



CITY OF
RICHMOND



STRATEGIC PLAN

A Multimodal Plan for Improving Transportation Equity in Richmond



City of Richmond
Office of Equitable Transit & Mobility
January 2024

RICHMOND CONNECTS

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Transportation Equity in Richmond*

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Office of Equitable Transit and Mobility

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Prepared by: EPR, PC and CCC Planning with consultant team partners Timmons Group, Renaissance Planning Group, On Point Transportation PR, Ebony Walden Consulting, Michael Baker International, and Jarrett Walker + Associates



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EXECUTIVE SUMMARY

Transportation investments have the potential to transform Richmond into a more equitable city where all residents can thrive.

Throughout US cities, past transportation policies and decisions have created injustices that have disproportionately harmed people of color, low-income communities, and other marginalized groups of people. These injustices and the burdens they place persist today. Access to opportunities is not equal for all Richmonders. The color of your skin and the neighborhood you live in often determine how easy or hard it is to get around. Getting to employment, education, food, healthcare, and other destinations is much more burdensome for some Richmonders than others.

Richmond Connects is one piece of the City of Richmond's efforts to change. It's a plan to create a different future - where everyone has ample access to opportunities, and where no group of people encounters more barriers to safe and reliable transportation than any other group.

The Richmond Connects Strategic Plan is the multimodal transportation plan for the City of Richmond, Virginia. Like typical transportation plans, it identifies transportation needs, develops projects and strategies to address the needs, and prioritizes projects and strategies for implementation. Unlike typical transportation plans, its purpose is to direct transportation investments to improve equity.



IMAGINE WHEN RICHMOND TRANSPORTATION IS EQUITABLE



Figure ES-1. Richmond Connects Equitable Transportation Vision.

In Richmond Connects, **transportation equity** means **improving access to opportunities by reducing barriers**.

Furthering the City's Equity Initiatives

At its core, this plan was developed with equity as its primary lens. This outcome-centered process was led by the Office of Equitable Transit and Mobility (OETM), part of the City of Richmond's Department of Public Works (DPW). The *Richmond 300* vision for equitable transportation and the adopted Equity Agenda drove the office to this equity focus. This focus was further refined in the [Path to Equity: Policy Guide for Richmond Connects](#), which documents and names the land-use and transportation injustices and barriers that Richmond Connects will address.

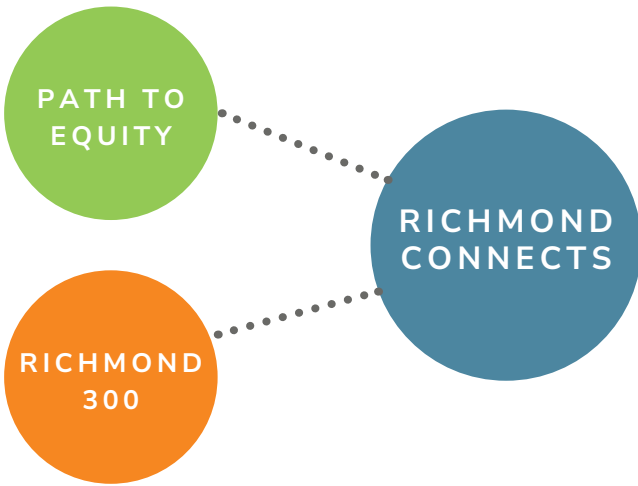


Figure ES-2. Relationship to Foundational Plans. Richmond Connects is the implementation mechanism for both the Path to Equity Policy Guide and for the transportation components of the Richmond 300 Master Plan.

Making Equity the Cornerstone of the Process

The Path to Equity establishes the policy direction for Richmond Connects. It defines what transportation equity means in Richmond and how transportation investments need to work towards improving equity.

The Richmond Connects process was designed to fulfill the policy guidance in Path to Equity. It began by defining needs, then developing recommendations - projects and strategies to address those needs. The process to define the needs was rooted in equity, based on inclusive community engagement combined with rigorous data-based analysis. The recommendations prioritize projects and strategies that will close gaps in access and remove barriers for Communities of Concern (aka Communities of Opportunity).



Richmond Connects Process



Figure ES-3. Richmond Connects Process Diagram.

Engagement-Centered Planning

Equity was also embedded in every facet of the outreach and engagement. Through community pop-ups, paid focus groups, neighborhood events, canvassing, social media, telephone town halls, online surveys, and email blasts, the team talked to over 20,000 Richmonders. In the last round of engagement alone, over 8,000 Richmonders completed a survey to indicate which projects were the most pressing for their neighborhood.

Deliberate, intentional actions were undertaken to ensure representation from marginalized communities; this included providing compensation for participation, deliberate multimedia accessibility and language simplification, consistent community-based and community-located events, and a 'titles-left-at-the-door' mantra. Hundreds of hours were spent having conversations with Richmonders who have been left out of previous planning processes.

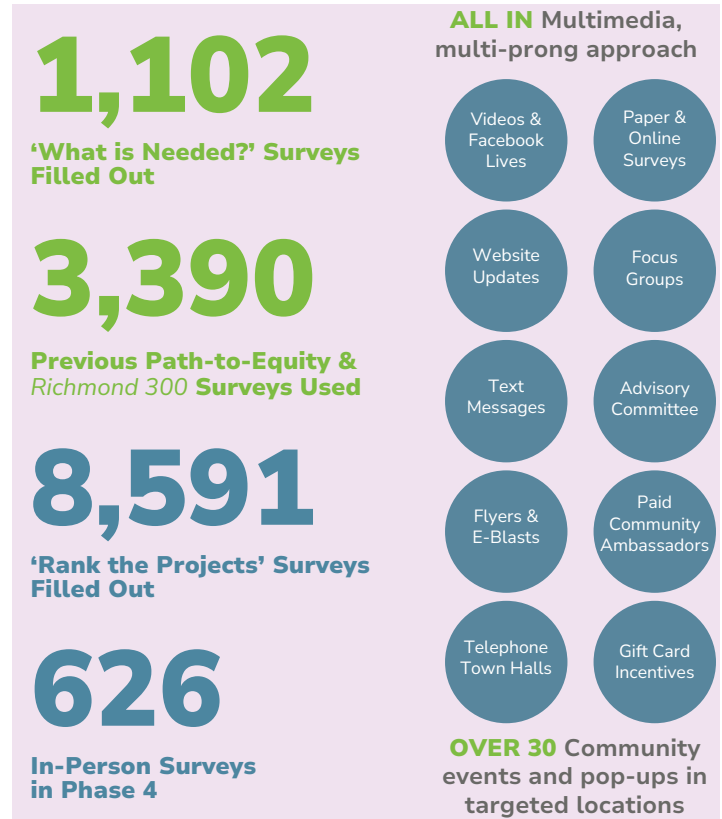


Figure ES-4. Community Engagement Highlights.

Big Moves for Transportation Equity

Achieving transportation equity in Richmond will require several “Big Moves” - wide-reaching themes that will guide the City’s implementation of Richmond Connects.

Richmond Connects “Big Moves”



1

Rethink Essential Transit Infrastructure: Bus stops dignified as a placemaking opportunity. Richmonders were loud and clear that waiting at the bus stop out of the elements was a priority, and the plan prioritizes improvements based on equity-centered needs. The recommendations elevate the GRTC Essential Transit Infrastructure plan to a Richmond City priority.



2

Act Quick: Responsive Lighter, Quicker, Cheaper projects to address safety NOW. Safety projects are abundant in the plan. Many projects have LQC options identified for immediate implementation. We cannot wait 10 years to solve these problems, and this plan identifies opportunities to act quickly.

3

Achieve Spatial Justice Through Transit: Transportation access is a civil right, and all Richmonders deserve access. Recommendations like the North-South Bus Rapid Transit and new bus service on Mechanicsville Turnpike will provide key access for the essentials of daily life. The plan proposes strategies to invest more into increasing frequency and reliability of the existing bus service, which is a lifeline service for many Communities of Concern.



4

Close the Gaps: Address accessibility and affordability through recommended equity-centered programming and actions. Building bike lanes and new transit service only matters if it’s affordable and connects to something. Many programs described within the plan aim to link land use and transportation to ensure transportation connects to relevant places. The plan also offers recommendations to increase access to key programs for our most vulnerable Richmonders, including through free programs and reduced fees.



5

Sidewalks, Sidewalks, Sidewalks: Restore and close gaps in the sidewalk network as a means of mending the fabric of social connectivity. Sidewalks connect many Richmonders to their community and to essential destinations. Communities with no sidewalks or trails, or whose walkways are in disrepair, are left disconnected. Without ADA-compliant curb ramps, people who use wheelchairs or other mobility devices are forced to ride or walk in the street. The plan proposes a new program to fund major sidewalk construction and identifies specific sidewalk and trail projects that are needed most.



Recommendations

Improving transportation equity in Richmond is no small task. The projects and strategies in the Richmond Connects Strategic Plan are wide-ranging and many. Recommendations are not just limited to typical transportation projects or to initiatives for OETM. This equity-focused plan recognizes the intersectionality between transportation and land use, economic development, housing, community wealth-building, food systems, sustainability, and climate equity.

PROJECT RECOMMENDATIONS

Project recommendations include a plethora of sidewalk, pedestrian safety, and traffic calming projects, transit improvements to make bus service more reliable, bus stop improvements to provide a dignified place to wait for the bus, and projects to continue building a network of safe bicycle facilities. They include major initiatives like working with GRTC to build a North-South Pulse bus rapid transit line, reconnecting Jackson Ward with a bridge deck over I-95 to reknit the community and connect Gilpin to downtown, and completing the Fall Line Trail to provide a safe off-road high-quality spine facility for getting from north to south on a bicycle, scooter, or by walking.

Project recommendations also include system-wide initiatives like closing sidewalk gaps and repairing broken sidewalks in areas of highest equity needs, and a program to establish spot improvements in areas with high safety and security needs. They also include working with residents on community revitalization and developing new parks. While these types of projects are not typically included in a transportation plan and the agencies to implement them will be outside of OETM, they are included in this plan to recognize the critical importance of these projects to improving accessibility,

which is the true end goal of transportation. A network of sidewalks, bike lanes, and bus lines won't help if there aren't jobs, schools, parks, grocery stores, or other places to meet daily needs nearby.

The Richmond Connects Project Recommendations map on the next page shows the full set of project recommendations in this Strategic Plan. Appendix C provides the full list of project recommendations. Project recommendations for each Needs Area are provided in Appendix E. Recommendations by Investment Need Category are provided in the "What are the Recommendations?" chapter.

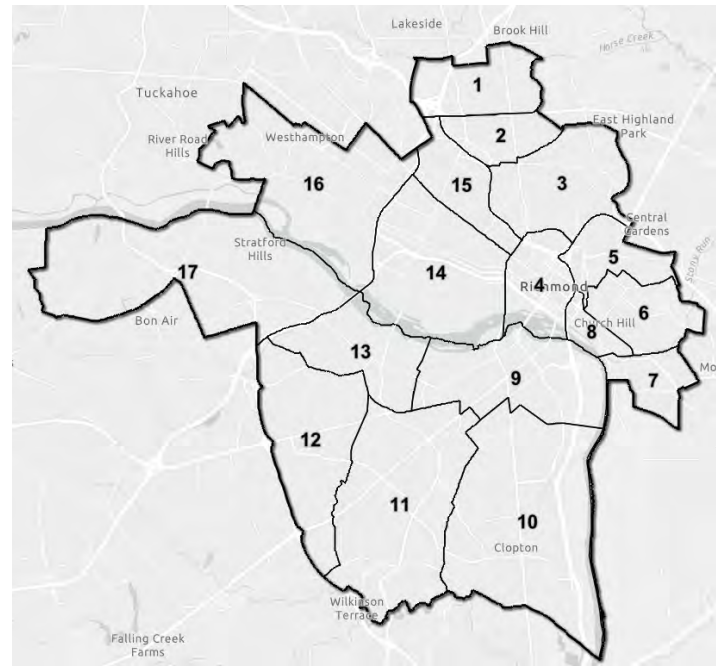
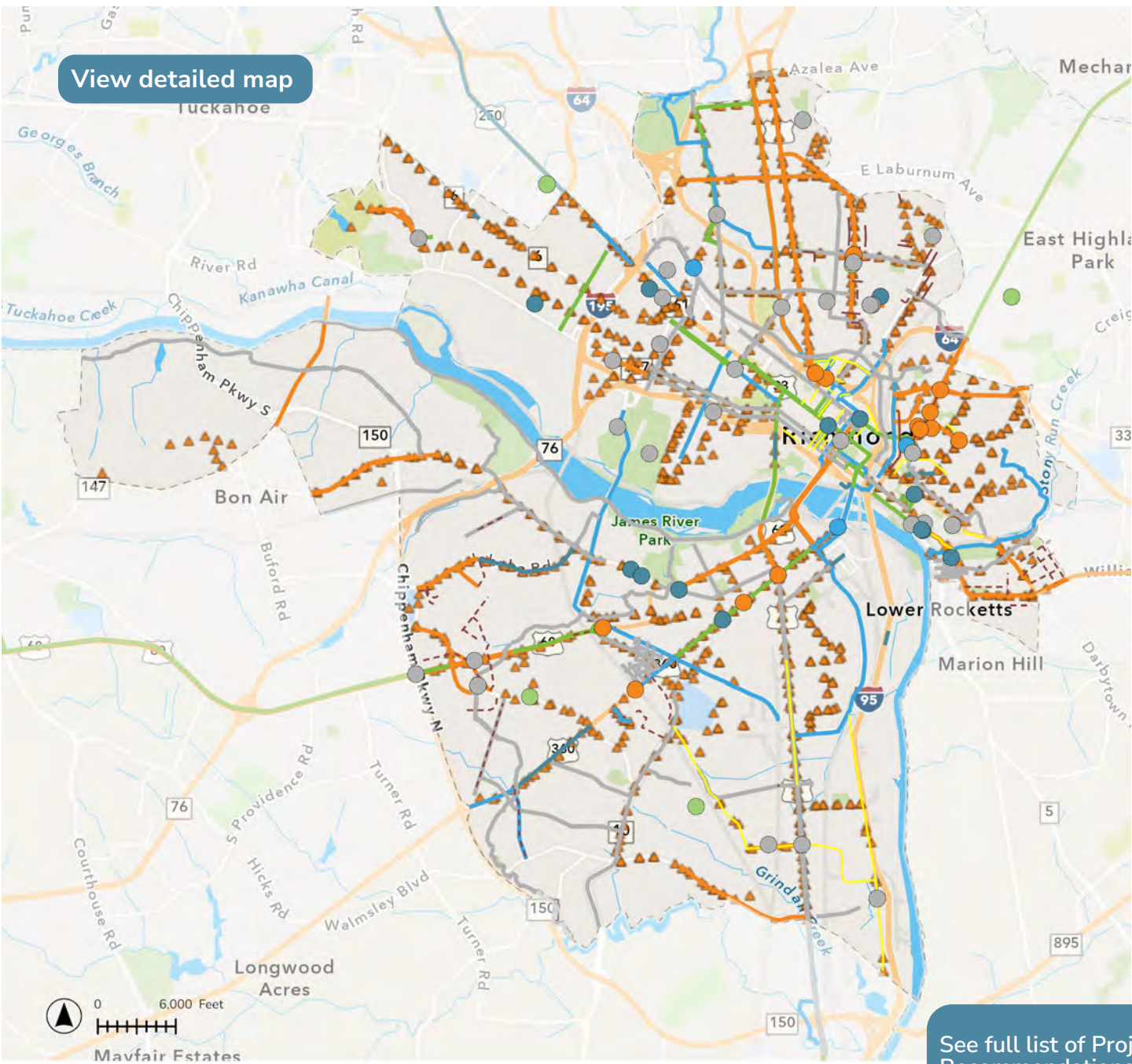


Figure ES-5. Map of Richmond Connects Needs Areas. The needs and project recommendations for each Needs Area are provided in Appendix E.

