



# LAFAYETTE BOULEVARD CORRIDOR STUDY



OCTOBER 2009

PREPARED FOR:

**FAMPO** 

PREPARED BY:

 Kimley-Horn  
and Associates, Inc.



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**FINAL REPORT**

**OCTOBER 2009**

### **PREPARED FOR:**

#### **Fredericksburg Area Metropolitan Planning Organization (FAMPO)**

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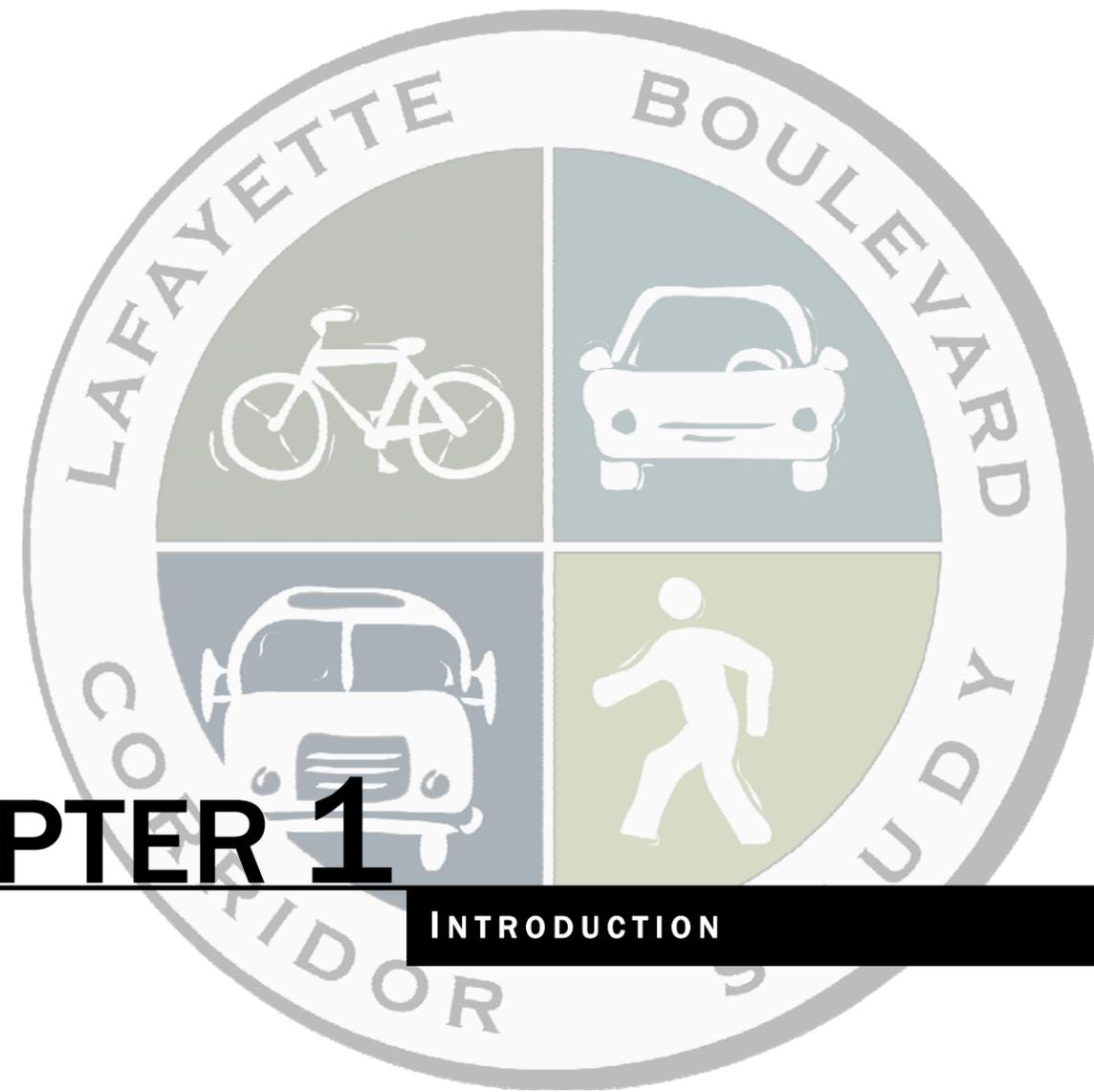
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# CHAPTER 1

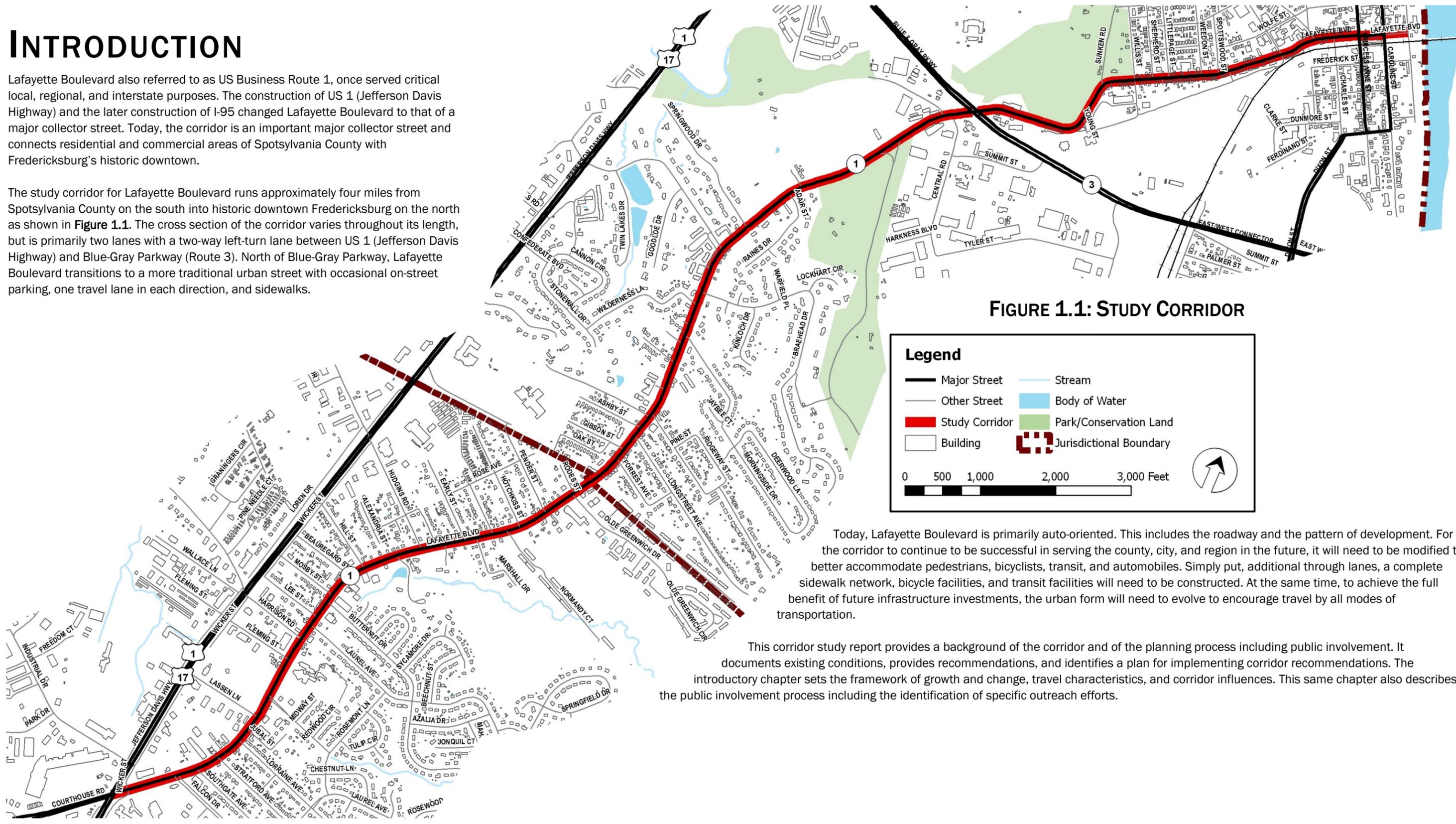
INTRODUCTION



## INTRODUCTION

Lafayette Boulevard also referred to as US Business Route 1, once served critical local, regional, and interstate purposes. The construction of US 1 (Jefferson Davis Highway) and the later construction of I-95 changed Lafayette Boulevard to that of a major collector street. Today, the corridor is an important major collector street and connects residential and commercial areas of Spotsylvania County with Fredericksburg's historic downtown.

The study corridor for Lafayette Boulevard runs approximately four miles from Spotsylvania County on the south into historic downtown Fredericksburg on the north as shown in **Figure 1.1**. The cross section of the corridor varies throughout its length, but is primarily two lanes with a two-way left-turn lane between US 1 (Jefferson Davis Highway) and Blue-Gray Parkway (Route 3). North of Blue-Gray Parkway, Lafayette Boulevard transitions to a more traditional urban street with occasional on-street parking, one travel lane in each direction, and sidewalks.



**FIGURE 1.1: STUDY CORRIDOR**

Today, Lafayette Boulevard is primarily auto-oriented. This includes the roadway and the pattern of development. For the corridor to continue to be successful in serving the county, city, and region in the future, it will need to be modified to better accommodate pedestrians, bicyclists, transit, and automobiles. Simply put, additional through lanes, a complete sidewalk network, bicycle facilities, and transit facilities will need to be constructed. At the same time, to achieve the full benefit of future infrastructure investments, the urban form will need to evolve to encourage travel by all modes of transportation.

This corridor study report provides a background of the corridor and of the planning process including public involvement. It documents existing conditions, provides recommendations, and identifies a plan for implementing corridor recommendations. The introductory chapter sets the framework of growth and change, travel characteristics, and corridor influences. This same chapter also describes the public involvement process including the identification of specific outreach efforts.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## STUDY GUIDANCE

Early in the planning process, the steering committee, public, Fredericksburg Area Metropolitan Planning Organization (FAMPO) staff, and other involved persons were asked to provide input with regard to “big picture” vision and values as well as on goals and objectives. Vision topics included community and sense of place, corridor aesthetics, vehicular safety and accommodation, pedestrian safety and accommodation, bicycle safety and accommodation, and transit safety and accommodation. The following vision statement was developed based on input and collaboration during the study process.

## VISION AND VALUES

Lafayette Boulevard should be enhanced to support the neighborhoods along its length. Improving its aesthetics as well as the look of development along the corridor is important to residents, business owners, and people who frequent the corridor. Burying utilities, improving landscaping, creating gateway treatments, and controlling signage would significantly improve the visual quality of the corridor.

At the same time, it is desirable to keep the corridor’s eclectic residential character intact. An improved aesthetic does not mean that the entire corridor should look and feel the same. As the corridor is improved throughout time, it is important that the corridor continues to support living opportunities for many income levels and people of all ages.

Providing safe and appropriate facilities for all modes of transportation and users is essential. Physical, operational, educational, and enforcement measures will need to work together to achieve the safe, convenient, and attractive transportation condition that is desired. Sidewalks, crosswalks, bikeways, and transit amenities should be complemented by a well-designed street and consistently enforced traffic laws.



Participants of Workshop 1 expressed their visions for several categories using sticky notes on category-specific boards

## GOALS AND OBJECTIVES

The goals and objectives are representative of input received during the study. They include the following:

1. **Strengthen the Community and Improve the Sense of Place**
  - Make transportation decisions to support long-term community health—not only for short-term benefits
  - Influence the implementation of desirable development patterns through strategic public infrastructure investment
  - Implement policies that encourage and require context-sensitive planning, design, and implementation
  - Limit negative corridor modification impacts on private property
  - Improve connectivity between neighborhoods along and across Lafayette Boulevard
  - Improve connectivity between areas north and south of Blue-Gray Parkway
  - Encourage new development at appropriate scales and quality
  - Eradicate blight along the corridor
2. **Maintain and Improve Corridor Aesthetics**
  - Develop corridor design guidelines to guide future investment and renovation
  - Install gateways at appropriate locations to celebrate special community features, assets, and destinations
  - Manage signage and advertising information along the corridor
  - Construct streetscape enhancements such as improved lighting (pedestrian-level), sidewalks, bikeways, planted medians, gateways, and street trees corridor wide
  - Consolidate, relocate, and/or bury overhead utilities
  - Encourage high-quality new development and redevelopment
  - Lessen the negative visual impacts of surface parking lots through appropriate screening and buffering
  - Buffer development appropriately
  - Reduce and prevent blight
3. **Provide a High-Quality Experience for Vehicles, Pedestrians, Bicycles, and Transit**
  - Preserve and enhance the operational functionality of Lafayette Boulevard
  - Maintain acceptable levels of service for all modes and users
  - Provide continuous sidewalks and bikeways along the entire corridor
  - Connect sidewalks and bikeways along Lafayette Boulevard to adjacent streets and destinations
  - Locate crosswalks at convenient intervals and with measures to ensure safety
  - Provide adequate facilities at bus stops such as shelters, lighting, paved waiting areas, a bus pull out, service information, and benches
  - Support local transit initiatives to provide frequent, reliable, and efficient services and attract more choice riders
  - Actively seek partnerships in developing and maintaining transportation infrastructure

4. **Ensure Transportation Safety and Security**
  - Design the street to minimize vehicular, pedestrian, and bicycle conflicts
  - Implement measures to minimize crash severity and frequency
  - Install safe crossings of streets for non-vehicular users
  - Create safe routes to school for non-vehicular users
  - Design corridor modifications to actively influence vehicles to travel at the posted speed limit (design speed = desired speed)
  - Enforce traffic laws
5. **Educate and Provide Information to the Public on Available Travel Mode Options**
  - Promote programs in schools and within the community to educate and encourage people to travel by non-auto modes
  - Provide clear and concise information on available travel options along the corridor at local businesses, public buildings, libraries, schools, community centers, and other appropriate locations
  - Partner with community organizations, businesses, or local/state agencies to conduct and provide bicycle-oriented educational events (e.g. bicycle rodeo)
  - Support programs that promote work travel by modes other than single-occupant autos



During Workshop 1, a large aerial was used to collect issues expressed by individual participants.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## GROWTH AND CHANGE

According to the United States Census Bureau, the population of the City of Fredericksburg increased by less than one-percent between 1990 and 2000—growing from 19,027 to 19,279 persons. Current population estimates indicate the city’s population is 22,818 persons. During the same period, Spotsylvania County grew substantially from 61,236 to 92,446 persons. Current population estimates indicate a continuance of the growth experienced between 1990 and 2000 with the population reaching 121,736 persons. Despite the fact that the county has experienced considerable growth, it is likely that the most of that growth occurred in areas of the county far removed from the study corridor.

During the 1990s, the George Washington Region experienced double digit population growth. The combination of available land, a cost of living that is less than nearby areas, and relatively good access to regional transportation networks contributed to the explosive growth. While the rate of population growth in the region has slowed since 2000, the area continues to be one of the fastest-growing regions in Virginia and has a current population that exceeds 300,000 persons.

Modest growth is anticipated along the Lafayette Boulevard corridor in the short-term. Long-term, the corridor is likely to experience significant travel demand growth and additional roadway capacity will be needed. As regional travel demand increases on the US 1 and Route 3 corridors, some travelers trying to avoid congestion on those routes may divert to Lafayette Boulevard. At the same time, as more opportunities are available for walking and bicycling and congestion makes travel by car less attractive, some people may choose to walk, bicycle or take transit, rather than drive.

## TRAVEL CHARACTERISTICS

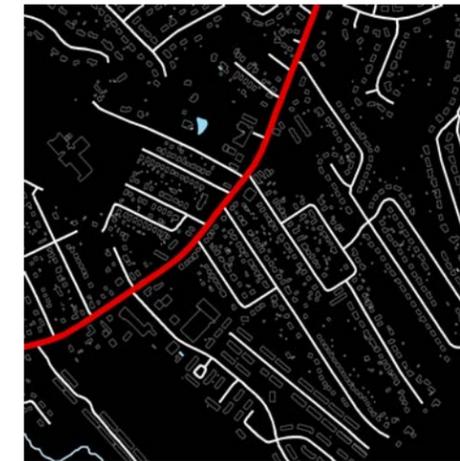
According to Journey to Work information contained in the 2000 Census, the majority of the George Washington Region’s workforce (79%) commutes to the Washington, D.C. or Richmond regions for work each day. Of workers that do not commute out of the region, the majority of those traveling to Fredericksburg have origins in adjacent Spotsylvania and Stafford Counties. Journey to Work information indicates that the primary travel mode for work trips continues to be driving alone in a private automobile. The result of the massive out-commuting pattern creates severe congestion on the region’s major road infrastructure—particularly on I-95, US 1, and major roadways having interchanges with I-95. The region continually ranks among those with the longest average commute for workers.

The pattern and conditions of travel on Lafayette Boulevard differ from those on other major roadways in the region. Whereas the peak periods and directions of travel are easily identifiable on corridors such as I-95, Route 3, and US 1, on Lafayette Boulevard the peaks are less severe and travel demand is steady throughout the day. While Lafayette Boulevard is a commuter route during the a.m. and p.m. peak hours, it also is busy in the mid-day in serving local trips and traffic. With many more of the trips on Lafayette Boulevard a part of a shorter trip purpose, the potential to shift some of those trips to a mode other than driving alone is possible. **Figure 1.2** shows daily traffic characteristics on Lafayette Boulevard.

## EVOLUTION OF CORRIDOR

Lafayette Boulevard predates many of the neighborhoods that have been developed at its edges. Throughout time, the corridor has carried goods and people between Spotsylvania County and the river port on the Rappahannock (prior to Fredericksburg’s founding); been a part of the US 1 corridor between Maine and Florida; and served as a major street.

As can be imagined, because of the length of time Lafayette Boulevard has existed and the ages in which development has occurred along its length, the urban form along the corridor varies widely. On the north, the historic city center of Fredericksburg exhibits a traditional, pre-war pattern of growth with an organized and interconnected system of streets, buildings lining important corridors, pedestrian-friendly streetscapes, human-scale development, and a generally compact urban form. On the south, a post-war pattern of development is evident through the disconnected street network, widely separated uses, limited pedestrian network, and the disconnected urban form. With some development and uses along the corridor beginning to age, the possibility exists to begin a measured process of corridor renovation to improve local street connectivity and encourage infill development supportive of multimodal travel.



Post-War Section: Lafayette Boulevard near Olde Greenwich Road



Pre-War Section: Lafayette Boulevard in downtown Fredericksburg

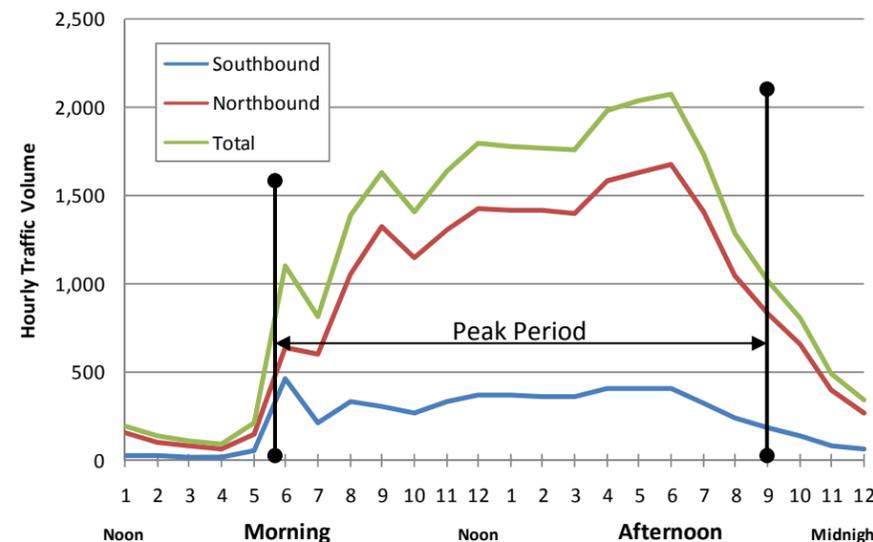
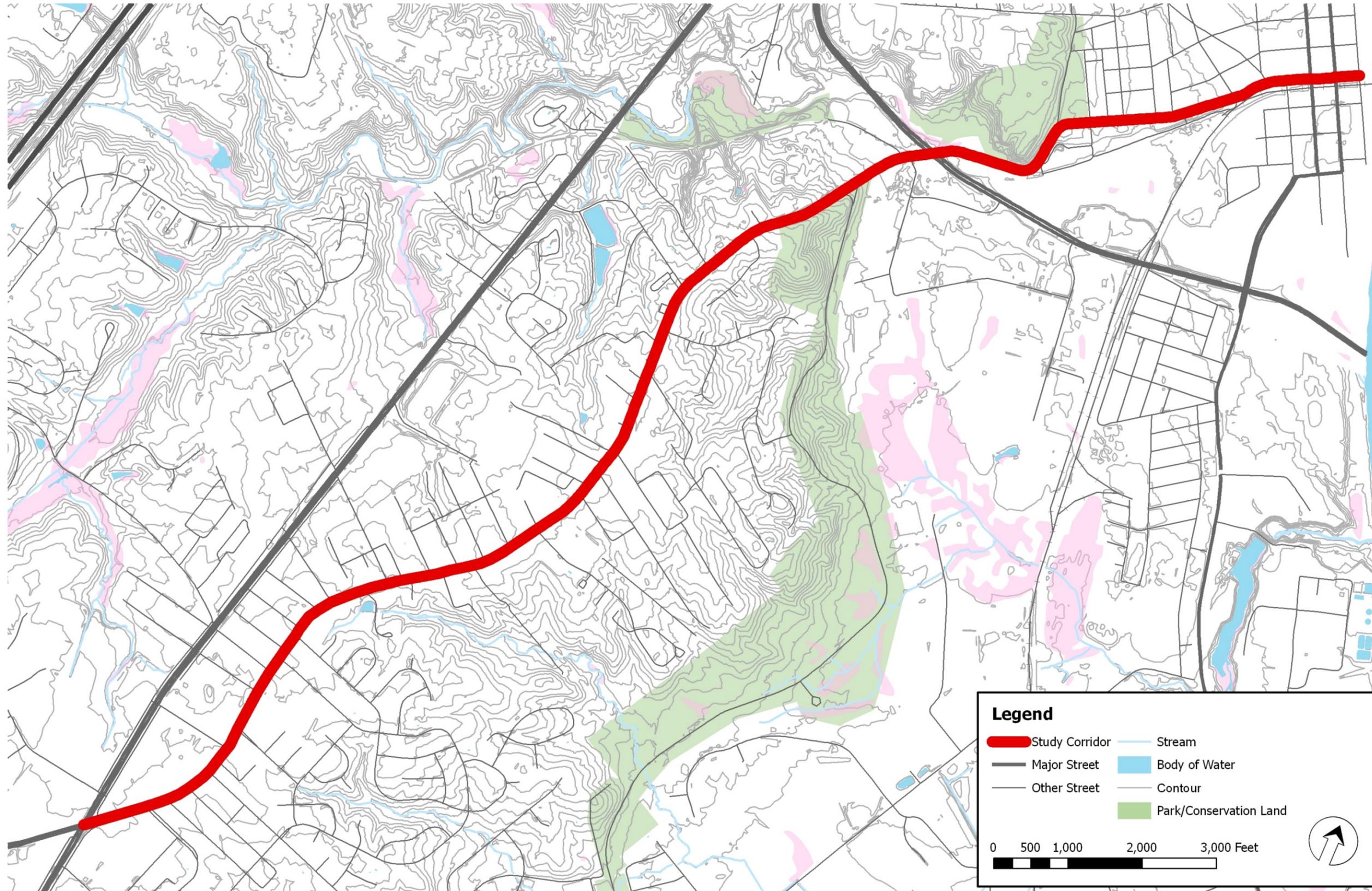


Figure 1.2: Daily Traffic Characteristics on Lafayette Boulevard

Lafayette Boulevard is busy throughout the day. The peak traffic period extends from approximately 6:00 a.m. to 9:00 p.m.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



**Figure 1.3**  
**NATURAL SYSTEMS**

**DESCRIPTION**

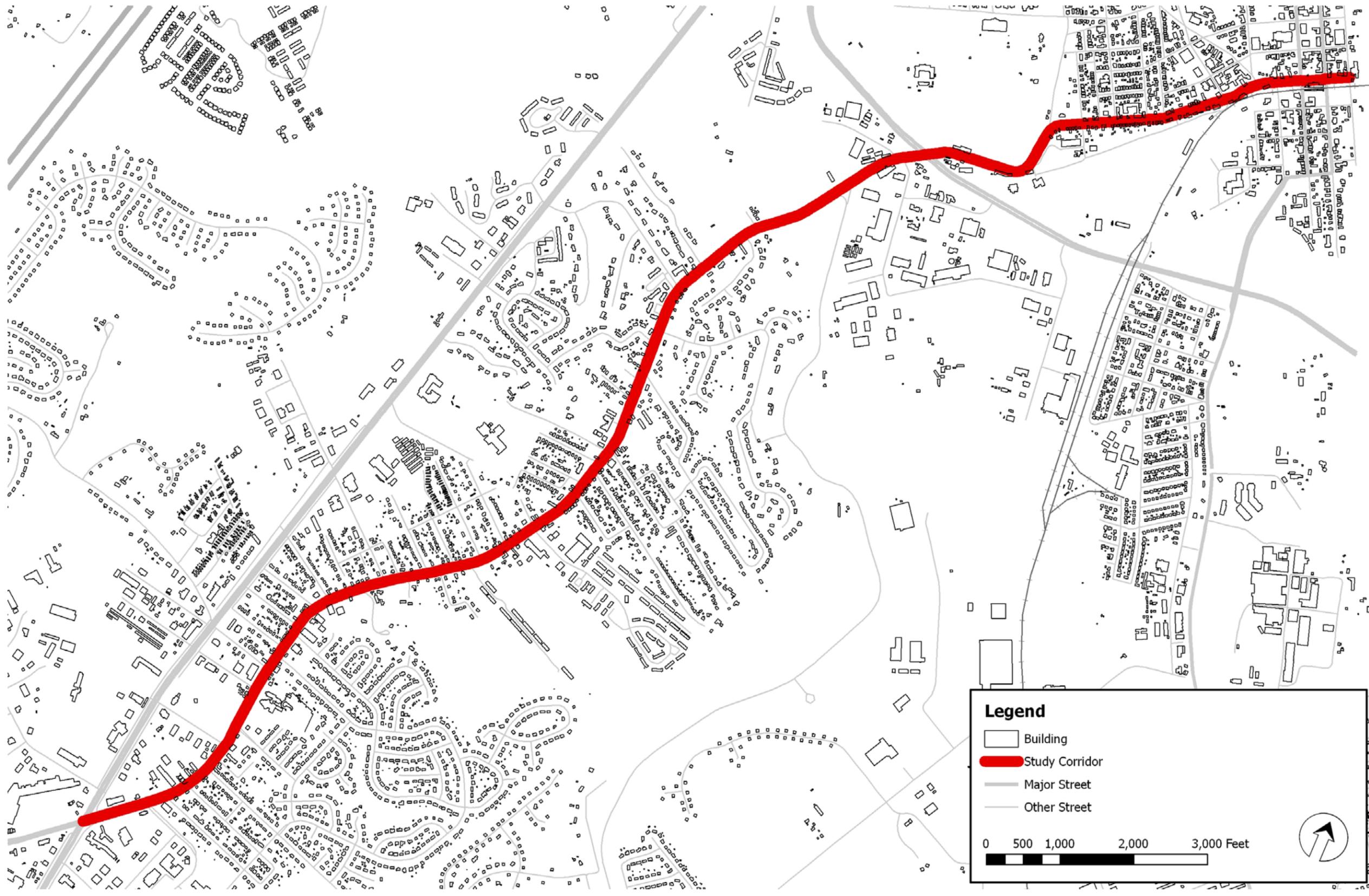
This figure illustrates natural systems along the Lafayette Boulevard corridor. It shows parks and conservation lands, streams and bodies of water, and topography.

**OBSERVATIONS**

In downtown, there are few natural barriers and the terrain is relatively flat. Few barriers to connectivity exist and downtown has an interconnected street pattern. Evident from the contours, the topography to the southeast of the corridor influenced the pattern of local streets and development. Local streets tend to run along ridge lines and small narrow valleys limit connectivity and separate one subdivision from another. The national park to the south of the corridor further limits connectivity between Lafayette Boulevard and other parts of the city and county. Near the south end of the study corridor, the terrain is relatively level and few natural barriers exist in creating connectivity.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



**Figure 1.4**  
**DEVELOPMENT**

**DESCRIPTION**

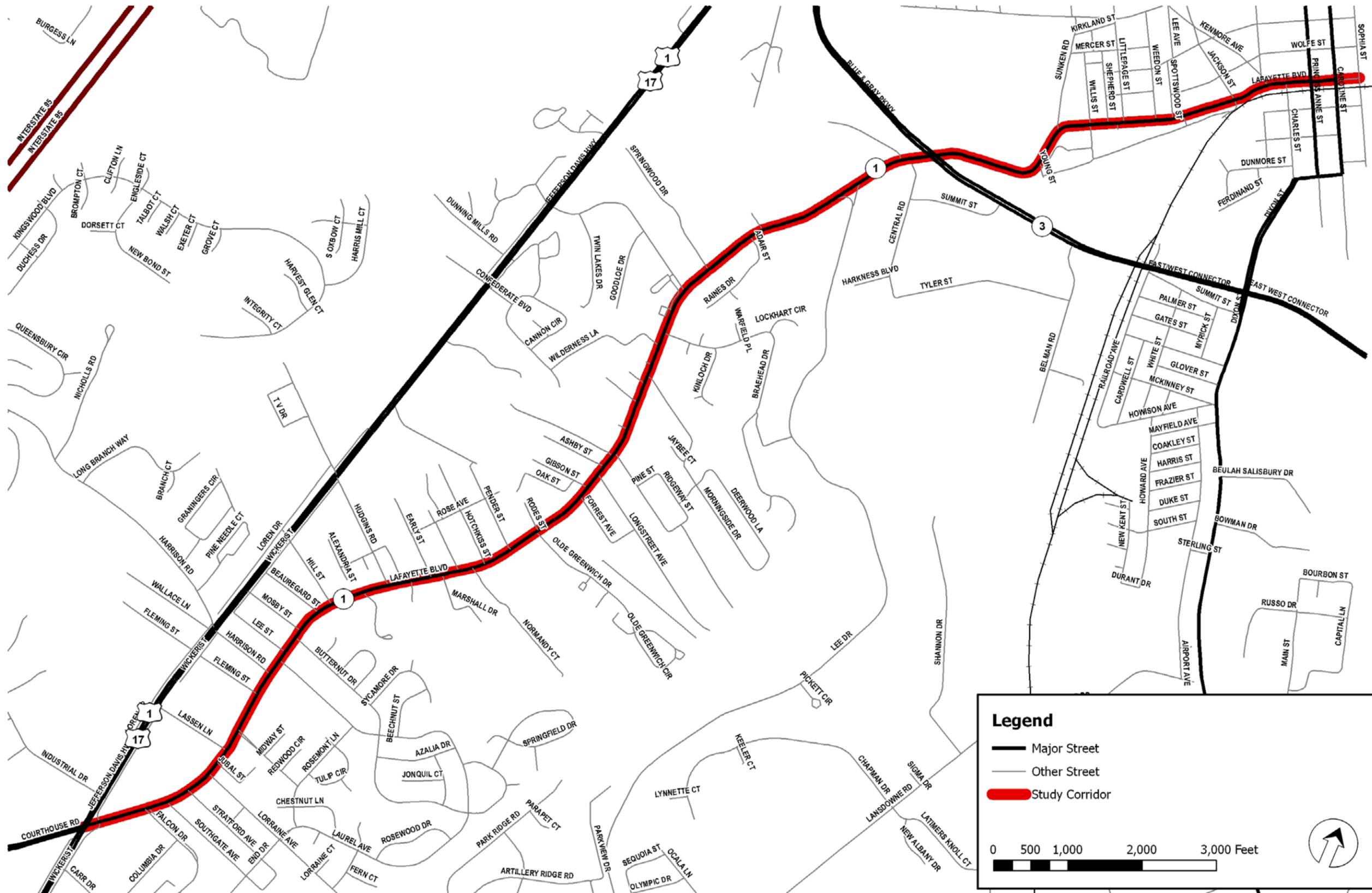
This figure illustrates the pattern of development along the Lafayette Boulevard corridor. It shows the network of streets and approximated building footprints.

**OBSERVATIONS**

At the north end of the study corridor, buildings are smaller and more closely spaced. The pattern of development is clearly organized around the interconnected street pattern—typical of the parts of communities developed prior to the early 1940s. South of Blue-Gray Parkway (Route 3), the figure shows an irregular pattern of development, more typical of communities developed after the early 1940s.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



**Figure 1.5**  
**TRANSPORTATION NETWORK**

**DESCRIPTION**

This figure illustrates the physical transportation network along the study corridor. It shows major and minor streets as well as the passenger and freight railroad corridor.

**OBSERVATIONS**

The study corridor traverses two very different street network characters between the Rappahannock River on the north and US 1 on the south. The street pattern is interconnected on the north and has considerable route redundancy—many travel paths. South of Blue-Gray Parkway, Lafayette Boulevard is the primary travel route and development relies almost entirely on it to connect to other parts of the community. Local streets do not connect to one another and Lafayette Boulevard has many offset intersections along it.



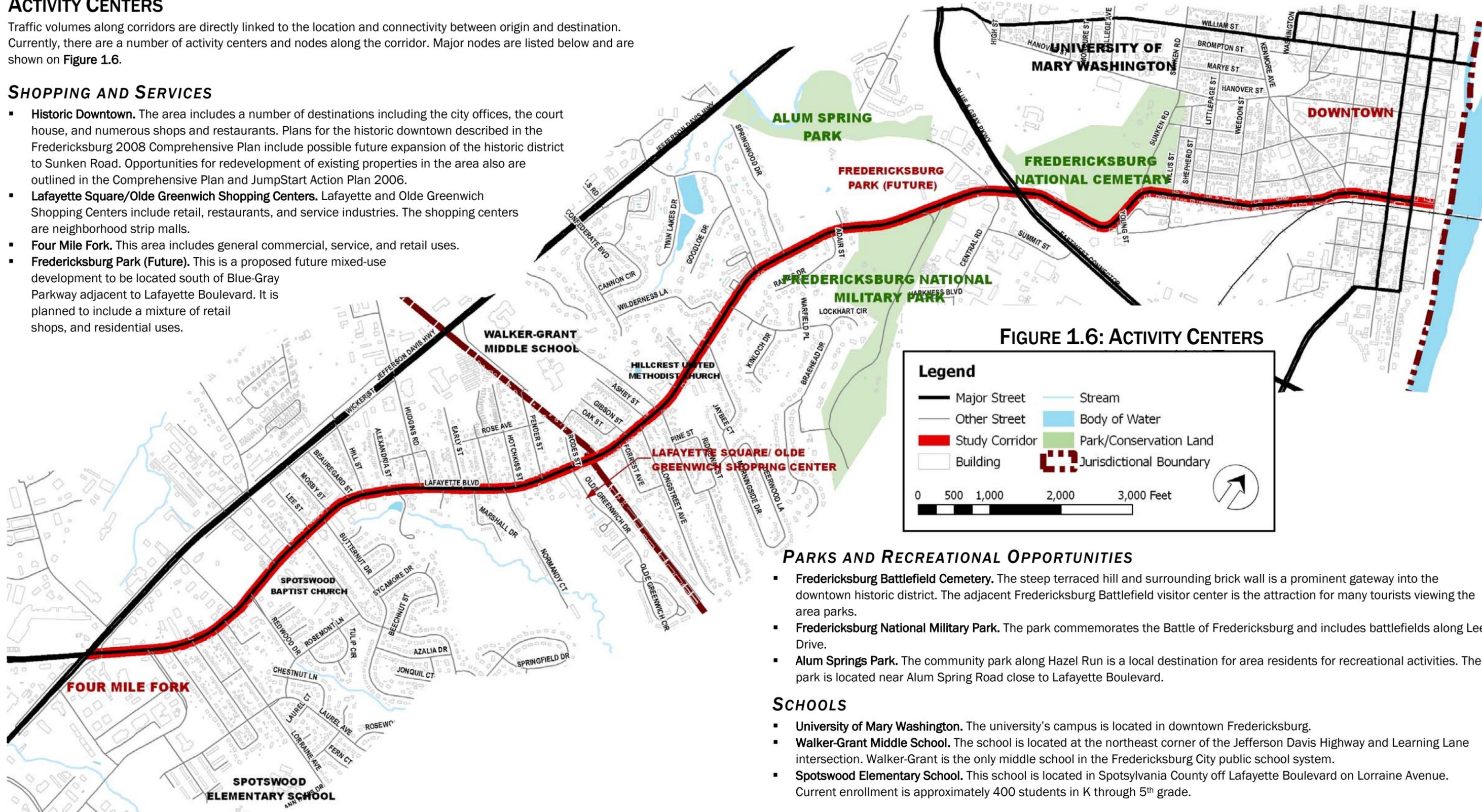
# LAFAYETTE BOULEVARD CORRIDOR STUDY

## ACTIVITY CENTERS

Traffic volumes along corridors are directly linked to the location and connectivity between origin and destination. Currently, there are a number of activity centers and nodes along the corridor. Major nodes are listed below and are shown on Figure 1.6.

### SHOPPING AND SERVICES

- **Historic Downtown.** The area includes a number of destinations including the city offices, the court house, and numerous shops and restaurants. Plans for the historic downtown described in the Fredericksburg 2008 Comprehensive Plan include possible future expansion of the historic district to Sunken Road. Opportunities for redevelopment of existing properties in the area also are outlined in the Comprehensive Plan and JumpStart Action Plan 2006.
- **Lafayette Square/Olde Greenwich Shopping Centers.** Lafayette and Olde Greenwich Shopping Centers include retail, restaurants, and service industries. The shopping centers are neighborhood strip malls.
- **Four Mile Fork.** This area includes general commercial, service, and retail uses.
- **Fredericksburg Park (Future).** This is a proposed future mixed-use development to be located south of Blue-Gray Parkway adjacent to Lafayette Boulevard. It is planned to include a mixture of retail shops, and residential uses.



### PARKS AND RECREATIONAL OPPORTUNITIES

- **Fredericksburg Battlefield Cemetery.** The steep terraced hill and surrounding brick wall is a prominent gateway into the downtown historic district. The adjacent Fredericksburg Battlefield visitor center is the attraction for many tourists viewing the area parks.
- **Fredericksburg National Military Park.** The park commemorates the Battle of Fredericksburg and includes battlefields along Lee Drive.
- **Alum Springs Park.** The community park along Hazel Run is a local destination for area residents for recreational activities. The park is located near Alum Spring Road close to Lafayette Boulevard.

### SCHOOLS

- **University of Mary Washington.** The university's campus is located in downtown Fredericksburg.
- **Walker-Grant Middle School.** The school is located at the northeast corner of the Jefferson Davis Highway and Learning Lane intersection. Walker-Grant is the only middle school in the Fredericksburg City public school system.
- **Spotswood Elementary School.** This school is located in Spotsylvania County off Lafayette Boulevard on Lorraine Avenue. Current enrollment is approximately 400 students in K through 5<sup>th</sup> grade.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## PLANNING PROCESS

The process to develop the Lafayette Boulevard corridor plan involved the following major efforts:

- **Public Involvement.** At the onset of the planning process, a project web site was established on FAMPO's web site. At the same time that the web site was launched, an advisory committee was formed to advise the study process through meetings and working sessions. As the study process proceeded, two public workshops were facilitated and two presentations were made to FAMPO committees.
- **Data Collection and Baselineing.** This involved collecting and assimilating background information including previously completed studies and plans, mapping, traffic volumes, crash data, and other information to firmly establish a starting point for the study.
- **Development of Plan Concepts.** Numerous concepts were developed during the study process. These concepts addressed current and anticipated transportation deficiencies, challenges, and opportunities along the corridor. They also focused on the accommodation of all modes of transportation in varying time horizons.
- **Plan Development and Recommendations.** Following input from the public, from the advisory committee, and from FAMPO staff, a recommended corridor plan was developed. This plan illustrates and describes proposed corridor modifications to support overall project goals and objectives.

## PUBLIC INVOLVEMENT

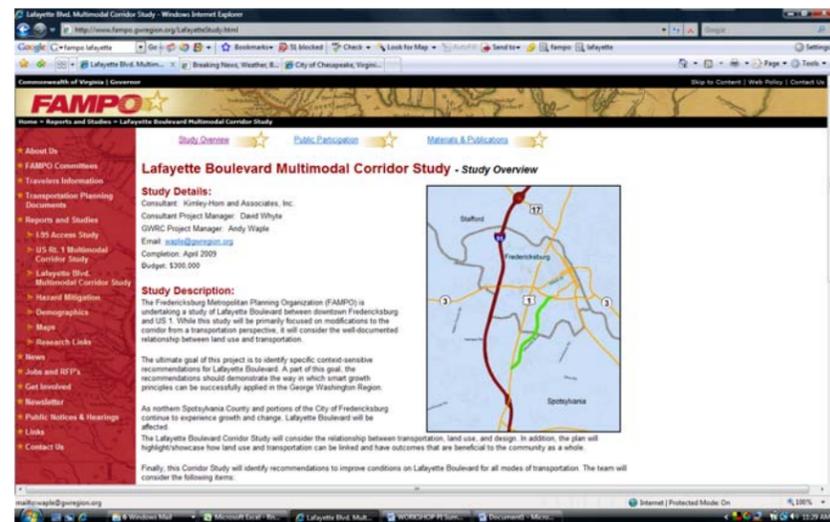
Meaningful public involvement is essential in developing community-focused corridor plans. A community's citizens have an intimate knowledge of the places where they live and travel and of the transportation problems they encounter. To make sure that the corridor plan considered citizen concerns and interests, input was solicited from the general public as well as through the advisory committee, FAMPO staff, and elected officials.

The study began with an educational process and a public workshop designed to gather meaningful input into the planning process. The following summarizes steps taken to inform, educate, and involve the public in the corridor planning, as well as a brief synopsis of the workshop itself.

- **Mailing List:** To ensure that citizens and businesses along the Lafayette Boulevard corridor were advised of the study, a comprehensive contact database was developed. The database included property owners located along and surrounding Lafayette Boulevard, citizens, businesses, elected officials, county public affairs, and key planning groups. Additionally, groups representing traditionally underserved populations—social service organizations, persons with disabilities, minority organizations, and senior citizen organizations—were notified and involved.
- **Logo/Study Identifier:** A logo specific to the study was developed and incorporated into all print and electronic documents.
- **Web Page** ([www.fampo.gwregion.org/LafayetteStudy.html](http://www.fampo.gwregion.org/LafayetteStudy.html)): The public was able to access information about the study from newly developed web pages that were posted to the existing FAMPO web site. Study background, study team member identification, meeting information, publications, and a comment form were available for review and/or download. Updated information was provided on the web page throughout the study.
- **Toll-Free Citizen Information Line (800-627-2892):** A toll-free phone number was set up and advertised to enable citizens to RSVP for workshops, ask questions, or to advise of any special requirements in order for them to participate.
- **Public Workshops:** To kick-off the study, the first public workshop was held June 26, 2008 at Spotswood Baptist Church on Lafayette Boulevard. Later in the study process—March 19, 2009—a second workshop was held to share study findings, present recommendations, and receive input on the draft corridor plan. A summary of the activities offered and input received is further described in the sections that follow. Notification was made through a variety of print and broadcast media for each workshop.



Photos showing Workshop 1 participation for the corridor study. Activity in these photos is related to the character preference survey.



