



Basis of Design Report

East High Streetscape Project

VDOT Project: 0000-104-298-UPC #109480

Final – April 17, 2019

PREPARED FOR



PREPARED BY

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Appendix A: Public Engagement Summary

Appendix B: Critical Path Schedule



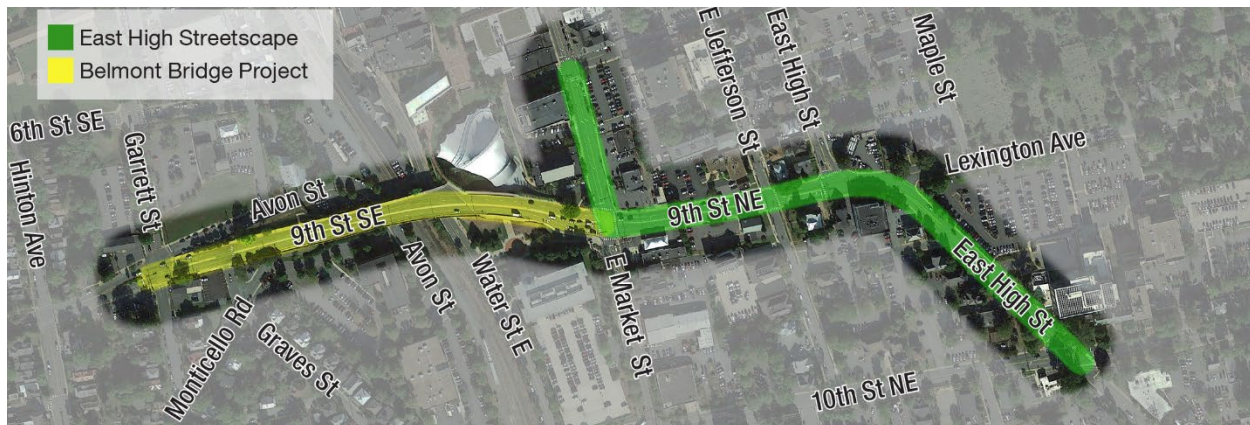
Chapter 1 Introduction

This report is the basis of design (BOD) for the engineering elements of the East High Streetscape Project. This report has been prepared based on project planning meetings, data collection, and input from the project stakeholders gathered during the public engagement process. The BOD serves as a record to document design criteria and project decisions made during the design development process that affect the development of the East High Streetscape. A summary of the public engagement process including public meetings and presentations to stakeholder groups should be consulted for more detailed information on the engagement process. The Public Engagement Summary is dated March 5, 2019 and can be found in Appendix A.

Field survey, utility survey, a traffic study, steering committee and technical committee meetings, stakeholder groups and public input supported the development of the BOD for the project.

The East High Streetscape in Charlottesville, Virginia is funded through SmartScale as VDOT Project 0000-104-298, UPC 109480. The vision for East High Street corridor is to improve an important link of the City's transportation network for bikes, pedestrians, buses, and cars. The project limits are along East Market Street from the intersection with 7th Street to the intersection with 9th Street, along 9th Street from the intersection with E. Market Street to intersection with East High Street and along East High Street from the intersection with 9th Street to the intersection with Locust Avenue/10th Street. The project connects with the Belmont Bridge Replacement Project (0020-104-101, C-501, UPC 75878) at the 9th Street and E. Market Street intersection. Based on this connection, the typical section, landscaping pallet, proposed materials, traffic signals, lighting and street furniture have been closely coordinated between the two projects.

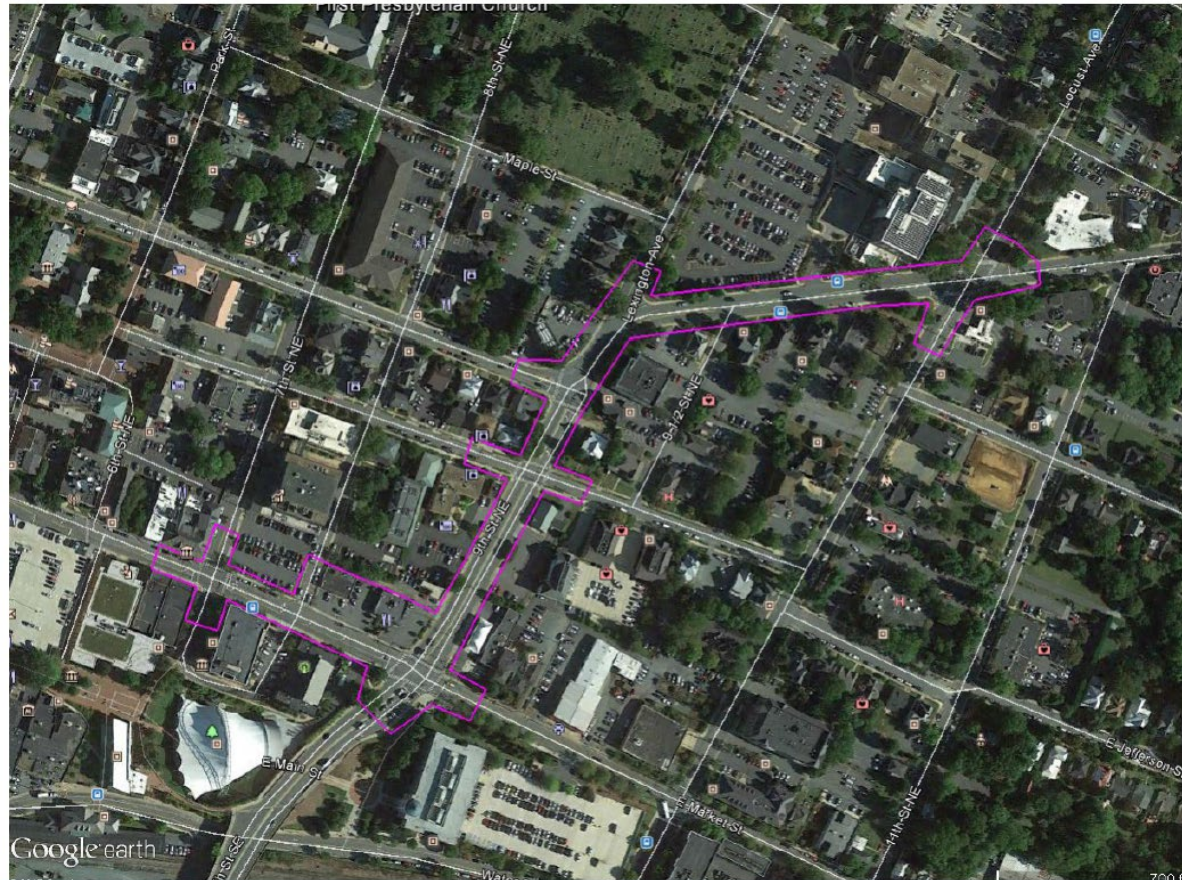
Figure 1-1: Relationship to Belmont Bridge Replacement Project



This report provides the proposed roadway parameters, justification for conceptual design decisions and summaries of the project scope based on applicable local, state, and federal guidelines, standards, and requirements for the corridor.

1.1 Project Limits

Figure 1-2 Overall Project Area



The project will extend from the E. High Street/Locust Avenue intersection, south to 9th Street, and west at the intersection of 9th Street/E. Market Street where it terminates at the 7th Street/E. Market Street intersection. In addition to the streetscape improvements, the intersection of E. High Street/Lexington Avenue will be re-aligned. The formal From/To limits for the project along 9th Street/E. High Street as reported on the Title Sheet are as follows:

From: 0.08 Miles North of Water Street

To: 0.38 Miles North of Water Street

Intersections within the project limits will receive upgrades such as signage, signal improvements, bike/pedestrian accommodations, lighting and landscaping. Overhead franchise utilities located within the project limits will be relocated from overhead to an underground utility duct bank constructed with the project. Most construction is anticipated to occur within the existing right of way except for the re-alignment for the E. High Street/Lexington Avenue intersection, where minimal right of way will need to be acquired. It is expected that temporary construction easements will be required throughout the corridor.

The project corridor runs adjacent to two historic districts (Martha Jefferson Historic District and Albemarle and Charlottesville Courthouse Historic District), but there are no anticipated direct impacts to individually listed

properties or any other historic elements such as buildings or site features. Encroachment into the limits of the historic districts will be limited to what is necessary to construct the improvements. The project is intended to improve the aesthetic environment by mirroring the surrounding architectural features thereby creating a more inviting corridor and drawing attention to the existing historic elements in the area.

Chapter 2 Needs/Existing Conditions

The existing conditions were documented through field and utility survey and compiled from various data sources. Field survey mapping for the entire project corridor was developed by H&B Survey and Mapping, LLC in March 2018. Underground utility mapping was performed by Accumark in March 2018. General information outside of the project area was gathered from City of Charlottesville GIS databases. A vertical and horizontal datum of NAVD '88 and horizontal coordinate system of NAD '83 have been set as the datum for the project.

Existing conditions of the corridor present six (6) specific needs to be addressed by this project: (1) intersection deficiencies (2) poor multimodal access (3) minimal transit amenities (4) limited way-finding signage (5) lack of context sensitivity and (6) unsafe intersection at Lexington Avenue.

According to VDOT 2015 traffic data, the segment of 9th Street between E. Market Street and E. High Street indicates an AADT of 14,000 vehicles per day. In addition to the vehicular traffic, the corridor currently experiences high levels of bicycle and pedestrian traffic, but has limited accommodations for the different modes of transportation at both intersections and throughout the corridor. Currently, nine (9) different Charlottesville Area Transit (CAT) bus routes travel at least a portion of this route on a daily basis, three (3) of the nine (9) routes have a minimum of two (2) stops between the intersection of 7th Street and E. Market Street and E. High Street and Locust Avenue/10th Street.

Wayfinding signage is limited, providing little direction to transit facilities, commercial establishments and recreation destinations and there is an overall lack of context sensitivity with limited street features such as street trees, benches, pedestrian lighting, etc. Lastly, the intersection at Lexington and E. High Street is unsafe due to its skewed angle, limited visibility for bicycles and pedestrians and long crossing distance for pedestrians.

Chapter 3 Purpose and Need

The purpose of this project is to construct a multimodal streetscape project that will extend from the intersection at E. High Street with Locust Avenue/10th Street to the intersection of E. Market Street with 7th Street. The project will link the Martha Jefferson neighborhood to the Downtown Pedestrian Mall and neighborhoods to the south.

This project will address needs related to intersection efficiency, multimodal access, transit amenities, way-finding signage, context sensitivity and safety.

Proposed improvements include widening sidewalks, landscaping and street trees, intersection improvements for better ADA, bicycle and pedestrian access, bicycle lanes, stormwater quality features, improved way-finding signage, signal upgrades for better efficiencies and enhanced access to transit facilities.

