**Winchester Frederick County (WinFred) MPO**
**TECHNICAL ADVISORY COMMITTEE (TAC) Meeting**
**December 4, 2018 - 10:00 a.m.**
**Frederick County Administrative Offices - First Floor Conference Room**
**107 N. Kent Street, Winchester, VA**

# AGENDA

1. **Administrative Items:**
   a) Welcome and Introductions
   b) Review and approval of the November 6, 2018 Technical Advisory Committee Meeting Minutes ***(Attached)***

2. **Public Comment Period**

3. **TIP amendment for UPC 86316 – Terry Short, VDOT (5 min.)**

   **Action:** Recommend an amendment to change the project from NonMPO to MPO and add the CN: Bridge/Rehab grouping.

4. **2019 Safety Performance Targets – John Madera, WinFred MPO (10 min.)**

   The FHWA Safety Performance rulemaking requires MPOs to agree to contribute to meeting State DOT safety targets or to establish safety targets for each of five safety measures. By supporting any of the VDOT targets the MPO agrees to plan and program projects to contribute toward achieving the State target, and must not only consider safety, but increase the safety of the transportation system. Targets are updated annually.

   **Action**: Recommend MPO agreement to contribute to meeting VDOT's 2019 Safety Targets.

5. **North Winchester Area Study Phase 2 – Terry Short, VDOT (10 min.)**

   The project consultant Kimley-Horn has submitted a scope and fee proposal for Phase 2.

6. **Upcoming Meeting Schedule (MPO Meetings are held at the Frederick County Administrative Offices):**
   - Project Steering Meeting: TBA
   - Policy Board: December 19, 2018 (Potentially Cancelled)
   - Technical Advisory Committee: January Meeting Cancelled

7. **VDOT/DRPT/Staff Updates (10 minutes)**

8. **Other Business (5 minutes)**

9. **Adjourn**

**Definition of Acronyms on next page**

## Glossary of Acronyms

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AGENDA

# WinFred METROPOLITAN PLANNING ORGANIZATION

Frederick County ❖ City of Winchester ❖ Town of Stephens City

◈◈◈◈◈◈◈◈◈◈◈◈◈◈

400 Kendrick Lane, Suite E, Front Royal, Virginia 22630
Phone: 540-636-8800
www.winfredmpo.org

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**Draft Technical Advisory Committee Minutes: November 6, 2018 @ 10 a.m.**

**Frederick County Administrative Offices**
**107 North Kent Street, Winchester, VA**
**First Floor Conference Room**

| Member Jurisdiction Representatives | | | | | |
|---|---|---|---|---|---|
| | **Frederick County** | | **VDRPT** | | **Staff** |
| | Patrick Barker | | Ciara Williams | ✓ | Brandon Davis |
| ✓ | John Bishop | | Todd Horsley | ✓ | John Madera |
| ✓ | Mike Ruddy | | **Winchester Airport** | ✓ | Karen Taylor |
| | Jay Tibbs | ✓ | Nick Sabo | ✓ | Becky Sandretzky |
| | **Stephens City** | | **Winchester Transit** | | **Others** |
| | Mike Majher | | Renee Wells | ✓ | Matt Smith, VDOT |
| | **VDOT** | | **Winchester** | ✓ | Jason Espie, EPR-PC |
| ✓ | Terry Short | ✓ | Perry Eisenach | ✓ | Bill Wench, EPR-PC |
| | | | Justin Hall | ✓ | Katie Schwing, OIPI |
| | **Non-Voting** | ✓ | Tim Youmans | | |
| | Mack Frost, FHWA | ✓ | Shawn Hershberger | | |
| | Tony Cho, FTA | | | | |
| | Rusty Harrington, VA Dept. of Aviation | | | | |

**Winchester Frederick County (WinFred) MPO**
**TECHNICAL ADVISORY COMMITTEE (TAC) Meeting**
**November 6, 2018 - 10:00 a.m.**
**Frederick County Administrative Offices - First Floor Conference Room**
**107 N. Kent Street, Winchester, VA**

**AGENDA**

1. **Administrative Items:**
   a) Welcome and Introductions – Chairman Youmans welcomed everyone to the meeting.
   b) Review and approval of the October 2, 2018 Technical Advisory Committee Meeting Minutes – Motion to approve minutes made by Mr. Eisenach; seconded by Mr. Ruddy. Motion Carried.

2. **Public Comment Period** – None reported.

3. **Scoping the next VTrans and updated needs assessment**

Ms. Taylor introduced Katie Schwing, Office of Intermodal Planning and Investment to present the following presentation. ***(attached)***

**OIPI would like to share information on the approach to the upcoming VTrans Plan update, along with anticipated engagement with the MPOs.**

Mr. Short questioned since VTrans is imperative that the need articulated in VTrans and it doesn't compile local transportation plans how can local Governments then insure that their project needs make their way to at least being acknowledged in the state-wide plans that is as big as VTrans. Mr. Bishop stated that VTrans acts as a gate keeper for Smart Scale projects, if you can't tie yourself to that identified need you get screened out, that is really important for us.

Mr. Eisenach stated that The City of Winchester is not considered an urban development area, which is strange because we feel the whole city of Winchester should be a UDA considering it is surrounded by Frederick counties UDA. He asked how do we get that changed so that we are a UDA? His second question was, on the regional network what's the best way to go about getting some roads added that are important but are not really considered on the regional network? Ms. Schwig informed us that is it a local process to designate a UDA and you would have to work with the city council and make an amendment to your comprehensive plan. There is a specific code language that has to be referenced and you also have to designate the boundaries of your UDA. Also, there's an expectation that the planning for the UDA area includes element of traditional neighborhood design. With the regional network in the past, it has been designated based on county lines, but the actual roads themselves weren't really designated as the regional network, she said to be thinking about this and it can be discussed more when we meet next time. Mr. Short stated that 85% of economic growth in Virginia comes from expansion of existing businesses. Economic potential is more important than present day snapshots.

Mr. Bishop asked if through participation if everything is being routed through the MPO's and PDC's or is there still expectation to be able to involve locality staff? Ms. Schwig stated the main focus is to go through the MPO's because that way they know that there is at least some conversation beyond just the single locality since they are trying to scale up to the state level but localities will still be involved in some way.

Mr. Davis brought up that the CTB really valued the Lynchburg regional connectivity study and that there may be a light version of that being done, he suggested to Ms. Schwig that the Regional Commission or the MPO could partner or take the lead on that effort to increase our input into creating something like that, that you all could use as a tool. He asked her if there would be value in that or is it something that you all want to handle and standardize across the state? He added that he could think of a couple of resources that we could approach to discuss partnering or taking the lead to match some of that effort that you all have and keep it more localized and present it to you rather than you take the lead and have us beg for participation. Ms. Schwig said this is something that could definitely be discussed, as it is a great idea. She added that it does need to be some what standardized because there needs to be an equal playing field for everyone.

**Action: None requested.**

4. **Presentation Winchester North-South Bike Route Study** – Jason Espie, EPR-PC

   Mr. Madera introduced Jason Espie, project manager for the bike study and Bill Wench, president of EPR Incorporated – sub consultant to Racey Engineering. ***(presentation attached)***

   Mr. Youmans stated that he thought the Green Circle Trail was going to run along the South side of Jubal Early Drive. He thought that for people heading North on Valley Avenue in the bike lane we were just going to have them stay in the south quadrant and not try to transition over to make a left turn onto Jubal Early Drive West Bound but instead go with the other Green Circle Trail traffic that is basically aligning with the cross walk on the left side at the intersection. Mr. Espie said this will be clarified in the final draft.

   **Action: None requested.**

5. **Upcoming Meeting Schedule (MPO Meetings are held at the Frederick County Administrative Offices):**
   - Project Steering Meeting: TBA
   - Policy Board: December 19, 2018
   - Technical Advisory Committee: December 4, 2018

6. **VDOT/DRPT/Staff Updates** – No Updates.

7. **Other Business** – None reported.

**Meeting adjourned at 11:20 a.m.**

**Definition of Acronyms on next page**

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# *VTrans*: Virginia's Statewide Multimodal Transportation Plan

## Kick-off VTrans Update

Win-Fred MPO TAC Meeting
November 6, 2018

Katie Schwing, AICP
Senior Transportation Planner
Office of Intermodal Planning and Investment (OIPI)

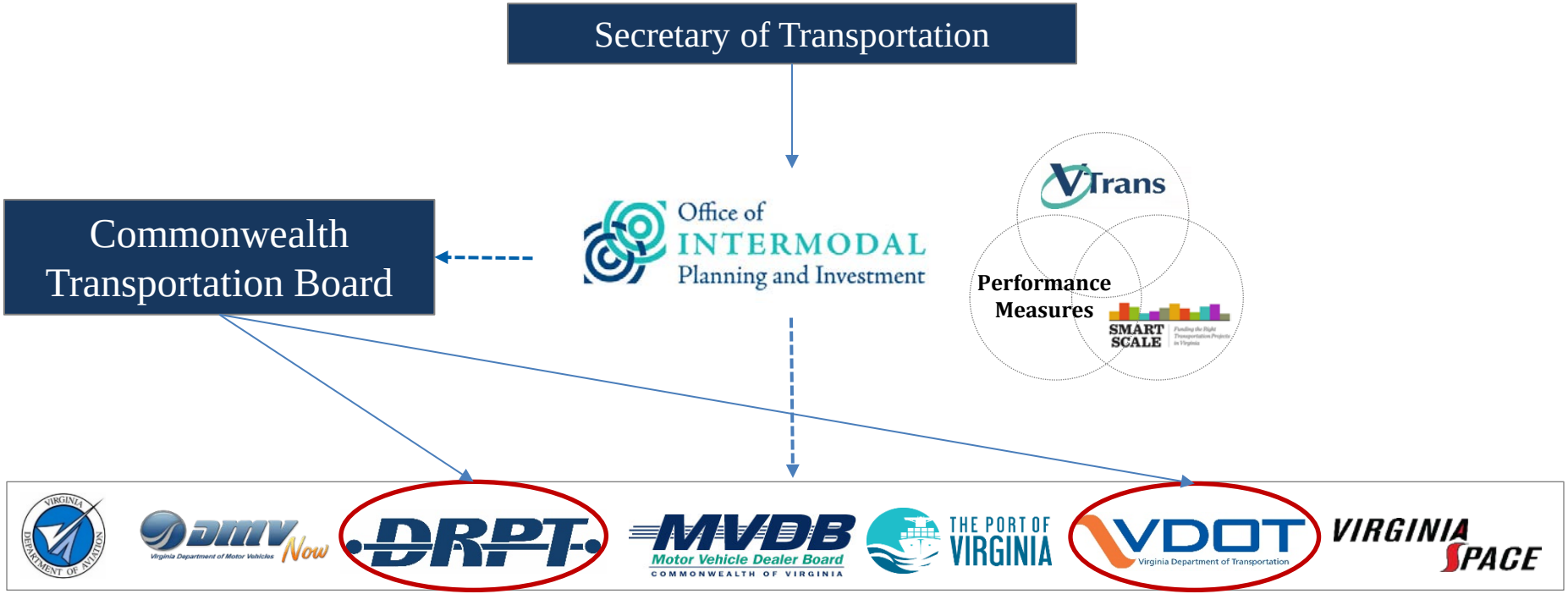
# OUTLINE

- What is VTrans?
- Review of VTrans2040
- Kick-off of VTrans Update
  - Major components
  - Key modifications from VTrans2040
  - Expected outcomes
  - Tentative timeline
- Stakeholder Involvement

# WHAT IS VTRANS?

- *VTrans* is Virginia's Multimodal Transportation Plan.
  - Provides a backdrop for consistent and coordinated performance-based transportation planning between federal, state, regional, and local agencies.
  - Performance-based, multimodal, long-range plan that is coordinated with MPO's and other stakeholders.
  - Includes a Needs Assessment
  - Updated at least every four years
  - *VTrans* has a statewide perspective and is not a compilation of local or regional plans

# OIPI's ROLE in VTRANS




*OIPI* assists the Commonwealth Transportation Board in the Development of VTrans.