The full list of project recommendations is provided in Appendix C.

Richmond Connects Project Recommendations



See full list of Project Recommendations in Appendix C.

- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)

Figure ES-6. Map of Richmond Connects Strategic Plan Project Recommendations

STRATEGY RECOMMENDATIONS

Strategy recommendations are also wide-ranging. Many of the strategy recommendations come directly from the *Richmond 300* Master Plan and Vision Zero Action Plan. Strategy recommendations include transportation-focused strategies like public safety campaigns, installing bike racks, keeping bus service fare-free, managing delivery vehicles, and implementing design approaches to slow down vehicles and prioritize non-car travelers. Other strategy recommendations reach into other policy areas like food insecurity, housing vouchers, and gentrification. While these strategies are outside the realm of typical transportation strategies, they are important to addressing issues that come up in the context of transportation equity.



Figure ES-7. Focus group talking through INC8 (Economic Development) strategies.

The strategy recommendations are provided for each Investment Need Category in the “What are the Recommendations?” chapter.

Strategies to Address Non-Mappable Transit Needs Investment Need Category 2: Transit

Top Five Strategies

Choose 5 strategies you think are most important, and put them at the top of the box. Then think about these questions, and re-write the strategy if you think it should be changed.

- Where is this strategy needed?
- Who benefits?
- How can this strategy be changed to benefit low-income and black/brown persons?

| 1 | 2 | 3 | 4 | 5 |
|---|--|--|--|--|
| <p>PRIORITIZE BUS RELIABILITY Prioritize spending money to hire more bus drivers, buy more buses, and improve technology to make the bus system more reliable, starting with the areas and bus routes that are late or off-schedule most frequently.</p> <p>2.1a <i>i changed det.</i></p> | <p>BUS ARRIVAL TIME DISPLAYS Add real-time displays showing bus arrival times to bus stops, especially in low-income areas.</p> <p>2.1c</p> | <p>Your Ideas</p> <p><i>Safety on Busses.</i></p> <p><i>RL</i></p> | <p>Your Ideas</p> <p><i>Fows blue programs on cars w/o Bus Routes, across existing routes - focus on those!</i></p> | <p>FARE-FREE GRTC Prioritize keeping the bus free.</p> <p>2.3a <i>CVK</i></p> |
| | | | | |

Figure ES-8. The Top Five strategies chosen by one of the focus groups for INC2 (Transit).

Richmond Connects Action Plan

The most important project and strategy recommendations in this Richmond Connects Strategic Plan were moved forward into the Richmond Connects Action Plan. The Richmond Connects Action Plan showcases the immediate actions the City will take in the near-term timeframe, starting now and working over the next five to 10 years. At the time of this writing, the current version of the Action Plan is the 2024 Edition.

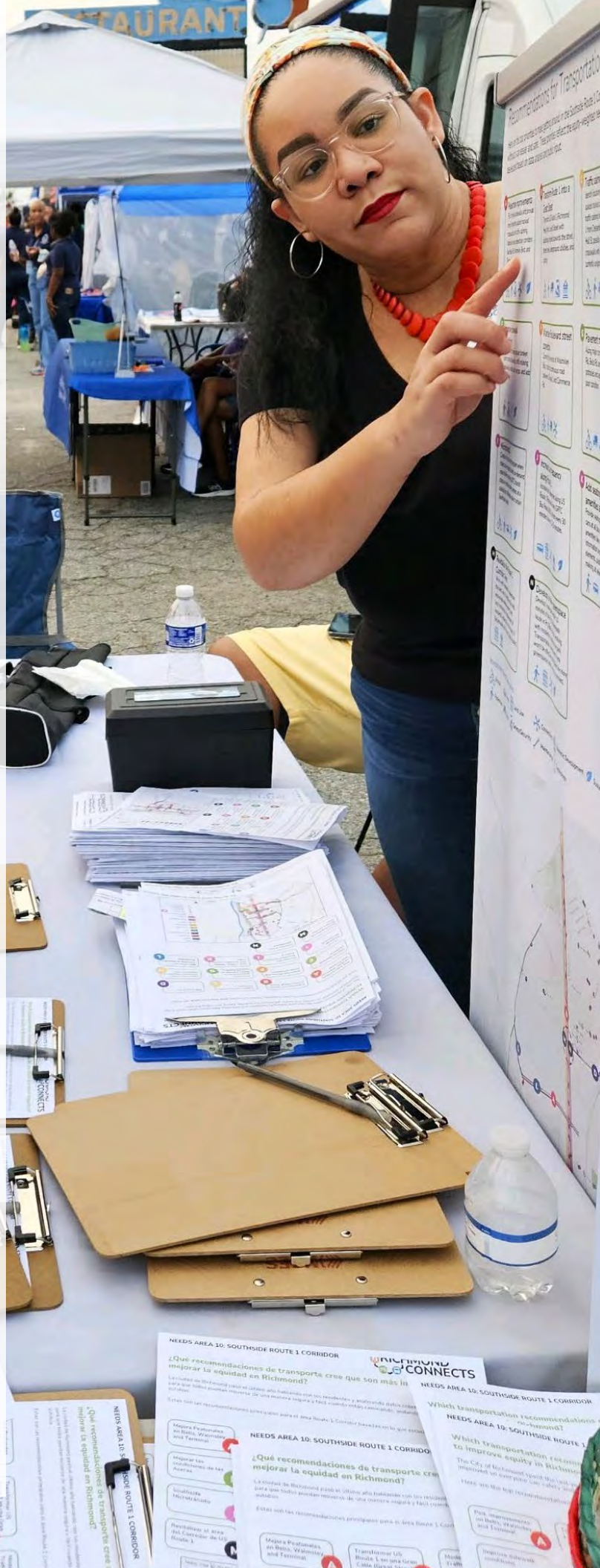


Figure ES-9. Richmond Connects Near-Term Action Plan.

INTRODUCTION

Transportation investments yield the power to create a more equitable City of Richmond, where all neighbors can thrive.

On the following pages, the Richmond Connects Strategic Plan lays out a playbook for how to move the needle on creating a more just and accessible city. It lays out a framework for investment that aims to “empower communities and remove barriers to access and opportunity” adapted from the City of Richmond’s [Equity Agenda](#). It identifies opportunities to make walking, riding and rolling safer and easier, and fundamentally, more equitable.



What is this Plan?

The Richmond Connects Strategic Plan is the multimodal transportation plan for the City of Richmond, Virginia. It is an implementation plan for the *Path to Equity: Policy Guide for Richmond Connects* that City Council adopted in 2022. It is also an implementation plan for the vision and goals for transportation set forth in the *Richmond 300 Master Plan*, the Equity Agenda, and for elements of the RVAgreen 2050 climate action and resiliency plan. It serves to update the bike master plan and will feed the City's funding processes with consistent, equitable, prioritized projects for several years, likely until 2030 and beyond. The Richmond Connects Strategic Plan will serve as the Master Transportation Plan for the City of Richmond, in accordance with Chapter 22, Article 3, §15.2-2223 of the Code of Virginia.

The Richmond Connects Action Plan is a complementary document to the Strategic Plan. The Action Plan contains the highest priority projects and strategies for the City to work on starting now and over the next five to 10 years. The Action Plan directs city leaders and decision makers on first next steps for the priorities as expressed by Richmonders.

It is anticipated that as projects within the current Action Plan (2024 Edition) get implemented, the Strategic Plan provides additional equity-centered projects to pull from when updating the Action Plan in future years. In addition to the Richmond Connects Action Plan, the City is also developing several topic-specific action plans, including curbside management and electric vehicles.

Overall, the Richmond Connects Strategic Plan and 2024 Action Plan is the means to an end. That end being equitable transportation, as laid out in the goals and objectives of existing planning. Richmond Connects was a process that not only gave a voice to communities most often left out of planning and decision-making, but a process that elevated those voices to the highest level of importance. It gave true power to Richmonders to lay

out what is needed to make transportation equitable, and allowed Richmonders to choose the projects and programs most important to fixing those publicly identified transportation problems. It was also a process to name, measure, and map both the transportation-land use injustices of the past, and the barriers to opportunity today. Lastly, it was a process to implement not an 'either/or' process but an AND process. One that meshed what we can map and measure with that which cannot be so easily drawn as lines on a map. **This plan is both data and people driven.**

Richmond Connects digs deeper into what a 'safe, reliable, equitable, and sustainable transportation network' looks and feels like to Richmonders. It takes the Richmond 300 vision for equitable transportation and turns it into actionable steps.

Richmond 300 Master Plan Vision for Equitable Transportation

Richmond prioritizes the movement of people over the movement of vehicles through a safe, reliable, equitable, and sustainable transportation network. Walking, biking, and transit options are the most convenient and used forms of transportation in Richmond, thereby improving the natural environment and our health. Richmond's multi-modal transportation system is high-quality and easy for all people to use regardless of income and physical abilities, seamlessly connecting Richmond neighborhoods and attractions to each other, the region, and the nation.

| Key Terms | |
|---|---|
| BIPOC | Black, Indigenous, People of Color. This is a commonly used term to designate non-white persons without centering on whiteness. |
| Communities of Concern (aka Communities of Opportunity) | Areas of Richmond that have a high density of residents who identify with one or more of these characteristics: <ul style="list-style-type: none"> • Black, indigenous, and people of color (BIPOC) • People living in low-income households • Senior citizens • Renters • People whose primary language is not English • At-risk youth • People with limited mobility |
| Equality | The concept of providing equal resources to all people |
| Equity | The process of eliminating disparities among people to improve outcomes. |
| Equity Agenda | The City's roadmap to a more inclusive and thriving City. Adopted in May 2021. |
| <i>Richmond 300: A Guide for Growth</i> | Richmond's comprehensive or master plan. This dictates how the city should grow and be developed, and provides guidance on all aspects of City planning. It is a legally binding document that is adopted by City Council. |
| RVAgreen 2050 | RVAgreen 2050 is the City of Richmond's equity-centered climate action and resilience planning initiative, to reduce greenhouse gas emissions 45% by 2030, achieve net zero greenhouse gas emissions by 2050 and help the community adapt to Richmond's climate impacts of extreme heat, precipitation, and flooding. |

Table 1. Key terms used throughout the Richmond Connects process and their definitions.

Equity Focus

This plan is a means to an end, that end being the removal of barriers limiting Richmonder's access to opportunity. It is a means to identify and name Richmond's history of racial injustice and economic oppression of marginalized groups, and how transportation investment - and non-investment - has had a profound impact on individuals and families in the City. It is through that naming, and then mapping, that this process also serves as a means to begin to *redress these past injustices*.

It focuses on the core concept of equity rather than equality. Equality often gets translated in transportation processes to mean equal distribution of resources and programs. But this does not ensure equal outcomes. Equity focuses on getting everyone to the same outcome,

the same finish line, with often quite unequal resource allocations. **That is the essence of equity - recognizing that not everyone is starting at the same starting line - and recognizing that to close that gap, more resources must be allocated to those who face the largest barriers.**

Additionally, it is not just the amount of resources, but the type of resources. Culturally appropriate and demographically sensitive solutions are needed to achieve equity. We would not give a senior citizen a sports bike and expect them to have the same race time as a professional biker. The same way if we focus only on equally distributing money to roadways, we cannot expect those without a car to perform as well as those with a car. This plan acknowledges a multitude of modes and multimodal lifestyles must be accommodated to achieve equity in Richmond.

MEASURING INEQUITY

The planning process for Richmond Connects offers a novel approach to measuring and mapping the inequities in transportation. It is unique in methodology for mapping the injustices created and perpetuated by government investment and regulatory frameworks over the last 300 years, to offer a new way to prioritize government spending on transportation.

It answers:

- Where have transportation investments and policies harmed black and brown communities?
- Where have transportation investments left behind low-income Richmonders?
- Where are our aging citizens left without options?
- Where are Richmonders unsafe?

While the reality of an inequitable transportation network is lived by many Richmonders who do not need statistics to 'prove' the inequities faced daily, it is also easily seen in the data. Richmonders do not face the same barriers across the City. Wealthier, whiter neighborhoods are characterized by higher degrees of accessibility to jobs by all modes. BIPOC (Black, Indigenous, and People of Color) and low-income communities also face barriers to accessing greenspace, healthcare, and community attractions. Whiter and wealthier Richmonders have fewer barriers to getting to all destinations except schools and retail (where BIPOC and low-income Richmonders see the benefit of dense urban landscape with many education and retail facilities nearby).

Our more affluent communities are also more likely to be able to afford a personal vehicle which increases access significantly. Even when comparing access by walking, biking, and transit, we see that for most destination types, Communities of Opportunity have a harder time getting to the places they need to go.

This means there is a geographical, and spatial, component to inequity and injustice in our City - captured in detail in the "What are the Needs?" chapter of this plan. For illustration, and to convey why certain areas of the city have markedly more recommendations than others (and why many programmatic recommendations reference serving lower income Richmonders only) - we can illustrate the differences by one geographic unit - Council Districts.

Most markedly, when comparing across council districts, these communities have significantly worse access to jobs (see Figure 1).

Certain council districts offer better access by walking, biking, and transit than others. This does not mean there are no transportation needs in these areas, but the severity of the problem and the gap to get everyone to the same finish line is larger in some parts of the City. That is the essence of this plan - to map where these past injustices are still influencing transportation access today - and to direct resources to those areas.

Another way to demonstrate the disparities Richmonders face is to look at how much of their annual income is spent on transportation (see Figure 2). Some Richmonders have to reach much deeper into their pockets every month to make ends meet, and transportation cost is one piece of a household budget that can make or break the bank. Residents living in the 1st District are spending less than 10% of their income, while others, such as the 6th and 7th Districts, are spending almost 35 percent! With the exception of District 2, areas with higher portions of Communities of Concern are spending a larger percentage of their household income on transportation!

For a complete listing and explanation of the past history of land-use and transportation injustices, please refer to the Path to Equity: Policy Guide for Richmond Connects.

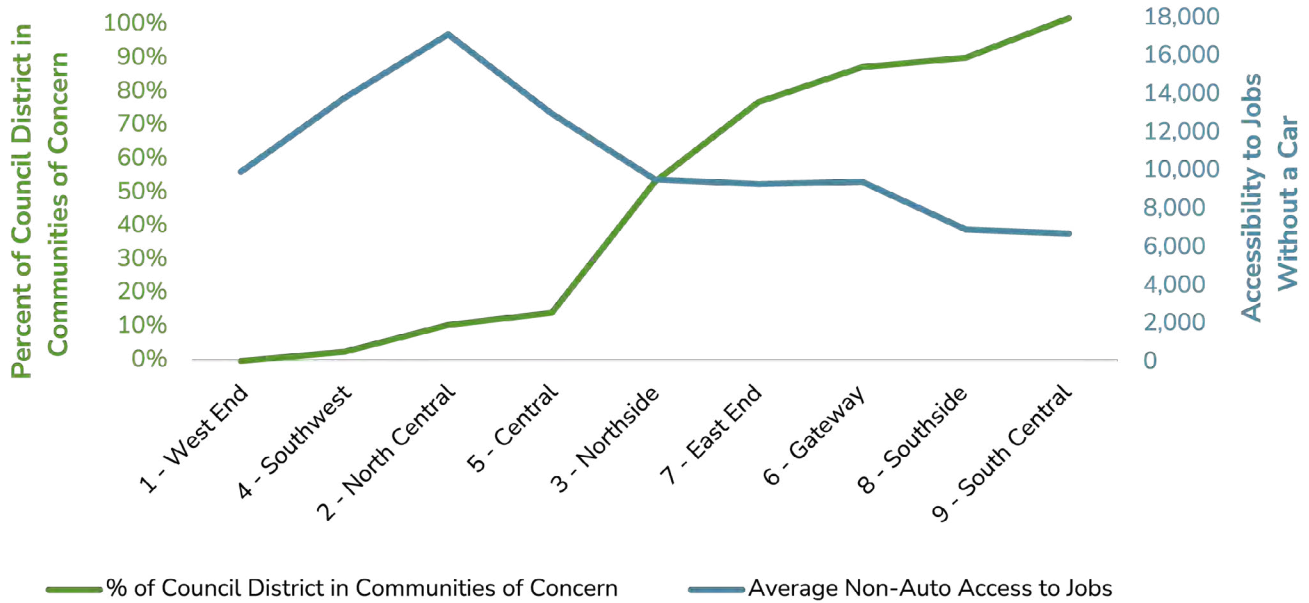


Figure 1. Non-Auto Accessibility to Jobs vs. Community of Concern Percentage by Council District. Getting to jobs by walking, bicycling, and transit is harder in Districts with high percentages of Communities of Concern, where non-auto access is most needed.