Chapter 4 NEPA Compliance

The suggested level of NEPA Document is a Programmatic Categorical Exclusion (PCE) under CE Category 23 CFR 771.117(c)3.

Chapter 5 Citizen Involvement

The E. High Streetscape Project is being developed with an extensive public engagement process to ensure that community input is received and applied to the design of this project. Details on the engagement process can be found with the current revision of the project's Public Engagement Plan. The project would intend to hold a formal Design Public Hearing following completion of the Preliminary Design Phase (60%) and the approval of the NEPA Document.

Chapter 6 SmartScale Funding Scope

The E. High Streetscape Project was prioritized and funded as part of FY17 SmartScale funding. No changes or additions in scope have been made since the application for SmartScale funds was submitted that will impact the project benefit regardless of impact to budget.

Chapter 7 Pedestrian/Bicycle Accommodations

The project will comply with guidelines published by the National Associations of City Transportation Officials (NACTO) entitled Urban Bikeway Design Guide and Urban Street Design Guide for pedestrian and bicycle accommodations. The conceptual design was developed with significant input from the public, City Staff and the City's Bicycle and Pedestrian Advisory Committee. The conceptual design as proposed will enhance the following bicycle and pedestrian accommodations with the following measures:

- 5 to 6 foot wide bicycle lanes along E. Market Street between 7th Street and 9th Street.
- Variable width sidewalk along both sides of E. Market Street between 7th Street and 9th Street.
- 5 foot bicycle lanes with a 1.5 foot wide striped buffer in both directions along 9th Street from E. Market Street to the intersection of E. High Street.
- 6 foot sidewalks with green space buffer along 9th Street from E. Market Street to E. High Street and along the west side of E. High Street from 9th Street to the CFA entrance.
- 5 foot sidewalk along the east side of E. High Street from Lexington Avenue to Locust Avenue/10th Street.
- High-visibility pedestrian crossings across E. Market Street, 9th Street/E. High Street and side streets.
- Signalized pedestrian crossings with audible push buttons and count down timers at the intersection of E. Market Street and 7th Street, E. Market Street and 9th Street, 9th Street and E. High Street and E. High Street and Locust Avenue/10th Street.

Chapter 8 Proposed Roadway Design Criteria

Roadway design of general travel lanes and other geometric roadway features within the right-of-way will follow this established set of design criteria. These criteria are a collection of design standards and/or guidance from local, state, and national sources. The American Association of State Highway and Transportation Officials (AASHTO) is the national body that has developed design standards and guidance for transportation infrastructure through practice, policy testing, research, and experience. This project will be designed in accordance with the manuals below:

City of Charlottesville

- The current edition of the *City of Charlottesville's City Standards and Design Manual*
- The current edition of the *City of Charlottesville's Streets that Work Guidelines*

AASHTO

- The 2011 edition of the *American Association of State Highway & Transportation Officials (AASHTO) Policy on the Geometric Design of Highways and Streets* (AASHTO Green Book)
- The current edition of the 2012 *AASHTO Guide for the Development of Bicycle Facilities*
- The current edition of the 2004 *AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities*

NACTO

- The current edition of the *NACTO Urban Street Design Guide*
- The current edition of the *NACTO Urban Bikeway Design Guide*

FHWA

- The current edition of the 2009 *Manual on Uniform Traffic Control Devices (MUTCD)*

Department of Justice

- The 2010 *ADA Standards for Accessible Design*

United States Access Board

- Proposed Right-of-Way Guidelines (PROWAG)

Virginia Department of Environmental Quality

- The current revision to the *Virginia Erosion and Sediment Control Handbook*
- The current revision to the 2013 edition of the *Virginia Stormwater Management Handbook, Volume I & II*

VDOT

- The current revision to the 2016 Edition of the *VDOT Road and Bridge Standards*
- The current revision to the, the current edition of the *VDOT Survey Manual*
- The current edition of the *VDOT Drainage Manual*
- The current edition of *VDOT Hydraulic Design Advisories*
- The current edition of the 2013 *Virginia Stormwater Handbook*
- The current edition of the 1992 *Virginia Erosion and Sediment Control Handbook*
- The current edition of the *VDOT Urban Construction Initiative Program Administrative Guide*
- The current edition of the *VDOT Locally Administrated Projects Manual*
- The current edition of the *VDOT Traffic Operations and Safety Analysis Manual (TOSAM)*

The map in Section 1.1 shows the project area. All streets within the City of Charlottesville are owned and maintained by the City. The following tables outline which standards will be utilized for each street within the project area. All the roadway segments with work beyond the curb return within the project limits are included in the table to outline governing criteria in case additional modifications are needed.



Table 8-1: Design Criteria

Design Criteria	Street Segment	9th Street (Route 20)	E. High Street (Route 20 /	E. Market Street
	From:	E. Market Street	9 th Street	9 th Street
	To:	E. High Street	Locust Avenue / 10 th Street	7 th Street
	Source			
Design Speed	VDOT Road Design Manual (RDM) Appendix A-4	25 mph	25 mph	25 mph
Posted Speed		25 mph	25 mph	25 mph
Location	VDOT 2005 Functional Classification Map	Urban	Urban	Urban
Functional Class	VDOT 2014 Functional Classification Map	Principal Arterial Other	Principal Arterial Other	Principal Arterial Other
STW Typology	City of Charlottesville Streets that Work Guidelines	Mixed Use B	Mixed Use B	Downtown
Curb/Curb & Gutter Standard	City of Charlottesville City Standards and Design Manual	CG-2 RT-1/SW-2	CG-2 RT-1/SW-2	CG-2 RT-1/SW-2
Min. Horizontal Radius (ft)	2011 AASHTO Greenbook Table 3-8, RDM Page A-16	154 feet	154 feet	154 feet
Inter. Section Sight Distance SDL/SDR (ft)	RDM, Page F-40	280/280	280/280	295/315
Stopping Sight Distance	2018 AASHTO Greenbook Table 3-1	155'	155'	155'
Min. Crest K Value	2011 AASHTO Greenbook, Table 3-34	12	12	12
Min. Sag K Value	2011 AASHTO Greenbook, Table 3-36	26	26	26
Superelevation Standard	RDM Page A-16	Urban Low Speed (ULS) – Normal Crown	Urban Low Speed (ULS) – Normal Crown	Urban Low Speed (ULS) – Normal Crown
Max. Grade	City Standards & Design Manual Page 24	8%	8%	8%
Maximum Gutter Spread (ft)	VDM, Page 9-3	Maximum 10 feet		
Minimum Storm Pipe Slope	VDM, Page 9-37	0.20%		
Storm Pipe Design Year	VDM, Page 9-3, Table 9-2	20 Year		
Design Vehicle		WB-67 Through SU-40 Side Streets	WB-67 Through SU-40 Side Streets	WB-67 Through SU-40 Side Streets

8.2 Design Vehicles

9th Street/E. High Street will be designed to allow through movement of vehicles as large as a WB-67. Due to width of side streets, the SU-40 is the largest vehicle that would be able to maneuver turns from 9th Street/E. High Street in both the existing and proposed condition within their own lanes. In both the existing and proposed condition, the SU-40 must track into oncoming lanes to navigate turns from mainline to side street.

Table 8-2: Design Criteria: Project-Wide Standards

Design Criteria	Source	Project-Wide Standard
Min. Width of Parallel Parking Lanes	Streets that Work page 81	8.0 feet
Min. Vertical Clearance to Signs, Adjacent to Sidewalk	VDOT RDM Appendix A(1)-71	7.0 feet to Bottom of Sign
Min. Vertical Clearance to Signs, Adjacent to Bike Lanes	Guide for the Development of Bicycle Facilities page 5-4	4.0 feet to Bottom of Sign
Min. Width of In Road Bike Lane Wo C&G/W C&G (ft)	Guide for the Development of Bicycle Facilities, Section 4.6.4, page 4-15	5 feet
Min. Width of Sidewalk Buffer Strip (ft)	Streets that Work page 46	3 to 6 feet Soil volume minimums: small trees = 250 ft ³ ; medium trees = 400 ft ³ ; large trees = 400 ft ³ (700 ft ³ preferred)
Min. Width of Sidewalk	Streets that Work page 46, PROWAG Rights-of-Way Guidelines R302.3, R302.4	Desired = 6 feet (Clear) Minimum – 4 feet (Clear) with 5' x 5' passing zones every 200 feet
Max. Grade of Sidewalk	VDOT RDM Appendix A-161	5.0% or longitudinal slope of adjacent street, whichever is greater
Max. Grade of Sidewalk Ramps	VDOT RDM Appendix A-152 PROWAG Rights-of-Way Guidelines R304.2.2, R304.3.2	12:1 (8.3%)
Max. Cross-slope of Sidewalk	VDOT RDM Appendix A-152	48:1 (2.0%)

Min Turn Lane Taper	2018 AASHTO Greenbook Section 9.7.2.3	100 feet
Min. Turn Lane Storage	2018 AASHTO Greenbook Section 9.7.2.2	100 feet*
Clear Zone (ft)	2011 AASHTO Roadside Design Guide Table 3-1	16 to 18 feet
Min. Width of Pedestrian "Refuge"	AASHTO Greenbook 4-64 – 4-66	6.0 feet median width
Min. Lateral Offset to Obstructions	AASHTO Roadside Design Guide Section 3.4.1	1.5 feet from Curb Face 3.0 feet at Intersections
Min. Lane Shift	MUTCD Section 3B.09	$L = W \times S^2 / 60$
* To be determined by traffic analysis, 100' is minimum		

The design vehicle will be analyzed for turning movements at all intersections along the corridor. AutoTURN® is the CAD-based program that can graphically show the full apron and turning path of a bus, truck, or other design vehicle when making different turning movements. Critical turning movements along the corridor will be identified by the project team and the City of Charlottesville to ensure the design vehicle can make turns from modified, improved or created intersections within the project area without unacceptable encroachment onto adjacent lanes or running over curbs, median, or sidewalk.

8.3 Horizontal Alignment

The horizontal alignment for 9th Street/E. High Street was developed to utilize as much existing pavement as possible while still maintaining traffic during construction and minimizing right-of-way impacts. The horizontal alignment is designed to connect with the adjacent Belmont Bridge replacement project alignment at the 9th Street and E. Market.

8.4 Vertical Alignment

The profile design throughout the project was developed to resemble the existing profile and utilize as much existing pavement as possible. From the intersection of E. Market Street and 9th Street to the CFA entrance on E. High Street, the vertical profile is designed to shift the crown west of the existing crown while maximizing existing pavement use. The proposed profile will allow for extension of the existing southbound cross slope (approximately 2%) to shift the crown location to the proposed centerline. This approach will allow for much of the existing pavement to remain and/or be adjusted with milling and overlay. This approach minimizes the cost of replacement asphalt and simplified maintenance of traffic. Through side street intersections at Jefferson Street, Lexington Avenue, and E. High Street at 9th Street the proposed profile varies from existing to limit side street impacts while maintaining smooth movements on the mainline.