# REVIEW OF VTRANS2040

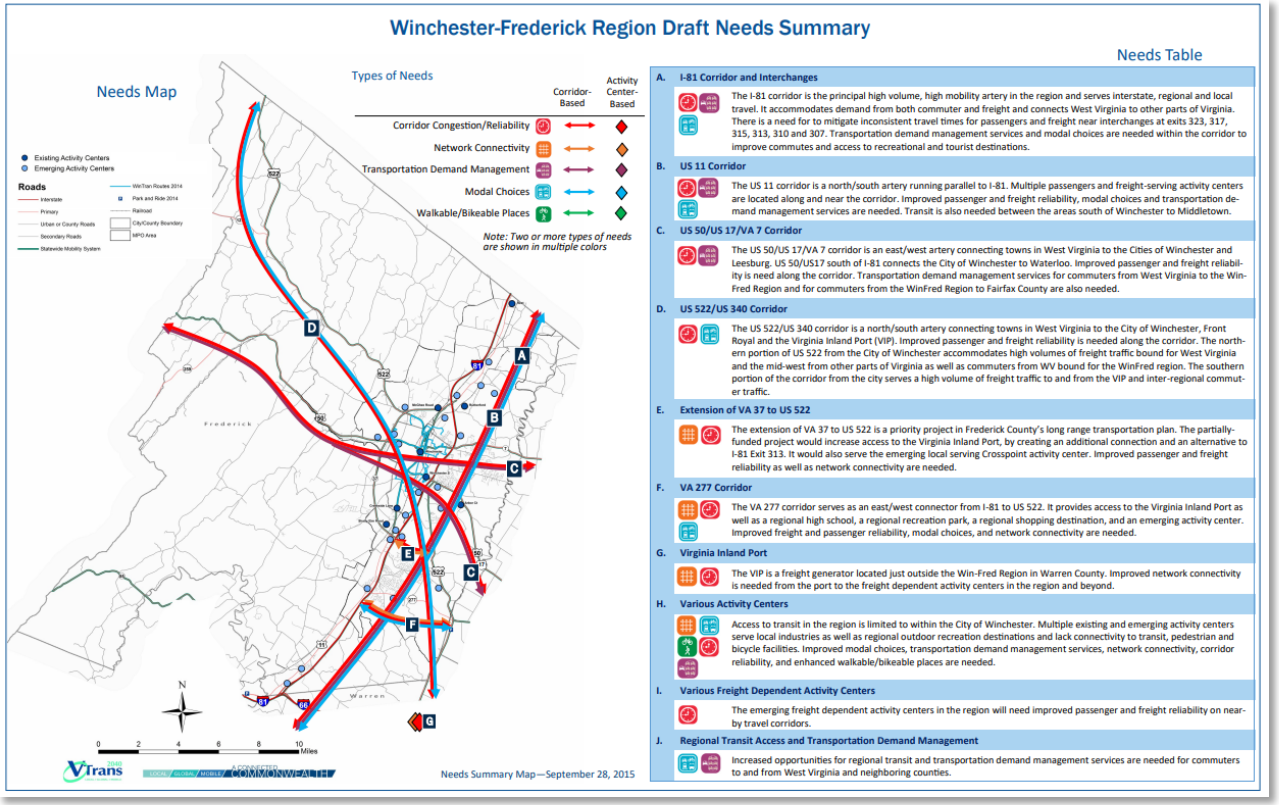
- Vision, Goals, Objectives and Guiding Principles were approved by CTB in December 2015
  - Needs approved by CTB in December, 2015
  - Recommendations approved by CTB in January, 2018
- Implementation Plan went to CTB for review in November, 2018

# REVIEW OF VTRANS2040

- Needs Assessment
  - Used a ten-year horizon
  - Identified needs by Travel Market:
    - Corridors of Statewide Significance
    - Regional Networks
    - Urban Development Areas (UDA's)
    - Safety (PSI's)
- Recommendations
    - Needs from the above categories were consolidated into one set of needs
    - Projects and studies were identified that could address those needs, and they were tiered (prioritized) based on analysis and local input

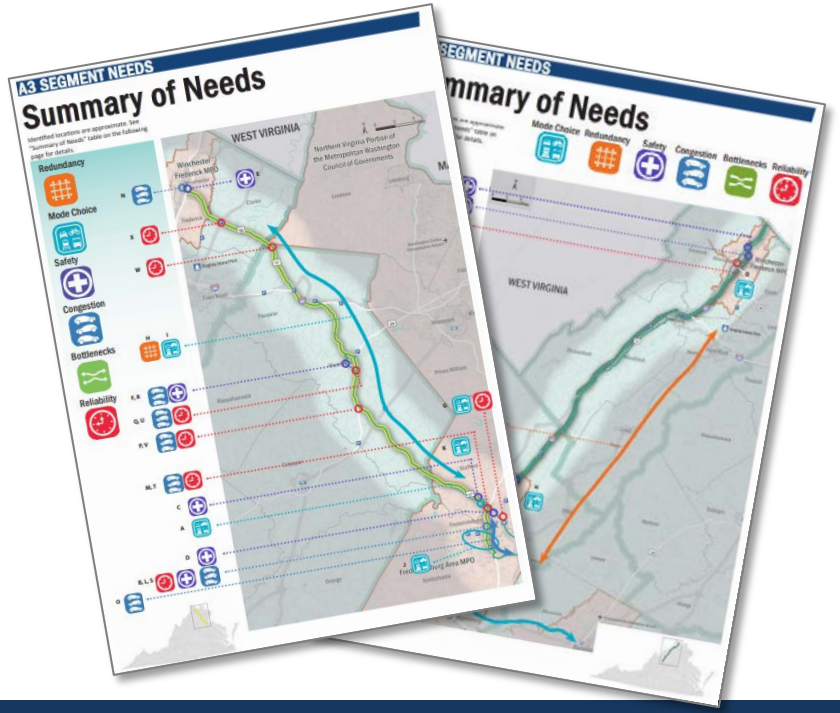
# REVIEW OF VTRANS2040

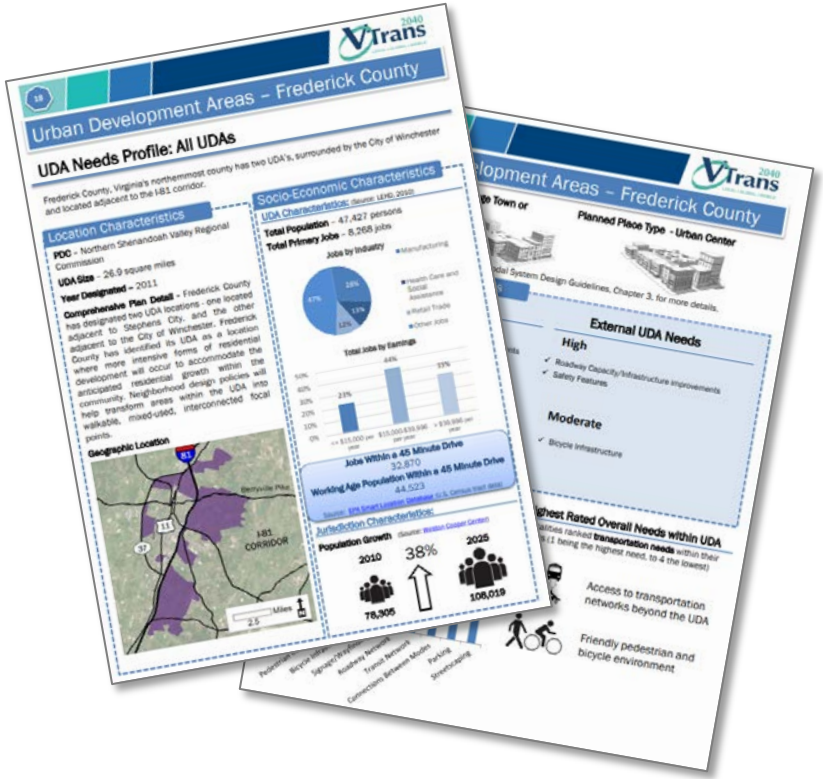
- Regional Network Needs



# REVIEW OF VTRANS2040

- CoSS and UDA Needs



# REVIEW OF VTRANS2040

- Current Uses
  - Vision, Goals & Objectives, and Guiding Principles
    - Overall reference for transportation planning at the state, regional, and local level
  - Needs Assessment
    - SMART SCALE (Applications for SMART SCALE must show that they address one of more VTrans Needs in order to be screened in (move on to scoring)

# VTRANS UPDATE KICK-OFF

- Major components
- Key modifications from VTrans2040
- Expected outcomes
- Tentative timeline
- Stakeholder Involvement

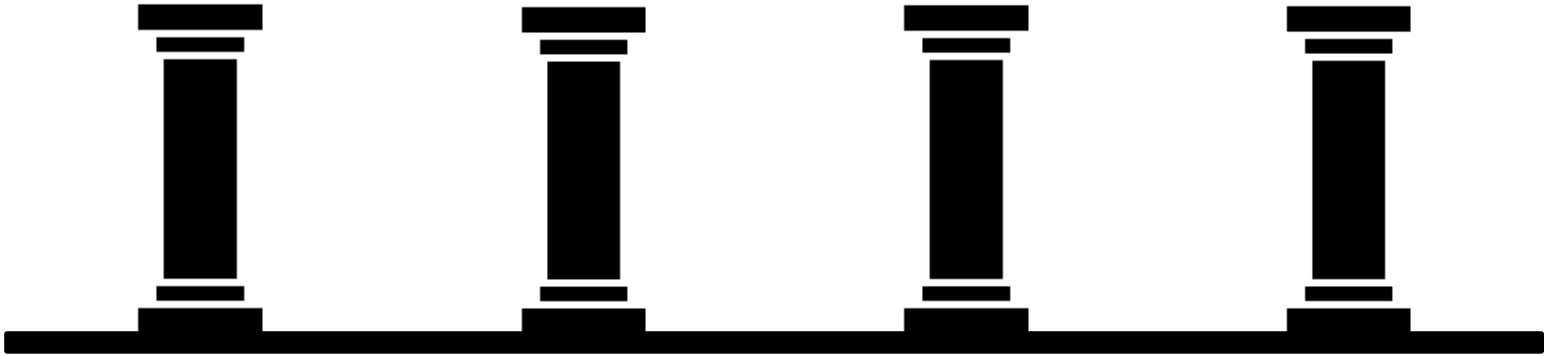
# MAJOR COMPONENTS

CTB's Vision, Goals and Objectives

Mid-term Needs Identification

Long Term Needs Identification

Strategic Actions



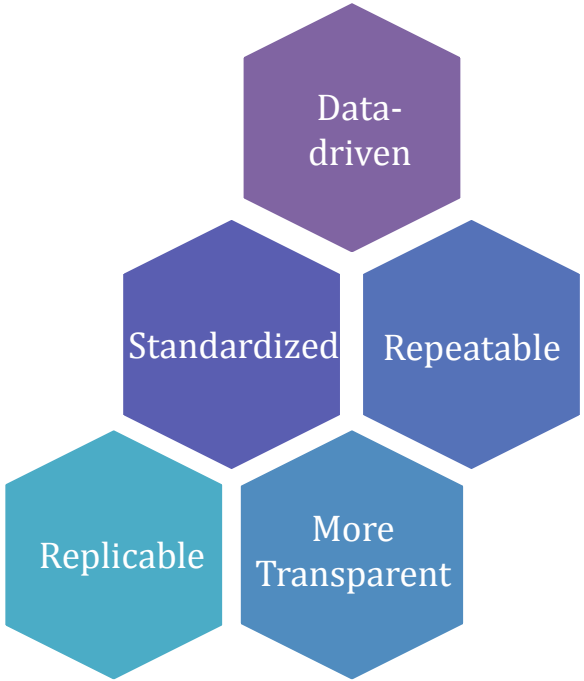
# MAJOR COMPONENTS (Vision, Goals, and Objectives)

- CTB to review and reaffirm their overall direction for transportation planning & policy
- Vision to be informed by:
  - A public survey
  - Vulnerability assessment
  - Demographic and land use trends, opportunities, and challenges
  - Technology trends, opportunities, and challenges
  - Financial trends, opportunities, and challenges

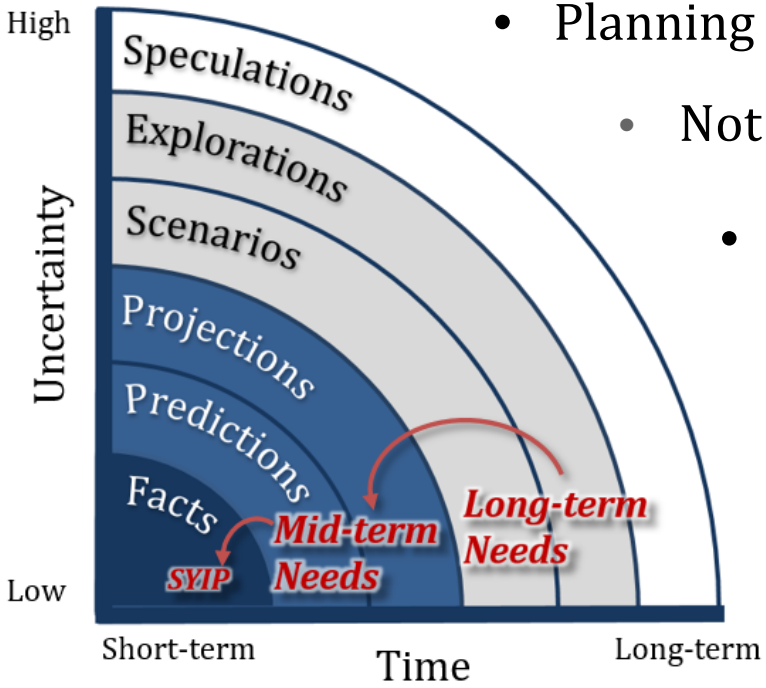
# MAJOR COMPONENTS (Mid-term Needs)

- Planning horizon: 0- 10 years
- **CTB to adopt a policy for needs identification**
  - Define “transportation need”
  - Review of VTrans need categories (e.g. CoSS, RN, UDA, Safety)
  - Utilize adopted Performance Targets, new measures or Key Performance Indicators (KPIs)
- **Adoption of the mid-term needs by December 2019**
  - Inform SMART SCALE Round 4

