

# Avon Street Extended (RE)Vision

Documentation Supporting Southern and Western Area Master Plan

THE WORK OF  
LINE+GRADE



Completed March, 2020

# Avon Street Extended (RE)Vision

**Professional Services Provided to:**

County of Albemarle  
Department of Community Development  
Transportation Planning  
401 McIntire Road  
Charlottesville, VA 22902

**Prepared for:**

5th and Avon Community Advisory Committee

**Prepared by:**

**LINE + GRADE**

CIVIL ENGINEERING

113 4<sup>TH</sup> Street NE; STE. 100  
Charlottesville, VA 22902  
dhyer@line-grade.com  
(434) 262.0169

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## Project Origins

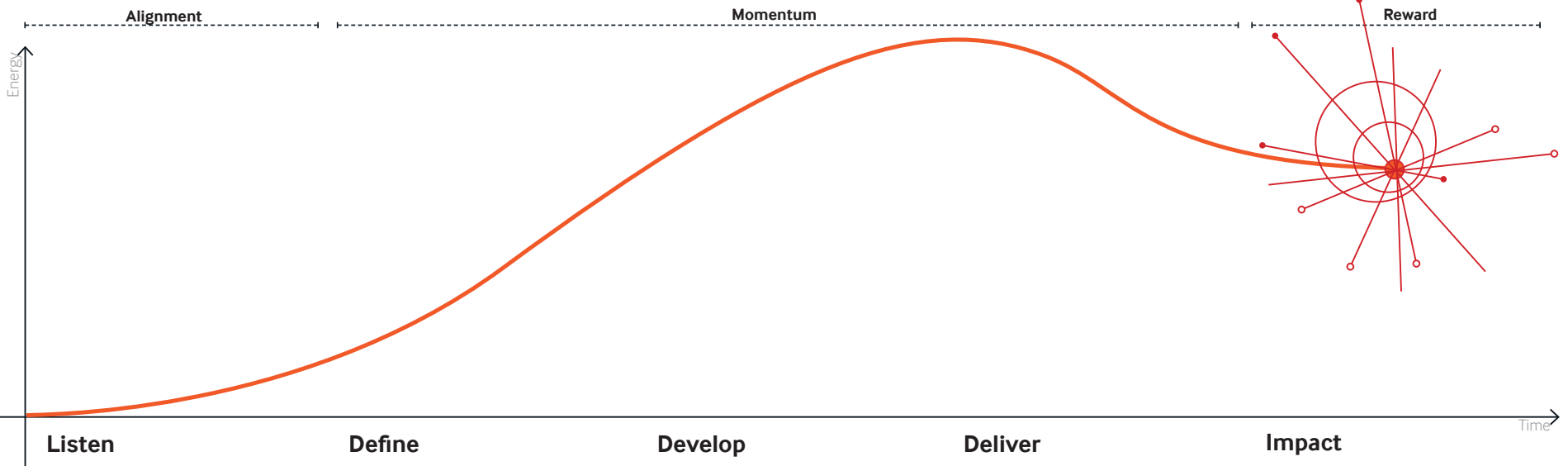
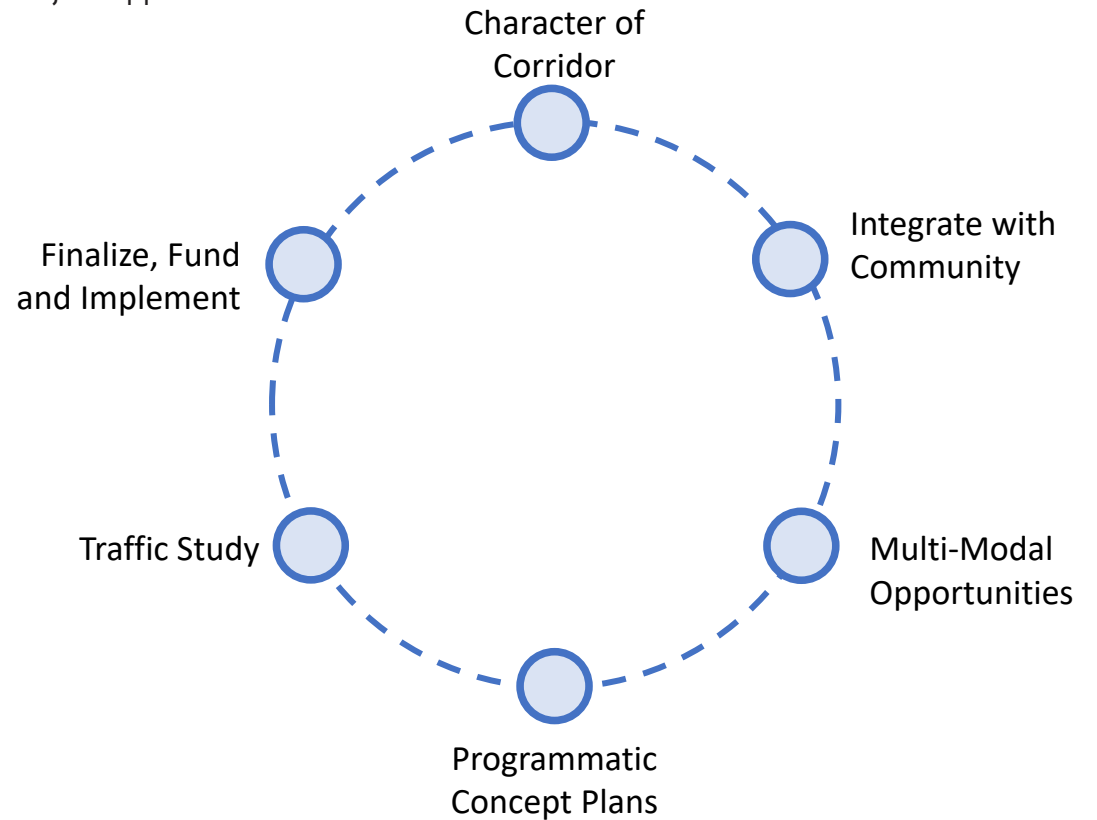
On July 19<sup>TH</sup> 2018 the Project Team presented a project approach to the 5<sup>TH</sup> and Avon Community Advisory Committee (CAC). The presentation was intended to highlight how our team could act as a liaison for a Community Driven Design Process which would result in a new vision for the Avon Street Extended Corridor - from the City of Charlottesville jurisdictional boundary to Route 20, a length of 2.3 miles.

Using a myriad of examples from similar projects, Line and Grade staff proposed how we would lead the CAC through the design and vision process. The original project approach icon is shown at right. And the Project Trajectory, below. Despite the tendency of an Engineering Firm to think in a linear fashion, projects such as this are necessarily non-linear and iterative. Though these graphics indicate neat-and-tidy transitions between phases, this is not actually the case.

## Introduction

What follows is a summary of each CAC Meeting and the design decisions that stemmed from these community meetings. For the purposes of this Memorandum, the work is referred to as **(RE)Vision**.

Project Approach:



## Listen:

As the project trajectory image shown on Page 4 suggests: the first phase of the project was for the design team to **listen** to the Community Advisory Committee and members of the community writ large. The summary below details discussion items and feedback from meetings held with these groups. A full transcript of all meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1.

- VDOT has expressed that a second signalized intersection at Southern Parkway will not be permitted.
- Pedestrian experience along existing roadway is very:
  1. “Unpleasant”
  2. “Foreboding”
  3. “Dangerous”
  4. “You take your life into your hands when crossing at Mill Creek”
- How can we keep speed slow?
- Goal of the proposed design changes are to:
  1. Slow traffic
  2. Change perceived character
  3. More residential
- Consider Roundabout at one of the primary intersections
- Pedestrian Connection across Interstate 64
- Existing Turn Lanes seem too long
- Design for Compatibility with City
  1. Discuss with City Staff and Leadership (Counselors, Bike, Ped, Trails)
- Land Use
  1. PVCC Land is for sale
  2. Schools (Cale Elem. Peabody, Monticello HS)
  3. Current and Future Residential (Refer to Springhill Village)
  4. Lakeside North
  5. Jail is along corridor.
  6. High School Center 2



“[...] You take your own life into your hands [...],” CAC Member



The intersection of Mill Creek Blvd. and Avon Street Ext. (Note the delivery vehicle).

