

A Proposal for a Bicycle-friendly Reconfiguration of the Fort Avenue and Campbell Avenue / Langhorne Road Intersection

Lynchburg Urban Network

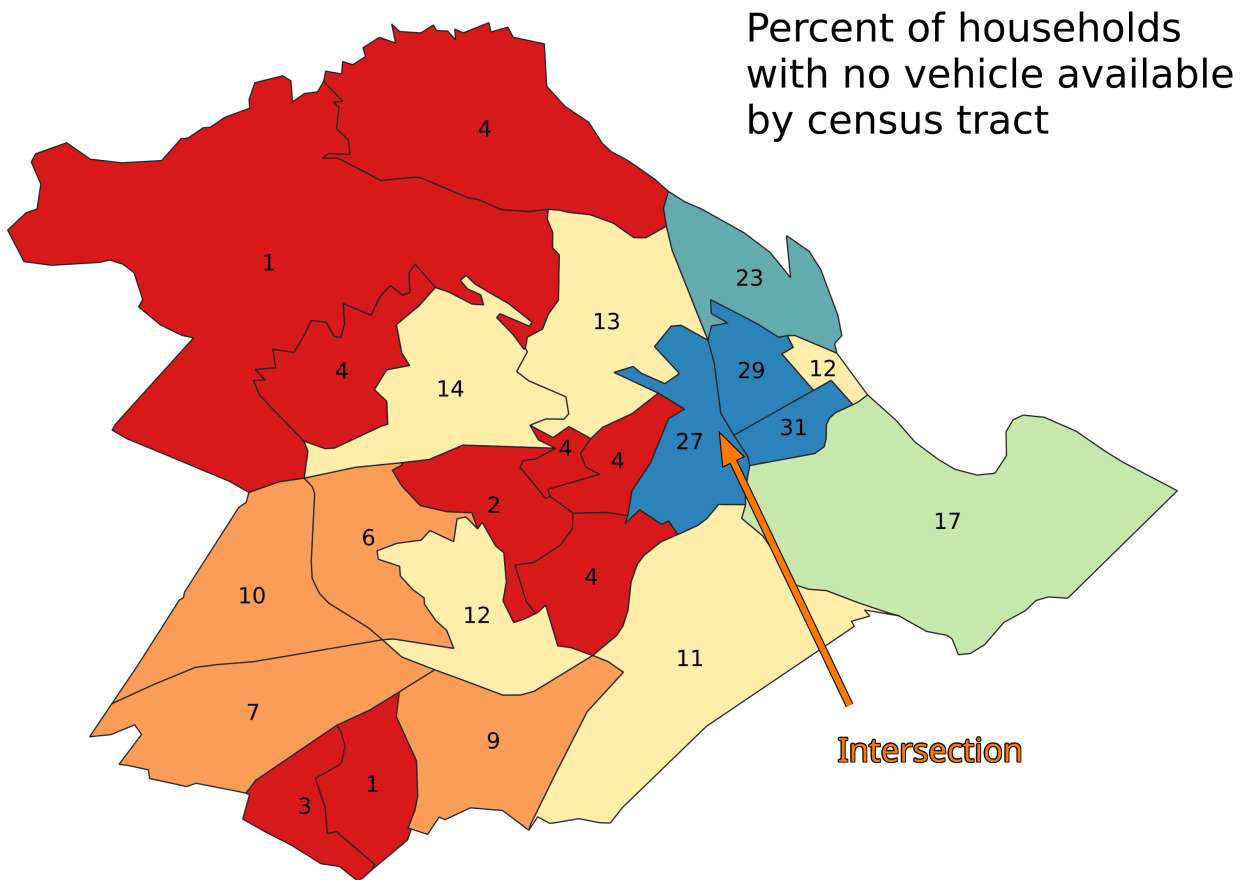
May 3, 2024

Why now?

There was a project in the Lynchburg FY24 budget's Capital Improvement Plan scheduled for design in FY24 Q4 and construction in FY26 (see last page). As of 2024-05, Public Works projects that design will begin in 2026 or 2027.