**Ensure that methods are:**



# MAJOR COMPONENTS (Long-term Needs)




- Planning horizon: 10+ years
  - Not an attempt to predict, but to be prepared
    - Develop three scenarios, associated needs and revenue impacts
      - Establish connection between mid-term and long-term needs
      - **Finalize by 2020**

# MAJOR COMPONENTS (Strategic Actions)

- Develop strategic actions for Board's consideration:
  - Policy options and recommendations
  - Priorities for project planning activities

# KEY MODIFICATIONS


- VTrans Update aims to:
  - Identify challenges and opportunities associated with trends
  - Provide a more complete picture for transportation investments
    - Convey trade-offs and opportunity cost associated with policy options
    - Relative return on investments

# KEY MODIFICATIONS

- VTrans Update aims to provide compelling, easy-to-communicate snapshot of existing and envisioned transportation in Virginia.
  - Convey economic benefits associated with transportation investments
  - Identify changes in economic output and productivity
  - Identify regional connectivity needs

# THEMES (Key Modifications)

Image Source: USDOT

- Resilient Transportation Infrastructure
- Smart Transportation Infrastructure
- Smart*er* Investments

- Increase awareness among public and local agencies

# EXPECTED OUTCOMES

- Provide policy options for investment decisions to prepare for the future, such as:
  - Which transportation investments support desired growth and economic development
  - Opportunity costs associated with delaying or not pursuing certain investments
  - Possible technological changes and associated revenue impacts to prepare for
  - Planning considerations for making transportation infrastructure less vulnerable to extreme natural events

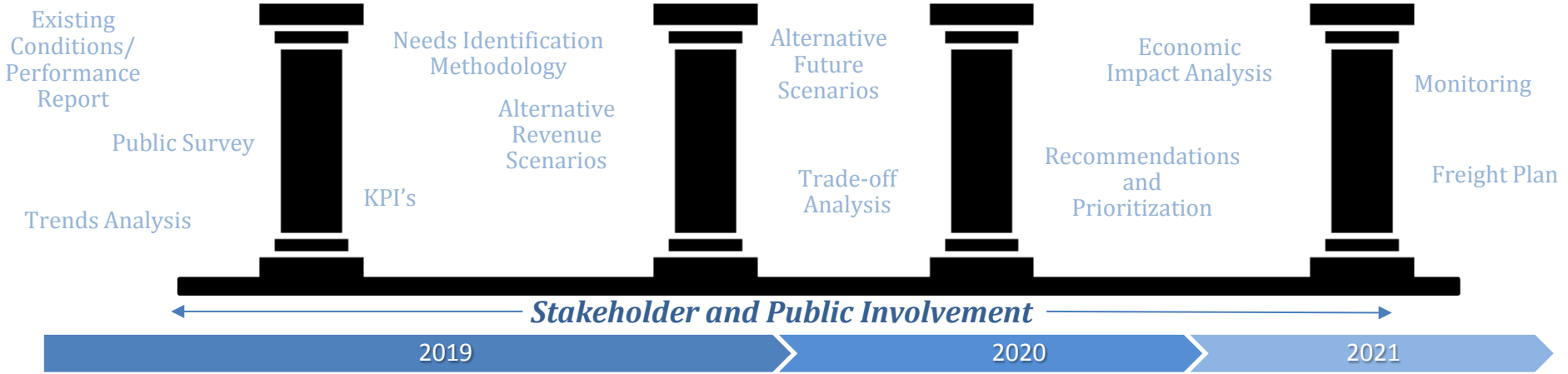
# KEY MILESTONES

CTB's Vision, Goals and Objectives

Mid-term Needs Identification

Long Term Needs Identification

Strategic Actions



# STAKEHOLDER INVOLVEMENT

- With MPO's
  - Presentations at MPOs and PDCs throughout the Commonwealth
    - Fall/Winter 2018:
      - Kick-off/Approach
    - Spring 2019:
      - Review Existing Conditions & Trends (to inform Vision)
      - Review Economic Profiles
      - Discuss Needs Identification Methodology
    - Fall 2019:
      - Review Draft Mid-Term Needs
  - Informal updates and notifications
  - MPO-initiated discussions

# STAKEHOLDER INVOLVEMENT

- With the Public
  - Spring 2019:
    - Statewide Survey to gauge opinions, attitude, and preferences towards transportation issues
  - Public meetings in all nine CTB districts
  - Continued involvement through Spring and Fall Transportation Meetings
  - Active online and social media presence


# Winchester Bicycle Routes Study

Presentation to WinFred MPO Technical Advisory Committee

November 6, 2018

Winchester Virginia

NSVRC
NORTHERN SHENANDOAH VALLEY REGIONAL COMMISSION

WINFRED
METROPOLITAN PLANNING ORGANIZATION

EPRPC

RACEY ENGINEERING

# Project Purpose

BACKGROUND

# The Project

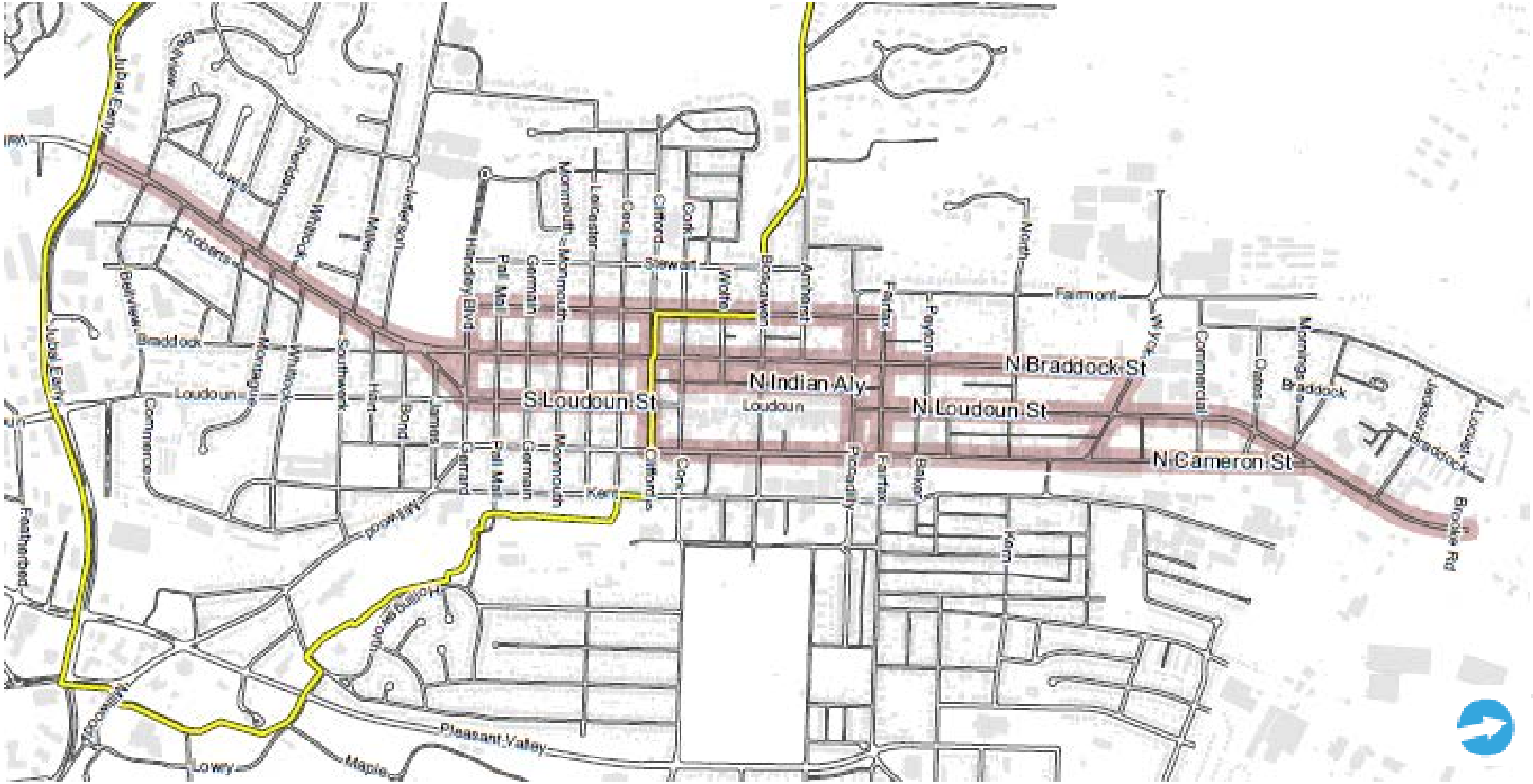
## Project Description

The Northern Shenandoah Valley Regional Commission (NSVRC) and the Winchester Frederick Metropolitan Planning Organization (WinFred MPO) are working with the City of Winchester on an implementation effort for bicycle and pedestrian planning in Winchester. NSVRC and WinFred MPO are conducting this project in response to the WinFred MPO's first bicycle and pedestrian mobility plan completed in 2009 which defined a network of bicycle and pedestrian facilities. Following the 2009 effort, an update to the plan was completed in 2014 which prioritized network segments for implementation based on latent demand, current deficiency, and cost effectiveness.

## Project Scope

1. Develop conceptual bikeway alternatives between Jubal Early Drive and Brooke Road, approximately 4.77 miles. The goal of this effort will be to develop routing and design treatment alternatives to create an intuitive, low-stress bicycle route between the project termini. The preferred alternative will be developed in consultation with key stakeholders and the public. Today's workshop is part of this process.
2. Enhance the user experience and encourage high demand for the Green Circle Trail by recommending interpretive marker locations along the trail (6.31 miles). The interpretive marker locations will draw user attention to historic, cultural and natural resources in view from the trail.

# Study Area Corridors for North-South Bike Connections



# APPROACH

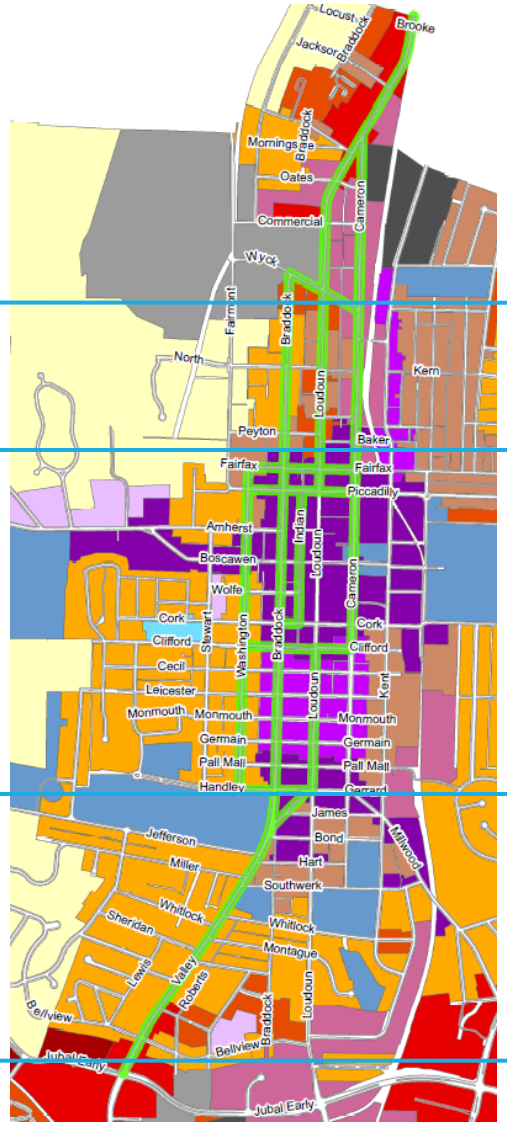
# Approach

- Respect context
- Retain existing on-street parking and work within existing curb-to-curb
- Look at comfort levels, volumes and less busy streets
- Ride all corridor routes, talk with people, observe
- Align where possible with Green Circle Trail
- Sharrows are the default treatment (all streets are 25 MPH)
- Conventional lanes where ROW (curb-to-curb) permit
- Sharrows and signage are low cost, but are not long term substite for separated lanes
- Identified special treatment areas
- Listen to the public!  May 23rd workshop


