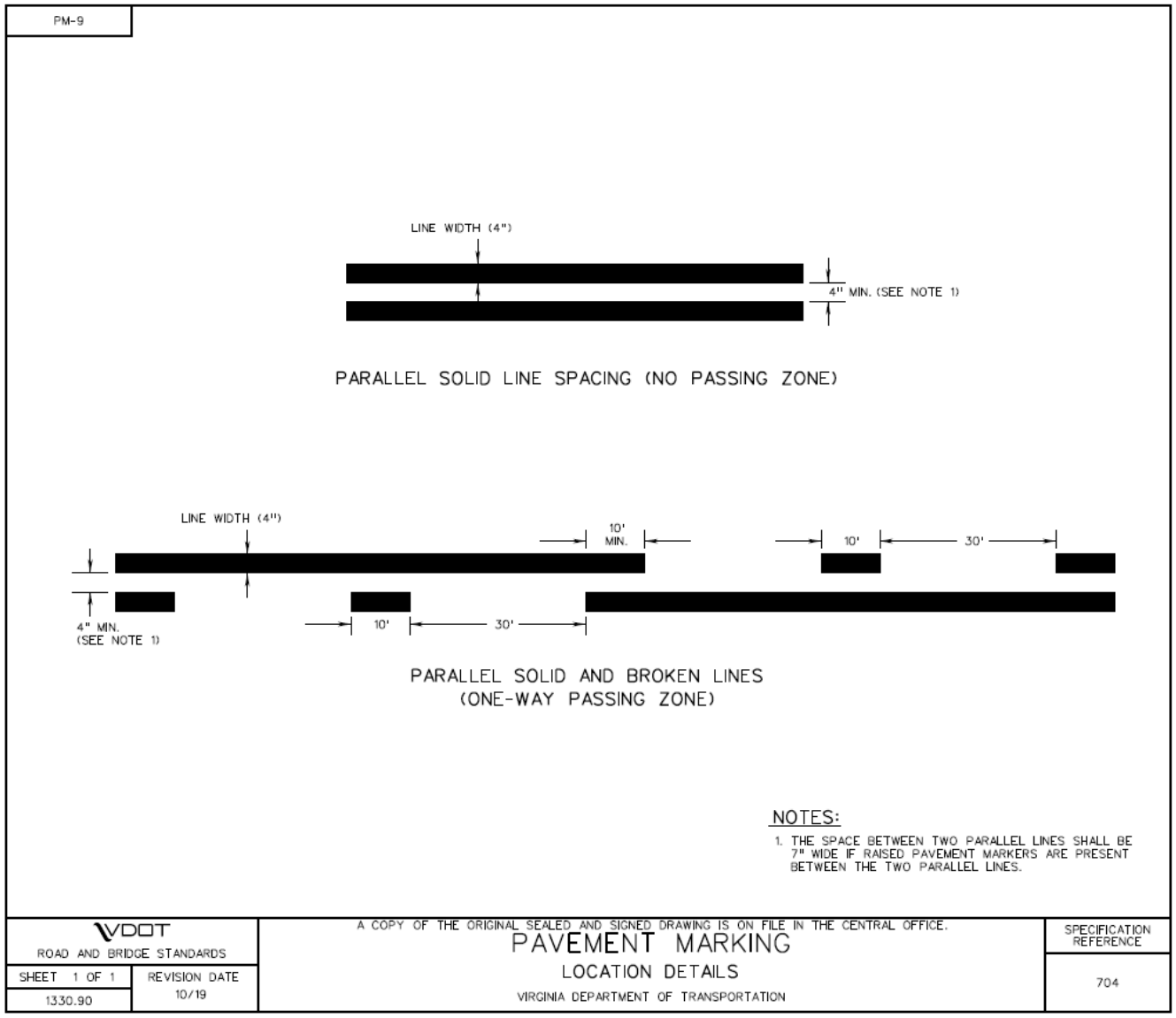
Source: MUTCD, 2009, Edition, Revisions 1 and 2 (Figure 3B-3)

***Figure 3*: Example Design – Signing and Pavement Markings (Plan Sheet)**



Center Line Pavement Markings

***Figure 4*: Standard Drawing**



Regular Width Edge Line Pavement Markings

WHAT: Countermeasure Description

Regular Width Edge Line pavement markings along two-lane rural roads are 4" wide white markings that define or delineate the right edge of a traveled way. These lines provide a visual reference to guide motorists and help reduce drifting onto the shoulder and roadside area. Edge Lines are useful, in particular while navigating horizontal and vertical curves and to provide additional guidance in adverse weather conditions such as rain, snow, or fog. When used with the center line or adjacent lane line for a multilane road, the Edge Line defines the travel lane for the road user.

Regular Width Edge Line Pavement Markings
(Example Location: Route 9, Loudoun County, VA)

WHERE: Conditions under which this Countermeasure should be Applied

The following considerations should be reviewed when determining the installation of Regular Width Edge Line pavement markings.

- Criteria for placement of Edge Line markings are shown in Table 3B-V2 (*VA Supplement to the MUTCD*).
  - Per Table 3B-V2 below, the references to Engineering Study are required for each site.
  - Although the systemic roadway segments already have been identified based on crash risk factors, that alone does not satisfy the site-specific Engineering Study determination in cases noted in this table.

Table 3B-V2. Criteria For Placement of Edge Line Markings

Pavement Width	Traffic Volume	Roadway Type					
		Undivided Limited Access	Bi-directional multi-lane	Two-lane Paved Roads with Center Line & without Curb and Gutter	Other Rural Arterials and Collectors	Local Residential	All Other Paved Roadway Segments
≥ 20 feet	≥ 3,000 vpd	Required	Required	Required	Recommended	Not Recommended unless primarily serving through traffic	May be considered only where Engineering Study indicates a need
	< 3,000 vpd	Required	Required	Required	May be considered only where Engineering Study indicates a need		
< 20 feet	≥ 3,000 vpd	Required	Required	May be considered only where Engineering Study indicates a need			
	< 3,000 vpd	Required	Required				

Note: See Paragraphs 8 and 9 of Section 3B.07 in this Supplement for additional locations where edge lines are required.

- Regular Width Edge Line markings shall be placed on roadways meeting any of the following criteria:
  - Rural arterials and collectors with a traveled way of 20 feet or more in width and an ADT of 3,000 vehicles per day or greater, with or without center line markings.
  - Sections of Primary routes subject to frequent fog or located on mountain crossings.
  - At narrow structures on all primary routes where the horizontal clearance between the structure and edge of the pavement is three (3) feet or less.

- Edge Line markings should be placed on paved rural arterials and collectors with a traveled way of 20 feet or more in width and an ADT of 3,000 vehicles per day or greater.
- For approaches to single-lane structures along two-lane roadways without continuous Edge Lines, Edge Lines shall be installed in the transition section and 300 feet upstream of the transition section (i.e., see Figure 3B-V1 in the 2011 *Virginia Supplement to the MUTCD*).
- Regular Width Edge Line markings may be excluded, based on engineering judgment, for reasons such as if the traveled way edges are delineated by curbs, parking, or other markings.
- Regular Width Edge Line markings may be used where edge delineation is desirable to minimize unnecessary driving on paved shoulders or on refuge areas with lesser structural pavement strength.

HOW: How the Countermeasure is Designed and Implemented

Materials:

- Regular Width Edge Line pavement markings shall be installed with either Paint (Type A) or Thermoplastic (Type B, Class I).
- Where existing Edge Line markings may already be in place and the designer is proposing to refresh those markings or mark the Edge Lines, the designer should review **Tables 1 and 2**, provided below, from VDOT IIM-TE-261.1 to determine pavement marking compatibility.

Table 1. Typical Service Life of Different Marking Materials.

Marking Material	Typical Service Life [1]
Latex Paint	1 Year
Epoxy	3 Years
Thermoplastic	3 Years
Patterned Preformed Tape	6 Years

[1] From 2001 Virginia Transportation Research Council Report, "Determining the Effectiveness of Pavement Marking Materials" by Cottrell and Hanson.

Table 2. Pavement Marking Material Compatibility Matrix.

If Existing Material is:	If Desired Material is:			
	Latex Paint	Thermoplastic	Epoxy	B-6 Tape
Latex Paint	Compatible	If existing is 90% removed	If existing is 90% removed	Not Compatible
Thermoplastic	Compatible	Compatible	If existing is 90% removed	Not Compatible
Epoxy	Compatible	Not Compatible	If existing is 90% removed	Not Compatible
B-6 Tape	Compatible	Not Compatible	Not Compatible	Not Compatible

Note: "Not Compatible" means that the desired new pavement marking material cannot be applied unless the existing material is eradicated in accordance with sections 512 and 704 of the VDOT *Road and Bridge Specifications*. "Compatible" implies that the existing pavement marking is still well-adhered to the pavement.

Source: VDOT IIM-TE-261.1

Regular Width Edge Line Pavement Markings

Installation Details:

- On two-lane rural roads, Edge Lines are typically on the right side of the road and are white. Since there may be short segments of the sites selected for systemic treatments where the roadway may be divided, additional information is provided for those conditions. Regular Width Edge Line pavement markings shall delineate right or left edges of travel.
    - Regular Width Right Edge Line pavement markings shall consist of a **4" solid white line** to delineate the right-hand edge of the roadway.
    - For divided or one-way roadway segments, Regular Width Left Edge Line pavement markings shall consist of a **4" solid yellow line** to delineate the left-hand edge of the roadway.
- Except for dotted Edge Line extensions, Edge Line markings shall not be continued through intersections or major driveways. Edge Line markings should not be broken for minor driveways.
- Where a paved shoulder is provided, the Edge Line shall be placed in the travel lane and not within the paved shoulder area.

General Notes:

- Initial project costs are increased by installing Thermoplastic (Type B, Class I) pavement markings; however, the Service Life is three (3) times greater (i.e., 3 Years versus 1 Year) and the Retroreflectivity Level is 2-3 times higher than that of Painted (Type A) pavement markings. Material type may be guided by District-specific preferences or means available for a given construction approach (e.g., state forces, new construction contract, or existing on-call construction contract) and the designer should discuss this topic with the District prior to completing design.
- Designer should coordinate with the District to determine if the section of roadway will be paved in the near term (based on District's understanding of paving schedule and pavement condition), to assess potential near-term construction conflicts, coordinate with paving schedules to implement countermeasure with paving, and/or to prevent investment of this countermeasure with HSIP funds for a section of roadway about to be repaved.
- Wider Edge Lines (6" to 8") should be considered for additional emphasis, traffic calming, and safety applications. *See also "Wider Edge Line Pavement Markings Countermeasure Reference Sheet."*

Typical Applications and Examples (Attached):

- *Figure 1: Example of Regular Width Edge Line Markings (MUTCD)*
- *Figure 2: Example Design - Regular Width Edge Line Markings (Plan Sheet)*

Regular Width Edge Line Pavement Markings

Pay Items & Quantities

Pay Item #	Spec	Description	Unit	Quantity
704SD20-0001	704	TYPE A PVMT LINE MRKG 4"	LF	-
704SD20-0006	704	TYPE B CLASS I PVMT LINE MRKG 4"	LF	-

Sign & Seal Requirements: PE sign and seal is not required.