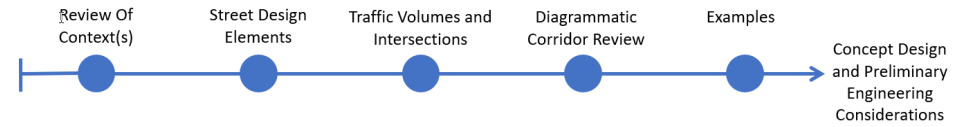


An aerial view of the narrowest portion of the corridor, where Avon Street crosses I64.

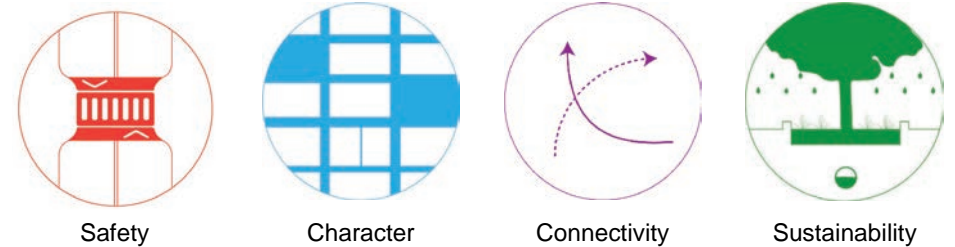
## Define:

Having Listened to the CAC's feedback and ideas about the Avon Street Corridor, the Project Team began to categorize and define the Avon corridor by the existing and preferred roadway typologies as well as the adjacent land use zoning. The following notes were generated during the January 17, 2019 CAC meeting. A full transcript of the meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1. The CAC presentation from January 17, 2019 can be found in Part 2 of that same document.

- Summarized main concerns expressed in previous CAC meeting:
  - Safety
  - Aesthetic and Character
  - Connectivity
  - Functionality
- Presented overview of design approach
  - Divided corridor into discreet phases
  - Road diet: re-allocate unnecessary pavement to other users
- Offered design options at key intersections
  - City integration
  - Mill Creek
  - Southern Parkway
  - Cale Entrance
  - 5th Street Station Parkway
  - Route 20/Biscuit Run
- Explored possible typical sections along discreet phases of corridor
  - Phase A – Industrial, City integration
  - Phase B - I64 Bridge
  - Phase C - Industrial transition to Core
  - Phase D - Mill Creek and Southern Pkwy (Core)
  - Phase E - Residential Transition to Core
  - Phase F - Route 20 and Biscuit Run
- CAC Feedback
  - Residential feel is most desirable.
  - Concern was expressed about cost/funding
  - Look at interim solutions
  - Reach out to local VDOT staff



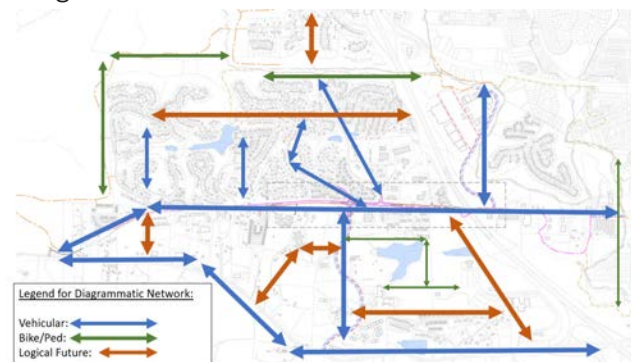
## Presentation Outline



## Identified Project Goals



## Defining Corridor



## Logical Connection (Current and Future)

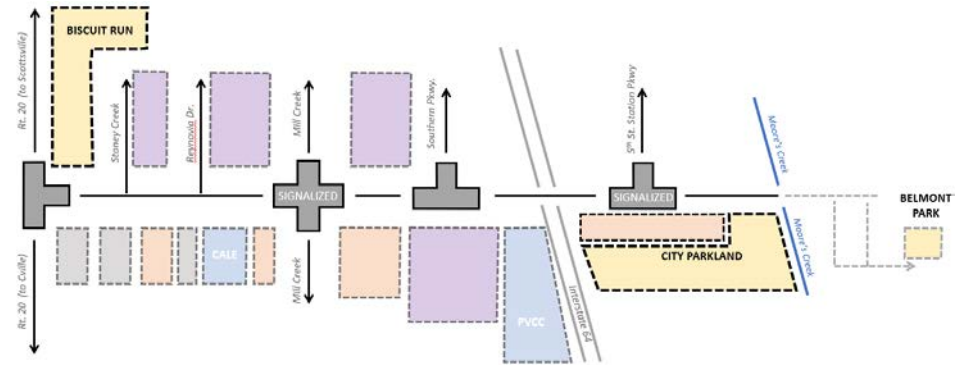
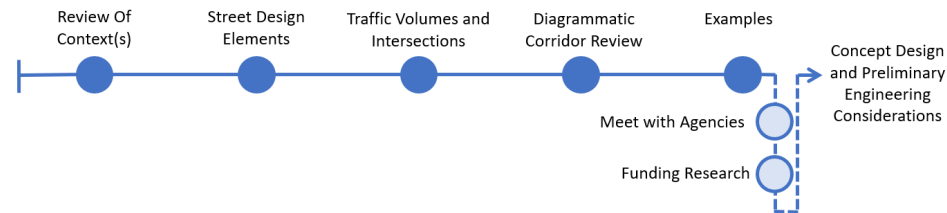
## Define:

In due course of the January CAC meeting it was expressed to the Project Team that this community led design process should not allow for detached solutions, but that the proposed solutions should be candidates for state and/or Federal Funding sources. This was welcome feedback as the design team was able to wrap the entire project approach around a series of fund-able, discreet projects. That is to say, the development of additional definitions to guide the project. The February CAC meeting was a presentation of these guiding considerations, identification of discreet projects as well as prospective funding sources. A full transcript of the meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1. The CAC presentation from February 21, 2019 can be found in Part 2 of that same document.

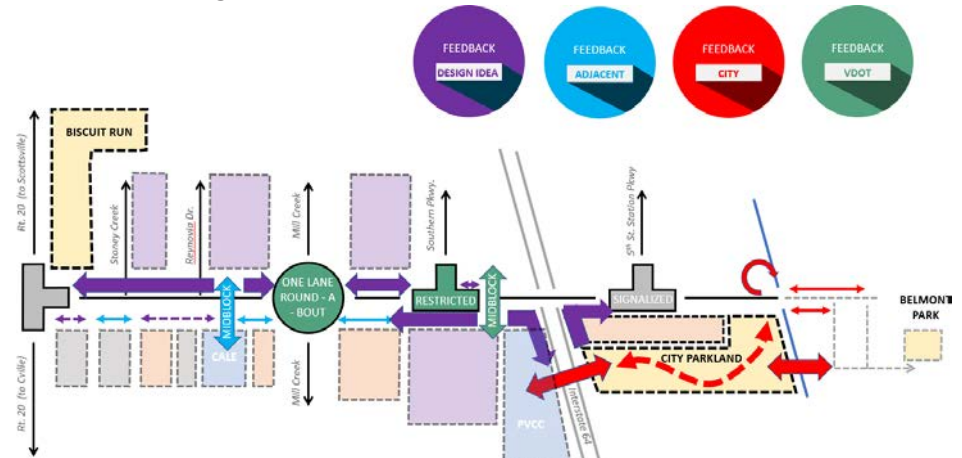
Between the CAC Meetings on January 17, 2019 and February 21, 2019 Line and Grade hosted meetings with several Agencies, including:

- January 29, 2019 Meeting with VDOT
  1. VDOT has not looked into roundabouts at Southern Pkwy or Mill Creek
  2. No statistical data is needed to propose a roundabout
  3. VDOT supports replacing a signalized intersection with a roundabout
  4. Consider Mid-Block Crossings
  5. Consider Ped Bridge crossing I64 as perpendicular (shorter spans).
- February 14, 2019 Meeting with City
  1. City owns 26 Acres behind Public Works yard for potential connection
  2. Ped Bridge option on east side of Avon Street Bridge
  3. Provide on-road bike accommodations
  4. City has an on-the-shelf new roadway striping plan for Avon St (City's)