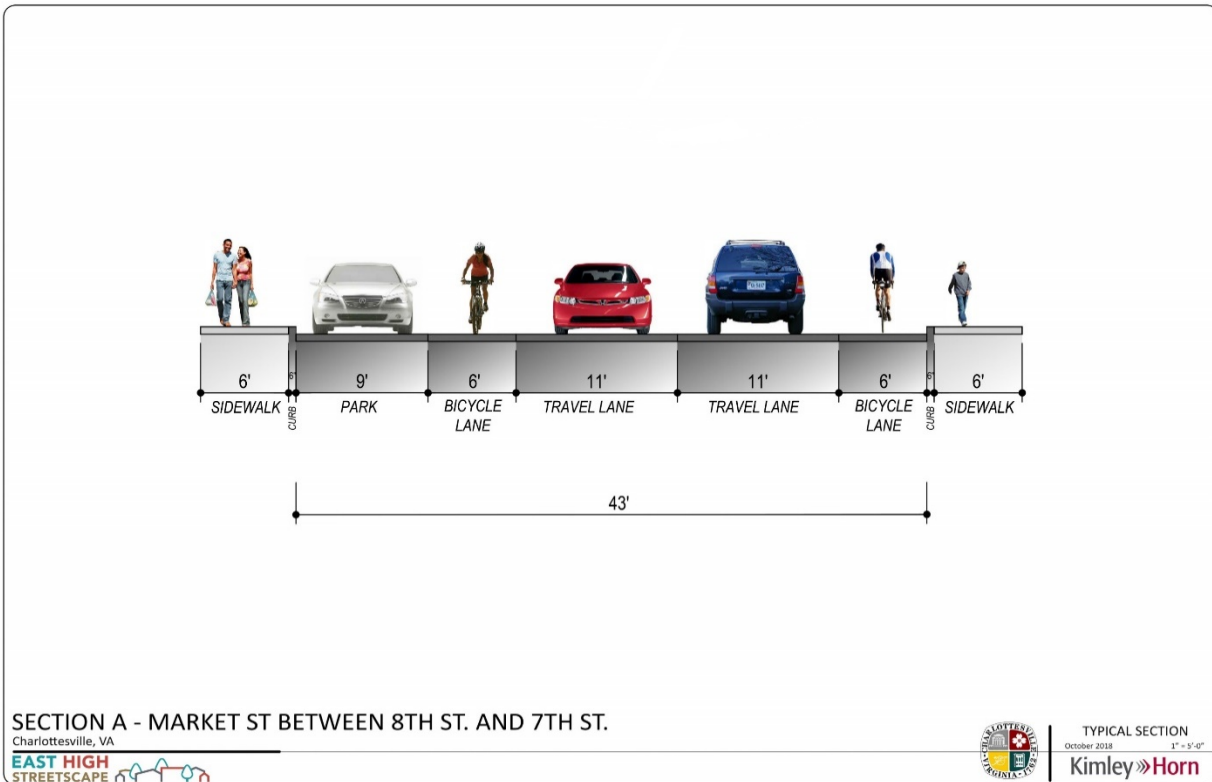
8.5 Typical Sections

Typical sections were developed iteratively based on engineering input, design standards, public engagement outcomes and targeted input and critique provided by various City of Charlottesville committees and councils. The design team evaluated the project limits and divided the corridor into three context zones. The first context zone was from E. Market Street to E. Jefferson Street on 9th Street. This zone provided the most space available for creativity and urban design, since its existing section included a median, two through lanes and two turn lanes. The median and two turn lanes could be repurposed to provide bicycle and pedestrian accommodations and planting space for trees and vegetation. The second context zone was from E. Jefferson Street to Lexington Avenue along E. High Street. This zone marked a transition space from the existing four lane divided roadway south of E. Jefferson Street to the two-lane undivided roadway north of Lexington Avenue. This zone also presented minimal space and significant constraints that would not allow for significant planting space; however, development plans for a private development between E. High Street and Lexington Avenue may allow for development of a ‘pocket plaza’ along the west side of E. High Street between the intersecting routes. The third context zone lied between Lexington Avenue and Locust Avenue/10th Street on E. High Street. This context zone had a very different feel than the other zones as the roadway was undivided, included left turn lanes to side streets and including a small section of on street parking in front of the CFA Institute. The design team presented three alternatives for the corridor that included elements of the preferred design, a raised median and a shared use path for a mix of bicycle and pedestrian uses. These alternatives were evaluated, discussed and filtered through public engagement including input from the project’s Steering Committee and the public at large. On significant example of the public engagement and its effect on the outcome of the preferred design is best exemplified by a debate between use of space on the preferred typical section between the City’s Bicycle and Pedestrian Advisory Committee and the City’s Tree Commission. The debate centered around the use of a buffer space for the bicycle lane within 9th Street between E. Market Street and E. High Street. Through dialogue and a joint meeting of the two committees a supported compromise was reached that allocated six inches of the original buffer between the through lanes and the bicycle lanes to the planting space to provide more tree soil volume. For further information on the public engagement process and outcomes dealing with the typical section, please see the project’s Engagement Summary.



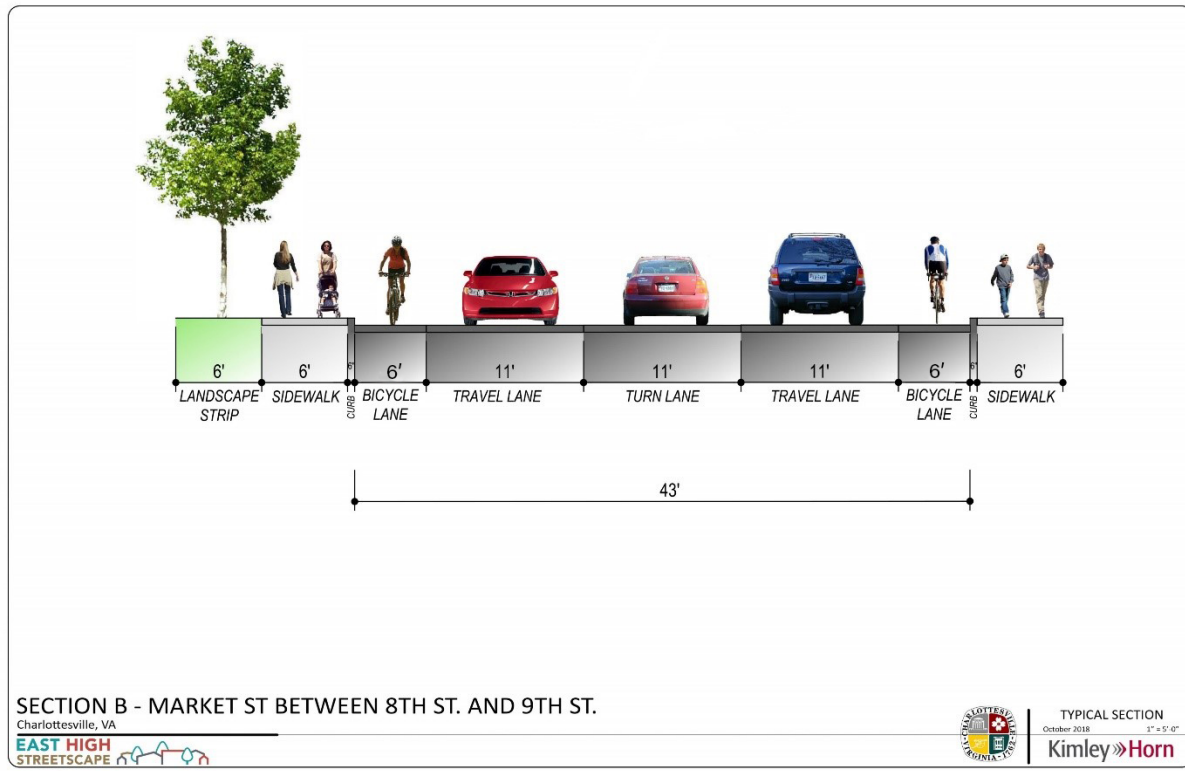
The typical section on E. Market Street between 7th Street and 8th Street, the typical section includes 11 foot through lanes in both directions. In addition, there is a 6-foot bike in each direction, an existing variable width sidewalk and 9 foot parallel parking stall along the westbound side of E. Market Street. Figure 8.1 shows the typical section.

Figure 8-1: Typical Section – Between 7th Street and 8th Street on E. Market Street (Looking East)



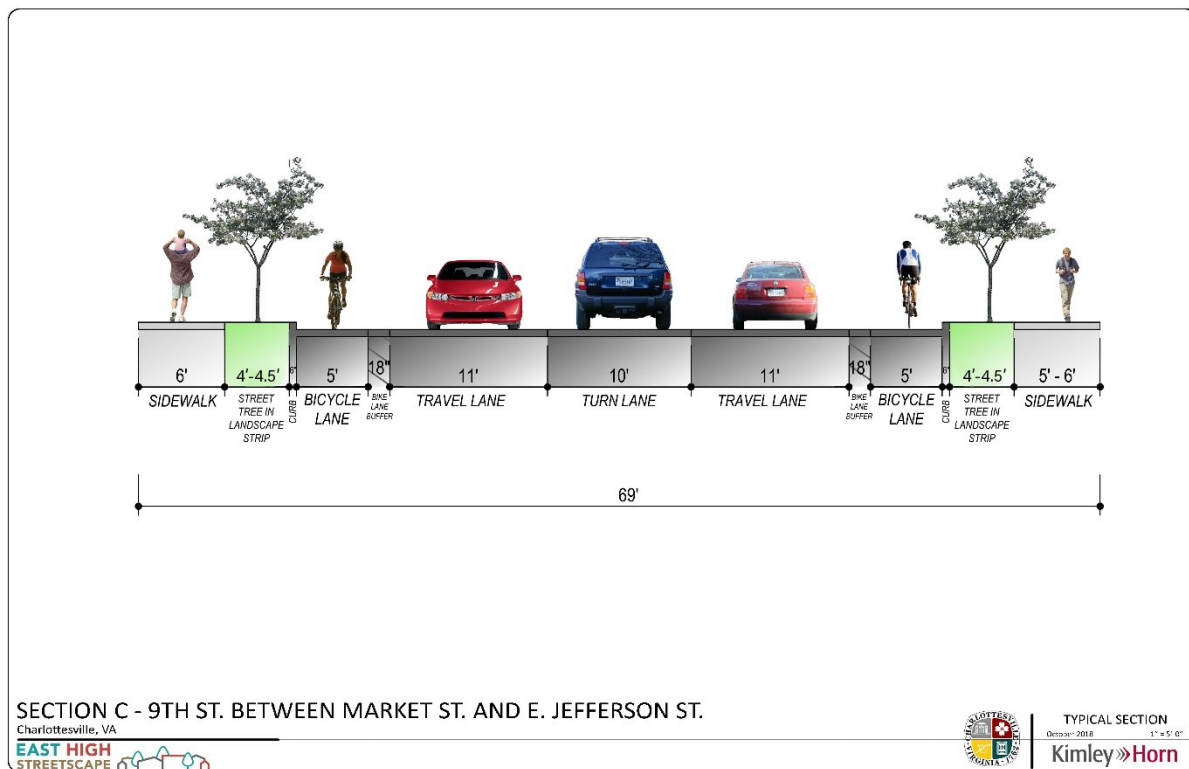
The typical section On E. Market Street between 7th Street and 8th Street includes 11 foot through lanes in both directions. In addition, there is a 6 foot bike in each direction, an existing variable width sidewalk and a variable width planting strip behind the sidewalk along the westbound side of E. Market Street. Figure 8.2 shows the typical section.