Useful References

1. 2011 Virginia Supplement to the MUTCD (Revision 1) Chapter 3B. Pavement and Curb Markings. https://www.virginiadot.org/business/resources/TED/final_MUTCD/2013_sup/Revision_1_Entire_Supplement.pdf
2. Investigation of the Safety Effects of Edge and Centerline Markings on Narrow, Low Volume Roads. Virginia Center for Transportation Innovation and Research (VCTIR). https://www.virginiadot.org/vtrc/main/online_reports/pdf/14-r3.pdf
3. Low-Cost Treatments for Horizontal Curve Safety 2016, Chapter 3. Markings. https://safety.fhwa.dot.gov/roadway_dept/countermeasures/horicurves/fhwasa15084/ch3.cfm#fig12
4. VDOT 2016 Road and Bridge Standards Section 1300 Traffic Control. https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section1300/CS1300.pdf
5. Edge-Line Pavement Markings on Two-Lane, Two-Way Local Roads, PennDOT Technical Information Sheet #201, Fall 2020. https://gis.penndot.gov/BPR_PDF_FILES/Documents/LTAP/TechSheets/TS_201_color.pdf

This Countermeasure Reference Sheet does not represent formal VDOT statewide policy or guidance, and instead is a compilation of preexisting guidelines combined with best practices. This document is a resource for designers to aid in consistent statewide implementation of VHSIP Systemic Phase II improvements.

Regular Width Edge Line Pavement Markings

***Figure 1*: Example of Regular Width Edge Line Markings (MUTCD)**

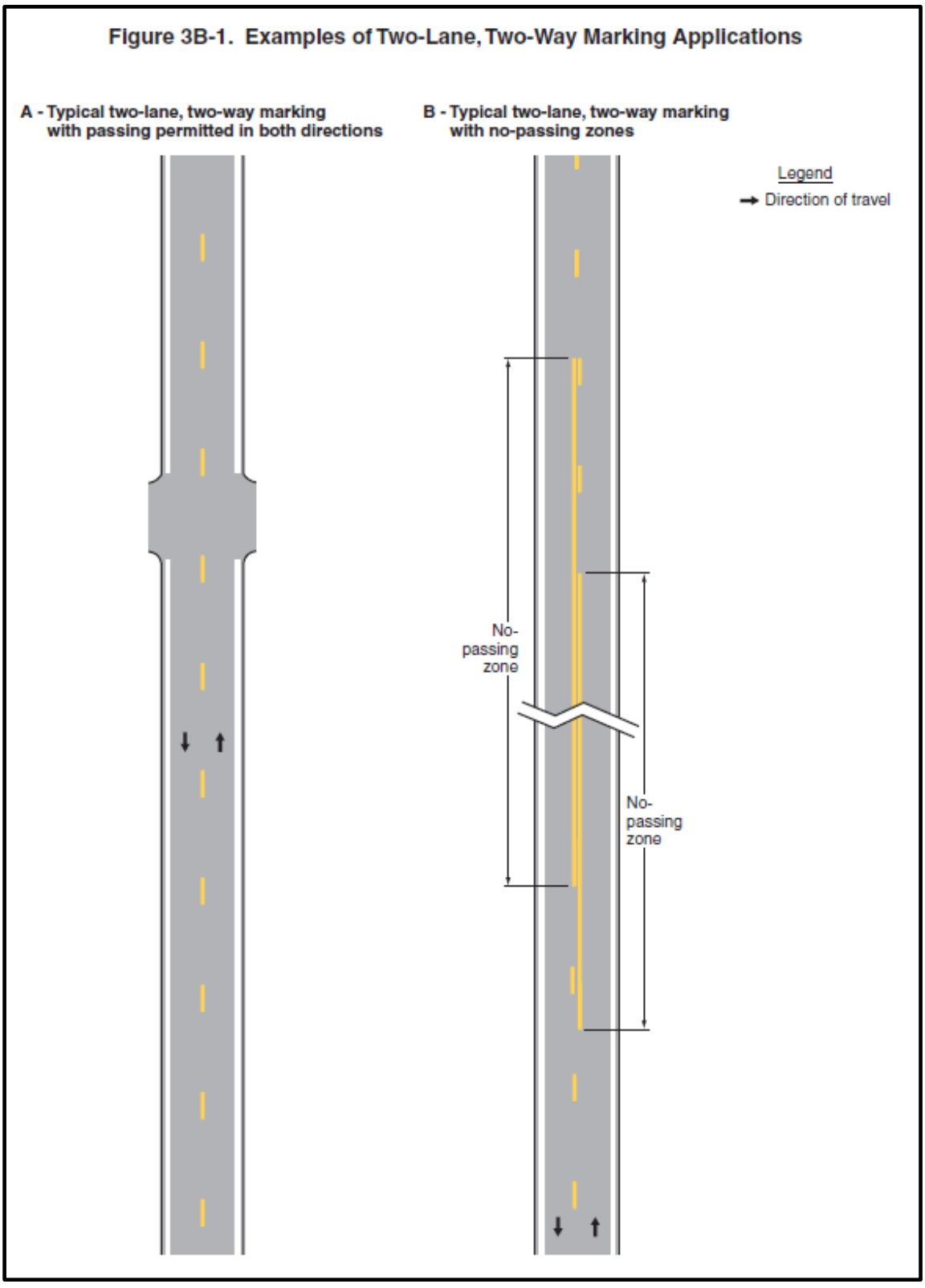


***Figure 2**: Example Design - Regular Width Edge Line Markings (Plan Sheet)*

South Main Street Pedestrian Road Safety Assessment

South Main Street

Pedestrian Road Safety Assessment

Danville, VA

9/25/2024

PATHS Prioritizing Active Transportation, Health, and Safety

Table of Contents

Acknowledgements

PATHS would like to thank the following organizations for providing valuable input throughout the RSA process:

- Virginia Department of Transportation
- Virginia Department of Health and their Virginia Walkability Action Institute
- City of Danville

Introduction

Background

The purpose of this study was to complete a road safety assessment (RSA), focusing on active transportation safety and health equity, for South Main Street in the City of Danville, VA. The City of Danville is in south Virginia with a population of approximately 43,000 people. The RSA was commissioned by a joint collaboration between the Virginia Department of Health (VDH) and the Virginia Department of Transportation (VDOT) through their Prioritizing Active Transportation, Health and Safety (PATHS) initiative. The City accepted an invitation to partner with PATHS for a health-equity-focused RSA in early Fall 2024. The PATHS team and the City selected the corridors based on the combination of safety concerns, a low Heath Opportunity Index (HOI) score, a top 1% statewide VDOT Pedestrian and Bicycle Safety Action Plan (PBSAP) corridor ranking, and the mix of land-use and road users along the corridor.

The PATHS RSA approach seeks to enhance walkability for improved safety and more equitable health outcomes through a focused multidisciplinary review of a roadway. Health equity is when every person has the opportunity to attain their full health potential, and no one is disadvantaged because of their social position or socially determined circumstances. However, the 2024 update of the PBSAP confirmed that nearly half of Virginia's fatal pedestrian crashes and nearly two-thirds of all pedestrian injury crashes occurred in areas with Low or Very Low HOI scores, indicating inequitable health and safety outcomes. Further, the 2024 PBSAP update identified the HOI as a high indicator of pedestrian crash risk. Transportation safety affects health equity because reliance on transit, walking, and biking to access employment, health care, education, and general errands may increase one's risk of being involved in a serious crash – specially on roadways with high speeds and high vehicular volume.

RSA Study Area

Geography, Roadway, and Traffic

The study area, illustrated in Figure 1, encompasses roughly 1.6 miles of S Main Street. The corridor is a City maintained road that serves as a connection to Central Boulevard that leads to the downtown Danville area north of the study area, and the US-29 interchange south of the corridor. S Main Street is a north-south oriented arterial road and connects residential, commercial, and institutional areas. A summary of the corridor characteristics is shown in Table 1 and pedestrian facilities at intersections is show in Table 2.

The RSA reviewed the following four segments of S Main Street Figure 1. Each segment is approximately 2,000 feet long.

- Segment 1 – S Main Street, Watson Street to Levelton Street / Industrial Avenue
- Segment 2 – S Main Street, Levelton Street / Industrial Avenue to Brodnax Street
- Segment 3 – S Main Street, Brodnax Street to Lockett Drive
- Segment 4 – S Main Street, Lockett Drive to Updike Place

Table 1 - Overview of Corridor Characteristics

Characteristics	Description
Orientation	North-South
Estimated Annual Average Daily Traffic (AADT) in 2022 (vehicles per day)[1]	15,400 (from Central Boulevard to Broadnax Street) 10,900 (from Broadnax Street to Lockett Drive) 10,300 (from Lockett Drive to Updike Place)
Speed Limit (miles per hour)	40
Number of Lanes	4 lanes (two in each direction) from Central Boulevard to Flint Street and College Park Drive/Shamrock Drive to Updike Place 5 lanes (two in each direction with two-way left turn lane) between Flint Street and College Park Drive/Shamrock Drive
Lane Widths (feet)	12′ through lanes 14′ two-way left turn lane
Roadway Features	Divided roadway with concrete median throughout most of the corridor Right and left turn lanes common at intersections along the corridor
Land Uses	Medium-Density Residential, Commercial (shopping plazas and convenience stores in multiple locations), Institutional (Danville Community College at Kemper Road)
Transit Presence	4 bus stops along the corridor only locatable by sign and have no amenities
Pedestrian Facilities	Sidewalks along both sides of the corridor from Watson Street to College Park Drive/Shamrock Drive
Bicycle Facilities	No bike facilities along the corridor

[1] Estimated Annual Average Daily Traffic with Factored Short Term Traffic Count Data with Growth Element, per VDOT https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/traffic-operations/traffic-counts/

Table 2 - Overview of features for intersections with existing pedestrian crossings across S Main Street

Intersection	Signalized	Un-signalized	School Zone	Transit Stop Presence	Marked Crosswalks	Spacing to Marked Crosswalk
S Main Street and Watson Street	X	-	-	-	South Leg	4400′ (North) 1500′ (South)
S Main Street and Levelton Street/Industrial Avenue	X	-	-	-	South Leg	1500′ (North) 1700′ (South)
S Main Street and Dudley Street	-	X	-	-	-	500′ (North) 1200′ (South)
S Main Street and Hughes Street	-	X	-	-	-	850' (North) 850' (South)
S Main Street and Kemper Road	X	-	-	X	-	1200' (North) 500' (South)
S Main Street and Broadnax Road	-	X	X	-	South leg	1700′ (North) 780′ (South)**
S Main Street near College Park Drive/Shamrock Drive	-	X	X		Midblock**	780′ (North) 4300′ (South)
S Main Street and College Park Drive/Shamrock Drive	-	X	X	-	-	300' (North)** 4000' (South)
S Main Street and Lockett Drive	-	X	-	X	-	2500' (North)** 1800' (South)
S Main Street and Updike Place	X	-	-	-	All legs	4300' (North)** 600' (West)