Front page of the Lafayette Boulevard project on FAMPO's web site.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## WORKSHOP 1

The goal of this workshop was to inform citizens of the study and the study process and to solicit initial input on current transportation issues along the corridor. During the workshop, citizens were offered the opportunity to provide input through a variety of means including a targeted questionnaire and priority-setting, character preference, allocation of resources issues identification, and vision and values exercises. The following summarizes the outcomes of the aforementioned exercises included in the workshop.

## QUESTIONNAIRE SUMMARY

A lengthy and detailed questionnaire was provided to participants. A brief summary of responses received is below:

- **Participants:** Most were residents (28); however, some business owners (18) were present.
- **Traffic back-up locations:** Blue-Gray Parkway was the primary back-up indicated. Other notable locations included Harrison Road and US 1.
- **Time-of-way for traffic back-ups:** The afternoon peak period (from 4:00 p.m. to 6:00 p.m.) was indicated as the most challenging period for traffic in the corridor.
- **Back-up causes:** Traffic signal timing and heavy volumes were viewed as the causes.
- **Other traffic issues:** Turning onto Lafayette Boulevard was noted as difficult from side streets.
- **Treatments appropriate to reduce traffic congestion:** More through lanes and left- and right-turn lanes at intersections were the most popular responses.
- **Public transit:** Most people stated that they did not use transit and those that did use transit, most use Virginia Railway Express (VRE). The low use of transit was due to the view that transit was generally infrequent and had a long travel time. Work trips were the most frequent transit trips.
- **Improving transit:** Providing more frequent service was the most frequent response.
- **Desired amenities:** Shelters, benches, and lighting were the most popular responses.
- **Quality of pedestrian and bicycle conditions:** Conditions were noted as being poor and needing work. A lack of facilities was noted as something keeping people from walking and bicycling.
- **Improving pedestrian conditions:** Providing sidewalks, marked crosswalks, and a paved multiuse path were popular responses.
- **Encouraging bicycle use:** People want facilities and would prefer a multiuse path.
- **Destinations:** The most popular destination indicated was downtown Fredericksburg, followed by the battlefield parks and restaurants.
- **Land use:** People most like the look and feel of downtown Fredericksburg as opposed to other parts of Lafayette Boulevard. Outdated commercial properties were noted as being the most unattractive parts of the corridor.
- **Desired uses:** Respondents noted a desire for a grocery store as well as other neighborhood scale uses (coffee shop, bookstore, restaurants, etc.).

Smaller-scale, street fronting buildings of two stories were preferable. Some three-story buildings would be acceptable.

- **Undesirable uses:** Respondents noted that auto dealerships and car maintenance businesses as well as big boxes were not compatible with the character of the corridor.
- **Appearance:** Respondents suggested that the corridor is somewhat unsightly. Downtown Fredericksburg sections of the corridor were noted as being favorite portions of the corridor. The section between Twin Lake Drive and Harrison Road was the least liked section of the corridor.
- **Improvements:** Lighting and street improvements to improve aesthetics were noted as highly desirable.
- **Concerns:** Safety, traffic congestion, and blight were the biggest concerns for the corridor with regard to character.

Write-in comments from respondents also noted that road widening and right-of-way acquisition would reduce property values, commuter traffic is heavy on Lafayette Boulevard, trucks have difficulty maneuvering without backing up traffic, US 1's overdevelopment is impacting traffic on Lafayette Boulevard, lack of sidewalks and dangerously located utility poles and signs impact safety for users, and maintaining existing driveways are important.



Workshop 1 participation

Front page of study questionnaire

## Lafayette Boulevard Questionnaire

Comments Due by July 28, 2008

Thank you for your participation in the Lafayette Corridor planning process. Your comments are essential to development of a successful plan. Please drop this form in the comment box before you leave. You also may mail or drop-off this form at the George Washington Regional Commission/FAMPO office in downtown Fredericksburg - Attention: Marti Donley, 406 Princess Anne Street, Fredericksburg, Virginia 22401. We look forward to receiving your comments by July 28, 2008. Please visit the study website for additional information: [www.fampo.gwregion.org/lafayettetstudy.html](http://www.fampo.gwregion.org/lafayettetstudy.html)

**Name/Address Information (optional)**

Name: \_\_\_\_\_ Organization/Affiliation: \_\_\_\_\_  
 Address: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 City: \_\_\_\_\_ What is your preferred method of contact?  U.S. Mail  Email  No

**About You**

1. Check those that best describe your interest in the corridor (check all that apply)

Resident in the Corridor  Employee in the Corridor  Property Owner in the Corridor  Business Owner in the Corridor

**Traffic**

2. Where are there traffic back-ups on Lafayette Boulevard? (be specific) \_\_\_\_\_

3. What time of day do the back-ups occur? (check all that apply)

Morning (7:00 a.m. to 9:00 a.m.)  Mid-day (11:00 a.m. to 1:00 p.m.)  
 Afternoon (4:00 p.m. to 6:30 p.m.)  Other (specify) \_\_\_\_\_

4. Why are there back-ups? (check all that apply)

Can't get through a signal the first time  Left turning cars block the through lane  
 Street is blocked by traffic on another street  Other (specify) \_\_\_\_\_

*Continued next page*



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## “IF I HAD \$100 TO SPEND...” SUMMARY

For this exercise, respondents were asked to allocate \$100 among several specific categories. The allocation of these dollars was not intended to reflect the cost of each item, but instead to indicate which items were most important and which were least important. The following is a summary of the results of this exercise. The dollar amounts indicated for each item indicate the total monetary allocation made to the particular item, which is some indication of the desire for the particular item. For convenience, items are ranked by dollar amount allocated.

1. Build and repair sidewalks and trails: **\$641**
2. Provide bikeways (on- or off-street): **\$502**
3. Widen the street: **\$351**
4. Improve street aesthetics (street trees, street lighting, and planted medians): **\$326**
5. Restore two-way left-turn lane between St. Paul Street and Twin Lake Drive<sup>1</sup>: **\$200**
6. Increase/provide transit services and supporting facilities: **\$181**
7. Improve traffic flow (control access, install medians, and coordinate signals): **\$249**
8. Repair transportation infrastructure: **\$125**
9. Promote smart patterns of growth through targeted initiatives, programs, ordinances, and requirements: **\$124**

Based on a tabulation of responses, “build and repair sidewalks and trails” along with “provide bikeways” were the most popular improvements in terms of total dollars allocated and the percentage of participants interested in seeing these types of improvements implemented. The preferred improvement trend appeared to favor aesthetic and community focused improvements rather than on capacity-enhancing infrastructure and targeted programs for smart growth.

Form for \$100 to Spend exercise

**\$100 to Spend...**

If you had \$100 to spend on improvements to the Lafayette Boulevard corridor, how would you spend it? You can spend it on one thing or spread it around.

Widen the street	\$.....
Repair transportation infrastructure	\$.....
Build and repair sidewalks and trails	\$.....
Provide bikeways (on- or off-street)	\$.....
Increase/provide transit services and supporting amenities (improve traffic flow (control access, install medians, coordinate signals, etc.))	\$.....
Improve street aesthetics (i.e. street trees, street lighting, planted medians, etc.)	\$.....
Promote smart patterns of growth through targeted initiatives, programs, ordinances, and requirements	\$.....
Other: .....	\$.....

## “IF I WERE KING OR QUEEN” SUMMARY

For this exercise, respondents were asked to state their unrestrained wants for Lafayette Boulevard. The following is a paraphrased summary of input received:

### Bicycle/Pedestrian Improvements

- Build sidewalks and bicycle facilities (multiuse paths, shoulders, and bike lanes) along the corridor and to specific destinations
- Provide landscaping and lighting along the corridor
- Provide clear and safe pedestrian crossings
- Construct a pedestrian/bicycle bridge over the Blue-Gray Parkway

### Traffic Safety Improvements

- Improve sight distance at key locations (Adair Street) along the corridor
- Remove the two-way left-turn lane
- Reduce the speed limit
- Improve existing street lighting

### Aesthetic Improvements

- Reduce blight and clean-up unmaintained properties
- Improve landscaping in downtown
- Relocate existing overhead utilities underground
- Reduce commercial signage
- Protect the battlefield

### Traffic Flow

- Consolidate driveways and points of access
- Improve traffic signal timing
- Install new traffic signals where needed
- Reduce the volume of commercial truck traffic
- Widen the corridor to four lanes outside of downtown Fredericksburg
- Construct an interchange at Blue-Gray Parkway
- Reestablish the two-way left-turn between St. Paul and Twin Lakes

### Transit Improvements

- Improve Fredericksburg Regional Transit (FRED) service to provide hourly or half-hour service to downtown, Central Park, and Cosner’s Corner
- Improve bus stops with bus bays, shelters, benches, and lighting
- Provide trolley service between Spotsylvania County and Fredericksburg

### Enforcement

- Increase police patrols in the evening
- Enforce existing property and landscaping ordinances
- Enforce speed limit
- Enforce sign regulations (size, number, and design)

### Planning and Development

- Provide adequate buffers and screening for all new development
- Remove all road fronting residential properties and replace with commercial businesses
  - Promote smart development patterns for business growth
  - Encourage private investment through redevelopment projects
  - Restrict new development

Form for If I were King or Queen exercise

**If I were King or Queen...**

If I were King or Queen, I would begin now to improve the Lafayette Boulevard Corridor in the following ways (Please be as specific as possible):

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

<sup>1</sup> This item was a citizen write-in and not a standard response item.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## CHARACTER PREFERENCE SUMMARY

In this exercise, participants were asked to indicate a visual preference based on images provided. The placement of a green dot on an image indicated a “like” of an item whereas the placement of a red dot on an item indicated the “dislike” of an item. **Figures 1.7, 1.8, and 1.9** provide a summary of input received.

**FIGURE 1.7: PEDESTRIAN ENVIRONMENT PREFERENCES**

### Summary of Transportation Character Exercise

The “like” number indicates the number of **GREEN DOTS** placed on the image shown. The “dislike” number indicates the number of **RED DOTS** placed on the image shown.



Like: 11 Dislike: 0



Like: 4 Dislike: 3



Like: 3 Dislike: 1



Like: 10 Dislike: 0



Like: 16 Dislike: 0



Like: 0 Dislike: 15



Like: 1 Dislike: 2



Like: 3 Dislike: 0



Like: 13 Dislike: 0



Like: 0 Dislike: 15



Like: 7 Dislike: 2



Like: 0 Dislike: 5



Like: 2 Dislike: 4



Like: 11 Dislike: 0



Like: 0 Dislike: 9



Like: 0 Dislike: 9



Like: 17 Dislike: 0

## Pedestrian Environment



Kimley-Horn and Associates, Inc.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

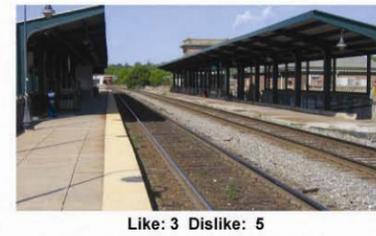
FIGURE 1.8: MULTIMODAL ACCOMMODATION PREFERENCES

## Summary of Transportation Character Exercise

The "like" number indicates the number of **GREEN DOTS** placed on the image shown. The "dislike" number indicates the number of **RED DOTS** placed on the image shown.



## Multimodal Accommodation





### FIGURE 1.9: OVERALL CHARACTER PREFERENCES

## Summary of Transportation Character Exercise

The "like" number indicates the number of **GREEN DOTS** placed on the image shown. The "dislike" number indicates the number of **RED DOTS** placed on the image shown.



## Overall Character



Like: 7 Dislike: 2



Like: 3 Dislike: 15



Like: 0 Dislike: 16



Like: 18 Dislike: 0



Like: 2 Dislike: 7



Like: 4 Dislike: 5



Like: 8 Dislike: 0



Like: 0 Dislike: 19



Like: 2 Dislike: 10



Like: 2 Dislike: 11



Like: 0 Dislike: 9



Like: 15 Dislike: 0



Like: 16 Dislike: 0



Like: 22 Dislike: 0



Like: 0 Dislike: 12



Like: 5 Dislike: 4



Kimley-Horn and Associates, Inc.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## WORKSHOP 2

The goal of this workshop was to receive input from the public on the preferred corridor modification concept. A presentation was made, questions were fielded, and a questionnaire was provided. Based on feedback received, the preferred concept was modified and finalized.

## QUESTIONNAIRE

A brief concept-focused questionnaire was provided to participants. A brief summary of responses received is below.

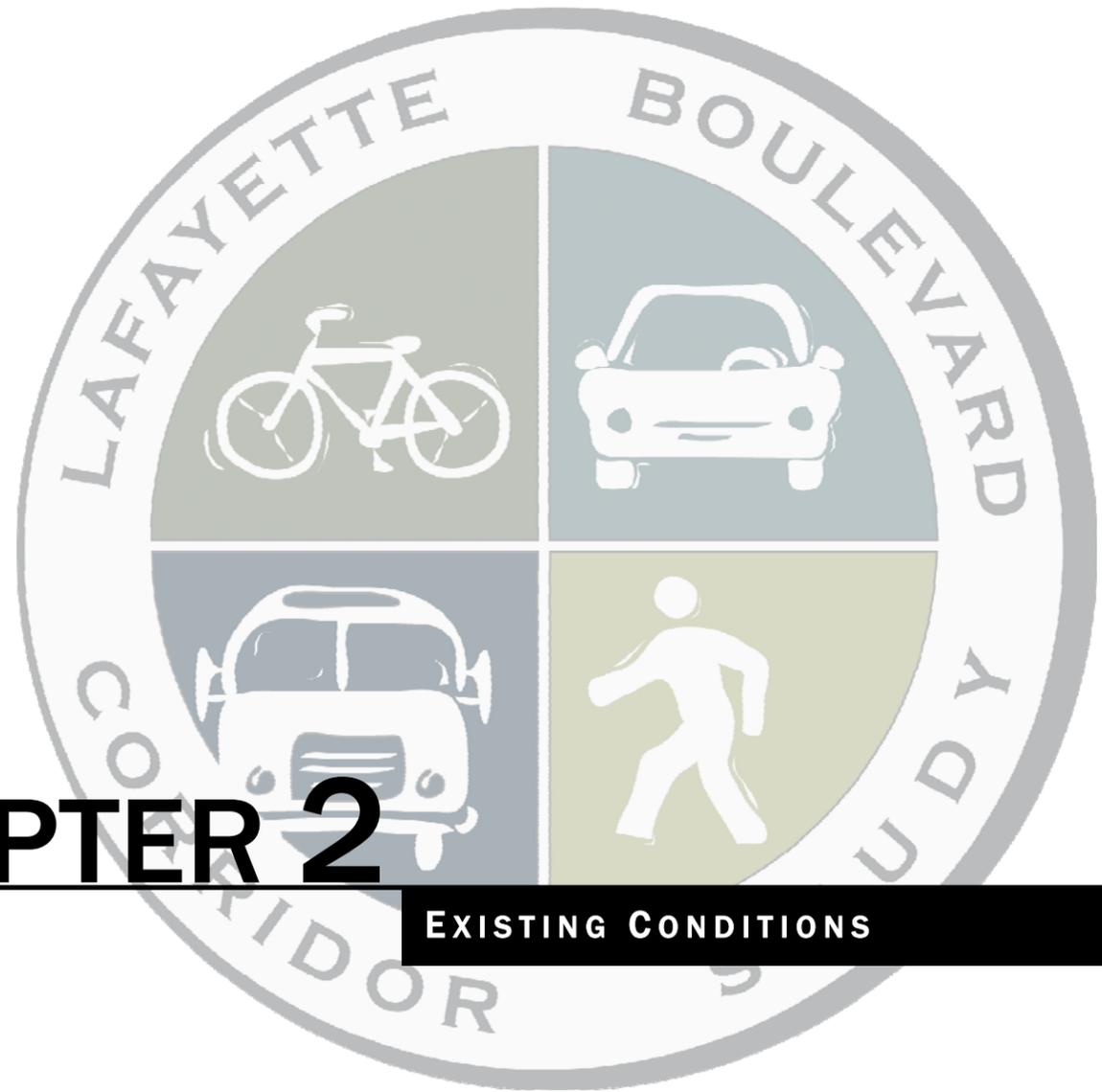
- **Participants:** A mixture of business owners, property owners, and residents
- **Roundabout at Lafayette Boulevard and Kenmore Avenue:** Most respondents favored the proposal; however, some concerns were noted with regard to property impacts and its ability to serve traffic during heavy VRE-related unloading periods.
- **Roundabout at Lafayette Boulevard and Twin Lake Drive:** Most respondents favored the proposal; however, some concern was noted as to the ability for side-street traffic (Twin Lake Drive) to turn onto to Lafayette Boulevard and one respondent wanted a detailed traffic study performed prior to approval of a roundabout at this location.
- **Roundabout at Lafayette Boulevard and Courtland/Hillcrest Drive:** Most respondents favored the proposal. Similar concerns of quality of side street operations and a traffic study were noted.
- **Other traffic signal or roundabout locations:** Potential locations include Lafayette Boulevard/Young Street, Lafayette Boulevard/Redwood Avenue, and low volume side-streets intersecting Lafayette Boulevard (for roundabouts).
- **Median on Lafayette Boulevard:** An overwhelming majority of respondents desired to have a landscaped median along Lafayette Boulevard between US 1 and Blue-Gray Parkway. The minority preferred no median or a concrete median.
- **Gateways:** These were preferred first at the battlefield and cemetery and then at the other locations including several write-ins for the train station. Treatments desired at these locations included landscaping, benches, historical period-type signage, an arch, and other quality aesthetic treatments.
- **Bicycle facilities:** The overwhelming majority of respondents preferred an off-street bike path or a multiuse path for the section of Lafayette Boulevard between US 1 and Blue-Gray Parkway. For downtown sections, responses were split between bike lanes and parking. There was notable concern about the loss of parking to accommodate a bike lane in downtown.
- **Transit:** Responses were well-distributed; however, there was a preference for sidewalks and shelters. Lighting was notably preferred, but not as popular as sidewalks and bus shelters.
- **Transit stop location:** More than specific locations, convenient spacing was noted as being important. Spacing recommendations ranged from ½-mile to every-other block (about ¼-mile). Also noted, there was a desire to have stops located adjacent to neighborhood entrances and commercial sites.

In addition to responses to specific questions, write-in comments included:

- Desire for “hidden driveway” signage at Adair Street
- Agreement with the Lee Drive “park gateway” road layout
- Dislike of “traffic circles” due to their potential to create bottlenecks and a preference for traffic signals as a result
- Preference of an alternative treatment to the grade separation at Blue-Gray Parkway
- Desire to keep the positive momentum going for Lafayette Boulevard enhancements
- Desire for a reduction in speed limit to 25 mph between Blue-Gray Parkway and Twin Lake Drive
- Desire for a traffic mirror at Sophia Street to improve sight distance
- Desire for good Virginia Department of Transportation (VDOT) coordination and cooperation among Spotsylvania County, Fredericksburg, and VDOT to make the plan happen
- Dislike or back-in angle parking due to experience with it in Washington, D.C.

The image shows the front page of a questionnaire titled "Lafayette Boulevard Questionnaire" with a deadline of "Comments Due by April 20, 2009". The form includes a thank-you message and instructions for participation. It contains several sections: "Name/Address Information (optional)", "About You", "The Corridor", "Gateways", "Pedestrians and Bicyclists", and "Transit". Each section contains specific questions with checkboxes for responses. For example, under "The Corridor", question 1 asks for opinions on roundabouts at three intersections. Under "Gateways", question 4 asks to select locations for gateways. Under "Pedestrians and Bicyclists", question 6 asks for preferred facilities for bicyclists. Under "Transit", question 8 asks for highest priority facilities for bus stops.

Front page of study questionnaire



# CHAPTER 2

EXISTING CONDITIONS



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## EXISTING CONDITIONS

The physical and operational characteristics of Lafayette Boulevard are as diverse as its urban form. On the north, Lafayette Boulevard is one of many urban streets serving downtown Fredericksburg. South of Blue-Gray Parkway, Lafayette Boulevard is the major street connecting US 1 and Blue-Gray Parkway. Generally livable on the north and in downtown Fredericksburg, Lafayette Boulevard south of Blue-Gray Parkway is in need of strategic modifications and enhancements to better serve the community as a whole.

Any corridor the age of Lafayette Boulevard and serving the number of purposes that it currently serves will have issues. As to Lafayette Boulevard, major issues relate to both land use and transportation and their lack of coordination. Simply stated, the pattern of land use does not complement Lafayette Boulevard and Lafayette Boulevard as a public street does not complement the uses that exist along the corridor. As the character and conditions vary widely along the approximately four-mile corridor, four distinct segments were identified to capture the changing character and conditions of Lafayette Boulevard.

### SOPHIA STREET TO SUNKEN ROAD

Development in downtown Fredericksburg began in the early 1700s when it was founded as a port for Spotsylvania County along the Rappahannock River. In the early years of the city, the river was a prominent organizer of growth. Later, proximity to the railroad, the introduction of the automobile, and the completion of US 1 and the interstate system steered the city's growth. The section of Lafayette Boulevard from Sophia Street to Sunken Road is currently characterized by the following:

- Pre-war street pattern
- Small parcels and closely spaced buildings
- Relatively dense development
- Highly mixed land uses
- Some historic buildings fronting the street
- Some inappropriate uses/urban forms
- Some residential and commercial blight—need for redevelopment
- Pedestrian scale development and streetscapes
- VRE/Amtrak train station
- Interconnected intersecting street network
- Extensive sidewalk network
- Two- and three-lane street section
- Frequent crosswalks
- Frequent traffic signals
- 10,000 to 11,000 vehicles per day
- Little traffic congestion
- Low vehicle speeds
- Pedestrian friendly conditions
- 25 mph posted speed limit
- Curb and gutter



*On-street parking is intermittent. Development forms vary from block-to-block in the downtown area.*



*Throughout the downtown section of Lafayette Boulevard, the street is two lanes and there are sidewalks in most locations.*



*Approaching downtown on Lafayette Boulevard at Kenmore Avenue. The corridor in this section has sidewalks, two travel lanes, and frequent signalized intersections.*



# LAFAYETTE BOULEVARD CORRIDOR STUDY

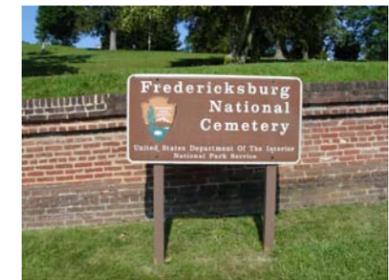
## SUNKEN ROAD TO TWIN LAKE DRIVE

This section of the Lafayette Boulevard corridor serves as the gateway into downtown Fredericksburg. Blue-Gray Parkway bisects this section of the corridor, following the Hazel Run stream valley between older and newer parts of the city. Land uses and the general urban form are less consistent through this section of Lafayette Boulevard. Nearer to Twin Lake Drive, the character is distinctly residential and low density. Traveling north, the Fredericksburg National Battlefield gives way to industrial uses fronting Lafayette Boulevard and Blue-Gray Parkway near the intersection. North of Blue-Gray Parkway, Lafayette Boulevard follows the contours of the land gaining elevation as the roadway enters downtown. Including and in addition to the aforementioned, the section of Lafayette Boulevard between Sunken Road and Twin Lake Drive is characterized by the following:

- Post-war street pattern
- Road alignment following natural topography (relatively steep hills and horizontal curves)
- Fredericksburg Battlefield Cemetery
- Fredericksburg Battlefield Park and Visitor Center
- Concentration of industrial uses/businesses adjacent to the Lafayette Boulevard/Blue-Gray Parkway intersection
- Some commercial and industrial blight—need for redevelopment
- Hazel Run
- Infrequent traffic signals
- Limited local street connectivity
- Two-lane cross section with no shoulder
- Lack of bicycle and pedestrian accommodations
- Higher vehicle speeds
- 18,000 to 20,000 vehicles per day
- Traffic congestion at the Lafayette Boulevard/Blue-Gray Parkway intersection
- Heavy traffic during peak periods
- 25 to 35 mph posted speed limit
- Some curb and gutter



The Lafayette Boulevard/Blue-Gray Parkway intersection is a major feature of this section of the corridor. It is the second largest intersection along the corridor and is a major barrier to pedestrian and bicycle connectivity. The intersection experiences considerable peak hour traffic congestion.



This section of the corridor passes through the Fredericksburg National Battlefield and National Cemetery national parks. The character in these sections is heavily influenced by the parks and is generally attractive. Lafayette Boulevard is mostly two-lane in this section.



Existing traffic signal at Twin Lake Drive and Lafayette Boulevard



Lafayette Boulevard Bridge across Hazel Run



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## TWIN LAKE DRIVE TO HARRISON ROAD

Lafayette Boulevard between Twin Lake Drive and Harrison Road exhibits the negative effects of a largely suburban growth pattern on a major public street. Frequent driveways, traffic congestion, missing sidewalks, vehicle crashes, blight, and other issues plague this section of the corridor. There are certainly pockets where these issues are not prevalent in this section of Lafayette Boulevard; however, this section would benefit tremendously from the implementation of a corridor enhancement strategy. This section of Lafayette Boulevard is largely characterized by the following:

- Post-war street pattern
- Narrow parcels fronting the street with individual driveways
- Homes relatively close to the street
- Mixture of development forms and age
- Some residential and commercial blight—need for redevelopment
- Little to no local street connectivity
- Wide separation of land uses
- Frequent intersections
- Inappropriate driveway spacing
- Lack of bicycle accommodations
- Wide driveways
- Two-lane cross section with a two-way left-turn lane
- Vehicle crashes and safety issues
- Difficulty turning left onto Lafayette Boulevard from side streets and driveways
- Intersection back-ups
- Long vehicle queues
- Higher vehicle speeds
- Heavy traffic throughout the day
- No sidewalk or crosswalks
- 20,000 to 22,000 vehicles per day
- 35 to 40 mph posted speed limit
- No curb and gutter



Overhead utility lines and signs clutter some sections of Lafayette Boulevard. As shown in the pictures, no sidewalks exist along most of the sections of Lafayette Boulevard between Twin Lake Drive and Harrison Road.

Worn paths take the place of sidewalks in this section of the corridor.



Consolidated signage and access management are not common along the corridor; however, some newer developments have consolidated driveways and signs.



The three-lane cross section is consistent along this section of the corridor. Edge conditions vary along the corridor. Newer developments along the corridor have installed curb and gutter. Most of the corridor is a shoulder section and is perforated by many individual site driveways.



## LAFAYETTE BOULEVARD CORRIDOR STUDY

### HARRISON ROAD TO JEFFERSON DAVIS HIGHWAY

This section of Lafayette Boulevard is as equally challenging as the previously discussed section. Larger scale commercial development dominates this section of the corridor. Correspondingly, traffic volumes are higher in this section than others and operational issues are more acute. Although much of the land uses in this section of the corridor are commercial, residential uses remain and are visible as the corridor approaches Harrison Road. The suburban development pattern of adjoining sections of Lafayette Boulevard continues in this section. This section of Lafayette Boulevard is largely characterized by the following:

- Post-war street pattern
- Combination of larger properties with shared entrances and smaller parcels fronting the street with individual driveways
- Significant commercial uses fronting the street
- Larger box/scale development
- Mixture of development forms and age
- Some residential and commercial blight—need for redevelopment
- Some local street connectivity
- Wide separation of land uses
- Frequent intersections
- Inappropriate driveway spacing
- Lack of bicycle accommodations
- Wide driveways
- Two- to four-lane cross section with a two-way left-turn lane and occasional right-turn lanes
- Inconsistent shoulder/curb and gutter treatment
- No sidewalk or crosswalks
- Difficulty turning left onto Lafayette Boulevard from side streets and driveways
- Intersection back-ups at major signalized intersections
- Long vehicle queues
- Higher vehicle speeds
- Vehicle crashes and safety issues
- Heavy traffic throughout the day
- 20,000 to 22,000 vehicles per day
- 40 mph posted speed limit
- Curb and gutter



*The majority of Lafayette Boulevard between Harrison Road and Jefferson Davis Highway is bordered by larger-scale commercial uses.*



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## VEHICULAR CONDITIONS

### STREET NETWORK

The street network along much of Lafayette Boulevard, outside of downtown Fredericksburg is not well connected. As a result, all trips must be carried on Lafayette Boulevard, which adds to traffic congestion, limits overall mobility, and guides most major points of access onto Lafayette Boulevard. The combination of these conditions strains the corridor and in some cases reduces its vehicle carrying capacity.

### DAILY TRAFFIC

Lafayette Boulevard serves many, and often competing travel purposes. This places significant strain on the corridor throughout the day and during weekday peak travel periods in the morning and evening. Streets that are largely commuter-only routes experience a dramatic increase in traffic at the onset of the morning and evening peak hours and then a corresponding decrease in traffic after the peaks. Lafayette Boulevard's daily traffic profile is different. Traffic volumes increase steadily in the morning and then remain high—at times near the corridor's vehicle carrying capacity—through the evening peak period. From a public point-of-view, the road appears busy all day with a somewhat noticeable increase in traffic and congestion corresponding with the peak commute hours.

**Figure 2.1** illustrates 2008 average daily traffic (ADT) volumes on Lafayette Boulevard as well as peak hour turning movement volumes at key intersections. As shown in **Figure 2.1**, Lafayette Boulevard between Harrison Road and Blue-Gray Parkway experiences the highest volumes of traffic with approximately 22,500 vehicles per day. Between Harrison Road and Jefferson Davis Parkway, traffic volumes are similar at approximately 21,800 vehicles per day. Traffic volumes in downtown Fredericksburg were significantly less than in other sections—at approximately 11,000 vehicles per day.

### INTERSECTION OPERATIONS

Existing intersection levels of service were computed and crash history was reviewed for Lafayette Boulevard. Level of service (LOS) rating is used to describe vehicular operating conditions for streets and intersections. The *Highway Capacity Manual* (HCM) defines six levels of service, LOS A through F, with A being the best and F the worst. According to the HCM, capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a fixed time duration. Whereas LOS A is defined by little to no delay at a street or intersection, LOS E is defined by significant traffic congestion and at-capacity conditions. In most urbanized and developed areas, operations of LOS D or better are generally considered acceptable.

LOS analyses for this study were performed using the Synchro Software Package, which uses methodologies contained in the HCM. While some road segments experience delay and congestion, traffic safety and congestion concerns are most acute at intersections. **Figure 2.2** shows existing laneage and levels of service at

signalized intersections in the study corridor. Intersection levels of services also are shown in **Table 2.1**.

**Table 2.1: Existing Intersection Levels of Service**

Intersection	AM Peak Hour	Mid-Day Peak Hour	PM Peak Hour
Jefferson Davis Highway/Lafayette Boulevard	D	C	D
Harrison Road/Lafayette Boulevard	B	B	C
Twin Lake Drive/Lafayette Boulevard	A	C	B
Blue-Gray Parkway/Lafayette Boulevard	D	C	D
Kenmore Avenue/Lafayette Boulevard	B	B	B
Charles Street/Lafayette Boulevard	A	A	A
Princess Anne Street/Lafayette Boulevard	B	A	A
Caroline Street/Lafayette Boulevard	B	B	B

Source: Kimley-Horn and Associates, Inc, 2008

As shown in **Figure 2.2** and **Table 2.1**, some intersections were found to operate at unacceptable levels of service. For these intersections, potential mitigation measures were considered to improve traffic operations. These mitigation measures are intended to serve as a starting point for future corridor modifications and may not be constructed.

### JEFFERSON DAVIS HIGHWAY/LAFAYETTE BOULEVARD

This signalized intersection operates at LOS D during the weekday a.m. and p.m. peak hours and LOS C during the mid-day peak hour. Left-turn movements experience significant delay at this intersection. Significant traffic turns left from Lafayette Boulevard (both approaches) onto Jefferson Davis Highway. In the short-term, the construction of an additional left-turn lane on Lafayette Boulevard would reduce overall intersection delay by allowing a more efficient allocation of green time to critical movements. In the long-term a combination of additional turn lanes, through lanes, and signal retiming will be necessary to maintain acceptable intersection operations.

### HARRISON ROAD/LAFAYETTE BOULEVARD

This signalized intersection operates at LOS B during the weekday a.m. and mid-day peak hours and LOS C during the p.m. peak hour. To improve operations at this intersection, additional lanes are needed on Harrison Road. In the long-term, widening Lafayette Boulevard and Harrison Road would further improve operations at the intersection.

### BLUE-GRAY PARKWAY/LAFAYETTE BOULEVARD

This signalized intersection operates at LOS C during the weekday mid-day peak hour and LOS D during weekday a.m. and p.m. peak hours. Significant delays are experienced in all left-turn movements and for through vehicles on Lafayette Boulevard. Short-term modifications will have little benefit to this intersection. To efficiently increase capacity will require additional through capacity—widening—to be provided on Lafayette Boulevard and Blue-Gray Parkway.



Dead-end streets along Lafayette Boulevard place strain on the corridor forcing it to carry local and non-local traffic.

## CRASH INFORMATION

Crash data was obtained from the Virginia Department of Transportation (VDOT) for this study for Spotsylvania County. Data was not available at the beginning of the study from the City of Fredericksburg, but is being obtained. For this study, four years of data—2004 to 2007—was provided by VDOT. It is important to note that crash data includes only reported crashes. Many minor crashes go unreported and are not included in the following summaries and evaluation.

As it would be expected, the highest volumes sections of Lafayette Boulevard also experienced the most frequent crashes. The Jefferson Davis Highway/Lafayette Boulevard intersection and the segment of Lafayette Boulevard between Jefferson Davis Highway and Southgate Avenue both experienced the highest crash frequency. Additional crash information is summarized in **Tables 2.2** and **2.3**.

**Table 2.2: Crash Frequency at Intersections**

Rank	Intersection	Frequency (Crashes/Year)
1	Jefferson Davis Highway/Lafayette Boulevard	17
2	Falcon Drive/Lafayette Boulevard	5
3	Harrison Road/Lafayette Boulevard	4

Data Source: Virginia Department of Transportation (2004 to 2007)

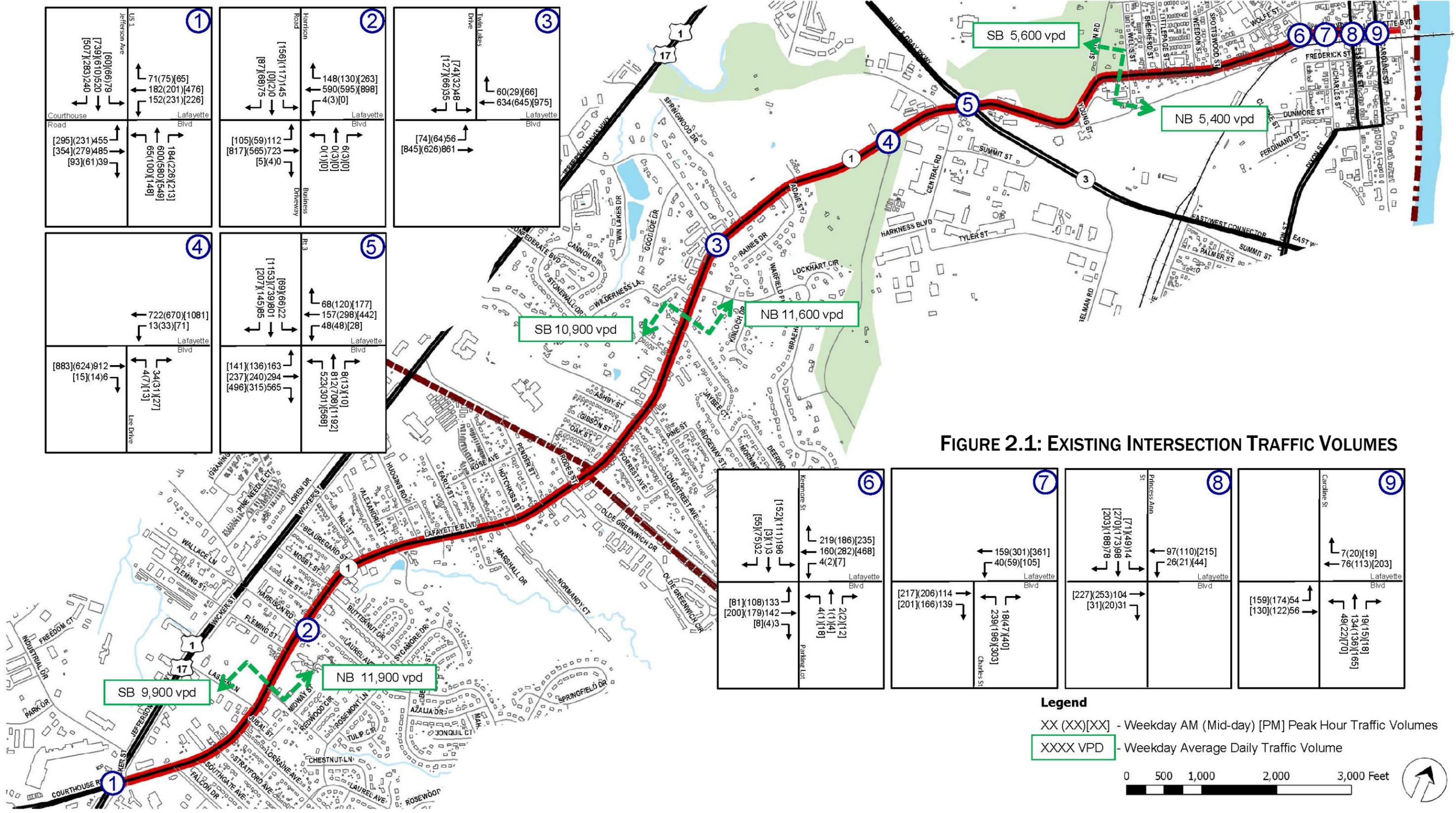
**Table 2.3: Crash Frequency on Road Segments**

Rank	Intersection	Frequency (Crashes/Year)
1	Jefferson Davis Highway to Southgate Avenue	6
2	Pender Drive to Olde Greenwich Drive	4
3	Fleming Street to Harrison Road	3

Data Source: Virginia Department of Transportation (2004 to 2007)



# LAFAYETTE BOULEVARD CORRIDOR STUDY

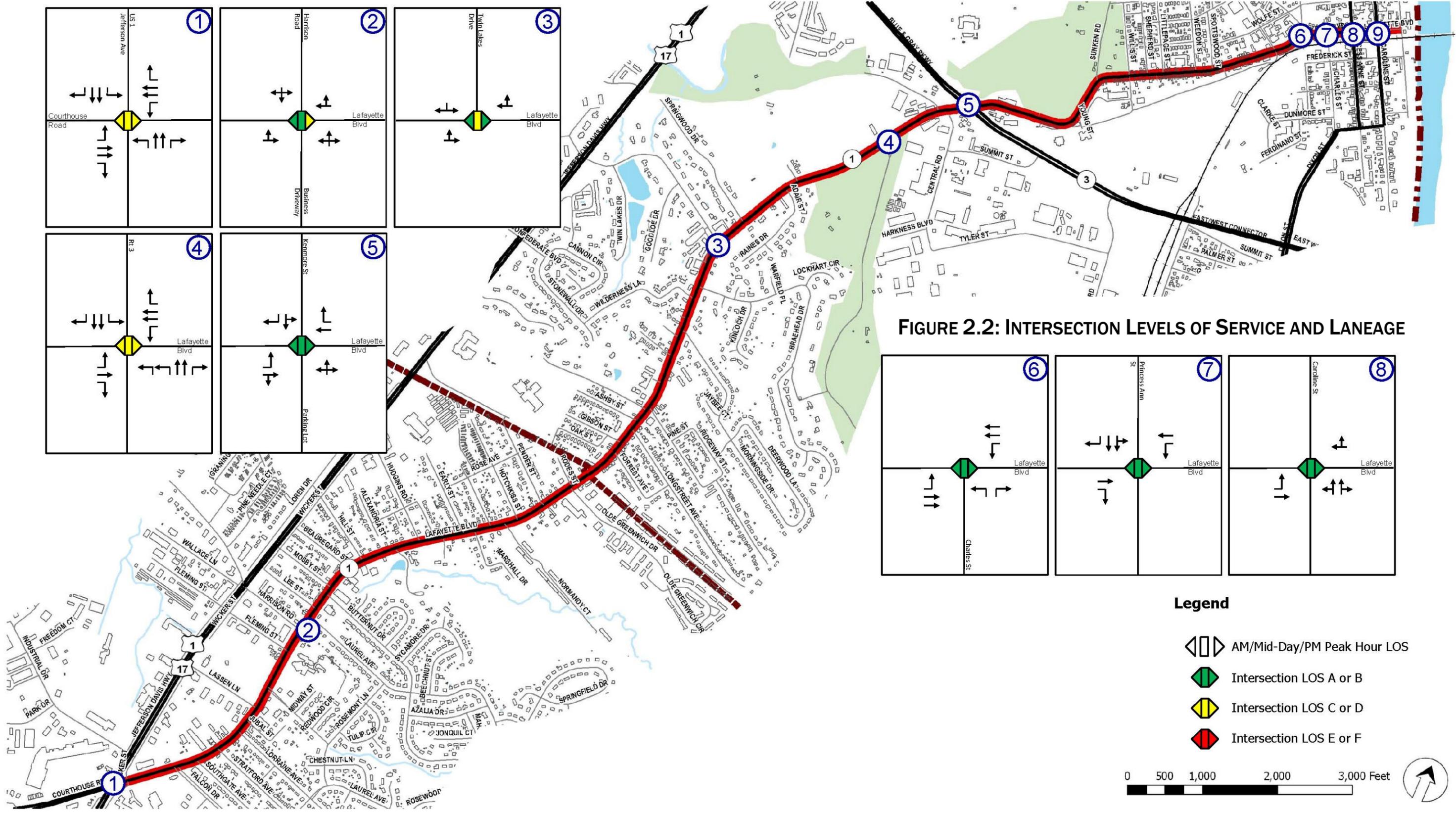


<p><b>1</b></p> <p>Jefferson Ave [60](66)79 [739](610)520 [507](285)240</p> <p>Courthouse Road [295](231)455 [354](279)485 [93](61)39</p> <p>Lafayette Blvd [184](226)213 [600](580)549 [65](100)148]</p>	<p><b>2</b></p> <p>Harrison Road [156](117)145 [101](2)0</p> <p>Lafayette Blvd [148](130)263 [590](595)898 [4](3)0]</p> <p>Business Driveway [105](59)112 [817](565)723 [5](4)0</p>	<p><b>3</b></p> <p>Twin Lakes Drive [74](32)48 [127](6)35</p> <p>Lafayette Blvd [60](29)[66] [634](645)975]</p> <p>Lafayette Blvd [74](64)56 [845](626)861</p>
<p><b>4</b></p> <p>Lafayette Blvd [722](670)1081 [13](33)71]</p> <p>Lee Drive [883](624)912 [15](14)6</p> <p>Lee Drive [34](3)27 [4](7)13]</p>	<p><b>5</b></p> <p>Rt 3 [69](66)22 [153](73)981 [207](145)95</p> <p>Lafayette Blvd [68](120)177 [157](298)442 [48](48)28]</p> <p>Lafayette Blvd [81](3)10 [812](708)1192 [523](301)568]</p>	

<p><b>6</b></p> <p>Keenore St [152](111)196 [33](1)3 [55](7)32</p> <p>Lafayette Blvd [219](186)235 [160](282)468 [4](2)7]</p> <p>Partlow Lot [81](108)133 [200](179)142 [8](4)3</p>	<p><b>7</b></p> <p>Lafayette Blvd [159](301)361 [40](59)105]</p> <p>Charles St [184](7)40 [239](196)303]</p>	<p><b>8</b></p> <p>Princess Ann St [71](49)14 [270](173)98 [203](189)78</p> <p>Lafayette Blvd [97](110)215 [26](21)44]</p> <p>Lafayette Blvd [227](253)104 [31](20)31]</p>	<p><b>9</b></p> <p>Caroline St [7](20)19 [76](113)203]</p> <p>Lafayette Blvd [159](174)54 [130](122)56]</p> <p>Lafayette Blvd [19](15)181 [134](136)165 [49](22)70]</p>
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# LAFAYETTE BOULEVARD CORRIDOR STUDY





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## PEDESTRIAN AND BICYCLE CONDITIONS

In addition to reviewing existing vehicular and transit conditions on Lafayette Boulevard, pedestrian and bicycle conditions were reviewed. The corridor was assessed for network connectivity and consistency, level of comfort for pedestrians and bicycles, and compliance with standards set under the Americans with Disabilities Act (ADA).