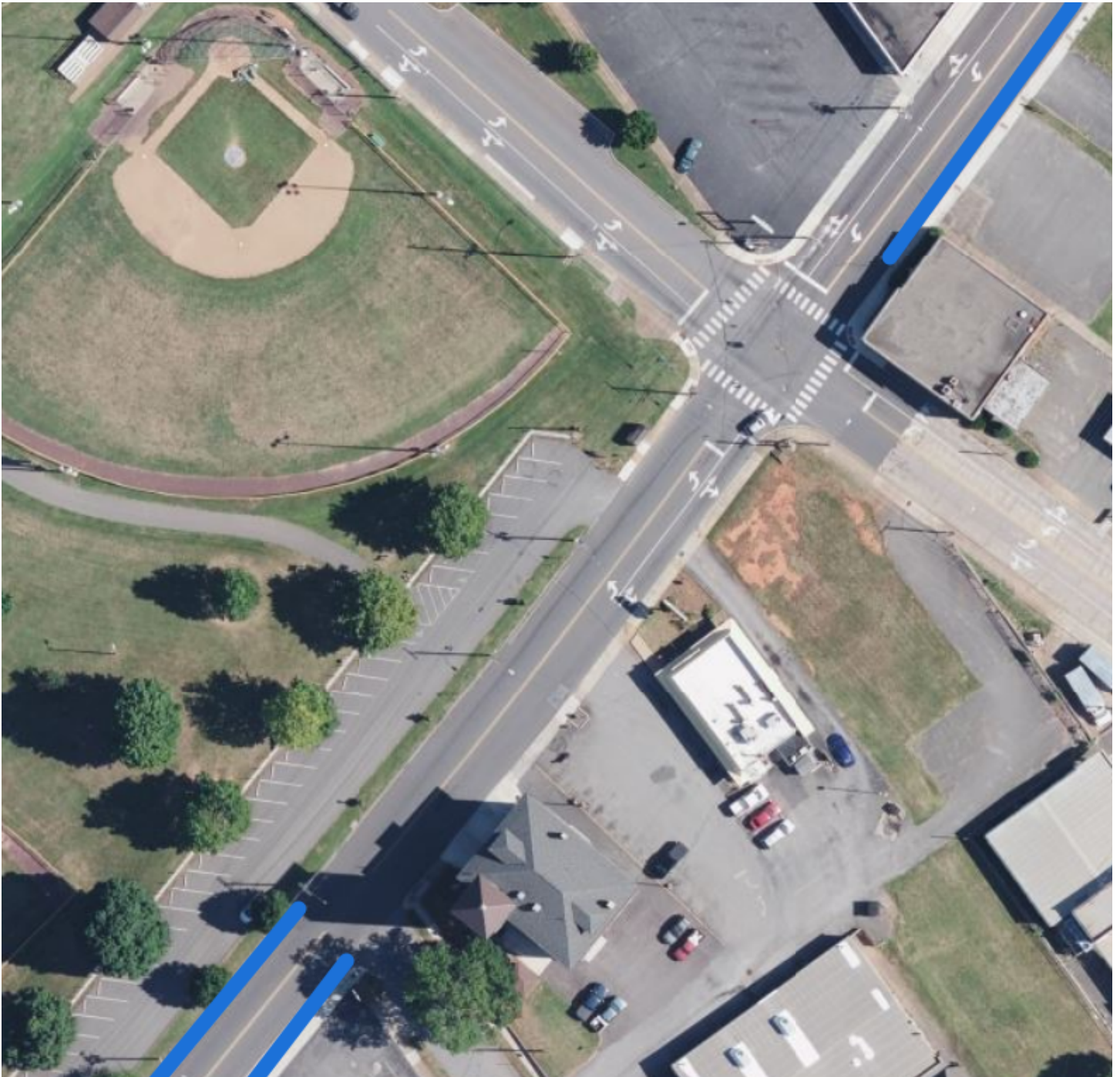
Why should this particular intersection have bicycle facilities?

- This intersection is located in an area where a large percentage of households do not have a car. Cyclists are frequently seen in this area riding on the sidewalk, which is illegal and can result in dangerous interactions with pedestrians and motorists.