**Indicates crosswalk spacing from middle of the intersection without marked crosswalks.*

***Indicates crosswalk is midblock and uncontrolled (not located at a signal or traffic control device requiring traffic on S Main St to stop)*

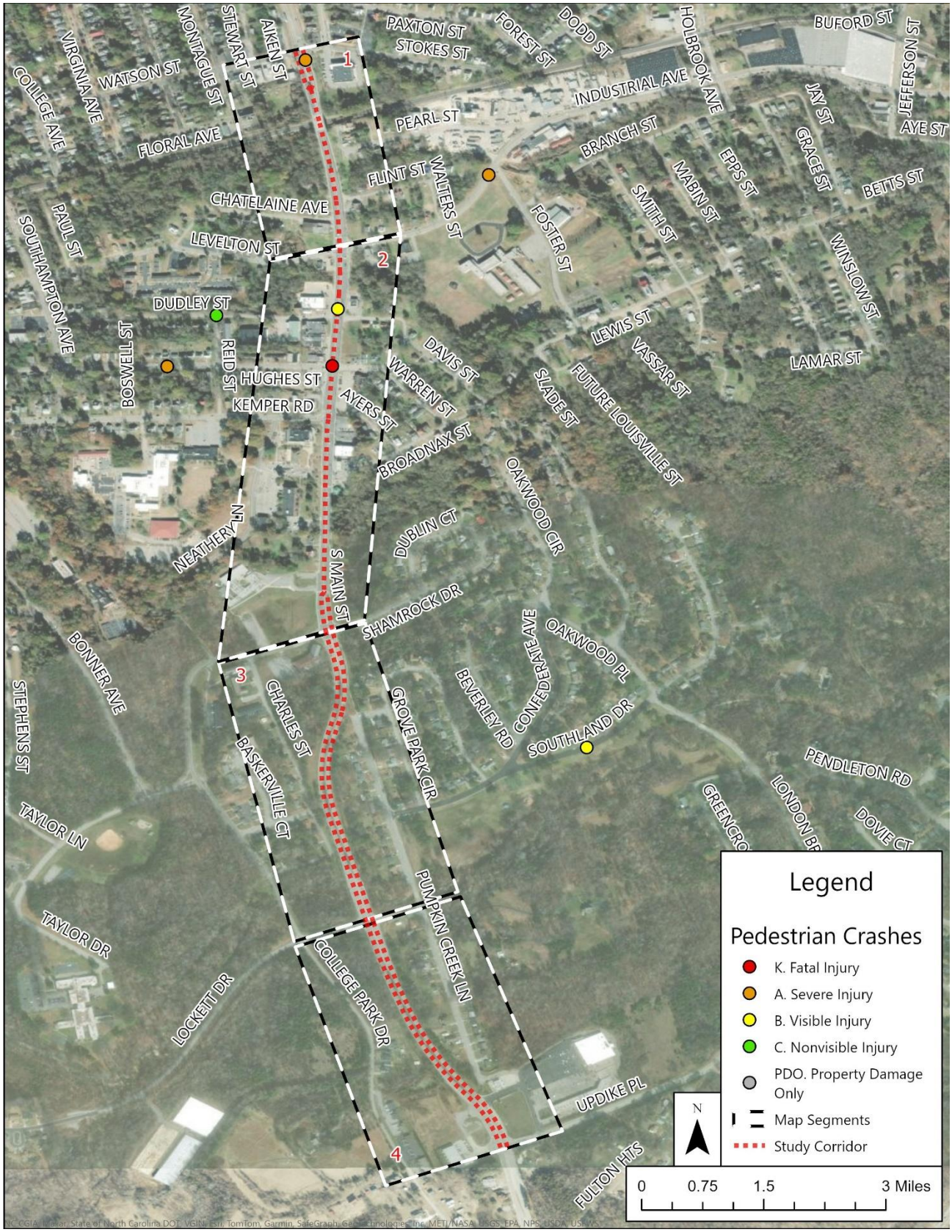


Figure 1 - Study Area Map Segments with Bicycle and Pedestrian Crashes, 2016-2023

Land Use

There is a mix of land use adjacent to the corridor. The corridor's surrounding land use is mostly made up of commercial and residential. uses There are also parcels with land uses consisting of institutional, mixed-use, light industrial, and rection/open space uses.

Community Health and Assets

The corridor is located within areas identified with Low and Very Low HOI. The HOI score is made up of four profiles:

- Community Environmental – a measure of the natural, built, and social environment
- Consumer Opportunity – a measure of the consumer resources available within a community
- Economic Opportunity – a measure of the economic opportunities available within a community
- Wellness Disparity – a measure of the disparate access to health services within a community

These profiles had a range scores with the Community Environmental Profile indicating predominantly "Very High" scores, the Consumer Opportunity Profile indicating mostly "Very Low" scores, the Economic Opportunity Profile indicating "Low" and "Very Low" scores, and the Wellness Disparity Profile indicating "Low", "Average", and "High" scores.

The FHWA Screening Tool for Equity analysis of Projects (STEAP) tool is used to identify key socioeconomic factors related to the study area. A summary of the FHWA STEAP data is shown in Table 3.

Table 3 - Overview of FHWA STEAP data

Socioeconomic Variables	Description	Percentage
Household Income In the Past 12 Months (In 2021 Inflation-Adjusted Dollars)	Less than $10,000 to $30,000	46.4%
Gross Rent As A Percentage Household Income In The Past 12 Months	50% or more	28.9%
Vehicle Availability	No vehicle available	17.6%
Household Type For Children Under 18 Years In Households (Excluding Householders, Spouses, And Unmarried Partners)	In female householder, no spouse/partner present household	48.2%

When describing the corridor's community assets in relation to pedestrians, the RSA team identified the following locations by Segment:

- Segment 1: General hospital north of segment and Walgreens
- Segment 2: Restaurants, medical facilities, Family Dollar, convenience store, and Danville Community College
- Segment 3: Church and preschool
- Segment 4: The Southwyck Plaza (Food Lion, restaurants, etc.), and the Dollar General

Transit

There are four bus stops present along S Main Street, some of which are not locatable by a sign and have no amenities such as benches, lighting, and shelters. The only bus stop that did have a bench was the one in front of the Family Dollar between Dudley Street and Hughes Street. The bus stops are serviced by City Transit route no. 1

Kemper Road-Danville Community College and route no. 4 Health Center. There are additional bus stops to the north of the S Main Street.

Pedestrian and Bicyclist Crash Data

VDOT's PowerBI tool provided the pedestrian- and bicyclist-involved crash data. There were no bicycle crashes within the 5-year time frame of the data sourcing, however bicycle crashes were included in the RSA analysis because of potentially similar travel characteristics to pedestrians (i.e., riding on sidewalks in lieu of on-street bicycle lanes). Between 2016 and 2023, there were three pedestrian involved on-roadway crashes. Crash locations are shown in Figure 1, and a summary of the crash data is shown in Table 4. Initial data review showed that showed that two of the crashes occurred during daylight hours and one of the crashes occurred during darkness or low-light times. Additionally, the crashes occurred at different location types along the corridors, including mainline roadway and within an intersection. The crashes were reported as severe injury, visible injury, and fatal injury. The crashes are diagrammed with the location and the corresponding map segment shown in the Appendix.

Table 4 - S Main Street Pedestrian and Bicyclist Crash Summary, 2016-2023

Crash Records by Crash ID and Map Segment *(Reported Pedestrian and Bicycle Crashes, 2016-2023)*							
Crash ID	**Map Segment**	**Type**	**Date**	**Time**	**Injury Severity**	**Location**	**Lighting Condition**
1	1	Ped	1/10/2023	14:53	Severe Injury	Main-Line Roadway	Daylight
2	2	Ped	3/12/2016	18:07	Visible Injury	Main-Line Roadway	Daylight
3	2	Ped	12/30/2016	20:16	Fatal Injury	Intersection Related	Darkness – Road Lighted

RSA Process

RSA Team

The RSA team comprised the following people:

- Kitteria Mayo, Danville Chapter Chair
- Derrick Lancaster, Danville Police Department
- Haywood McKenly Graves (Danville Community College)
- Cornelius Johnson, Danville Community College
- Eli Wilson, VDOT Lynchburg District
- Karen Black, Danville Public Works*
- Marc Adelman, Transportation Director*
- Tyrell Payne, Transportation Board Member*
- Brian Fox, Danville Life Saving Creek*
- Annette Oudom, VHB, on behalf of PATHS
- Taylor Bonner, VHB, on behalf of PATHS

** Indicates that the representative was unable to attend the in-person portion of the RSA*

RSA Agenda

The RSA was conducted over one day and featured the primary RSA activities and the full RSA team; it began with background on the RSA process, common pedestrian crash types, and a review of the study area context, characteristics, and health data. Following a briefing on the map packet and practicing safety in the field, the RSA team conducted the segment field reviews, beginning with Segment 1. After the field review, the RSA team debriefed on the observations made and various safety concerns for the corridor. Additionally, a nighttime field review to assess lighting conditions along the corridor was conducted by the PATHS team.

The Appendix includes the RSA agenda and other supporting items.

Assessment Findings

Area-Wide Positive Features

The study area includes some features that promote pedestrian safety including marked crosswalks and pedestrian signal heads with countdown timers at three signalized intersections, including S Main Street at Watson Street, Levelton Street, and Updike Place. Also, sidewalk is present along most of both sides of the corridor between Watson Street and College Park Drive/Shamrock Drive. South of Shamrock Drive, sidewalk on the east curb connects pedestrians to sidewalk on Pumpkin Creek Lane, serving as a connection to the Food Lion grocery store and other commercial properties. At the intersection of Updike Place and S Main Street, there is a new traffic signal with pedestrian signals, new curb ramps, high visibility crosswalks, and an all-pedestrian phase that prohibits vehicular movements during the walk phase.

Area-Wide Issues

The RSA team observed the following issues affecting pedestrian safety along the study corridor:

- *Pedestrian Facilities* – While there are sidewalks throughout much of the corridor, there are segments with narrow sidewalk segments that have vegetation overgrowth resulting in an effective width of less than 5 feet and no furnishing strip or buffer in some locations that reduce comfort when walking alongside a roadway with higher vehicle volumes and speeds. There are also many ADA compliance issues with driveway cross slopes, old curb ramp designs, utility poles reducing the usable width of the sidewalk, and the bridge spanning the railroad tracks south of Watson Street has a significant upwards slope with narrow sidewalks. There is one uncontrolled crosswalk roughly 300 feet north of College Park Drive/Shamrock Drive without appropriate crosswalk safety enhancements in line with FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossings, shown in Figure 4, and VDOT's IIM-TE-384.1. The significant gaps between the spacing of marked crosswalks (greater than 800 feet) may lead to pedestrians to crossing at higher risk locations where crosswalks are not marked and drivers do not expect pedestrians – refer to Table 2 for more details.