## NETWORK CONNECTIVITY AND CONSISTENCY

Encouraging bicycling and walking for recreational and commuting purposes hinges on creating a network of sidewalks and bicycle facilities that connect people to various origins and destinations. In addition, adding places for people to lock or store their bicycles at key locations improves the overall environment for bicycling.

Places that have been successful in improving public health by getting residents to replace automobile trips with alternative modes of transportation have done so by integrating bicycling and walking into the existing transportation network. Fredericksburg achieves this along the Lafayette Boulevard corridor by providing bicycle parking at the train station and through front mounted bicycle racks on Fredericksburg Regional Transit (FRED) vehicles

While there are numerous destinations for bicyclists along Lafayette Boulevard, there are no facilities or street markings. There are “Share the Road” signs near Willis Avenue and Lee Drive, along with a route marker for the Interstate Bicycle Route 1 at Lee Drive, but no facilities to accommodate bicyclists.

Primarily in downtown Fredericksburg, the sidewalks are relatively consistent in design and location. To the south of Sunken Road there are generally not sidewalks. Field observations revealed a system of informal paths along many sections of Lafayette Boulevard where people were observed to walk. A notable challenge to pedestrian and bicycle connectivity, the Lafayette Boulevard/Blue-Gray Parkway intersection experiences significant vehicular volumes. To accommodate traffic volumes, right turns generally run free and there are many vehicle lanes pedestrians must cross. Under the current geometric condition, it is very difficult to cross the intersection safely on-foot and for most bicyclists.

## LEVEL OF COMFORT FOR PEDESTRIANS

Despite the lack of sidewalks and formal pedestrian facilities, with the exception of crossing Blue-Gray Parkway, it is possible to walk along the majority of Lafayette Boulevard. Worn paths and pedestrians were observed in areas where there were not sidewalks; however, these sections of the corridor are entirely unusable for children, the elderly, and people with visual or mobility impairments.

## CHALLENGING LOCATIONS

The Lafayette Boulevard/Kenmore Avenue intersection is another example of an intersection that is difficult to understand and navigate as a pedestrian. On every leg it is unclear where to cross, when to cross, and in which direction to look before

crossing. Similarly, the Charles Street intersection is unmarked and confusing for pedestrians.

South of Sunken Road, Lafayette Boulevard is very difficult to cross. There are no pedestrian crossings and few traffic control devices (signals and stop signs) to create gaps in traffic to allow people to cross the street. Several pedestrians were observed crossing Lafayette Boulevard between traffic signals using the two-way left-turn lane as a refuge.

Sidewalks that are continuous, relatively straight, at least five feet wide, and with curb ramps are the most basic measure of walkability of an area. Next on the list is a series of crossing opportunities—signals, refuge islands, and medians. None of these are present along Lafayette Boulevard, placing pedestrians at a disadvantage to motorists.

The number and design of cuts or driveways over the sidewalk greatly influences walking. From Caroline Street to Willis Street, the curb cuts are well designed and spaced in a manner that allows access at one point. After the Battleground Visitor’s Center a new style of driveway develops where the area that would be a sidewalk is one enormous driveway allowing people to enter at any angle, park anywhere, and do so at high speeds. South of Wallace Lane, almost every business on the west side of the street has numerous, wide access points. Narrowing driveways reduces the chance of conflicts between pedestrians and bicyclists and forces motorists to pull into the driveway at slower rates of speed.

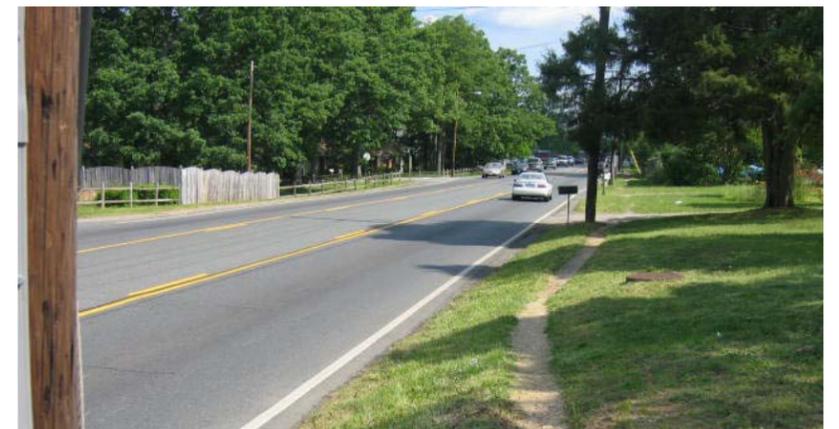
Motor vehicle traffic obviously plays a big role in how comfortable people are outside of their cars. Speed is the primary factor in the level of comfort of other road users, followed by vehicle mix or type, and vehicle volume. This is why, for example, transportation planners try to route trucks through non-residential streets and to focus traffic calming measures on residential streets and near schools. Motorists on Lafayette Boulevard generally drove the speed limit near the train station, but increased in speed closer to the Blue-Gray Parkway. The highest speeds were near Lee Drive where motorists were generally driving at least 10 to 15 mph above the 35 mph speed limit, as tracked in an automobile traveling with the speed of traffic. The vehicle mix included many large private vehicles, though few large commercial vehicles.



*Conditions are challenging at Charles Street due to the intersection configuration and lack of pavement markings for pedestrians.*



*Conditions for walking deteriorate outside of downtown Fredericksburg. Source: Nelson\Nygaard Consulting Associates, 2009*



*Informal paths exist in many places along Lafayette Boulevard where there are no sidewalks, but these are not suitable for children, older adults or persons with visual and mobility impairments.*

*Source: Nelson\Nygaard Consulting Associates, 2009*



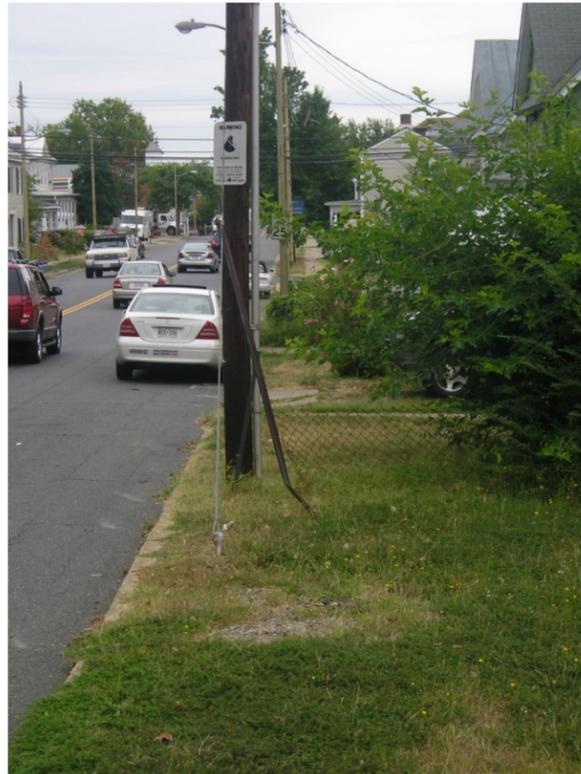
*Conditions are challenging at Kenmore Avenue due to the intersection configuration and lack of pavement markings for pedestrians.*



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## ADA COMPLIANCE

ADA guidelines are regulatory minimum design standards which guide sidewalk width, curb ramp slope and tactile landings, and driveway design. Currently, sidewalks are mostly limited to the portions of Lafayette Boulevard between Sophia Street and Willis Avenue and a one-block portion at Fleming Street. Where sidewalks exist they appear to be in compliance with minimum ADA standards. Many of the curb ramps, especially adjacent to newer development incorporated tactile warning strips in their construction.



*A block near downtown with no sidewalk and a chain-link fence that prevents people from walking anywhere but the street.  
Source: Nelson \Nygaard Consulting Associates, 2009*



*Approaching Blue-Gray Parkway no sidewalks are provided.  
Source: Nelson \Nygaard Consulting Associates, 2009*



*The Blue-Gray Parkway/Lafayette Boulevard intersection is a major obstacle for pedestrians and bicycles in the corridor.  
Source: Nelson \Nygaard Consulting Associates, 2009*



## LAFAYETTE BOULEVARD CORRIDOR STUDY

### LEVEL OF COMFORT FOR BICYCLES

People are likely to ride their bicycle for short trips, typically of less than five miles in length. For trips of more than five miles people tend to consider other travel options such as driving or taking transit. After the consideration of travel distance, major factors influencing a person's decision to bicycle include the flatness of the terrain, climate/weather, perceived safety of the route, and if there is a place to safely secure a bicycle upon arrival.

Between Sophia Street and Sunken Road, Lafayette Boulevard is generally flat and with a degree of openness that allows motorists and bicyclists to make eye contact at intersections and points of conflict. Between Sunken Road and Twin Lake Drive, Lafayette Boulevard narrows considerably and experiences two considerable grade changes leading to and from Blue-Gray Parkway. Between Twin Lake Drive and US 1, Lafayette Boulevard is relatively flat and development is set-back sufficiently to provide reasonable sight lines.

Similar to the assessment of walkability, the assessment of bicycling conditions is influenced by the activities within the space shared by motorists and bicycles. Conditions affecting bicycling conditions negatively along Lafayette Boulevard include:

- Vehicles traveling at speeds higher than posted speed limits
- Numerous driveways
- High traffic volume
- Lack of facilities
- Lack of bicycle parking
- Lack of bicycle traffic



*Conditions in downtown Fredericksburg are reasonable for cyclists; however, south of downtown conditions are unsuitable for most cyclists.*  
Source: Nelson \Nygaard Consulting Associates, 2009



*The worn paths along Lafayette Boulevard serve cyclists as well as pedestrians.*  
Source: Nelson \Nygaard Consulting Associates, 2009

### SUMMARY OF DEFICIENCIES FOR PEDESTRIANS AND BICYCLES

Bicycling and walking conditions vary widely along Lafayette Boulevard. Conditions are relatively good in downtown Fredericksburg and very poor south of downtown. Generally, the corridor is difficult to use from a pedestrian and bicyclist perspective, particularly south of Willis Street. Lack of sidewalks, bicycle facilities, high vehicle speeds, high traffic volumes, and numerous driveways all contribute to the corridor being challenging to most pedestrians and bicyclists. Even in downtown where there are sidewalks, conditions could be improved. The lack of sidewalks and safe crossing locations along Lafayette Boulevard south of Willis Street makes it difficult for anyone to walk from place-to-place along the corridor.

Including downtown Fredericksburg, for Lafayette Boulevard to become pedestrian and bicycle friendly will require a combination of the installation of facilities and a transition in uses along the corridor.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## TRANSIT CONDITIONS

Lafayette Boulevard is served by FRED Route F3 Fredericksburg, which operates between FRED Central and Massaponax. As shown in **Figure 2.3**, this route operates on Lafayette Boulevard from Jackson Street to Falcon Drive. The F3 service operates on weekdays from 7:30 a.m. to 8:30 p.m. Service operates on 60-minute headways with departures from FRED Central at 30 minutes past each hour and from the southern end of the route at Lee's Hill Center on the hour. Route F3 carries approximately 20,000 riders per year, or 155 on each weekday. It is FRED's third highest ridership route.

In addition to Route F3, three other FRED routes serve Lafayette Boulevard and connect with Route F3. These routes are Route C2 (Caroline County), Route K1 (King George County), and Route K2 (King George County). Each of these routes operates on long headways (excess of one-hour). These routes do not have timed-transfers with Route F3.

The most significant transit connections to Route F3 are provided at its two ends, which are FRED Central and the Capital One complex. On the north, Route F3 operates to and from FRED Central, which is the hub for most FRED services. At FRED Central, connections are available to the following:

- Route C2: Caroline County that operates to and from Caroline County
- Route K1: King George County that operates to King George County
- Route F1: Fredericksburg that operates to and from the Central Park/Celebrate Virginia area
- Route F2: Fredericksburg that operates to and from Massaponax on Route 1 and connects with Route F3 at its southern end
- Route F4: Fredericksburg that operates between Central Park and Sylvania Heights using FRED Central and Dixon Street/Tidewater Trail
- Route D2: Stafford County South that operates to Warrenton Road

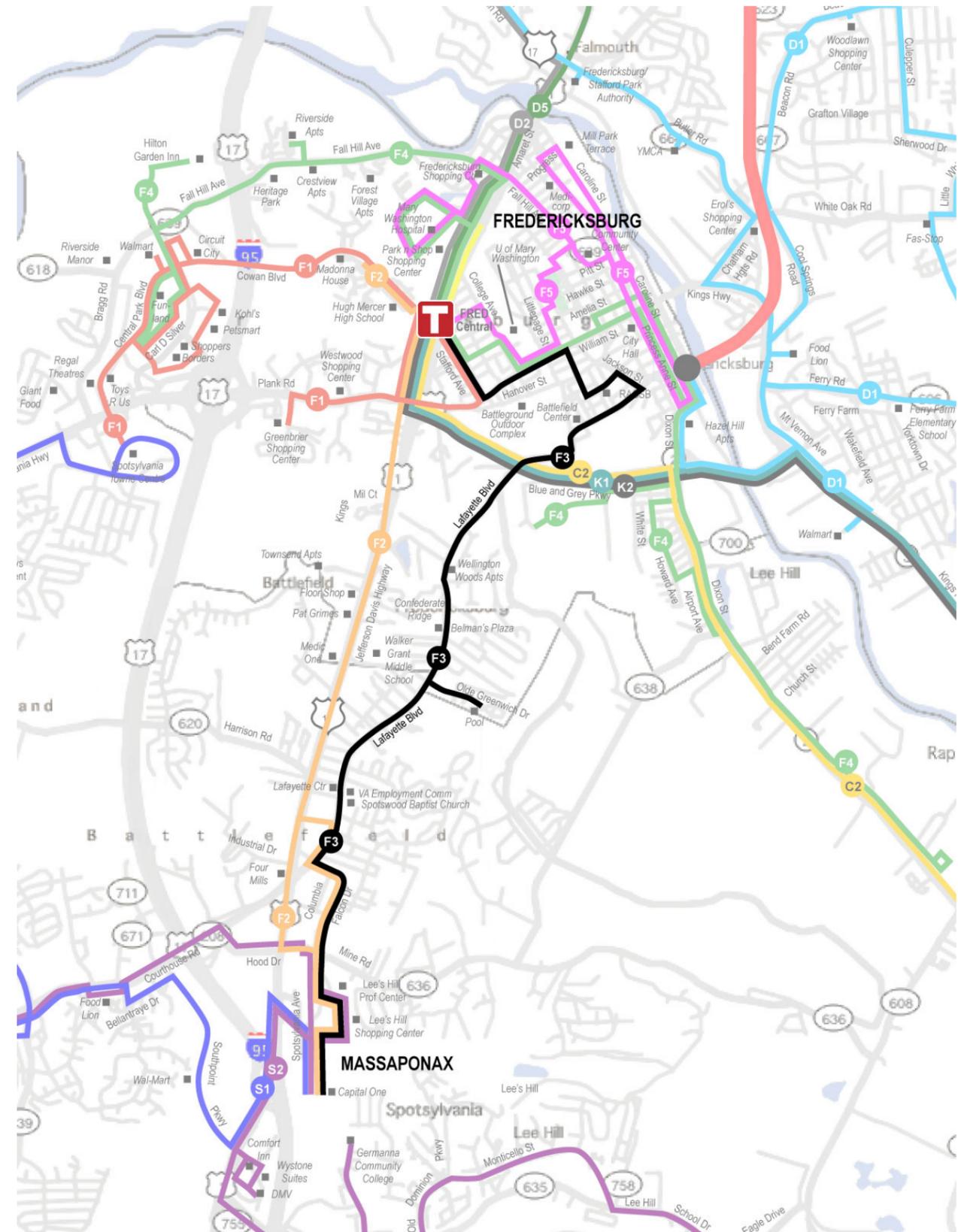
At its southern end in Massaponax, Route F3 connects with:

- Route F2: Fredericksburg that operates to Fredericksburg along Route 1
- Route S1: Spotsylvania County that operates to the Spotsylvania Mall via Harrison Road, Mine Road, and Route 3
- Route S2: Spotsylvania County that operates between Spotsylvania Courthouse and Route 17 via Massaponax

Bus stops are located with regularity along the study section of Lafayette Boulevard. Only a few of the stops provide information to patrons about where the bus is going and when it will show up. Further, facilities such as benches and shelters are not provided at any location. While some people may view benches, information, and shelters as optional or enhancement amenities, for the transit patron, they are essential facilities and should be provided at most bus stops. Similarly, the lack of sidewalks along Lafayette Boulevard is a general discouragement for prospective transit patrons.



FRED bus stop with no posted route information or amenities.  
Source: Nelson\Nygaard Consulting Associates, 2009



**Figure 2.3: Existing Route F3 Service in the Lafayette Boulevard Corridor**  
Source: Nelson\Nygaard Consulting Associates, 2009



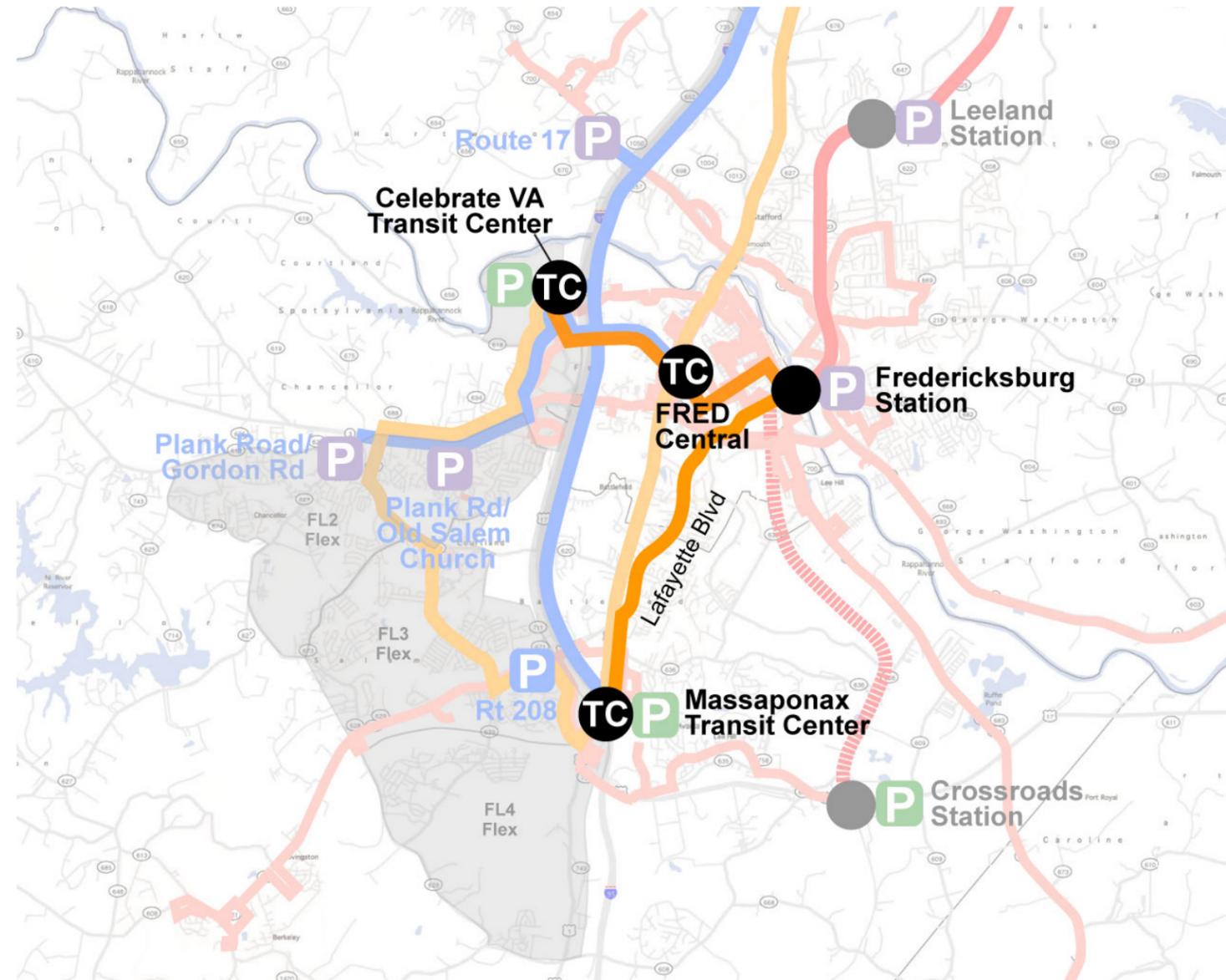
# LAFAYETTE BOULEVARD CORRIDOR STUDY

## POTENTIAL TRANSIT IMPROVEMENTS

The *Transit Needs Plan* that was developed as part of the *Long-Range Transportation Plan* identifies a number of improvements to regional transit services. These include the development of a system of transit centers and a supporting system of regional bus routes to serve as the spine of an expanded system. As envisioned by the *Transit Needs Plan*, one of the regional routes would operate along Lafayette Boulevard. As shown in **Figure 2.4**, this route would run between a new Massaponax Transit Center, Fredericksburg Station, FRED Central, and a new Celebrate Virginia Transit Center.

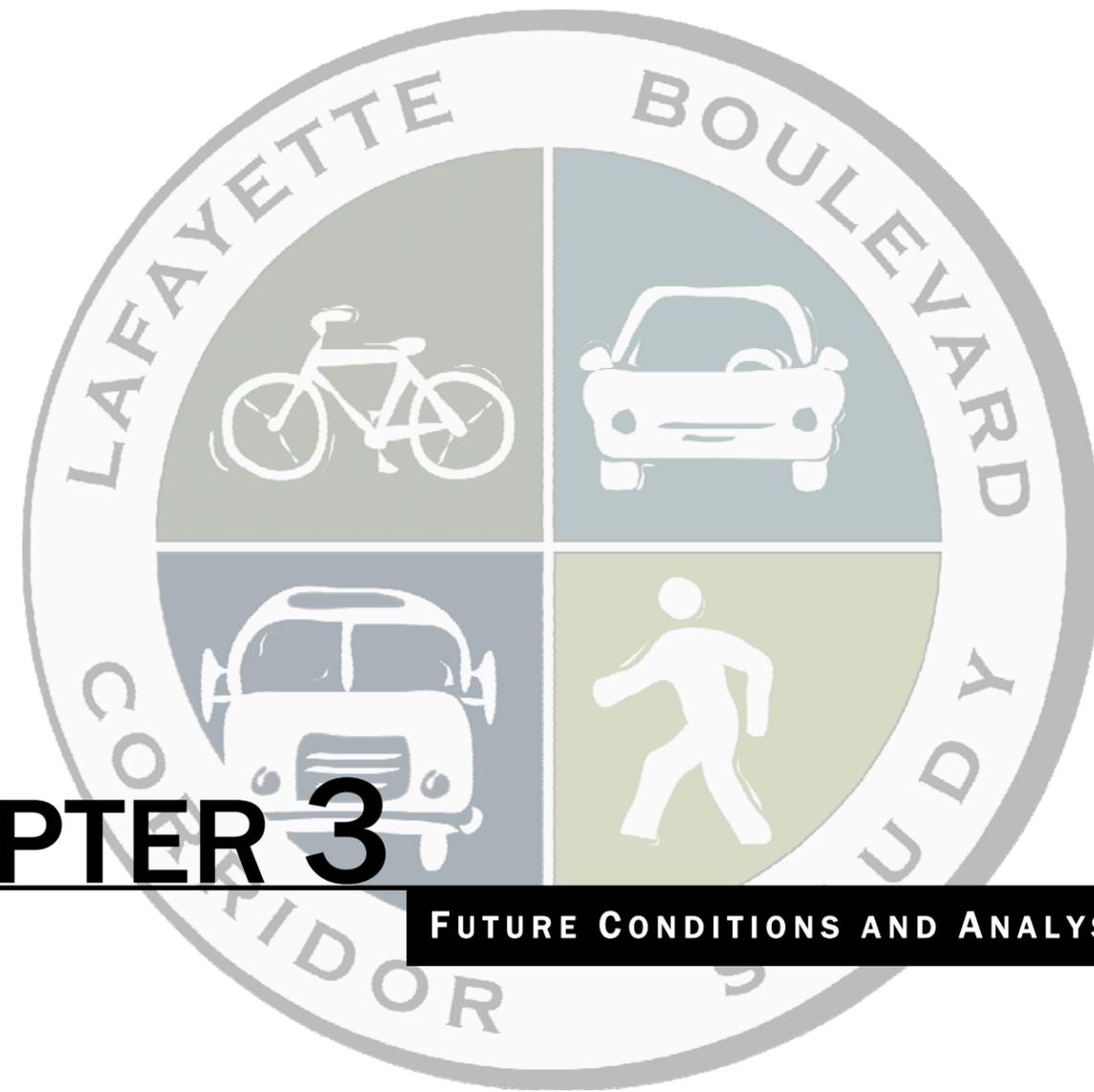
The *Transit Needs Plan* envisions that this new route, which would replace the existing Route F3, would operate six days a week (Monday through Saturday), every 30 minutes from 6:30 a.m. to 8:30 p.m. The *Constrained Transit Plan*, which matched proposed services to the amount of revenue that is anticipated to be available, also proposes this route with the same days and span of service, but with service frequencies scaled back to every 60 minutes.

It should be noted that in addition to the Saturday service and the longer hours of service, this proposed route would provide direct service to downtown Fredericksburg, VRE, and Central Park. The proposed new regional route would provide direct service to three important destinations, as well as provide connections to additional routes at transit centers. To improve service in the Lafayette Boulevard corridor prior to implementation of more extensive regional transit improvements, similar improvements could be made to the existing Route F3 service. Specifically, Route F3 could be realigned at its northern end to operate to and from FRED Central via Fredericksburg Station and downtown Fredericksburg.



**Figure 2.4: Transit Needs Plan Regional Route in Lafayette Boulevard Corridor**

Source: Nelson\Nygaard Consulting Associates, 2009



# CHAPTER 3

FUTURE CONDITIONS AND ANALYSIS



## FUTURE CONDITIONS

During the next 25 years there will be significant increases in population and employment in Fredericksburg and Spotsylvania County as well as in other parts of the George Washington Region. Impacts of population and employment growth will be experienced in many different forms and among those, as increased travel demand. To support future increases in travel by all modes of transportation will require physical and policy actions at many scales, including at the corridor and intersection level.

From a multimodal travel perspective, Lafayette Boulevard will need to accommodate increases in local and regional traffic as well as move pedestrians, bicyclists, and buses. To accommodate projected increases in travel demand, the eventual implementation of a combination of the following will be required:

- **Transportation system management:** Address existing geometric and capacity deficiencies; consolidate and remove unnecessary driveways; restrict the location of new driveways; improve signal timing/coordination (where signals will exist) to maximize corridor capacity based on variation of vehicular demand; consider non-traditional intersection treatments such as roundabouts; and accommodate non-vehicular users through the construction of sidewalks, crosswalks, and bikeways.
- **Intersection modification:** Install/designate exclusive turn lanes at key locations to improve intersection efficiency, consider non-traditional intersection treatments such as roundabouts, and provide appropriate pedestrian crossing treatments and amenities. At major intersections, consider measures such as grade separations to preserve corridor efficiency.
- **Widening (add through lanes):** Provide additional through lanes along portions of the corridor in conjunction with bicycle, pedestrian, and transit facilities.
- **Street interconnectivity:** Improve the connectivity of the adjoining local street network along Lafayette Boulevard by strategically constructing new streets and street extensions.

## TRAVEL DEMAND MODELING

In general, regional travel demand models use land use (socioeconomic) and transportation network (street and transit networks) data to generate future person-trip forecasts. Forecasted person trips are assigned within the model to non-motorized (pedestrian and bicycle) modes, transit, and vehicle (car and truck) trips. Each trip type is assigned to a respective network (or by other means). Vehicular traffic volumes, forecasts of walking and bicycling trips, and transit ridership are generated as a result.

To understand the overall travel demand impacts of long-term population and employment growth on Lafayette Boulevard, the Fredericksburg Area Metropolitan Planning Organization (FAMPO) 3.0 model (2035 horizon year) was used through cooperation with FAMPO staff. In the George Washington Region, this model is the primary tool for developing forecasts and evaluating future travel demand for communities.

The Lafayette Boulevard corridor represents a very small portion of the overall model network. To accurately reflect transportation network conditions along the corridor, manual adjustments were made to forecasts developed by the model. Since Lafayette Boulevard and the major connecting roadways were accurately represented in the model, network adjustments were not made in the development of forecasts. Instead, effort was focused on balancing traffic volumes between parallel corridors. For Lafayette Boulevard, traffic was better balanced to reflect anticipated roadway conditions for US 1, Blue-Gray Parkway, and Lafayette Boulevard.

**Figure 3.1** shows estimated future traffic volumes at intersections and road sections for Lafayette Boulevard. As shown in the figure, traffic is forecast to be highest in the section between Blue-Gray Parkway and US 1. Forecasts are significantly lower between Sophia Street and Blue-Gray Parkway. In reviewing volumes in the model, there is a considerable volume of traffic that seems to be interested in avoiding the section of US 1 between Lafayette Boulevard and Blue-Gray Parkway and the section of Blue-Gray Parkway/William Street between US 1 and Lafayette Boulevard. Understanding this model-generated travel pattern, manual adjustments, reflected in the volumes shown in **Figure 3.1**, were made to represent a reasonable assignment of traffic to Lafayette Boulevard, US 1, and Blue-Gray Parkway.

## SCENARIOS

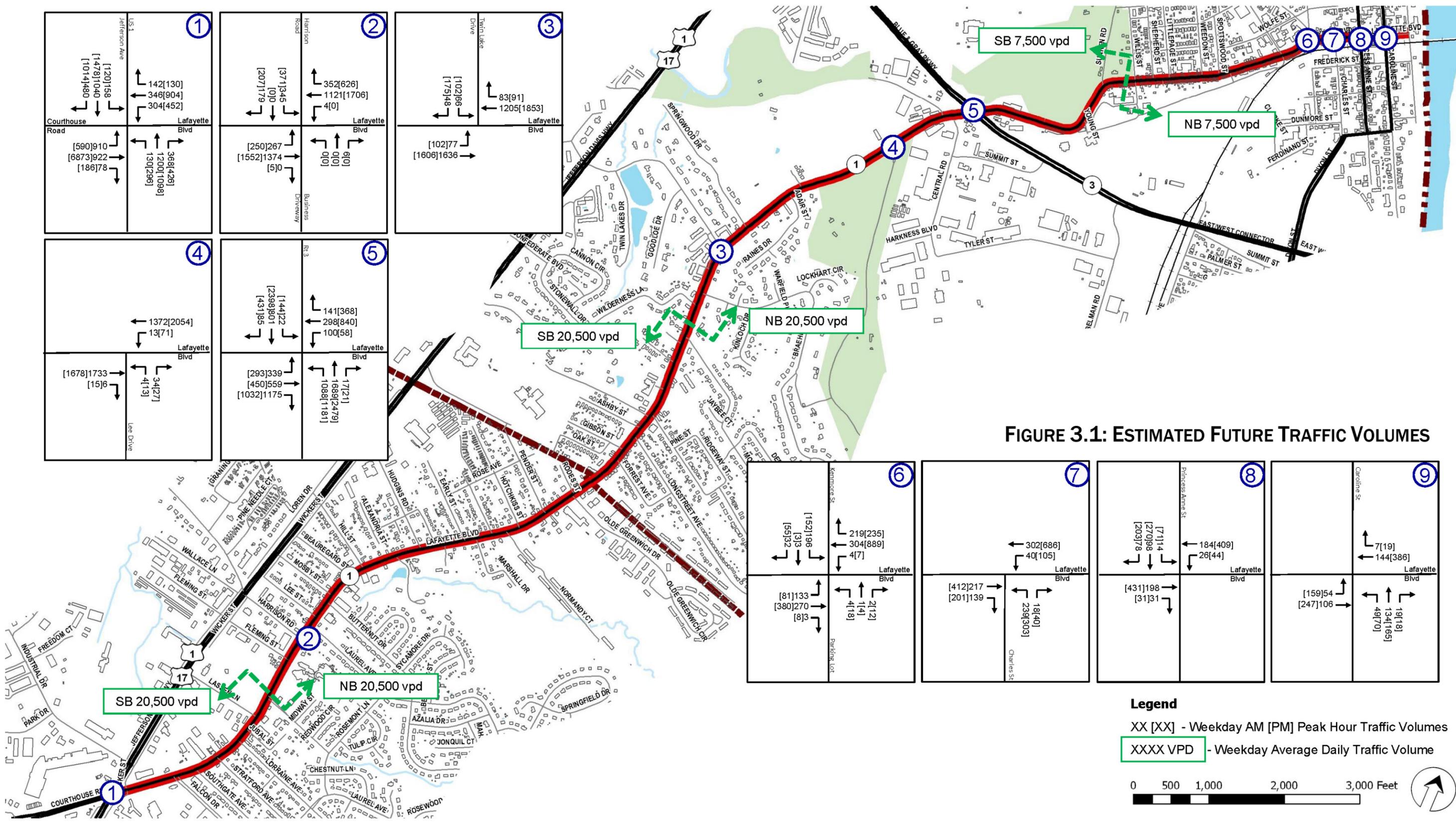
Based on the traffic volumes developed for the corridor, three scenarios were evaluated for Lafayette Boulevard. Each scenario was evaluated using an analysis model (Synchro) which considered intersection traffic control, traffic volumes, and intersection lanes. Using the model, intersection levels of service were developed and reviewed. For planning purposes, LOS D was assumed to be the threshold of acceptable traffic operations for intersections.

The following corridor modifications were consistent among the three scenarios studied:

- Alternative evaluation between the Lafayette Boulevard/Kenmore Avenue intersection as a single-lane roundabout and signalized intersection
- No widening or expansion of Lafayette Boulevard between Sophia Street and Young Street—only multimodal and streetscape enhancements
- Consideration of a roundabout at the Lafayette Boulevard/Twin Lake Drive intersection
- Modifications to the Lafayette Boulevard/Lee Drive intersection that would not negatively impact the park



# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 3.1: ESTIMATED FUTURE TRAFFIC VOLUMES**

<p><b>1</b></p> <p>Jefferson Ave</p> <p>Courthouse Road</p> <p>Lafayette Blvd</p> <p>120[158] 1478[1040] 1014[480]</p> <p>142[130] 346[904] 304[452]</p> <p>590[910] 6873[922] 186[78]</p> <p>368[428] 1200[1098] 130[298]</p>	<p><b>2</b></p> <p>Hartson Road</p> <p>Lafayette Blvd</p> <p>371[345] 0[0] 207[179]</p> <p>352[626] 1121[1706] 4[0]</p> <p>250[267] 1552[1374] 5[0]</p> <p>6[0] 0[0] 6[0]</p>	<p><b>3</b></p> <p>Twin Lake Drive</p> <p>Lafayette Blvd</p> <p>102[96] 175[48]</p> <p>83[91] 1205[1853]</p> <p>102[77] 1606[1636]</p>
<p><b>4</b></p> <p>Lafayette Blvd</p> <p>1372[2054] 13[71]</p> <p>1678[1733] 15[6]</p> <p>34[27] 4[13]</p>	<p><b>5</b></p> <p>Rt. 3</p> <p>Lafayette Blvd</p> <p>144[22] 1239[801] 431[85]</p> <p>141[368] 298[840] 100[58]</p> <p>293[339] 450[559] 1032[1175]</p> <p>17[21] 1689[2479] 1088[181]</p>	

<p><b>6</b></p> <p>Kennel St</p> <p>Lafayette Blvd</p> <p>152[196] 3[3] 55[32]</p> <p>219[235] 304[889] 4[7]</p> <p>81[133] 380[270] 8[3]</p> <p>21[2] 1[4] 4[18]</p>	<p><b>7</b></p> <p>Lafayette Blvd</p> <p>302[686] 40[105]</p> <p>412[217] 201[139]</p> <p>181[40] 239[303]</p>	<p><b>8</b></p> <p>Princess Anne St</p> <p>Lafayette Blvd</p> <p>171[14] 270[98] 203[78]</p> <p>184[409] 26[44]</p> <p>431[198] 31[31]</p>	<p><b>9</b></p> <p>Caroline St</p> <p>Lafayette Blvd</p> <p>7[19] 144[386]</p> <p>159[54] 247[106]</p> <p>19[18] 134[165] 49[70]</p>
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# LAFAYETTE BOULEVARD CORRIDOR STUDY

## SCENARIO 1: NO WIDENING OF LAFAYETTE BOULEVARD

In this scenario, Lafayette Boulevard was evaluated as a two-lane roadway with existing intersection turn lanes. The results of the analysis showed that under this scenario, the section of Lafayette Boulevard between Hazel Run and US 1 would experience failing traffic operations during the a.m. and p.m. peak hours. The inclusion of additional intersection turn lanes, traffic signals, roundabouts, and other spot-type capacity enhancements would not improve traffic operations sufficiently in the corridor between Hazel Run and US 1. Intersections would be heavily congested and contribute to substantial corridor delays, long vehicle queues, and low travel speeds.

## SCENARIO 2: WIDENING OF LAFAYETTE BOULEVARD BETWEEN US 1 AND HARRISON ROAD

In this scenario, Lafayette Boulevard was evaluated as a two-lane roadway with intersection turn lanes between Hazel Run and Harrison Road and a four-lane median divided roadway between Harrison Road and US 1. At Harrison Road, the four-lane median divided section would taper to a two-lane section (one through lane in each direction). The results of the analysis of this scenario showed that the four-lane section of Lafayette Boulevard would operate reasonably; however, queues associated with the Harrison Road intersection would affect portions of the four-lane section. The two-lane section between Hazel Run and Harrison Road would experience failing traffic operations during the a.m. and p.m. peak hours. Similar to the previous scenario, the inclusion of additional intersection turn lanes, traffic signals, roundabouts, and other spot-type capacity enhancements would not improve traffic operations sufficiently.

## SCENARIO 3 (RECOMMENDED): WIDENING OF LAFAYETTE BOULEVARD BETWEEN US 1 AND HAZEL RUN

In this scenario, Lafayette Boulevard was evaluated as a four-lane median divided roadway between Hazel Run and US 1. Similar to the previous scenarios, the section of Lafayette Boulevard between Hazel Run and Sophia Street would not be expanded. The results of the analysis shown in **Table 3.1** and **Figure 3.2** indicate that with the exception of two intersections, the corridor would operate acceptably under 2035 conditions during the a.m. and p.m. peak hours.

Several options were evaluated for the Lafayette Boulevard/Blue-Gray Parkway intersection. These consisted of additional through lanes—beyond the four-lane section—on Lafayette Boulevard and Blue-Gray Parkway and an interchange. The analysis of these options indicated that an interchange would be needed at the Lafayette Boulevard/Blue-Gray Parkway intersection to maintain adequate traffic operations.