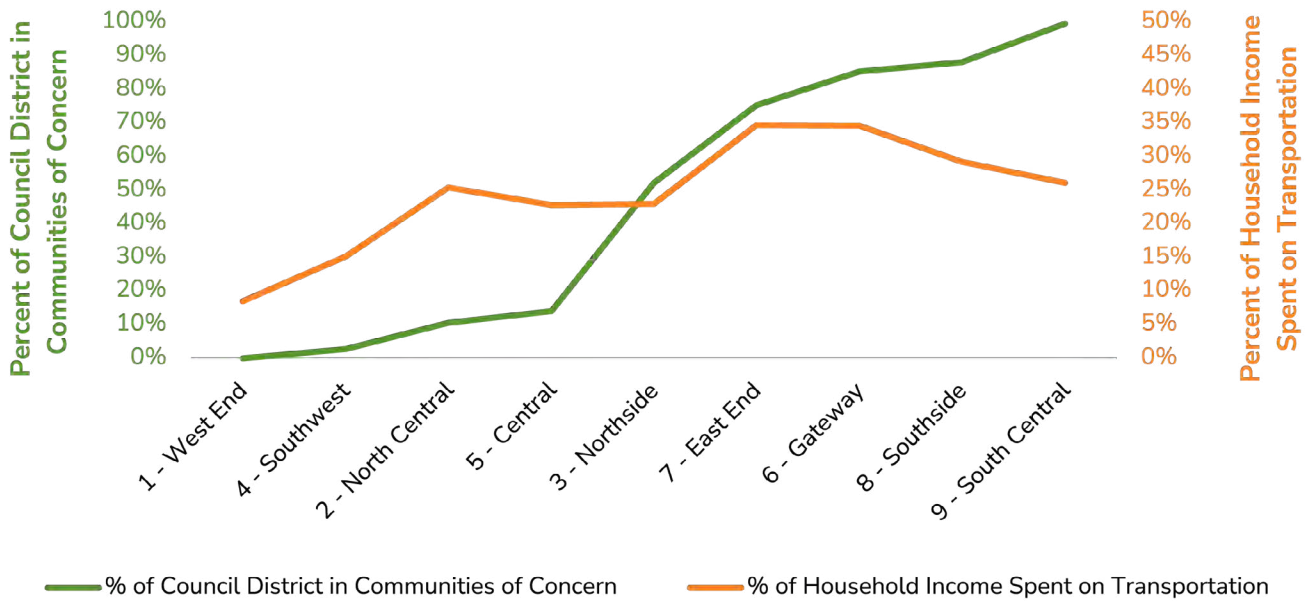


Figure 2. Percent of Household Income Spent on Transportation by Council District vs. Percent of Council District in Communities of Concern.

FIXING THE PROBLEMS

With the problems and inequities named and mapped, this plan then answers: where can we fix the problems faced by marginalized Richmonders, and how do we do it? This plan tells leaders, here is where the City of Richmond can spend money to move the needle to a more equitable transportation network that everyone can benefit from. See “What are the Recommendations?” for the recommendations.

While this plan has many pieces to the puzzle, it does not propose to have the complete solution - the problems and inequities our City faces are intersectional and cross many agencies and entities. It is an attempt to own transportation’s piece of the equity puzzle, and propose actionable solutions to close the gaps that transportation disinvestment has created and/or perpetuated.

THINKING AND PLANNING DIFFERENTLY

This plan differs from many localities’ transportation plans. It is an accessibility-based, equity-based, process that does not ask where congestion or traffic lies. Rather it asks the following:

- How much can we get to via the network that we have?
- Do those places serve the people’s needs, and where is it the worst?
- How much better could that network be at connecting people to the places that are relevant to their lives?
- Can low-income and BIPOC Richmonders access meaningful jobs on a bike and on foot, or on a bus?
- Can they also get to shopping, healthcare and schools in a reasonable time without a car?
- What other barriers might our Communities of Concern face that could be addressed with investments in programs and changes in policy?

Instead of asking where do we need to move cars faster as many transportation plans do, it asks where do we need to slow cars to protect those on foot and on bikes?

This plan is bold in that it rejects the notion of creating new capacity through building more lanes for cars, and rather sets out to create capacity by getting people OUT of cars. Every new bike trip, every new walk trip, and every new bus trip, is one less car trip. Richmond aims to solve local traffic problems by creating safe and reliable multimodal capacity combined with smart land use to create accessible mixed use neighborhoods where essential needs can be met, and pleasure activities can be reached, without a financially cumbersome personal vehicle. In a geographically constrained, built-out city where land is limited for new right-of-way, this plan prioritizes projects that create a built environment which connects Richmonders in an equitable and sustainable way to ensure all can thrive.

This planning process challenges us to think about the following:

- With the \$249.4 billion spent federally on nation-wide transportation projects including, \$100 billion for FHWA and \$51.6 billion for FTA, how can that money be used differently to close equity gaps?
- How can practitioners acknowledge the power that level of funding could have to impact the lives of those who have been harmed by past land-use and transportation injustices?
- How can we reimagine the purpose of transportation to be a vital piece of the overall equity puzzle?

We have a choice to make: this funding could be used to maintain the auto-dependent, inequitable legacy of the past, or it could be applied creatively and with intention to move the equity needle to a more just and sustainable future.

How was this Plan Developed?

Richmond Connects is a plan developed for Richmonders, by Richmonders. Its development was guided by a two-pronged approach integrating rigorous equity-focused multimodal accessibility data analysis (i.e. “doing our homework”) with direct, robust, community engagement with Richmonders who face the most barriers to opportunity and who are often left out of the transportation planning process (i.e. “listening to the people”). This two-pronged approach of data analysis and community engagement was present in every step of plan development.

POLICY

The process began with examining and understanding the policy context from existing and adopted plans, like the *Richmond 300* Master Plan, Vision Zero Action Plan, RVAgreen 2050 Climate Equity Action Plan, Richmond Equity Agenda, Path to Equity Policy Guide, and others.

As mentioned in the Introduction to this plan, the Richmond Connects Strategic Plan is an implementation mechanism for the transportation policies and strategies in these prior plans.

In the Policy phase, metrics and analysis methods were defined for each of the 10 Equity Factors and 11 Investment Need Categories, which are described in more detail in the “Richmond’s Transportation Equity Framework” chapter, ensuring they represent and directly link back to this policy context.

Public comments from these prior efforts, notably *Richmond 300* and Path to Equity, were reviewed, drawing from the rich set of information that Richmonders had already provided.

Richmond Connects Process



Figure 3. Richmond Connects Process.

NEEDS

The Equity Factors and Investment Need Categories were carried forward to guide the process of identifying needs.

In this plan, a need is defined as something that is wrong or missing. Richmond Connects identifies needs - things that need to be fixed or improved to make transportation in Richmond more equitable.

The Needs Identification process took over a year, involving state-of-the-art multimodal accessibility modeling and persistent in-depth community engagement to hear from thousands of Richmonders, especially those in Communities of Concern.

Many, many needs were identified through this process, and the top equity-based needs were defined for each Investment Need Category. These include mappable needs like specific areas where transit service is unreliable and specific streets where sidewalks are missing, as well as non-mappable needs that are more systemic or programmatic in nature, such as lack of driver compliance and yielding to pedestrians, pervasive car-culture, and the overall car-centric built environment. The Needs Identification process is further described in the “What are the Needs?” chapter and fully documented in Appendix A.

RECOMMENDATIONS

Recommendations were developed to address the top needs for the 11 Investment Need Categories. These included project recommendations to address the mappable needs and strategies for the non-mappable needs.

Project and strategy recommendations came from a combination of previously identified recommendations in prior plans, ideas from community input, and new ideas for needs where no previously-identified recommendations or ideas existed.

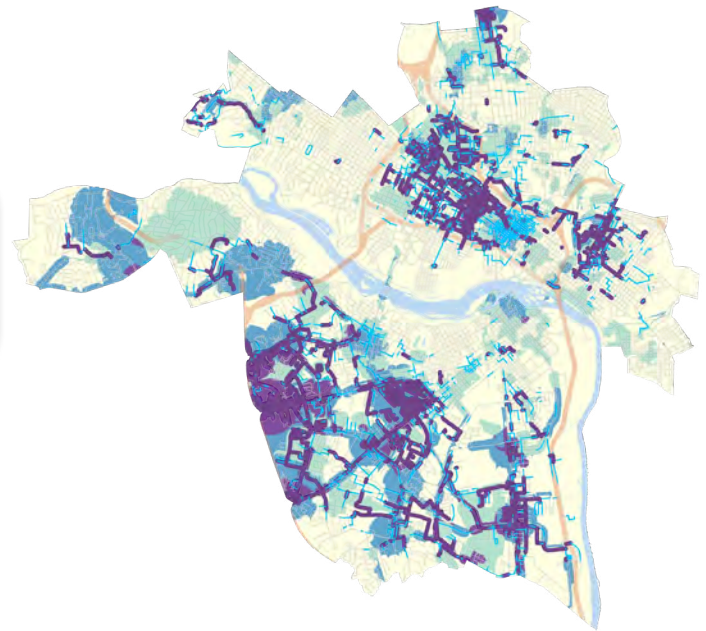


Figure 4. INC 1b Pedestrian Needs map

The draft project recommendations were shared with the public in a set of surveys. Over 8,000 Richmonders took a survey and indicated which project recommendations they thought were most important to improving transportation equity.

The strategy recommendations were vetted through a carefully-selected focus group representing all facets of Richmond’s Communities of Concern and reviewed by the Advisory Committee - a group representing stakeholder, advocacy, and technical professional perspectives.

The output of the Recommendations phase is this Strategic Plan and accompanying Action Plan. The Action Plan identifies the top-most important projects and strategies for improving transportation equity in Richmond and lays out immediate action steps for each.

IMPLEMENTATION

Implementation is where the change happens. The City of Richmond will use this Strategic Plan and the accompanying Action Plan to guide decisions about where dollars are spent. The City will work towards the strategies and pursue funding for the projects in the Action Plan.

of Family Dollar stores, pharmacies, convenience stores, and restaurants. The team attended several events held in target communities, such as the Peter Paul Block Party, Armstrong High School Senior Picnic, Gilpin Resource Day, Hillside Community Day Backpacking Event, and Southwood Community Day. This approach also included knocking on doors, standing at corner stores, putting flyers up at bus stops and community centers, and generally being where the people already are.

The last phase of outreach resulted in over 600 handwritten survey responses, each one representing not just a survey but a person-to-person conversation and connection to the City of Richmond's planning processes. While the team estimates the last phase alone represented over 200 hours of manpower collecting the surveys, this approach is irreplaceable and represents the most successful way to build community connections and get meaningful input.

COMPENSATION

Throughout the process, the Richmond Connects team provided compensation to Richmonders to attend Advisory Committee meetings, to attend focus groups, and to complete surveys. Acknowledging that professional planners are compensated for their feedback as part of their normal job duties, the team acknowledged the importance of offering compensation for community members who provided irreplaceable community feedback.

SIMPLIFY, SIMPLIFY, SIMPLIFY

The team also spent considerable time reiterating publicly facing materials to convey content in the most direct, simple manner possible. Often unintentionally, planner speak and professionalisms are a barrier for Communities of Opportunity to influence government processes. The OETM outreach manager kept the team grounded by frequently reviewing and simplifying materials to provide the most accessible content possible.



Figure 7. Phase 2 of engagement asked the public what the top transportation-related needs were. Along with a survey, two focus groups were hosted to get further insight into transportation needs in Communities of Concern. (East End, 1/19/2023)

This also meant offering paper surveys! While the time to input these surveys was much greater than an online survey, the Communities of Opportunity frequently requested this in early phases of the Path to Equity planning processes, and the team stuck to this request for all phases of outreach.

TITLES LEFT AT THE DOOR

This planning process employed the use of planning committees to support and guide process decisions along the way. These committees had different but overlapping representation, and each had a significant role in the plan development. A Technical Committee of internal staff with specialty in technical analysis reviewed the means and methods for each phase of measuring and mapping. Additionally, a Steering Committee composed of internal staff from multiple City of Richmond offices helped answer big questions about how to accomplish each plan phase, and this group provided review of deliverables throughout. The Steering Committee also included two community members and city council liaisons. Finally, an Advisory Committee was utilized to review key milestones and refine outreach strategies. This group

contained community members, community activists and advocacy groups, along with regional and state planning partners. It was designed to hold space for the co-creation of priorities and collaboration across interests. Each of these committees practiced the “titles left at the door” mantra for engaging with one another. Every idea was valid and all ideas were considered by the collective.

Similarly, the project team utilized two rounds of focus groups made up of members of Communities of Opportunity, first to validate and refine the identification of needs, and second to refine and prioritize the programmatic recommendations in this plan. These groups were paid for attendance and gave a wealth of information from community experts who have the lived experience to offer such insights. The focus groups proved to be a critical element of the equity-focused outreach, and resulted in capturing in depth conversation and rationale for support of programs that would have been impossible to capture any other way.

Doing Our Homework: Equity-Centered Multimodal Accessibility Analysis

Working hand-in-hand with community engagement, the data-driven multimodal accessibility analysis helped to define equity-centered transportation needs.

The data-driven analysis included:

- Identifying and quantifying transportation System Needs, regardless of equity considerations - the areas where access by non-auto modes is difficult due to lack of facilities or services, poor quality of facilities and services, or other factors.
- Identifying and quantifying People Needs - the areas where people who are experiencing the most barriers and greatest lack of access to opportunities live, and the streets they use to make trips.
- Using the People Needs to weight the System Needs towards equitable outcomes that redress past injustices and remove barriers today.

The System Needs were rooted in accessibility measures and expressed through the 11 INCs.

Each of the People Needs was based on one of the Equity Factors, part of the adopted ‘Path to Equity: Policy Guide for Richmond Connects.’ This step measured things like where redlining still has an impact on accessibility and BIPOC homeownership, or where neighborhoods are still locked in a car-centric development pattern that makes it unsafe to travel on foot.

These equity-factor based People Needs were then overlaid with the access-based Network Needs, to result in 11 equity weighted needs maps highlighting the areas with the worst transportation problems that were compounded by past injustices.

Accessibility relies on the notion that people need to get to actual places, not just travel quickly. It combines notions of mobility and proximity - what is close by and how quickly can you get there - rather than just mobility alone, like traditional car-centric measures focused solely on congestion.