Figure 8-2: Typical Section – Between 7th Street and 8th Street on E. Market Street (Looking East)



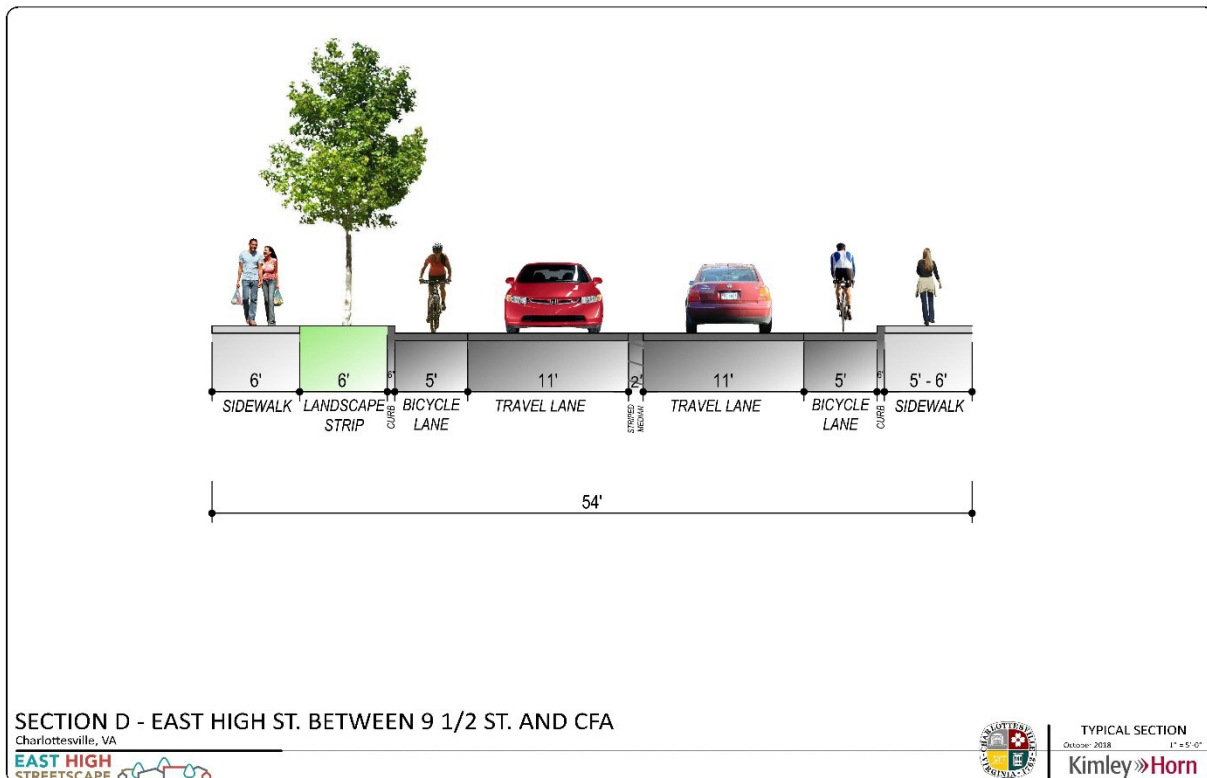
The typical section on 9th Street between E. Market Street and E. High Street includes an 11 foot through lane in both directions, as well as a 10 foot turn lane for access to E. Market Street, E. Jefferson Street and E. High Street. In addition, there is a 5 foot bike lane heading in each direction separated from the through lanes by a 1.5 feet of buffer by striped pavement, a variable width planting strip (4' to 4.5' from back of curb) and a variable width sidewalk (5' to 6' wide). Figure 8.3 shows the typical section.

Figure 8-3: Typical Section – Between E. Market Street and E. High Street on 9th Street (Looking North)



The typical section east of the intersection of 9th Street and E. High Street maintains one 11 foot lane and one 5 foot bike lane in each direction and the 2 foot striped buffer is eliminated. Northbound along E. High Street the sidewalk transitions to the back of curb and planting is eliminated to stay within right-of-way. On the left side, the planting space between the back of curb and sidewalk transitions to 6 feet with a 6 foot sidewalk. The center left turn lane transitions to a 2 foot striped median to improve vehicle and pedestrian safety. The typical section for E. High Street between 9th Street and Locust Avenue/10th Street is shown in Figure 8-4 below.

Figure 8-4: Typical Section – Between E. High Street and Locust Avenue/10th Street on E. High Street (Looking Northeast)



The typical section east of the entrance to CFA eliminates the planting space along the southbound side of E. High Street to allow for introduction of a 10' wide left turn lane for access to Locust Avenue.

8.6 Superelevation

All streets within the project limits are urban streets with posted speed limits of 25 mph; therefore, the streets are to utilize normal crown superelevation in accordance with TC5.11 Urban Low Speed (ULS).

8.7 Design Waivers and Exceptions

Because all streets improved within this project are maintained by the City of Charlottesville, no design waivers for elements that do not meet the requirements of the Virginia Department of Transportation but exceed AASHTO standards require a design waiver to be submitted. However, the project is required to either fully comply with

AASHTO standards or obtain a Design Exception that must be approved by both the City and VDOT. Based on a review of the current design, Kimley-Horn anticipates no need for design exceptions on this project.

Chapter 9 Drainage and Stormwater Management Strategy

Kimley-Horn has conducted a preliminary assessment of the drainage and stormwater management requirements for the E. High Streetscape Project. The analysis and recommendations can be found in the project's Stormwater Management Design Approach memorandum dated March 11, 2019. The below is a summary of the requirements and recommended approach for stormwater management compliance.

The E. High Streetscape Project will disturb more than 10,000 square feet; therefore, the project must provide a post construction stormwater management plan in accordance with Part IIC of the current Virginia Stormwater Management Code. Stormwater management computations and design will be compliant to the current edition of the City of Charlottesville Standards and Design Manual and the current edition of the 2013 Virginia Stormwater Management Handbook. It is assumed that the project will need to reduce the post construction phosphorous loading by approximately 0.5 pounds per year. It is assumed that water quality compliance will be achieved using a Manufactured Treatment Device (MTD) placed at various locations along the project corridor. It is hoped that the MTD can augment and compliment the landscape and hardscape design of the corridor.

The E. High Streetscape Project drains to five (5) distinct outfalls when considering flood protection or quantity compliance of stormwater. Four of the five outfalls will meet flood protection criteria with no proposed detention based on compliance with the 1% rule, removal of impervious area and redirection or removal of drainage area. One outfall may require in-line detention, which is to be accomplished with proposed storm sewer pipe, weirs and an orifice.

Chapter 10 Ancillary Design Considerations

Other guidelines and factors will influence the design of E. High Street. The following sections briefly describe a few of them and how they will affect the roadway.

10.1 ADA Compliance

The project will comply with federal and state Americans with Disabilities Act (ADA) requirements. VDOT guidance includes the Americans with Disabilities Act Compliance document (TE-377.0) and IIM-LD-55.16 (Guidelines for the Placement of Curb Ramps and Pedestrian Access Routes) dated July 15, 2014, which pertain specifically to curb ramps and pedestrian access routes. Curb ramps will conform to VDOT Road and Bridge Standards CG-12 Types A, B, or C (see VDOT Road and Design Manual, Appendix A, Section A-5). PROWAG, while not formally adopted, will be used to evaluate and design for future compliance with upcoming ADA requirements/guidance.

10.2 Traffic Studies Design Integration

This basis of design report is one of numerous studies/reports being completed for the East High Streetscape project. For additional information on traffic analyses and traffic operations please see the report entitled 'East High Streetscape Traffic Report' dated February 5, 2019.

10.3 Maintenance of Traffic

All maintenance of traffic plans will comply with the latest editions of the Manual on Uniform Traffic Control Devices (MUTCD), Virginia Work Area Protection Manual (VWAPM), and local City of Charlottesville requirements. Traffic control measures will need to meet location specific characteristics for this high density, urban environment with close intersection spacing and posted speed limits of 25 MPH. Typical types of traffic control applications found in the VWAPM related to this project include the following:

- Work Beyond the Shoulder Operation (TTC-1.1)
- Mobile or Short Duration Shoulder Operation (TTC-2.0)
- Stationary Operation on Shoulder (TTC-4.1)
- Shoulder Closure Operation with Barrier (TTC-6.1)
- Shoulder Closure with Barrier and Lane Shift Operation (TTC 7.0)
- Short Duration Operation on a Multi-Lane Roadway (TTC-15.1)
- Outside Lane Closure Operation on a Four-Lane Roadway (TTC-16.1)
- Inside Lane Closure Operation on a Four-Lane Roadway (TTC-17.1)
- Lane Closure on a Two-Lane Roadway Using Flaggers (TTC-23.0)
- Lane Closure Operation – Near Side of an Intersection (TTC-26.1)
- Lane Closure Operation – Far Side of an Intersection (TTC-27.1)
- Lane Closure Operation in an Intersection (TTC-28.1)
- Turn Lane Closure Operation (TTC-29.1)
- Flagging Operation at a Signalized Intersection (TTC-30.1)
- Sidewalk Closure and Bypass Sidewalk Operation (TTC-35.0)
- Crosswalk Closure and Pedestrian Detour Operation (TTC-36.1)

In addition, Charlottesville's Pedestrian Accessibility in the Public Way During Construction must be followed during construction. Any construction that impacts a public street or sidewalk should consider the following:

- Advanced warning and guidance signs
- Adequate illumination and reflectors
- Use of temporary walkways
- Channeling and barricading to separate pedestrians from traffic
- Adequate barricading to prevent visually impaired pedestrians from entering work zones
- Wheelchair accessible alternate pedestrian circulation routes with appropriate signage

Please see the conceptual maintenance of traffic graphics and exhibits, which details the phasing and plan to maintain traffic through completion of the project.