Table 3.1: Scenario 3 (Recommended) 2035 Intersection Levels of Service

Intersection	AM Peak Hour	PM Peak Hour
<b>Lafayette Boulevard and Caroline Street (traffic signal)</b>		
NB Approach	A	A
SB Approach	A	B
WB Approach	C	C
<i>Overall Intersection</i>	<i>B</i>	<i>B</i>
<b>Lafayette Boulevard and Princess Anne Street (traffic signal)</b>		
NB Approach	A	A
SB Approach	A	A
EB Approach	C	B
<i>Overall Intersection</i>	<i>A</i>	<i>A</i>
<b>Lafayette Boulevard and Charles Street (traffic signal)</b>		
NB Approach	A	A
SB Approach	A	B
WB Approach	B	B
<i>Overall Intersection</i>	<i>A</i>	<i>B</i>
<b>Lafayette Boulevard and Kenmore Avenue (roundabout)</b>		
NB Approach	A	A
SB Approach	A	A
EB Approach	A	B
WB Approach	A	A
<i>Overall Intersection</i>	<i>A</i>	<i>A</i>
<b>Lafayette Boulevard and Blue &amp; Gray Parkway Westbound Ramps (traffic signal)</b>		
NB Approach	C	D
SB Approach	C	D
WB Approach	D	D
<i>Overall Intersection</i>	<i>D</i>	<i>D</i>
<b>Lafayette Boulevard and Blue &amp; Gray Parkway Eastbound Ramps (traffic signal)</b>		
NB Approach	A	A
SB Approach	A	A
WB Approach	E	E
<i>Overall Intersection</i>	<i>A</i>	<i>B</i>

Source: Kimley-Horn and Associates, Inc., 2009

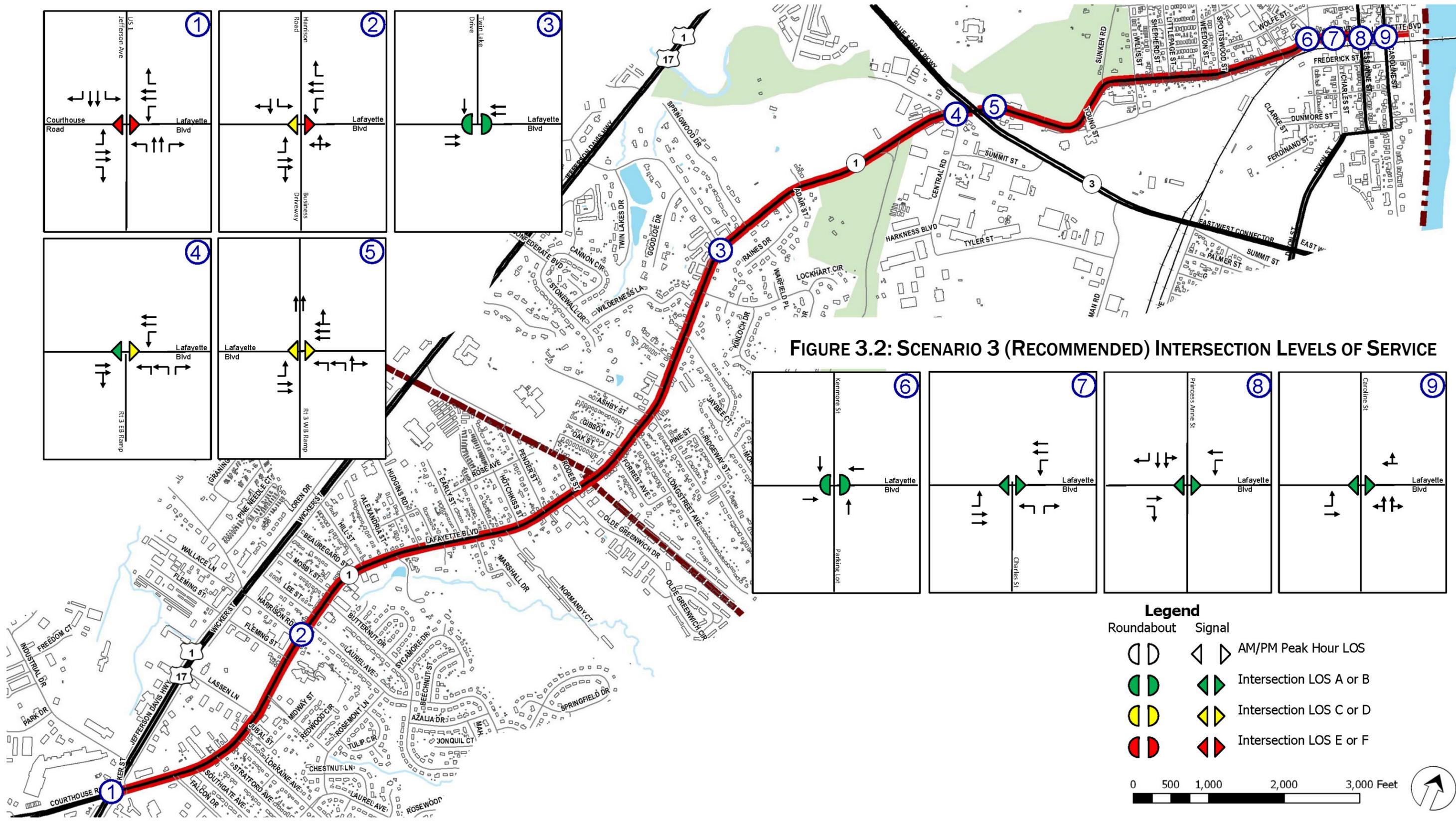
Table 3.1: Scenario 3 (Recommended) 2035 Intersection Levels of Service (continued)

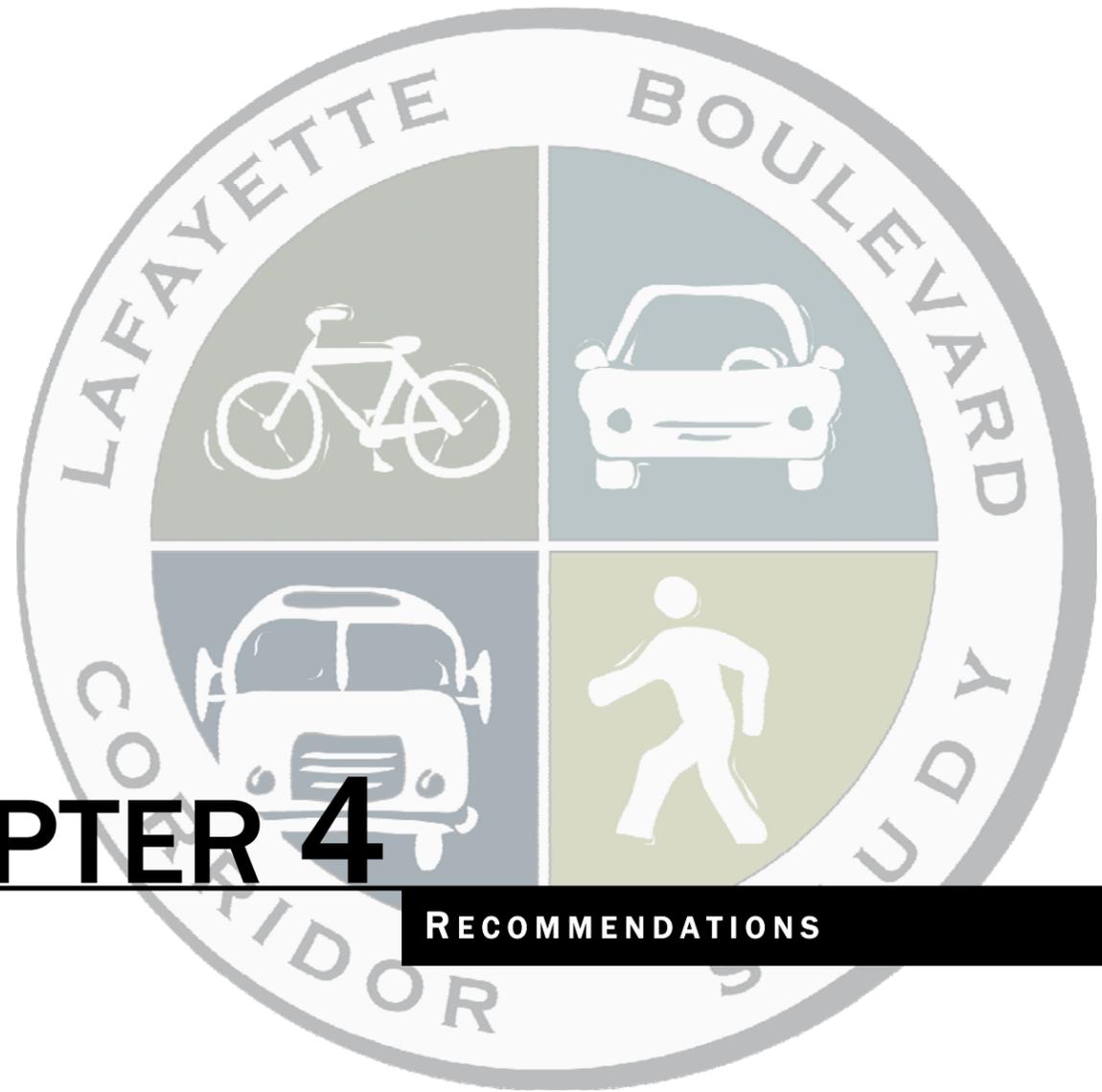
Intersection	AM Peak Hour	PM Peak Hour
<b>Lafayette Boulevard and Twin Lake Drive (roundabout)</b>		
NB Approach	A	A
SB Approach	A	B
EB Approach	D	D
<i>Overall Intersection</i>	<i>A</i>	<i>B</i>
<b>Lafayette Boulevard and Harrison Road (traffic signal)</b>		
NB Approach	C	D
SB Approach	D	F
EB Approach	E	F
WB Approach	D	A
<i>Overall Intersection</i>	<i>D</i>	<i>F</i>
<b>Lafayette Boulevard and US Route 1 (Jefferson Davis Highway) (traffic signal)</b>		
NB Approach	F	F
SB Approach	F	F
EB Approach	F	F
WB Approach	F	F
<i>Overall Intersection</i>	<i>F</i>	<i>F</i>

Source: Kimley-Horn and Associates, Inc., 2009



# LAFAYETTE BOULEVARD CORRIDOR STUDY





# CHAPTER 4

RECOMMENDATIONS



## RECOMMENDATIONS

### ABOUT THE PLAN

This chapter presents the recommended corridor concept that will accommodate future growth and improve vehicular and non-vehicular conditions along Lafayette Boulevard. The corridor concept remedies existing transportation deficiencies; enhances conditions for vehicles, pedestrians, bicycles, and transit; and accommodates future travel demand. Recommendations were prepared at a planning-level of detail using GIS base mapping and recent aerial photography as references. Recommendations in this chapter are organized into the following sections:

- Overview
- Sectional elements
- Pedestrians, bicycles, and transit

### CROSS SECTIONS

Cross sections shown for the corridor concept are typical. As more detailed design plans and drawings are prepared to implement the recommended corridor plan, it is likely that the typical roadway sections shown in this document will be fine-tuned to minimize property and built environment impacts, accommodate natural terrain, avoid unwanted negative impacts, and address other factors and considerations identified in a design process.

The cross sections shown on the pages that follow are for mid block sections of the corridor. At some intersections, additional right-of-way may be needed to accommodate transportation infrastructure and traffic control hardware. In downtown, there are likely to be slight inconsistencies between cross sections shown in the plan and existing sections due to simple inconsistency in the way that older streets have been constructed. Future street sections should match existing sections to the extent practicable.

### LOCAL STREET CONNECTIONS

New local streets shown in the plan and described in text are an illustration or depiction of a desired connection, not an engineered alignment. Many of these connections will require significant coordination and compromise to be constructed.

### UTILITIES

Overhead utilities are not specifically addressed in the corridor plan; however, they should be approached in the following manner, subject to funding availability and other factors, as the corridor is modified in the future:

- **Step 1: Consolidation.** Where funds are not available to bury or relocate overhead utilities to another corridor, efforts should be undertaken to consolidate overhead utilities to one side of Lafayette Boulevard. As a part of this



*Looking north along Lafayette Boulevard toward the train station and Sophia Street. In the foreground is the recommended Lafayette Boulevard/Kenmore Avenue roundabout. In the background the recommended streetscape is shown along with the reconfiguration of the Lafayette Boulevard/Princess Anne Street intersection.*

relocation, to the extent possible, laterals (aerial lines crossing the street) also should be consolidated.

- **Step 2: Removal of Laterals.** As additional funding is available, overhead utility laterals should be further consolidated and relocated underground as feasible.
- **Step 3: Bury Overhead Utilities or Locate Off-Corridor.** If a sufficient level of funding is available, overhead utilities should be comprehensively consolidated off-corridor or relocated underground. This is the preferred approach to addressing overhead utilities during intersection and roadway reconstruction, but also represents the most costly option to addressing overhead utility issues.

### KEY DEFINITIONS

A number of technical and planning terms are used with frequency throughout this chapter in the description of recommendations. For reference, these terms are defined below:

- **Verge:** In a curb-and-gutter roadway condition, this is the space (may be referred to as a buffer) between the back of the curb and the right-of-way line or sidewalk. It can be landscaped (not paved) or can be treated as an extension of the adjacent sidewalk or bicycle facility by being paved.
- **Tree lawn (or landscaped verge):** In a curb-and-gutter roadway condition, this is the landscaped area bounded by the back of the curb and the sidewalk or the

edge of a right-of-way. This area provides separation between an off-street bicycle or pedestrian facility and a travel lane. It also is a suitable location for some features commonly found along streets including fire hydrants, mail boxes, trees, street signs, and similar elements.

- **Hardscaped verge:** In a curb-and-gutter roadway condition, this is the paved area bounded by the back-of the curb and the sidewalk. This area provides separation between an off-street bicycle or pedestrian facility and a travel lane. Similar to the tree lawn, it also is a suitable location for some features commonly found along streets including fire hydrants, mail boxes, trees, street signs, and similar elements.
- **Vertical curb:** A roadway edge element that does not include a horizontal gutter pan. These elements also are referred to as “header” curbs.
- **Travel lane:** A through vehicle lane.
- **Shared lane:** A vehicle lane shared among two or more movements—through and right; through and left; left, through, and right; and left and right.
- **Exclusive turn lane:** A vehicle lane designated for one movement—left, through, or right.
- **Cartway:** The section of a street where cars travel—the space between the opposing faces of curb.
- **Median:** A raised (using curbing) or otherwise delineated feature that separates traffic traveling in opposite directions. Medians also are used to separate traffic traveling in the same direction.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## OVERVIEW

The recommended corridor plan is shown schematically in **Figures 4.1** and **4.2**. **Figure 4.1** illustrates roadway elements and **Figure 4.2** illustrates pedestrian, bicycle, and transit elements of the corridor plan. The character and use of Lafayette Boulevard varies tremendously between downtown Fredericksburg and US 1 in Spotsylvania County. In downtown Fredericksburg, land uses impart an in-town residential and traditional business district feel to the corridor. Crossing Blue-Gray Parkway, the corridor takes on a suburban look and feel in response to development patterns along the corridor.

## GENERAL RECOMMENDATIONS

Responding to the varying character, the recommended plan generally proposes the following:

- **Two-lane cross section between Sophia Street and Young Street.** Traffic volumes are forecast to increase minimally in this section. Except during very isolated periods of the day, principally accompanying the arrivals and departures of Virginia Railway Express (VRE) trains, a two-lane cross section will provide sufficient capacity to move traffic adequately.
- **Four-lane median divided cross section approximately between Blue-Gray Parkway and US 1.** Traffic volumes in this section of the corridor are forecast to grow considerably. Already busy throughout the day, the widening of the corridor to four lanes will enable it to accommodate the forecasted increase in traffic.
- **Consolidation or undergrounding of overhead utilities.** Overhead utility conditions vary throughout the corridor. As the corridor is modified (widened and/or enhanced), the consolidation and/or relocation of utilities will enable the landscape of the plan to be implemented, as well as will improve the visual quality of the corridor.
- **Consolidation of driveways and other points of vehicle access.** Driveways and intersection are the primary locations of crashes, contribute to interruptions in traffic flow, create turn conflicts, and create issues for pedestrian and bicycle safety. The strategic consolidation of driveways and points of access will allow Lafayette Boulevard to operate more efficiently and safely without adversely affecting land uses (development) along the corridor.
- **Removal/adjustment of billboards and other outsized outdoor advertising and signage.** There is considerable visual clutter along the corridor. Signage for businesses and attractions varies in age, quality, and configuration. Reducing sign size and mounting height and improving the way that signs are mounted (configured) will reduce the amount of visual clutter along the corridor and improve its visual quality.
- **Enforcement of city and county zoning ordinances.** Overgrown landscaping, indoor furniture in front yards, dilapidated (and in-need of repair) buildings, abandoned (or not operable) vehicles, and other blight have a negative impact

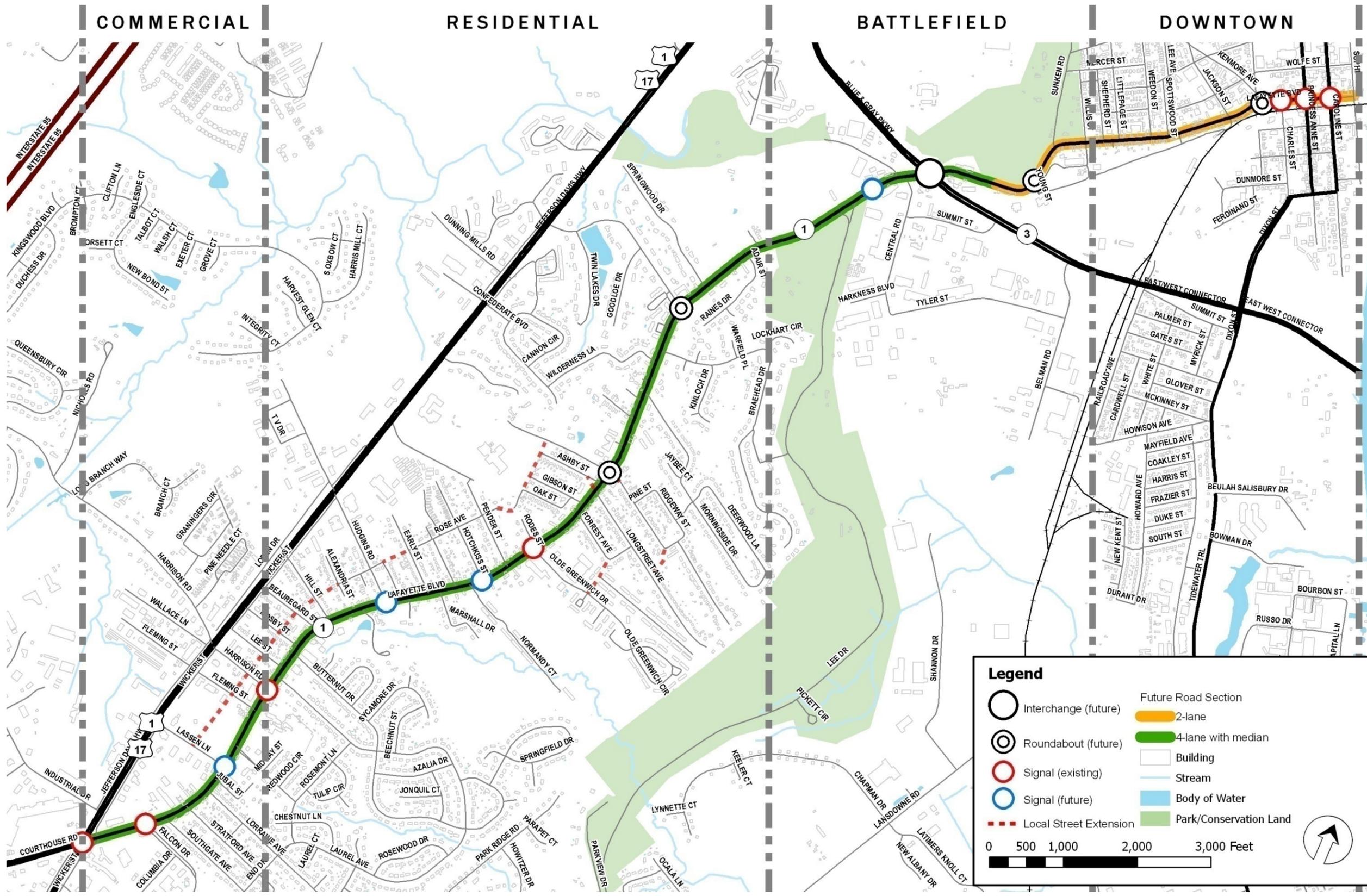


The image shows the recommended corridor plan in the vicinity of Lee Drive, looking north along Lafayette Boulevard. As shown, Lafayette Boulevard is recommended to be partially realigned through this section to create a parkway median adjacent to the battlefield.

- on people's perception of an area. By enforcing existing zoning ordinances, many of these negative visual impressions can be resolved, which often leads to a change in people's attitude toward an area and an increase in value of that area.
- **Continuous sidewalks throughout the corridor.** Whether people choose to walk or not, facilities need to be provided. With few exceptions, all trips begin and end with walking. Providing continuous sidewalks throughout the corridor improves accessibility and connectivity for all modes of transportation.
- **Continuous bicycle accommodations throughout the corridor.** Providing appropriate facilities has tremendous potential to increase bicycling in the corridor by offering safe and convenient opportunities for bike travel.
- **Appropriately spaced bus stops and transit passenger facilities.** Shelters, benches, signs, lighting, and paved waiting areas are not amenities, but instead facilities critical to supporting and encouraging transit use—especially for special populations. By providing transit or would-be transit patrons with a dignified experience, there is the potential that current riders will be retained and further satisfied and new riders will be attracted.
- **New traffic signals and roundabouts when warranted or justified by an engineering study.** Intersections are critical elements within road corridors. Providing the appropriate treatment with adequate spacing is essential to moving people along and across a corridor. Traffic signals and roundabouts each have benefits and drawbacks that will need to be weighed against one another as they are considered for specific locations.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



**Figure 4.1**  
**STREET**  
**RECOMMENDATIONS**

**DESCRIPTION**

This figure diagrammatically illustrates the recommended corridor cross section for Lafayette Boulevard and important future local street connections. It also shows the location of existing and future traffic signals and roundabouts.

To accommodate increases in traffic along Lafayette Boulevard, it is recommended to widen the roadway to four lanes with a landscaped median as shown. Median openings, exclusive left-turn lanes, exclusive right-turn lanes (at a limited number of locations), traffic signals, and roundabouts are proposed at strategic locations throughout the corridor to facilitate safe and efficient traffic movements to and from intersecting streets. The anticipated increase in traffic volume at the Lafayette Boulevard/Blue-Gray Parkway intersection will necessitate that it is modified to become an interchange at some point in the future.

Additionally, a number of local street connections are proposed to better connect existing development along Lafayette Boulevard. They are as shown and create opportunities for additional local street connectivity and access to traffic signals and roundabouts.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

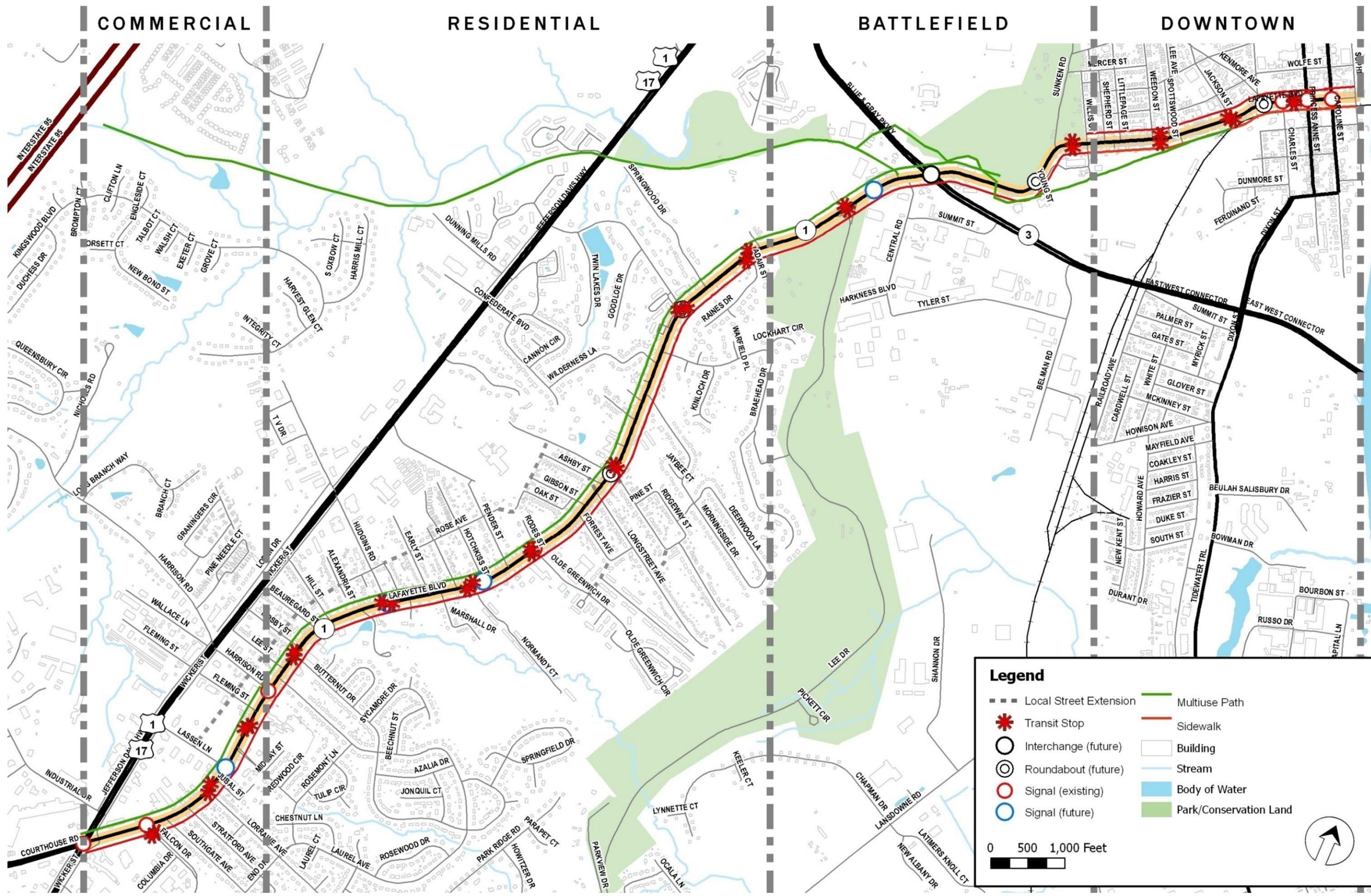


Figure 4.2  
**TRANSIT,  
PEDESTRIAN, AND  
BICYCLE  
RECOMMENDATIONS**

**DESCRIPTION**

This figure diagrammatically illustrates transit, pedestrian, and bicycle recommendations for Lafayette Boulevard. It shows the location of sidewalks, bikeways, transit stops.

A continuous sidewalk is proposed along the southeast side of Lafayette Boulevard between US 1 and Sophia Street. Beginning at Willis Street, a sidewalk also is recommended along the north side of the corridor. A continuous multiuse path is proposed along the northwest side of Lafayette Boulevard between US 1 and Hazel Run, where the trail would turn off-corridor and connect with the Virginia Central Railway (VCR) trail connecting to downtown Fredericksburg. Transit stops are recommended at strategic locations throughout the corridor.

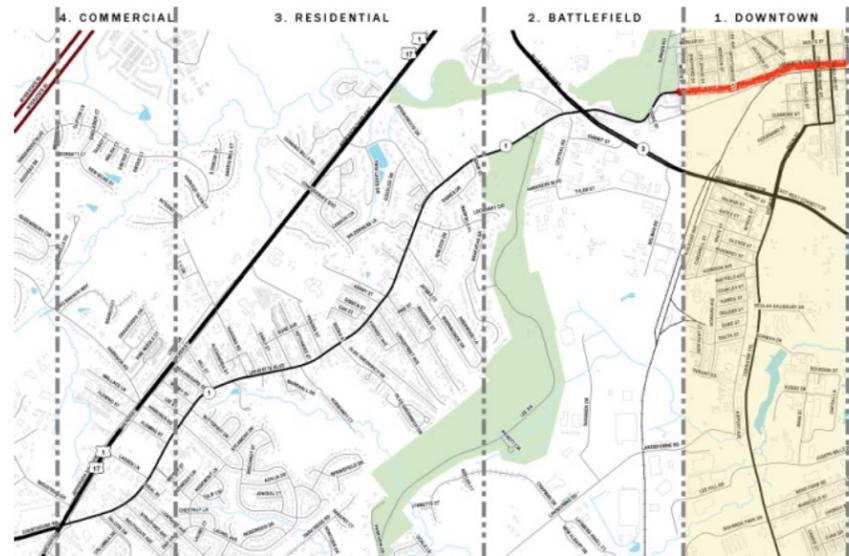


# LAFAYETTE BOULEVARD CORRIDOR STUDY

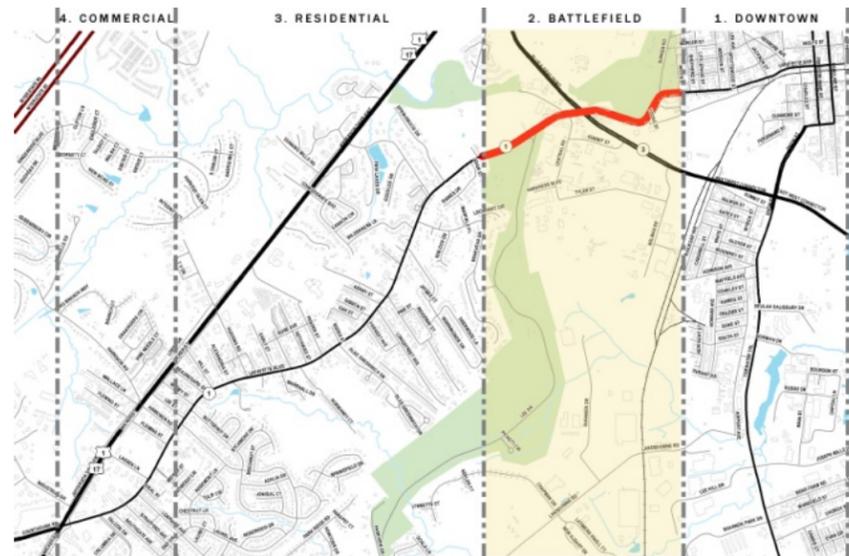
## SPECIFIC RECOMMENDATIONS

The Lafayette Boulevard corridor was divided into four sections, based on the general character of development and land uses at its border and recommended corridor modification measures. The recommended corridor plan includes tailored recommendations for each of the following four sections of Lafayette Boulevard. Specific recommendations for each section of Lafayette Boulevard are described on the pages that follow.

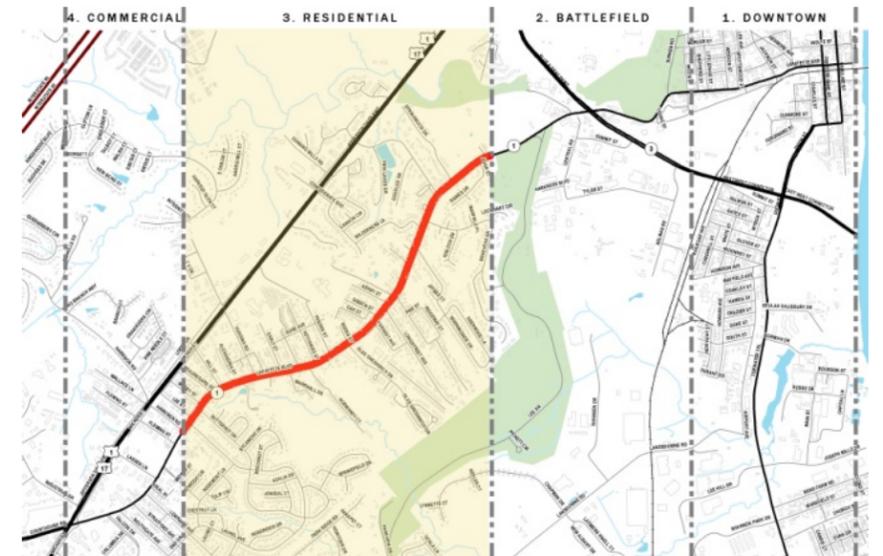
**SECTION 1  
(DOWNTOWN  
FREDERICKSBURG)**  
Lafayette Boulevard between Sophia  
Street and Sunken Road



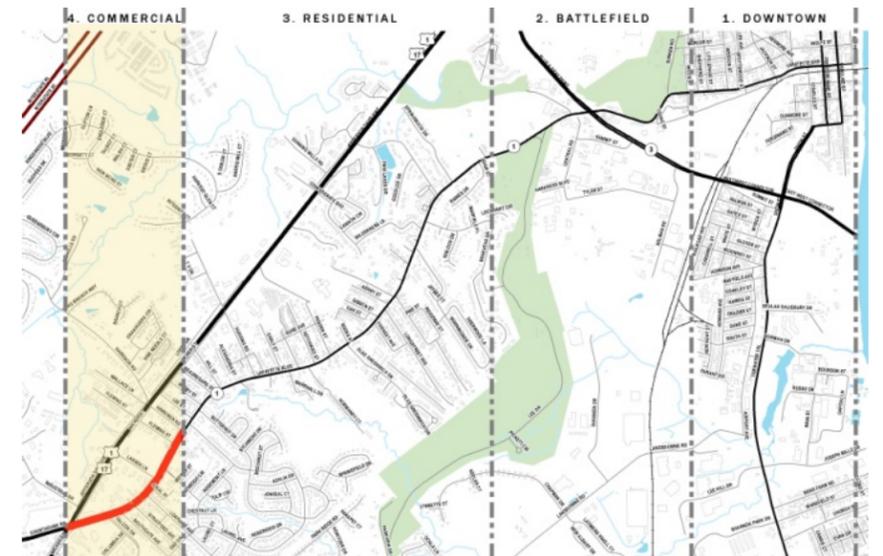
**SECTION 2  
(BATTLEFIELD)**  
Lafayette Boulevard between Sunken  
Road and St. Paul Street



**SECTION 3  
(RESIDENTIAL)**  
Lafayette Boulevard between St.  
Paul Street and Harrison Road



**SECTION 4  
(COMMERCIAL)**  
Lafayette Boulevard between  
Harrison Road and US 1





# LAFAYETTE BOULEVARD CORRIDOR STUDY

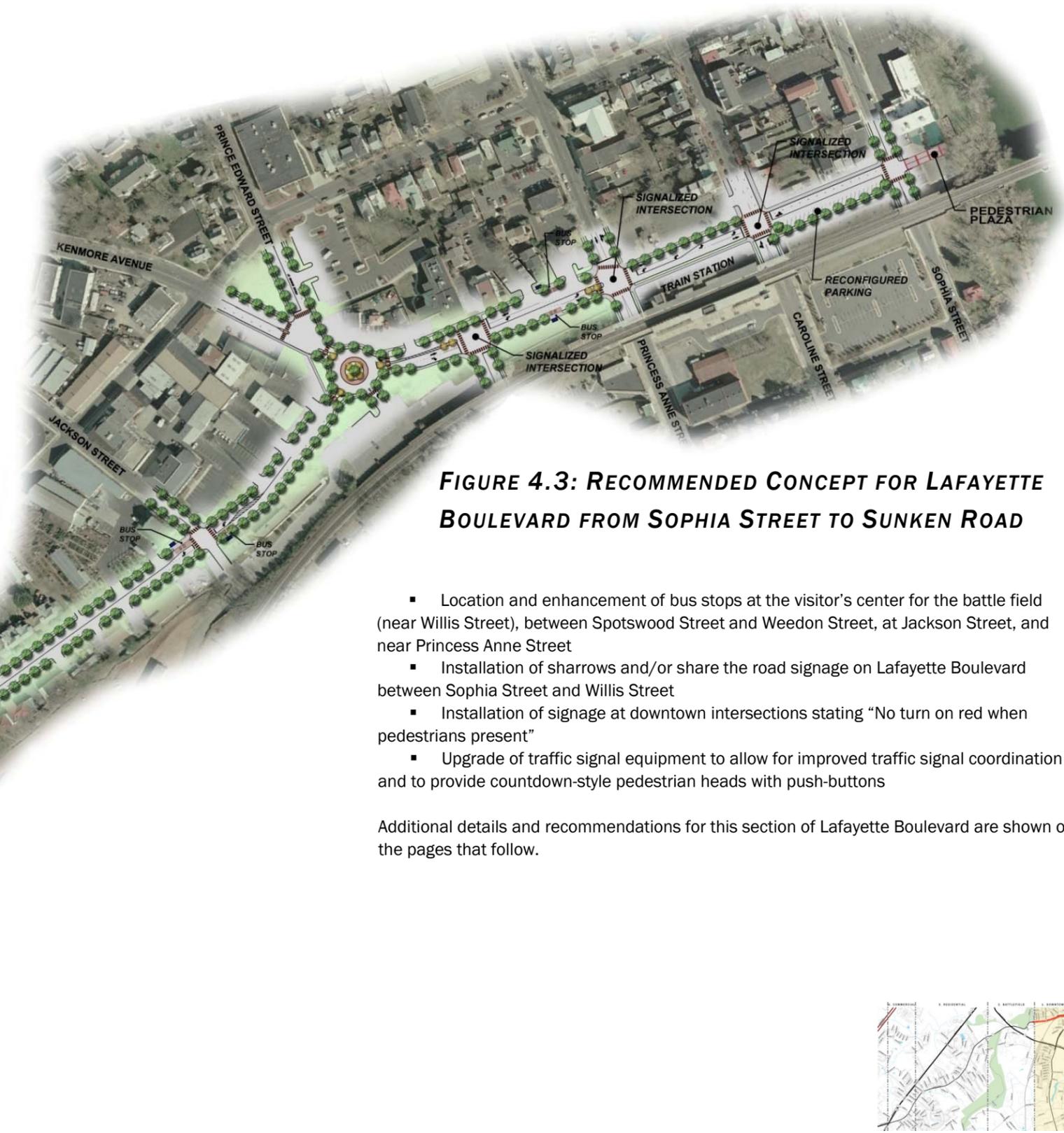
## 1. DOWNTOWN FREDERICKSBURG SECTION (SOPHIA STREET TO SUNKEN ROAD)

The detailed recommended concept for this section is shown in **Figure 4.3**. General recommendations of this section of the corridor include the following:

- Two-lane cross section
- Low design speed: 25 mph
- On-street parking
- Limited right-of-way impacts
- Safe and convenient pedestrian and bicycle accommodations
- Gateway for downtown and the battlefield
- Enhanced streetscape

Specific recommendations for this section of Lafayette Boulevard include:

- Enhanced streetscape from Sophia Street to Sunken Road (improved sidewalks, street trees, lighting, driveway consolidation, and road restriping/reconfiguration)
- View corridor and plaza to the Rappahannock River aligned with Lafayette Boulevard
- Reconfiguration of the head-in parking along the railroad to reverse-in angle parking
- Reconfiguration of Lafayette Boulevard between Kenmore Avenue and Sophia Street to reduce un- or under used vehicle lanes
- Roundabout at the Lafayette Boulevard/Kenmore Avenue intersection
- Modification of Prince Edward Street to one-way westbound (away from Lafayette Boulevard) between Kenmore Avenue and Wolf Street
- Crosswalks across Lafayette Boulevard at unsignalized intersections of Jackson Street, Spotswood Street, Weedon Street, Littlepage Street, Shepherd Street, and Willis Street



**FIGURE 4.3: RECOMMENDED CONCEPT FOR LAFAYETTE BOULEVARD FROM SOPHIA STREET TO SUNKEN ROAD**

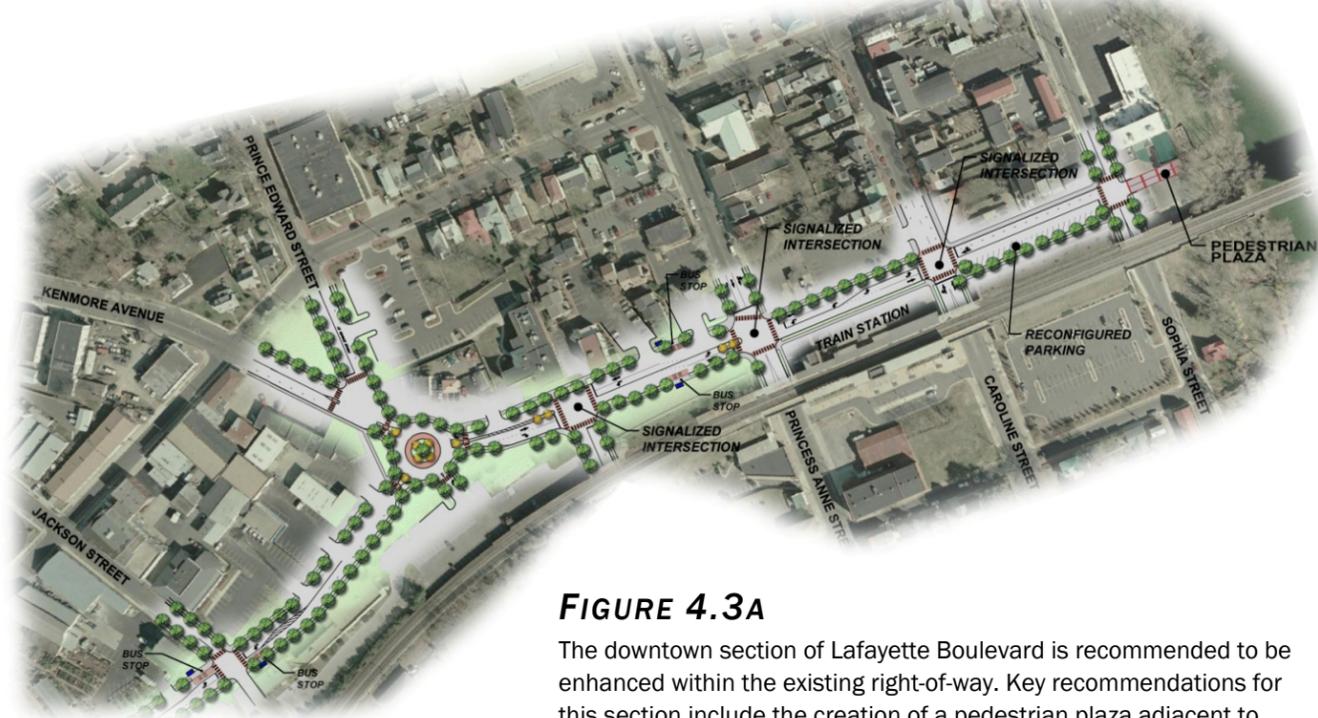
- Location and enhancement of bus stops at the visitor’s center for the battle field (near Willis Street), between Spotswood Street and Weedon Street, at Jackson Street, and near Princess Anne Street
- Installation of sharrows and/or share the road signage on Lafayette Boulevard between Sophia Street and Willis Street
- Installation of signage at downtown intersections stating “No turn on red when pedestrians present”
- Upgrade of traffic signal equipment to allow for improved traffic signal coordination and to provide countdown-style pedestrian heads with push-buttons

Additional details and recommendations for this section of Lafayette Boulevard are shown on the pages that follow.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## SOPHIA STREET TO JACKSON STREET



**FIGURE 4.3A**

The downtown section of Lafayette Boulevard is recommended to be enhanced within the existing right-of-way. Key recommendations for this section include the creation of a pedestrian plaza adjacent to Sophia Street; reconfiguration of parking along the southeast side of the street to reverse-in angle parking; sidewalk and streetscape improvements; a roundabout at the Kenmore Avenue/Lafayette Boulevard intersection; and minor street reconfiguration to reduce street width and better define intersections for pedestrians, bicycles, and vehicles.



**FIGURE 4.3B**

This illustration is oriented looking south along Lafayette Boulevard from Sophia Street at a pedestrian's view from the recommended plaza connecting to the Rappahannock River. As shown, it is recommended to reconfigure the existing head-in parking along the railroad corridor to reverse-in. Also recommended in this section are high-visibility crosswalks, a consistent streetscape, and pedestrian-level lighting. When modifications are constructed along Lafayette Boulevard, sight distance at Sophia Street should be reviewed with regard to the placement of pavement markings and traffic control devices.

**FIGURE 4.3C**

This illustration is oriented above Lafayette Boulevard looking south from Sophia Street. The recommended head-in parking reconfiguration is shown along with recommended streetscape treatment and the pedestrian plaza adjacent to Sophia Street (adjacent to Brock's restaurant).





# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 4.3D**

This illustration is oriented looking south along Lafayette Boulevard from Caroline Street toward the train station. As shown, it is recommended to provide high-visibility crosswalks, pedestrian-level street lighting, streetscaping, and traffic signal improvements (pedestrian countdown heads and push buttons).

## SOPHIA STREET TO JACKSON STREET



**FIGURE 4.3E**

This illustration is oriented above Lafayette Boulevard looking north toward the Rappahannock River from Princess Anne Street. As shown, a plaza is proposed at the north end of Lafayette Boulevard connecting to the Rappahannock River. Infill buildings are shown along the west (left) side of Lafayette Boulevard for illustrative purposes to demonstrate an extension of Fredericksburg's downtown character to Lafayette Boulevard. This illustration shows a reconfiguration of the Lafayette Boulevard/Princess Anne Street intersection to improve pedestrian accommodations and minimize intersection width while retaining an acceptable vehicular level of service.





# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 4.3F**

This illustration is oriented looking north along Lafayette Boulevard from Princess Anne Street toward the train station. As shown, it is recommended to provide high-visibility crosswalks, pedestrian-level street lighting, streetscaping, and traffic signal improvements (pedestrian countdown heads and push buttons). Additionally, it is recommended to reconfigure the intersection to reduce its overall size and to improve conditions for pedestrians, while maintaining adequate vehicular functionality.