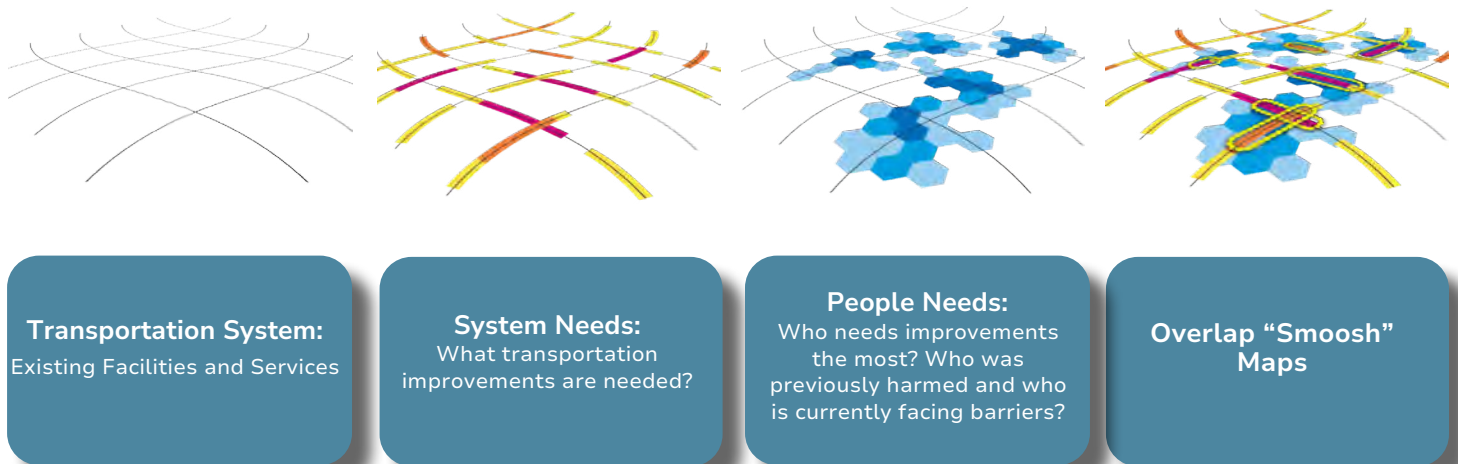


Figure 8. Equity-Centered Data Analysis Framework.

This analysis, combined with the community engagement, was the foundation for identifying the top equity-based transportation needs and developing recommendations.

The Needs identified through this process are presented in “What are the Needs?” chapter. Further information on the needs analysis and identification is provided in Appendix A. Recommendations are presented in the “What are the Recommendations?” chapter. Appendix B explains how the recommendations were developed.

Richmond's Previous Equity Documents

Richmond's recent past reflects the growing awareness of the inequality in health and wealth outcomes for BIPOC and low-income residents. There were several prior planning efforts that laid the bedrock upon which the Path to Equity: Policy Guide for Richmond Connects, and this plan, were built. Several key practices from these previous planning efforts were used in the development of Richmond Connects. This included the best practice of compensation for community input, utilized in both the Master Plan and RVAgreen 2050. It also included the need for mapping and measuring disparities, the mapping of which was initiated in the RVAgreen 2050 process.

Overall, these planning efforts prior to Richmond Connects all begin to weave the thread of equity through City functions. Richmond Connects is an attempt to weave new threads, and tighten those existing threads, in the blanket of equity actions being undertaken by the City of Richmond.

RICHMOND EQUITY AGENDA

In Spring of 2021, City Council adopted a bold, City-wide equity agenda. This laid out the definition of equity in Richmond, referenced in this plan many times. It also laid out key action items across all city departments to work towards closing gaps in access to opportunities.

RICHMOND 300: A GUIDE FOR GROWTH

The *Richmond 300* Master Plan was awarded the 2021 Daniel Burnham Award for a Comprehensive Plan from the American Planning Association (APA) for the groundbreaking work to engage meaningfully marginalized communities, and to lay out a plan for growth that acknowledges the history of injustice in Richmond. It laid out the solid foundation for Richmond Connects to push the envelope even further to name and redress these injustices.

"Overcoming years of divestment, specifically in our Black and Brown communities, is an immense task, and *Richmond 300* steps away from the status quo and provides bold yet sound approaches to combatting inequities by adopting to our changing environment, addressing affordable housing needs, and fostering economic inclusion."

-Mayor Levar Stoney, *Richmond 300*

RVAGREEN 2050

Following on the Master Plan was another equity-focused planning process. This process was the climate action plan, RVAgreen 2050. It took a hard look at the disparate climate vulnerabilities of disadvantaged communities, and began the mapping of the climate inequities in Richmond, via the climate equity index and tool. It also carried on the work of paying ambassadors from Communities of Opportunity to sit at the planning table and shape the plan outcomes. This process also developed an equity screening tool that can be adapted and used for many of the programmatic recommendations in this plan (several reference an equity screening score card, which could be based on this RVAgreen 2050 tool).

MULTIMODAL NETWORK EQUITABLE ACCESS STUDY

Prior to the start of Richmond Connects, the City of Richmond with the support of the Virginia Office of Intermodal Planning and Investment, undertook a study to develop and define accessibility. This tool was modified and used in the current Richmond Connects needs definition. But also critical to this process, were the other research areas undertaken in this study. The team analyzed data regarding gentrification risk of large transportation investments, and found that generally the investments in large transportation improvements came into play once an area had already

begun the gentrification process. This is an important concept to acknowledge that planners have a tendency to recommend transportation investments in 'up and coming' areas, often without doing a thorough assessment of gentrification risks and planning for mitigation of those risks. This is often overlooked in transportation plans, and this concept should be included in any equity scorecards used for transportation projects.

This study also highlighted the movement of many Communities of Concern to less accessible more suburban areas, as an effect of gentrification, a trend to watch. Overall, this study laid some data analysis that informed the planning done in Richmond Connects, and is a critical basis of why this transportation plan also has recommendations for land use and housing policy.

MORE TO DO!

As noted earlier in this document, this is but one step towards true equity in Richmond. There is still much more work to do.



RICHMOND'S TRANSPORTATION EQUITY FRAMEWORK

The Path to Equity Policy Guide establishes a strong policy foundation that Richmond Connects builds on. The Path to Equity is a framework with several different elements that inspire and permeate through the Richmond Connects Strategic Plan. Two of the most foundational elements from Path to Equity are the Equity Factors and Investment Need Categories. The Richmond Connects needs identification process was designed around these elements, which are introduced in this chapter.

Equity Factors

The Path to Equity Policy Guide establishes 10 Equity Factors. These are statements that describe how transportation investments will work towards redressing past injustices and closing equity gaps. Some of the Equity Factors are geared towards reconciling inequities that originated from past transportation and land use injustices like redlining, neighborhood dissection, urban renewal, suburbanization of poverty, and car-centric planning. Other Equity Factors are focused on improving access and safety for populations who experience the most barriers. Others acknowledge the important role transportation investments make in climate equity work.

The 10 Equity Factors were written by the Path to Equity Advisory Committee, a group of Richmond stakeholders who represent a diversity of community, advocacy, and professional perspectives. The Advisory Committee included compensated community ambassadors - people who live in the neighborhoods that experience the most transportation barriers, and brought their lived experiences to the process.

The 10 Equity Factors articulate how Richmond needs to use its transportation investments to improve equity, from the perspectives of the people who are experiencing the most inequities.



EQUITY FACTOR 1:

Transportation investments will improve access to housing, jobs, services, recreation, and education, addressing remaining inequities created by redlining.



EQUITY FACTOR 2:

Transportation investments will reconnect and revitalize communities to address inequities created by the highway system's dissection of neighborhoods.



EQUITY FACTOR 3:

Transportation investments will improve neighborhood connectivity and revitalize the fabric of the communities negatively impacted by urban renewal.



EQUITY FACTOR 4:

Transportation investments will improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.



EQUITY FACTOR 5:

Transportation investments will address gaps in the multimodal network and will utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.



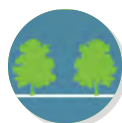
EQUITY FACTOR 6:

Transportation investments will equitably increase the safety and comfort of cyclists and pedestrians, connecting Communities of Concern to opportunities.



EQUITY FACTOR 7:

Transportation investments will improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for Communities of Concern.



EQUITY FACTOR 8:

Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVAGreen 2050.



EQUITY FACTOR 9:

Transportation investments will prioritize densely populated areas of Communities of Concern including communities of color, low-income communities, senior and limited mobility populations, families traveling with children, and at-risk youth.



EQUITY FACTOR 10:

Transportation improvements will focus on improving climate resiliency for the most impacted communities.

Investment Need Categories

The Path to Equity also establishes the Investment Need Categories. The Investment Need Categories were designed to align with the goals and objectives from the *Richmond 300* Master Plan. They also align with existing regional, state, and federal funding programs and projects types.

The Richmond Connects needs analysis was specifically designed to identify the highest needs in each of the 11 Investment Need Categories. The process to identify the needs is described in the next chapter.



INC1A: BICYCLE

Enhancing transportation options to ensure equitable access for cyclists, regardless of their physical abilities or geographic location.



INC1B: PEDESTRIAN

Improving walkability and pedestrian infrastructure to provide equitable access for pedestrians in all areas of the city.



INC2: TRANSIT

Promoting a safe & reliable transit network for all and finding ways to increase transit frequency.



INC3: FREIGHT

Developing efficient freight transportation systems to ensure reliable movement of goods and reduce delays.



INC4: LAND USE

Aligning transportation and land use planning to address historical disparities and promote equitable development across communities.



INC5: SAFETY

Implementing measures to reduce traffic-related injuries and fatalities and creating safe environments for all road users.



INC6: CONNECTIVITY

Establishing well-integrated transportation networks to provide efficient connections between different modes of travel.



INC7: MAINTENANCE

Ensuring regular upkeep and maintenance of transportation infrastructure to sustain its quality and usability over time.



INC8: ECONOMIC DEVELOPMENT

Expanding transportation infrastructure to stimulate economic growth by enhancing connectivity to job centers and commercial areas.



INC9: TECHNOLOGY

Embracing technological advancements to improve transportation efficiency, accessibility, and user experience.



INC10: SUSTAINABILITY

Promoting environmentally friendly transportation solutions to minimize ecological impact and reduce emissions.

WHAT ARE THE NEEDS?

Equity-based needs consider **who** is experiencing the most barriers to safe, convenient transportation, and **where** these barriers prevent equitable access to opportunities.

The chapter provides a high-level overview of how Richmond's transportation equity needs were defined and identified. Needs are presented by Investment Need Category and include both mappable and non-mappable needs.



What is a need?

A **need** describes something that is wrong, needs fixing, or needs improvement. In transportation, a need is something that prevents someone from getting where they need to go safely or easily. **Needs** can be barriers or gaps in transportation facilities or services, or poor quality of those facilities or services.

Some needs are **mappable** - they can be pinpointed to a specific location or area. This chapter describes the process to identify mappable needs for each Investment Need Category, and shows maps identifying the areas, and in some cases the streets, where equity-based needs are highest. Other needs are **non-mappable** - they represent barriers to access that cannot be located on a map. This chapter also identifies the non-mappable needs and describes how these needs were identified.

Different areas of Richmond have different levels of equity-based transportation needs.

Equity-based needs consider *who* is experiencing the most barriers to safe, convenient transportation, and *where* these barriers prevent equitable access to opportunities.

Richmond is a complex city and its neighborhoods were developed over time, making certain areas have different transportation-related needs. Older areas of the city, like Downtown, Shockoe, and Church Hill, were developed pre-automobile with a street grid and with walkability and density in mind. Newer areas of Richmond, notably the 1970 Chesterfield annexation areas, were developed in the late 20th century with car-centric planning - with cul-de-sacs, streets without sidewalks, and car-scale development.

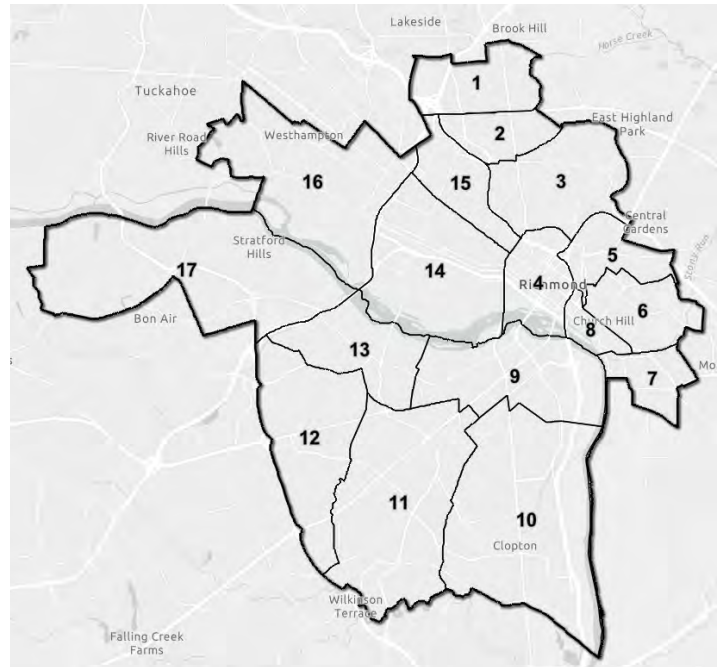


Figure 9. Map of the 17 Needs Areas in the City of Richmond. The needs identification process in Richmond Connects defined 17 Needs Areas throughout the City.

Some Needs Areas of Richmond have high-quality access to a variety of destinations by all modes. These areas tend to be neighborhoods whose residents are primarily white, higher-income, with high levels of educational attainment. Other Needs Areas have poor accessibility by walking, bicycling, or transit, and these areas tend to be areas whose residents meet one or more characteristics of Communities of Concern. There are differences in land use, street patterns, overall neighborhood character, and historical context too. Some areas were once thriving Black neighborhoods that were redlined, torn apart by highway construction, or demolished in the name of urban renewal. Other areas are low density car-centric suburban areas with multi-lane high-speed arterials and a lack of sidewalks. Still other areas are former industrial areas with a lack of street trees, where temperatures are hottest. Richmond's various neighborhoods are unique, and they each have unique equity-based transportation needs, some much higher than others.



NEEDS NARRATIVES

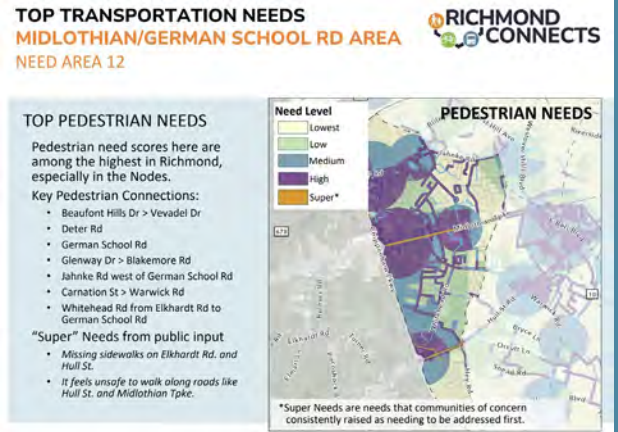
Recognizing these unique differences, the Richmond Connects needs analysis defined 17 different Needs Areas of the City of Richmond. Each Need Area is a collection of neighborhoods and *Richmond 300* Nodes with similar equity context and transportation needs.

The needs described in this chapter are presented by the 11 Investment Need Categories, previously defined in the “Richmond’s Transportation Equity” chapter, in the following sections.

The needs are also presented by the 17 different Needs Areas in Appendix E.

Different areas of Richmond have different needs. The equity-based transportation needs were identified for 17 different areas of Richmond. The top needs are presented in a series of 3-page summaries. These top needs are the results of a year-long effort of analysis and public engagement!

You can see the Needs Narratives for each of the 17 Needs Areas in Appendix E of this document.



Needs Identification Process Overview

IDENTIFYING THE MAPPABLE NEEDS

As mentioned previously, the equity-based needs were identified through an integrated combination of **data-driven analysis** and **community input**. The steps in this process are outlined generally below. More details are provided in **Appendix A**. Many of these steps are documented in StoryMaps in the [Richmond Connects Map Collection](#). Links to each StoryMap are provided.