# Land Use Context

AUTO-ORIENTED – HISTORIC/CENTRAL BUSINESS– RESIDENTIAL – AUTO-ORIENTED

# Land Use/Zoning Context




North of Wyck – Industrial, Commercial, Auto-oriented

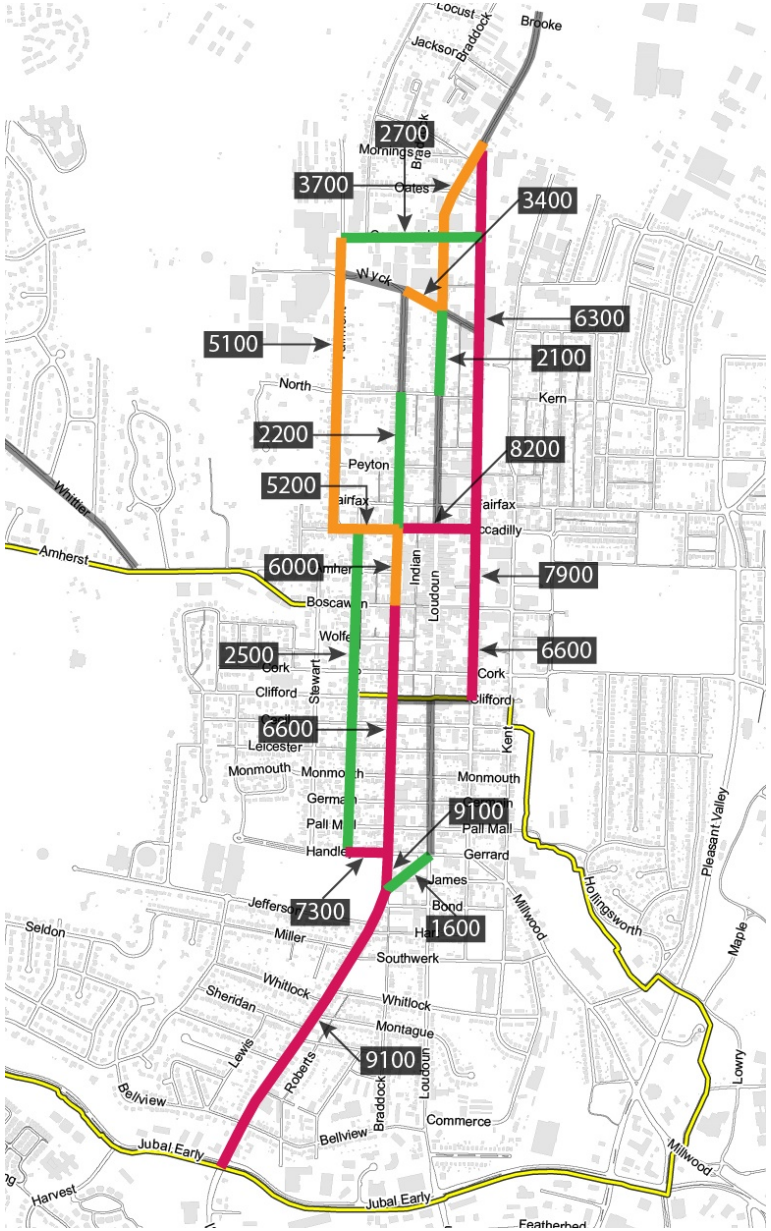
Wyck to Fairfax – Residential and transition

Fairfax to Gerrard – Historic Core, Central Business

Gerrard to Jubal Early – Transition and Residential

# Traffic Volumes (AADT)

- <3000 AADT
- 3000 - 6000 AADT
- >6000 AADT



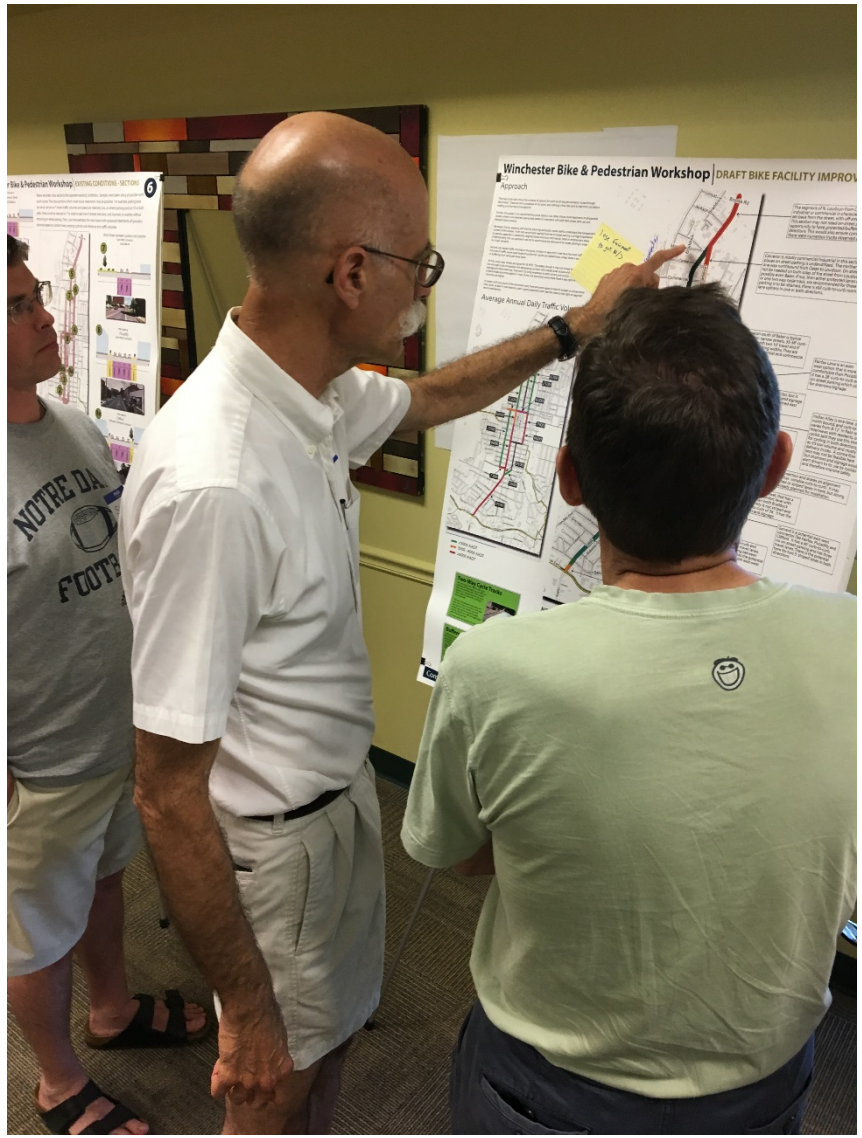

Source: VDOT

# Field Review



Source: VDOT

# Public Involvement – May 23rd Workshop




Source: VDOT

# Bicycle Treatments

INFRASTRUCTURE AND INFORMATION

# Lane treatments – Shared and Separated

## Shared Lane Markings

"Shared Lane Markings," or "sharrows" are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits, shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicycle positioning, and may be configured to offer directional and way-finding guidance." Sharrows are preferred for 25 mph streets. Sharrows support bicycle travel on roads that are not wide enough to permit the designation of a formal bike lane. Sharrows require no additional street space, or widening.

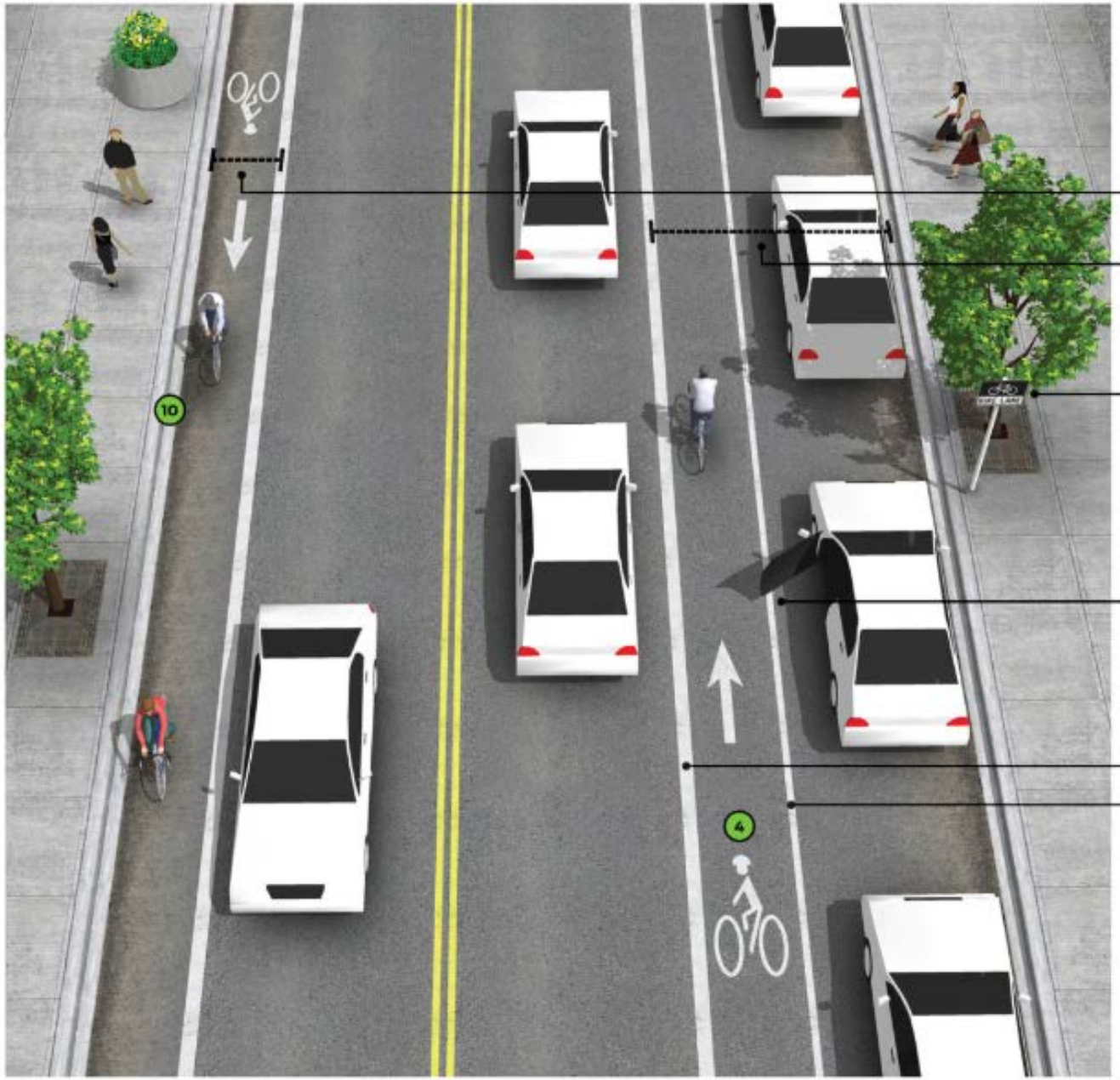
Source: National Association of City Transportation Officials (NACTO)

## Conventional Bike Lanes

Conventional bike lanes give bicyclists an exclusive space on the road that is delimited by paint and signage. Bike lanes increase the safety and comfort of both bicyclists and drivers alike by reducing points of conflict and providing ample space for passing.

Bike lanes are best suited to streets with high vehicle volume (greater than 3,000 average daily traffic), and posted speeds between 25 and 35pm

Source: National Association of City Transportation Officials (NACTO)




*Conventional bike lane. In this example, the bike lane was made possible by the relegating of parking to the opposite side of the street, which is has shared lane markings. Hybrid examples like this could become feasible where parking is feasible to be removed as it could be on Valley Avenue, northbound by Orrick Cemetery. (Charlottesville, VA) Photo: EPR PC.*

# NACTO Urban Bikeway Design Guideline, design standards for conventional bike lanes

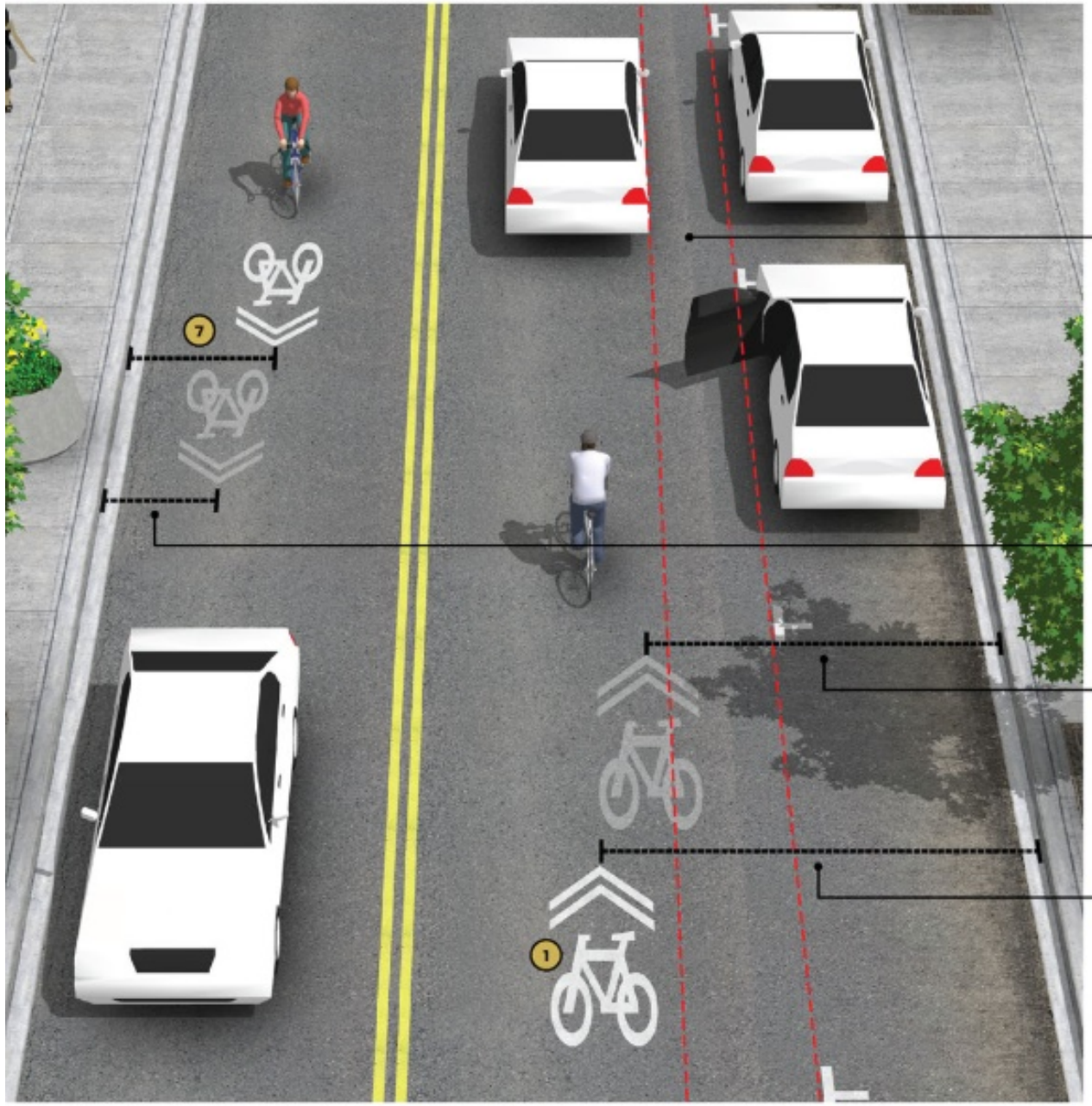



*Figure 3 - Example of a shared lane marking, or "sharrow". Photo: University of Colorado Denver*

NACTO Urban Bikeway Design Guideline, Bikeway signing and marking design guidelines for shared lane markings.