## SOPHIA STREET TO JACKSON STREET



**FIGURE 4.3G**

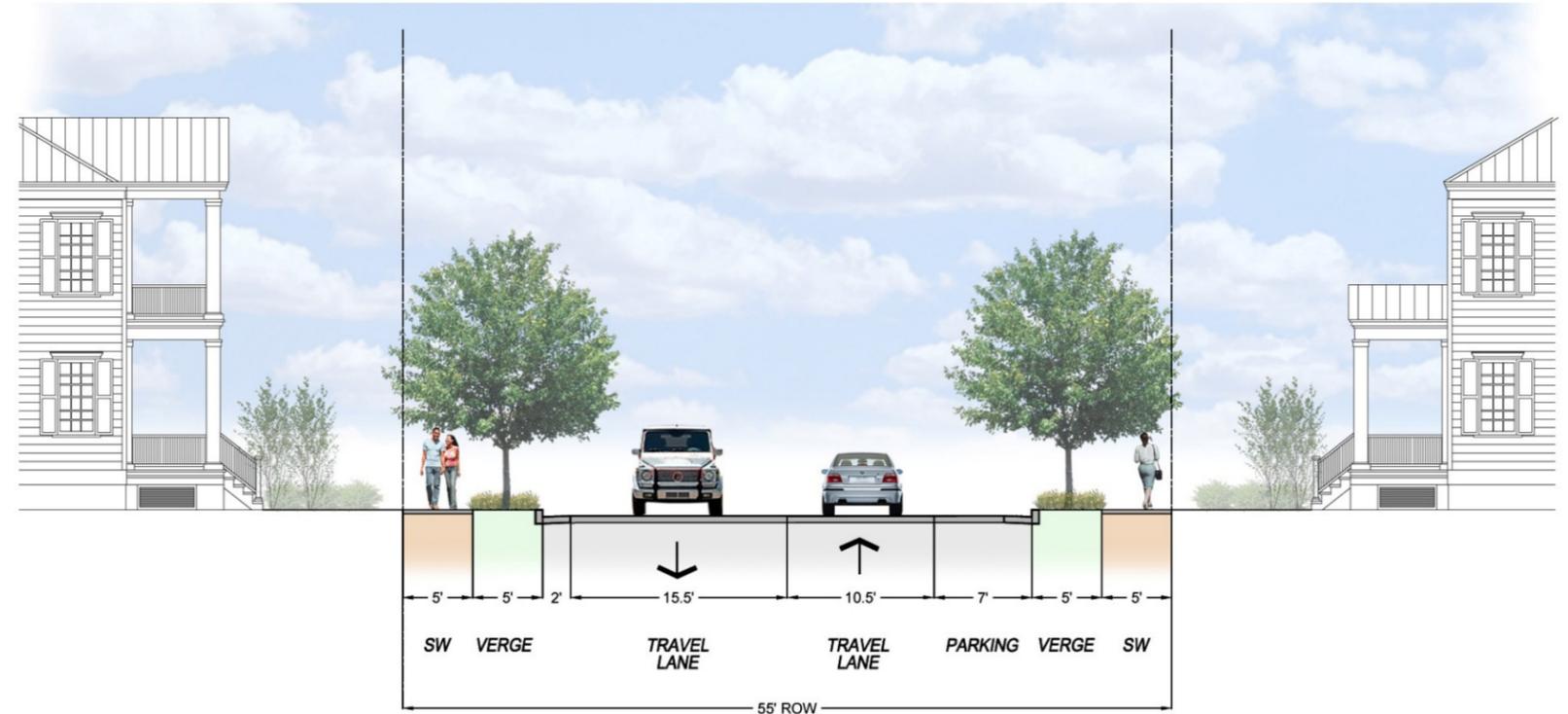
This illustration is oriented above Lafayette Boulevard looking north toward the Rappahannock River from Princess Anne Street. Infill buildings are shown for illustrative purposes to demonstrate an extension of Fredericksburg's downtown character to Lafayette Boulevard. This illustration shows a reconfiguration of the Lafayette Boulevard/Princess Anne Street intersection to improve pedestrian accommodations and minimize intersection width while retaining an acceptable vehicular level of service. This intersection also shows (foreground) the reconfiguration of the Lafayette Boulevard/Kenmore Avenue intersection as a roundabout. Little to no right-of-way is necessary to complete the recommended reconfiguration





# LAFAYETTE BOULEVARD CORRIDOR STUDY

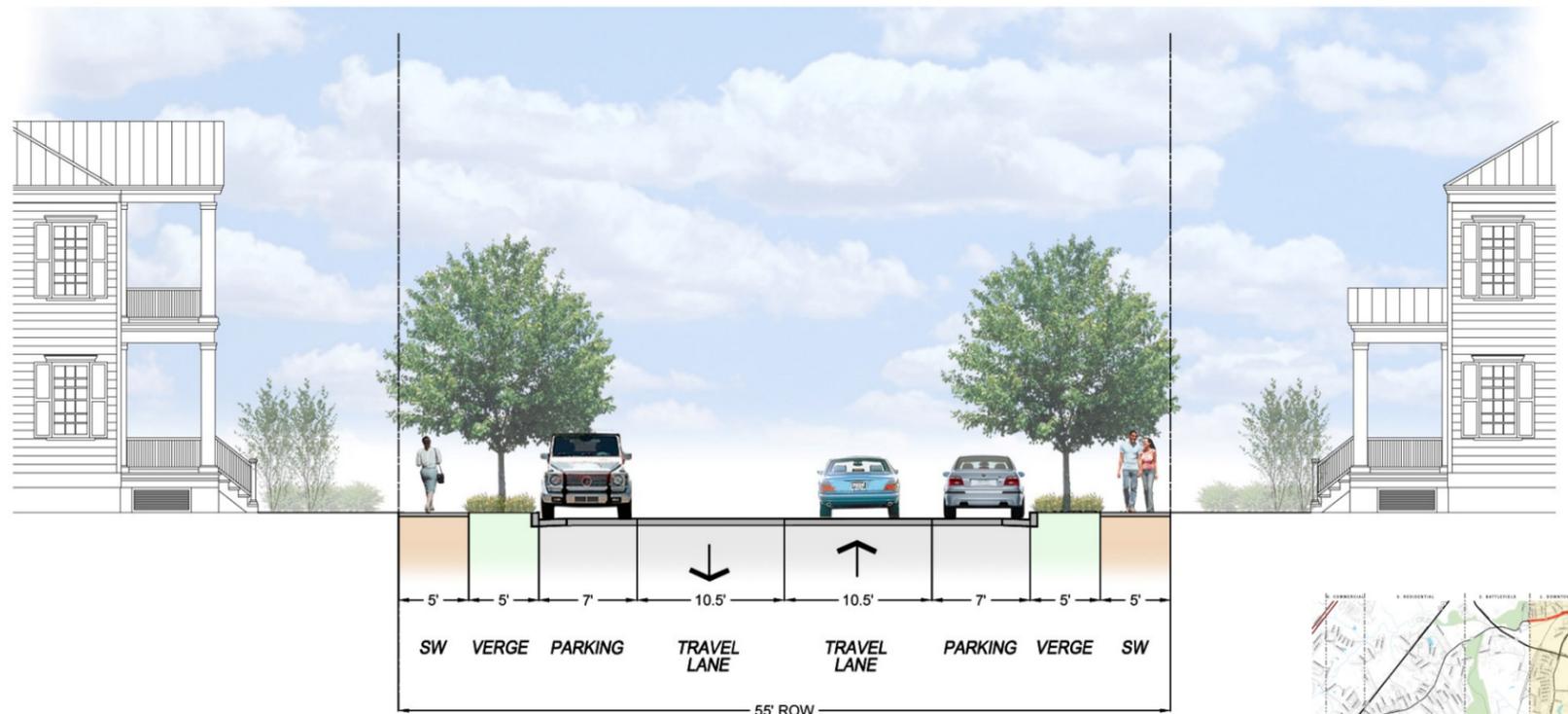
## SPOTSWOOD STREET TO SUNKEN ROAD



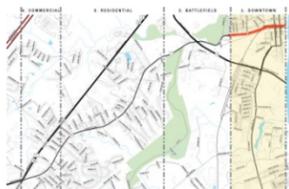
**FIGURE 4.3I: TYPICAL CROSS SECTION DD**

### FIGURE 4.3H

This portion of the downtown section of Lafayette Boulevard is recommended to be enhanced within the existing right-of-way. On-street parking would remain along most of this section; however, it would be interrupted at several intersections by left-turn lanes and pedestrian refuge medians. No right-of-way acquisition is recommended for this section; however, within the right-of-way, streetscape enhancements including improved sidewalks, street trees, and pedestrian-level lighting are recommended. Four different cross sections are provided for this section of Lafayette Boulevard.

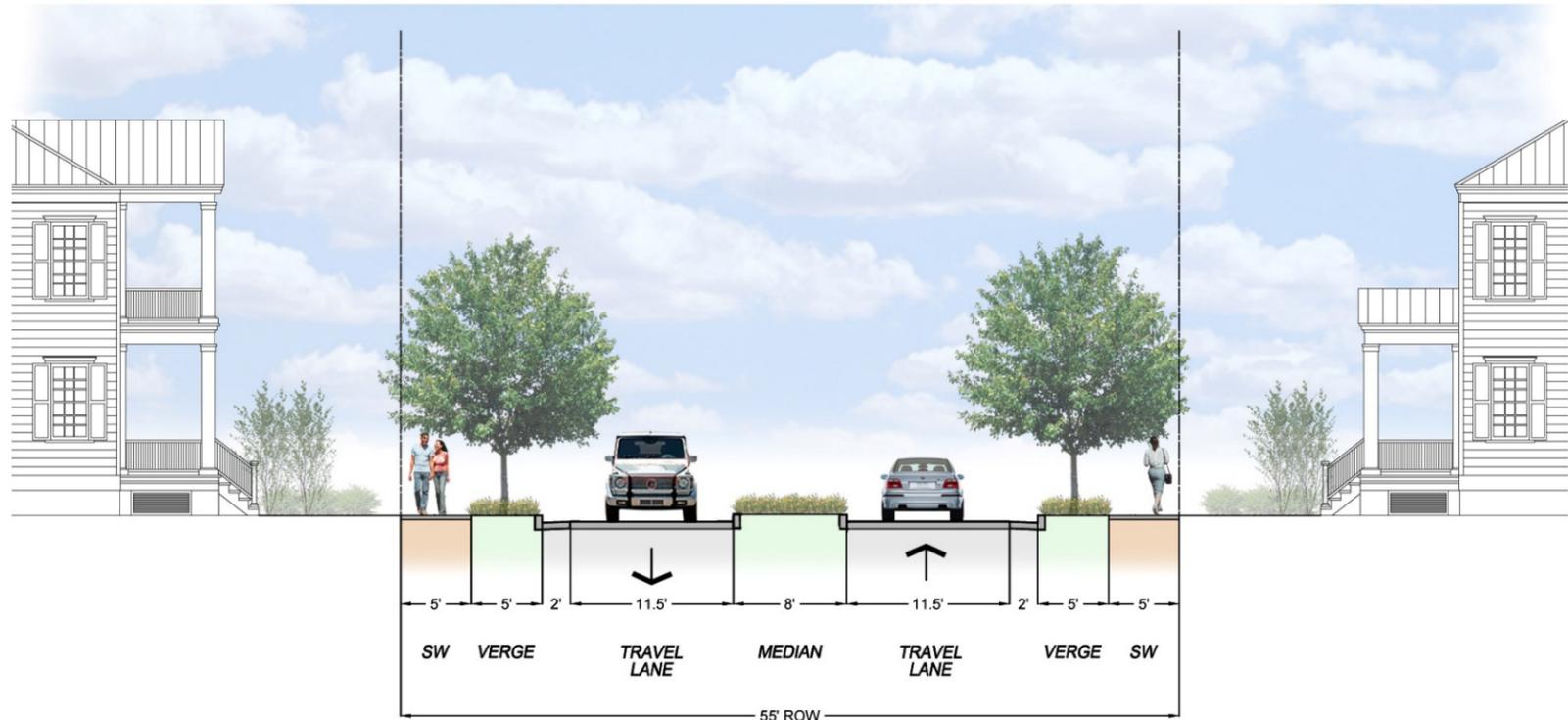


**FIGURE 4.3J: TYPICAL CROSS SECTION CC**

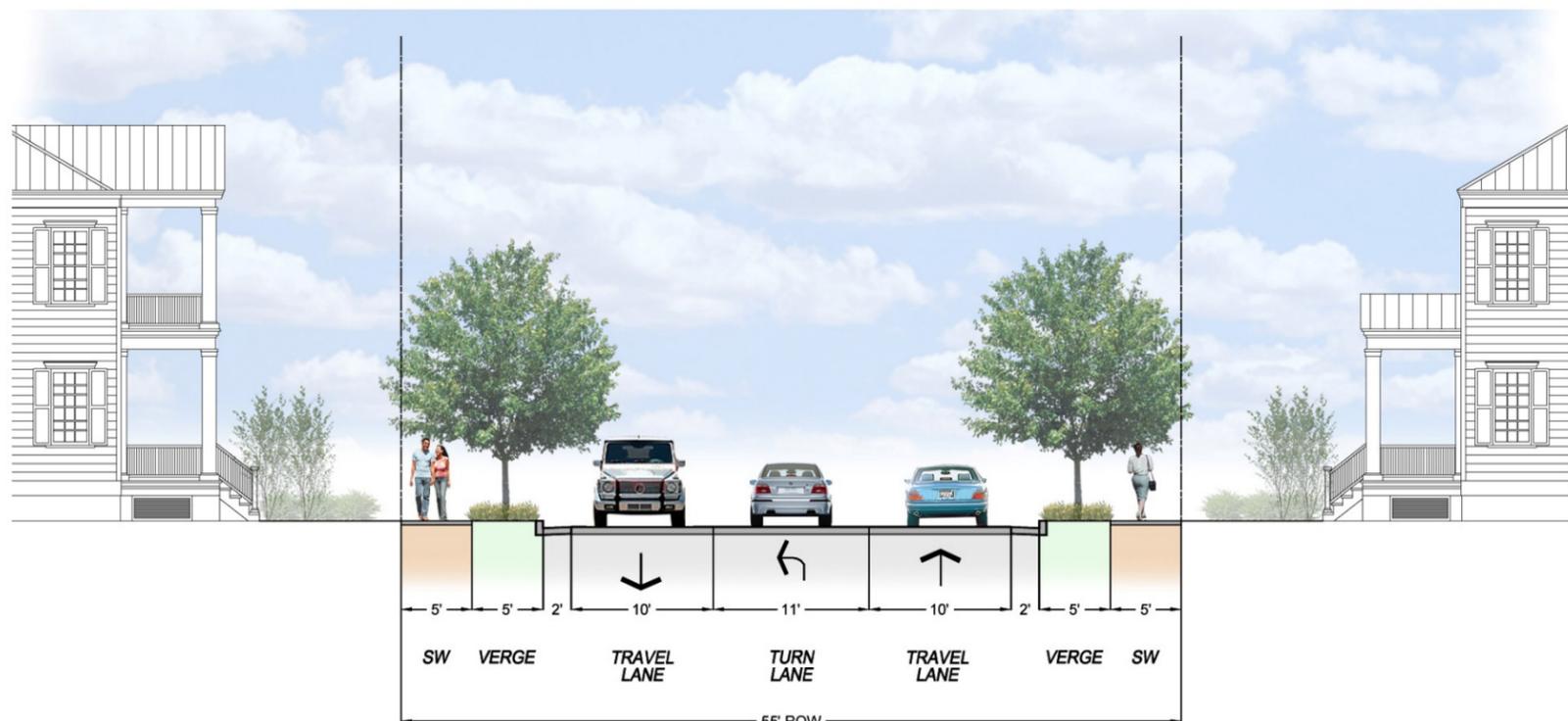




# LAFAYETTE BOULEVARD CORRIDOR STUDY

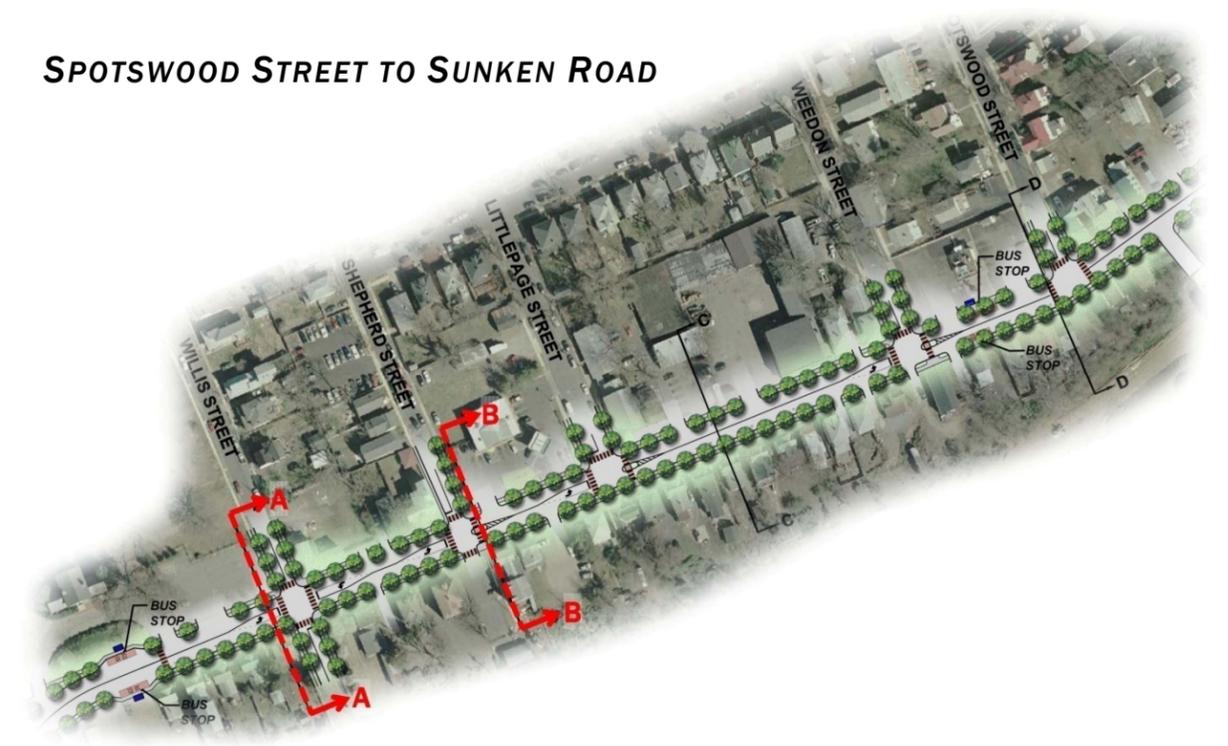


**FIGURE 4.3K: TYPICAL CROSS SECTION BB**



**FIGURE 4.3L: TYPICAL CROSS SECTION AA**

## SPOTSWOOD STREET TO SUNKEN ROAD





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## 2. BATTLEFIELD SECTION (SUNKEN ROAD TO ST. PAUL STREET)

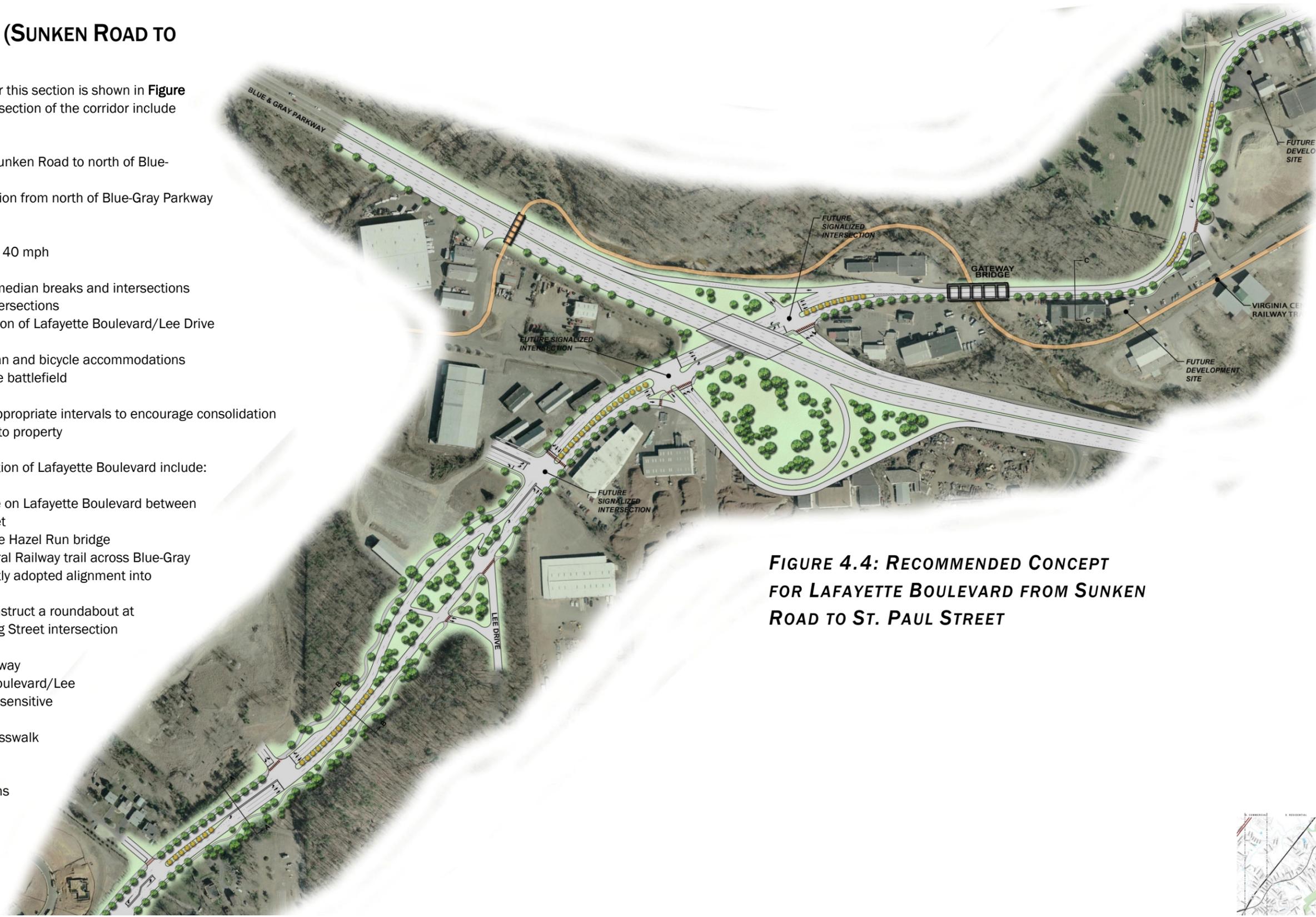
The detailed recommended concept for this section is shown in **Figure 4.4**. General recommendations of this section of the corridor include the following:

- Two-lane cross section from Sunken Road to north of Blue-Gray Parkway
- Four-lane median divided section from north of Blue-Gray Parkway to St. Paul Street
- Right-of-way acquisition
- Moderate design speed: 35 to 40 mph
- Consolidation of driveways
- Provision of left-turn lanes at median breaks and intersections
- Traffic signals at important intersections
- Context-sensitive reconfiguration of Lafayette Boulevard/Lee Drive intersection
- Safe and convenient pedestrian and bicycle accommodations
- Gateway for downtown and the battlefield
- Enhanced streetscape
- Median openings/breaks at appropriate intervals to encourage consolidation of access and provide access to property

Specific recommendations for this section of Lafayette Boulevard include:

- Gateway treatment/landscape on Lafayette Boulevard between Sunken Road and Young Street
- Aesthetic enhancements to the Hazel Run bridge
- Constructing the Virginia Central Railway trail across Blue-Gray Parkway and along the currently adopted alignment into downtown Fredericksburg
- Evaluating the potential to construct a roundabout at the Lafayette Boulevard/Young Street intersection as a part of redevelopment
- Interchange at Blue-Gray Parkway
- Reconfiguring the Lafayette Boulevard/Lee Drive intersection in a context-sensitive manner
- Bus stops and a mid-block crosswalk at Lee Drive

Additional details and recommendations for this section of Lafayette Boulevard are shown on the pages that follow.

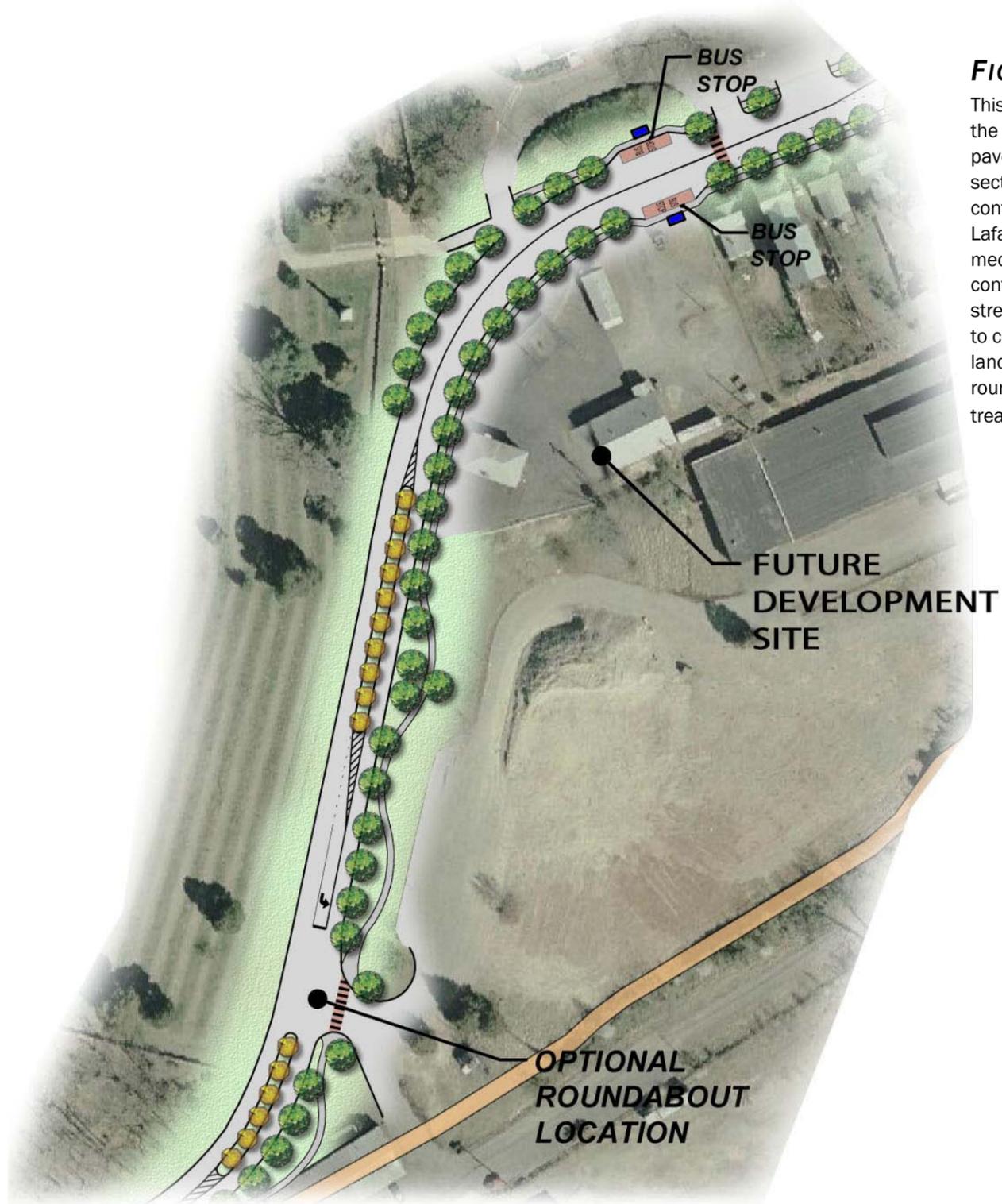


**FIGURE 4.4: RECOMMENDED CONCEPT FOR LAFAYETTE BOULEVARD FROM SUNKEN ROAD TO ST. PAUL STREET**





# LAFAYETTE BOULEVARD CORRIDOR STUDY



SUNKEN ROAD TO YOUNG STREET

### FIGURE 4.4A

This section of Lafayette Boulevard runs adjacent to the battlefield cemetery. Currently, there is excess pavement on Lafayette Boulevard through this section. To work with the historic and national park context of this area, it is recommended to modify Lafayette Boulevard and create a landscaped median with appropriate plantings for the adjacent context. Similarly, rather than impose an urban streetscape through this section, it is recommended to create a parkway-like section through the use of landscaping and accompanying street treatments. A roundabout is recommended as an optional treatment at Young Street.



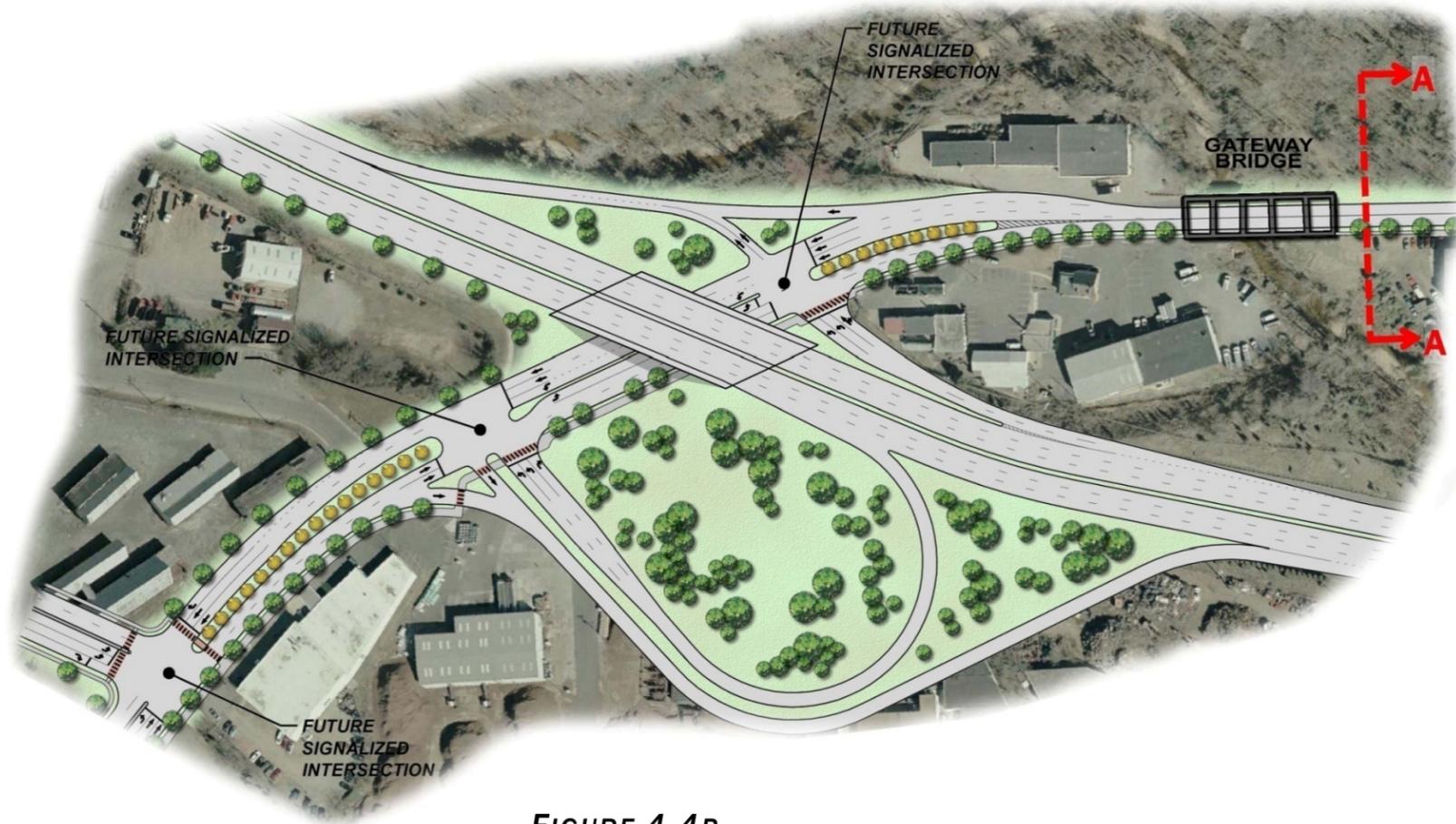
To better adapt the corridor's context, elements such as steel-backed timber guardrails are appropriate solutions. They maintain safety where guardrail protection is needed, also while working with the area's context.

Source: Federal Highway Administration, 2008



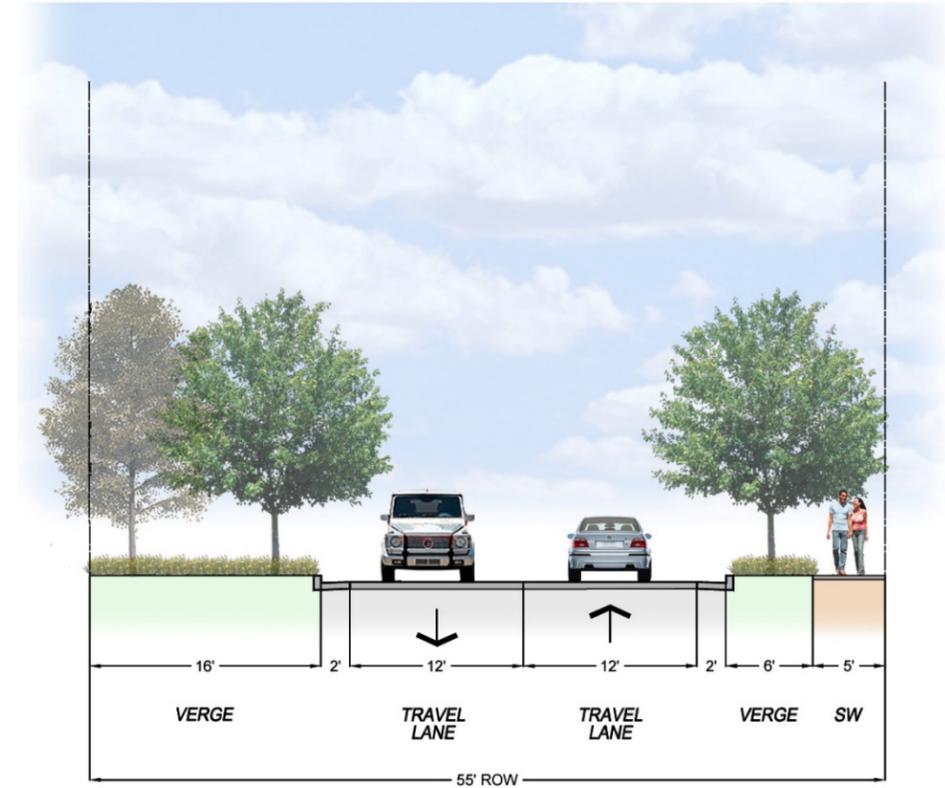


## LAFAYETTE BOULEVARD/BLUE-GRAY PARKWAY INTERCHANGE



**FIGURE 4.4B**

The intersection of Lafayette Boulevard and Blue-Gray Parkway will need substantial modification to continue to serve travel demand. To provide an acceptable level of service for all modes of transportation, a grade separation is recommended for the intersection. As shown, ramps could be located to minimize impacts on Hazel Run. Traffic signals would be needed at the ramp termini with Lafayette Boulevard. Sidewalks and the multiuse path would continue through the interchange are to link areas along both sides of Blue-Gray Parkway.



**FIGURE 4.4C: TYPICAL CROSS SECTION AA**





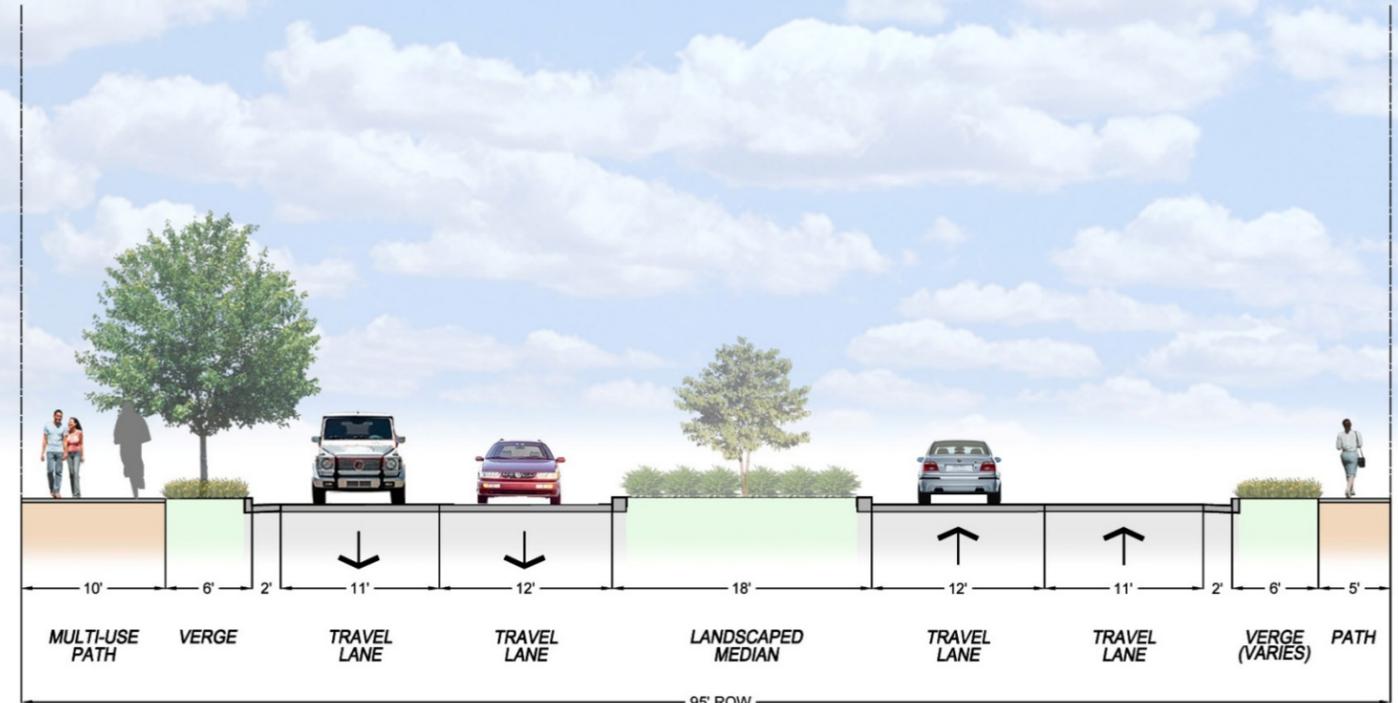
# LAFAYETTE BOULEVARD CORRIDOR STUDY

## LEE DRIVE AREA

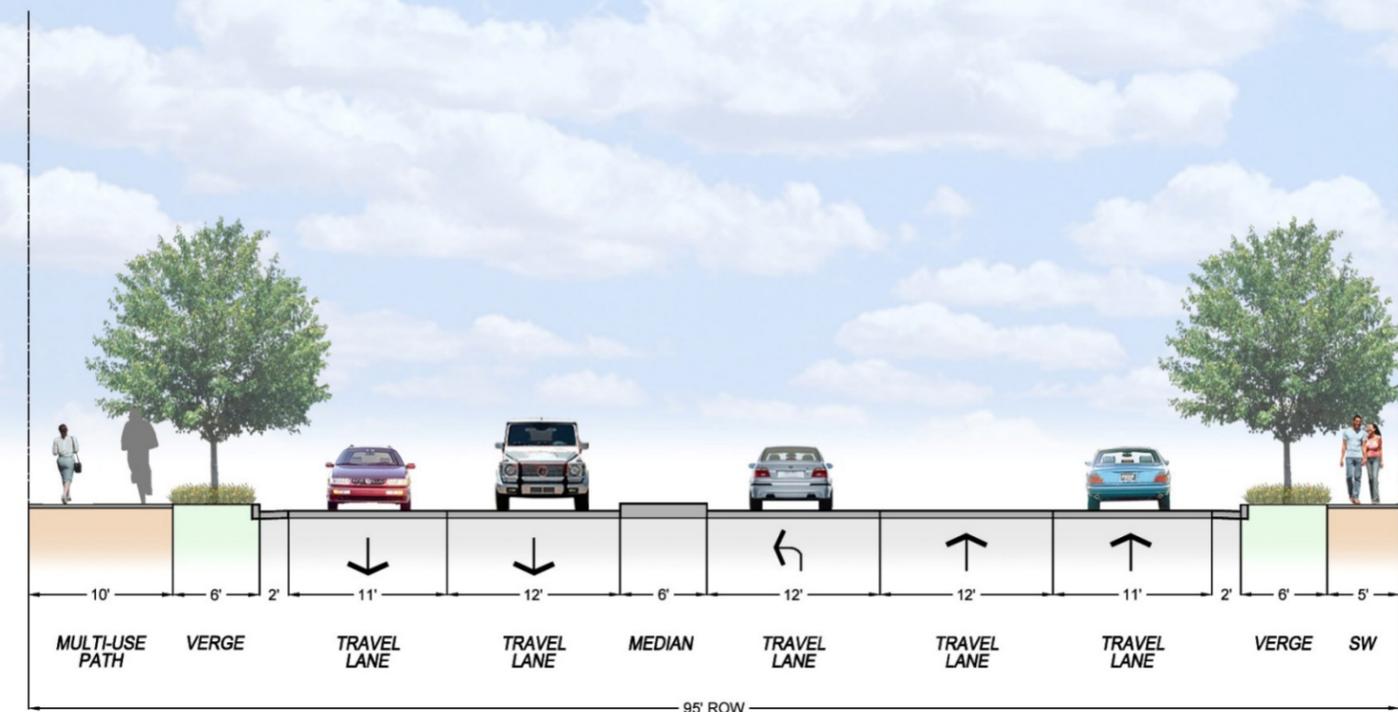
**FIGURE 4.4D**

The recommended concept for this section of Lafayette Boulevard includes a partial realignment of the roadway to create a parkway median adjacent to the national park. With this realignment, Lee Drive would remain mostly unchanged; however, its operations would be improved as a result of outbound (left-turn) traffic having the ability to negotiate traffic on Lafayette Boulevard one direction at a time. The entrances shown along the west side of Lafayette Boulevard are consistent with those currently shown on development plans along that side of the roadway.

Two typical cross sections are provided for this section.



**FIGURE 4.4E: TYPICAL CROSS SECTION BB**



**FIGURE 4.4F: TYPICAL CROSS SECTION AA**



# LAFAYETTE BOULEVARD CORRIDOR STUDY



## LEE DRIVE AREA



**FIGURE 4.4G**

This illustration is oriented looking north along Lafayette Boulevard. In this image, Lee Drive intersects Lafayette Boulevard on the right. This illustration shows the recommended realignment of Lafayette Boulevard adjacent to Lee Drive. It shows right-of-way impacts along the west side (non park side) to accommodate the realignment. As shown, the existing configuration of Lee Drive would be generally maintained with enhancements made in the form of a parkway median to improve traffic operations for Lee Drive. Bus stops are proposed along each side of Lafayette Boulevard in bays with a connecting crosswalk through the median. Along the west side (left side) of the corridor, the multiuse path would continue and along the east side, the sidewalk would continue as a paved trail.





# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 4.4H**

This illustration is oriented looking southwest from Lee Drive. The existing “Y” intersection configuration on Lee Drive is shown in the foreground. The recommended wide median, common on parkways throughout the United States, provides vehicles exiting Lee Drive the opportunity to negotiate one leg of Lafayette Boulevard at a time.

The recommended mid-block pedestrian crosswalk also makes use of the wide median as do two bus stops—one in each direction of Lafayette Boulevard. In addition to the median improving traffic operations and safety, its width is intended to act as a buffer between the national park and planned commercial development along the west side of Lafayette Boulevard.



**FIGURE 4.4I**

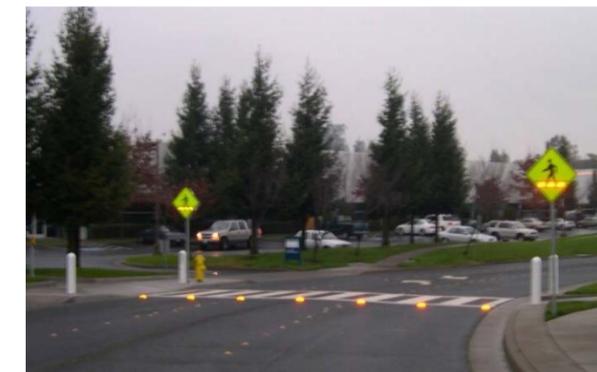
This illustration is oriented looking northwest from Lee Drive. The existing “Y” intersection configuration on Lee Drive is shown in the foreground. This illustration shows the inbound left-turn lane recommended for southbound Lafayette Boulevard.

To manage traffic speeds in the northbound direction, measures such as radar speed signs and textured pavements should be considered. Approaching the mid-block crosswalk in both directions, measures to increase the visibility of the crosswalk such as in-pavement actuated flashing lights, rapid flashing beacons, and high-visibility signage should be considered.