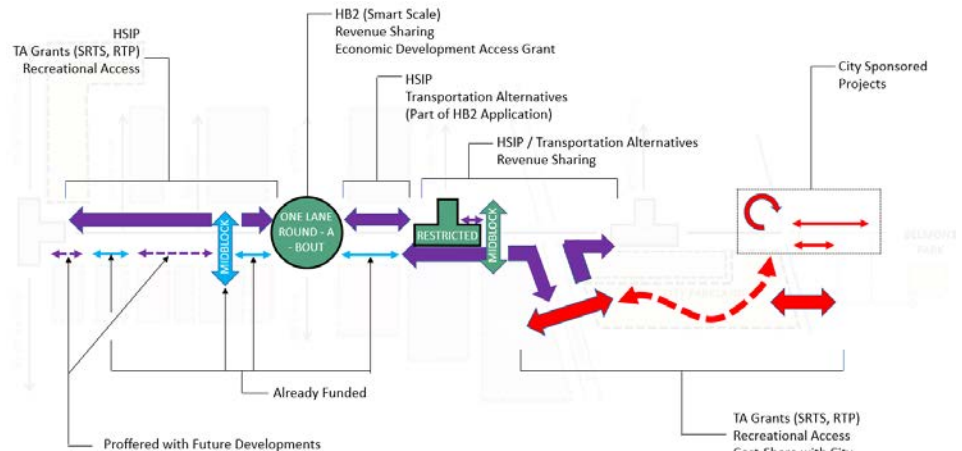
## Presentation Outline



Representative Diagram of Corridor



Discrete Project Opportunity Definitions



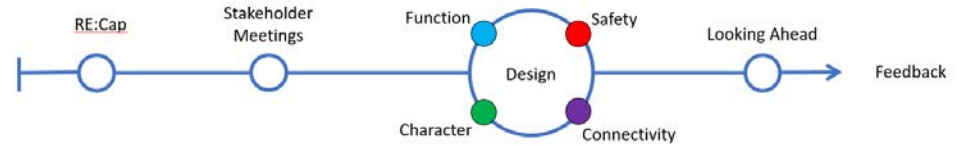
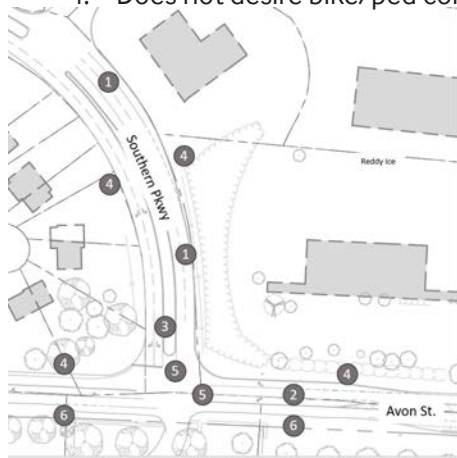
Potential Funding Sources Identified

## Develop:

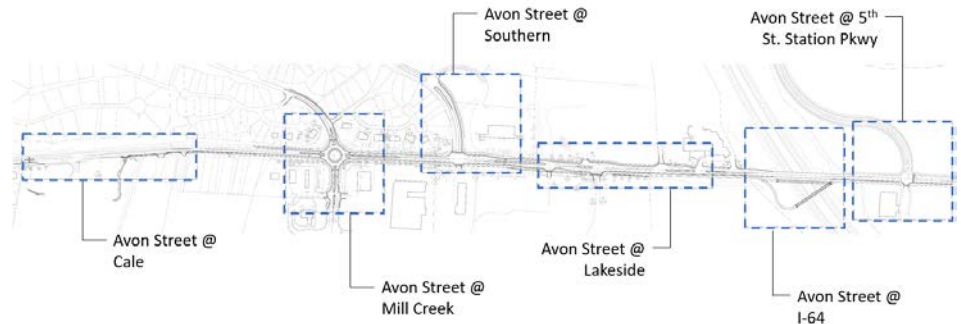
After substantial effort had been put toward defining the context(s), challenges, and funding opportunities within the corridor the design team began to develop and conceptualize programmatic elements associated with the desired improvements. Within each of the *design areas* as shown to the right, the Project Team proposed improvements analogous to each of the Project Goals defined on Page 6 of this Memo. These elements were presented at the March CAC 2019. A full transcript of the meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1. The CAC presentation from March 21, 2019 can be found in Part 2 of that same document.

Between the CAC Meetings on February 21, 2019 and March 21, 2019 Line and Grade hosted meetings with several Agencies, including:

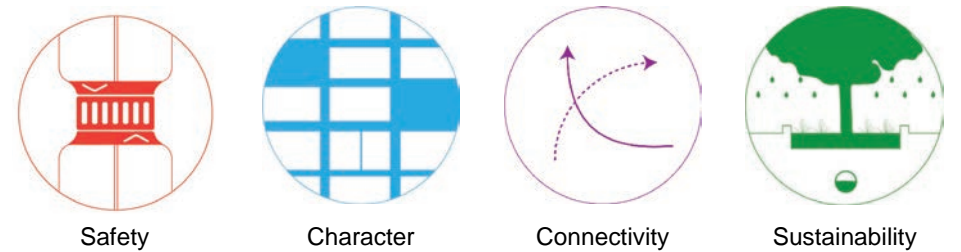
- February 26, 2019 Meeting with Cale Elem.
  1. 600-650 children (Pre-K to 5th Grade) (in February 2019)
  2. Current Enrollment for 2019-2020 School Year is 721 Students
  3. Safe Route to School Project underway (AMT Engineers)
  4. Peak Traffic Hours: 7:40-8:10 am and 2:30-3:00 pm
  5. Left Turn into Cale is difficult with on-coming traffic
  6. Majority of walking students come from Avinity neighborhood
- February 27, 2019 Meeting with PVCC
  1. PVCC pulls students from Greene, Louisa, Albemarle and Fluvanna
  2. Very small percentage of cyclists or pedestrians to campus
  3. No plans for portion of property adjacent to Avon Street
  4. Does not desire bike/ped connection through campus to Monticello



### Presentation Outline



### Overview of Design Areas



### Identified Project Goals



Example of Stated Improvements

## Deliver:

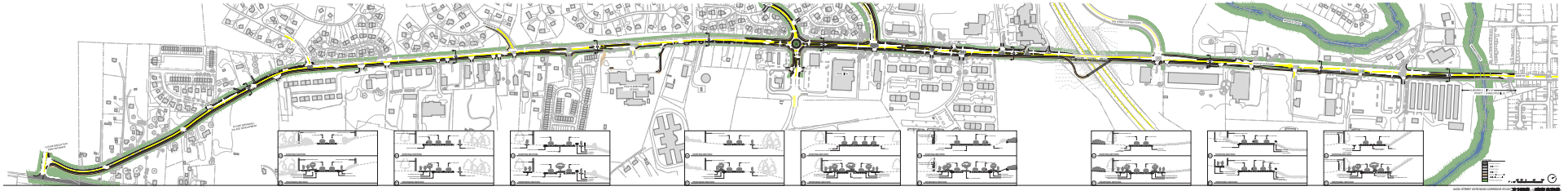
In May 2019, the 5th and Avon CAC hosted a community event at Cale Elementary school. The intent of this meeting was to Deliver the current Vision drafts to the broader community and solicit feedback regarding the considerations. A copy of this presentation can be found in Part 2 of the *Supplement to (Re)Vision* document.

(RE)

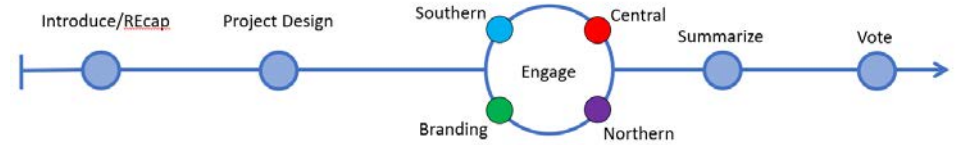
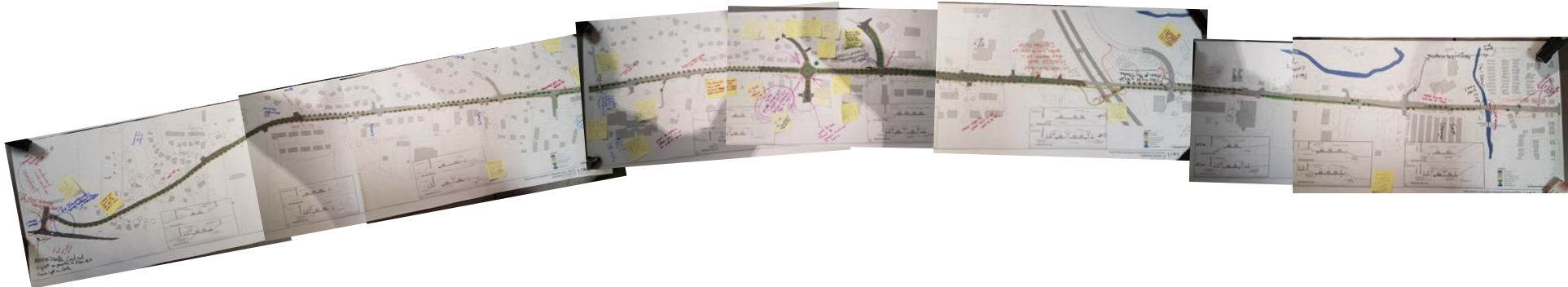
Beyond a presentation and the opportunity to see the designs at close-hand, the citizens were allowed to provide data-points regarding what they felt was the most appropriate place to implement improvements, and, what type of improvements to implement in those areas. Comments and feedback were solicited from those in attendance as well as in on-line survey. Data sets and public feedback can be found in Part 3 of the *Supplement to (Re)Vision*.