Chapter 11 Project Costs and Schedule

Other guidelines and factors will influence the design of E. High Street. The following sections briefly describe a few of them and how they will affect the roadway.

11.1 Project Issues/Risks/Risk Mitigation

A risk is any uncertain event that, if it happens, can potentially interfere with successful delivery of an improvement. All improvements have risks; however, some improvements may have more significant risks than

others due to technical complexity, funding, financing, and stakeholder acceptance. Risk management generally involve the process of anticipating what risks an improvement faces, mitigating them to the extent reasonably possible, and having a plan to react to them if/when they occur. This is recognized in both VAP3 and VDOT guidance regarding the analysis of and mitigation of risks. The purpose of risk analysis and risk management during project development is to:

- Identify risks facing a project
- Identify mitigation strategies to eliminate and/or lessen the impact of risks should they occur
- Prepare adequate contingency to cover remaining and/or unknown risks
- Identify further due diligence, planning and/or analysis to eliminate and/or lessen the impact of risk

Risk management is undertaken throughout the lifecycle of an improvement to track identified risks, measure the performance of mitigation, identify new risks as they arise, maintain adequate risk budgeting, and capture best practices. The central tool for tracking the above is a risk register created at the very early stages of the improvement development. The risk register is then updated with new and/or closed out risks as the project progresses. The initial assessment of the risks identified in the risk register is qualitative and will be updated with quantified values as the project progresses and more project data becomes available.

Importantly, the identification of an uncertainty as a “risk” is not intended to convey that a process is flawed or the development team has not done an adequate job. Rather, it is a tool that helps leadership to think and react proactively to plan for and mitigate impacts of various risks. Following is a list by discipline of potential issues that may affect project development, risks faced by the project and risk mitigation strategies to be applied to manage and minimize risks throughout project development.

Environmental

Risk/Issue: Section 106 Compliance and impacts to Adjacent Historic Districts, Historic Properties or Elements

Description: The project corridor runs adjacent to two historic districts (Martha Jefferson Historic District and Albemarle and Charlottesville Courthouse Historic District).

Mitigation: The Virginia Department of Transportation’s Culpeper District Environmental Division will be preparing the project’s NEPA document and necessary Section 106 compliance information. Kimley-Horn will coordinate closely with VDOT in development of the documentation to ensure it matches the preliminary design. Encroaching of right of way and/or easement and improvements into the historic districts or historic properties and elements will be limited to the absolute minimum necessary.

Risk/Issue: Hazardous Materials (i.e. low or high-level petroleum contaminated soils)

Description: The project corridor runs adjacent to two existing operating gas stations, which means it is possible the sites contain(ed) a leaking underground storage tank. The leaking underground storage tank may have contaminated soils to be excavated as part of the project for utility installations to be contaminated with low level or high levels of petroleum.

Mitigation: Kimley-Horn will provide the City with a Corridor Hazardous Materials Reconnaissance Survey (CHMRS) to assess the risk of the project encountering petroleum contaminated soils during construction. The CHMRS will evaluate the risk of encountering contaminants and recommend

further investigations or appropriate mitigation strategies such as accounting for and provided for removal of contaminated soils in the cost opinion and construction contract.

Design

Risk/Issue: Public Engagement and Support of Design

Description: The City of Charlottesville values and expects a high level of public engagement in all its public projects. Further, the stakeholders and citizens of the City of Charlottesville expect to be an integral part to the design process.

Mitigation: Working with the City of Charlottesville, Kimley-Horn developed a formal Public Engagement plan to craft an engagement process that communicates relevant project information and gathers community input for consideration as incremental decisions are made. To achieve success and maintain schedule, the requires efficient coordination between the public, City of Charlottesville and the consultant team. The PEP outlines the sequence of events and preliminary schedule for meetings, workshops, and deliverables.

Right-of-Way

Risk/Issue: Impacts (permanent or temporary) to parking lots/spaces

Description: E. Market Street and E. High Street within the project limits are bordered by commercial buildings with parking located between the buildings and the back of sidewalk. Temporary easement and/or right of way may be required behind the back of sidewalk in most locations, which could have an adverse impact on parking lots (number of spaces, drive aisles, etc.) Impacts even for temporary construction easement could require significant dollars in damages that may not be fully known until the right of way valuation and negotiation phase.

Mitigation: Kimley-Horn will develop a streetscape design that balances needs and impacts of landscaping, sidewalk width and roadway improvements to minimize and/or eliminate most impacts to parking lots along the project corridor. Kimley-Horn will also engage with the right of way agent to have in-line reviews of the design developed by the right of way agent prior to the formal Design Public Hearing and the Request for Right of Way Authorization.

Utilities

Risk/Issue: Impacts to Gas, Water and/or Sewer

Description: As in any urban corridor the E. Market Street, 9th Street and E. High Street corridors contain numerous public utilities that may conflict with proposed storm sewer, underground duct bank and proposed landscaping.

Mitigation: Kimley-Horn will conduct an extensive test hole program to seek to minimize public utility relocations as integral part of the design.

Construction

Risk/Issue: Maintenance of Traffic/Traffic Management

Description: As with any construction in urban environment with moderately high traffic volumes, the design of the project must be developed with the construction process in mind. Many design ideas while impressive looking on paper may not be constructible.

Mitigation: Kimley-Horn will develop a detailed sequence of construction, transportation management plan and maintenance of traffic plans that demonstrates a viable and constructible plan for completing the work.

Risk/Issue: Coordination with the Belmont Bridge Replacement Project

Description: As discussed in this report, the E. High Streetscape Project abuts and is closely related to the adjacent Belmont Bridge Replacement Project. Based on the current schedules of these two City of Charlottesville administered projects, both projects will be under construction at the same time. This will potentially require two different contractors to coordinate through construction and the phasing of work and the handling of traffic will have effects on the adjacent project.

Mitigation: The City has already taken a helpful mitigation step by selecting one consultant team for both projects. During the Detailed Design Phase, Kimley-Horn will develop a detailed TMP and sequence of construction for the E. High Streetscape Project that will coordinate the two projects based on the planned schedule for the Belmont Bridge Replacement Project. The construction contracts for both projects will include Special Provisions and/or contract requirements for close coordination between the two projects including weekly coordination meetings, progress meetings and coordination meetings prior to and before major traffic switches.

Risk/Issue: Impacts of work hours, work type and noise to adjacent Neighborhoods

Description: The project is surrounded by a mix of residential, commercial and government land uses with vastly different peak hour times and traffic volumes. Further, during the Spring, Summer and Fall weekly events are held at the Sprint Pavilion on the Downtown Mall. Further, the project will require potential night work and long work hours that will need to be evaluated for compliance with the City's Noise Ordinance and acceptable work hours.

Mitigation: Kimley-Horn will develop a detailed Transportation Management Plan including allowable work hours, which will be informed by allowable lane closure hours, considerations for adjacent neighborhoods and compliance to the City's Noise Ordinance.

Risk/Issue: Utility relocation during construction

Description: On most transportation projects, the project is phased to tie up most of the preliminary engineer, then acquire right of way and easements, then move utilities and then construct the project. On the E. High Streetscape Project, the City intends to convert overhead franchise utilities to underground within a concrete duct bank. This change in the order of events will transfer schedule risk to the City's contract with the contractor, since the City nor the contractor will have minimal authority to have the franchise utilities move their facilities on agreed upon schedule.

Mitigation: Prior the Final Design Phase submission, Kimley-Horn will develop a Contract Time Duration Report that will identify and build-in a reasonable schedule for franchise utility relocation to ensure the contract time is adequate. Kimley-Horn will also include a Special Provision requiring the contractor to have a Utility Coordinator on the project to transfer some of the schedule risk back to the Contractor in the contract.

11.2 Project Cost Opinion

The level of detail provided in each opinion of probable construction cost will increase with each Design Phase Submittal. As such, the contingency included in the estimate will be adjusted as more information becomes available, the plans are revised, and material quantities are refined. The E. High Streetscape Project was funded through the Fiscal Year 2017 Smart Scale process, so a project budget was established at the time of the application. The project budget as established through the SmartScale application is as follows:

Table 11-1: Smart Scale Application Budget

<u>Phase Description</u>	<u>Budget</u>
Preliminary Engineering	\$688,000
Right of Way and Utility Relocation	\$1,950,000
Construction	\$3,000,000
Total Project Budget	\$5,638,000

At the Preliminary Design Phase (60%) submission, a preliminary opinion of probable construction cost, a right of way acquisition cost opinion and a utility relocation cost opinion was updated for the project utilizing the preliminary design. A detailed cost estimate for each phase is available; however, a summary of the cost opinions is below:

Table 11-2: Preliminary Opinion of Probable Construction Cost at Preliminary Design Phase Submission

<u>Phase Description</u>	<u>Budget</u>
Preliminary Engineering	\$988,000
Right of Way and Utility Relocation	\$545,000
Construction	\$5,624,000
Total Project Budget	\$7,157,000
<i>Construction Phase assumes FY22 Ad date</i>	

It is understood that the cost opinion for the Preliminary Design Phase (60%) represents a significant increase over the SmartScale budget. The City intends to fund the difference in cost without requesting additional SmartScale funds.

11.3 Project Schedule

The East High Streetscape Project was funded through the FY17 SmartScale process, so a schedule was submitted as part of the SmartScale Application. The original SmartScale application did not include sufficient time within the schedule for the selection of the City's consultant or the current City Council mandated public engagement process, so the below schedule is considered a re-baselined schedule. The below tabulated schedule in Table 11-3 compares the SmartScale application schedule to the current schedule. Appendix B displays the critical path schedule in Gnat chart format.

Table 11-3: Milestone Schedule

Activity ID	Activity Name	Milestone Description	Planned Start Date	Planned Finish Date
10	Project Agreement	City/State Agreement Issuance and Signature	7/1/2016	9/22/2016
12	Authorize Preliminary Engineering	Begin PE Phase and Charges	9/23/2016	9/23/2016
22	Scope Project	Determine Requirements	9/24/2016	5/6/2019
33	Final Environmental Document	NEPA Document Signed	01/15/2019	04/05/19
65F	Plan Design/Field Inspection	1 st Right of Way Design Phase Submittal (90%)	10/16/19	10/16/19
	Public Involvement	Design Approval	8/6/19	8/6/19
52	Authorize Right-of-Way and Utility Funds	Issue Right of Way Authorization	2/25/20	2/25/20
72	Prepare for Advertisement	Submit PS&E Package	3/18/21	3/18/21
69X	Right-of-Way/Utility Certification Date	Right-of-Way Acquisitions Completed	3/17/21	3/17/21
79	CN Funding Review/Authorization of Funds	Issue Authorization to Advertise	3/18/21	4/28/21
80	Advertise Project	Issue Invitation for Bids (Advertisement)	4/29/2021	4/29/2021
84	Award Contract	Issue Notice to Proceed to Contractor	7/26/2021	7/26/2021
91	Administer Contract	Construction Operations	7/27/2021	7/27/2022
95	District Closeout Completion Date		01/16/23	4/10/2023
96	Central Office Closeout Date		4/10/23	8/11/23

Public Engagement Summary



March 5, 2019

PREPARED FOR



PREPARED BY

Kimley»»Horn



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Introduction

The Public Engagement Summary provides a brief overview of public engagement events and key takeaways. The engagement process was designed to communicate relevant project information and gather community input for consideration as incremental decisions were made. To achieve success and maintain schedule, a Public Engagement Plan was designed to maintain coordination between the public, City of Charlottesville, Virginia Department of Transportation, and the consultant team.