**LEE DRIVE AREA**



Source: Federal Highway Administration, 2008



Pedestrian-actuated rapid flash beacons and in-pavement lights at crosswalks can dramatically increase the visual value and awareness of drivers of a crosswalk. Radar speed signs are effective measures in communicating the speeds of traffic to passing vehicles.





# LAFAYETTE BOULEVARD CORRIDOR STUDY



**LEE DRIVE AREA**

**FIGURE 4.4J**

This illustration is oriented looking south along Lafayette Boulevard. In this illustration, Lee Drive is on the left. As shown, a multiuse path is recommended along the west side of the street and a winding sidewalk along the east side. Bus stops in bays with facilities such as shelters, benches, and lighting are recommended for this location. The horizontal deflection (curve) proposed for Lafayette Boulevard will contribute to an improved aesthetic condition along the corridor, it also will help to manage vehicle speeds for southbound traffic. Street lighting throughout this section of Lafayette Boulevard should be strategically located to illuminate the sidewalk and multiuse trail, bus stops, crosswalks, and intersections. Lighting should be designed to minimize the dispersion of upward light.



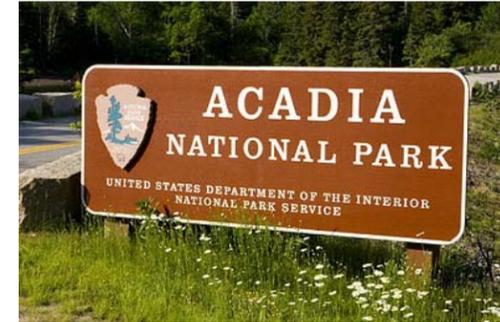


# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 4.4K**

This illustration is looking south along Lafayette Boulevard. As shown, gateway elements to announce the national park should be placed at the termini of the parkway median. Additionally, other elements appropriate to a national park setting should be used to further reinforce the presence of the park. The substantial horizontal curve in the roadway will help to manage traffic speeds.



Source: National Parks Service



Source: National Parks Service

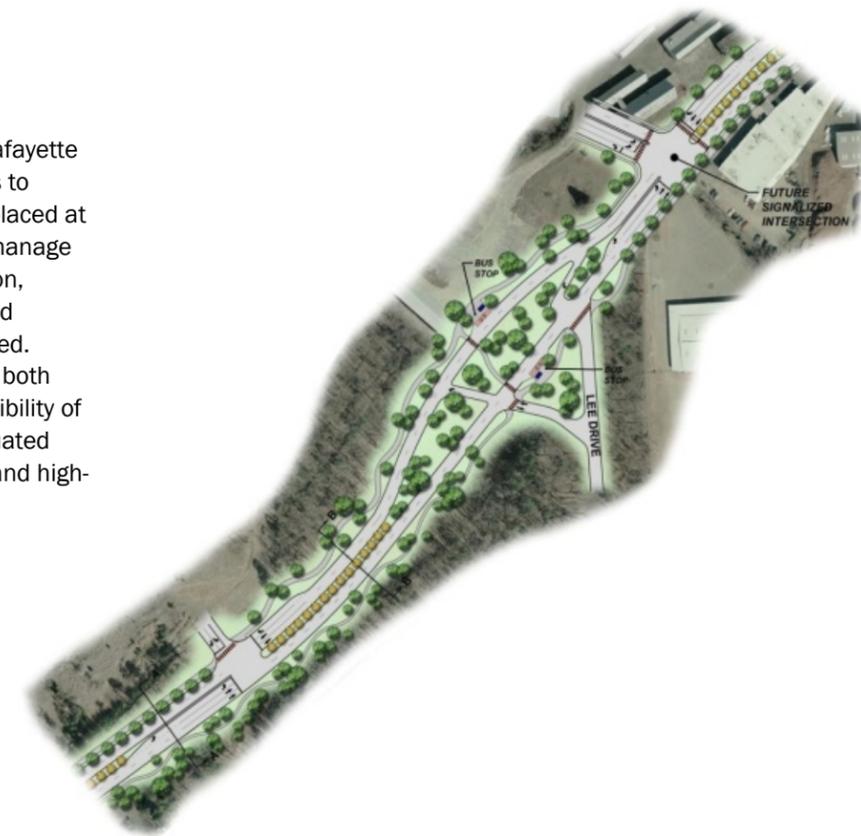
Appropriate signage, in addition to the inclusion of supporting elements appropriate to the battlefield context can announce and reinforce the presence of the park. Signage also has the potential to positively influence driver behavior.



Source: National Parks Service

**FIGURE 4.4L**

This illustration is looking north along Lafayette Boulevard. As shown, gateway elements to announce the national park should be placed at the termini of the parkway median. To manage traffic speeds in the northbound direction, measures such as radar speed signs and textured pavements should be considered. Approaching the mid-block crosswalk in both directions, measures to increase the visibility of the crosswalk such as in-pavement actuated flashing lights, rapid flashing beacons, and high-visibility signage should be considered.



## LEE DRIVE AREA





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## 3. RESIDENTIAL SECTION (ST. PAUL STREET TO HARRISON ROAD)

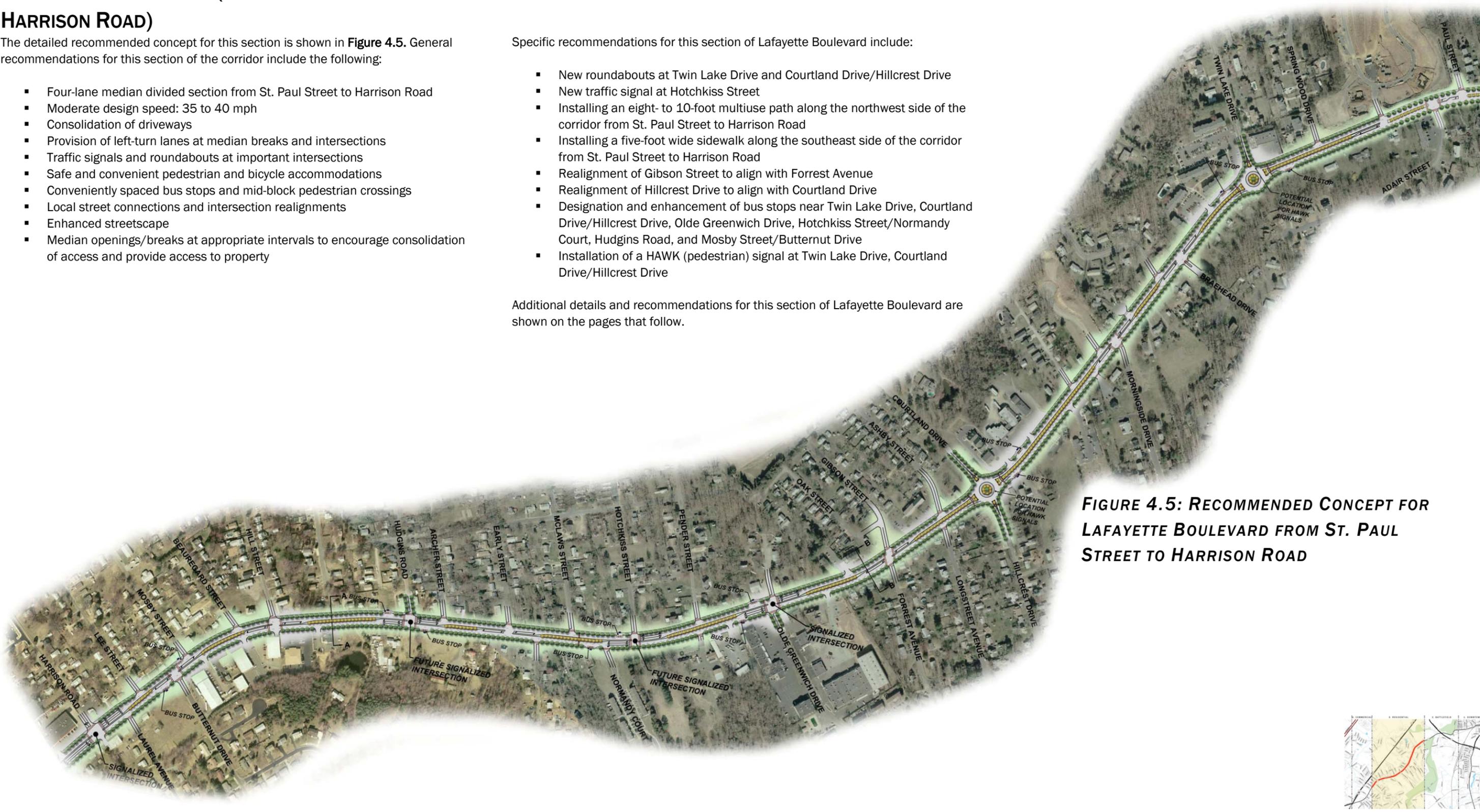
The detailed recommended concept for this section is shown in **Figure 4.5**. General recommendations for this section of the corridor include the following:

- Four-lane median divided section from St. Paul Street to Harrison Road
- Moderate design speed: 35 to 40 mph
- Consolidation of driveways
- Provision of left-turn lanes at median breaks and intersections
- Traffic signals and roundabouts at important intersections
- Safe and convenient pedestrian and bicycle accommodations
- Conveniently spaced bus stops and mid-block pedestrian crossings
- Local street connections and intersection realignments
- Enhanced streetscape
- Median openings/breaks at appropriate intervals to encourage consolidation of access and provide access to property

Specific recommendations for this section of Lafayette Boulevard include:

- New roundabouts at Twin Lake Drive and Courtland Drive/Hillcrest Drive
- New traffic signal at Hotchkiss Street
- Installing an eight- to 10-foot multiuse path along the northwest side of the corridor from St. Paul Street to Harrison Road
- Installing a five-foot wide sidewalk along the southeast side of the corridor from St. Paul Street to Harrison Road
- Realignment of Gibson Street to align with Forrest Avenue
- Realignment of Hillcrest Drive to align with Courtland Drive
- Designation and enhancement of bus stops near Twin Lake Drive, Courtland Drive/Hillcrest Drive, Olde Greenwich Drive, Hotchkiss Street/Normandy Court, Hudgins Road, and Mosby Street/Butternut Drive
- Installation of a HAWK (pedestrian) signal at Twin Lake Drive, Courtland Drive/Hillcrest Drive

Additional details and recommendations for this section of Lafayette Boulevard are shown on the pages that follow.



**FIGURE 4.5: RECOMMENDED CONCEPT FOR LAFAYETTE BOULEVARD FROM ST. PAUL STREET TO HARRISON ROAD**

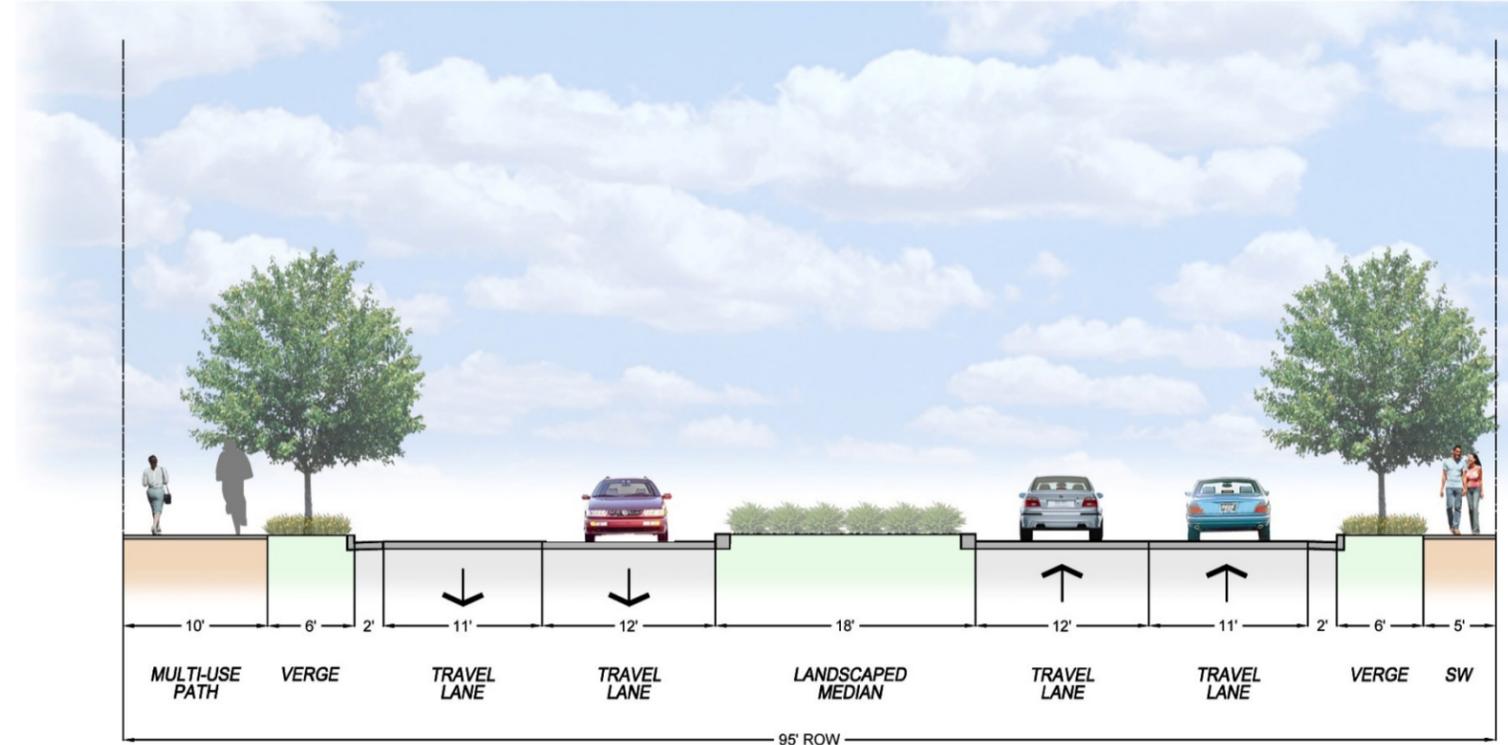
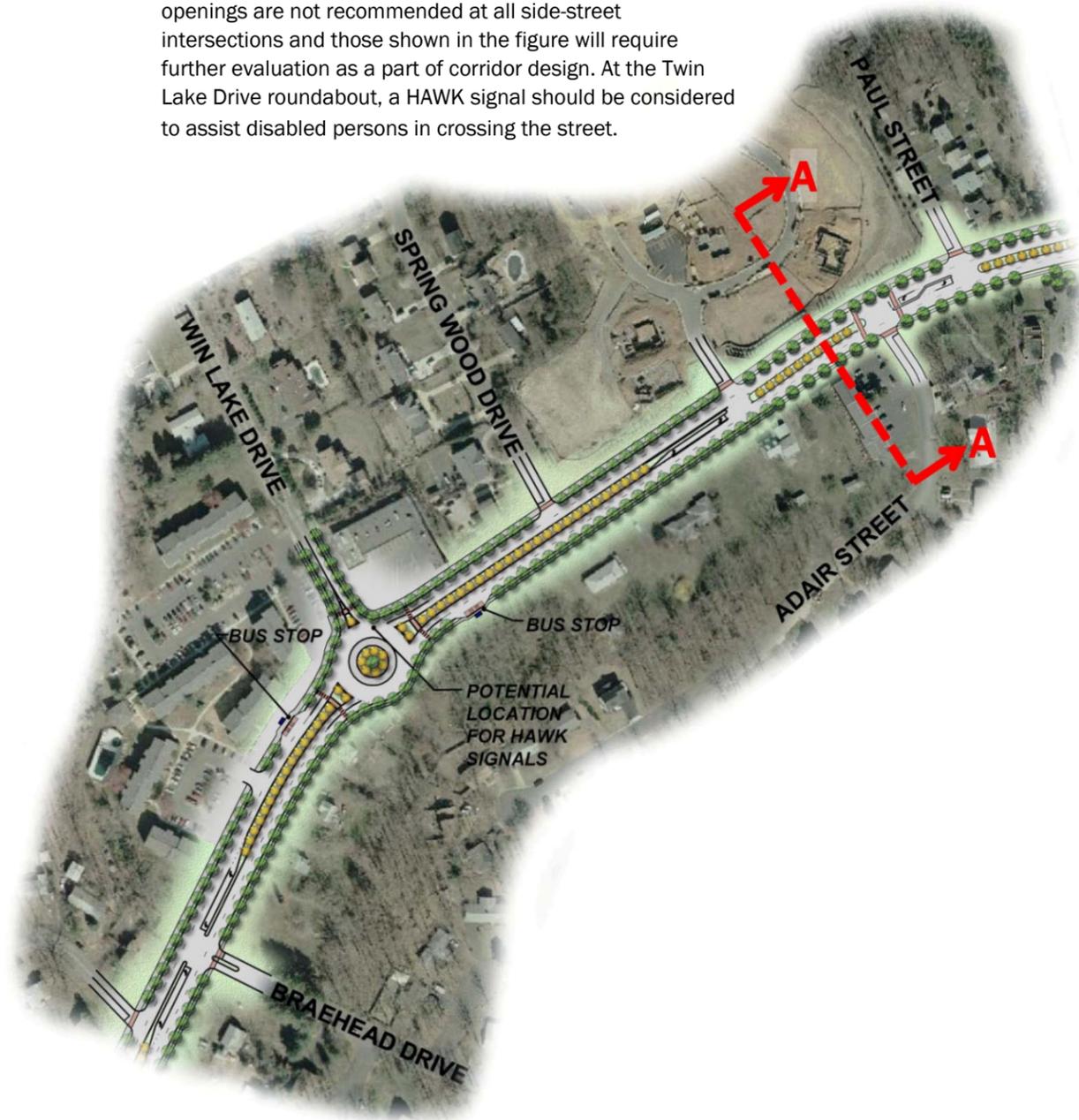




**ST. PAUL STREET TO BRAEHEAD DRIVE**

**FIGURE 4.5A**

The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway. A two-lane roundabout is recommended at Twin Lake Drive. Median openings are not recommended at all side-street intersections and those shown in the figure will require further evaluation as a part of corridor design. At the Twin Lake Drive roundabout, a HAWK signal should be considered to assist disabled persons in crossing the street.



**FIGURE 4.5B: TYPICAL CROSS SECTION AA**

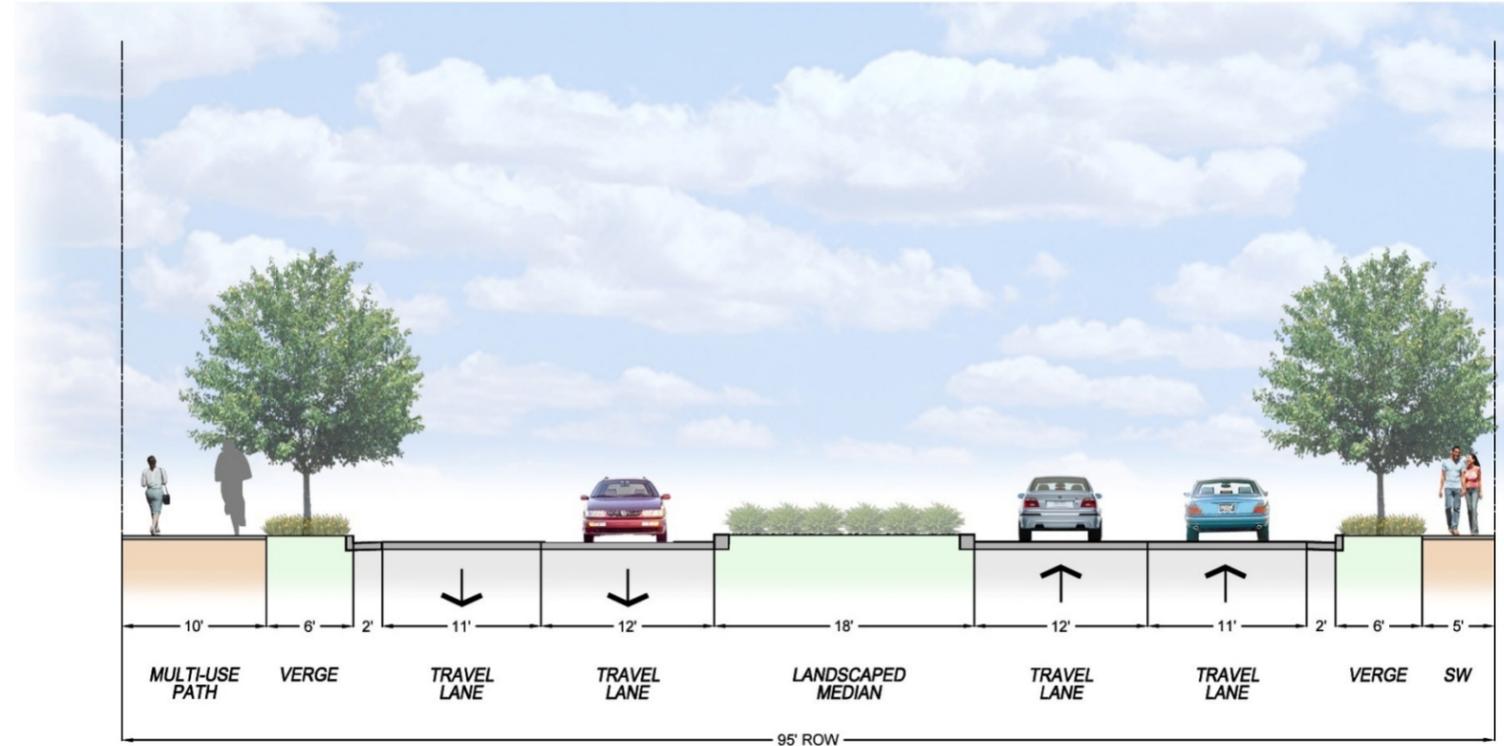
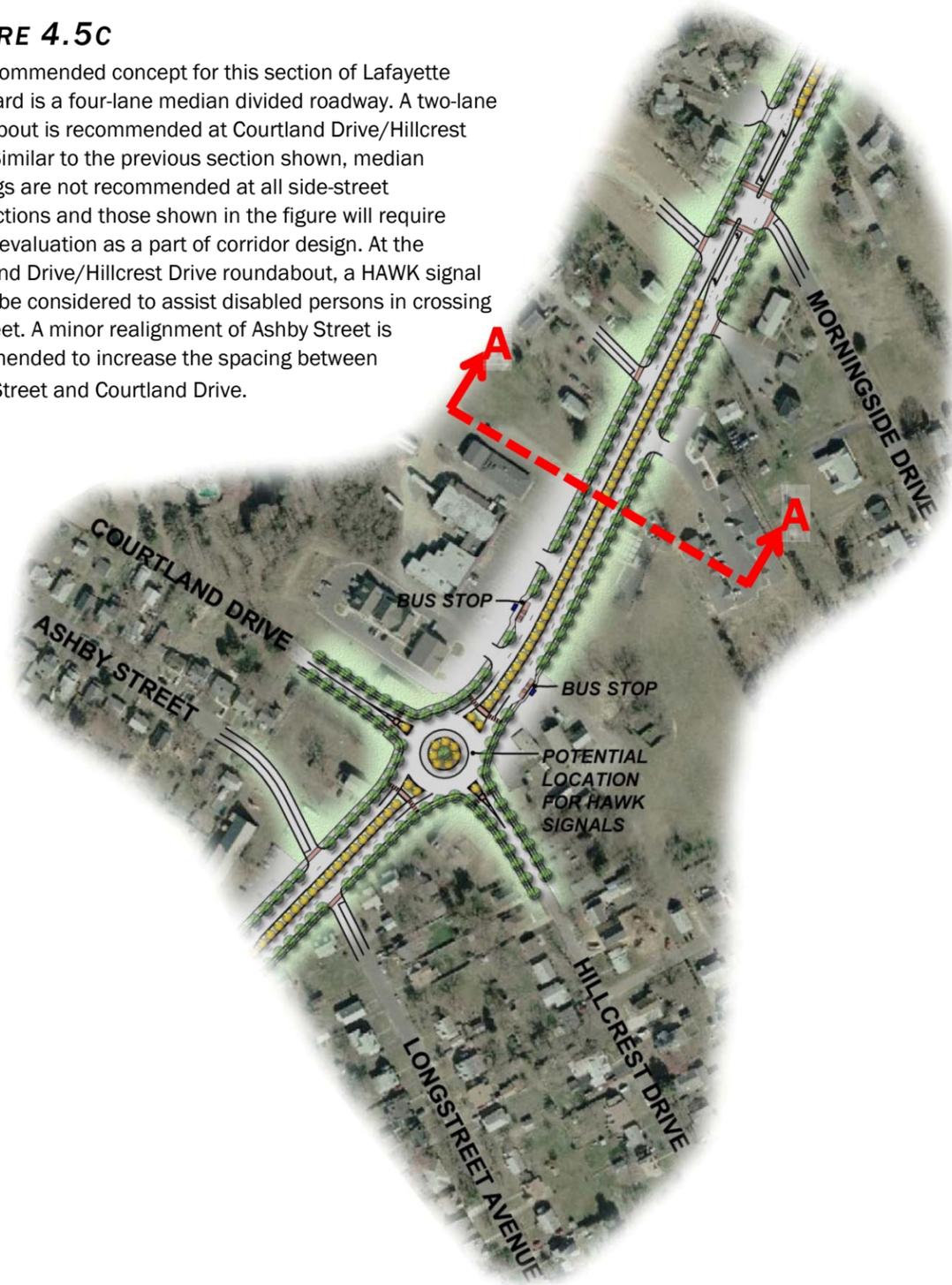




## MORNINGSIDE DRIVE TO ASHBY STREET

**FIGURE 4.5C**

The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway. A two-lane roundabout is recommended at Courtland Drive/Hillcrest Drive. Similar to the previous section shown, median openings are not recommended at all side-street intersections and those shown in the figure will require further evaluation as a part of corridor design. At the Courtland Drive/Hillcrest Drive roundabout, a HAWK signal should be considered to assist disabled persons in crossing the street. A minor realignment of Ashby Street is recommended to increase the spacing between Ashby Street and Courtland Drive.



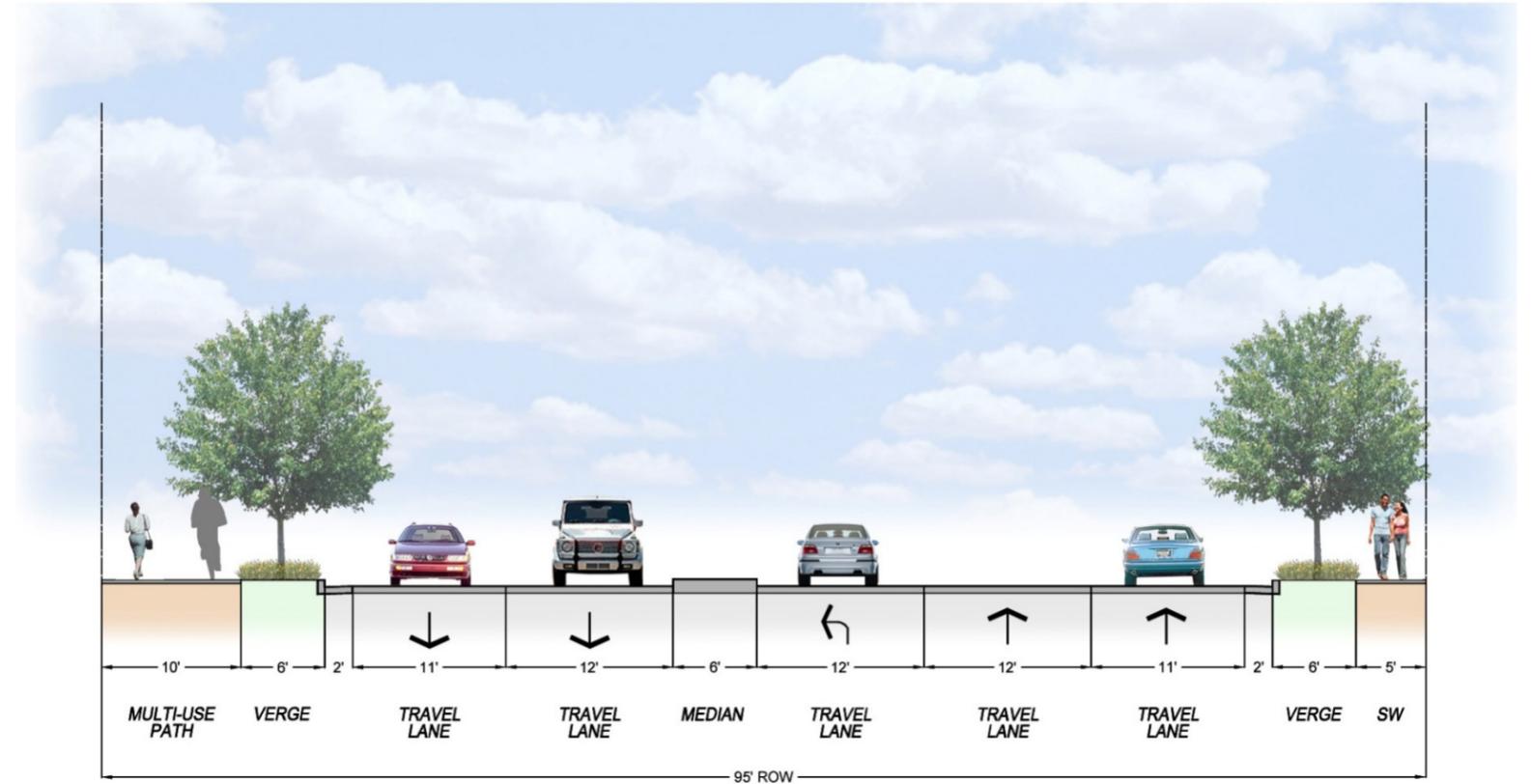
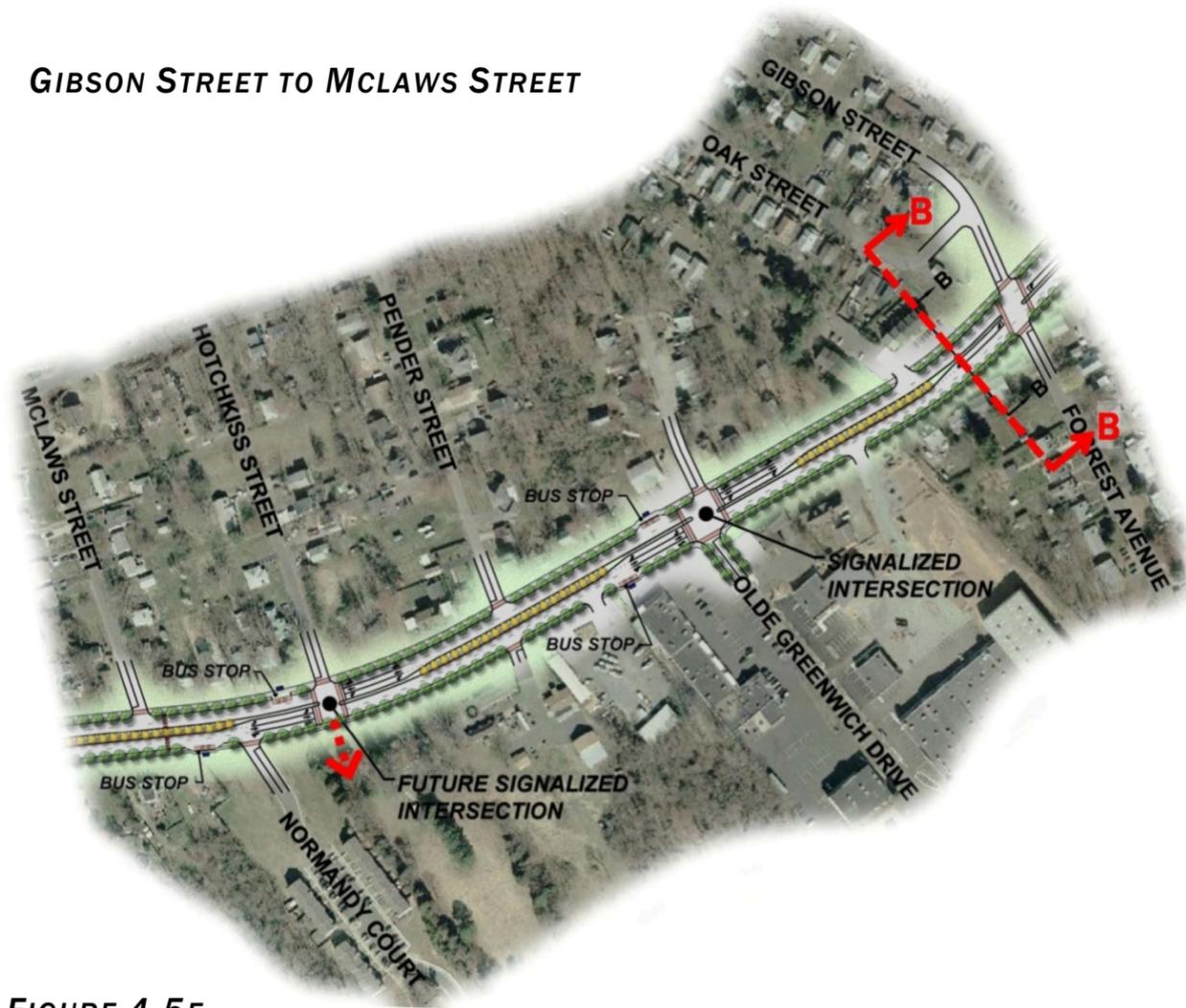
**FIGURE 4.5D: TYPICAL CROSS SECTION AA**





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## GIBSON STREET TO MCLAWS STREET



**FIGURE 4.5F: TYPICAL CROSS SECTION BB**

### FIGURE 4.5E

The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway. It is recommended to maintain the traffic signal at Olde Greenwich Drive and consider an additional traffic signal at Hotchkiss Street. When development occurs to the northeast of Normandy Court, a fourth intersection leg should be created to tie directly to Hotchkiss Street.

Similar to the previous section shown, median openings are not recommended at all side-street intersections and those shown in the figure will require further evaluation as a part of corridor design.





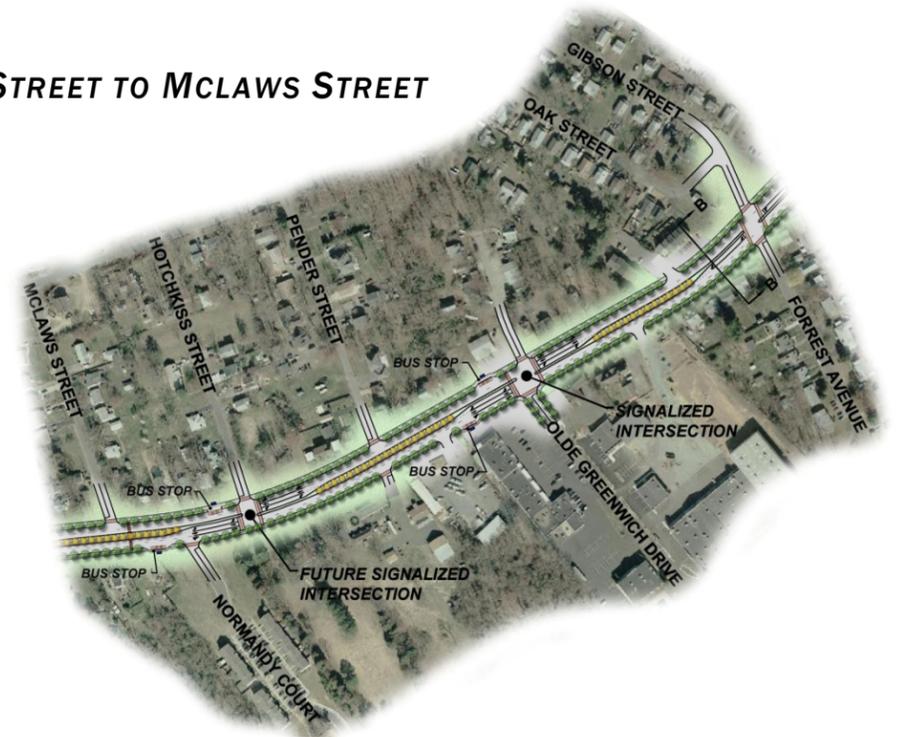
# LAFAYETTE BOULEVARD CORRIDOR STUDY



**FIGURE 4.5G**

This illustration is oriented looking south along Lafayette Boulevard toward Olde Greenwich Drive. The illustration shows the recommended street widening to a four-lane median divided cross section. Also shown, along the west side an eight- to 10-foot wide multiuse path is recommended. Along the east side, a five-foot sidewalk is recommended.

## GIBSON STREET TO MCLAWS STREET



**FIGURE 4.5H**

This illustration is oriented above Lafayette Boulevard looking eastward. The street intersecting from the upper right corner is Olde Greenwich Drive. This image shows the recommended widening of Lafayette Boulevard to a four-lane median divided section with a sidewalk along the east side and a multiuse path along the west side. Far-side bus stops also are shown along with the recommended bus bays and shelters at the stops.





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## GIBSON STREET TO MCLAWS STREET



**FIGURE 4.51**

This illustration is oriented above Lafayette Boulevard looking south toward Olde Greenwich Drive. This illustration clearly shows the recommended four-lane median divided cross section, streetscape, and pedestrian and bicycle facilities. It also conceptually illustrates the consolidation of driveways for individual properties. The typical section for this portion of Lafayette Boulevard requires approximately 95 feet of right-of-way. Existing right-of-way is unknown, but is assumed to be approximately 60 feet.

The image also shows conceptual infill development on two corners of the intersection.





# LAFAYETTE BOULEVARD CORRIDOR STUDY



## GIBSON STREET TO MCLAWS STREET



**FIGURE 4.5J**

This illustration is oriented above Lafayette Boulevard looking north toward Olde Greenwich Drive. This illustration shows the same general street features as the previous illustration. Clearly shown in this image is the treatment of the two bus stops proposed to be adjacent to Olde Greenwich Drive. These bus stops are recommended to have bus bays, shelters, benches, and lighting.





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## 4. COMMERCIAL SECTION (HARRISON ROAD TO US 1)

The detailed recommended concept for this section is shown in **Figure 4.6**. General recommendations for this section of the corridor include the following:

- Four-lane median divided section from Harrison Road to US 1
- Moderate design speed: 40 mph
- Consolidation of driveways
- Provision of left-turn lanes at median breaks and intersections
- Traffic signals at important intersections
- Safe and convenient pedestrian and bicycle accommodations
- Conveniently spaced bus stops and mid-block pedestrian crossings
- Enhanced streetscape
- Median openings/breaks at appropriate intervals to encourage consolidation of access and provide access to property

Specific recommendations for this section of Lafayette Boulevard include:

- New traffic signal at (or in the vicinity of) Lassen Lane
- Installing an eight- to 10-foot multiuse path along the northwest side of the corridor from Harrison Road to US 1
- Installing a five-foot wide sidewalk along the southeast side of the corridor from Harrison Road to US 1
- Designation and enhancement of bus stops near Redwood Drive, Lorraine Avenue, and on Falcon Drive

Additional details and recommendations for this section of Lafayette Boulevard are shown on the pages that follow.



**FIGURE 4.6: RECOMMENDED CONCEPT FOR LAFAYETTE BOULEVARD FROM HARRISON ROAD TO US 1**





# LAFAYETTE BOULEVARD CORRIDOR STUDY

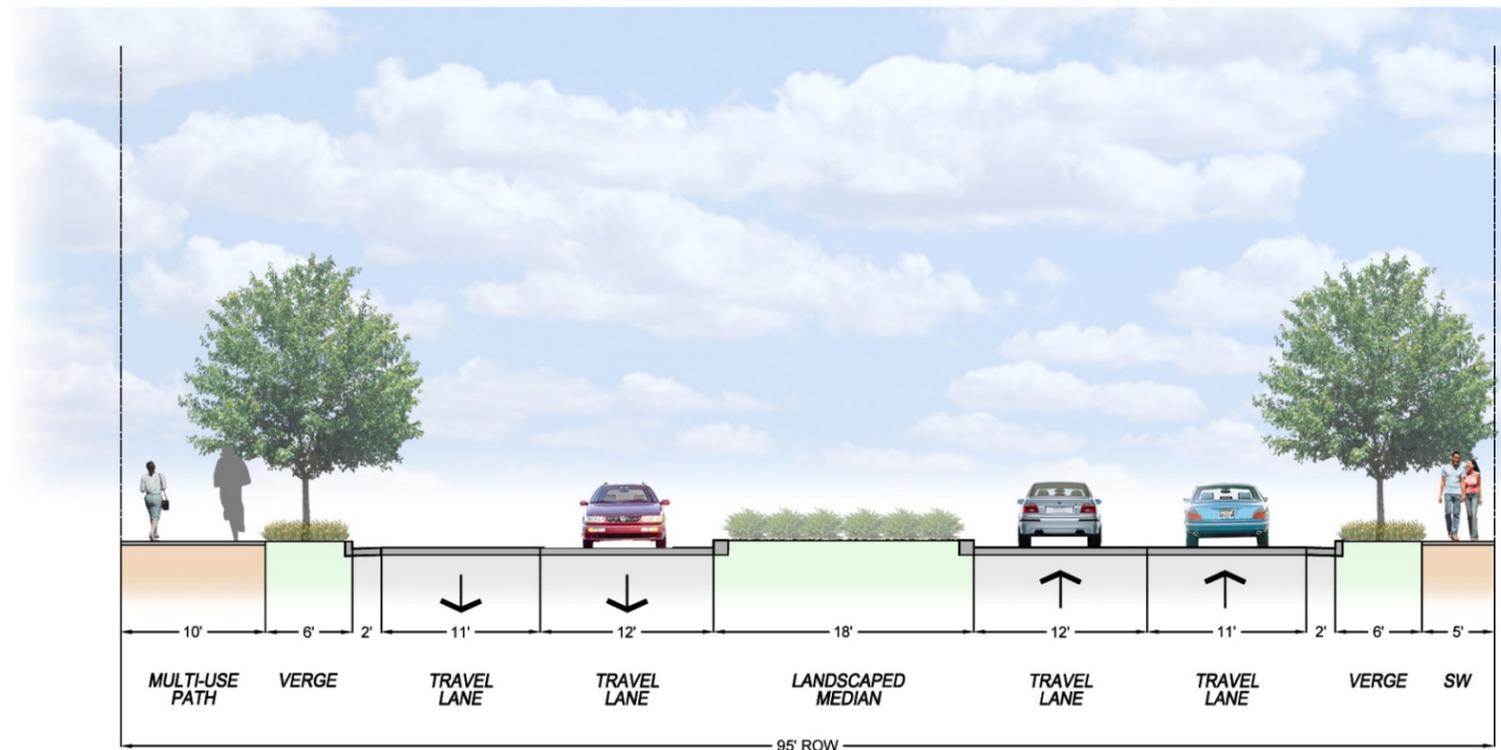


**BEAUREGARD STREET TO HARRISON ROAD**

**FIGURE 4.6A**

The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway on approximately 95 feet of right-of-way. It is recommended to maintain the traffic signal at Harrison Road. Differing from previous sections, right-turn lanes are recommended at major intersections to help accommodate projected increases in traffic along the corridor.

Similar to the previous section, median openings are not recommended at all side-street intersections and those shown in the figure will require further evaluation as a part of corridor design.