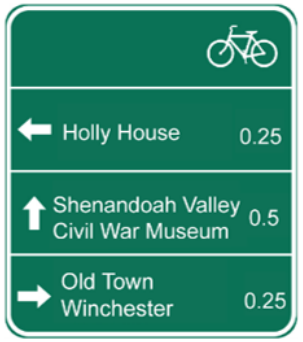
# Routes and Signage

## Bicycle Routes

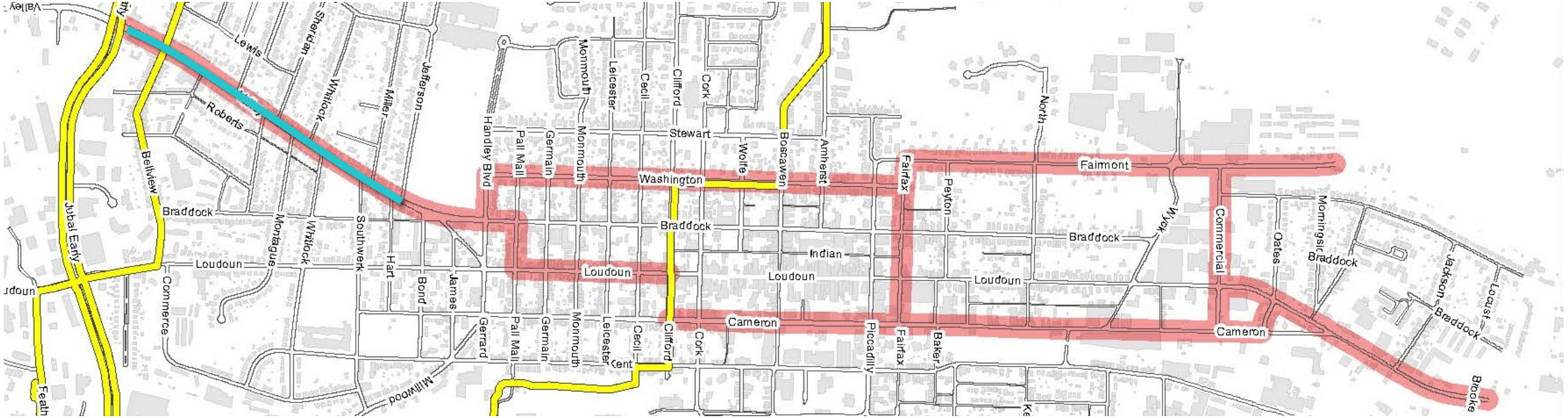
Bicycle routes are streets that have been formally designated by the local jurisdiction as recommended corridors for bicycle travel. They help bicyclists identify safe and continuous routes that they can use to reach their destinations.

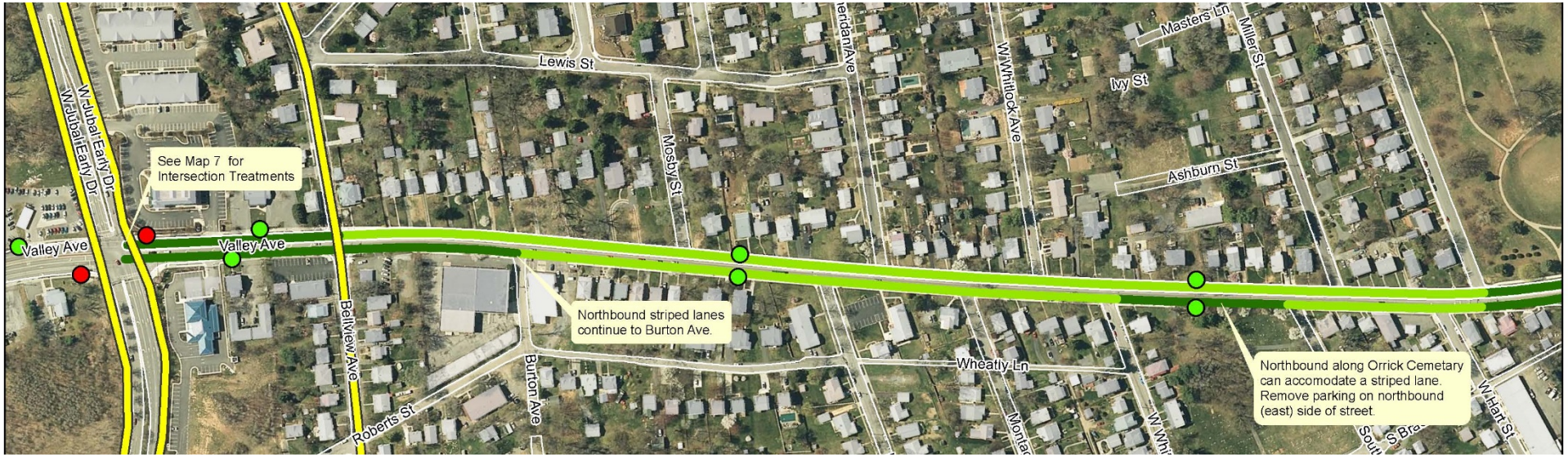
If a street is designated as a bicycle route, signage is placed along it to identify the route and to provide way-finding information to key destinations. Bicycle routes commonly feature pavement markings such as bicycle lanes or sharrows to better accommodate bicyclists, but these are not required.

Source: National Association of City Transportation Officials (NACTO)


| **Confirmation Sign** | **Decision Sign** | **Turn Sign** |
|---|---|---|
| Indicates to bicyclists that they are on a designated bicycle route. Increases motorist awareness of the bicycle route. | Marks the junction of two or more bicycle routes. Informs bicyclists of the designated bicycle route to access key destinations. [8] | Indicates where a bicycle route turns from one street onto another street. Can be used with pavement markings. |
|   |   |   |

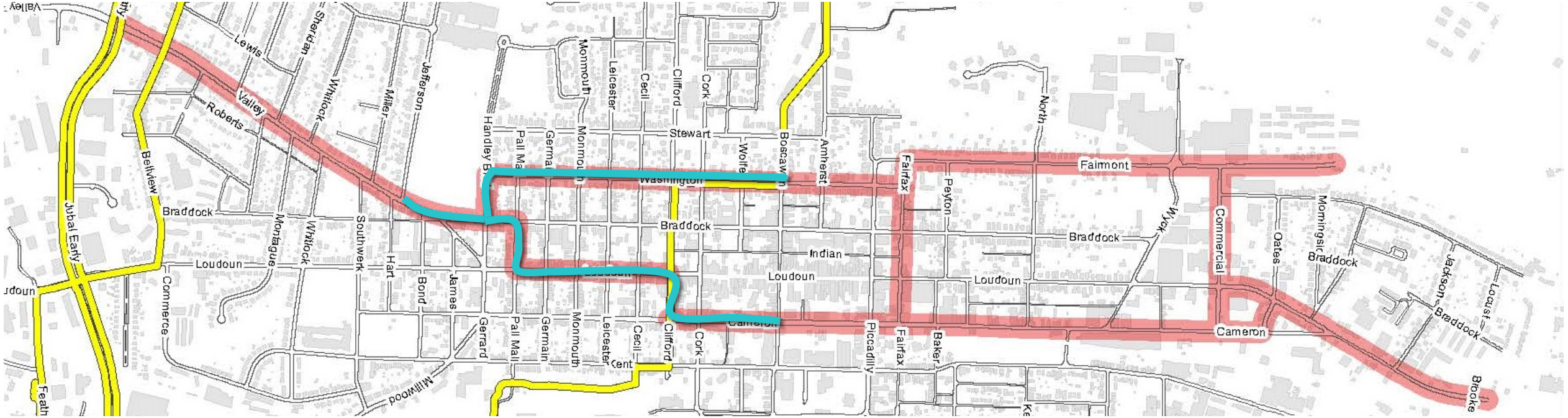
# Routes and Recommendations

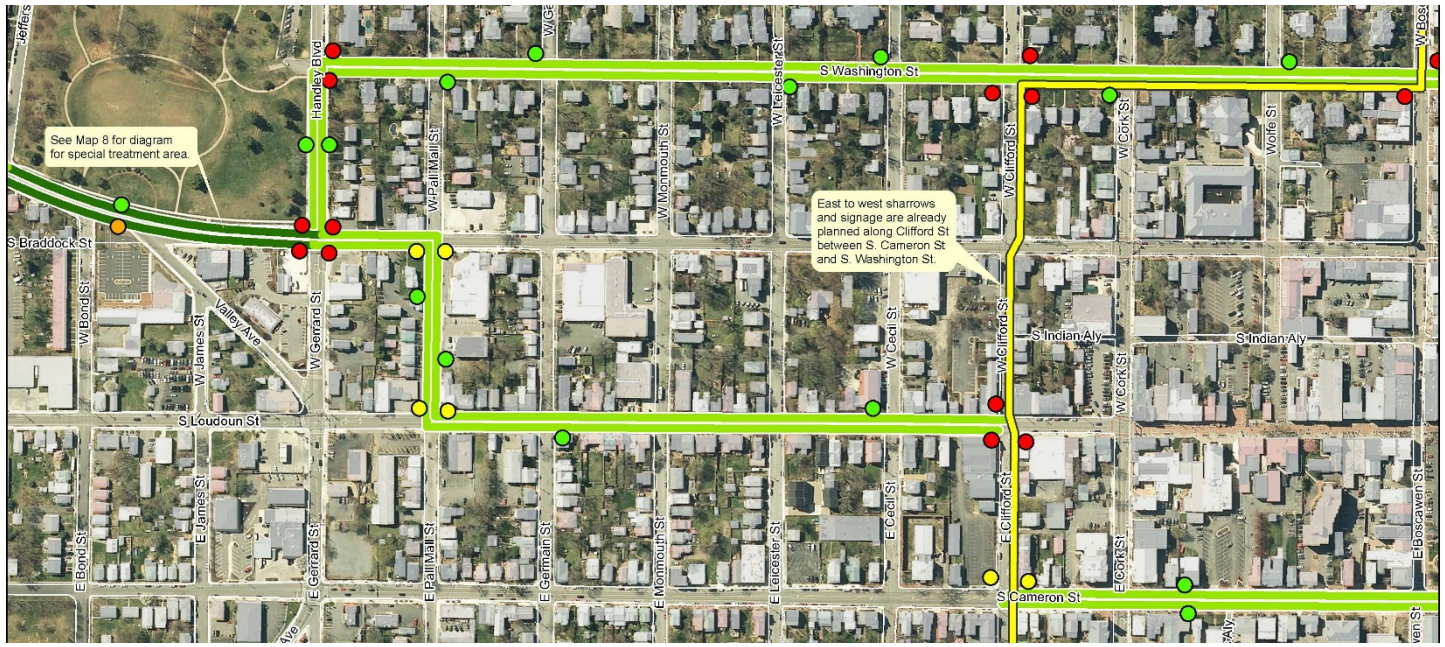



Valley avenue is predominately sharrowed, with occasional conventional lanes where ROW permits, or where on-site parking can be removed.