Communication Procedures

The tight deadline and SmartScale funding of the East High Streetscape Project required efficient communication between staff, the consulting team, elected officials, the community, and stakeholders. The PEP included a Communication Protocol that outlined general strategies that were employed throughout the project to maintain smooth coordination and enhance communication among the various parties involved in the design process. The Communication Protocol focused on internal and external communication channels.

Internal (Project Team)	External (Public)
<ul style="list-style-type: none"> Public Engagement Plan Email Memos EastHighStreetscape.org Data Transfers Technical Committee Meetings 	<ul style="list-style-type: none"> EastHighStreetscape.org (with online comment form) Steering Committee Meetings Streetscape Summit MetroQuest Survey Open House Public Engagement Summary



Overview of Activities

The community engagement process for the East High Streetscape project generated information to supplement technical data. When communicating with the public, the project team focused on explaining why decisions were made and showing where in the planning process those decisions were made. The following activities were conducted as part of the process and are referenced in this summary.

Project Committees

The East High Streetscape project was led by two committees: a **Technical Committee** charged with decision making and a **Steering Committee** that served an advisory role to the Technical Committee. Representatives of the committees include:

Technical Committee (Decision-Making)

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ Amanda Poncy, Bike/Ped Committee ○ Brennen Duncan, NDS City Traffic Engineer ○ Martin Silman, NDS City Engineer ○ Carrie Rainey, PLACE, NDS Planning ○ Zack Lofton, NDS Planning ○ Brenda Kelley, Redevelopment Manager | <ul style="list-style-type: none"> ○ Doug Ehman, Parks and Recreation ○ William Sclafani, Police ○ Eric Thomas, Police ○ Jay Davis, Fire and Rescue ○ Jason McIlwee, Utilities |
|--|--|

Steering Committee (Advisory)

- | | |
|---|---|
| <ul style="list-style-type: none"> ○ Rosamond Casey, Little High Neighborhood ○ Missy Creasy, Planning Commission ○ Jennifer B. Feist, Murray Enterprises, LLC/Tarleton Oaks ○ Lisa Green, Planning Commission and Entrance Corridor ○ Greg Jackson, Little High Neighborhood ○ Eberhard Jehle, Martha Jefferson Neighborhood | <ul style="list-style-type: none"> ○ David Katz, Belmont Carlton Neighborhood ○ Brian Menard, Tree Commission ○ Michael P. Ronayne, Tree Commission ○ Lena Seville, Bike/Ped Committee ○ Michael Wheelwright, North Downtown Neighborhood |
|---|---|



Engagement Events

Various engagement strategies targeted specific stakeholders and/or the community at-large to 1) engage community leaders, 2) Offer decision points for stakeholders and the public, and 3) Sequence engagement activities to build support and participation.

Activity	Project Website (www.easthighstreetscape.org)
Target Audience	Public Stakeholders Steering Committee
Objective	Serve as a portal for plan information
Activity	Technical Committee Meetings (March 8, 2018 / June 28, 2018)
Target Audience	City Staff
Objective	Make decisions based on advisement from Consultant Team and Steering Committee
Activity	Steering Committee Meeting #1 (March 8, 2018)
Target Audience	Steering Committee Public (open meeting)
Objective	Discuss purpose of committee, identify factors for success, and establish preliminary needs and priorities to inform the activities for the Streetscape Summit
Activity	Streetscape Summit – Community Event 1 (April 21, 2018)
Target Audience	Public Stakeholders
Objective	Drop-in workshop with interactive stations and guided walking tours of the study area Identify community values, priorities, and vision through a series of interactive stations
Activity	MetroQuest Survey (April 18, 2018 to May 31, 2018)
Target Audience	Public Stakeholders
Objective	Offer opportunity for input to be provided through an online platform
Activity	Steering Committee Meeting #2 (June 28, 2018)
Target Audience	Steering Committee Public (open meeting)
Objective	Review public engagement outcomes, discuss context and existing conditions, and review preliminary design concepts
Activity	Open House – Community Event 2 (August 15, 2018)
Target Audience	Public Stakeholders
Objective	Memorialize outcomes of the engagement process, present conceptual streetscape plan, and provide information on design development and construction
Activity	Presentations to Boards and Commissions (Various Dates)
Target Audience	Bike and Pedestrian Committee Tree Commission Planning Commission City Council
Objective	Present final concept to City agencies, boards, and councils for comment and approval

Summary of Public Engagement Events

The following sections provides a brief summary and key takeaways from the Steering Committee meetings, community events, online survey, and presentations to boards and committees. **More detailed summaries for each event are available under separate cover.**

Event	Key Takeaways
Steering Committee Meeting #1 <i>March 8, 2018</i>	<ul style="list-style-type: none"> ○ Key Words: safety, gateway, walkable ○ Strengths: location, connections ○ Challenges: traffic, balancing modes ○ Priorities: Pedestrian Facilities, Landscaping, Bicycle Facilities, Traffic and Travel Speeds ○ Expectations: travel options, connectivity, land use/design
Streetscape Summit <i>April 21, 2018</i>	<ul style="list-style-type: none"> ○ Key Words: safe, pedestrian-friendly, welcoming ○ Priorities: Pedestrian Facilities, Landscaping, Bicycle Facilities, Traffic and Travel Speeds ○ Preferred Features: buffered bike lanes, high-visibility crosswalks, trees ○ Other: Lexington/High intersection
MetroQuest Survey <i>April 18, 2018 to May 31, 2018</i>	<ul style="list-style-type: none"> ○ Key Words: simple, functional, aesthetic, accessible ○ Priorities: features that directly relate to the movement of people (regardless of mode) ○ Enhanced Design Requests: buffering bicyclists and pedestrians from traffic
Steering Committee Meeting #2 <i>June 28, 2018</i>	<ul style="list-style-type: none"> ○ Focus: Reviewing alternatives so a preferred concept could be presented at the Open House ○ Agreement: Constraints prevent complete modifications to some areas (e.g. Market Street) and limit options to the entirety of the study corridor ○ More Discussion Requested: Widths for sidewalks, bike lanes, bike buffers, and planting strips
Open House <i>August 15, 2018</i>	<ul style="list-style-type: none"> ○ Allocation of Space: Participants differed on whether space should go toward bicyclists (bike lane and bike lane buffer) or a planting strip. ○ Pedestrian Crossings: Pedestrian crossings were identified as important, particularly at East Jefferson Street. ○ Access Control: Participants supported limited access (left-in / right-in / right-out) at Lexington Avenue. Participants also supported limited access at the CFA Institute Entrance, however several comments expressed a lack of opinion.

Steering Committee Meeting #1 (March 8, 2018)

At the first Steering Committee meeting, members discussed the purpose of the committee and how other groups will be involved, identified factors for success, and established preliminary needs and priorities to inform the activities for the Streetscape Summit on April 21, 2018.

Activities

One Word

During introductions, committee members were asked to use one word to describe the study corridor today and one word to describe their ideal vision for the future.

- **Today:** Challenging, disjointed, suburban in character
- **In the Future:** Multimodal, safe, enhanced gateway

S.C.O.R.E.

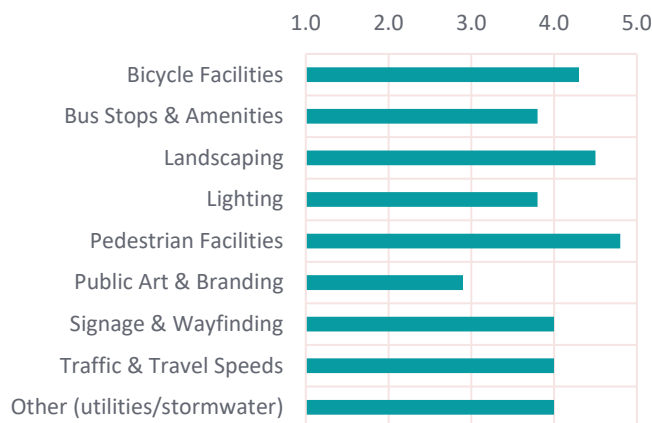
Each committee member identified Strengths, Challenges, Opportunities, Risks, and Expectations. The purpose of the activity was to spur conversation among the committee and to explore the overlaps between the strengths/opportunities and challenges/risks. The following table summarizes recurring themes:

- **Strengths:** Location, Connections, Aesthetics
- **Challenges:** Traffic Flow, Multimodal Conditions, Engagement, Land Use
- **Opportunities:** Travel Options, Gateways, Aesthetics, Lasting Impact
- **Risks:** Traffic and Travel Operations, Disconnects
- **Expectations:** Travel Options, Connectivity, Land Use and Urban Design

Design Elements

The committee began the process of navigating project constraints (e.g., budget and space) by prioritizing eight design elements by indicating the importance of each categories and then ranking them 1 through 8. The eight design considerations were: Community Gateway, Improved Approaches, Innovative Design, Landscaping, Lighting, Multimodal Design, Scenic Viewsheds, and Travel Speeds.

Importance



Ranking

	Design Consideration	Avg.
1	Pedestrian Facilities	1.40
2	Bicycle Facilities	3.70
3	Landscaping	3.80
4	Traffic & Travel Speeds	4.56
5	Lighting	4.89
6	Signage & Wayfinding	4.89
7	Bus Stops & Amenities	5.30
8	Other (utilities/stormwater)	7.00
9	Public Art & Branding	7.22

Streetscape Summit (April 21, 2018)

The Streetscape Summit was an interactive workshop designed organized in a variety of stations to help inform the understanding of existing conditions as well as potential concepts that could be incorporated into the streetscape design. In addition to the activity stations, participants were invited to participate in one of two walkabouts of the study area. The MetroQuest survey was featured at the workshop and remained open until May 31, 2018.