Corridor Priority Matrix (Combined)	Route 20 Intersection and Biscuit Run Entrance	Mixed Use: Light Industrial and Residential	Cale Elementary	Mill Creek to Southern Pkwy	Lake Side apts / Armory / Jail	64 Bridge	Integration with City of Charlottesville	Total
Pedestrian Facilities	25	14	14	16	18	10	14	111
More Pedestrian Crossings	13	4	15	11	13	20	7	83
Pedestrian Level Lighting	5	3	4	7	5	0	8	32
Bicycle Facilities	25	15.5	8	12.5	15.5	19.5	18	114
Bike Stations and Bike Parking	1	4	2	3	4	3	4	21
Traffic Calming Measures	6	7	13	11	11	7	8	63
Intersection Improvements	13	13	4	17	18	6	2	73
Landscaping and Street Trees	2.5	5	5	7.5	7.5	4.5	3	35
Corridor Branding	2	2	0	3	2	1	3	13
Mass Transit / On-Demand Transit	5	6	3	14	13	6	6	63
Greenspace and Viewpoints	5	8	6	5	4	7	8	43
<b>Total</b>	<b>102.5</b>	<b>81.5</b>	<b>74</b>	<b>107</b>	<b>111</b>	<b>84</b>	<b>81</b>	<b>641</b>

## Aggregated Data Sets



Avon Street Extended Corridor Concept Design As Presented (There is no easy way to show 2.3 miles on an 11' wide piece of paper)



## Presentation Outline



## Example of Public Feedback

## Deliver:

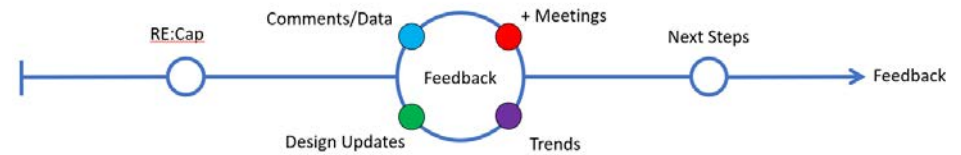
The July CAC meeting primarily consisted of presenting and reviewing the data which was gathered during the public open house in May. The design team also presented revised design elements which had been updated based on sound feedback and were deemed to benefit the project(s).

The Project Team also made recommendations to the CAC as to what appeared to be the top three (3) projects based on citizen feedback.

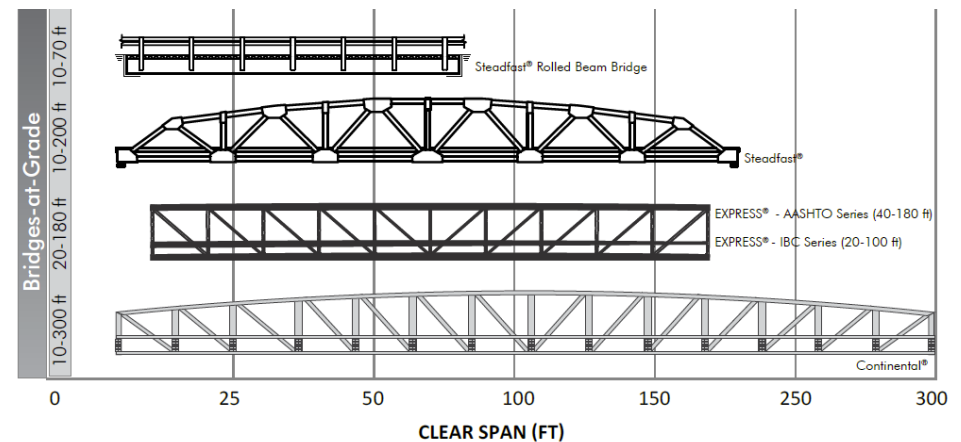
A full transcript of the meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1. The CAC presentation from July 18, 2019 can be found in Part 2 of that same document.

Between the CAC Meetings on May 16, 2019 and July 18, 2019 the Project Team hosted meetings with several Agencies, including:

- **June 6, 2019 Meeting with Charlottesville Area Transit (CAT)**
  1. Bus Stop desired at Avon and 5th Street Station Intersection
  2. Extended turn lanes for bus pull offs
  3. No bus stops within shopping centers. Only in ROW
  4. New Route to Mill Creek anticipated in near future
  5. Proposed Shared Use Path near CAT deemed fully acceptable
  6. CAT prefers roundabouts at ends of lines (supports roundabout plan)
  
- **July 17, 2019 Meeting with VDOT regarding Ped Bridge**
  1. The Proposed Structure would require a Maintenance Agreement with Albemarle County
  2. Once cost estimates are developed VDOT will help identify appropriate funding strategies
  3. Required Approvals:
    - VDOT District Engineer
    - Federal Highway Administration (FHWA)
    - VDOT Structure and Bridge Department
  4. Design Guidance
    - I-64 Median Rail needs extending
    - New Slope Protection is needed



## Presentation Outline



## Pedestrian Bridge Structure Selection



## Mid-Block Crossing at Cale Elementary

Corridor Priority Matrix (Combined)	Route 20 Intersection and Biscuit Run Entrance	Mixed Use: Light Industrial and Residential	Cale Elementary	Mill Creek to Southern Pkwy	Lake Side apts / Armory / Jail	64 Bridge	Integration with City of Charlottesville	Total
Pedestrian Facilities	25	14	14	16	18	10	14	111
More Pedestrian Crossings	13	4	15	11	13	20	7	83
Pedestrian Level Lighting	5	3	4	7	5	0	8	32
Bicycle Facilities	25	15.5	8	12.5	15.5	19.5	18	114
Bike Stations and Bike Parking	1	4	2	3	4	3	4	21
Traffic Calming Measures	6	7	13	11	11	7	8	63
Intersection Improvements	13	13	4	17	18	6	2	73
Landscaping and Street Trees	2.5	5	5	7.5	7.5	4.5	3	35
Corridor Branding	2	2	0	3	2	1	3	13
Mass Transit / On-Demand Transit	5	6	3	14	13	6	6	53
Greenspace and Viewpoints	5	8	6	5	4	7	8	43
<b>Total</b>	<b>102.5</b>	<b>81.5</b>	<b>74</b>	<b>107</b>	<b>111</b>	<b>84</b>	<b>81</b>	<b>641</b>

## Data Output

## Deliver:

The September CAC meeting was yet again an opportunity for the broader public to come and be updated on the progression of the design. However, the meeting was not well attended so it was really a more formal version of the Monthly CAC meeting.

The presentation consisted of an overall recap of the project work to date. Returning to the original Project Goals (Page 6) and how the proposed design ideas and concept plans honored these goals.

Furthermore, the design team presented the final revised design of the entire corridor, from the City of Charlottesville Jurisdictional Boundary to Route 20 and then presented detailed designs of the top 3 project areas as determined by community feedback. These top projects are:

- Pedestrian Crossing of Interstate 64
- Intersection Improvements at Avon Street and Southern Parkway
- Intersection Improvements at Avon Street and Mill Creek Blvd.

Please note that the desired and proposed improvements listed above are not only oriented toward single-occupant vehicles but rather, multi-modal improvements for Pedestrians, Bicyclists, Mass Transportation and traditional vehicular transit.

Each of these project's areas were presented as isolated projects which corresponded with the overall vision of the corridor. When approached in this manner, the corridor will be entirely overhauled piece by piece as funding sources are identified and secured.

The top three design project renderings can be seen to the right.

The cost estimates for each of these projects is included in Part 5 of the *Supplement to (Re)Vision* document.