US Census 2021 ACS 5-year estimates

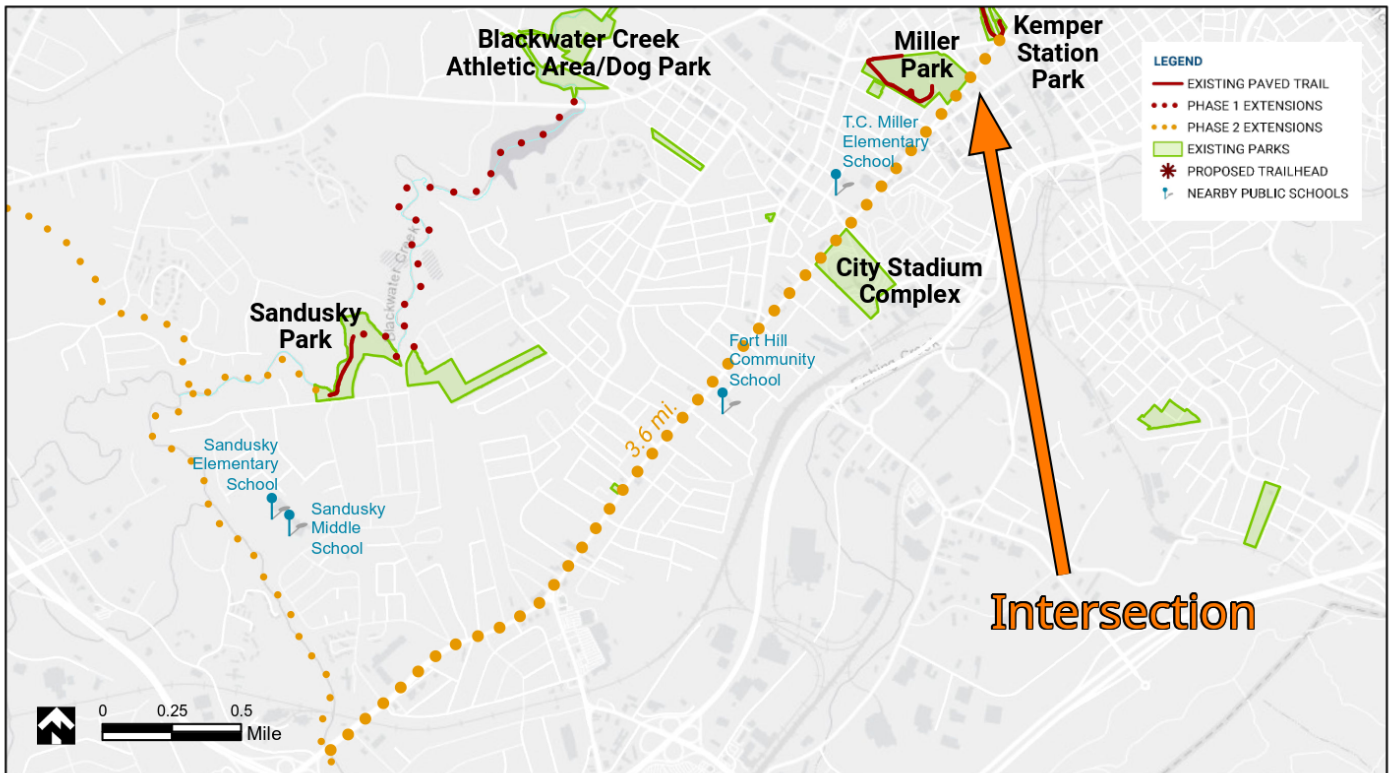
- Bicycle lanes (blue) are found on Fort Avenue to the southwest and northeast of this intersection. Bicycling accommodations have not been made through the intersection, a dangerous location for all road users.



- This intersection is along a cycling corridor identified by Parks & Recreation as a critical route in the approved Master Plan 2022. Moreover, improving the safety and continuity of existing bicycle lanes on Fort Avenue would provide hundreds of households with easy access to our trail system.