Objectives for the Streetscape Summit included:

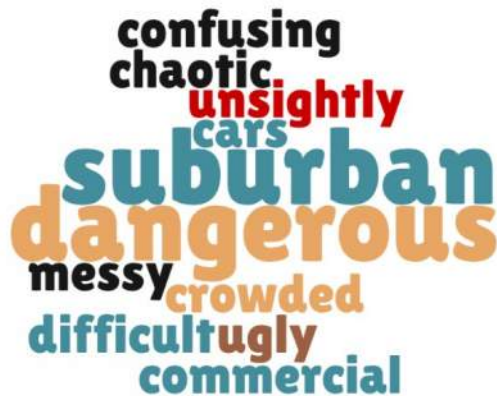
1. Identify community values through a variety of interactive exercises
2. Educate the public on constraints and opportunities associated with the streetscape design
3. Gather feedback on a variety of design elements

Activities

One Word

The One Word exercise asked participants to describe East High Street today and describe what East High Street should be in the future.

TODAY, East High Street is...



IN THE FUTURE, East High Street should be...



Priority Pyramid

The eight design considerations introduced at Steering Committee Meeting #1 were presented at the Streetscape Summit, and participants were asked to select and prioritize their top six. Each choice was then weighted, with those being ranked as a first priority receiving a higher score than those ranked lower. The top four priorities were:



Thought Wall

The Thought Wall allowed participants to express more in-depth thoughts, ideas, concerns, or suggestions on individual sheets of paper. One sheet was reserved for their most important comment. After writing their comments, participants posted the comment under a banner representing the design consideration that best represents the thought. A review of the comments revealed several recurring themes that focused on the need to prioritize walking over cars, including street trees, and reconfiguring key intersections such as Lexington and High Street. When all comments were evaluated against the themes, the following rankings emerged:

- **Frequency (total comments) |** 1. Landscaping 2. Pedestrian Facilities 3. Traffic and Travel Speeds
- **Intensity (“most important” comments) |** 1. Bicycle Facilities 2. Landscaping 3. Traffic and Travel Speeds

Street Builder

The Street Builder activity allowed participants to think critically about the future design of specific segments within the study corridor and build a their “dream street” and specific designs for East 9th Street, High Street, and Market Street. Participants were forced to remove or change elements of the street to make **the** design fit within the necessary dimensions. The most popular street elements were **street trees, sidewalks (of any dimension), and bicycle lanes**. Other popular elements included bioswales, multiuse paths, and buffers to create protected bicycle facilities. Most of the street designs were 2-lane cross sections.

Visual Preference Survey

To better understand the community’s aesthetic preferences, participants were presented with boards displaying various images organized into four elements (Travel Realm Improvements, Intersection Improvements, Sidewalks and Lighting, and Branding and Wayfinding) and used dots to vote for their three favorite images on each board. Characteristics of top images for each element included:

- **Travel Realm Improvements |** dedicated bicycle facilities with landscaped or natural buffers protecting cyclists from traffic
- **Intersection Improvements |** raised crosswalks and aesthetic treatments) and natural landscaping
- **Sidewalks and Lighting |** wide sidewalks with buffers from traffic, street trees, landscaping, and integrated lighting
- **Branding and Wayfinding |** modern signage elements that convey a continuity of branding and help with navigation

Strong Places/Weak Places

To better understand perceptions of the study area, participants identified strong places (desirable, special, safe, and reflect well on the corridor) and weak places (unsafe, undesirable, eyesores, and overall reflect poorly on the community) along the corridor and in the surrounding area. Weak locations were clustered along the length of the corridor, while strong locations were mostly located in Downtown and the neighborhoods to the north.

MetroQuest Survey (April 18, 2018 to May 31, 2018)

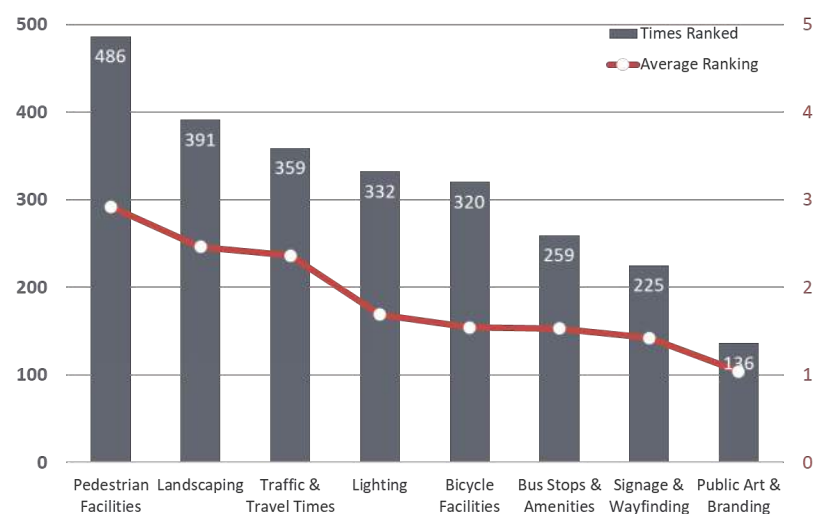
An online survey developed using the MetroQuest platform provided an additional opportunity for the public and stakeholders to offer input. The survey was designed to mirror the Streetscape Summit as closely as possible, so that input can be compared and collated for a better understanding of the community's overall preferences and priorities. The level of participation exceeded expectations: **530** participants | **13,495** individual data points | **380** written comments.

Screens

The survey included five screens that guided participants through the process of learning about the project and providing input.

Priorities

Design decisions were informed in part by constraints such as time, space, and money. Participants were asked to identify which design elements were important to them. The priorities, whether based on the frequency or intensity, included Pedestrian Facilities, Landscaping, and Traffic & Travel Times. Comments on this screen used words such as simple, functional, aesthetic, and accessible to describe the ideal streetscape



Strategies

Participants were asked to rate how much they liked design features for each of the priorities elements they identified in the previous screen. The design preferences were identified.

- **Pedestrian Facilities** | wide, buffered sidewalks
- **Landscaping** | enhanced sidewalk buffers and planted medians
- **Traffic & Travel Times** | traffic safety enhancements and turn lanes
- **Lighting** | pedestrian-scale lighting
- **Bicycle Facilities** | buffered bike lanes
- **Bus Stops & Amenities** | bus stops with seating
- **Signage & Wayfinding** | pedestrian and vehicle wayfinding
- **Public Art & Branding** | integrated public art

Investments

Participants were asked how they would prioritize spending \$100 on improvements. Fixed costs were set at \$30 to account for planning and design, utilities, and right-of-way. High investment in sidewalks and lighting (including landscaping) continued the trend for these features being a priority. While Branding & Wayfinding received the least investment, those who invested funds in the category invested a higher portion of it.

Steering Committee Meeting #2 (June 28, 2018)

At the second Steering Committee meeting, members discussed the results of public engagement including the Streetscape Summit and MetroQuest, reviewed and evaluated schematic design alternatives, and discussed recommendations for design going forward in preparation for the Public Open House on August 15, 2018.

Schematic Design Alternatives

Three schematic design alternatives were presented at the meeting. The alternatives maximized the available right-of-way to address priorities identified in previous public engagement events. The alternatives could be viewed as pieces and parts so access control, laneage, etc. could be selected à la carte to form a preferred alternative. Consistent features of the alternatives included:

- Reducing 9th Street between East Market Street and East High Street to three lanes with one travel lane northbound and southbound and a center lane for left turns
- Removing the dedicated right-turn lane at the corner of the Carlton Oaks development and converting the remaining lane to a shared right/through lane, creating an area of public space
- Reorienting Lexington Avenue to intersect perpendicularly with East High Street
- Shortening the crosswalk across East High Street on the west side of the intersection with 10th Street/Locust Avenue

Details on how the alternatives differed can be viewed in the meeting materials (presentation and detailed summary) offered under separate cover.

Schematic Design Alternatives Discussion

The focus of the meeting was a facilitated discussion on the alternatives. The project team refined the alternatives into preferred alternative to be presented at the Open House. Key elements of the discussion included:

- Agreement that Market Street is constrained preventing extensive modifications to the existing condition
- Constraints imposed by need for through movement across East High Street at the 10th Street/Locust Avenue intersection and limits imposed by project scope and budget
- Constraints of scope, budget and right-of-way that limit the ability to install a roundabout at the intersection of East High Street and 10th Street/Locust Avenue
- Discussion about prioritizing the uphill bicycle lane over the downhill bicycle lane for comfort and safety of bicyclists
- Discussion of widths for sidewalks, bike lanes, and planting strips
- Review of signalized intersection locations
- Discussion of appropriate tree plantings
- Discuss about the existing locations of utility poles
- Concern that reducing conflict points could increase average travel speeds
- Discussion of on-road versus off-road bicycle facilities

The meeting concluded with an evaluation activity to score each schematic design alternative based on the extent to which each alternative addresses the priorities identified from public engagement results. This activity was adapted for use in the Open House

Open House (August 15, 2018)

The Open House allowed the public and stakeholders to view the streetscape concept that was developed based on previous engagement events, including the Streetscape Summit, MetroQuest Survey, and Steering Committee meetings. The event was designed as an informal meeting with large plots of the concept, illustrative cross sections, traffic exhibits, and a summary of engagement results. In addition to collecting general comments, the Open House collected specific feedback on priority considerations (as identified in earlier engagement efforts) and access control at two locations along the corridor. Attendees received a worksheet to make it easier for them to weigh in on these elements.

Priority Considerations

Participants were asked to rate on a scale of 1 to 5 how well the streetscape concept addressed priority considerations identified through previous engagement activities. An optional comment also was requested.

- **Pedestrian Facilities** | Preference to return both crosswalks at East Jefferson; Preference for wider sidewalks where possible
- **Bicycle Facilities** | Differing opinion on the width of the bike buffer versus the width of the planting strip
- **Traffic & Travel Speeds** | Maintain appropriate levels of access; Keep travel speeds low
- **Landscaping** | Prefer planted medians where possible; Add street trees; Wider landscape buffers or treegrates preferred

Alternatives

Participants were asked to select from multiple alternatives for a few locations along the corridor that had unresolved considerations.

- **Lexington Avenue Intersection** | The option that included left-in/right-in/right-out access was preferred by more than 70% of participants. Comments focused on that option as safer, better for walking, and reduced queueing.
- **CFA Institute Entrance** | The option that included left-in/right-in/right-out access was preferred by approximately 60% of participants. Comments referenced the need to accommodate large trucks for deliveries.