A full transcript of the meeting minutes can be found in the *Supplement to (Re)Vision* document, Part 1. The CAC presentation from September 19, 2019 can be found in Part 2 of that same document.

What follows in the next six pages is an enlarged copy of the plans as presented during the September Meeting. The orientation and layout has been adapted to the 8.5x11 landscape format of this document.



Concept Rendering of 2-Span Pedestrian Bridge over I-64

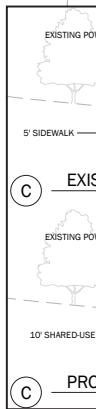
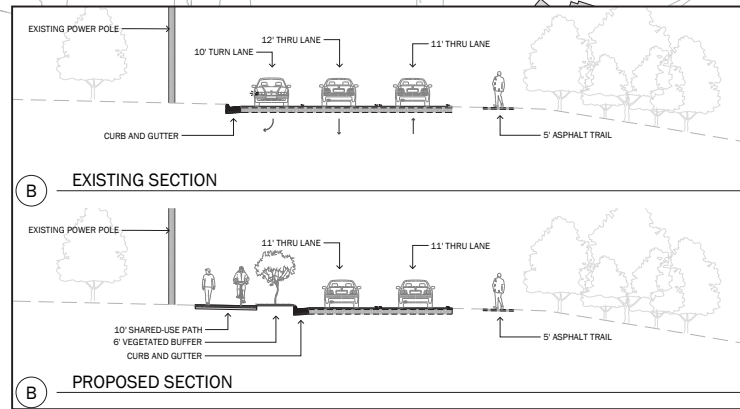
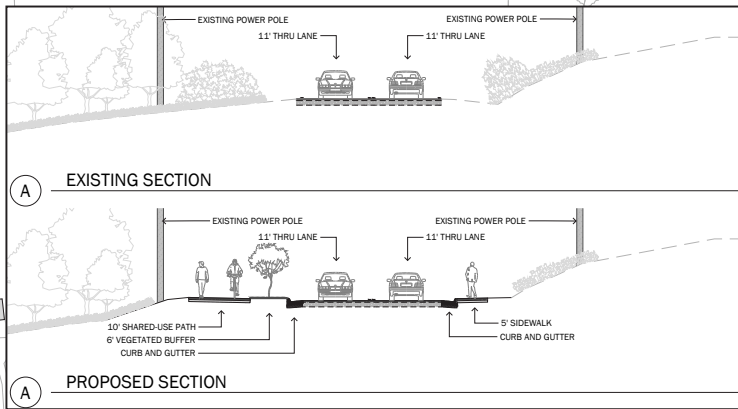


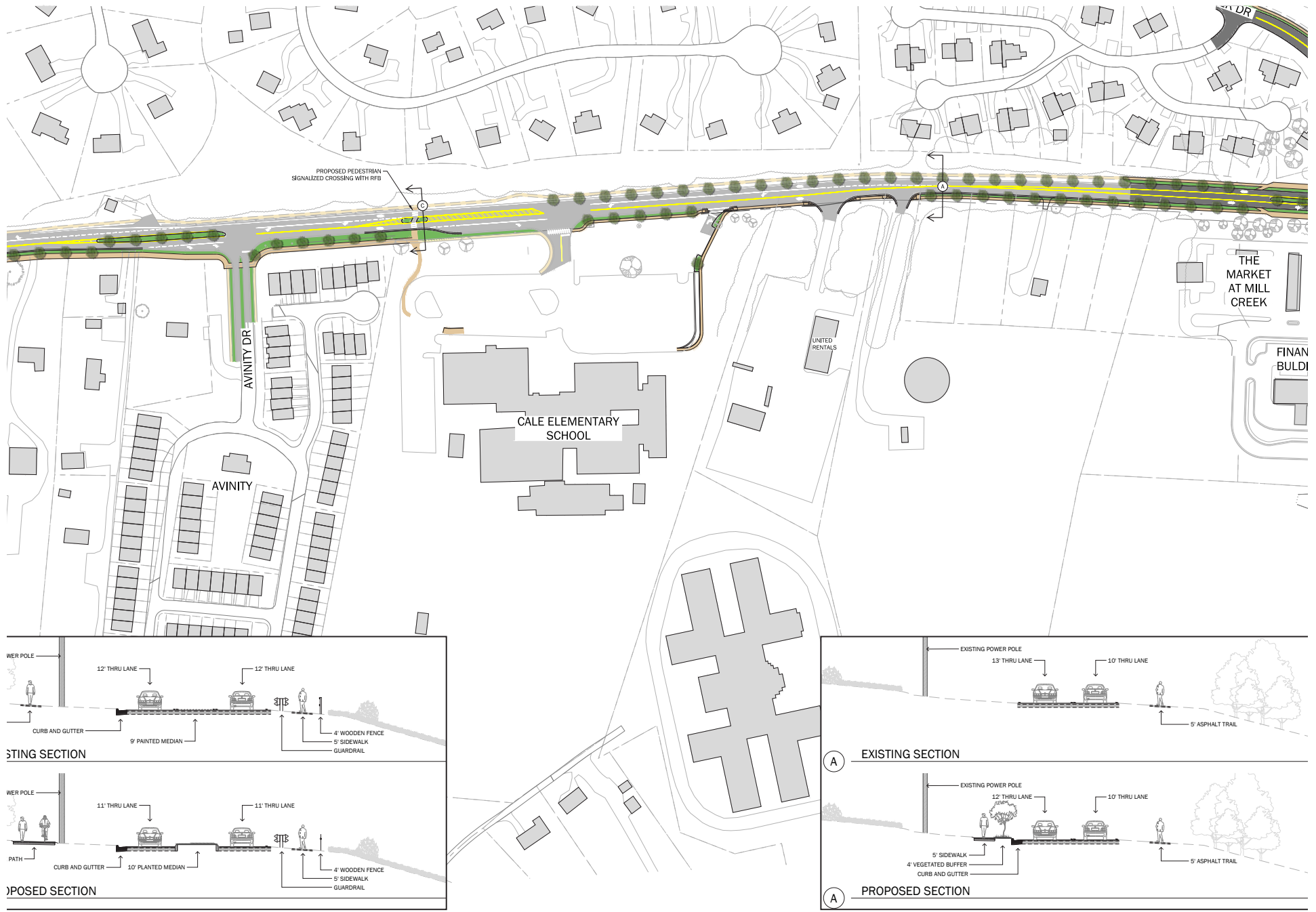
Conceptual Intersection of Avon Street and Southern Parkway