- *Motor Vehicle Speeds* – Overall vehicle speeds appeared to be above the posted 40 mph speed limit. RSA participants reported that higher vehicle speeds may impact pedestrian comfort walking along and crossing the roadway. The distance between signalized intersections, the cross section width and grade of the roadway, and minimal traffic congestion may contribute to the vehicular speeds greater than 40 mph. The roadway is five-lane undivided with a two-way left turn lane – traffic volumes are significantly less than what can be supported by a roadway of this configuration, allowing for high vehicular speeds due to limited congestion.

- *Lighting* – The RSA team reported that overall roadway lighting had been upgraded to LED recently, but lighting levels and placement at crossing locations did not align with national pedestrian-scale lighting guidance. There was also a lack of lighting at unsignalized intersections and along the roadway, specifically on the west curb of Levelton Street/Industrial Avenue intersection near the Family Dollar.

- *Vegetation/Sedimentation Encroaching on Sidewalks and Affecting Visibility* – The RSA team identified numerous locations along the corridor where encroaching vegetation limited the usable width of sidewalk and curb ramps.

- *Access to Transit* – Many of the transit bus stops lack boarding and alighting areas that are ADA compliant, and marked crosswalks (with appropriate visibility enhancements) to facilitate passengers crossing S Main Street to access those stops away from signalized intersections. Segment-specific recommendations for crossing improvements are noted later in the report.

- *Land Use and Network Connectivity* – The corridor has several features that concentrate vehicle trips along S Main Street, contribute to elevated roadway speeds, and reduce bicycle and pedestrian connectivity. The corridor is a major north/south route into Danville and is classified as a minor arterial, but the lack of a connected grid roadway network does not allow for the distribution of vehicle trips; S Main Street is a heavily used vehicular route for commuters, local travelers, and regional traffic during incidents on U.S. Route 29.

*Figure 2 (Left) – Picture S Main Street, facing north (*Credit: VDOT)

Figure 3 (Right) – Picture of S Main Street and Dudley Street crossing (Credit: VDOT)

Area-Wide Suggestions

The following suggestions are recommended within three implementation timeframes to promote pedestrian safety throughout the corridor. **These suggestions are dependent on funding availability, project feasibility, other local constraints, and coordination between local, state, regional, and private entities**. They should be revisited depending on funding availability and for compatibility with concurrent improvement opportunities

(e.g., roadway overlay schedules, new development, new community facilities, and intersection upgrades). Segment-based recommendations, implementation timeframes, and responsible parties are described later in this report and summarized in the Appendix.

Near-term (0-2 years)

- Danville to trim vegetation encroaching on sidewalk and limiting sight distance at intersections.
- Danville to evaluate all signals for the installation of High-Visibility Back Plates (HVSB), Leading Pedestrian Intervals (LPI), and Flashing Yellow Arrow (FYA). Evaluate No Right Turn on Red (NTOR) at side streets with poor sight distance.
- Danville to install/upgrade crosswalks at unsignalized locations to in line with treatments recommended in FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossings and VDOT's IIM-TE-384.1. Table 5 shows the proposed crosswalk distances, to be installed with appropriate safety treatments.
    - See discussion of potential new crosswalks at Dudley Street and Hughes Street and relocation of the existing crosswalk north of Shamrock Drive.
    - For each crosswalk, all curb ramps need to be compliant with ADA and Public Right-of-Way Accessibility Guidelines (PROWAG) requirements.
- Danville to install marked crosswalks on all legs of signalized intersections.
    - For each crosswalk, all curb ramps, push button locations, and accessible pedestrian signals along the corridor need upgrades to be compliant with ADA and Public Right-of-Way Accessibility Guidelines (PROWAG) requirements
    - The intersection of Main Street and Updike Place is an exception to all of these recommendations as it has been recently constructed and meets these requirements.
- Danville Mass Transit to evaluate existing transit stop locations relative to marked pedestrian crossings and relocate within approximately 100 feet of a crossing and add transit stop amenities such as shelters, benches, signage, and lighting.
- Danville Utilities to fix lighting that is non-functioning along the corridor.

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	❶ 2 4 5 6	❶ 5 6 7 9	① 5 6 ❼ ❾	❶ 4 5 6	❶ 5 6 7 9	① 5 6 ❼ ❾	❶ 4 5 6 7 9	① 5 6 7 9	① 5 6 ❾
3 lanes with raised median (1 lane in each direction)	❶ 2 3 4 5	❶ ❸ 5 7 9	① ❸ 5 ❼ ❾	① 3 4 5 7 9	① ❸ 5 ❼ ❾	① ❸ 5 ❼ ❾	① ❸ 4 5 7 9	① ❸ 5 ❼ ❾	① ❸ 5 ❾
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	❶ 2 3 4 5 6 7 9	❶ ❸ 5 6 7 9	① ❸ 5 6 ❾	① 3 4 5 6 7 9	① ❸ 5 6 ❼ ❾	① ❸ 5 6 ❾	① ❸ 4 5 6 7 9	① ❸ 5 6 ❾	① ❸ 5 6 ❾
4+ lanes with raised median (2 or more lanes in each direction)	❶ ❸ 5 7 8 9	❶ ❸ 5 7 8 9	① ❸ 5 8 ❾	① ❸ 5 7 8 9	① ❸ 5 ❼ 8 ❾	① ❸ 5 8 ❾	① ❸ 5 ❼ 8 9	① ❸ 5 ❼ 8 ❾	① ❸ 5 8 ❾
4+ lanes w/o raised median (2 or more lanes in each direction)	❶ ❸ 5 6 7 8 9	① ❸ 5 ❻ 7 8 9	① ❸ 5 ❻ 8 ❾	① ❸ 5 ❻ 7 8 9	① ❸ 5 ❻ ❼ 8 ❾	① ❸ 5 ❻ 8 ❾	① ❸ 5 ❻ ❼ 8 9	① ❸ 5 ❻ ❼ 8 ❾	① ❸ 5 ❻ 8 ❾

Given the set of conditions in a cell,

\# Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Rectangular Rapid-Flashing Beacon (RRFB)**
8 Road Diet
9 Pedestrian Hybrid Beacon (PHB)**

Figure 4 – FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossings. (Credit: FHWA)

Table 5 – Overview of features for intersections with proposed short-term pedestrian crossings across S Main Street

Intersection	Signalized	Un-signalized	School Zone	Transit Stop Presence	Marked Crosswalks across S Main Street (Proposed and Existing)	Spacing to Marked Crosswalk
S Main Street and Watson Street	X	-	-	-	South leg North leg	N/A (Limited Access to North) 1,500' (South)
S Main Street and Levelton Street/Industrial Avenue	X	-	-	-	South leg North leg	1,500' (North) 530' (South)
S Main Street and Dudley Street	-	X	-	-	North or South leg[2]	530' (North) 380' (South)
S Main Street and Hughes Street	-	X	-	-	North or South leg[2]	380' (North) 370' (South)
S Main Street and Kemper Road	X	-	-	X	North and South legs	370' (North) 500' (South)
S Main Street and Broadnax Road	-	X	X	-	South leg	500' (North) 1,100' (South)
S Main Street near College Park Drive/Shamrock Drive	-	X	X		~~Midblock~~ Relocate to Shamrock Drive Intersection	780' (North) 310' (South)
S Main Street and College Park Drive/Shamrock Drive	-	X	X	-	North leg	1100' (North) 4,100' (South)
S Main Street and Lockett Drive	-	X	-	X	N/A[1]	2,200' (North) 1,800' (South)
S Main Street and Updike Place	X	-	-	-	North and South legs	4,100' (North) 600' (West)

[1]*Intersection currently does not have any connecting pedestrian or bicyclist facilities. Upon potential redesign or inclusion of sidewalks on Lockett Drive, crosswalks should be installed to connect people to sidewalks on Pumpkin Creek Lane*

[2] *Crosswalk location on Main Street relative to the intersection should be determined and consider opportunities for one-way conversions and space for pedestrian refuge islands.*

Red text indicates proposed or relocated crosswalks and updated spacing

Intermediate (2-5 years)

- Danville to investigate the potential for a roadway reconfiguration on the corridor between Watson Street and Shamrock Drive. This portion of S Main Street has land use and trip generators most conducive to pedestrian and bicyclist crossings, as well as many access points via side streets and driveways. Potential configurations could include a 4-lane divided corridor with access management or a 3-lane configuration with a two-way left turn lane.
    - Traffic volumes throughout the day are significantly lower than what can be accommodated, allowing for vehicle speeds that increase the risk of pedestrian fatalities.
    - The existing roadway configuration may make meeting a 40 mph target speed difficult.
    - Additional space could be used for extending the sidewalk, dedicated bike lanes, or exclusive transit space if a high-frequency route was designated for the full length.
- Danville to replace non-ADA compliant ramps in conjunction with the paving schedule.

Long-term (5+ years)

- Danville to evaluate consolidating access at uncontrolled driveways, coordinated with new development, redevelopment, or major roadway improvements.
- Danville to implement findings from the planning study for roadway reconfiguration, including an emphasis on safety for all modes.
    - With potential uncontrolled pedestrian crossings, the posted speed limit and target speed should not be greater than 35 mph. The desired target speed should indicate the roadway reconfiguration needed.
    - 5-lane to 3-lane Road Diet (*see following section for more details*): one through lane in each direction, two-way-left-turn lane in middle with 25-30 mph target speeds. Allows for on-street bicyclists facilities with separated facilities, but may be unprotected. Pedestrian crossings on a 3-lane road may be uncontrolled, though is recommended with additional enhancements.
    - 4-lane conversion: landscaped median and left turn lanes at signalized intersections. Continue landscaped median through unsignalized intersections to make them right-in right-out or convert to Reduced Left-Turn Conflict (RCUT) intersections. Target speed of 30-35 mph with physical separation for bicyclists and pedestrian hybrid beacons (PHB) or rectangular rapid flashing beacons (RRFB) with raised crosswalks for pedestrian crossings.

Road Diet

FHWA defines a road diet as the reconfiguration of a roadway to improve safety and accommodate all users through a lane reduction. Typically, this involves repurposing one or more vehicular travel lanes for other travel modes, such as adding bike lanes, widened or new sidewalks, or dedicated turn lanes. This reconfiguration can reduce speeding, improve traffic flow, and make streets safer for non-motorized users by providing designated spaces for walking and biking. Road diets can have significant safety benefits, with a 4-lane to 3-lane conversion (2-lanes with a two-way-left-turn lane) having crash reduction potential of 47 percent.[2]

[2] Persaud, B., Lana, B., Lyon, C., and Bhim, R. "Comparison of empirical Bayes and full Bayes approaches for before-after road safety evaluations." Accident Analysis & Prevention, Vol. 42, Issue 1, pp. 38-43 (2010)

FHWA's *Road Diet Informational Guide* states that studies have shown road diets can be implemented on roadways with average daily traffic (ADT) volumes upwards of 25,000 vpd.[3] Though road diets may be feasible on high volume roadways, FHWA recommends that roadways with volumes less than 20,000 vpd are good candidates for road diets. VDOT guidance states that roadways with volumes less than 16,000 vpd may be good candidates for road diets.[4] S Main Street currently has traffic volumes of roughly 10,000 to 15,000 vpd, which makes it a good road diet candidate by both FHWA and VDOT guidance. Another road diet in Danville includes West Main Street between Stewart Street and Holbrook Avenue, which was reconfigured from a 4-lane divided roadway to a 2-lane divided roadway with bike lanes and parking.