Figure 4.12: Lynchburg Proposed Greenway Connections: Phase 2C - Fort Avenue Complete Street Improvements

2021-2031 City of Lynchburg Parks and



Assumptions

- Fort Avenue, Langhorne Road, and Campbell Avenue are all classified as minor arterials at this intersection.
- The paved area of the intersection will not be changed when signals are replaced and pedestrian accommodations are made per upcoming Capital Improvement Plan project.
- The streets at this intersection are not part of any Virginia state routes, so are not subject to particular VDOT rules regarding roadway widths or lane widths.
- Langhorne Road and Campbell Avenue are part of United States Numbered Highway System Route 501 (Business) at this intersection, but this designation should not affect the ability of the Lynchburg Department of Public Works to alter lane widths or geometries in this intersection.
- Fort Avenue at this intersection is classified as a “constrained street” by the City of Lynchburg 2013-2030 Comprehensive Plan goal T-1.9 and should not be widened.
 - “Preserve the City’s history and protect neighborhoods by maintaining context sensitive street designs to maintain safe speeds (see Exhibit 3-2). The following streets shall not be widened through the addition of lanes or removal of existing parking lanes unless the City Council determines that no other alternatives can be found to safely accommodate traffic. . . .”
- A Policy on Geometric Design of Highways and Streets, 7th Edition by AASHTO recommends motor vehicle lane widths of 10-11 feet for lower-speed, minor, urban arterials.
 - “Lane widths on through travel lanes may vary from 10 to 12 ft [3.0 to 3.6 m]. Lane widths of 10 ft [3.0] may be used in more constrained areas where truck and bus volumes are relatively low and speeds are less than 35 mph [60 km/h]. Lane widths of 11 ft [3.3 m] are used quite extensively for urban arterial street designs. The 12-ft [3.6-m] lane widths are desirable, where practical, on high-speed, free flowing, principal arterials.”
- Guide for the Development of Bicycle Facilities, 4th Edition by AASHTO recommends bicycle lane widths of 5 feet in most cases.
 - “. . . a bicyclist’s preferred operating width is 5 ft (1.5 m). Therefore, under most circumstances the recommended width for bike lanes is 5 ft (1.5 m).”

Existing configuration

Currently the intersection has a left turn lane and straight/right turn lane entering from each direction, as well as one lane exiting in each direction.

Bicycle facilities are present on Fort Avenue to the northeast and southwest.