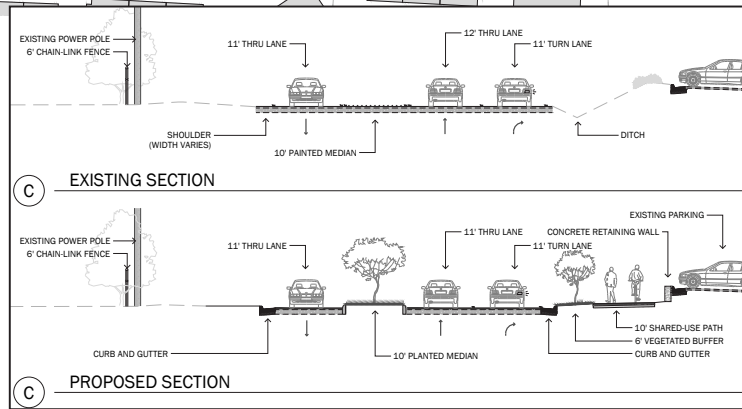
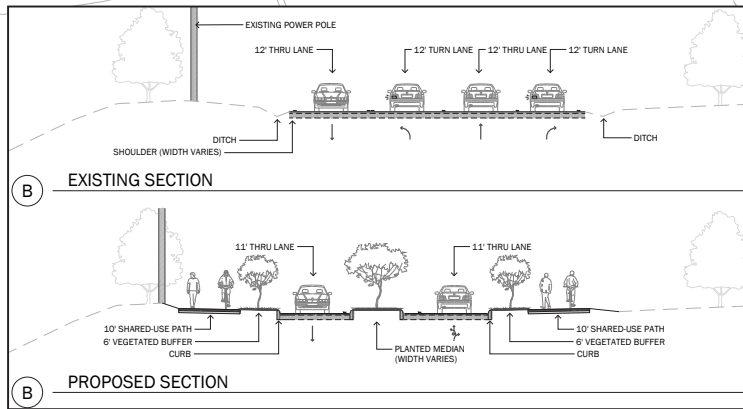
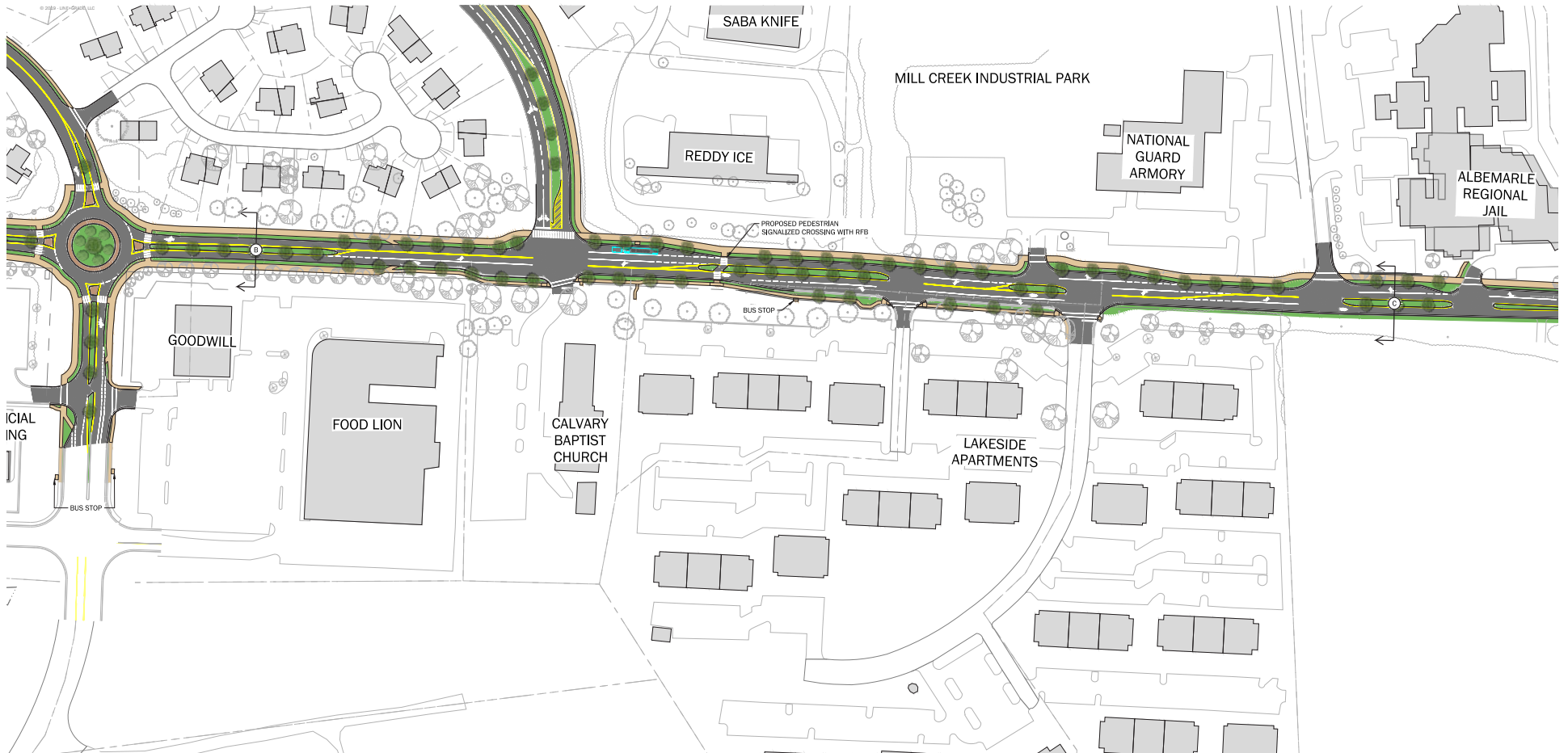


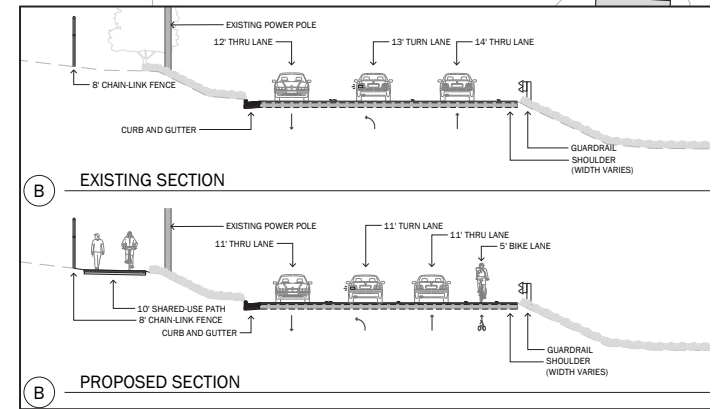
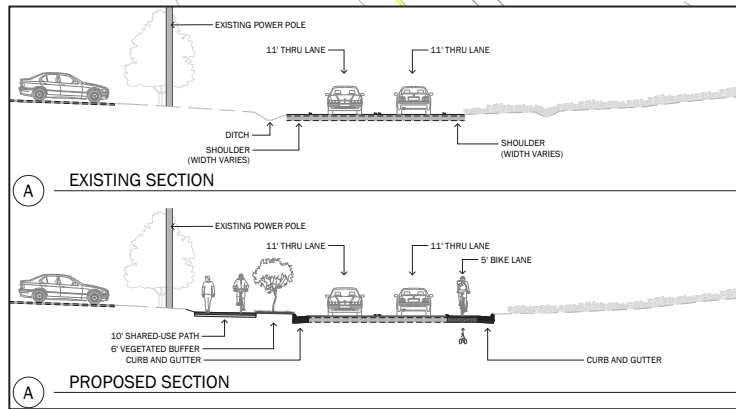
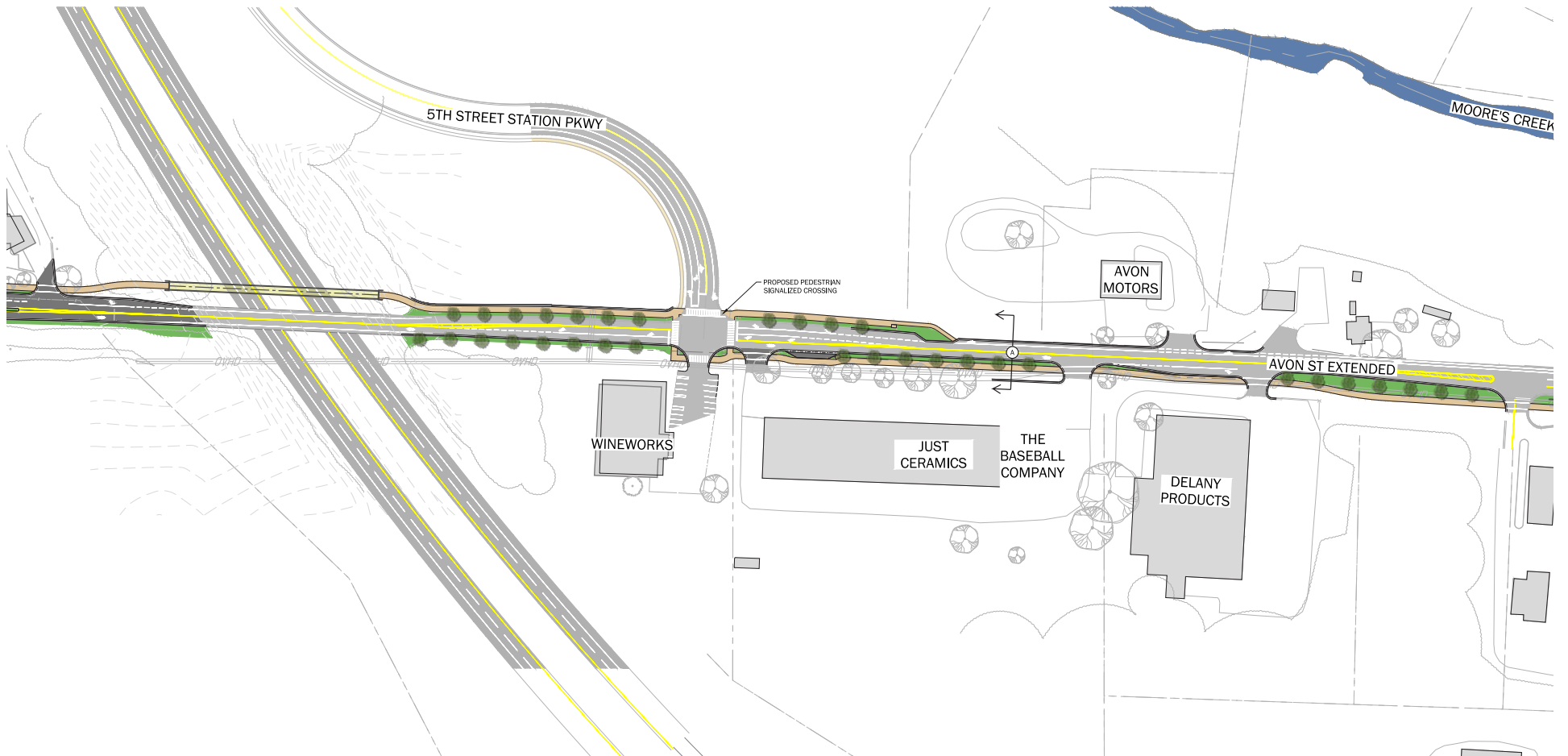
Conceptual Intersection of Avon Street and Mill Creek Blvd.