An example of a road diet in the City of Danville is Westover Drive (State Route 51) in 2019, where the roadway was reconfigured from a 4-lane undivided roadway to a 2-lane undivided roadway with bike lanes on both sides. Figure 5 shows the before and after cross-sections of the roadway.

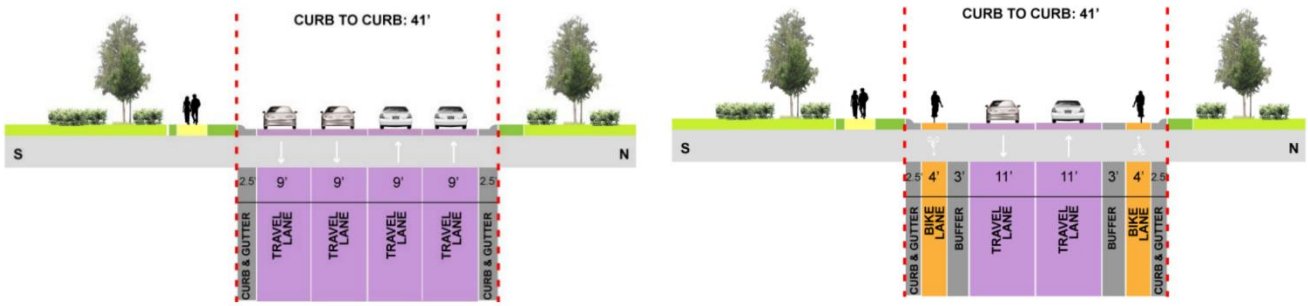


Figure 5. Cross-section of Westover Drive before and after reconfiguration (Source: City of Danville)

The existing traffic volumes on S Main Street reveal that there could be potential for a 5- to 3-lane conversion. This type of conversion has been completed within the U.S. on several corridors that pass through areas with mixed land use or areas with a heavy commercial presence. Given the commercial frontage along S Main Street between Levelton Street and Brodnax Road, the economic and safety benefits could be substantial. Examples of 5- to 3-lane conversions include N Monroe Street in Spokane, WA (Figure 6 and Figure 7) or Wilton Drive in Broward, FL (Figure 8). Since implementation of the roadway reconfiguration, Wilton Drive has seen a 66 percent reduction in pedestrian and bicyclist crashes and 75 percent reduction in fatal and serious injury crashes.[5]

[3] Knapp, Keith, Brian Chandler, Jennifer Atkinson, Thomas Welch, Heather Rigdon, Richard Retting, Stacey Meekins, Eric Widstrand, and Richard J. Porter. Road diet informational guide. No. FHWA-SA-14-028. United States. Federal Highway Administration. Office of Safety, 2014.

[4] Roadway reconfiguration guidance. Accessed December 4, 2024. https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/transportation-and-mobility/bicycle-and-pedestrian/23671-VDOT_Road_Diet_Brochure.pdf.

[5] "Broward Metropolitan Planning Organization: Complete Streets Master Plan & Wilton Drive Implementation." Roadway Safety Foundation. Accessed December 4, 2024. https://www.roadwaysafety.org/broward-metropolitan-planning-organization-complete-streets-master-plan-wilton-drive-implementation.

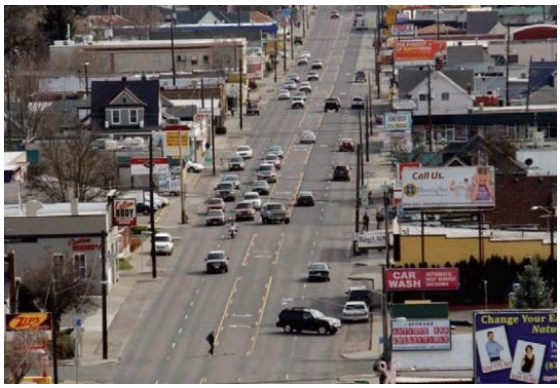


Figure 6 (left) – Photo of North Monroe Street, Spokane, WA, before lane reconfiguration. (Credit: City of Spokane)

Figure 7 (right) – Photo of North Monroe Street, Spokane, WA, after lane reconfiguration. (Credit: City of Spokane)

Figure 8. Wilton Drive, Broward, FL after conversion from 5-lanes to 3-lanes (Credit: Road Safety Foundation)

Segment 1 – S Main Street, Watson Street to Levelton Street/Industrial Avenue

Reported Crashes

There was one severe injury crash pedestrian crash reported in Segment 1 that occurred on January 1, 2023, at roughly 2:00 pm. This crash was a straight hit pedestrian crash that occurred south of the traffic signal at Watson Street.

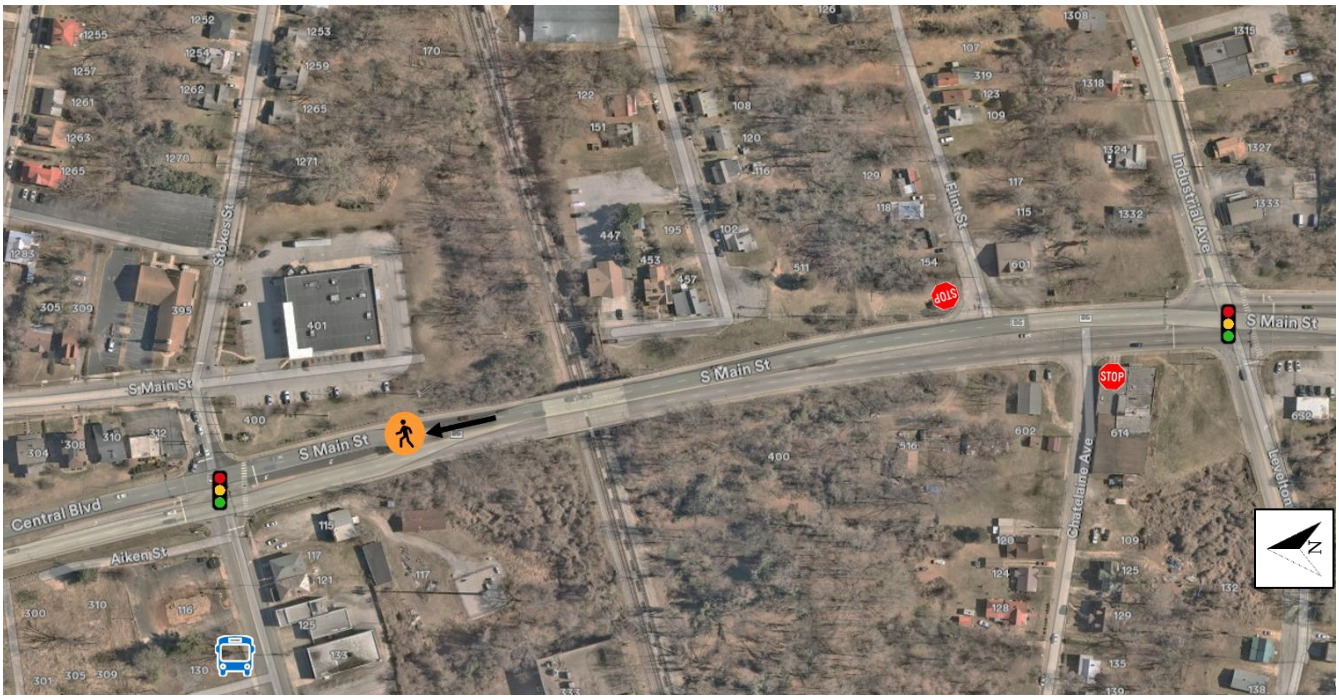


Figure 9 – Segment 1 with pedestrian crashed and existing conditions.

Observations and Related Issues Affecting Safety

- Roadway
  - The posted speed limit is 40 mph, and vehicle volumes are estimated in the 15,000 AADT range. The roadway is four-lane divided with a median, with a bridge segment that is four-lane undivided.
- Road User Behavior
  - RSA participants noted speeding from Central Boulevard southbound to S Main Street. This driver behavior can increase the crash potential when transitioning to S Main Street due to the context change of the corridor from a 4-lane divided roadway with a grass median on Central Boulevard to a 4-lane undivided roadway with multiple conflict points on S Main Street.
- Transit
  - There is one transit stop on Watson Street east of the intersection across from Danville Internal Medicine with no shelter.
  - There is a transit stop approximately 250 feet south of Levelton Street
- Land Use
  - Sovah Health Hospital is on the northeast corner of the intersection and a Walgreens on the southeast corner.
  - This segment has access on both ends to side streets with single-family homes.

    - Danville Planning Commission has approved the development of a new apartment complex along Steward Street adjacent to Central Boulevard with 195 market-rate units on 9 acres. Construction is slated to begin by the end of 2024. This new development may generate pedestrian and bicyclist trips across Central Boulevard/S Main Street to access the hospital, downtown, and other community trip generators.
    - The railroad to the south makes it challenging to make significant roadway modifications without reconstructing the bridge entirely.
- Bicycle and Pedestrian Facilities
    - Sidewalk with no buffer is present on the east/west sides of the corridor.
    - Vegetation overgrowth obstruction pedestrian path on sidewalk near the bridge.
    - Utility poles located within sidewalk at the corner of Watson Street and S Main Street.
    - RSA participants noted a lack of comfort while walking on sidewalks due to high vehicle speed and narrow sidewalks.
    - During the RSA participant noted that several pedestrians were seen crossing S Main Street away from the traffic signals at Levelton Street. Instead, they stopped in the two-way left turn lane to perform a two-stage crossing.
- Intersection(s)
    - The traffic signal is older and may not have the capability to accommodate signal changes like a flashing yellow arrow or LPI.
    - Watson Street (Signalized) – There was only one marked crosswalk on the south side of the intersection with push buttons and pedestrian signal heads. However, the push button was not functional, and RSA participants noted there was a long wait time for pedestrian crossing.
    - Flint Street (unsignalized) – No marked crosswalks.
    - Chatelaine Avenue (unsignalized) – No marked crosswalks.
    - Industrial Avenue/Levelton Street (signalized) – There was only one marked crosswalk on the south side of the intersection with push buttons and pedestrian signal heads.
- Lighting
    - Luminaires were evenly spaced along both sides of the segment.

*Figure 10 (Left) – Picture of overgrowth on east sidewalk walking towards Watson Street. (*Credit: VDOT)

*Figure 11 (Right) – Picture of curb ramp and unmarked north/south crosswalk at Industrial Avenue and S Main Street. (*Credit: VDOT)

Recommendations

Near-term (0-2 years)

- S Main Street and Watson Street (signalized) - Danville to refurbish existing marked crosswalk and install additional crosswalks on the north, east, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.
    - It was also noted during the field visit that push buttons to cross the south leg of the intersection were not working.
    - Note: The new apartment complex on Steward Street will generate additional walking and biking trips across S Main Street from the north side of the intersection.
- S Main Street and Levelton Street/Industrial Avenue (signalized) - Danville to refurbish existing marked crosswalk and install additional crosswalks on the north, east, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.