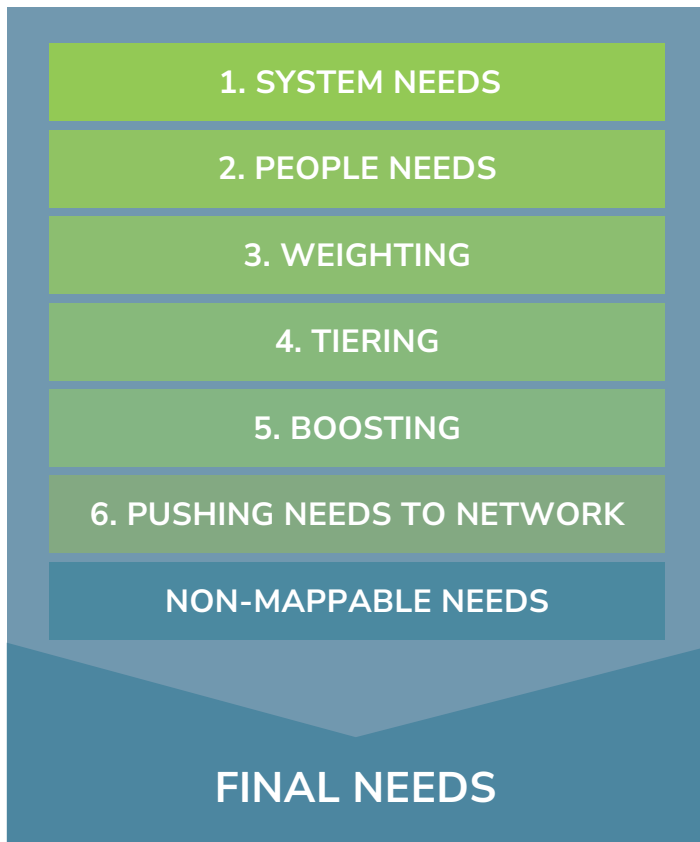


Figure 10. Steps in the Needs Identification Process.

Step 1: Unweighted System Needs (by Investment Need Category)

The data-driven analysis identified transportation accessibility-based System Needs for each Investment Need Category. This part of the analysis resulted in a set of 11 unweighted needs maps - one for each Investment Need Category. These maps show where there are the biggest gaps and barriers purely from a transportation facilities and services standpoint, without considering the Equity Factors.

Step 2: People Needs (by Equity Factor)

The data-driven analysis also established People Needs based on the 10 Equity Factors from the Path to Equity Policy Guide. This part of the analysis resulted in a set of 10 maps - one for each Equity Factor - identifying places and people who have experienced past injustices and present-day disparities.

The 11 unweighted Investment Need Category maps and 10 Equity Factor maps are provided in the [Needs Analysis Mapping StoryMap](#).

Step 3: Weighted Needs (by Investment Need Category, weighted by Equity Factors)

The Richmond Connects team worked with the Steering Committee to identify which Equity Factors were relevant to each Investment Need Category. The 11 Investment Need Category (System) needs maps were then weighted by the relevant Equity Factors. This step produced a set of 11 weighted needs maps - again, one for each Investment Need Category. These maps are provided in the Weighted Needs Maps StoryMap. The needs in these maps are expressed as a number from 0 to 1, and the weighted need is symbolized on a continuous stretched color ramp.

Step 4: Tiered Needs

The Richmond Connects team worked with the Steering Committee to define tiers of need. Four need tiers were established:

The weighted needs maps were modified to display the needs in the four need tiers to produce the tiered needs maps. Throughout this plan, the term “High Need” is interchangeable with “Tier 1 Need”. Both terms refer to the highest need tier.

Step 5: Boosted Needs (to reflect public input)

Public input was incorporated into the needs identification in several ways. One of those ways was in this step in the data-driven analysis.

As described elsewhere in this plan, over 1,000 public comments were collected from the Phase 1 survey that asked, “What needs to be improved to make transportation in Richmond more equitable?” Respondents had the option to identify a location for their comment. Over 4,000 mapped comments were collected from the Phase 1 survey and the prior surveys from *Richmond 300* and *Path to Equity*. The Richmond Connects team reviewed each comment and tagged the relevant Investment Need Categories. The team identified clusters of comments for each Investment Need Category. Areas that fell within a comment cluster were boosted to the next need Tier (i.e. given an extra weight of 0.2).

Step 6: Pushing the Needs to the Network

All of the maps produced up to this point were area-based maps. For the Bicycle, Pedestrian, and Freight categories, the area-based needs were “pushed to the network.” Essentially, the team analyzed and identified which streets were being used the most for trips to and from the high need areas. This analysis considered both the boosted score of the need area and the volume of bicyclists, pedestrians, and freight vehicles on the streets.

The 11 maps of the weighted, tiered, boosted area-based needs, together with the network-based needs for the Bicycle, Pedestrian, and Freight categories, represent the culmination of the data-driven needs analysis process. These final citywide Needs Maps are presented in the [Needs Analysis StoryMap](#). They are also presented in this plan later in this chapter. Full documentation, including data sources and analysis methods, of the data-driven analysis through this step is provided in Appendix A.

Identifying the Non-Mappable Needs

In addition to the final needs maps, a set of non-mappable needs were identified for each Investment Need Category. The non-mappable needs are issues raised by Richmonders through the process that could not be pinpointed on a map. They generally relate to city-wide policies and programs, or describe issues that are present throughout the City, not just in specific areas.

A total of 145 non-mappable needs were initially identified through the first round of engagement, as well as through the assessment of previous survey data from the Path to Equity engagement and *Richmond 300* engagement.

The initially identified 145 needs were each examined to determine if the need:

- Represents an infrastructure improvement project or type of project
- Aligns with a mappable need and will be addressed by a mappable recommendation

If either of these statements were true, the need was moved out of consideration for recommendations. Each of the remaining non-mappable needs was then examined to determine if the need:

- Was a common theme in all outreach
- Directly benefits a Community of Concern
- Aligned with a Super Need identified by a Community of Concern

If a remaining non-mappable need met any one of the above three criteria, it was advanced forward into recommendations development.

The following pages present the final Needs Maps and the list of non-mappable needs for each Investment Need Category.

Investment Need Category 1A: Bicycle

[View detailed map](#)

MAPPABLE BICYCLE NEEDS

A bicycle need is revealed:

- Where access is significantly degraded by the absence of bicycle facilities or the presence of low-quality facilities, or
- Where bike-share facilities are beyond a short walking distance,
- With less tolerance for poor/underperforming accessibility in *Richmond 300 Nodes*, along Great Streets, or along the high injury street network,

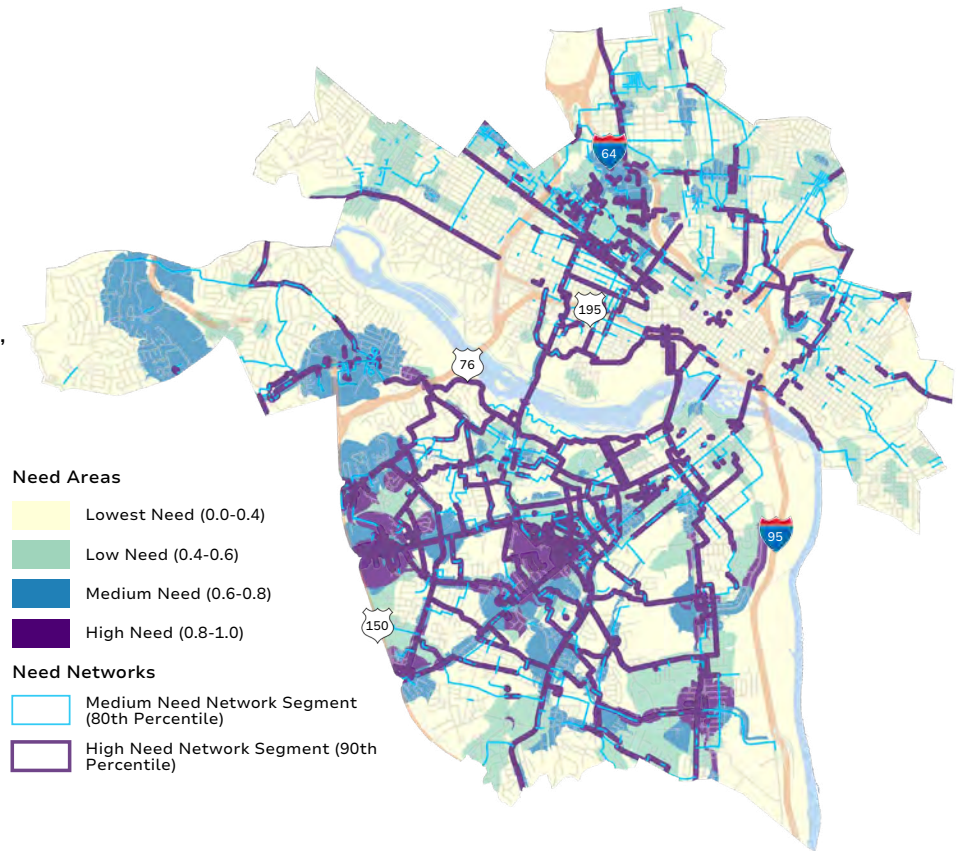


Figure 11. Investment Need Category 1A: Bicycle Needs

NON-MAPPABLE BICYCLE NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Drivers don't share the road, aren't friendly with bicyclists, and park in bike lanes.
- Bike lanes have trash, debris, and weeds.
- There aren't bike racks or other places to park a bike.
- Some people can't afford to own a bike or have a physical disability and can't ride a bike.
- Bikeshare is too expensive.

Other non-mappable needs were identified but not advanced forward:

- Lack of dedicated bicycle infrastructure with physical separation, sharrows are ineffective, lack of proper signage
- Bike infrastructure needs to be more connected to create a real network
- Lack of shared-use paths
- Lack of paths along railroad corridors
- Missing bike lanes to connect to important areas
- Missed opportunities for closing streets to vehicular traffic
- Lack of integration between transit and bikeshare services
- Limited hours and allowable areas for e-scooters
- Inequitable distribution of scooters

Investment Need Category 1B: Pedestrian

[View detailed map](#)

MAPPABLE PEDESTRIAN NEEDS

A pedestrian need is revealed:

- where access is significantly degraded by the absence of pedestrian facilities or the presence of low-quality facilities, or
- with less tolerance for poor/underperforming accessibility in *Richmond 300 Nodes*, along Great Streets, or along the high injury street network,

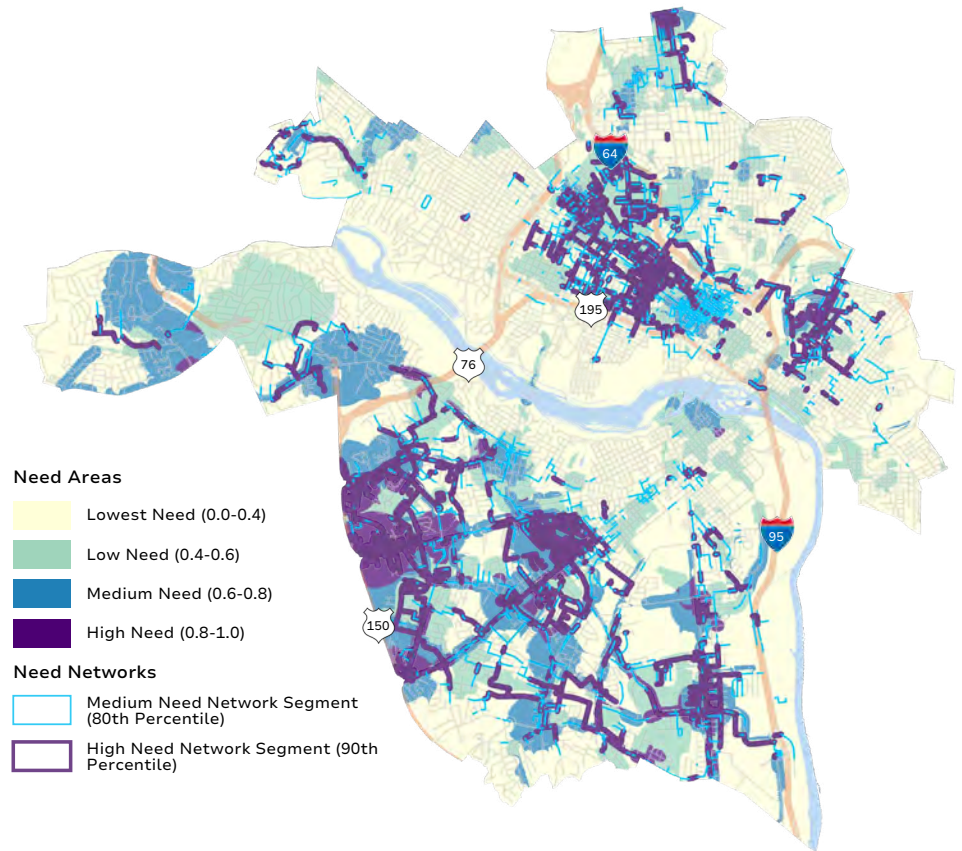


Figure 12. Investment Need Category 1B: Pedestrian Needs

NON-MAPPABLE PEDESTRIAN NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Richmond’s major intersections area generally designed for moving as many cars as fast as possible. They are not designed for pedestrians.
- Richmond’s streets are too dark at night.
- Richmond’s streets lack safe, clear, stable, and smooth paths for people who use wheelchairs or other mobility devices, push strollers, or “roll” with other wheels on sidewalks.
- In Richmond, it’s much harder to get around by walking, biking, or taking the bus than by driving a car. If you don’t own your own car, it’s really hard to get where you need to go. (Richmond is too car-centric.)

Other non-mappable needs were identified but not advanced forward:

- Lack of key sidewalk connections/connectivity
- Lack of painted crosswalks, elevated walkways, and/or flashing ped crossings
- Lack of shared-use paths
- Lack of paths along railroad corridors
- Lack of ped-only lanes or closing streets to vehicular traffic

Investment Need Category 2: Transit

[View detailed map](#)

MAPPABLE TRANSIT NEEDS

A transit need is revealed:

- where access is significantly degraded by the absence of transit, inadequate span of frequent service (off-peak service hours), unreliable service, or inaccessible/uncomfortable stops, or
- with less tolerance for poor/underperforming accessibility in *Richmond 300 Nodes*, along Great Streets, along streets with existing transit routes, or along the high injury street network.