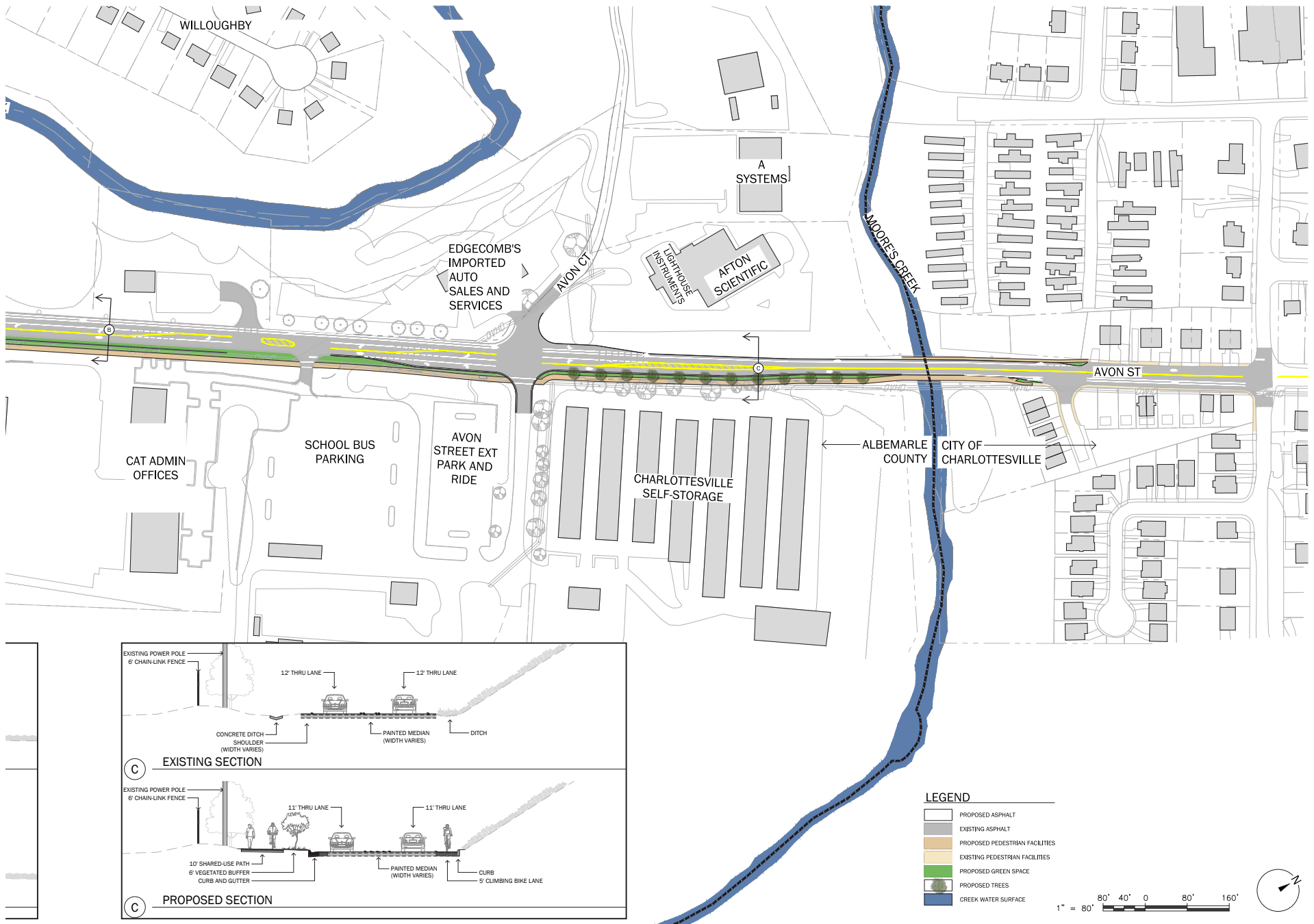






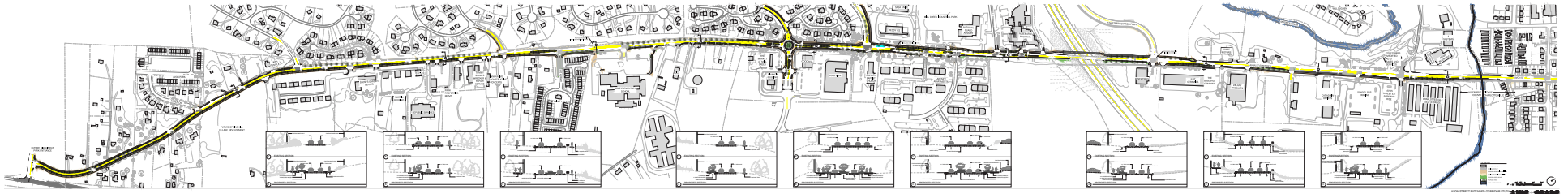






AVON STREET EXTENDED CORRIDOR STUDY  
ALBEMARLE COUNTY, VA **LINE + GRADE**  
JULY 18, 2019 **CIVIL ENGINEERING**

# Impact: Success of Implementing Project Goals



Entire Avon Street Extended Corridor from City Line to Route 20

## Safety



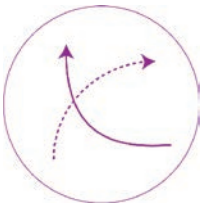
- Defined Pedestrian Zone
- Safety Enhanced Intersections with Refuge Islands
- Lower Intersection Speeds
- Fewer Intersection Conflict Points
- Shorter Intersection Crossing Distances
- Traffic Calming Medians
- Buffered Bike and Pedestrian Facilities

## Character



- Additional Landscaping and Street Trees
- Viewpoint Landmarks
- Consistent Roadway Margin (Edge) Treatment
- Repetitive Features (i.e.: Landscaped Medians, Plant materials)
- Utility Relocations (Underground or Offset from Street)

## Connectivity



- Continuous Shared Use Path (SUP) from City of Charlottesville Jurisdictional Boundary to Biscuit Run
- Connections to Existing Bike and Ped Facilities on Adjacent Streets/Thoroughfares (i.e.: Mill Creek Blvd.)
- Pedestrian Bridges Will Connect Residential Areas to Commercial Centers
- New Marked Crossings
- Transit Ready

## Sustainability



- Street Trees Contribute to Rainfall Interception
- Street Trees can Assist to Offset Heat-Island Effect
- Reduced Pavement widths
- Increased Greenspace
- Stormwater Management