## Map 2 - Valley Avenue from Jubal Early Dr to Jefferson Street

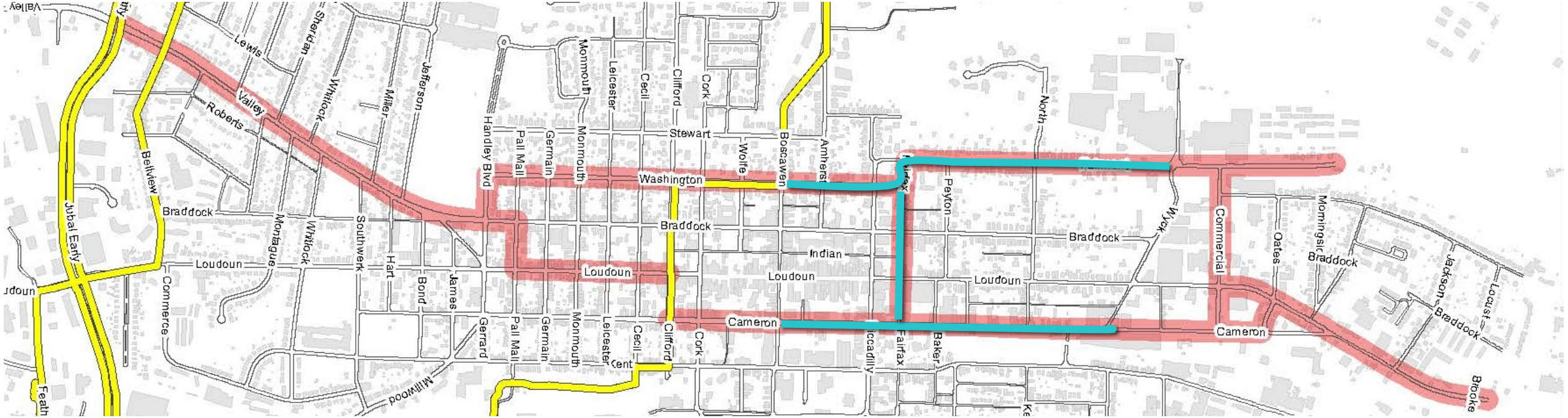


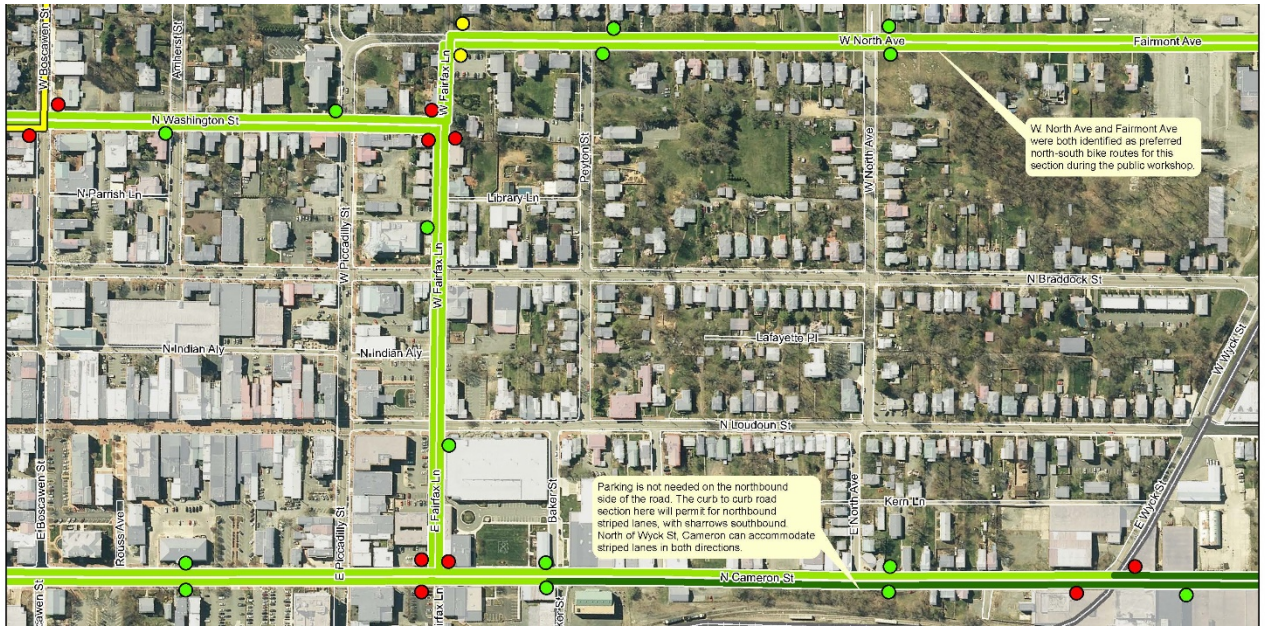




Washington Street, west parallel route; Loudon St/Cameron St, east parallel route, cradle the downtown mall and allow access from neighborhoods east and west of the routes. Clifford (GCT) is an east-west connection.

The downtown area does not have the ROW to install conventional lanes without removing on-street parking. The recommendation for most of the historic downtown is sharrows.

Map 3 - Jefferson St to Boscawen. Route splits at W Gerrard St and Handley Blvd into parallel N/S routes

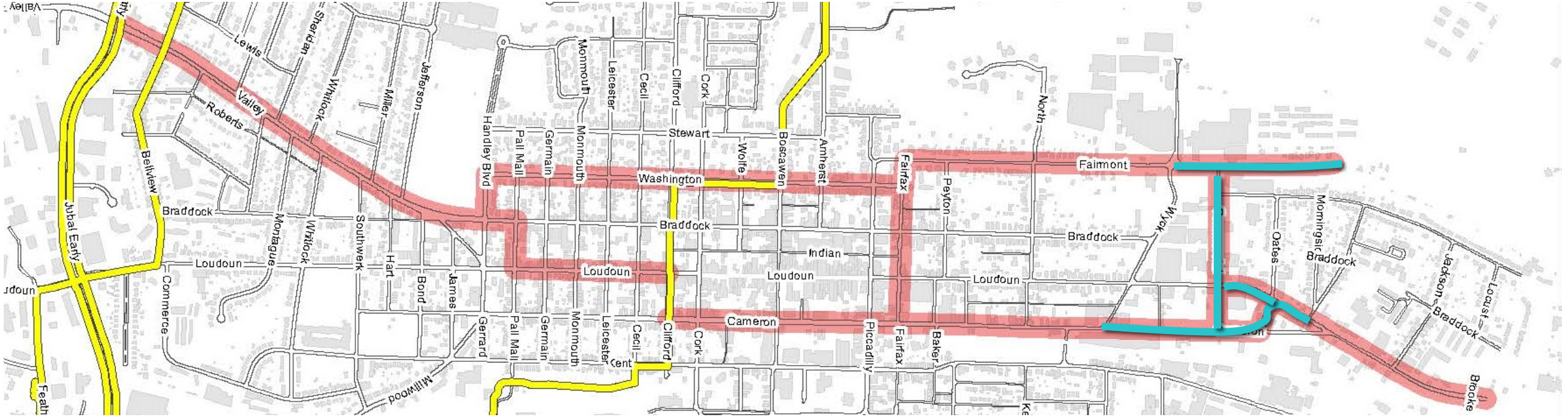


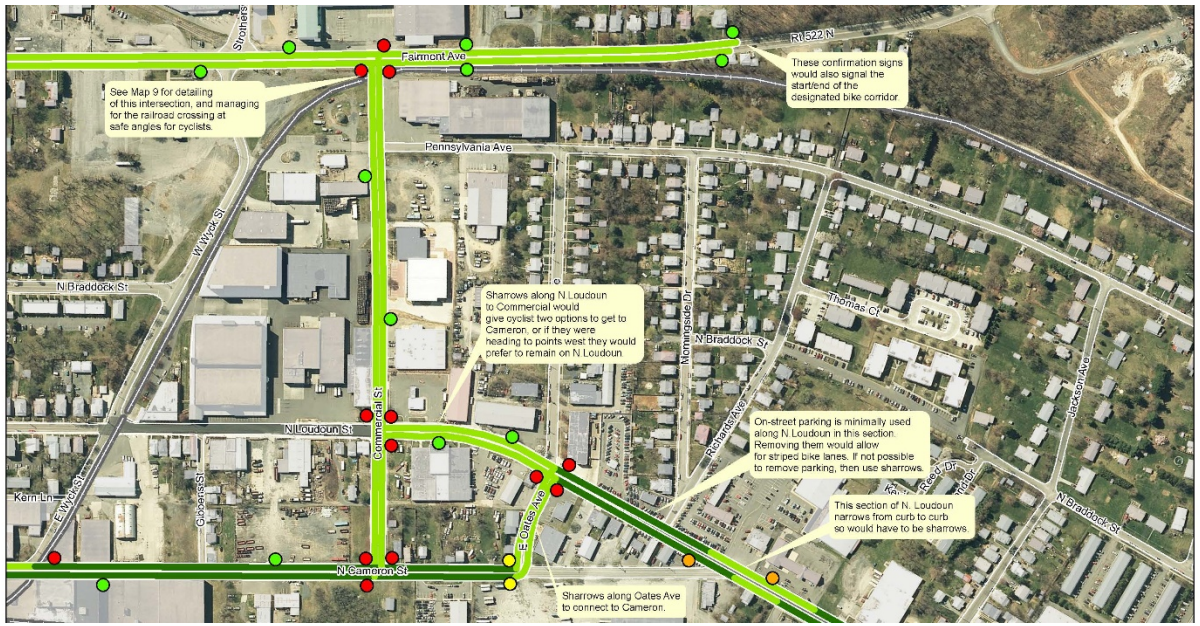




Washington Street, west parallel route; Cameron St, east parallel route, cradle the downtown mall and allow access from neighborhoods east and west of the routes. East-west connection made on Fairfax Lane, slower traffic, and more comfortable than Picadilly

Recommendations are for sharrows/signage to designate routes, as this area is still predominately historic/residential with limited ROW. The exception to this is Northbound on Cameron.