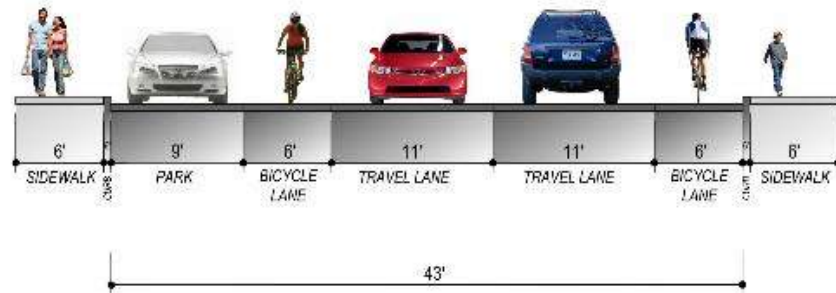
Summary of Stakeholder Group Meetings

Following completion of the formal engagement phase of the East High Streetscape Project, the engagement activities continued with presentations, discussions and formal actions taken by the following Stakeholder Groups, City Committees and Commissions. **More detailed summaries for each event are available under separate cover.**

Event	Key Takeaways
Charlottesville Bicycle & Pedestrian Advisory Committee and Charlottesville Tree Commission <i>September 27, 2018</i>	<ul style="list-style-type: none"> ● Focus: Resolution of competing interests for width on the typical sections between bicycle and landscape/planting space. ● Approval: Endorsement of a compromise that will typically provide 4.5' wide planting space (behind back of curb and before the concrete sidewalk) and a 5' wide bicycle lane with a 1.5' wide buffer along 9th Street between E. Market Street and E. High Street. ● More Discussion Requested: Actual tree soil volumes.
Charlottesville PLACE Design Task Force <i>November 8, 2018</i>	<ul style="list-style-type: none"> ● Focus: Recommend action to the City Planning Commission concerning the character, location and extent of the proposed improvements being in accordance with the City's adopted Comprehensive Plan. ● Approval: Endorsement of funding the undergrounding of overhead utilities, review current zoning and make recommendations for changes to be consistent with the design, encourage design compatibility with the Belmont Bridge Replacement Project, investigate landscaping and plantings for use as storm water management, consider how plantings help mitigate vehicular exhaust, explore mountable median use between E. High Street and Locust, explore a median between 9th Street and E. Market Street, provide all four crosswalks at 9th Street and Jefferson Avenue ● More Discussion Requested: Continued public engagement opportunities, design of a public plaza in front of Tarleton Oaks and consider eliminating concrete crosswalks and using thermoplastic markings.
City Planning Commission <i>November 13, 2018</i>	<ul style="list-style-type: none"> ● Focus: Confirm that the E. High Streetscape Project design was in accordance with the City's Comprehensive Plan. ● Approval: The Planning Commission confirmed that the general character, location and extent of the proposed improvements are substantially in accord with the City's adopted Comprehensive Plan.
City Council <i>December 3, 2018</i>	<ul style="list-style-type: none"> ● Approval: Approved the preferred conceptual design of the E. High Streetscape Project and authorized commencement of final design.

Preferred Conceptual Design

The following concept plan and typical section depict the preferred conceptual design for the E. High Streetscape Project.

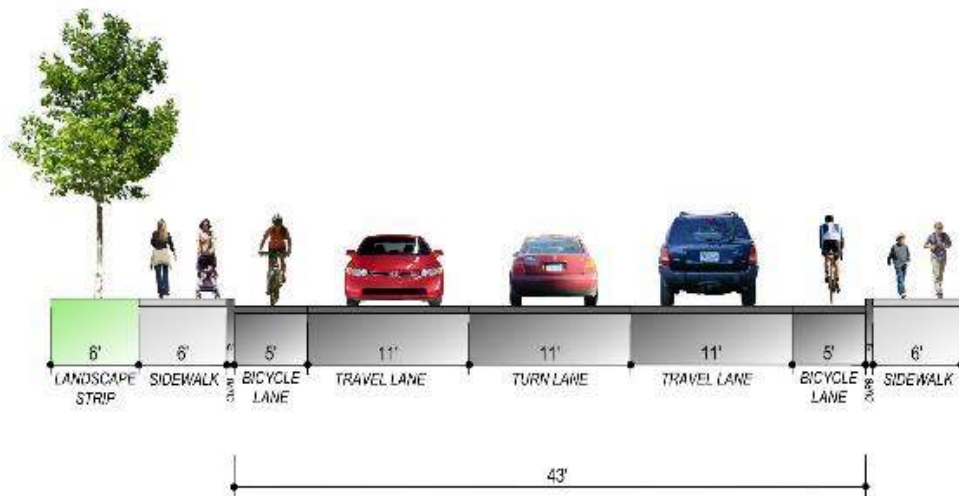


SECTION A - MARKET ST BETWEEN 8TH ST. AND 7TH ST.

Charlottesville, VA
**EAST HIGH
STREETSCAPE**



TYPICAL SECTION
WEEK 0.0A
Kimley»Horn

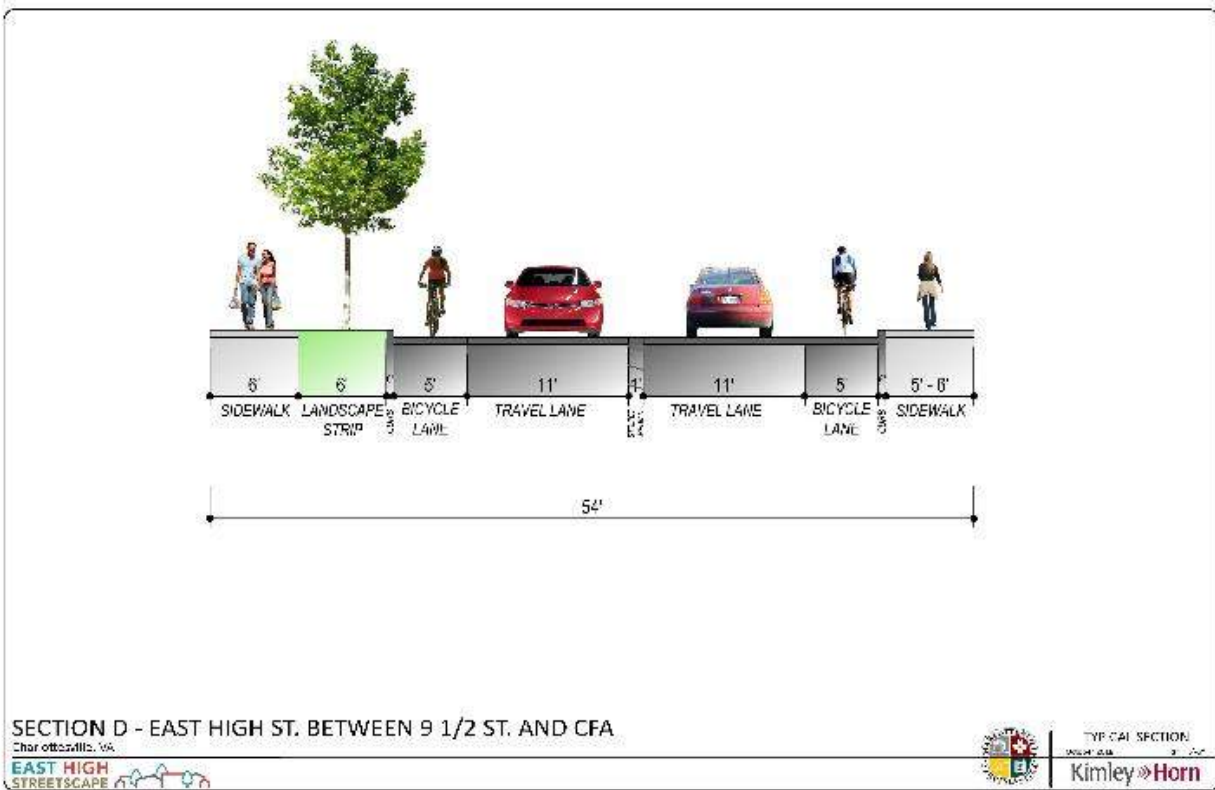
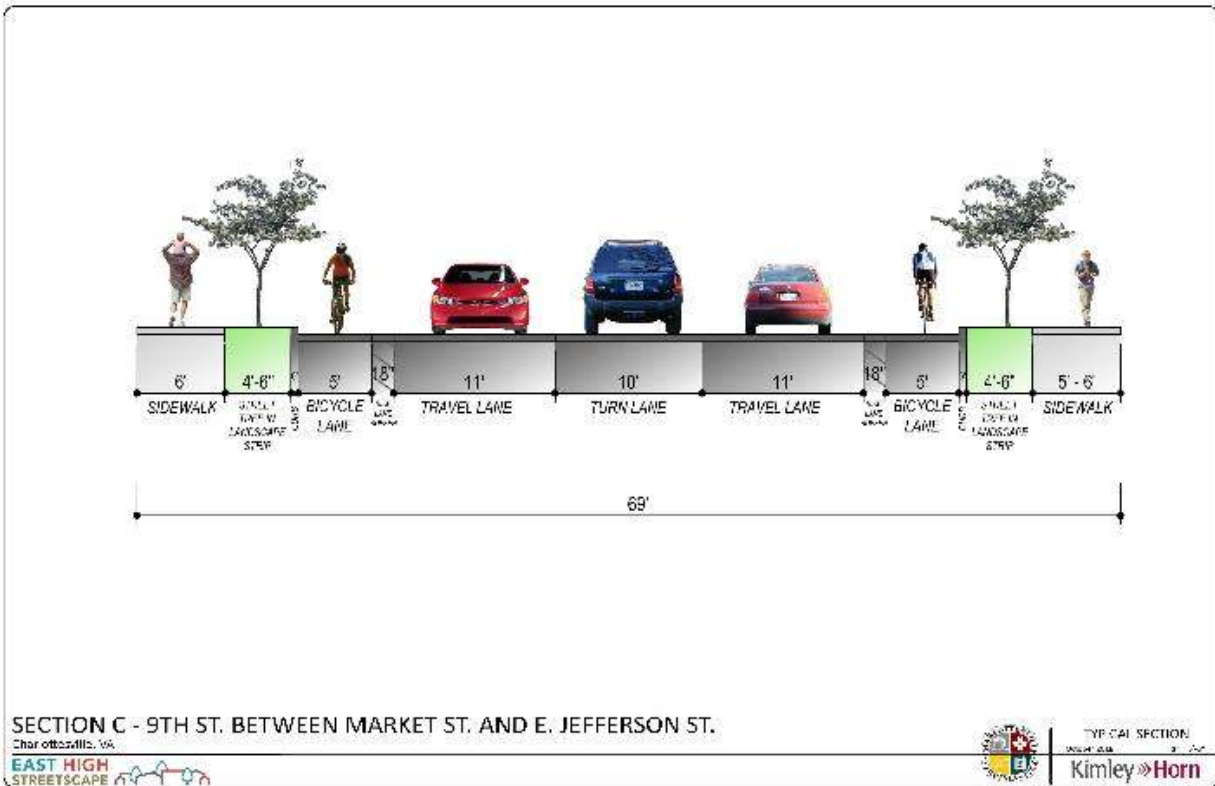


SECTION B - MARKET ST BETWEEN 8TH ST. AND 9TH ST.

Charlottesville, VA
**EAST HIGH
STREETSCAPE**



TYPICAL SECTION
WEEK 0.0A
Kimley»Horn





APPENDIX B – Critical Path Schedule