Intermediate (2-5 years)

- Danville to evaluate multiple alternatives at the Watson Street/S Main Street intersection to accommodate potential roadway reconfiguration:
    - Dropping a lane to designate right turn only lanes from S Main Street onto Watson Street and Central Boulevard onto Watson Street in tandem with a potential roadway reconfiguration change (5-lane to 3-lane conversion between Watson Street and Shamrock Drive)

- A 4-lane conversion could include narrowing lanes to 11 feet, extending median nose and widen to 6 feet on northern most leg of intersection to be a pedestrian refuge.
- Danville to implement geometric improvements to Watson Street/Stokes Street/S Main Street intersection to better operations at Watson Street/S Main Street/Central Boulevard.

Long-term (5+ years)

- Danville Public Works to evaluate converting to an alternative intersection design, potentially turbo or 2-by-1 lane roundabout, depending on roadway reconfiguration.

Segment 2 – S Main Street, Levelton Street/Industrial Avenue to Brodnax Street

Reported Crashes

There were two pedestrian crashes reported on segment 2. There was one visible injury crash that took place on March 12, 2016, at roughly 6:00 pm. The crash occurred at Dudley Street/S Main Street intersection. The fatal injury crash took place on December 30, 2016, at roughly 8:00 pm. The crash occurred at the Hughes Street/S Main Street intersection.

Figure 12 – Segment 2 aerial with pedestrian crashes and existing conditions.

Observations and Related Issues Affecting Safety

- Roadway
  - The posted speed limit is 40 mph, and vehicle volumes are estimated in the 15,000 AADT range.
  - The roadway is five-lane undivided with a two-way left turn lane – traffic volumes are significantly less than what can be supported by a roadway of this configuration, allowing for high vehicular speeds due to limited congestion.
- Transit
  - There is one transit stop on Kemper Road.

- Land Use
    - There are several pedestrian destinations within this segment, including Family Dollar, a convenience store/gas station, and Danville Community College.
- Bicycle and Pedestrian Facilities and Behavior
    - There is sidewalk along both sides of each street within this segment, however there were many tripping hazards from settling and broken concrete.
    - During the RSA participant noted that several pedestrians were seen crossing S Main Street away from the traffic signals at Kemper Road. Instead, they stopped in the two-way left turn lane to perform a two-stage crossing.
    - All intersections in the segment need upgrades to ADA-compliant curb ramps.
- Intersection(s)
    - Hughes Street (unsignalized) –no marked crosswalks.
    - Dudley Street (unsignalized) – no marked crosswalks.
    - Kemper Road (signalized) – no marked crosswalks, push buttons, or pedestrian signal heads.
    - Brodnax Street (unsignalized) – uncontrolled marked crosswalk on south side of intersection with school crossing warning signs.
- Lighting
    - During the nighttime portion of the RSA, some lights along the segment were not working.

Figure 13 (Left) – Picture of crosswalk at Brodnax Street (Credit: VDOT)

Figure 14 (Right) – Picture of S Main Street with pedestrian crossing away from signalized intersection. (Credit: VDOT)

Recommendations

Near-term (0-2 years)

- S Main Street and Dudley Street (unsignalized) – Danville to evaluate the potential installation of a new crosswalk on the north or south leg of the intersection equipped with ADA curb ramps and a PHB (short to intermediate-term improvement).
- S Main Street and Hughes Street (unsignalized) – Danville to evaluate the potential installation of a new crosswalk on the north or south leg of the intersection equipped with ADA curb ramps and a PHB (short to intermediate-term improvement).
- S Main Street and Kemper Road (signalized) – Danville to install three new crosswalks on the north, south, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.
- S Main Street and Brodnax Street (unsignalized) – Danville to evaluate multiple alternatives at the crossing to increase pedestrian safety:
    - Consider shifting the crosswalk south into median area and installing a pedestrian refuge median and an RRFB or PHB (depending on uncontrolled crosswalk guidance from FHWA and VDOT).
    - Danville to install ADA curb ramps when making crosswalk improvements at Brodnax Street.

Intermediate (2-5 years)

- Danville to investigate making Dudley Street and Hughes Street a one-way pair to gain space on S Main Street that would have been for left turns onto the side streets to install crosswalks with pedestrian refuge islands – this could also be paired with the conversion to a 4-lane road with a landscaped median, raised crosswalks, and/or RRFBs.
    - Converting Hughes Street and Dudley Street to one-way could also allow for curb extensions on the side street approaches, designated on-street parking on Hughes Street and Dudley Street, and shorter pedestrian crossings.

Long-term (5+ years)

Danville to implement roadway reconfiguration study findings. Depending on the potential for a roadway reconfiguration to a 3-lane or 4-lane road, the potential crosswalk enhancements at uncontrolled locations could include an RRFB or PHB, per guidance in FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossings and VDOT's IIM-TE-384.1.

- If 4-lane roadway reconfiguration is preferred, Danville Public Works to should also investigate the installation of a landscaped median to make non-intersection driveways right-in right-out and add left turn lanes at intersection.

Segment 3 – S Main Street, Brodnax Street to Lockett Drive

Reported Crashes

There were no reported bicycle and pedestrian crashes within Segment 3 from 2016 through 2023.

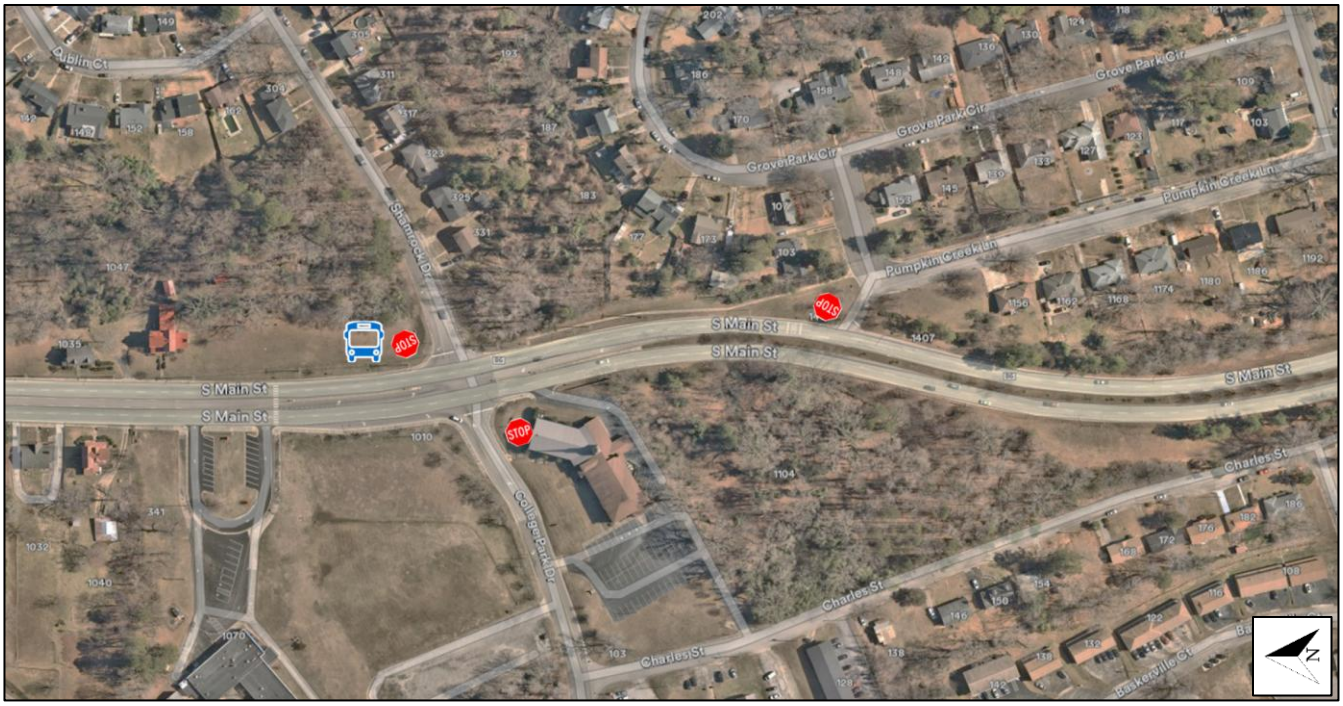


Figure 15 – Segment 3 aerial with pedestrian crashed and existing conditions.

Observations and Related Issues Affecting Safety

- Roadway
  - The posted speed limit is 40 mph, and vehicle volumes are estimated in the 11,000 AADT range. The roadway is five-lane undivided with a two-way left turn lane on north side, and four-lane divided with median on south side.
- Road User Behavior
  - The existing roadway width of Pumpkin Creek Lane of approximately 40 feet and limited use of on street parking allows for high vehicular speeds.
- Transit
  - There is a transit stop at the corner of Shamrock Drive/S Main Street.
- Land Use
  - There is a mix of residential and commercial in this segment, with the residential concentrated on the south side with a church and preschool on the north side.
- Bicycle and Pedestrian Facilities
  - There is sidewalk with no buffer present on both sides of the road up to College Park Drive/Shamrock Drive. From Shamrock Drive/College Park Drive for the remainder of the corridor
  - There is an unsignalized crosswalk at the preschool driveway, approximately 300 feet from Shamrock Drive/College Park Drive.
    - RSA participants did not feel comfortable walking and crossing at this portion of the corridor.
  - RSA participants noted a lack of comfort while walking on sidewalks due to high vehicle speed and narrow sidewalks.
- Intersection(s)
  - College Park Drive/Shamrock Drive (unsignalized) – No marked crosswalks.

- Lockett Drive (unsignalized) – No marked crosswalks.

Figure 16 – Picture of intersection of College Park Drive/Shamrock Street/S Main Street. (Credit: VDOT)

Recommendations

Near-term (0-2 years)

- Crosswalk between Brodnax Street and Shamrock Drive (unsignalized) – Danville to evaluate relocation of the midblock crossing to preschool driveway to the intersection of S Main Street and Shamrock Drive with the installation of a PHB (short to intermediate-term improvement).
    - Danville to install ADA curb ramps when relocating the crosswalk across S Main Street to Shamrock Drive.
    - Side street approaches of College Park Drive and Shamrock Drive to also get marked crosswalks with ADA curb ramps.
- Danville to investigate safety (review of sight distance, speeds, and existing crash data) of slip lane off Pumpkin Creek Lane onto S Main Street and close if needed.

Intermediate (2-5 years)

- Danville to evaluate multiple crosswalk alternatives at the College Park Drive/Shamrock Drive/S Main Street crossing to increase pedestrian safety and consider installing a PHB.