## Map 4 – Boscawen St to Wyck St

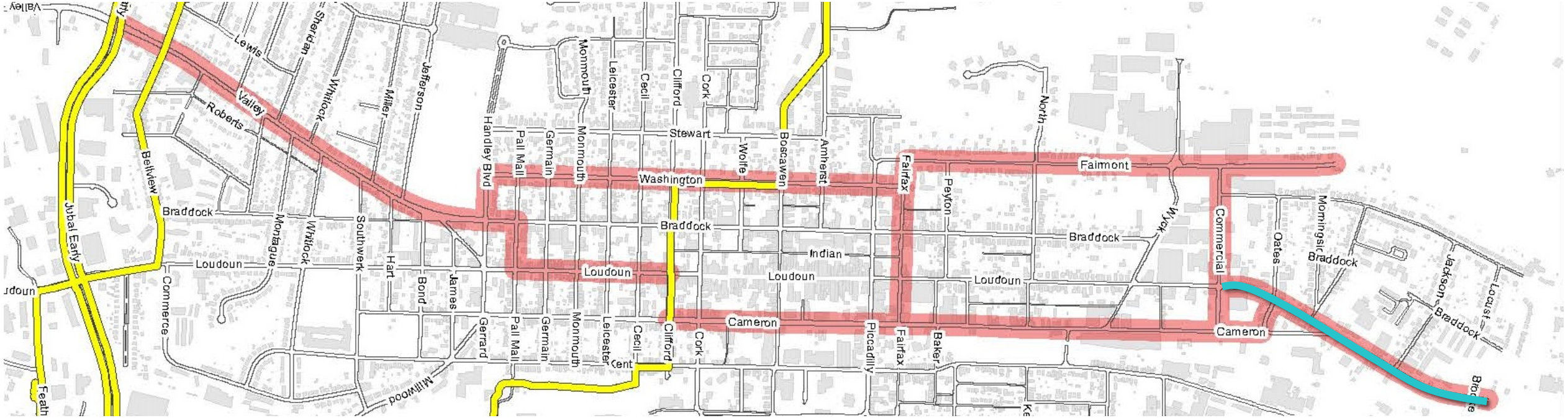


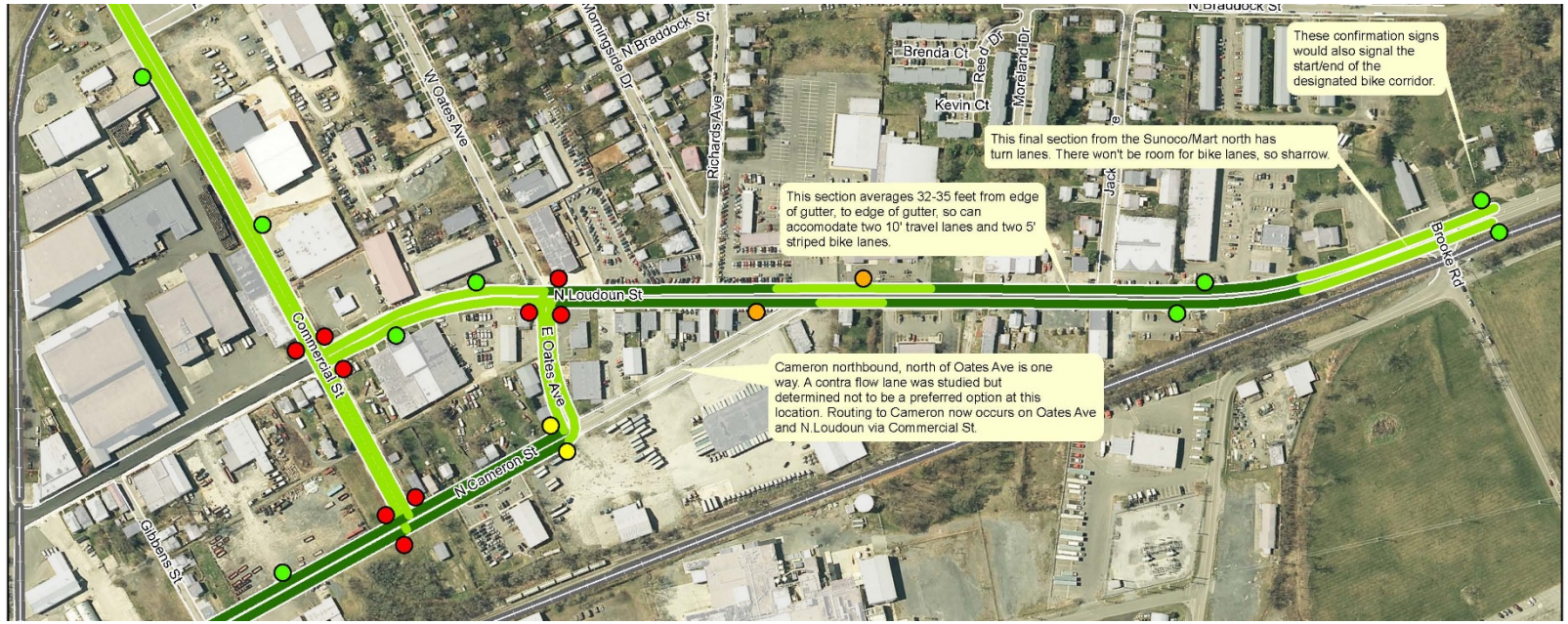




Fairmont Ave is on the west; Cameron on the east. Fairmont is sharrows, Cameron can accommodate conventional lanes on both sides of the street, parking is not needed here and/or the wider shoulder permits separated lanes. Cameron St north of E Oates Street is one way. Looked at a contra flow lane here but chose to route bikes along Oates to N Loudoun.

Commercial St is the recommended east-west connection as its more comfortable riding than Wyck.

## Map 5 – Wyck St to Richards Ave




Primary N/S route here is along N. Cameron St. There is room for conventional bike lanes here if on-street parking in places can be removed. A number of businesses have off-street parking along N. Loudoun so this may be possible. If not, then sharrow.

## Map 6 – Richards Ave to Brooke Rd


Proposed use of the two stage green turn box. Cyclists at a red light could queue to make a left turn. However, if the light is green, northbound, bicyclists wishing to travel westbound (left) on Jubal Early could proceed to a two-stage green turn box. The image shown is a two stage green turn box at the intersection of University and McCormick in Charlottesville Virginia.

Green bike boxes would allow bicyclists to advance and queue in front of traffic at a red light, and green painted lanes across Jubal Early Drive. Example here is University and McCormick, Charlottesville, Virginia

EPRPC

## LEGEND

1. MUTCD reference: Interim Approval for Optional Use of an Intersection Bicycle Box (IA-18) https://mutcd.fhwa.dot.gov/resources/interim_approval/ia18/index.htm
   MUTCD reference, Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14) https://mutcd.fhwa.dot.gov/resources/interim_approval/ia14/index.htm
2. MUTCD reference, Interim Approval for Optional Use of Two-Stage Bicycle Turn Boxes (IA-20) https://mutcd.fhwa.dot.gov/resources/interim_approval/ia20/index.htm
3. The curb-to-curb pavement width allows for conventional bike lanes on the northbound side until Burton Avenue, where it will transition to sharrows.

0 100 200 300 400 Feet

# Map 7 – Special Treatment Area – Jubal Early Drive and Valley Avenue Intersection

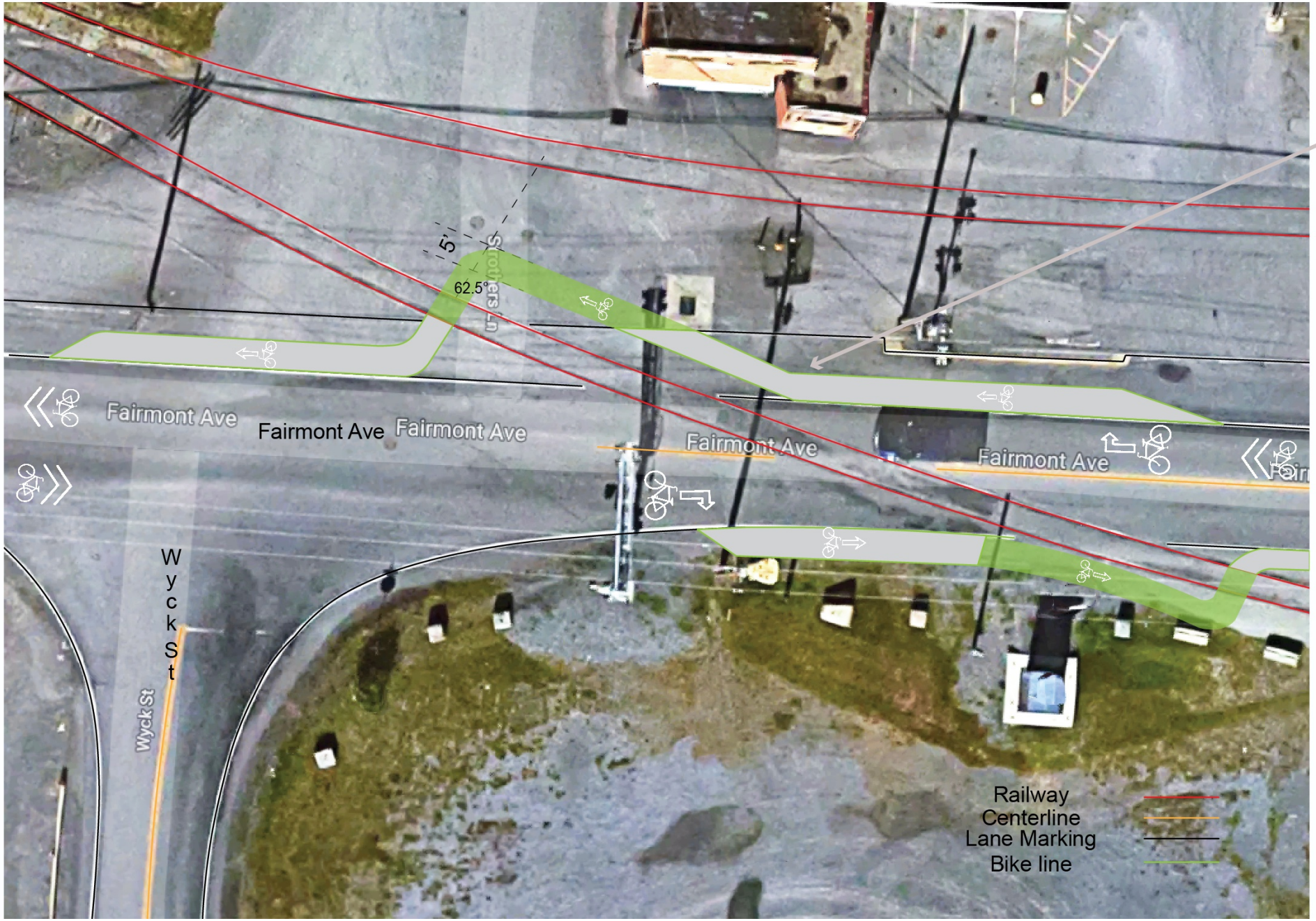

## LEGEND

EPRPC

1. The wide curb-to-curb width in this section allows for the retention of parking that is utilized for school and athletic pickup and drop off, and for a dedicated bike lane.
2. There is excess curb-to-curb width here, we are proposing this striping to allow for a continued bike lane.
3. Green painted intersection queuing bike boxes, with a two-stage bicycle turn box on Gerard westbound, and supporting signage here will be needed, see Map 7 for details and references. The routes split here into their parallel north-south routes.

0 100 200 300 400 Feet

# Map 7 – Special Treatment Area – Valley Ave from Jefferson St to W Gerard, and intersection




W10-12

Rail crossings pose a dangerous risk to bicyclists. If crossed at less than 60 degrees of an angle, the front and/or rear tire can get stuck in the groove of the embedded rail, causing the bike to stop suddenly which usually results in a rider falling or going over the handlebars. It is a common occurrence especially in cities where there are light-rail or street car lines.

The intersection of Fairmont Avenue and Wyck Street has a rail spur that cyclists at the workshop identified as dangerous. The special treatment proposed to the left would have the sharrow transition to a dedicated bike lane that would 'dog-leg' out and then turn to cross the tracks at a safe angle (>60 degrees) on both north and southbound directions. The use of gray and green paint at these sections would help direct cyclists, and warning signs such as MUTCD W10-12 above should be place in advance of both north and south-bound approaches.

# Map 7 – Special Treatment Area – Fairmont Ave and Wyck Street (rail crossing safety)

# Preliminary Cost Estimates

North-South Bicycle Routes
City of Winchester

| Northbound | Length (ft) | Length (mi) | Cost/Mile City | Cost (City) |
|---|---|---|---|---|
| Sharrows | 19,660 | 3.72 | $ 7,260 | $ 27,032.00 |
| Striped lane | 6,851 | 1.30 | $ 56,760 | $ 73,651.00 |
| | **26,511** | **5.02** | | **$ 100,683.00** |
| **Southbound** | | | | |
| Sharrows | 22,302 | 4.22 | $ 7,260 | $ 30,665.00 |
| Striped lane | 4,196 | 0.79 | $ 56,760 | $ 45,107.00 |
| | **26,498** | **5.02** | **$ 64,020** | **$ 75,772.00** |
| **Total Estimated Cost for Lane Treatments** | | | | **$ 176,455.00** |

| Signage Type | Frequency | SF/sign | Total SF | Cost ($45/SF) |
|---|---|---|---|---|
| Confirmation | 52 | 5 | 260 | $ 11,700.00 |
| Confirmation/Decision | 4 | 10 | 40 | $ 1,800.00 |
| Decision | 34 | 10 | 340 | $ 15,300.00 |
| Turn | 10 | 10 | 100 | $ 4,500.00 |
| **Estimated Signage Costs** | | | | **$ 33,300.00** |

| | |
|---|---|
| Estimated Lane Treatments Cost | $ 176,455.00 |
| Estimated Signage Cost | $ 33,300.00 |
| **Total Estimated Cost** | **$ 209,755.00** |

## Cost Assumptions Per Mile

| Sharrow | Cost | Frequency | Per Mile | Cost Per Mile |
|---|---|---|---|---|
| Sharrow symbol | $275.00 | every 200 feet | 26.4 | $7,260 |
| | | | | **$7,260** |
| **Striped Lane** | | | | |
| Eradicate existing markings | $4.50 | per linear foot | | $23,760 |
| Striping 6" white marking on traffic side of lane | $3.25 | per linear foot | | $17,160 |
| Striping 4" white marking on parking side of lane | $2.50 | per linear foot | | $13,200 |
| In lane bike symbol with arrows | $250.00 | every 500 feet | 10.56 | $2,640 |
| | | | | **$56,760** |


# Green Circle Trail

## ENVIRONMENTAL AND HISTORIC INTERPRETIVE SIGNAGE STUDY

Winchester Virginia

NSVRC
NORTHERN SHENANDOAH VALLEY REGIONAL COMMISSION

WINFRED
METROPOLITAN PLANNING ORGANIZATION

# Thank you!

EPRPC

RACEY ENGINEERING

MPO TIP Report 11/15/2018 9:43:30 AM

# Winchester MPO

## Project Groupings

| GROUPING | Construction : Bridge Rehabilitation/Replacement/Reconstruction | | | | | |
|---|---|---|---|---|---|---|
| ROUTE/STREET | | | | | TOTAL COST | $2,697,622 |
| | FUND SOURCE | MATCH | FY18 | FY19 | FY20 | FY21 |
| PE | Federal - STP/STBG | $0 | $0 | $30,000 | $0 | $0 |
| CN | Federal - STP/STBG | $0 | $0 | $74,493 | $0 | $0 |
| CN AC | Federal - AC OTHER | $0 | $0 | $2,134,748 | $0 | $0 |
| MPO Note | TIP AMD - move UPC 86316 from Staunton NonMPO CN: Bridge Rehab/Replacement grouping to Winchester MPO CN: Bridge Rehab/Replacement grouping; updated based on actual oblig's: add $30,000 (STP/STBG) FFY 19 PE phase; add $21,692 (MG/EB), & $51,689 (STP/STBG) Prev RW phase; add $74,493 (STP/STBG) & $2,134,748 (AC-Other) FFY19 CN phase. | | | | | |

DRAFT 11/27/18

Mr. Raymond Khoury, P.E.
State Traffic Engineer
Traffic Engineering Division
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

Dear Mr. Khoury:

*Winchester-Frederick County MPO* submits this letter to the Virginia Department of Transportation (VDOT) to fulfill the March 2016 FHWA final rulemaking (23 CFR 490) for National Performance Measures for the Highway Safety Improvement Program (HSIP) target setting requirements. The Safety Performance rulemaking requires MPOs to agree to contribute to meeting the State DOT safety targets or to establish safety targets for each of the five safety measures including number of fatalities, rate of fatalities per 100 million vehicle miles traveled (VMT), number of serious injuries, rate of serious injuries per 100 million VMT, and number of non-motorized fatalities and non-motorized serious injuries.