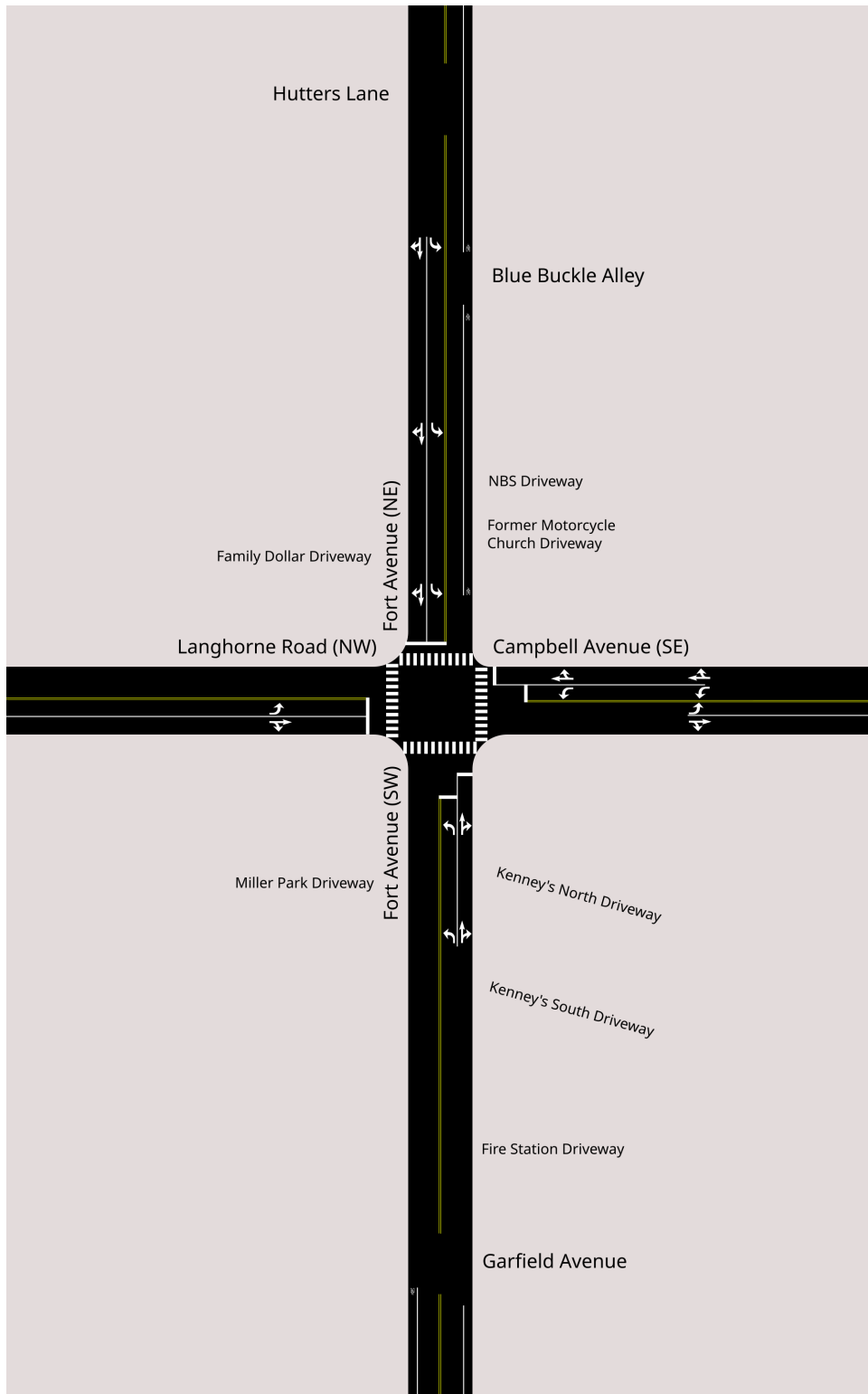


Figure 1: Current intersection

Proposed configuration

We propose a repainting of the intersection to include (in order of importance):

1. 5' bicycle lanes on Fort Avenue beginning immediately after bicyclists exit the intersection in either direction
2. A turn lane configuration on Fort Avenue that the 11th edition of the MUTCD calls a "Mixing zone without yielding area"