Long-term (5+ years)

- Danville to evaluate converting to alternative intersection design, potentially turn or 2-by-1 lane roundabout at the College Park Drive/Shamrock Drive/S Main Street crossing to increase pedestrian safety. The roundabout can be used as a gateway treatment to slow drivers for the context change north of the intersection, increasing the driver's time and ability to react to turning vehicles.

- Danville to evaluate designating Pumpkin Creek Lane as a place for walking and biking by designating parking, adding bike sharrows, extending existing sidewalk and/or adding new sidewalk on west curb to physically narrow street.

Segment 4 – S Main Street, Lockett Drive to Updike Place

Reported Crashes

There were no reported bicycle and pedestrian crashes within Segment 4 from 2016 through 2023.

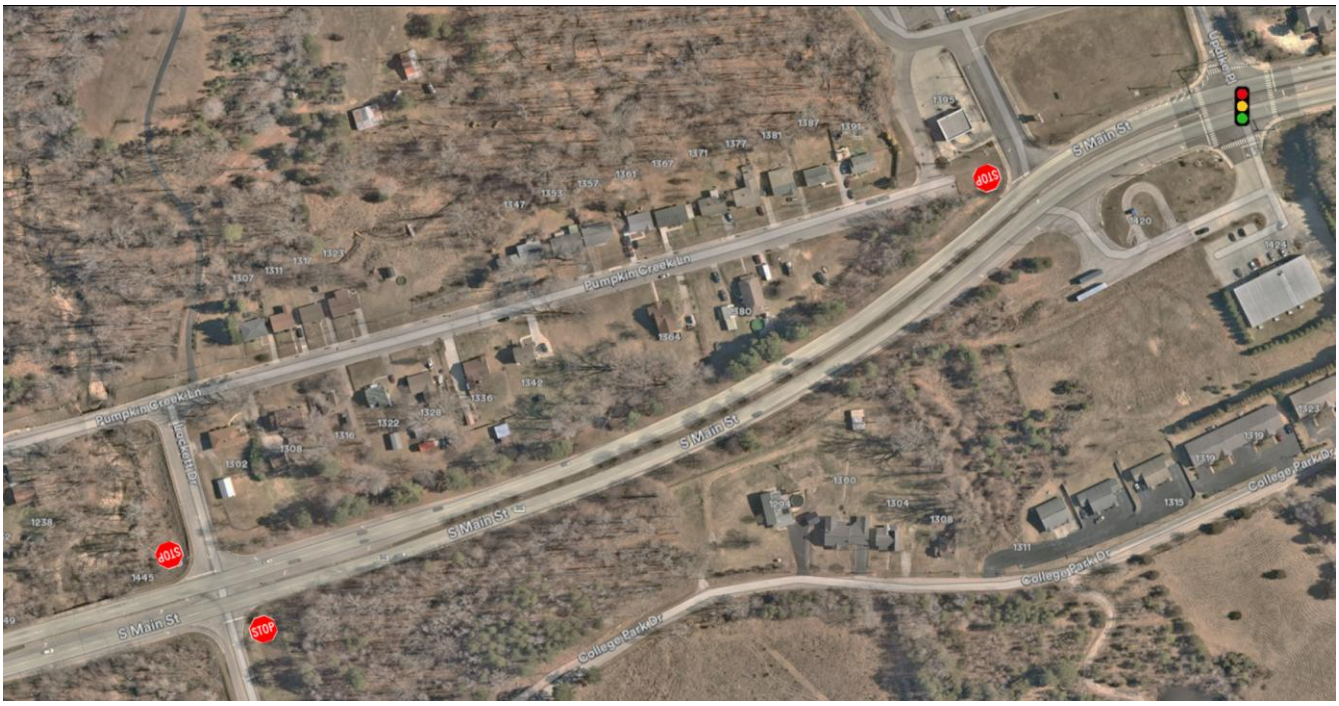


Figure 17 – Segment 4 aerial with pedestrian crashed and existing conditions.

Observations and Related Issues Affecting Safety

- Roadway
  - The posted speed limit is 40 mph, and vehicle volumes are estimated in the 10,000 AADT range. The roadway is four-lane divided with median.
- Land Use
  - There are several pedestrian destinations on the south portion of this segment, including a shopping plaza and a Dollar General on the south side.
- Bicycle and Pedestrian Facilities
  - There is sidewalk at the south side of the segment near the Updike Place intersection.
- Intersection(s)
  - Updike Place (signalized) – There were marked crosswalks on all legs, push buttons, and pedestrian signal heads with an all-pedestrian phase.

Figure 18 (Left) – Picture of intersection of Updike Place and S Main Street, facing northeast. (Credit: VDOT)

Figure 19 (Right) – Picture of S Main Street on segment 4, facing north. (Credit: VDOT)

Recommendations

Near-Term (0-2 years)

- Danville to evaluate converting gore areas at northeast corner of Updike Place/S Main Street intersection into truck aprons using a brick-like stamping treatment or something similar to visually tighten the corner radius and indicate it as non-driving space.

Intermediate (2-5 years)

- Danville to evaluate adding a channelizing island at Southwyck Plaza exit, approximately 400 feet north of Updike Place/S Main Street intersection to designate the driveway as right-in-right-out.
- Danville to evaluate designating Pumpkin Creek Lane as a place for walking and biking; narrowing streets and placing sidewalks on the west curb.
    - Evaluate connecting proposed sidewalk to S Main Street sidewalk on the east curb on Pumpkin Creek Lane. If sidewalk is installed, evaluate potential crosswalk with PHB and ADA curb ramps, or pair with alternative intersection design improvements (in long-term recommendations).
    - Connect sidewalk on Pumpkin Creek Road to sidewalk alongside S Main Street in front of shopping plaza.

Long-term (5+ years)

- Danville to evaluate converting to alternative intersection design, potentially turbo or 2-by-1 lane roundabout at the Lockett Drive/S Main Street intersection. The roundabout could allow for pedestrians to safely access the transit stop located on Lockett Drive east of the intersection without the need for a signal or PHB.
- Note: If the commercial parcel north of the Dollar General is ever planned for redevelopment, an access road or connection from the existing Dollar General parking could help prevent additional uncontrolled access points on S Main Street.

Next Steps

The findings of the RSA should be revisited on a recurring basis. The City of Danville may consider refreshing or revising the RSA process every 5 years. By developing performance measures for ongoing evaluation and review, the City can track progress made at sites discussed by the RSA. Metrics can include the number of sites improved or the percent change in pedestrian crash rates over three or more years. The City and VDOT may also consider short-term and pilot projects to demonstrate and further evaluate concepts noted within this report. These may include the implementation of LPI, relocation of transit stops, and access management.

Funding Opportunities

In addition to local funding, the City should work with other agencies such as VDOT, VDH, DRPT, and other parties for funding opportunities—like transit route and facility updates and spot safety improvements—and the long-range planning process to bundle and coordinate project development of safety measures. See examples of previous projects in the SMART SCALE portal at https://smartportal.virginiahb2.org/#/public/apps.

Highway Safety Improvement Program (HSIP): The goal of the state-funded HSIP, is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. For more information see: https://www.virginiadot.org/business/ted_app_pro.asp.

SMART SCALE: SMART SCALE is about picking the right transportation projects for funding and ensuring the best use of limited tax dollars. It evaluates potential transportation projects based on key factors like how they improve safety, reduce congestion, increase accessibility, contribute to economic development, promote efficient land use, and affect the environment.

Transportation Alternatives Program (TAP): The TA program is intended to help local sponsors fund community-based projects that expand nonmotorized travel choices and enhance the transportation experience by improving the cultural, historical, and environmental aspects of the transportation infrastructure. The program does not fund traditional roadway projects or provide maintenance for these facilities. Instead, it focuses on providing pedestrian and bicycle facilities, community improvements and mitigating the negative impacts of the highway system. For more information see: https://www.virginiadot.org/business/prenhancegrants.asp.

Reconnecting Communities Pilot (RCP) Program: The Office of the Secretary of Transportation (OST) has released an FY24 Notice of Funding Opportunity (NOFO) for the Reconnecting Communities Pilot (RCP) program. This is a continuation of two previous rounds of RCP Funding in FY22 and FY23. The RCP Program focuses on improving access to daily needs such as jobs, education, healthcare, food, nature, and recreation, and foster equitable development and restoration, and provide technical assistance to further these goals.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant Program: RAISE grants, which are federally funded, are available for transportation projects that enhance mobility, improve road infrastructure, and promote sustainable development. RAISE grants are designed to support a wide range of transportation projects, including road upgrades, bridge repairs, public transportation improvements, pedestrian and bicycle infrastructure, and multimodal transportation solutions. For more information see: https://www.transportation.gov/RAISEgrants

Virginia Roadway Maintenance Funding: According to Code of Virgnia § 33.2-319. Payments to cities and certain towns for maintenance of certain highways:

"Any city or town converting an existing moving-lane that qualifies for payments under this section to a bicycle-only lane after July 1, 2014, shall remain eligible for such payments, provided that (i) the number of moving-lane-miles converted is not more than 50 moving-lane-miles or three percent of the city's or town's total number of moving-lane-miles on July 1, 2014, whichever is less, and (ii) prior to any such conversion, the city or town certifies that the conversion design has been assessed by a professional engineer licensed in the Commonwealth pursuant to Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 and that the assessment has demonstrated that (a) the level of service of the street to be converted will not be reduced or if it will be reduced that the associated roadway network will retain adequate capacity to meet current and future mobility needs of all users and (b) the conversion has been designed in accordance with the National Association of City Transportation Officials' Urban Bikeway Design Guide."