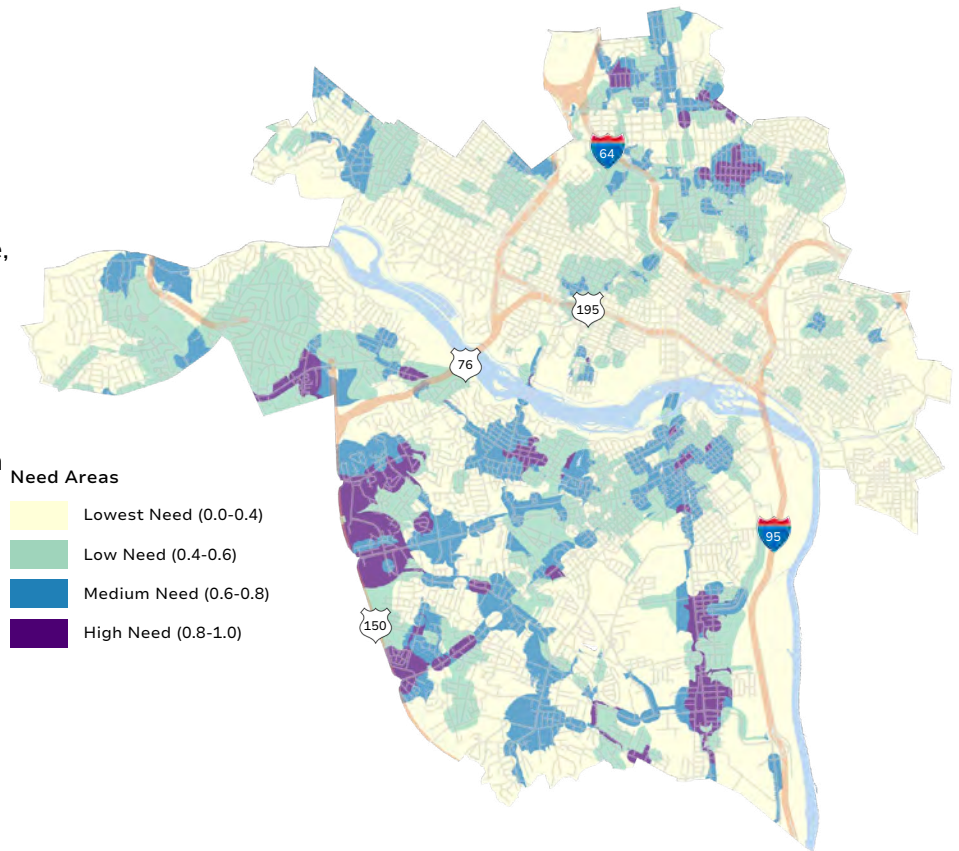


Figure 13. Investment Need Category 2: Transit

NON-MAPPABLE TRANSIT NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- GRTC buses are not reliable.
- GRTC buses don't run late at night and have limited weekend service.
- Need to keep buses free
- There is a nationwide shortage of qualified licensed bus drivers
- There aren't enough options for getting around by bus if you live in the far-south and south-western parts of Southside, and ride-sharing (Uber/Lyft) is expensive.

Other non-mappable needs were identified but not advanced forward:

- Lack of sheltered waiting areas with seating, trash, lighting, and other amenities
- Infrequent stops
- Limited dedicated bus lanes
- Limited park & rides/commuter parking lots
- Lack of permanent GRTC transfer plazas
- Lack of opportunities for trolleys/light rail
- Lack of opportunities for high-speed rail

Investment Need Category 3: Freight

[View detailed map](#)

MAPPABLE FREIGHT NEEDS

A freight need is revealed:

- Access from freight generators to interregional facilities is degraded by bottlenecks, delay, or lack of redundancy, with more tolerance for poor/underperforming accessibility in *Richmond 300* Nodes and along Great Streets,
- There is a high amount of commercial VMT on Narrow last-mile connectors or there are notable modal conflicts in heavy industrial areas,
- Along segments in zones with high rates of commercial vehicle trip generation and limited curb space or adequate alley/rear loading zone space, or
- There is no intermodal (rail, port) facility within 5 miles of zoned industrial areas.

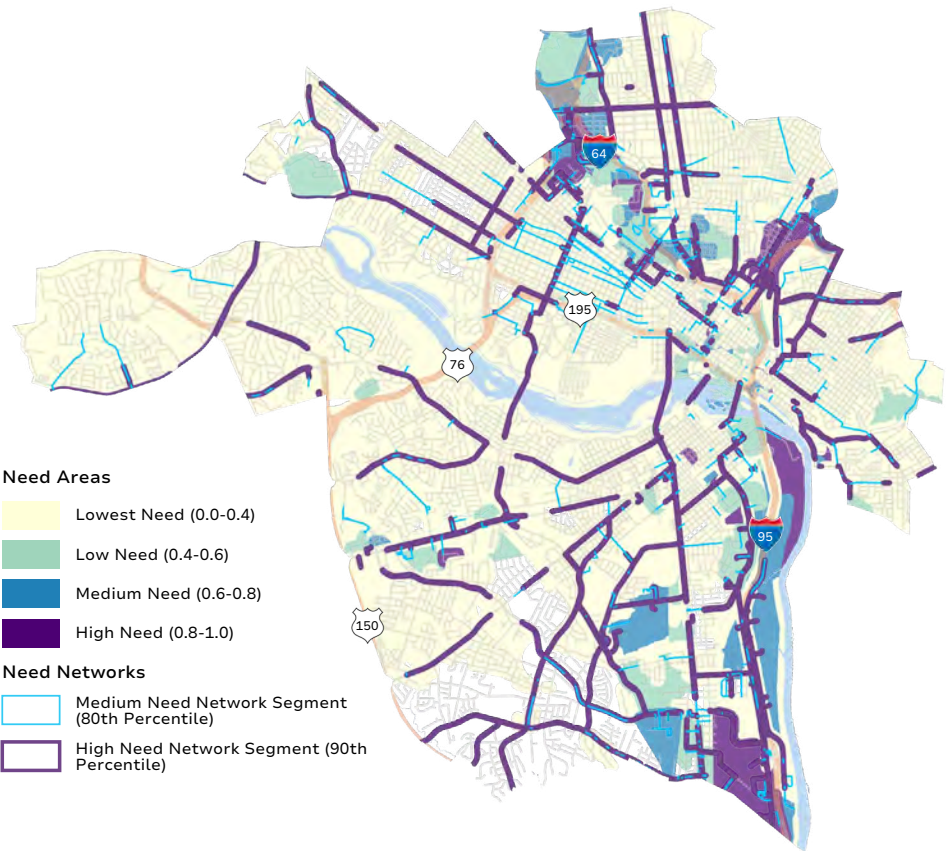


Figure 14. Investment Need Category 3: Freight

NON-MAPPABLE FREIGHT NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Some streets have too much truck traffic
- Low-income residents are most vulnerable to negative effects of supply chain disruptions.
- It costs a lot to have groceries delivered to your door. Rising home delivery costs make it harder for low-income households to know where their next meal is coming from.

Other non-mappable needs were identified but not advanced forward:

- Lack of on-street loading zones
- Global freight movement via Port of Virginia facilities; rail facilities just outside of City

Investment Need Category 4: Land Use

[View detailed map](#)

MAPPABLE LAND USE NEEDS

A land use need is revealed:

- Access to competitive relevant destinations by travel purpose by non-auto modes is inadequate or significantly lower than access to all destination, with less tolerance for poor/underperforming accessibility in *Richmond 300 Nodes*,
- The minimum walk time to quality open space exceeds 10 minutes,
- A significant proportion of land area is devoted to surface parking, with less tolerance for high proportions of surface parking in *Richmond 300 Nodes*, or
- A Great Street is underdeveloped to support Complete Streets policy.

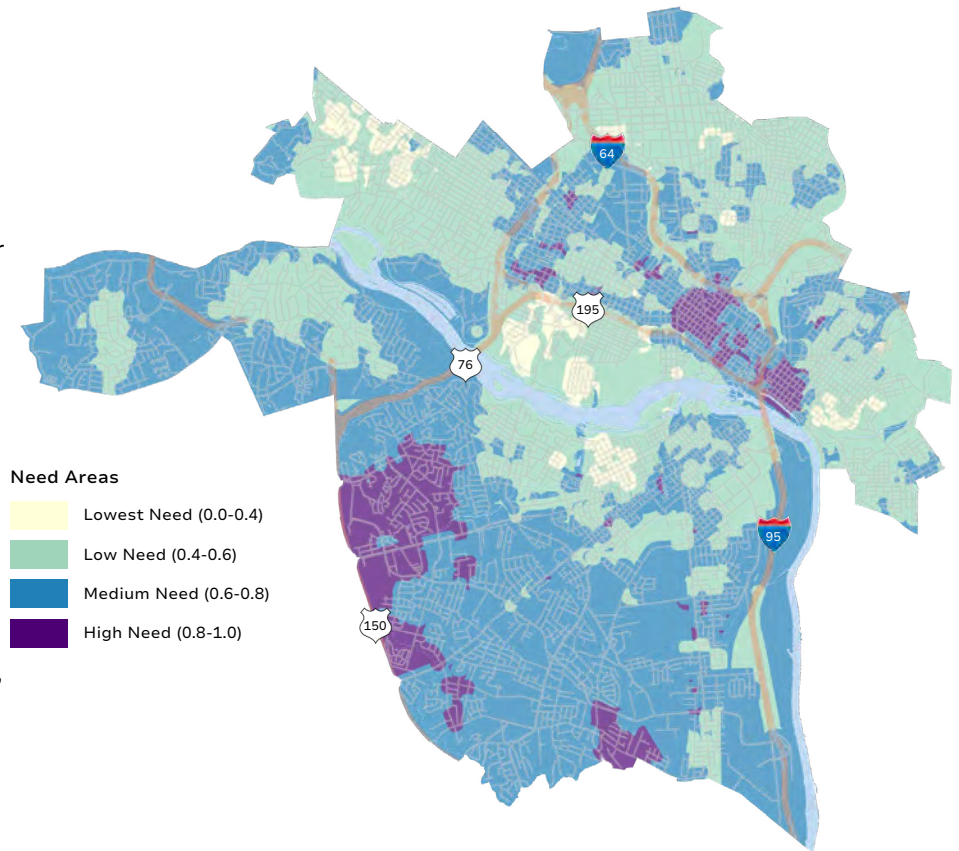


Figure 15. Investment Need Category 4: Land Use

NON-MAPPABLE LAND USE NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Provide the right amount of parking so there's enough, but not too much.
- There isn't enough affordable housing near job centers and other major areas of activity, and near transit.
- There aren't enough destinations (shopping, parks) that you can get to by riding the bus.

Other non-mappable needs were identified but not advanced forward:

- More density near transit
- Not enough grocery stores nearby
- Lack of access to all services

Investment Need Category 5: Safety/Security

[View detailed map](#)

MAPPABLE SAFETY/SECURITY NEEDS

A safety/security need is revealed:

- Where non-interstate crashes leading to fatality or serious injury is high, or
- In highly-walkable (high accessibility) areas with moderate concentrations of violent crime incidents or high concentrations of property crime incidents.

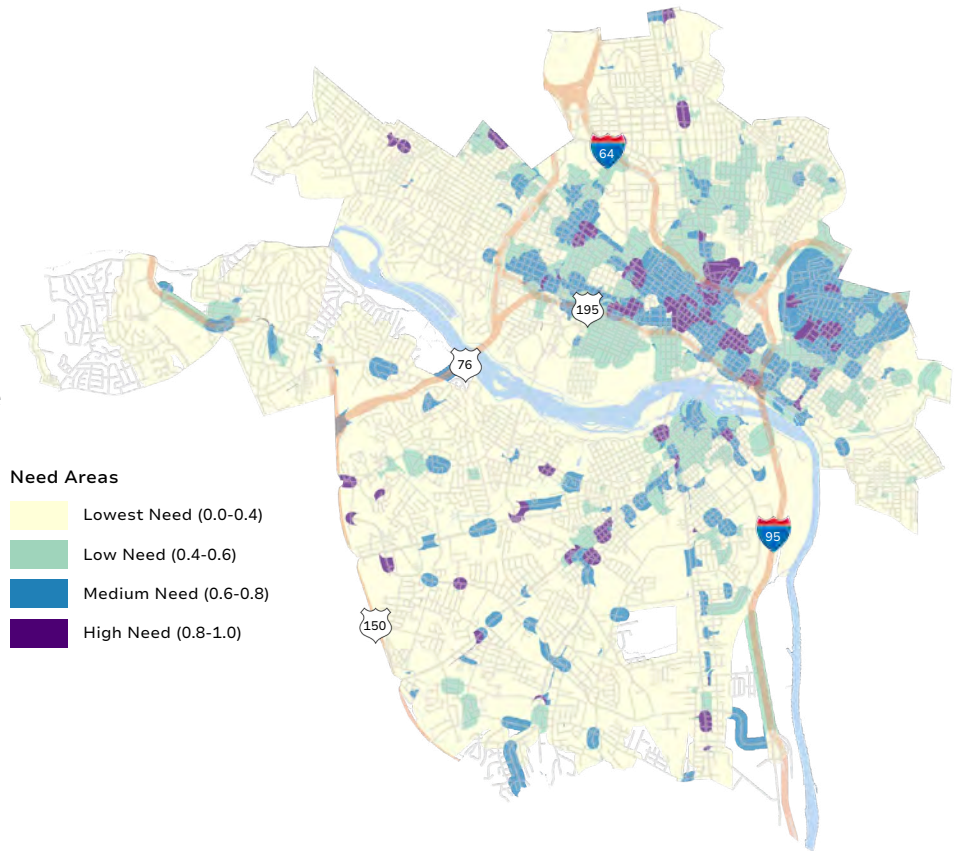


Figure 16. Investment Need Category 5: Safety/Security

NON-MAPPABLE SAFETY/SECURITY NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- There is a lack of “safety culture”. We need to change normal acceptable driving, walking, and bicycling behavior to be focused on how to travel and share the road safely.
- There is little (if any) enforcement for unsafe driving behavior, including illegal parking and drivers not stopping for pedestrians.
- Enforcing safety laws by writing tickets can inequitably harm minority and low-income communities. Not enforcing safety laws can also harm these communities.
- Streets are designed for cars to go fast, and drivers often can't see pedestrians.

- Safety programs like Safe Routes to School need more money
- There are few (if any) public restrooms or places for people to sit throughout the city when walking or biking.

Other non-mappable needs were identified but not advanced forward:

- lack of 4-way stop signs or roundabouts at certain intersections
- Poor lighting at night

Investment Need Category 6: Connectivity

[View detailed map](#)

MAPPABLE CONNECTIVITY NEEDS

A connectivity need is revealed:

- Where observed accessibility is significantly lower than potential accessibility under a well-connected network,
- Observed trip-making appears to be circuitous or indirect, or
- Low/no inter-city rail or bus service is available during peak hours within a 15-minute trip.

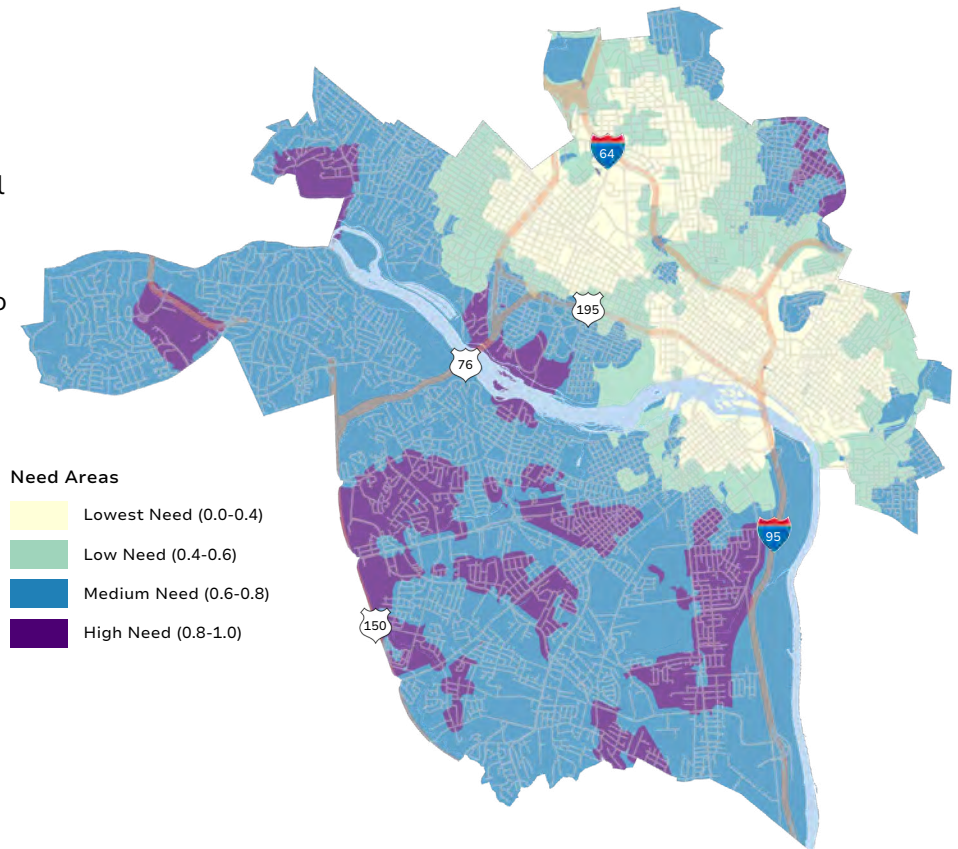


Figure 17. Investment Need Category 6: Connectivity

NON-MAPPABLE CONNECTIVITY NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Most resources for understanding options for getting around by bus, bike, or walking in Richmond are only in English.
- Paths for walking and bicycling are mostly on roads with heavy traffic.