The selected methodology and selected targets are outlined below acknowledging acceptance to support the VDOT target, to set a numerical target for each performance measure specific to the MPO planning area, or any combination of these two methods for all five safety performance targets.

By supporting any of the VDOT targets we agree to plan and program projects to contribute toward achieving the State target, and must not only consider safety, but increase the safety of the transportation system. Details of the methodology used to estimate VMT for our MPO area within Virginia for establishing our rate targets is provided in the additional information section below.

## Methodology Summary

| | VDOT | MPO | If MPO, applicable data analysis method |
|---|---|---|---|
| Number of fatalities | ☒ | ☐ | |
| Rate of fatalities per 100 million vehicle miles traveled (VMT) | ☒ | ☐ | |
| Number of serious injuries | ☒ | ☐ | |
| Rate of serious injuries per 100 million VMT | ☒ | ☐ | |
| Number of non-motorized fatalities and non-motorized serious injuries | ☒ | ☐ | |

## Additional Information on Methodology

Enter data analysis and summary information here if other method was selected above.

## Selected Targets

### *Future Target Annual Percent Reduction Values*

### *(default is Virginia 5-year average target annual reduction)**

| | |
|---|---|
| **Fatality Reduction** | **-3.15%** |
| **Fatality Rate Reduction** | **-1.4%** |
| **Serious Injury Reduction** | **1.15%** |
| **Serious Injury Rate Reduction** | **2.65%** |
| **Non-Motorized Reduction** | **0.3%** |
| **VMT % Increase** | **1.5%** |

*A positive value is a reduction and a negative value is an increase percentage.

### *2019 Safety Performance Targets*

| | |
|---|---|
| **Fatalities** | **8** |
| **Fatality Rate** | **0.92** |
| **Serious Injuries** | **38** |
| **Serious Injury Rate** | **4.37** |
| **Non-Motorized Fatalities and Serious Injuries** | **6** |

We acknowledge MPO targets are reported to VDOT, and will be made available to FHWA upon request. Our 2019 safety targets are submitted for each performance measures on all public roads within 180 days after the VDOT reported its statewide targets, which falls on February 27th, 2019.

For questions or comments, please contact me at *jmadera@nsvregion.org* and *(540) 636-8800*.

Respectfully,

*John Madera, Principal Planner*

*Northern Shenandoah Valley Regional Commission*
*400 Kendrick Lane, Suite E*
*Front Royal, VA 22630*

DRAFT

Original: June 1, 2016
Revision 1: February 23, 2017
Revision 2: April 26, 2017
Revision 3: April 24, 2018
**Revision 4: November 27, 2018**

Mr. John Madera
Principal Planner
Northern Shenandoah Valley Regional Commission
400 Kendrick Lane
Front Royal, VA 22630

**Re:** ***North Winchester Interchange Alternatives Analysis Report (IAAR) Proposal - REVISED***

Dear Mr. Madera:

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "the Consultant") is pleased to submit this letter agreement (the "Agreement") to the Northern Shenandoah Valley Regional Commission ("NSVRC" or "the Client") for providing professional traffic and transportation engineering services in support of the North Winchester Interchange Alternatives Analysis on I-81 at Exit 317.

## Scope of Services

The revised scope of services below describes the services to be provided by the Consultant team under this contract. It is assumed that John Madera (NSVRC) will be the Contract Manager, Terry Short and Scott Alexander will be the VDOT co-Project Managers, and Amanda Harmon will be the Consultant team Project Manager. Throughout this scope of services, milestones will require review and input from NSVRC, VDOT and Frederick County; therefore, these agencies will be referred to as the Study Work Group (SWG) in this document when joint involvement with the three agencies is required.

## Project Understanding

VDOT requested Kimley-Horn to develop potential alternatives to improve existing and anticipated future traffic operations and safety at the I-81 at Exit 317 interchange in Frederick County.

The study area includes US 11 from just west of the Crown Lane/Pactive Way intersection to just east of the Snowden Bridge Boulevard intersection. The following intersections are included in the study area:

- US 11 at Crown Lane/Pactiv Way (signalized)
- US 11 at Welltown Road/Amoco Lane (signalized)
- US 11 at I-81 Exit 317 southbound on and off ramps (signalized)
- US 11 at I-81 Exit 317 northbound off ramp (signalized)
- US 11 at Redbud Road/I-81 northbound on ramp (signalized)
- US 11 at Snowden Bridge Boulevard (signalized)

### Information to be provided by VDOT, NSVRC, or Frederick County

It is assumed that the following information will be provided to the Consultant team by VDOT, Frederick County, or NSVRC within requested times to maintain project schedule.

- Proposed roadway or other transportation (transit, bike, pedestrian, etc.) improvements under study, design, or construction by VDOT or local agencies in the study area
- Planned developments in the area

## Task 1 – Project Management and Coordination

This task consists of effort required to administer the project addressing contract matters; internal project coordination; coordination with stakeholders; general quality control; and project management responsibilities consisting of project organization, schedule management, and development of monthly progress reports for the project.

### Task 1 Deliverables

- Monthly progress reports to accompany monthly invoices

## Task 2 – Existing Conditions Analysis

### Subtask 2A – Traffic Operations Analysis

Kimley-Horn will use the base model developed under the initial **North Winchester Interchange Alternatives Analysis Report (IAAR)** contract to develop and finalize the AM and PM existing conditions peak hour analysis models in Synchro 9 for the six study intersections shown in **Figure 1**. Synchro models will be developed using existing geometry and peak hour traffic volumes previously collected.

**Figure 1: Study Area Intersections**

Turning movement counts (TMCs) were collected under the initial **North Winchester Interchange Alternatives Analysis Report (IAAR)** contract for all six study intersections. Synchro 9 will be used to report control delay (in seconds per vehicle) and 95$^{th}$ percentile queue length (in feet). Kimley-Horn will summarize existing peak hour traffic operations in tabular format.

### Subtask 2B – Crash Analysis

Kimley-Horn will conduct a crash analysis for the study corridor using the latest five years of available crash data. Kimley-Horn will analyze and summarize the following crash data for the study area:

- Corridor-wide crash data in tabular format for up to ten factors such as weather conditions, lighting conditions, crash type, crash severity, or other crash factors as necessary to aid in identifying crash patterns
- Obtain VDOT Traffic Engineering Department (TED) published potential for safety improvement (PSI) rankings for intersection and segments in the study corridor
- Crash pie charts summarized for each study intersection

### Task 2 Deliverables

- Existing AM and PM peak hour operational analysis results summarized in tabular format
- Crash analysis tables and pie charts for each study intersection

## Task 3 – Future Conditions Analysis

### Subtask 3A – Future Traffic Volume Development

Kimley-Horn will forecast future year (2030) AM and PM weekday peak hour traffic volumes for the no-build and build alternatives by applying a 1.0% linear growth rate west of I-81 and a 1.3% linear annual growth rate east of I-81 (provided by VDOT Staunton District) to existing turning movement counts. All future traffic analysis will be conducted under 2030 conditions.

### Subtask 3B – No-Build Traffic Operations Analysis

Kimley-Horn will use the existing conditions AM and PM peak hour Synchro models as the basis for the development of the 2030 no-build Synchro models. Kimley-Horn will perform peak hour no-build traffic operations analyses using Synchro 9 and will summarize the AM and PM peak hour traffic operations results in tabular format.

### Subtask 3C – Development of Potential Improvements

Kimley-Horn will identify traffic operation and geometric deficiencies based on results from **Task 2** and **Subtask 3B**. Kimley-Horn will identify up to four (4) potential interchange concepts using VDOT's Junction Screening Tool (VJuST) for further screening consideration.

### Subtask 3D – Alternatives Screening Analysis

Kimley-Horn will evaluate the potential operational benefits associated with the four (4) proposed interchange concepts identified from **Subtask 3C** using Synchro 9. Screening analyses will be performed in the worse peak hour (highest overall traffic volumes) under 2030 conditions.

Kimley-Horn will present the results of the alternatives screening analysis during a conference call with VDOT and relevant stakeholders. It is anticipated that the two (2) interchange alternatives to evaluate further will be selected during this call.

### Subtask 3E – Route 37 Limited Access Break

Kimley-Horn will review a potential limited access break on Route 37 at Lenoir Drive. Kimley-Horn will determine if there is enough data to support a potential access break and document the steps to pursue it.

### Task 3 Deliverables

- Existing AM and PM peak hour operational analysis results summarized in tabular format
- No-build AM and PM peak hour operational analysis results summarized in tabular format
- List of up to four potential interchange improvements
- Route 37 limited access break summary

## Subtask 4 – Concept Sketches and Cost Estimates

### Subtask 4A – Stage 1 Concept Sketches and Cost Estimates

Kimley-Horn will develop up to four (4) Stage 1 hand-sketched concept drawings and planning level cost estimates for interchange alternatives agreed upon by the SWG. These are anticipated to be developed to compare and screen alternatives. Concept drawings will be illustrated on aerial imagery.

### Subtask 4B – Stage 2 Concept Sketch and Cost Estimate

Kimley-Horn will develop two Stage 2 concept drawings and cost estimates for the two interchange alternatives selected by the SWG in **Subtask 3D**. The concept drawings will be illustrated on aerial imagery. Engineering, permitting, and utility relocation will be approximated based on GIS and available survey information. The Stage 2 planning level costs will be compared to the quantity take-offs based on the geometric alternatives developed and the Stage 1 final planning level cost estimates.

### Task 4 Deliverables

- Stage 1 planning level cost estimates for up to four interchange alternatives
- Stage 1 sketch-level concept drawings for up to four interchange alternatives
- Stage 2 concept drawings for two interchange alternatives selected by the SWG
- Stage 2 planning level cost estimates for two interchange alternatives selected by the SWG

## Task 5 – Analysis Summary

Kimley-Horn will prepare a PowerPoint presentation that summarizes the efforts of **Tasks 2** through **4**. Kimley-Horn will submit a draft presentation to the SWG for review. Following the receipt of one round of consolidated SWG comments, Kimley-Horn will prepare a final presentation. In addition to the final presentation, Kimley-Horn will compile a technical appendix containing study data and results.

### Task 5 Deliverables

- Draft PowerPoint presentation delivered in electronic format
- Final PowerPoint presentation and technical appendix delivered in electronic format

# ADDITIONAL SERVICES

The following services are not included in the scope of services, but can be provided as additional services if authorized by the NSVRC. Compensation for additional services will be agreed to prior to their performance:

- Analysis of additional alternatives beyond what is documented in this scope of services
- Meetings, presentations, or coordination in addition to those described
- Traffic analysis on I-81

## SCHEDULE

Kimley-Horn will provide the services on a mutually-agreeable schedule. It is anticipated that this task assignment will be completed in July 2019.

## FEE AND BILLING

Kimley-Horn will perform the services in Tasks 1 – 5 for the total lump sum fee based on the total fees shown in **Table 1**. Lump sum fees will be invoiced monthly based upon the overall percentage of services performed.

**Table 1 – Fee Summary (REVISED)**

| Tasks | Total |
|---|---|
| Task 1 – Project Management and Coordination | $4,400 |
| Task 2 – Existing Conditions Analysis | $17,500 |
| Task 3 – Future Conditions Analysis | $30,300 |
| Task 4 – Concept Sketches and Cost Estimates | $30,200 |
| Task 5 – Analysis Summary | $6,700 |
| **Total Lump Sum Fee** | **$89,100** |

Lump sum fees will be invoiced monthly based upon the overall percentage of services performed. Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

## CLOSURE

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the attached Standard Provisions, which are incorporated by reference. As used in the Standard Provisions, "Consultant" shall refer to Kimley-Horn and Associates, Inc., and "Client" shall refer to NSVRC.

Kimley-Horn, in an effort to expedite invoices and reduce paper waste, submits invoices via email in an Adobe PDF format. We can also provide a paper copy via regular mail if requested. Please include the invoice number and Kimley-Horn project number with all payments.

Please provide the following information:

____ Please email all invoices to: jmadera@nsvregion.org

____ Please copy: 400-E Kendrick Lane, Front Royal VA 22630

If you concur in all the foregoing and wish to direct us to proceed with the services, please have authorized persons execute two copies of this Agreement in the spaces provided below, retain one copy, and return the other to us. We will commence services only after we have received a fully-executed agreement. Fees and times stated in this Agreement are valid for sixty days after the date of this letter.

To ensure proper set up of your projects so that we can get started, please complete and return with the signed copy of this Agreement the attached Request for Information. Failure to supply this information could result in delay in starting work on your project.

We appreciate the opportunity to provide these services to you. Please contact me if you have any questions.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Timothy E. White

Timothy E. White
Senior Associate

Copy: Terry Short, Jr. – VDOT
Scott Alexander – VDOT
Amanda Harmon – Kimley-Horn
Andy Nagle – Kimley-Horn

Attachment:
Standard Provisions