For more details see: https://law.lis.virginia.gov/vacode/title33.2/chapter3/section33.2-319/

Appendix

This appendix contains the following items related to the RSA:

- Segment Implementation Recommendations
- RSA Agenda
- Presentation Slides

Segment Implementation Recommendations

Location	Timeframe	Recommendation	Responsible Group(s)
Corridor-wide	Near-term	Evaluate all signals for evaluate all signals for HVSB, LPI, and FYA. Include an evaluation of NTOR on side streets where sight distance may be limited.	City of Danville
	Near-term	Trim vegetation encroaching on sidewalk and limiting sight distance at intersections.	City of Danville
	Near-term	Fix lighting that is out along the corridor.	Danville Utilities
	Near-term	Install marked crosswalk with curb ramps, push buttons, accessible pedestrian signals on all legs of signalized intersections.	City of Danville
	Near-term	Evaluate existing and potential marked uncontrolled crosswalks to be in line with FHWA and VDOT guidance.	City of Danville
	Near-term	Evaluate and relocate transit stops to be adjacent or near marked crosswalks and add transit stop amenities.	Danville Mass Transit
	Mid-term	Conduct a planning study to evaluate potential roadway reconfiguration options on S Main Street between Watson Street and Shamrock Drive.	City of Danville
	Mid-term	Replace non-ADA compliant ramps in conjunction with the paving schedule.	City of Danville
	Long-term	Implement study corridor recommendations for roadway reconfiguration, including an emphasis on safety for all modes and meeting target speeds.	City of Danville
	Long-term	Evaluate consolidating access at uncontrolled driveways, coordinated with new development, redevelopment, or major roadway improvements.	City of Danville
Segment 1: S Main Street, Watson Street to Levelton Street / Industrial Avenue	Near-term	S Main Street and Watson Street: refurbish existing marked crosswalk and install additional crosswalks on the north, east, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.	City of Danville
	Near-term	S Main Street and Levelton Street: refurbish existing marked crosswalk and install additional crosswalks on the north, east, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.	City of Danville
	Mid-term	Evaluate intersection design alternatives to achieve a potential roadway reconfiguration at S Main Street and Watson Street	City of Danville
	Mid-term	Evaluate implementing geometric improvements to Watson Street/Stokes Street/S Main Street intersection to better operations at Watson Street/S Main Street/Central Boulevard.	City of Danville
	Long-term	Evaluate converting S Main Street and Watson Street to alternative intersection design, potentially turbo roundabout or 2-by-1 lane roundabout.	City of Danville
Segment 2: S Main Street, Levelton Street / Industrial Avenue to Brodnax Street	Near-term	S Main Street and Dudley Street (unsignalized): evaluate the potential installation of a new crosswalk on the north or south leg of the intersection equipped with ADA curb ramps and a PHB (short to intermediate-term improvement).	City of Danville
	Near-term	S Main Street and Hughes Street (unsignalized): evaluate the potential installation of a new crosswalk on the north or south leg of the intersection equipped with ADA curb ramps and a PHB (short to intermediate-term improvement).	City of Danville
	Near-term	S Main Street and Kemper Road: install three new crosswalks on the north, south, and west legs of the intersection with ADA curb ramps, pedestrian signal heads, and push buttons.	City of Danville
	Near-term	S Main Street and Brodnax Street: evaluate multiple alternatives at the crossing to increase pedestrian safety.	City of Danville
	Mid-term	Investigate making Dudley Street and Hughes Street a one-way pair	City of Danville
	Long-term	Implement study corridor recommendations for roadway reconfiguration	City of Danville

Location	Timeframe	Recommendation	Responsible Group(s)
Segment 3: S Main Street, Brodnax Street to Lockett Drive	Near-term	Evaluate relocation of the midblock crossing to preschool driveway to the intersection of S Main Street and Shamrock Drive with the installation of a PHB (short to intermediate-term improvement).	City of Danville
	Near-term	Evaluate closing Pumpkin Creek Lane slip lane access onto S Main Street.	City of Danville
	Mid-term	Evaluate multiple crosswalk alternatives at the College Park Drive/Shamrock Drive/S Main Street crossing to increase pedestrian safety and consider installing a PHB	City of Danville
	Long-term	Evaluate alternative intersection designs at College Park Drive/Shamrock Drive and S Main Street, including a roundabout as a gateway treatment into the northern portion of S Main Street.	City of Danville
	Long-term	Evaluate designating Pumpkin Creek Lane as a place for walking and biking; narrowing streets and placing sidewalks on the west curb.	City of Danville
Segment 4: S Main Street, Lockett Drive to Updike Place	Short-term	Evaluate converting gore areas at northeast corner of Updike Place/S Main Street intersection into truck aprons	City of Danville
	Mid-term	Evaluate designating Pumpkin Creek Lane as a place for walking and biking; narrowing streets and placing sidewalks on the west curb.	City of Danville
	Mid-term	Connect sidewalk on Pumpkin Creek Road to sidewalk alongside S Main Street in front of shopping plaza.	City of Danville
	Mid-term	Evaluate adding a channelizing island at Southwyck Plaza exit, approximately 400 feet north of Updike Place/S Main Street intersection to designate the driveway as right-in-right-out	City of Danville
	Long-term	Evaluate converting to alternative intersection design, potentially turbo or 2-by-1 lane roundabout at the Lockett Drive/S Main Street intersection	City of Danville

PATHS Pedestrian Road Safety Assessment Agenda
September 25, 2024

Danville, VA (S Main Street)

Wednesday, September 25

Meeting Location: 1009 Bonner Avenue, Danville, VA 24541, Room 203b

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9:00 – 10:00 AM	Introduction to the study and RSA process • Welcome and introduction of RSA team • Brief overview of RSA process
10:00 – 11:00 AM	Review background data and field packets • Discuss findings from background and sociodemographic review • Share new material (if applicable) and local perspectives • Field map packet orientation
11:00 AM – 12:30 PM	First-half of field observations • Walking portion from Danville Community College to Watson Street • Wear PPE (i.e. high visibility vest, etc.) as directed by facilitator
12:30 – 1:30 PM	Lunch
1:30 – 3:30 PM	Second half of field observations • Continue observations between Danville Community College and Shamrock Drive / College Park Drive • Drive to S Main Street / Lockett Drive and S Main Street / Updike Place intersections for observations (no sidewalks)
3:30 – 5:00 PM	Findings workshop/debrief • Summarize observations

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8:30 PM – 9:30 PM	Evening - Optional Nighttime Field Observations • Meet at intersection of S Main Street and Kemper Road • Wear PPE (i.e. high visibility vest, etc.) as directed by facilitator

Self-Certification Checklist

Safe Streets and Roads for All
Self-Certification Eligibility Worksheet

All applicants should follow the instructions in the NOFO to correctly apply for a grant. See the SS4A website for more information.

Table 1 of the SS4A NOFO describes eight components of an Action Plan, which correspond to the questions in this worksheet. Applicants should use this worksheet to determine whether their existing plan(s) contains the required components to be considered an eligible Action Plan for SS4A.

This worksheet is required for all SS4A **Implementation Grant** applications and any **Planning and Demonstration Grant applications to conduct Supplemental Planning/Demonstration Activities only**. Please complete the form in its entirety, do not adjust the formatting or headings of the worksheet, and upload the completed PDF with your application.

Eligibility

An Action Plan is considered eligible for an SS4A application for an Implementation Grant or a Planning and Demonstration Grant to conduct Supplemental Planning/Demonstration Activities if the following two conditions are met:

- You can answer "YES" to Questions **3, 7,** and **9** in this worksheet; *and*
- You can answer "YES" to **at least four of the six remaining** Questions, **1, 2, 4, 5, 6**, and **8.**

If both conditions are not met, an applicant is still eligible to apply for a Planning and Demonstration Grant to fund the creation of a new Action Plan or updates to an existing Action Plan to meet SS4A requirements.

Applicant Information

Lead Applicant: _____ **UEI:** _____

Action Plan Documents

In the table below, list the relevant Action Plan and any additional plans or documents that you reference in this form. Please provide a hyperlink to any documents available online or indicate that the Action Plan or other documents will be uploaded in Valid Eval as part of your application. Note that, to be considered an eligible Action Plan for SS4A, the plan(s) coverage must be broader than just a corridor, neighborhood, or specific location.

Document Title	Link	Date of Most Recent Update

Action Plan Components

For each question below, answer "YES" or "NO." If "YES," list the relevant plan(s) or supporting documentation that address the condition and the specific page number(s) in each document that corroborates your response. This form provides space to reference multiple plans, but please list only the most relevant document(s).

1. Leadership Commitment and Goal Setting

Are **BOTH** of the following true?

- A high-ranking official and/or governing body in the jurisdiction publicly committed to an eventual goal of zero roadway fatalities and serious injuries; and
- The commitment includes either setting a target date to reach zero OR setting one or more targets to achieve significant declines in roadway fatalities and serious injuries by a specific date.

☐ **YES**

☐ **NO**

Note: This may include a resolution, policy, ordinance, executive order, or other official announcement from a high-ranking official and the official adoption of a plan that includes the commitment by a legislative body.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

2. Planning Structure

To develop the Action Plan, was a committee, task force, implementation group, or similar body established and charged with the plan's development, implementation, and monitoring?

☐ **YES**

☐ **NO**

Note: This should include a description of the membership of the group and what role they play in the development, implementation, and monitoring of the Action Plan.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

3. Safety Analysis

Does the Action Plan include **ALL** of the following?

- Analysis of existing conditions and historical trends to provide a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region;
- Analysis of the location where there are crashes, the severity, as well as contributing factors and crash types;
- Analysis of systemic and specific safety needs, as needed (e.g., high-risk road features or specific safety needs of relevant road users); and,
- A geospatial identification (geographic or locational data using maps) of higher risk locations.

☐ **YES**

☐ **NO**

Note: Availability and level of detail of safety data may vary greatly by location. The Fatality and Injury Reporting System Tool (FIRST) provides county- and city-level data. When available, local data should be used to supplement nationally available data sets.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

4. Engagement and Collaboration

Did the Action Plan development include **ALL** of the following activities?

- Engagement with the public and relevant stakeholders, including the private sector and community groups;
- Incorporation of information received from the engagement and collaboration into the plan; and
- Coordination that included inter- and intra-governmental cooperation and collaboration, as appropriate.

☐ **YES**

☐ **NO**

Note: This should be a description of public meetings, participation in public and private events, and proactive meetings with stakeholders.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

5. Equity Considerations

Did the Action Plan development include **ALL** of the following?

- Considerations of equity using inclusive and representative processes;
- The identification of underserved communities through data; and
- Equity analysis developed in collaboration with appropriate partners, including population characteristics and initial equity impact assessments of proposed projects and strategies.

☐ **YES**

☐ **NO**

Note: This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

6. Policy and Process Changes

Are **BOTH** of the following true?

- The plan development included an assessment of current policies, plans, guidelines, and/or standards to identify opportunities to improve how processes prioritize safety; and
- The plan discusses implementation through the adoption of revised or new policies, guidelines, and/or standards.

☐ **YES**

☐ **NO**

Note: This may include existing and/or recommended Complete Streets policy, guidelines for community engagement and collaboration, policy for prioritizing areas of greatest need, local laws (e.g., speed limit), design guidelines, and other policies and processes that prioritize safety.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

7. Strategy and Project Selections

Does the plan identify a comprehensive set of projects and strategies to address the safety problems in the Action Plan, with information about time ranges when projects and strategies will be deployed, and an explanation of project prioritization criteria?

☐ **YES**
☐ **NO**

Note: This should include one or more lists of community-wide multi-modal and multi-disciplinary projects that respond to safety problems and reflect community input and a description of how your community will prioritize projects in the future.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

8. Progress and Transparency

Does the plan include **BOTH** of the following?

- A description of how progress will be measured over time that includes, at a minimum, outcome data.
- The plan is posted publicly online.

☐ **YES**
☐ **NO**

Note: This should include a progress reporting structure and list of proposed metrics.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

9. Action Plan Date

Was at least one of your plans finalized and/or last updated between 2019 and April 30, 2024?

☐ **YES**
☐ **NO**

Note: Updates may include major revisions, updates to the data used for analysis, status updates, or the addition of supplemental planning documents, including but not limited to an Equity Plan, one or more Road Safety Audits conducted in high-crash locations, or a Vulnerable Road User Plan.

If "YES," please list your most recent document(s), date of finalization, and page number(s) that corroborate your response.

Document Title	Date of Most Recent Update	Page Number(s)