Figure 9E-5. Examples of Pavement Markings for Mixing Zones

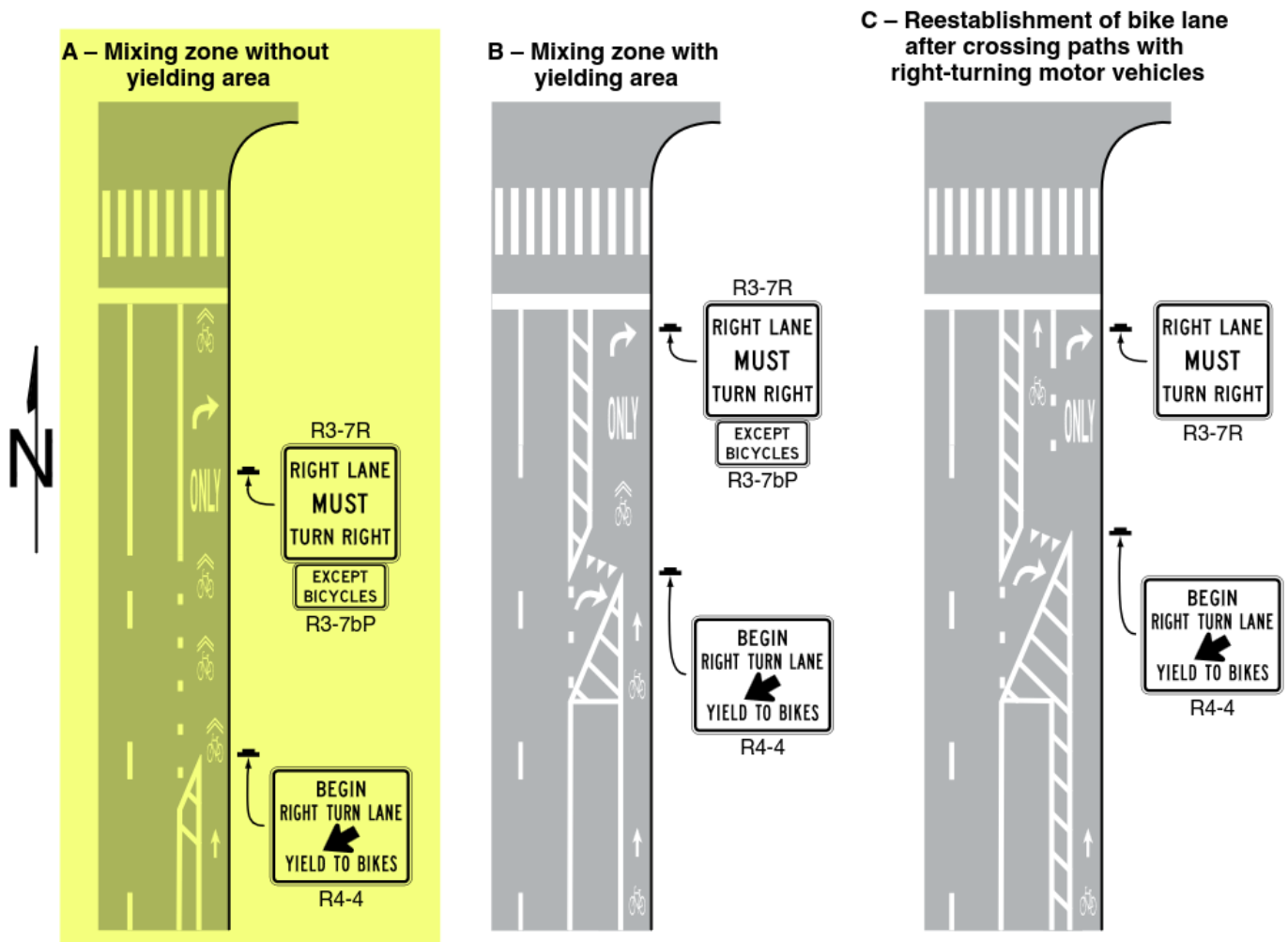


Figure 2: MUTCD bicycle mixing zones

3. Green pavement for several feet where bicycle lanes exit the intersection to clarify separation between motor vehicles and bicycles
4. Dashed bicycle lane lines on Fort Avenue at minor roads and driveways where there are currently gaps in bicycle lane lines