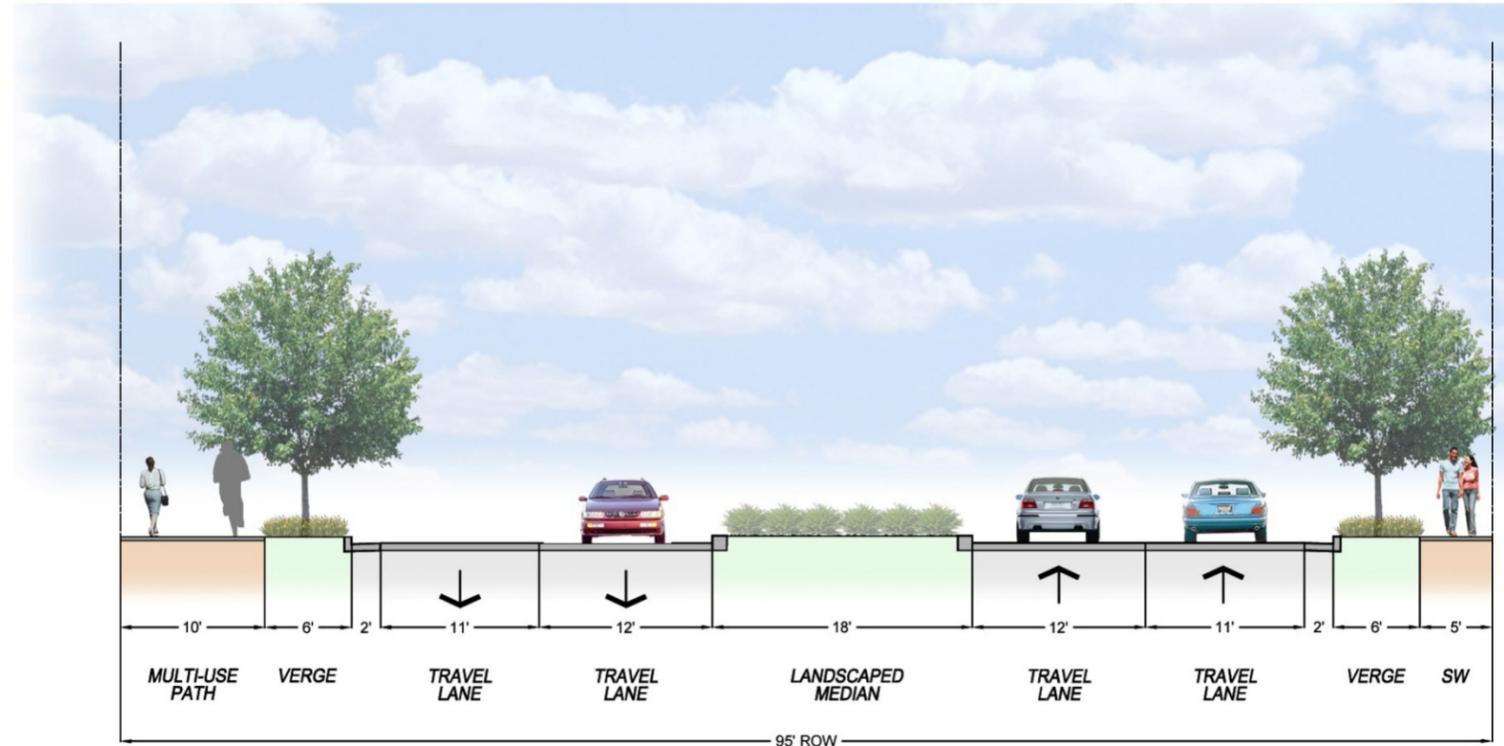
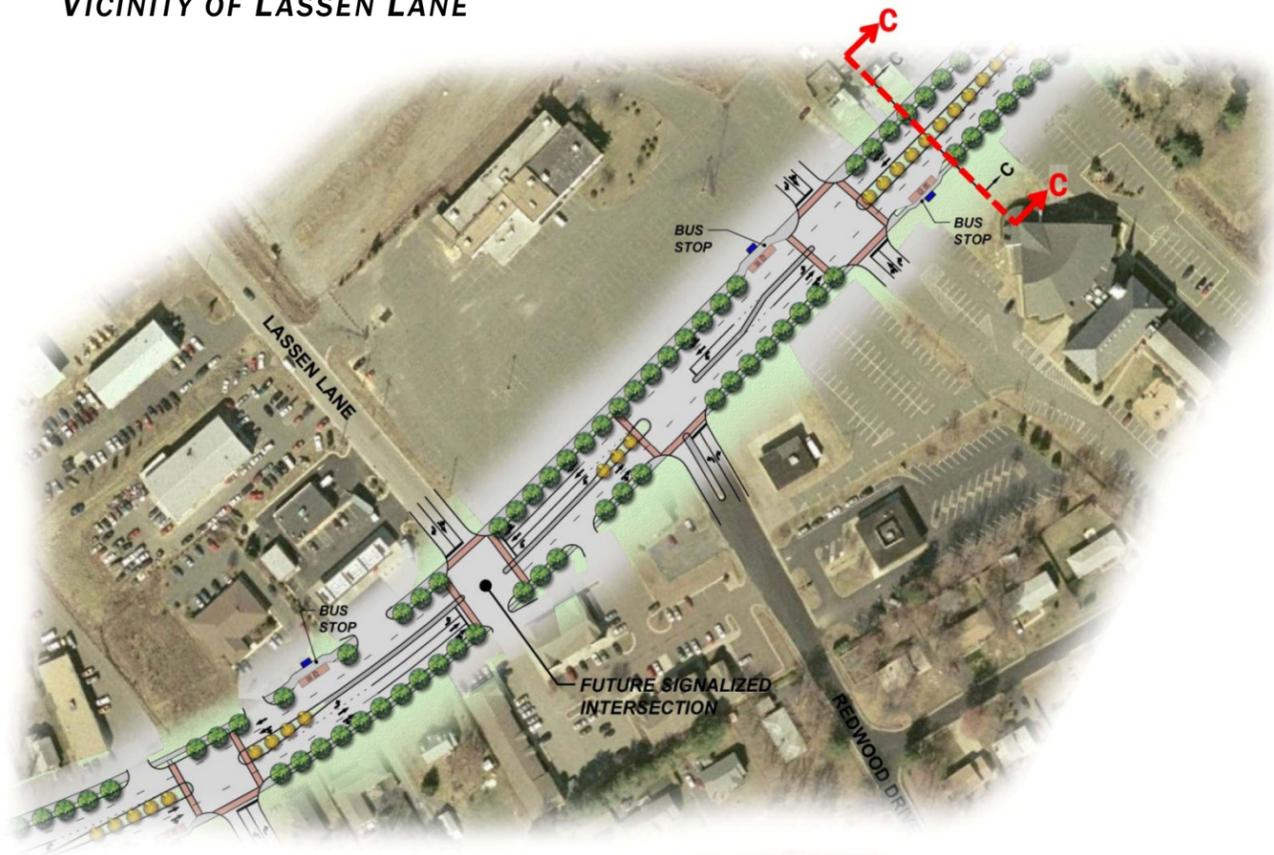
**FIGURE 4.6B: TYPICAL CROSS SECTION CC**





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## VICINITY OF LASSEN LANE



**FIGURE 4.6D: TYPICAL CROSS SECTION CC**

### FIGURE 4.6C

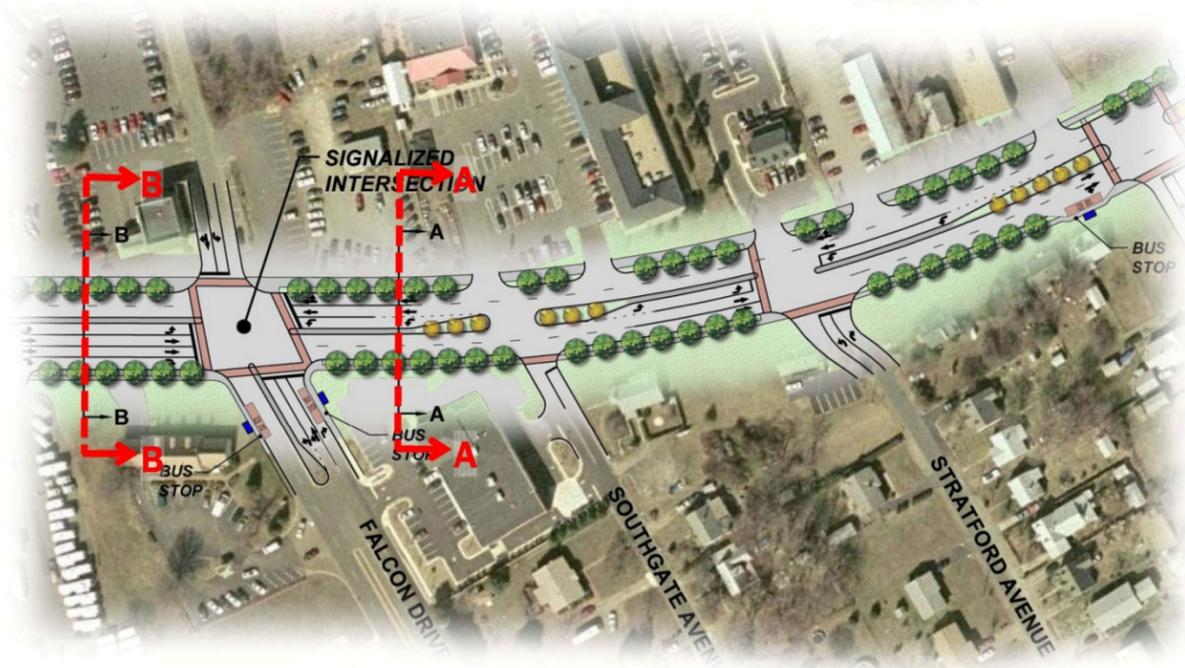
The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway. It is recommended to install a traffic signal at Lassen Lane and to create a new intersection adjacent to Spotswood Baptist Church. Similar to the previous section, right-turn lanes are proposed at some intersections. Also, although median openings are shown more frequently, they are not recommended at all side-street intersections and those shown in this figure will require further evaluation as a part of corridor design.





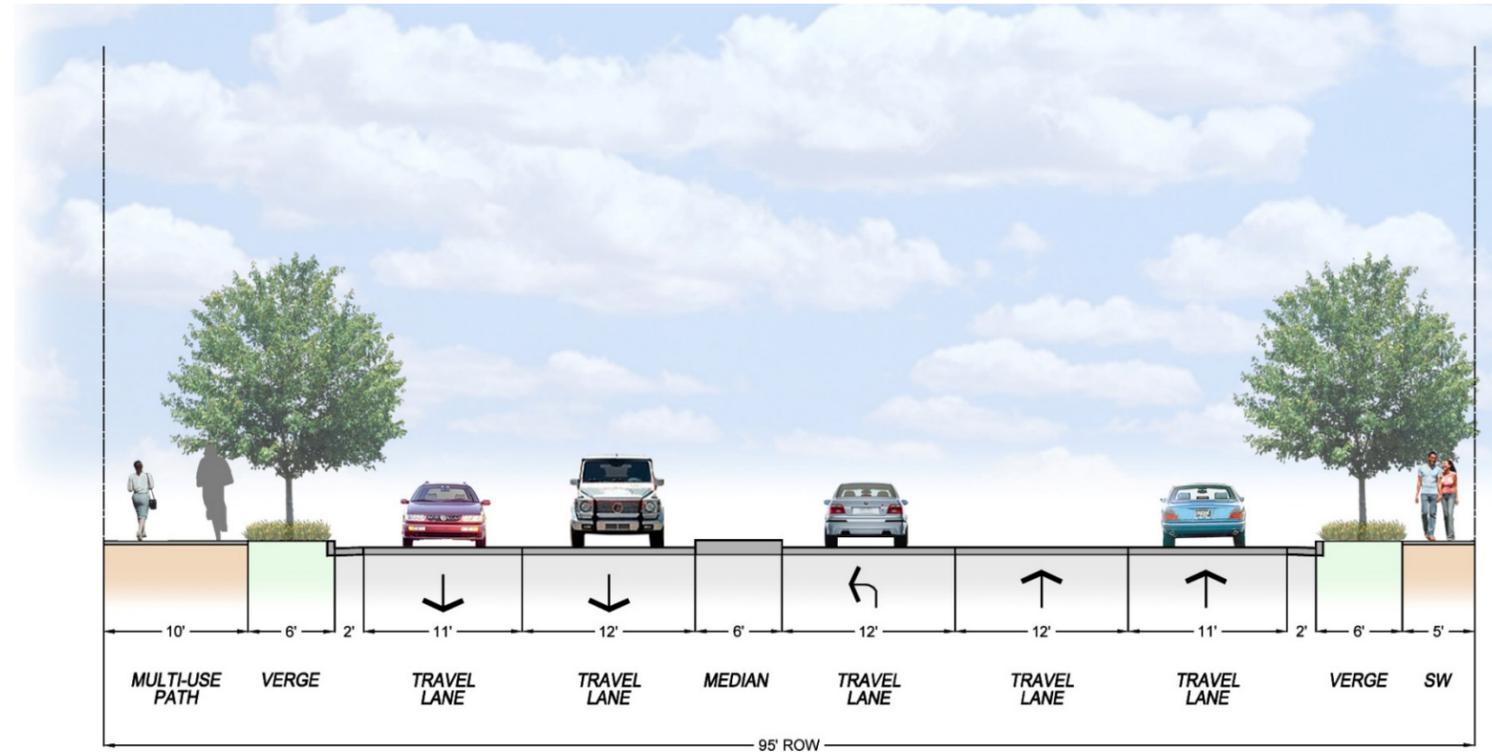
# LAFAYETTE BOULEVARD CORRIDOR STUDY

## VICINITY OF FALCON DRIVE

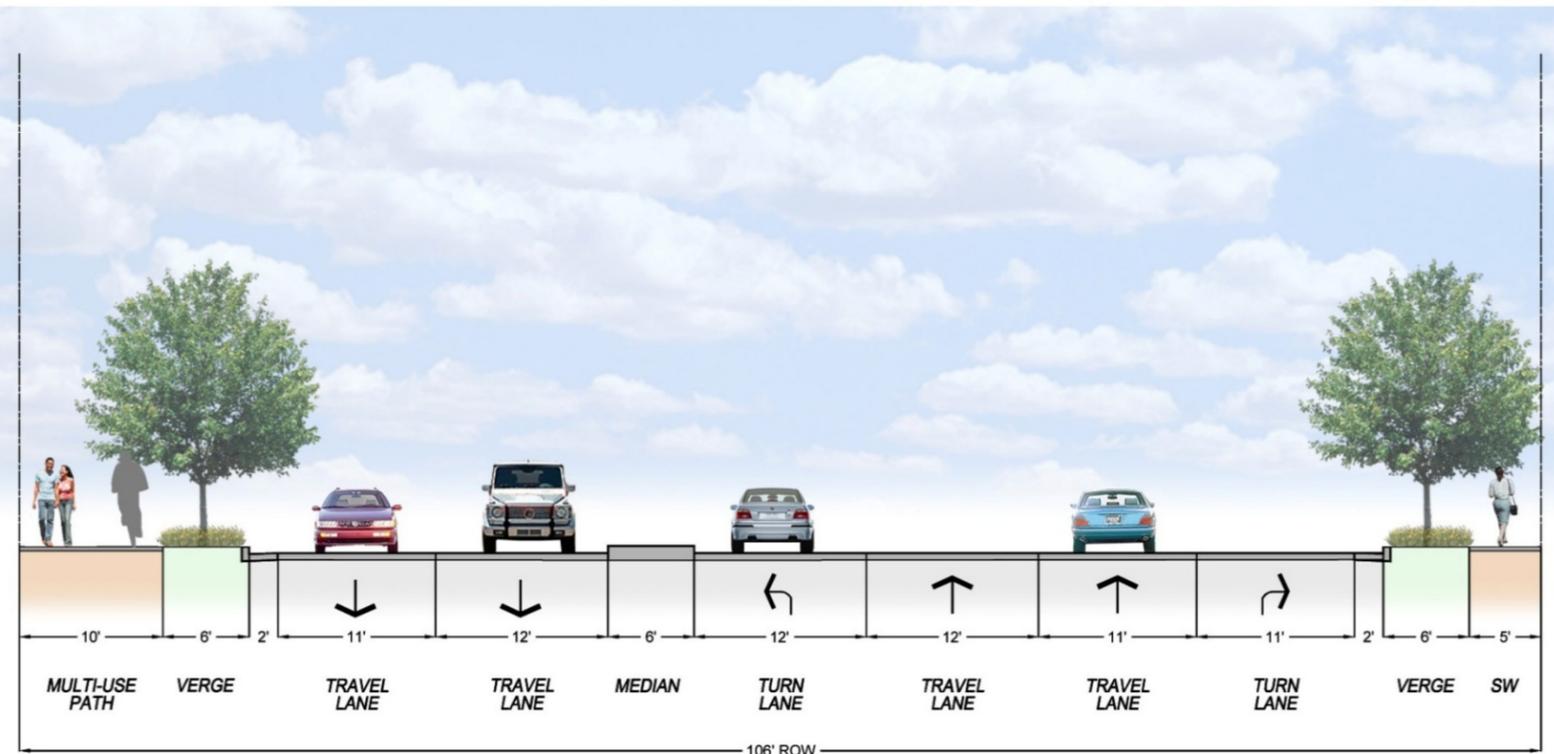


**FIGURE 4.6E**

The recommended concept for this section of Lafayette Boulevard is a four-lane median divided roadway. It is recommended to maintain the existing traffic signal at Falcon Drive. Similar to the previous section, right-turn lanes are proposed at some intersections. Also, although median openings are shown more frequently, they are not recommended at all side-street intersections and those shown in this figure will require further evaluation as a part of corridor design.



**FIGURE 4.6F: TYPICAL CROSS SECTION AA**



**FIGURE 4.6G: TYPICAL CROSS SECTION BB**



## LAFAYETTE BOULEVARD CORRIDOR STUDY

### PEDESTRIANS AND BICYCLE RECOMMENDATIONS

To accommodate growth and enhance mobility in the Lafayette Boulevard corridor it will be essential to improve conditions for vehicular and non-vehicular users. The automobile will undoubtedly remain a popular mode of travel, if not the dominant model of travel; however, in some areas and for many age groups, increasing opportunities to walk and bicycle could greatly contribute to quality of life.

Walking and bicycling have innumerable benefits to personal and societal health, traffic conditions, livability, sustainability, and an area’s vibrancy. Similarly, transit can offer people a real alternative to driving for some trips and offer those who are not able to or choose not to drive a means of making trips to more distant destinations.

#### MULTIUSE PATHS AND SIDEWALKS

A combination of sidewalks and a multiuse trail are proposed to run the length of the corridor:

- **Downtown Fredericksburg to Sunken Road:** Traditional five-foot sidewalks on both sides of the road. Bicyclist would share the cartway with automobiles.
- **Sunken Road to Hazel Run:** An eight- to 10-foot wide multiuse trail would be provided along the east side of the corridor.
- **Hazel Run to south of Blue-Gray Parkway:** An eight- to 10-foot wide multiuse trail would be provided along the west side of the road to connect to the Hazel Run trail and a sidewalk would be provided along the east side of the road.
- **Blue-Gray Parkway to US 1:** An eight- to 10-foot wide multiuse trail would be provided along the west side of the road and a sidewalk would be provided along the east side of the road.
- **Virginia Central Railway trail:** This off-street trail is planned to run approximately parallel to portions of Lafayette Boulevard along the abandoned Virginia Central Railway alignment from west of US 1 to Blue-Gray Parkway where it would connect to the Hazel Run trail.

Augmenting on-corridor facilities for pedestrians and bicyclists, a grade separated pedestrian and bicycle crossing is currently proposed over Blue-Gray Parkway to the west of Lafayette Boulevard. This crossing would connect to the proposed Hazel Run trail and to the Virginia Central Railway trail. The recommended Lafayette Boulevard multiuse path system is recommended to connect to this bridge and connecting trails using the proposed site entrance immediately south of Blue-Gray Parkway.

#### BICYCLE PARKING

Currently, the train station is the only location along Lafayette Boulevard that provides bicycle racks. Bicycle facilities along the corridor are important in providing for cyclist mobility and equally important is providing an appropriate place to secure a bicycle at a destination. Potential destinations that should provide bicycle parking include bus stops, retail centers, parks, and along the downtown streetscape.

#### PEDESTRIAN CROSSINGS

The recommended plan includes pedestrian crossings at most major intersections. At public street intersections and major driveways with low side-street volumes, standard parallel horizontal line crosswalk markings are generally appropriate. At higher volume intersections, high-visibility, ladder-style, or otherwise visually distinctive crosswalk markings should be installed.

All crosswalk markings should be placed based on an engineering study and under the guidance of the current *Manual on Uniform Traffic Control Devices*. Where there are sidewalks adjacent to signalized intersections, push-button activated pedestrian heads with countdown displays should be installed.

#### HAWK SIGNAL

Originally developed by the City of Tucson, this signal type is proving to be beneficial in positively affecting motorist behavior at mid-block pedestrian crossings. High-intensity activated crosswalk (HAWK) signals are a relatively new measure being installed at crosswalks across larger streets where there are not vehicular traffic signals. They are useful in areas with moderate pedestrian and moderate to heavy traffic volumes. They work well in areas that may otherwise not meet the standard “warrants” for vehicular traffic signals, but also are helpful in allowing people with visual and mobility impairments to cross the street safely.

HAWK signals are push-button activated by a pedestrian or bicyclist. The signals function only when activated. When not activated, the signals are not lit. When a pedestrian desires to cross at the HAWK, the following sequence follows:

1. Signal is actuated by pressing the button
2. Overhead signal heads begin to flash yellow and a short time later, display a steady yellow indication. This sequence is intended to make drivers aware of the change in operation and to begin to prepare to stop.
3. Following the solid yellow indication, the system displays a solid red. Meanwhile the pedestrian heads show a “walk” signal.
4. Once the “walk” interval times out, the steady red indication transitions to flashing red. If there are not pedestrians in the crosswalk, intersecting traffic may proceed with caution after first stopping.

HAWK signals have the potential to be particularly useful at roundabouts and other locations in the Lafayette Boulevard corridor including the roundabouts at Kenmore Avenue, Twin Lake Drive, and Courtland Drive/Hillcrest Drive.



Example of a HAWK installation.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## TRANSIT ELEMENTS

In the future, transit service along the Lafayette Boulevard Corridor is likely to remain relatively infrequent. In the short-term, transit service is anticipated to operate on 60-minute headways and in the long-term service is likely to operate on 30-minute headways. To support transit service along Lafayette Boulevard, bus stops are proposed at a number of locations using configurations that are suitable to the proposed location. Bus stop locations and configurations (types) are described in the following sections and shown in **Figures 4.3, 4.4, 4.5, and 4.6** earlier in this Chapter.

## BUS STOP LOCATIONS

Proposed stop locations were identified based on factors that include spacing (distance between stops), adjacent intersection characteristics, adjoining land uses, and physical constraints. Selecting the appropriate stop type and location depends upon the area and its context. Stops should always be sited to maximize connectivity, access, and safety for riders. The following localized conditions should be considered when locating a bus stop:

- Access to pathways for walking and bicycling
- Sight distance for bus drivers and passengers
- Availability of space for a waiting pad area
- Availability of space to allow a person using a wheelchair to have safe and accessible egress and ingress to the bus
- Proximity to local destinations
- Ease of transferring to intersecting bus routes
- Roadside physical constraints

## BUS TURNOUTS

Bus turnouts (or pull outs) provide space for buses to stop to pick-up and discharge passengers out of the flow of traffic. Road traffic is not impeded by buses that stop in turnouts and cars do not erratically change lanes to avoid being stopped behind a bus.

Pullouts can be beneficial to transit service; however, they also may affect bus operations negatively. On roads with speed limits of less than 40 miles per hour and heavy traffic (more than 250 vehicles per hour) for part of the day, turnouts should be used with caution as buses may experience greater difficulty in returning to traffic. Along much of Lafayette Boulevard, speeds are expected to be less than 35 miles per hour; however, traffic is expected to be significant. The recommended street cross section will have curb-and-gutter, which would mean that stopped buses would block traffic.

Although some buses may experience delay in returning to the stream of traffic, bus turnouts are proposed where sufficient space exists. In areas where sufficient space is not available for turnouts, buses would stop in the outermost traffic lane.



Example of a bus turnout with a bike lane.  
Source: Nelson\Nygaard Consulting Associates

## BUS STOP CONFIGURATIONS

Several different bus stop configurations were recommended for future stops along Lafayette Boulevard—near-side, far-side, and mid-block stops. Each of these are described in the following:

- **Near-side stops:** These are located in-advance of an intersection. Near-side stops are appropriate when traffic in the direction of bus travel is heavier beyond the intersection than ahead of it or where the cross-street is a one-way street where traffic flows from right to left. The choice between a near-side and a far-side stop can depend on whether one or the other offers an advantage for transit riders to access a major destination or other intersecting bus routes.

### Advantages

- Allows the width of the intersection to be used to help the bus pull away from the curb
- Prevents double-stopping at a red light

- Provides the driver more opportunity to look for oncoming traffic including other buses with potential transfer passengers

### Disadvantages

- May conflict with right-turning vehicles
- May create or have sight distance issues for pedestrians and traffic
- May block a through vehicle lane during a peak travel period

- **Far-Side Bus Stops:** These are located immediately beyond an intersection. Far-side stops are appropriate when traffic in the bus' direction of travel is heavier on the near-side of an intersection, when there is a large volume of right-turn on the near side of an intersection in the direction of bus travel, or when the crossing street is a one-way street where traffic flows from left to right. The choice between a near-side and a far-side stop also can depend on whether one or the other offers an advantage for transit riders to access a major destination or other intersecting bus routes:

### Advantages

- Minimizes conflicts with right-turning vehicles
- Encourages pedestrians to cross the street behind the bus
- Reduces the required deceleration distance and allow the buses to more easily pull back into traffic after a signalized intersection

### Disadvantages

- Sight distance may be obscured for crossing vehicles and pedestrians
- May produce double-stopping, which is when the bus stops for a red light and then must stop again to pick up and drop off passengers

- **Mid-Block Bus Stops:** These are located between intersections. A mid-block stop is one that is generally located 100 feet or more before or beyond an intersection. Mid-block stops can be advantageous when a near-side or far-side stop is not suitable or when there is a major destination in the middle of the block and activity on the other side of the street is very limited.

### Advantages

- Minimizes sight distance issues for vehicles and pedestrians
- Creates less pedestrian congestion at mid-block passenger waiting areas

### Disadvantages

- Less desirable than near- or far-side stops because they do not maximize access to crosswalks and connecting bus services
- Amount of walking required is increased and may lead to unsafe jaywalking to reach a destination or to catch an arriving bus
- Requires more linear curbside space to be devoted to the bus stop which impacts on-street parking

If possible, crosswalks should be provided at mid-block stops. If there is a mid-block crosswalk, the bus stop should be placed on the far side of the crosswalk to improve sight distance for motorists and pedestrians.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## BUS STOP SPACING

The distance between bus stops greatly affects transit's productivity and coverage. If stops are spaced too close to one another, buses stop too frequently and the speed of the service suffers. On the other hand, if the stops are placed too far apart, transit becomes less accessible and usage may decline. A standard measure for distance between stops on a regular local route is approximately 800 feet, which was used as a guide in locating bus stops along Lafayette Boulevard. Where destinations are more closely spaced and population densities were higher, additional stops were infilled.

## BUS STOP FACILITIES

Waiting for the bus is a significant part of nearly every transit patron's experience. If bus stops provide a comfortable waiting environment, people traveling to and from that area will be more likely to use transit. Conversely, if bus stops do not provide a comfortable environment, people will be less likely to use transit. Not surprisingly, research shows that the quality of the customer experience while waiting for transit vehicles is a crucial determinant of both overall satisfaction and general community attitudes towards transit. This same research shows that the cost of better amenities is often more than offset by increased ridership.

Bus ridership along Lafayette Boulevard is relatively low. The George Washington Region's *Transit Needs Plan* envisions significant general improvements to FRED service including along Lafayette Boulevard. Given that projected ridership at most stops would be low to moderate, recommended elements for bus stops along Lafayette Boulevard are summarized in the following section.

**Bus stop sign:** All stops should have a bus stop sign. Signs should be uniform and clearly identify the bus stop as to the service operated. Signs also should present basic information including route numbers, names, the direction of the route, and a phone number to call for additional information. As applicable, these signs should also note exceptions to normal service practices such as buses operating without wheelchair lifts or bicycle racks.

**Maps and schedule information:** This information is important to informing a waiting passenger of key service information. The provision of schedule information can help reduce some of the uncertainty associated with taking a bus, as it helps to inform people whether they are at the right place, at the right time, and when the bus is scheduled to come. At lower volume stops, this information can be mounted on the bus stop pole. At higher volume stops, more extensive information can be mounted in shelters, on walls, and on freestanding signs. It would be desirable for all stops to provide basic schedule and route information.

## BUS STOP ELEMENT AND DESCRIPTION



ART 73		ART 73	
Arlington Heights -		Arlington Heights -	
Pewee - Pentagon City		Pewee - Pentagon City	
Effective 9.7.03		Effective 9.7.03	
<b>TIME TO GET ABOARD ART 73.</b>			
ART 73 runs at half-hour intervals during extended rush hour periods from 6:22 a.m. to 9:37 a.m. and 3:47 p.m. to 7:52 p.m., Monday through Friday.			
<b>FARES:</b>			
Regular fare is \$1.25 for a Member or ART customer.			
The following discounts are available on ART customers:			
• 50% fare with Member number (available at your Member boarding station)			
• Free ride with valid Member's Hand Tag			
• Free ride with a valid Member transfer			
• Free ride on Member with a valid ART transfer			
• 50% fare senior citizens and people with disabilities in possession of a WEMATA ID or Medicare card on all buses or all routes and on bus transfers and fare. Additional phone ID card may be required.			
<b>HOLIDAY SCHEDULE:</b>			
ART 73 does not operate on these Arlington County holidays: New Year's Day, Martin Luther King Jr. Day, President Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, day after Thanksgiving, and Christmas Day.			
<b>ADA ACCESSIBLE:</b>			
All ART buses are fully ADA accessible with wheelchair lifts and priority seating. TDD is available for the hearing impaired through Virginia Rider Center at 1-800-828-1128.			



# LAFAYETTE BOULEVARD CORRIDOR STUDY

## BUS STOP ELEMENT AND DESCRIPTION

**Paved waiting area:** Stops should have a paved waiting area where riders can sit or stand while waiting. Along Lafayette Boulevard, the paved waiting areas can be integrated into the sidewalks and multiuse path. They should be accessible to persons with disabilities and ideally should be relatively flat. There should be adequate room on the waiting area for a bus to extend its wheelchair ramp and for wheelchair users to navigate their chairs onto the ramp. Bus stop waiting pads can be defined through the use of colored or stylized pavers if desired.



**Trash can:** Trash receptacles are a convenience for waiting riders and help to reduce the amount of trash left on buses and on the street. Trash cans should be within easy reach of the bus stop waiting area, but should not block sidewalk traffic or pedestrian access to buses. If the stop has a shelter, the trash receptacles can be integrated with the shelter. In busier areas (and where pick-up is scheduled on a regular basis), a recycling receptacle also can be provided to collect newspapers and/or bottles and cans. Trash receptacle design should be consistent with the design of the other bus stop furniture and amenities, and could be emptied by individual cities as part of their normal trash pickup service.



**Lighting (typically from a streetlight):** Strategic placement of street lights can minimize the need for additional street lighting to be located to support a transit stop. At night, passengers tend to feel much more comfortable waiting at a bus stop if it is lit. In most urban settings, stops can be sited at locations that are lit through other sources, such as street lights, or light at nearby businesses. It is possible to provide lighting at the stop itself using solar mounted lights or within shelters.





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## BUS STOP ELEMENT AND DESCRIPTION

**Shelter with seating:** These provide protection from the elements for waiting passengers and help to identify stop locations. Aside from buses, they are one of the most visible elements of a transit system. As such, attractive and well designed shelters can help to provide a strong positive image, and also publicize the availability of transit.

Shelters can be designed in an unlimited number of ways, and can range from simple off-the-shelf designs to complex custom designs. Shelters, as their name implies, should shelter passengers from the elements, and to do this they should have at least two walls. They should also provide seating and clear areas for wheelchairs. Similar to benches, shelters present an opportunity to integrate art into the bus stop, or to generate advertising revenues.



**Bike racks:** Bicycle racks help to provide an additional way for passengers to access bus service. Bike racks can range from very basic to whimsical shapes that act as a type of public art.





# LAFAYETTE BOULEVARD CORRIDOR STUDY

## RECOMMENDED BUS STOPS

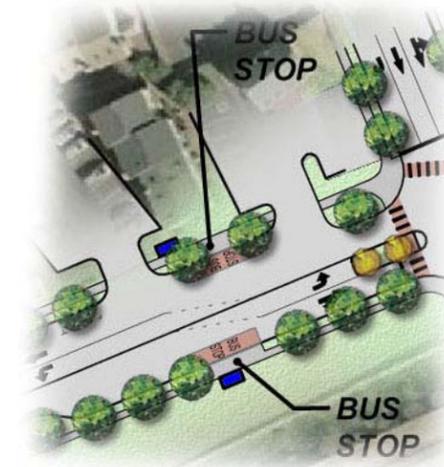
Along Lafayette Boulevard, one of the most important considerations was to fit bus stops and pullouts into a developed environment. The consideration of physical constraints and operations of Lafayette Boulevard were important in determining which type of stop would be appropriate for a particular location. Major constraint considerations included:

- Location of activity centers
- Desire to minimize impacts on residences
- Availability of space for bus pull-outs
- Availability of space for shelters

The following figures illustrate recommended bus stops along Lafayette Boulevard.

## BUS STOP DESCRIPTION AND LOCATION

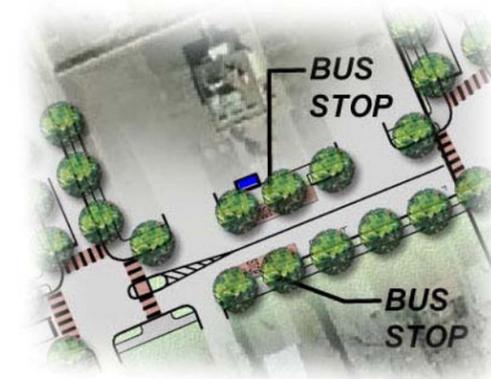
**Figure 4.7: Princess Anne Street.** This stop is a mid-block bus stop. In the northbound direction, this bus stop would be in the traffic lane and in the southbound direction the bus stop would displace on-street parking.



**Figure 4.8: Jackson Street.** This far side bus stop recommends the bus stopping in the travel lane. A high-visibility, ladder-style pedestrian crosswalk would be recommended at this location.

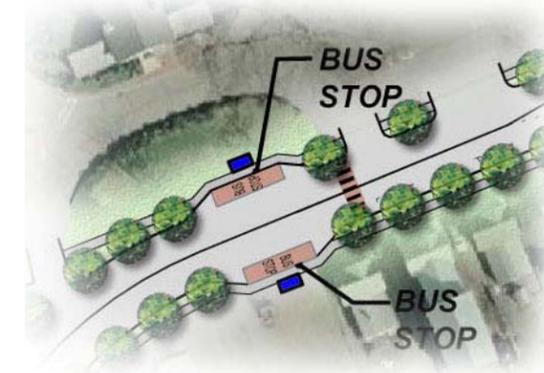


**Figure 4.9: Weedon Street/Spotswood Street.** This mid-block bus stop would be located between Weedon Street and Spotswood Street. In both directions, the bus would stop partially out of the flow of traffic using the on-street parking lane.

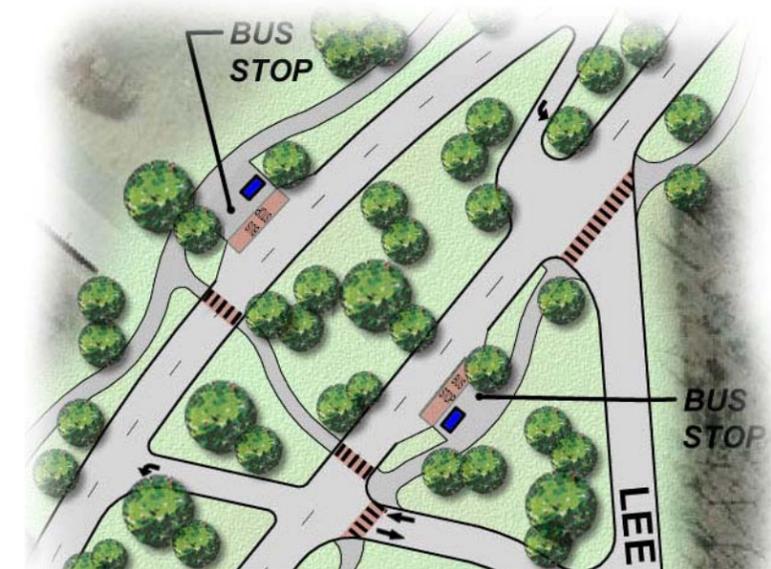


## BUS STOP DESCRIPTION AND LOCATION

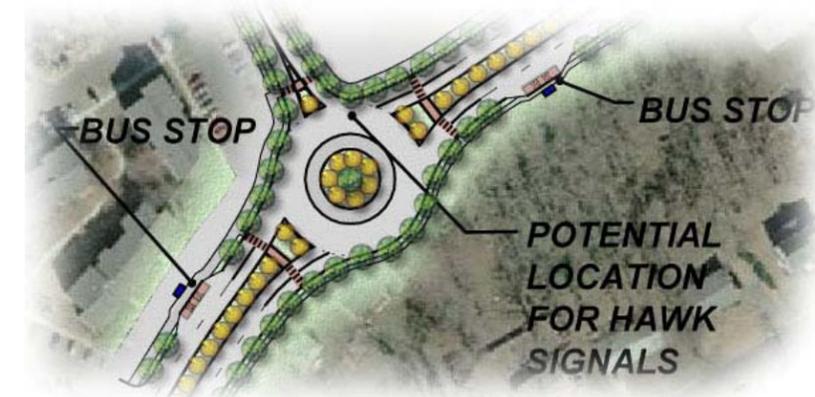
**Figure 4.10: Sunken Road/Weedon Street.** This mid-block bus stop would be located adjacent to the park office for the Battlefield Cemetery between Sunken Road and Willis Street. Bus bays are recommended at this location.



**Figure 4.11: Lee Drive.** This mid-block bus stop is recommended between the legs of Lee Street. Bus bays are recommended at this location in addition to a mid-block crosswalk.



**Figure 4.12: Twin Lake Drive.** This far-side bus stop is recommended to be located adjacent to Twin Lake Drive. Due to the presence of the roundabout and the potential for buses to create queues that could affect the operation of the roundabout, bus bays are proposed at this location. To further enhance pedestrian safety at this location, a HAWK signal should be considered.

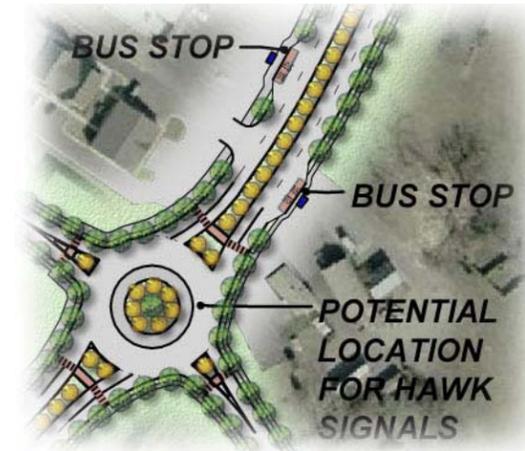




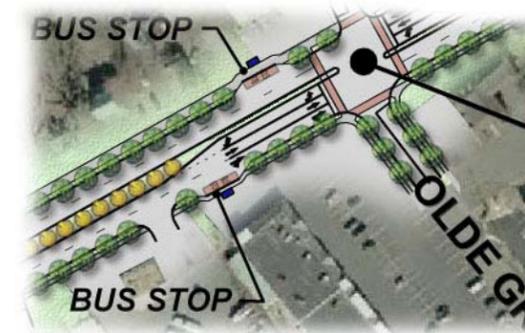
# LAFAYETTE BOULEVARD CORRIDOR STUDY

## BUS STOP DESCRIPTION AND LOCATION

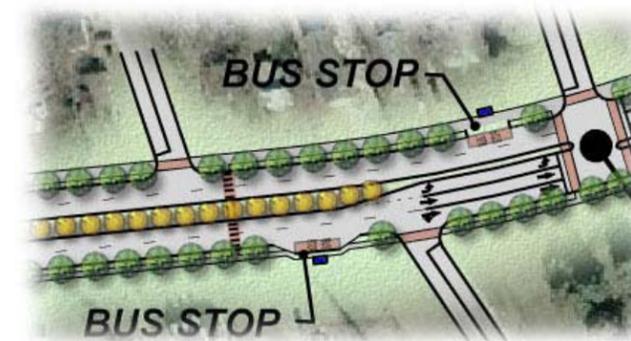
**Figure 4.13: Courtland Drive.** This combination far-side/near-side bus stop is recommended to be located adjacent to Courtland Drive. In the southbound direction, buses would stop sufficiently in-advance of the roundabout. In the northbound direction, buses would stop following the roundabout. Bus bays are recommended in both directions.



**Figure 4.14: Olde Greenwich Drive.** This combination far-side/near-side bus stop is recommended to be located to the south of Olde Greenwich Drive. Bus bays are recommended in each location.



**Figure 4.15: Normandy Court/Hotchkiss Street.** This mid-block bus stop is proposed to have a bus bay in the northbound direction and an in-travel lane stop in the southbound direction. Accompanying the bus stop, a mid-block pedestrian crossing is recommended between Normandy Court and Mclaws Street. It is recommended that the crosswalk at this location be marked using ladder-style pavement markings.



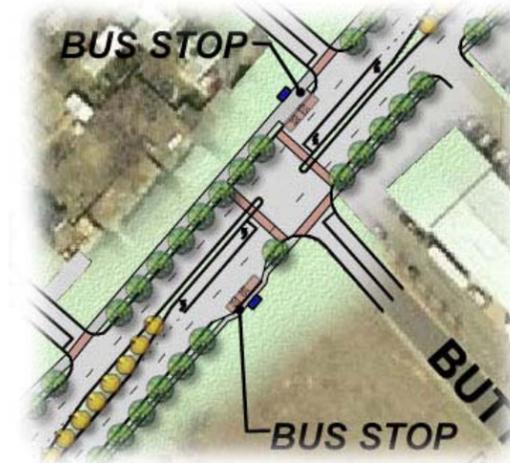
**Figure 4.16: Hudgins Road.** This far-side bus stop is recommended to provide bus bays in both directions.



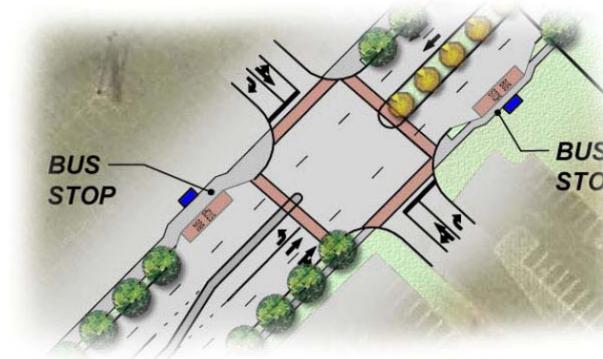


## BUS STOP DESCRIPTION AND LOCATION

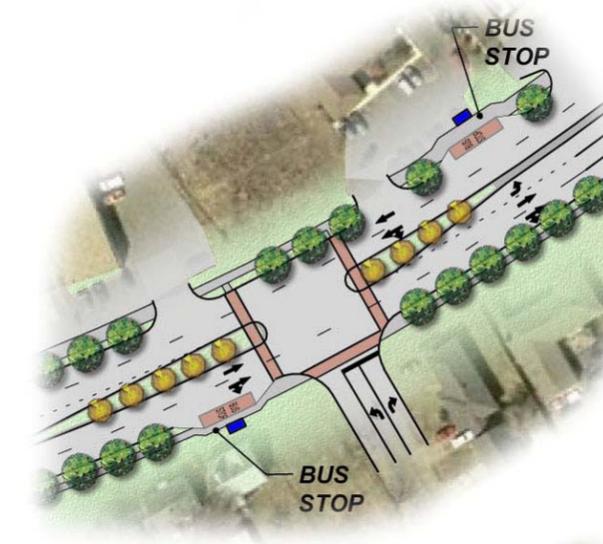
**Figure 4.17: Butternut Drive.** This near-side bus stop is recommended to provide a bus bay in the northbound direction and an in travel-lane stop in the southbound direction.