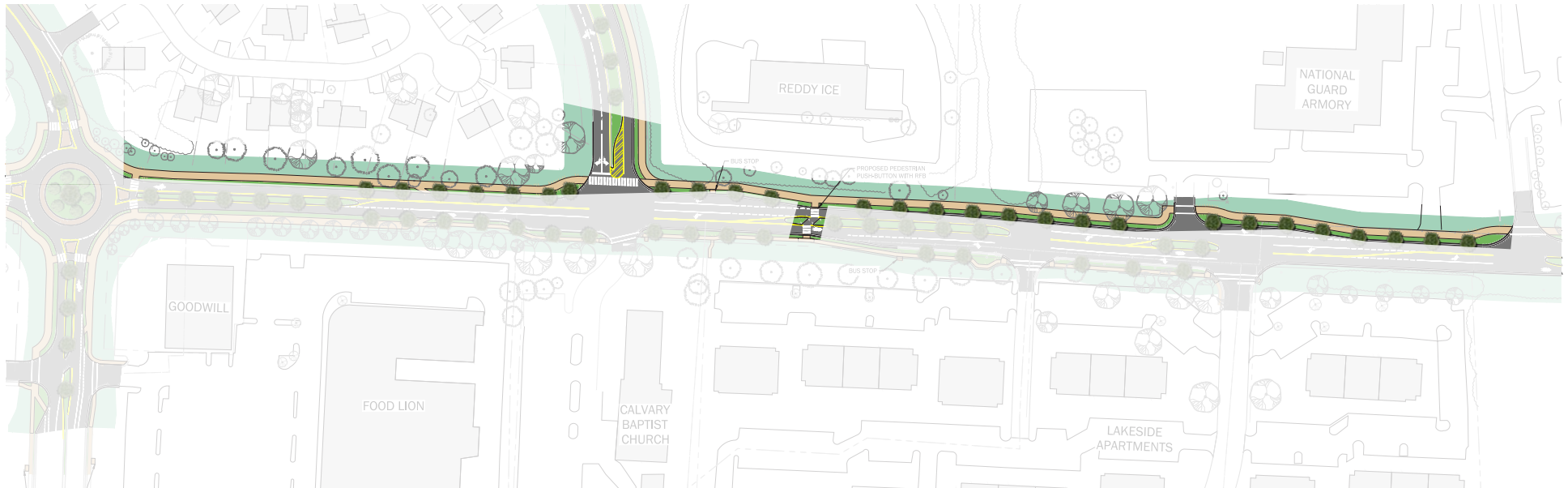


Avon Street Adjacent to Cale Elementary School



Avon Street and Southern Parkway

## PRIORITY PROJECT 1: Pedestrian + Bike Improvements from Mill Creek to Peregory Lane



### Priority Project Area | Improvements from Mill Creek to Peregory

The area identified as the first logical priority project includes pedestrian and multi-modal improvements along the western margin of Avon Street between Mill Creek Blvd and Peregory Lane. It is noteworthy to express that the most highly ranked project was the pedestrian bridge across I-64, however, the installation of the infrastructure improvements shown here are a necessary pre-cursor to the pedestrian bridge installation.

The improvements generally consist of a 10' wide shared use path, improved visibility and crossing accommodations at each intersection as well as a new mid-block crossing with pedestrian refuge island.

The applicable funding mechanisms identified to support this work include:

- HSIP (Highway Safety Improvement Program / FHWA)
- Transportation Alternatives
- Smart Scale Revenue Sharing

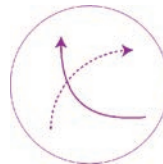
Current estimates of probable costs for this work are approximate **\$1.35MM** as estimated via 2020 cost indexes.

#### Safety



Reduced Lane Widths  
Traffic Calming Median  
Buffered Bike/Ped  
High Viz. Crossings

#### Connectivity



Shared Use Path  
Marked Crossings  
Transit Ready

#### Sustainability



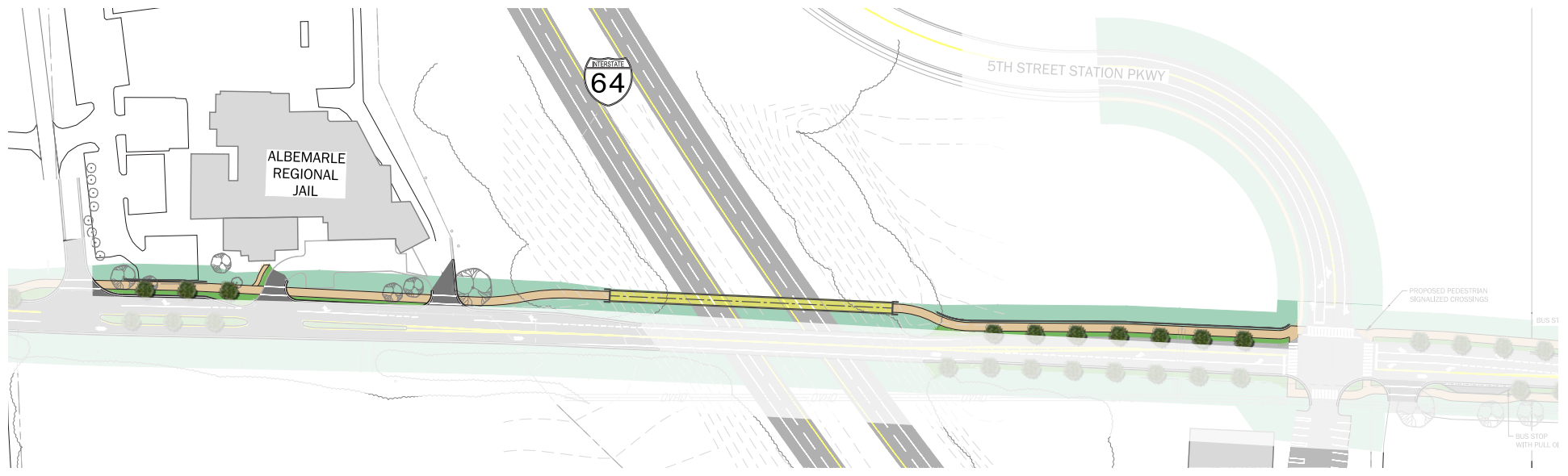
Street Trees  
Reduced Pavement widths  
Increased Greenspace  
Stormwater Management

#### Character



Landmark Viewpoint

## PRIORITY PROJECT 2: Pedestrian + Bike Bridge Crossing Interstate 64



Priority Project Area | Pedestrian Bridge Across I-64

The pedestrian bridge across Interstate 64 was the Avon Corridor Stakeholder’s most highly ranked project. This project will unlock a safe pedestrian and bicycle corridor for these users to utilize non-motorized transportation alternatives.

As currently developed, the pedestrian bridge would be a multi-span prefabricated structure. VDOT has expressed support of the project but will defer the maintenance and ownership of this structure to the County of Albemarle.

The applicable funding mechanisms identified to support this work include:

- Transportation Alternatives
- Revenue Sharing
- Cost Share with the City

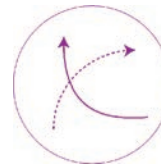
Current estimates of probable costs for this work are approximate **\$4 MM** as estimated via 2020 cost indexes.

### Safety



Buffered Bike/Ped  
Dedicated Bike/Ped

### Connectivity



Pedestrian Bridge  
Shared Use Path  
Marked Crossings

### Sustainability



Street Trees  
Multi-Modal Opportunities

### Character



Iconic Structural Details  
Landmark

### PRIORITY PROJECT 3: Intersection Improvements at Mill Creek Drive



Current VDOT estimates indicate that the Avon Corridor carries approximately 12,000 vehicles per day. That said, there are a number of projects anticipated in the vicinity of this corridor over the coming decades including the County's High School Center 2, a number of new residential communities and the Biscuit Run park. Needless to say, traffic will be increasing.

Of course there are a number of factors that effect the Level of Service (LOS) of an intersection, but generally speaking a single lane roundabout can adequately handle over 20,000 vehicles per day. Which is to say, transitioning the traditional signalized intersection at Mill Creek Blvd. and Avon Street could add substantial capacity to this corridor while at the same time promoting a safe and predictable manner for vehicles and pedestrians to interact.

As currently developed, the single-lane roundabout would feature a landscaped and signature gateway feature promoting the branding of this area as well as providing a desirable turn-around point of public transit as well as single-occupancy vehicles during peak hours traffic.

The applicable funding mechanisms identified to support this work include:

- SmartScale
- Revenue Sharing
- Economic Development Access Grant

Current estimates of probable costs for this work are approximate **\$2.3 MM** as estimated via 2020 cost indexes.

Priority Project Area | Pedestrian Bridge Across I-64

#### Safety



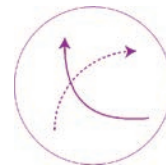
- Buffered Bike/Ped
- Dedicated Bike/Ped
- Reduced ped X-ing Distances
- Fewer Conflict Points

#### Sustainability



- Street Trees
- Reduced Runoff
- Increased Greenspace

#### Connectivity



- Additional Vehicular Capacity
- Shared Use Path
- Marked Crossings
- Transit Ready

#### Character



- Iconic Landmark
- Area Branding