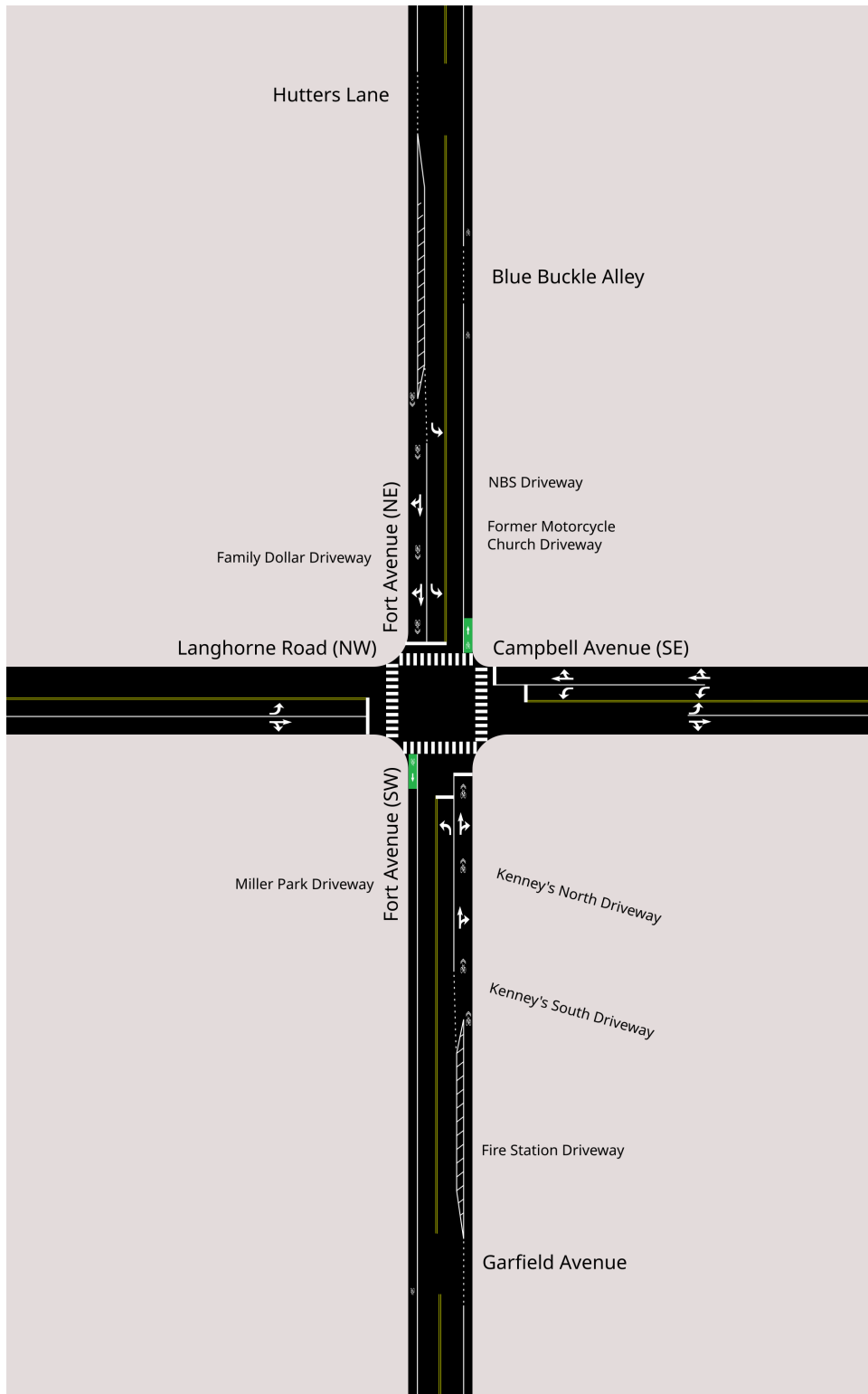


Figure 3: Proposed intersection



Project Title	Project Number	Service Area
Campbell Avenue Intersection and Signal Reconstruction	T0332	Transportation
Location	Project Type	Department
Campbell Ave. - Fort Ave. to 12th St.	New	Public Works



Department Priority

Project supports essential services

Project Description

Fort Avenue and 12th Street Signal Replacements on Campbell Avenue with pedestrian features; road rebuild.

Relationship to Comprehensive Plan

Chapter 3, Page 30, Goal T-1.4: Prioritize improvements to the transportation system based on safety considerations; existing deficiencies; multimodal and environmental considerations; opportunities to improve street connectivity; physical, economic and policy constraints; contributions to the neighborhood character; impact on historical and environmental resources; required right-of-way; target levels of service; public safety access; regional connectivity; and system continuity.

Project Manager

Lee Newland, P.E., City Engineer

Projected Start Date	Q1 FY 2024
Projected Completion Date	Q4 FY 2026

Projected Schedule	
Activity	Projected Date
Consultant Engineering	Q4 FY 2024
Construction	Q4 FY 2026

Why Now

Signals work in synchronization and both are beyond their useful life span as they are over 40 years old. The roadway is concrete pavement that needs replacing due to deterioration and pot holes. Improvements to pedestrian crossing features will be added for safety.

Financial Summary

Total Project Cost	
Prior Appropriations as of 06/30/2023	\$0
Budget FY 2024	3,125,000
FY 2025 - FY 2028 Planned	0
Remaining Need	0
Total Project Cost	\$3,125,000
Local Funding Percentage	100.0%

Estimated Debt Service	
Project Total Debt Expenditures	
Principal	\$3,125,000
Interest	865,177
Total	\$3,990,177
Estimated Annual Debt Service	\$199,509

Five Year Proposed Appropriations by Activity

Activity	Budget FY 2024	Planned FY 2025	Planned FY 2026	Planned FY 2027	Planned FY 2028	Program Period Estimate
Consultant Engineering	312,500	0	0	0	0	\$312,500
Construction	2,812,500	0	0	0	0	\$2,812,500
Total	\$3,125,000	\$0	\$0	\$0	\$0	\$3,125,000

Five Year Proposed Expenditure Cash Flow Projections

Funding Source	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Program Period Total
Local: Line of Credit	625,000	1,250,000	1,250,000	0	0	\$3,125,000
Total	\$625,000	\$1,250,000	\$1,250,000	\$0	\$0	\$3,125,000

Operating Budget Impact

None anticipated at this time.