Other non-mappable needs were identified but not advanced forward:

- Lack of connectivity of bike infrastructure results in disjointed network
- Limited service area for GRTC
- lack of first mile/last mile solutions

Investment Need Category 7: Maintenance

[View detailed map](#)

MAPPABLE MAINTENANCE NEEDS

A maintenance need is revealed:

- Where sidewalk condition, pavement condition, or bridge condition is below 'good' rating, with less tolerance for poor condition in high volume areas, or
- Where traffic signal infrastructure is within 20% of its 'useful life.'

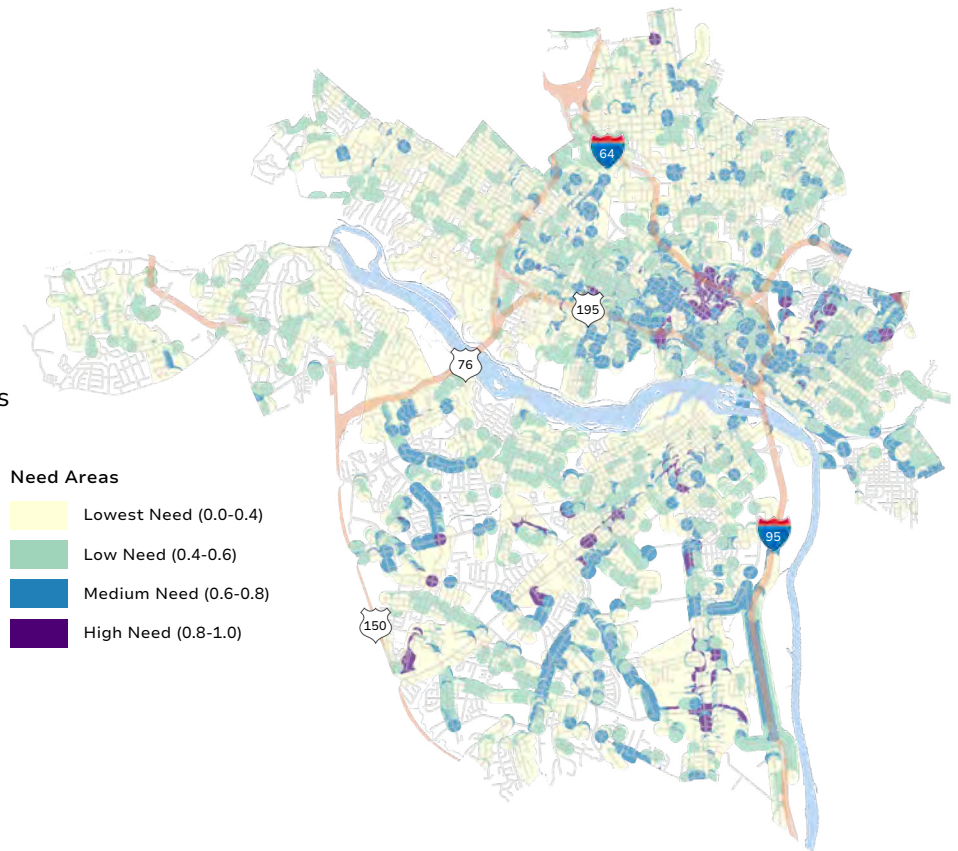


Figure 18. Investment Need Category 7: Maintenance

NON-MAPPABLE MAINTENANCE NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- There are lots of pot-holes in the streets and sidewalks are broken, and it's not clear when the City is going to fix them.
- Bike lanes have trash or weeds growing in them.

Other non-mappable needs were identified but not advanced forward:

- General need for sidewalk maintenance (cracks, tree roots, overflowing trash cans etc.)

Investment Need Category 8: Economic Development

[View detailed map](#)

MAPPABLE ECONOMIC DEVELOPMENT NEEDS

An economic development need is revealed where:

- Access to relevant jobs is reduced by lack of proximal employment destinations in Enterprise Zones,
- Access to relevant retail destinations is reduced by lack of proximal retail destinations in Enterprise Zones, or
- The Market Value Analysis categorized the area as lower market value (Market Categories G, H, or I).

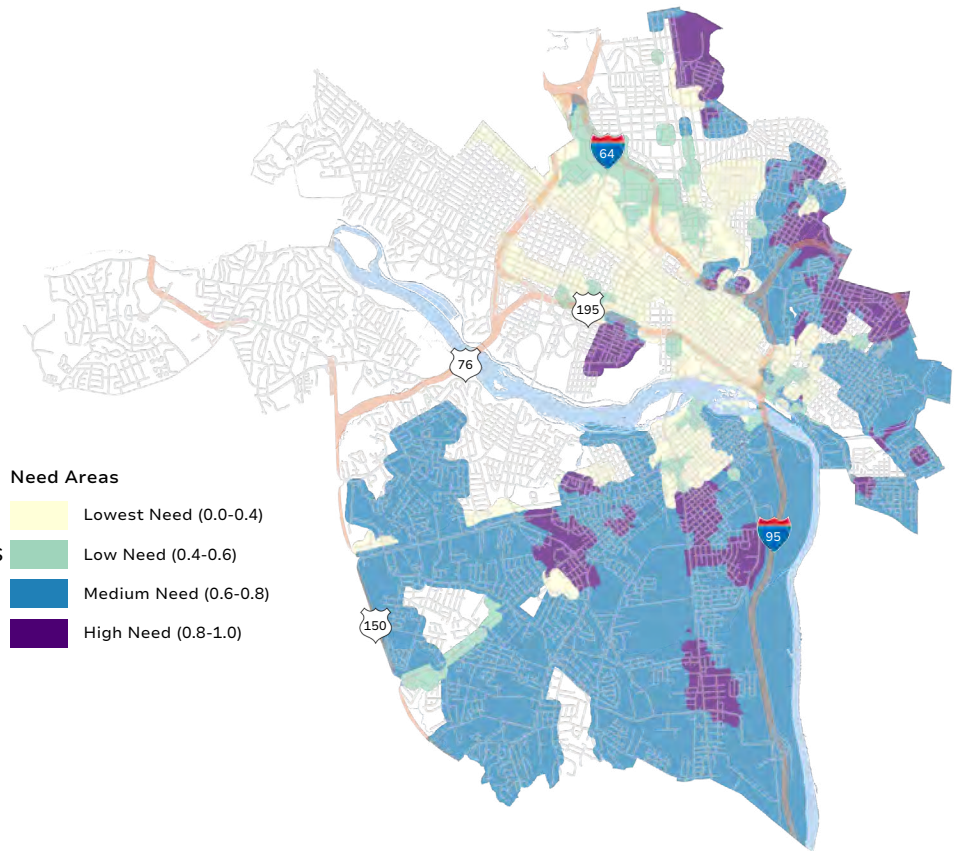


Figure 19. Investment Need Category 8: Economic Development

NON-MAPPABLE ECONOMIC DEVELOPMENT NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- Lack of access to fresh healthy food. In some areas, there are no grocery stores nearby, and if you don't have a car, you cannot get to a place that sells fresh healthy food.
 - Low-density edge areas. It costs a lot of money to run bus service to the low density areas at the city edges. To make bus service work, there needs to be more housing and jobs in these areas.
 - Lack of affordable transportation to jobs. There are few (if any) affordable options for getting to high paying jobs if you don't have a car. Employers should help share the cost of transportation.
 - Gentrification. Neighborhoods that used to be affordable are gentrifying, and investments in low-income neighborhoods can contribute to gentrification.
 - Lack of wealth building opportunities. Low-income and minority populations typically have lower rates of home ownership and fewer opportunities to build personal wealth.
 - Lack of access to high-speed internet. Some people don't have access to broadband, business level speeds, and office functions.
 - Lack of access to child care. It's hard to find affordable child care, and getting to child care can be difficult, especially if you don't have a car.
- Other non-mappable needs were identified but not advanced forward:
- Lack of close-by relevant job opportunities
 - Lack of amenities in general, and lack of general shopping for daily household needs

Investment Need Category 9: Technology

[View detailed map](#)

MAPPABLE TECHNOLOGY NEEDS

A technology need is revealed where:

- High portions of the population are unbanked,
- Access to mobility substitutes (high speed home internet access and reliable cellular service) is limited, or
- No access to shared mobility (bike share).

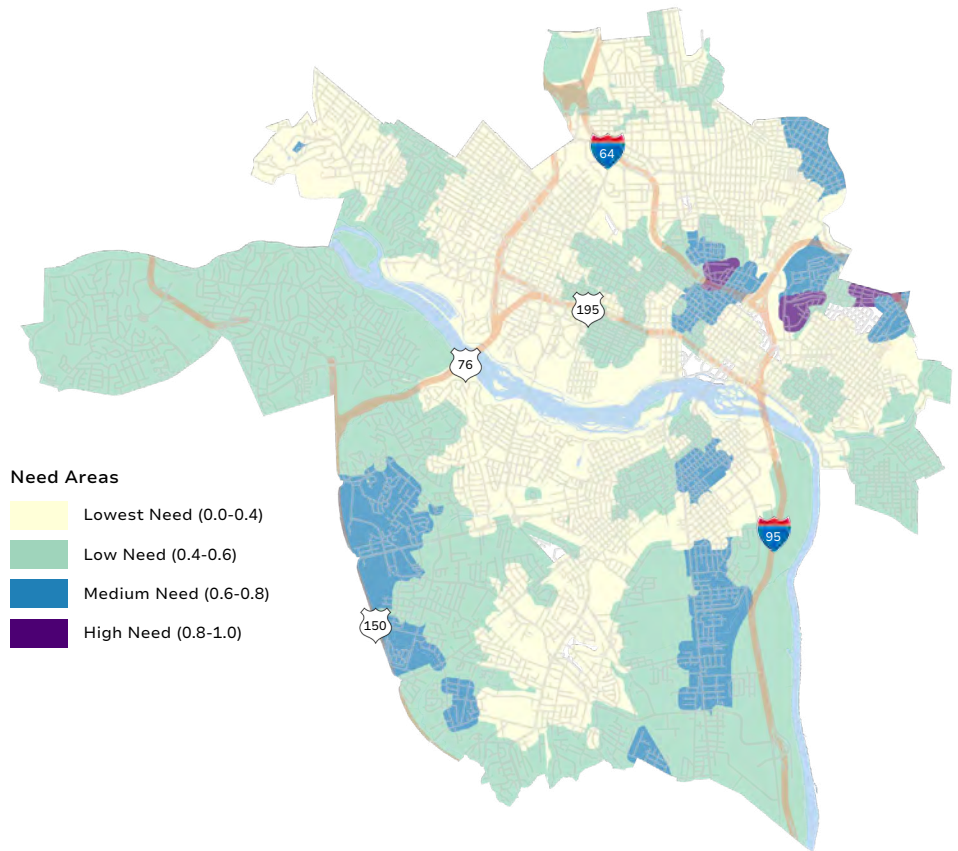


Figure 20. Investment Need Category 9: Technology

NON-MAPPABLE TECHNOLOGY NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- E-scooters aren't available everywhere.
- Newer transportation options like bikeshare, e-scooters, and rideshare aren't available to people who have physical disabilities, don't speak English, or don't have a smartphone, bank account, or credit card.

Other non-mappable needs were identified but not advanced forward:

- Limited bikeshare locations

Investment Need Category 10: Sustainability

[View detailed map](#)

MAPPABLE SUSTAINABILITY NEEDS

A sustainability need is revealed where:

- There is a high urban heat vulnerability index,
- There is a high relative risk of flooding, or
- There is low access to public EV charging stations, low access to electric transit fleet, or low EV ownership rates.

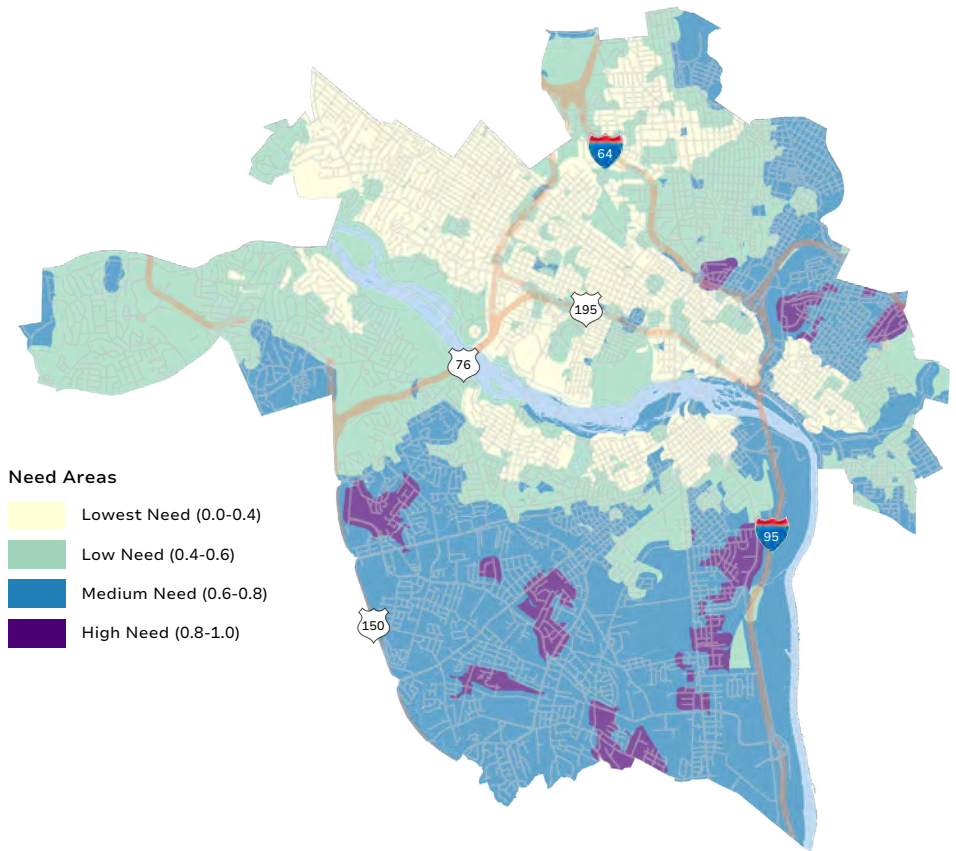


Figure 21. Investment Need Category 10: Sustainability

NON-MAPPABLE SUSTAINABILITY NEEDS

The following non-mappable needs were advanced forward to recommendations development:

- City government transportation-related activities rely on fossil fuels, like gasoline, and produce greenhouse gas emissions and other air pollution.
- There is currently no way to measure and monitor local/neighborhood air quality and transportation-related air pollution
- Electric vehicles and e-bikes cost too much to own or rent.
- Electric vehicle charging stations are only available in affluent white neighborhoods.
- Street pavement and lack of street trees makes the air hot, which increases heat risk for pedestrians, bicyclists, and people waiting for the bus, and worsens water quality.

- 10.6 It's hard to get to fresh food, community gardens, and community spaces for food vending and farmers markets.

Other non-mappable needs were identified but not advanced forward:

- Road flooding/drainage issues overall

Super Needs

In addition to public input being used to bump up the need levels in areas where there were clusters of comments, the public input was also incorporated another way. The top issues from public comments in Communities of Concern were identified, and vetted back to the public through in-person outreach in Communities of Concern.