**Figure 4.18: Spotswood Baptist Church.** This far-side bus stop is recommended to provide a bus bay in both directions.



**Figure 4.19: Lassen Lane.** This near-side bus stop is recommended to have bus bays in both directions.

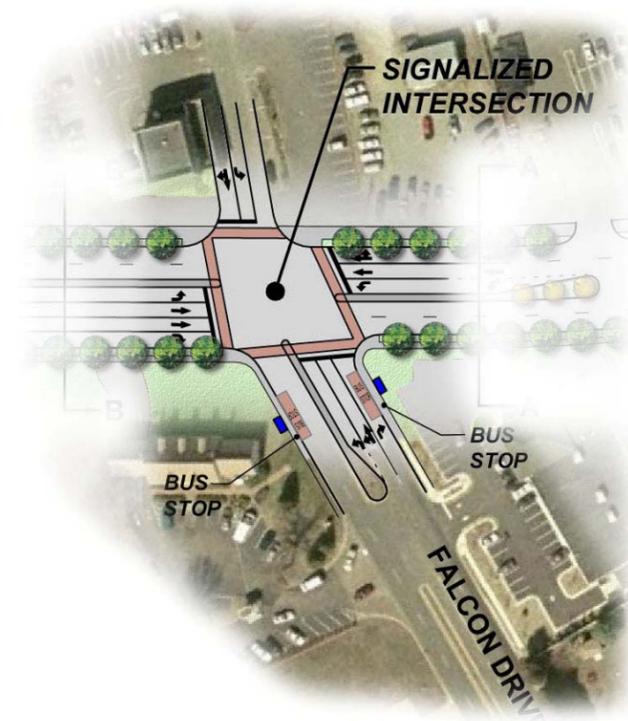


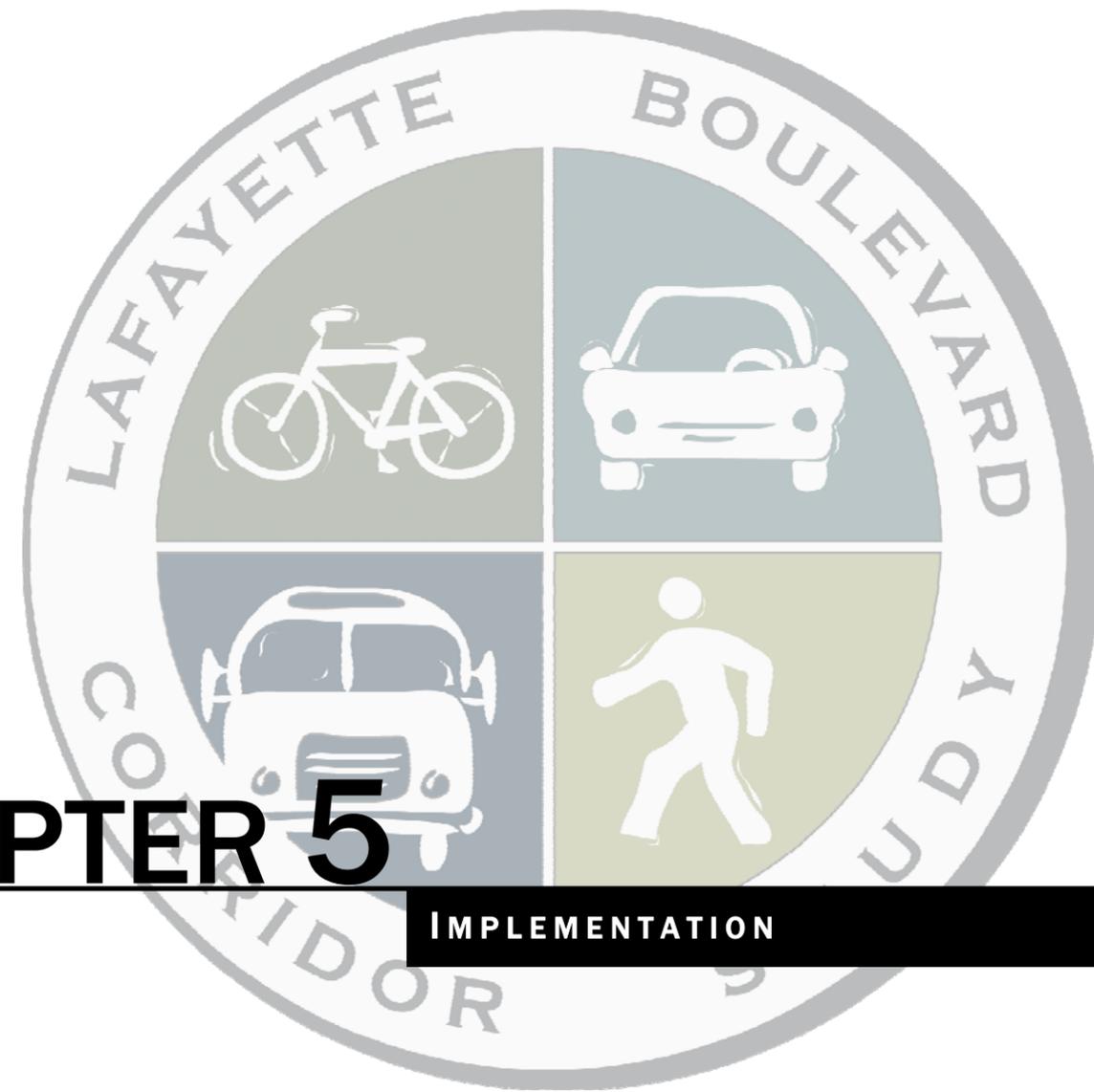


# LAFAYETTE BOULEVARD CORRIDOR STUDY

## BUS STOP DESCRIPTION AND LOCATION

**Figure 4.20: Falcon Drive.** Bus stops at this location are proposed to be located on Falcon Drive. Stops in both directions are recommended to be located in the travel lane.





# CHAPTER 5

IMPLEMENTATION



## LAFAYETTE BOULEVARD CORRIDOR STUDY

# IMPLEMENTATION

The recommended corridor plan for Lafayette Boulevard includes recommendations to remedy safety, capacity, aesthetic, and other issues in addition to identifying measures to accommodate future travel demand by all modes of transportation. The recommended plan takes a multimodal approach to accommodating growth in travel demand by focusing on vehicular improvements as well as enhancements to support greater transit use and more convenience and safety for pedestrians and bicyclists.

To implement elements of the recommended plan will require the partnership of a number of entities including the City of Fredericksburg, Spotsylvania County, Fredericksburg Area Metropolitan Planning Organization (FAMPO), Virginia Department of Transportation (VDOT), the National Parks Service (NPS), private transportation providers, neighborhood residents, elected officials, private land owners, developers, and other parties. Achieving success along the corridor will require cooperation, coordination, compromise, and investment. The corridor plan will need to be further developed through detailed engineering studies and designs and through public outreach associated with design efforts. Key steps in implementation include the following:

- **Acceptance/Adoption/Approval of the Plan:** The City of Fredericksburg, Spotsylvania County, and FAMPO should approve/adopt the corridor study. It should be referenced as a part of other local and regional planning documents.
- **Allocation/Programming:** Funds for design and construction should be programmed by Fredericksburg, Spotsylvania County, and VDOT. In addition, as new development is approved along the corridor, right-of-way should be reserved and segments of the future cross section should be constructed as appropriate.
- **Organization:** The corridor spans two jurisdictions. A deliberate effort should be undertaken to coordinate project programming and design activities to support the logical and efficient implementation of the corridor plan.
- **Design:** The corridor study document contains a relatively specific set of recommendations. Engineering plans will need to be prepared prior to advancing the project to construction.
- **Acquisition:** Along many sections of Lafayette Boulevard, it will be necessary to acquire right-of-way to construct the recommended plan. Further studies will be necessary to verify precise right-of-way impacts and property acquisition needs.
- **Construction/Operation:** Once plans and studies are complete and funding is available, modifications would be constructed.

## RIGHT-OF-WAY CONSIDERATIONS

At the time of the corridor study, detailed right-of-way information was not available for the study corridor. The following assumptions were made with regard to right-of-way for Lafayette Boulevard:

- **Sophia Street to Young Street:** 55 feet
- **Young Street to US 1:** 60 feet

Based on these assumptions, no additional right-of-way was assumed to be needed to accommodate the recommended corridor plan for Lafayette Boulevard between Sophia Street and Young Street. Between Young Street and St. Paul Street, the recommended typical cross section varies, but generally 40 additional feet of right-of-way is needed to construct the recommended plan. At intersections throughout the Lafayette Boulevard corridor as well as the recommended Lafayette Boulevard/Blue-Gray Parkway interchange, right-of-way in addition to the aforementioned 40 feet will be necessary to accommodate roadway elements such as dedicated turn lanes, traffic signal equipment, ramps, and structures. The following should be considered when securing right-of-way needed for the implementation of the corridor plan:

- **Sophia Street to Young Street:** No additional right-of-way is assumed to be needed to accommodate the recommended corridor concept plan in this section.
- **Young Street to Blue-Gray Parkway:** A minimum of 35 additional feet of right-of-way should be secured along the southeast side of the corridor to support modifications associated with the interchange at Blue-Gray Parkway.
- **Blue-Gray Parkway interchange:** A detailed concept design should be prepared to specifically identify future right-of-way lines for the interchange (loops, structures, and ramps) and associated road widening and recommended pedestrian and bicycle facilities on Lafayette Boulevard and Blue-Gray Parkway.
- **Blue-Gray Parkway to St. Paul Street:** Impacts should be avoided on National Parks Service lands and the corridor should be widened toward the west. In sections of the corridor where the cross section is typical, approximately 100 feet of right-of-way should be secured even though the typical cross section has the potential to be implemented with a 95-foot wide (minimum) right-of-way.
- **St. Paul Street to US 1:** Generally, a 100-foot right-of-way should be secured along this section of Lafayette Boulevard even though the typical cross section has the potential to be implemented with a 95-foot wide (minimum) right-of-way. To minimize structure impacts in this section of the corridor, a combination of symmetric and asymmetric widening of the right-of-way should be considered based on a detailed engineering plan.

## CORRIDOR MODIFICATION IMPACTS

As recommended modifications to Lafayette Boulevard are designed, the property (land and structures) and environmental impacts of constructing the recommended plan will be better understood and should be mitigated wherever feasible. The section of Lafayette Boulevard between Young Street and US 1 will require additional right-of-way to be constructed. Between Young Street and US 1, it is likely that the widening of Lafayette Boulevard will occur through symmetric (equally about the centerline) and asymmetric (unevenly about the centerline) modifications.

Figures 5.1, 5.2, and 5.3 show potential structure impacts as a result of the implementation of the recommended corridor plan. Structures within 40 feet of the future right-of-way line (outside of downtown Fredericksburg) and falling within the potential future right-of-way are highlighted. The identification of proximity impacts to structures is not intended to imply that these structures will be acquired or that these are the only proximity impacts. Instead, the identification of possible impacts is intended to inform the reader of this document that there will be impacts to property as a result of the widening of Lafayette Boulevard and that the impacts will vary depending on how the corridor is modified.

In terms of potential proximity impacts, all three scenarios have the potential to affect—either directly or through a proximity impact—approximately 135 to 145 structures. The symmetric widening scenario has the fewest number of structures that would fall within the planned right-of-way. Approximately 17 of these structures are within the Lafayette Boulevard/Blue-Gray Parkway interchange footprint area. The remaining six are dispersed along the corridor. Considering the results of the evaluation of potential right-of-way impacts along the corridor, the most responsible widening scenario is likely to be a combination of symmetric and asymmetric widening to minimize individual property acquisition as well as structure impacts.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

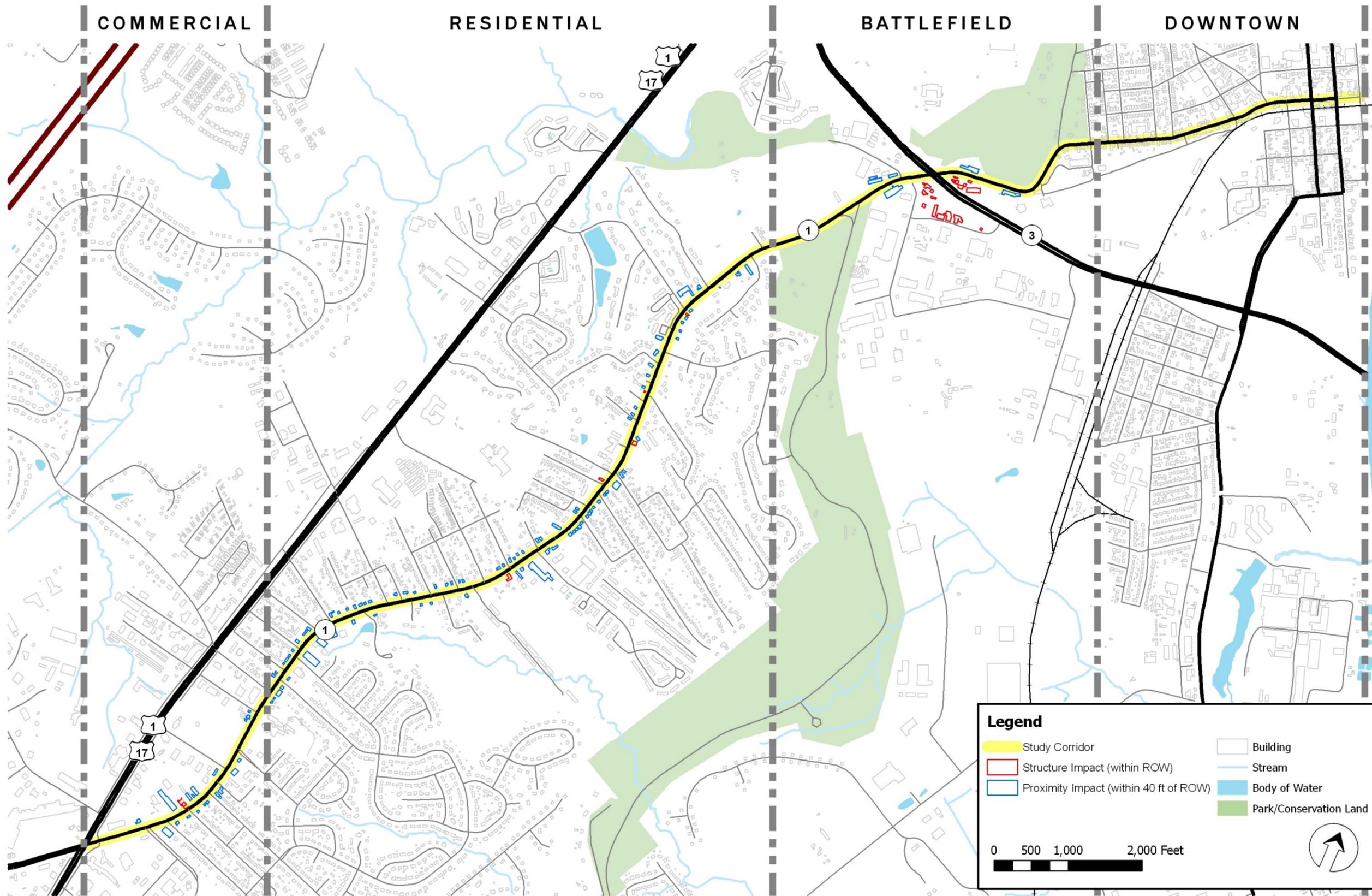


Figure 5.1  
**SYMMETRIC  
 WIDENING**

**DESCRIPTION**

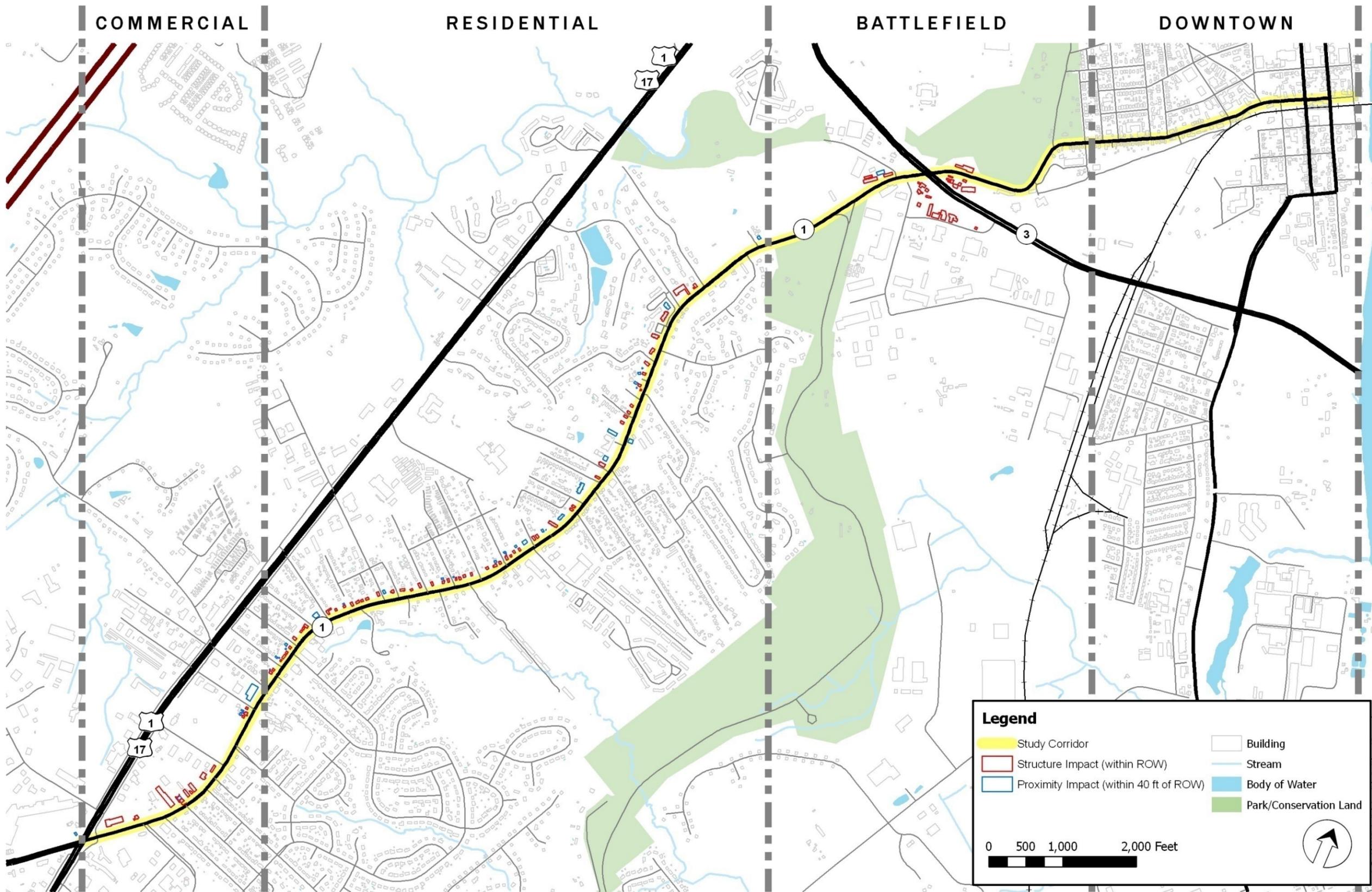
This figure illustrates potential impacts to structures along Lafayette Boulevard if the corridor is widened equally about the existing centerline.

**OBSERVATIONS**

As shown, approximately 23 structures are anticipated to be within the future right-of-way, which was assumed to be 100 feet (50 feet on either side of the road centerline) between Young Street and US 1. An additional 116 structures have some portion that will be within 40 feet of the future right-of-way line. As shown, structure impacts would be dispersed among both sides of the street.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



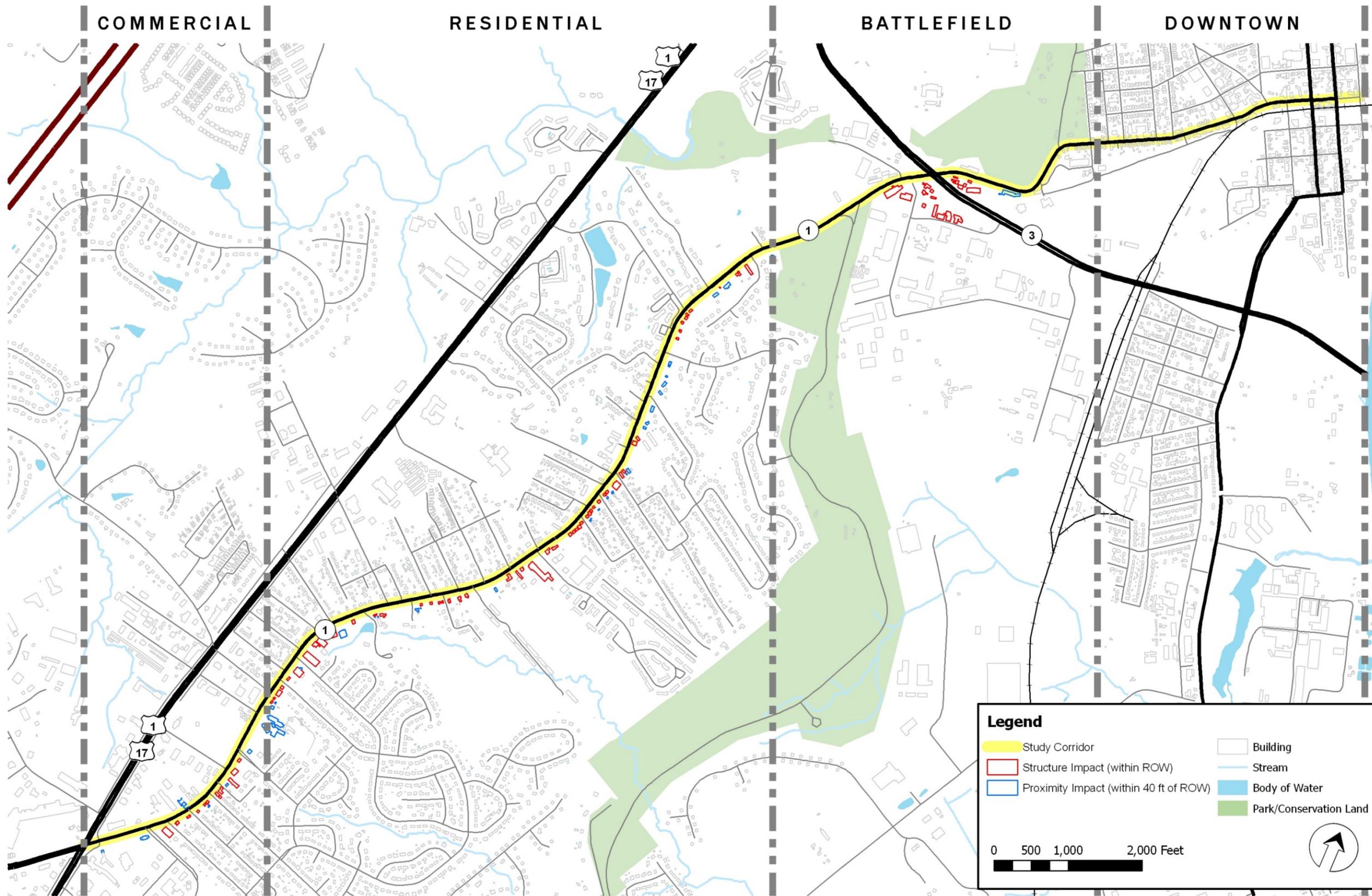
**Figure 5.2**  
**WEST SIDE WIDENING**

**DESCRIPTION**  
This figure illustrates potential impacts to structures along Lafayette Boulevard if the corridor is widened to the west only. The existing east side right-of-way line would be maintained in this scenario.

**OBSERVATIONS**  
As shown, approximately 91 structures are anticipated to be within the future right-of-way, which was assumed to be 100 feet between Young Street and US 1. An additional 55 structures have some portion that will be within 40 feet of the future right-of-way line. Also shown, structure impacts would be concentrated almost entirely to the west.



# LAFAYETTE BOULEVARD CORRIDOR STUDY



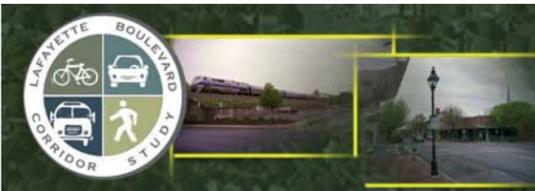
**Figure 5.3**  
**EAST SIDE WIDENING**

**DESCRIPTION**

This figure illustrates potential impacts to structures along Lafayette Boulevard if the corridor is widened to the east only. The existing west side right-of-way line would be maintained in this scenario.

**OBSERVATIONS**

As shown, approximately 82 structures are anticipated to be within the future right-of-way, which was assumed to be 100 feet between Young Street and US 1. An additional 53 structures have some portion that will be within 40 feet of the future right-of-way line. Also shown, structure impacts would be concentrated almost entirely to the east.



## LAFAYETTE BOULEVARD CORRIDOR STUDY

### PHASING

It is unlikely that the recommended plan for Lafayette Boulevard will be constructed in a single phase. **Figure 5.4** identifies potential phases of construction for Lafayette Boulevard based on factors such as availability of right-of-way, partnership opportunities, and project scale.

### SUMMARY OF PLAN RECOMMENDATIONS

A summary of recommendations is shown in **Table 5.1**. This table organizes recommendations by location, action, the general project type, responsible parties/organizations, alignment with plan objectives, and implementation timeframe. Immediate-, short-, mid-, and long-term timeframes are described below.

- **Immediate-term (0 to 1 year):** includes relatively straight-forward recommendations that do not require right-of-way acquisition or complex engineering. Some items within this classification may require more than a year to complete; however, it is intended that the process for accomplishing these recommendations will begin within the timeframe specified.
- **Short-term (1 to 5 years):** includes more complex and expensive (time, effort, and money) elements. This group of projects starts to put infrastructure and services in-place to accomplish the long-term vision of the corridor. The intent is that these projects will be programmed, have funding identified, and then be undertaken as funding becomes available with the short-term horizon.
- **Mid-term (6 to 10 years):** includes increasing complex and expensive (time, effort, and money) projects. To address many of these recommendations will require partnership among multiple entities. Elements within this phase will noticeably affect the corridor's character.
- **Long-term (beyond 10 years):** includes substantial elements of the plan that are of significant complexity and expense (time, effort, and money).

### OBJECTIVES

Plan objectives are briefly summarized below for reference:

- A. Strengthen the community and improve the sense of place
- B. Maintain and improve corridor aesthetics
- C. Provide a high-quality experience for vehicles, pedestrians, bicycles, and transit
- D. Educate and provide information to the public on available travel mode options
- E. Ensure transportation safety and security



# LAFAYETTE BOULEVARD CORRIDOR STUDY

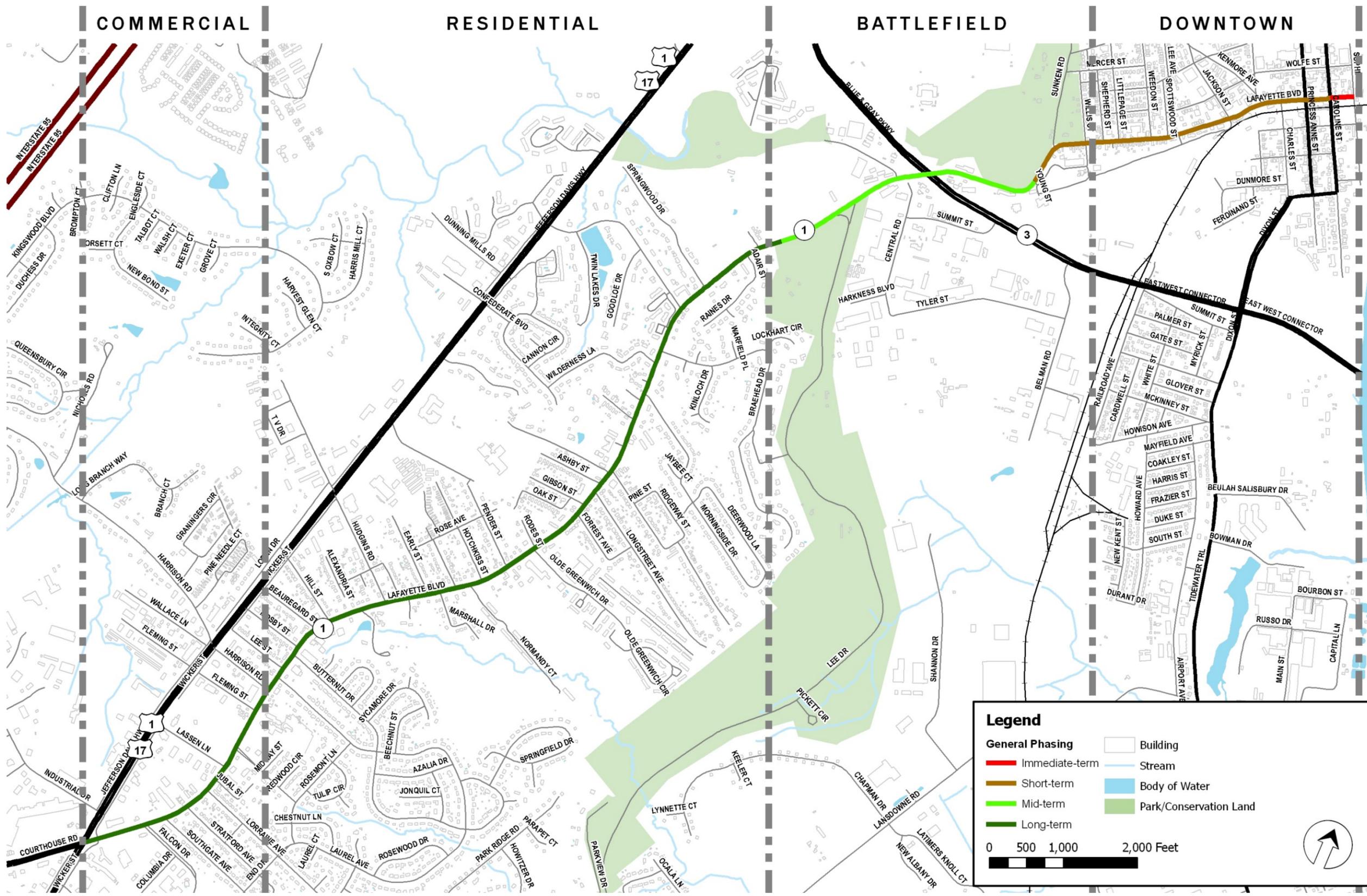


Figure 5.4  
**PHASING FOR IMPLEMENTATION**

**DESCRIPTION**

This figure illustrates potential phasing of modifications along Lafayette Boulevard.

**OBSERVATIONS**

As shown, downtown sections of the corridor would have the potential to be implemented in earlier phases. Other sections of the corridor would likely be implemented over a longer period of time due to the expense and complication of their modification.



# LAFAYETTE BOULEVARD CORRIDOR STUDY

Table 5.1: Summary of Plan Recommendations

	Location	Description	Follow-up Action	Related Objective(s)	Timeframe for Implementation			
					Immediate-term (less than 1 year)	Short-term (1 to 5 years)	Mid-term (6 to 10)	Long-term (beyond 10 years)
<b>Follow-up Studies/Design</b>								
1	Engineering	Prepare corridor design to identify specific right-of-way requirements	Design	B, C, E	✓	✓	✓	✓
2	Design Guidelines	Prepare corridor design guidelines to guide corridor enhancements and future development	Study	A, B	✓			
<b>Section Modifications</b>								
3	Sophia Street to Caroline Street	Reconfigure head-in parking to reverse-in angle parking	Design and Construction	A, B, C, E	✓			
4	Sophia Street to Sunken Road	Maintain existing two-lane cross section and install streetscape improvements	Design and Construction	A, B, C, E		✓		
5	Sunken Road to vicinity of Young Street	Maintain two-lane cross section and install streetscape improvements compatible with the battlefield cemetery	Design and Construction	A, B, C, E		✓		
6	Vicinity of Young Street to south of Blue-Gray Parkway	Widen to four-lane cross section with left-turn lanes at public street intersections and future interchange ramps	Design and Construction	B, C, E			✓	
7	South of Blue-Gray Parkway to south of Fredericksburg Battlefield frontage on Lafayette Boulevard	Widen to four-lane parkway cross section	Design and Construction	A, B, C, E			✓	
8	South of Fredericksburg Battlefield to US 1	Widen to a four-lane median divided cross section with left-turn lanes at median openings and right-turn lanes at substantial intersections	Design and Construction	B, C, E				✓
<b>Intersection Modifications</b>								
9	Lafayette Boulevard/Princess Anne Street	Reconfigure intersection to minimize unused pavement and install landscaped refuge median	Design and Construction	B, C, E		✓		
10	Lafayette Boulevard/Charles Street	Reconfigure intersection to minimize unused pavement and install landscaped refuge median	Design and Construction	B, C, E		✓		
11	Lafayette Boulevard/Kenmore Avenue	Construct a single-lane modern roundabout	Design and Construction	B, C, E		✓		
12	Lafayette Boulevard/Weedon Street	Stripe northbound left-turn lane and construct pedestrian refuge on north intersection leg	Design and Construction	B, C, E		✓		
13	Lafayette Boulevard/Littlepage Street	Stripe northbound left-turn lane and construct pedestrian refuge on north intersection leg	Design and Construction	B, C, E		✓		
14	Lafayette Boulevard/Shepherd Street	Stripe northbound left-turn lane and construct pedestrian refuge on north intersection leg	Design and Construction	B, C, E		✓		



# LAFAYETTE BOULEVARD CORRIDOR STUDY

Table 5.1: Summary of Plan Recommendations

	Location	Description	Follow-up Action	Related Objective(s)	Timeframe for Implementation			
					Immediate-term (less than 1 year)	Short-term (1 to 5 years)	Mid-term (6 to 10)	Long-term (beyond 10 years)
15	Lafayette Boulevard/Young Street	Consider a single-lane modern roundabout as a part of area redevelopment	Design and Construction	B, C, E			✓	
16	Lafayette Boulevard/Blue-Gray Parkway	Construct grade separation	Feasibility Study, Design, and Construction	C, E				✓
17	Lafayette Boulevard/Lee Drive	Construct parkway intersection treatment	Design and Construction	A, B, C, E			✓	
18	Lafayette Boulevard/Twin Lake Drive	Construct a two-lane modern roundabout	Design and Construction	B, C, E				✓
19	Lafayette Boulevard/Courtland Drive/Hillcrest Drive	Construct a two-lane modern roundabout	Design and Construction	B, C, E				✓
20	Lafayette Boulevard/Hotchkiss Street	Install traffic signal when justified by an engineering study	Design and Construction	C, E				
21	Lafayette Boulevard/Hudgins Road	Install traffic signal when justified by an engineering study	Design and Construction	C, E				
<b>Bicycle and Pedestrian Modifications</b>								
22	Sophia Street to Sunken Road	Replace or repair sidewalks on both sides of the street	Construction	A, B, C, E		✓		
23	Sophia Street to Sunken Road	Consider installation of sharrow pavement markings to make motorists aware of a shared (bicycle/vehicle) lane condition	Design and Construction	C, D, E		✓		
24	Sunken Road to Blue-Gray Parkway	Construct an eight- to 10-foot multiuse path along the east side of the street	Design and Construction	C, E			✓	
25	Blue-Gray Parkway	Construct a pedestrian and bicycle bridge across Blue-Gray Parkway to connect the Virginia Central Railway trail with the Hazel Run trail	Design and Construction	C, E		✓		
26	Hazel Run	Construct a trail connection between the Lafayette Boulevard trail and the Hazel Run trail	Design and Construction	C, E		✓		
27	All signalized intersections	Provide countdown-style pedestrian heads and pedestrian push-buttons	Design and Construction	C, E	✓			



# LAFAYETTE BOULEVARD CORRIDOR STUDY

Table 5.1: Summary of Plan Recommendations

	Location	Description	Follow-up Action	Related Objective(s)	Timeframe for Implementation			
					Immediate-term (less than 1 year)	Short-term (1 to 5 years)	Mid-term (6 to 10)	Long-term (beyond 10 years)
<b>Other Modifications</b>								
28	Hazel Run Bridge	Enhance bridge and roadway aesthetics to serve as a gateway to historic downtown Fredericksburg	Design and Construction	A, B, C			✓	
29	Lassen Lane to Hill Street	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
30	Hill Street to Early Street	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
31	Pender Street to Oak Street	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
32	Oak Street to Courtland Drive	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
33	Olde Greenwich Drive to Forrest Avenue	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
34	Longstreet Avenue to Hillcrest Drive	Local street connection parallel to Lafayette Boulevard	Feasibility Study, Design, and Construction	C				
35	Ashby Street	Minor realignment to align Ashby Street with Longstreet Avenue	Feasibility Study, Design, and Construction	C			✓	
<b>Bus Stops</b>								
36	Princess Anne Street	Mid-block bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
37	Jackson Street	Far-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
38	Weedon Street/Spotswood Street	Mid-block bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
39	Sunken Road/Weedon Street	Coordinate with National Parks Service on exact location and as appropriate, provide amenities at the mid-block bus stops	Design and Construction	A, C, D, E				✓
40	Lee Drive	Coordinated with development on the west side of Lafayette Boulevard, provide bus stops	Design and Construction	A, C, D, E				✓
41	Twin Lake Drive	Far-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
42	Courtland Drive	Bus stops with shelters, benches, trash receptacles, signs, and lighting to the north of the proposed roundabout	Design and Construction	A, C, D, E				✓
43	Olde Greenwich Drive	Bus stops with shelters, benches, trash receptacles, signs, and lighting to the south of the traffic signal	Design and Construction	A, C, D, E				✓



# LAFAYETTE BOULEVARD CORRIDOR STUDY

Table 5.1: Summary of Plan Recommendations

	Location	Description	Follow-up Action	Related Objective(s)	Timeframe for Implementation			
					Immediate-term (less than 1 year)	Short-term (1 to 5 years)	Mid-term (6 to 10)	Long-term (beyond 10 years)
44	Normandy Court/Hotchkiss Street	Bus stops with shelters, benches, trash receptacles, signs, and lighting to the south of the traffic signal	Design and Construction	A, C, D, E				✓
45	Hudgins Road	Far-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
46	Butternut Drive	Near-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
47	Spotswood Baptist Church	Far-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
48	Lassen Lane	Near-side bus stops with shelters, benches, trash receptacles, signs, and lighting	Design and Construction	A, C, D, E				✓
49	Falcon Drive	Bus stops with shelters, benches, trash receptacles, signs, and lighting to the east of Lafayette Boulevard on Falcon Drive	Design and Construction	A, C, D, E				✓

**Notes**  
 NPS – National Parks Service  
 VDOT – Virginia Department of Transportation



## LAFAYETTE BOULEVARD CORRIDOR STUDY

### OPINION OF COST

Recommended modifications to Lafayette Boulevard will carry a significant monetary cost. Standard methodologies were used to develop an opinion of probable cost for the recommended Lafayette Boulevard plan. The following summarizes the opinion of probable cost for the Lafayette Boulevard plan:

- **Sophia Street to Young Street:** \$4.0 million
- **Young Street to St. Paul Street:** \$37.0 million
- **St. Paul Street to Harrison Road:** \$18.6 million (City of Fredericksburg) and \$15.9 million (Spotsylvania County)
- **Harrison Road to US 1:** \$10.6 million

### POTENTIAL FUNDING SOURCES

Making modifications to the corridor will be integral to attracting new residents and businesses as well as maintaining and enhancing mobility for all modes of transportation. The following funding sources have the potential to contribute funding for the modification of Lafayette Boulevard.

### CITY AND COUNTY CAPITAL IMPROVEMENT PROGRAMS

Projects within Capital Improvement Programs (CIP) are typically permanent improvements to infrastructure, transportation, and other physical elements in a community. The process for planning capital improvements is continuous and evolves to address aging infrastructure and changing priorities. Spotsylvania County and the City of Fredericksburg both maintain capital improvement programs to address infrastructure and other major investment needs.

### FEDERAL PROGRAMS

There are a number of federal programs that fund transportation, some of which apply and are appropriate to recommendations identified in the corridor study. Federal transportation funding programs, most of which are administered through state and regional agencies include:

- **Earmarks:** allocations of funding for specific projects as identified in budgets approved by lawmakers
- **National Highway System:** funds interstates, primary routes, and major highways
- **Bridge:** funds structure inspection
- **Surface Transportation Program:** funds are distributed based on federal rules, which include a population equity bonus to balance appropriation to individual states according the Appropriation Act
- **Congestion Mitigation Air Quality (CMAQ):** funds are distributed to areas with air quality issues for the purpose of reducing emissions through the mitigation of congestion
- **Highway Safety Improvement Program (HSIP):** funds are distributed based on need
- **Transit:** there are a variety of transit funds available for both operations and capital improvements

- **American Recovery and Reinvestment Act (ARRA):** this federal program has authorized a number of grant and other funding mechanisms for transportation improvements

### STATE

There are a number of state programs that fund transportation, some of which apply and are appropriate to recommendations identified in this plan. State transportation funding programs, administered by a number of departments for varying purposes, address vehicular and non-vehicular transportation. In addition to new construction and maintenance funds, funds also are available for varying degrees of study. A sample of programs relevant to the recommendations in this plan includes the following:

- **Six-Year Plan:** the state's primary program for transportation improvements statewide. It addresses the funding needs for all modes of transportation.
- **Enhancement Funds:** primarily fund projects that benefit non-vehicular elements of the transportation system such as bikeways, streetscapes, and sidewalks
- **Multimodal Planning Grants:** are competitive and primarily focused on the preparation of multimodal plans that provide recommendations on more strongly linking land use and transportation
- **Transportation Partnership Opportunity Fund (TPOF):** encourages the funding of construction projects through the Public-Private Transportation Act (PPTA)

### PUBLIC/PRIVATE

Public/private transportation initiatives and programs (PPTA and similar) could be used to fund some recommendations in this plan in addition to local mechanisms requiring private contributions to transportation infrastructure. The proffer system as well as negotiated and voluntary contributions for the new construction and improvement of transportation infrastructure and services are important.

### TAX INCREMENT FINANCING

Tax increment financing (TIF) districts can be established within a geographically defined area to use future gains in real estate property taxes to finance public improvements associated. As private development invests in an area and invests in infrastructure, often there is an increase in the value of surrounding real estate, which can increase tax revenues. Increased revenue from a TIF district can then be used for studies, streetscape, public amenities and services, or other infrastructure.

### NEXT STEPS

While this plan is comprehensive in its approach to Lafayette Boulevard, for individual elements to be implemented, momentum will need to be maintained. Design guidelines and a corridor design would better inform developers, property owners, elected officials, and the public as to the long-term vision for the corridor. A more refined project schedule, the identification of specific funding sources and amounts, and the adoption of priorities (neighborhood, political, and functional) will need to be developed and identified. Key items requiring further study are identified in **Table 5.1**.