These top issues were also noted in the Phase 2 focus groups. Issues that were raised consistently as top issues are considered to be “super” needs. These are the needs that Communities of Concern consistently raised as needing to be addressed first.

Super Needs are needs that Communities of Concern consistently raised as needing to be addressed first. The Super Needs were given priority during the development of recommendations.

East End Super Needs

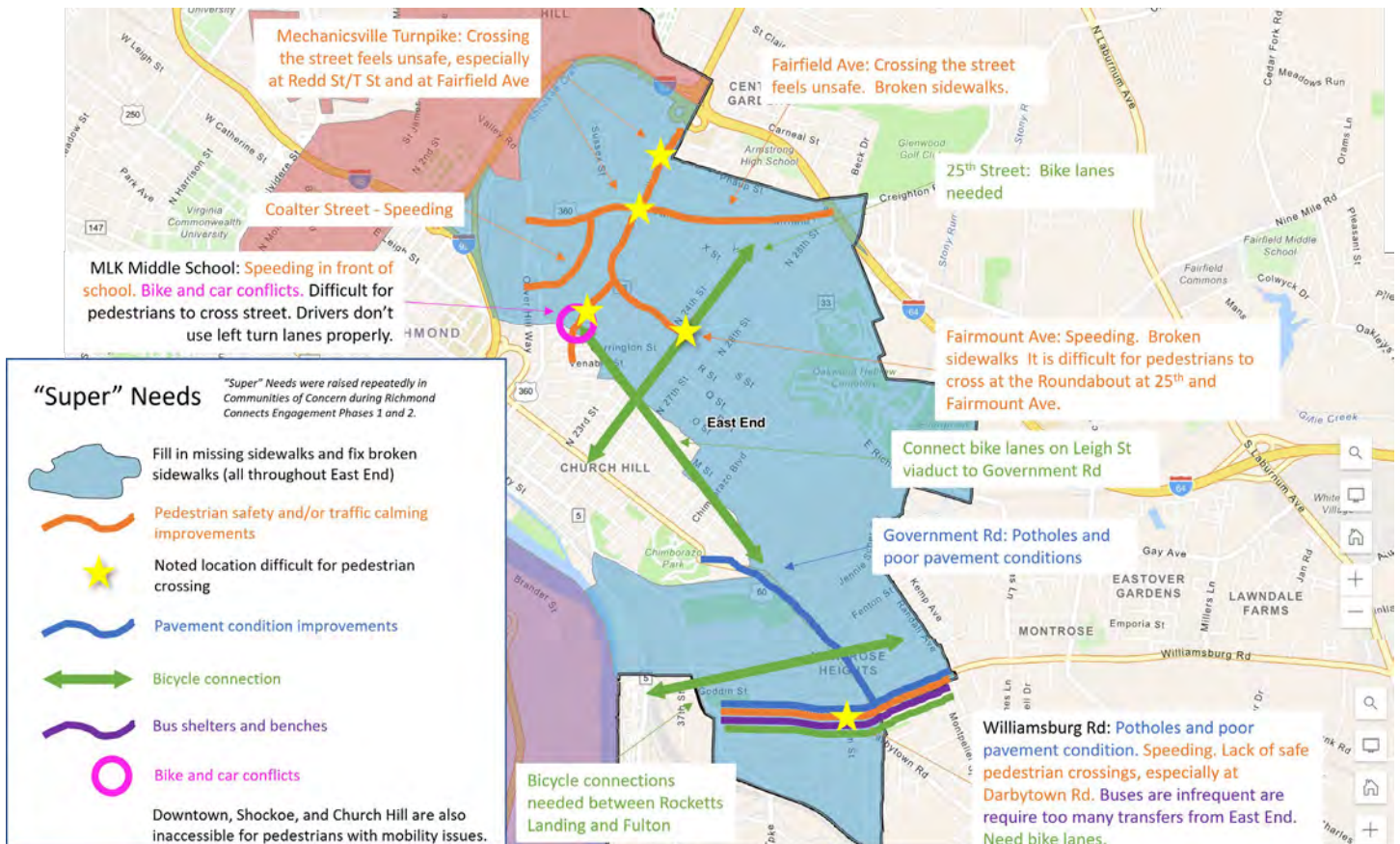


Figure 22. East End Super Needs.

Northside Super Needs

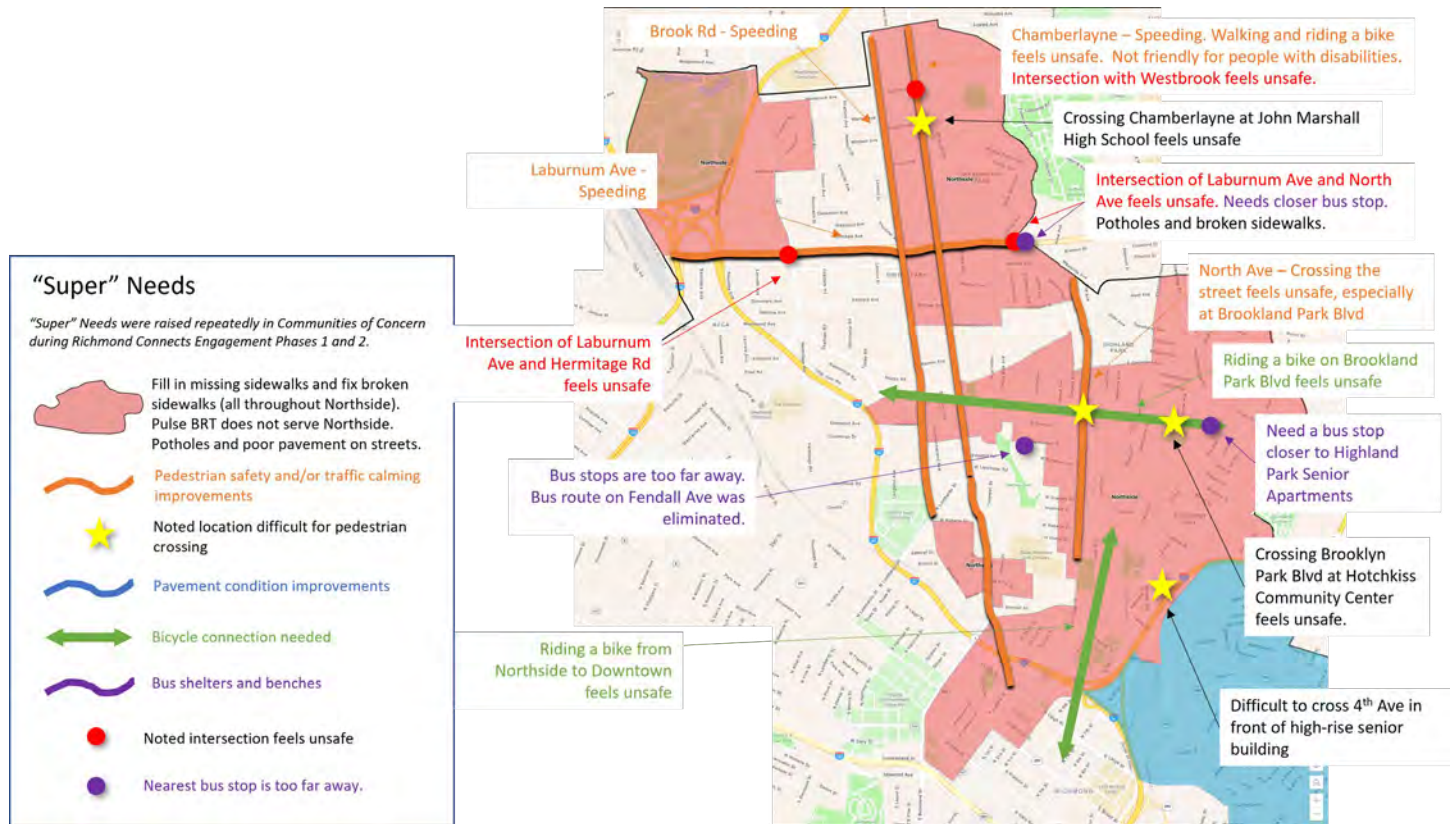


Figure 23. Northside Super Needs.

Southside Manchester Super Needs

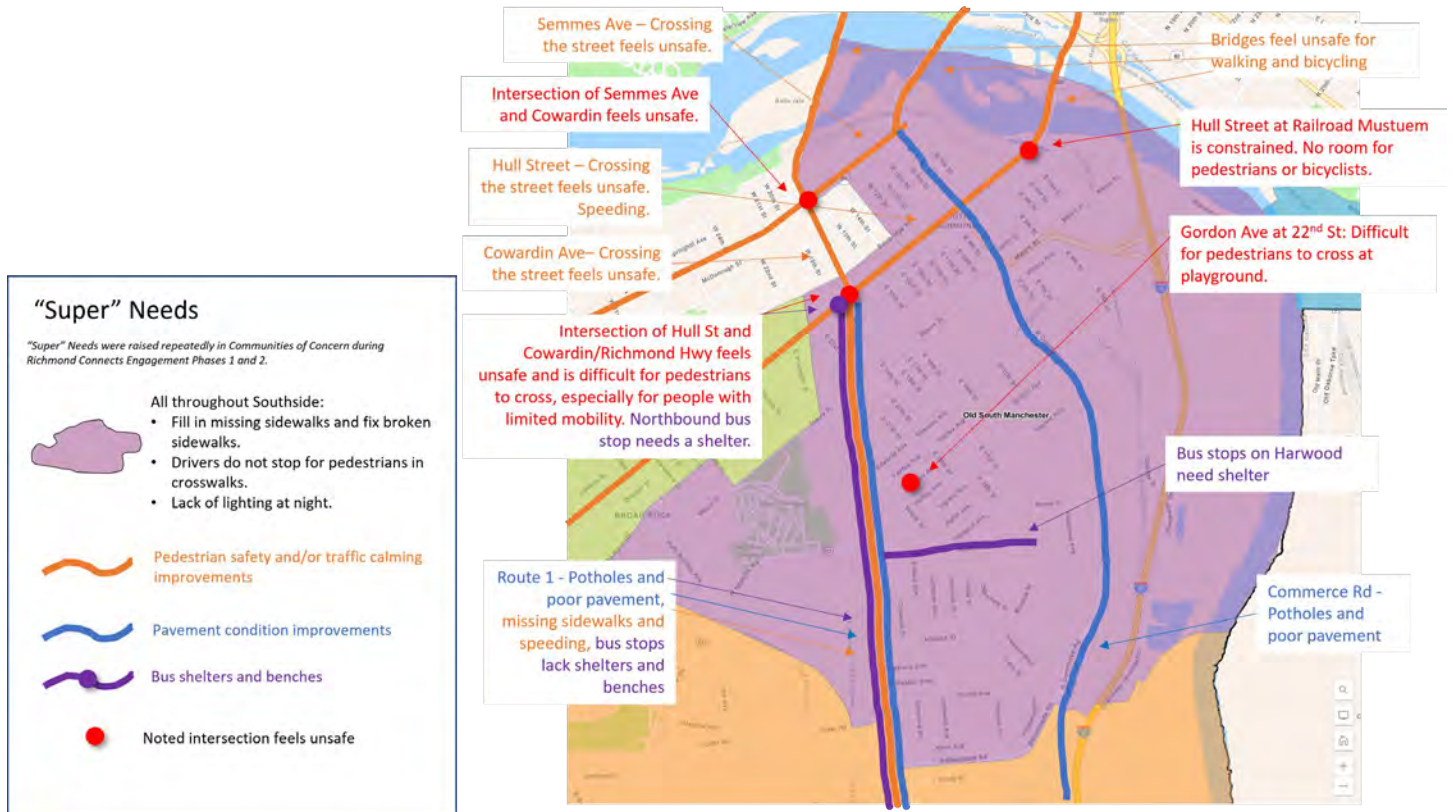


Figure 24. Southside Manchester Super Needs

Southside Midlothian Super Needs

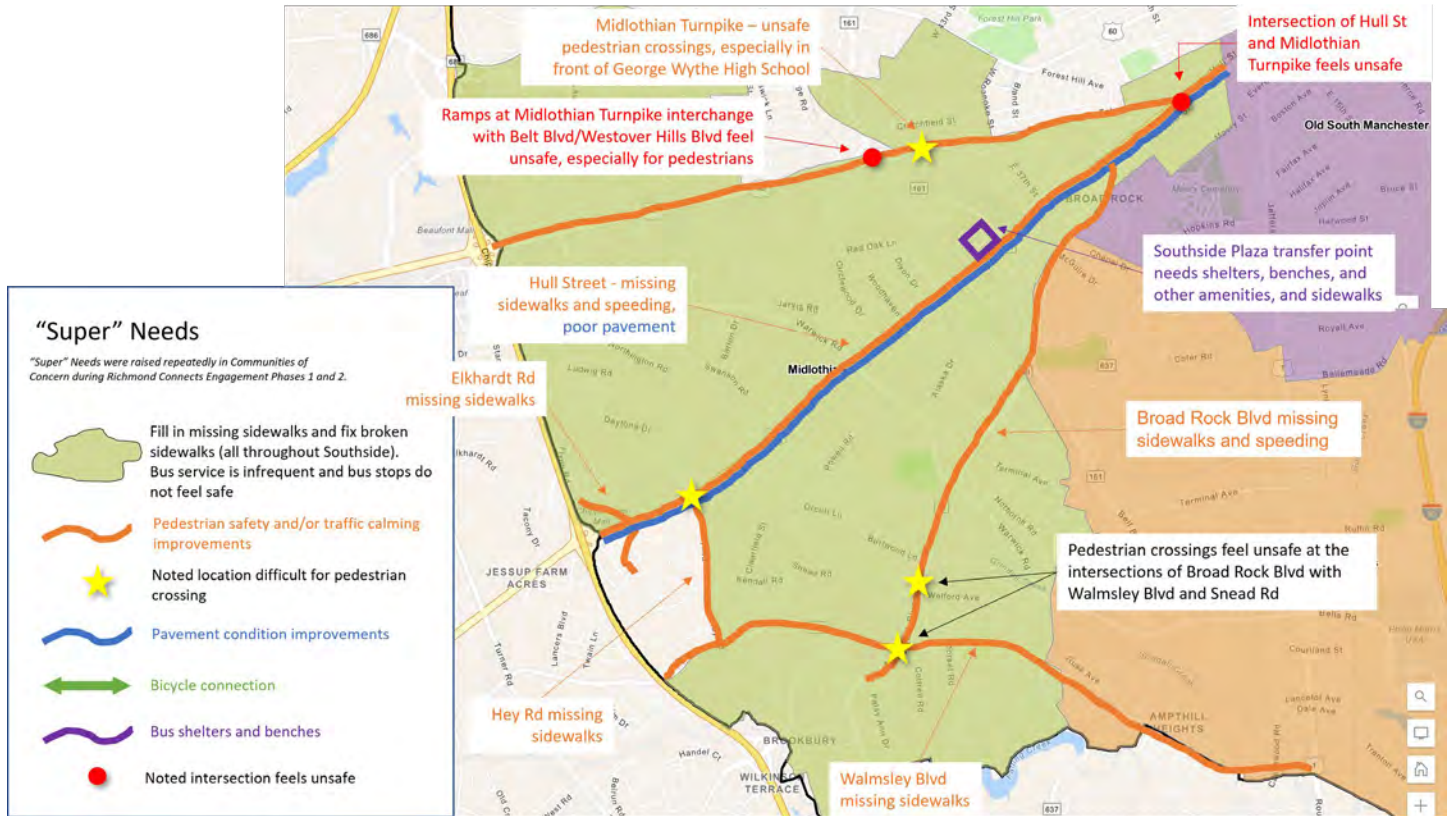


Figure 25. Southside Midlothian Super Needs

Southside Walmsley Super Needs

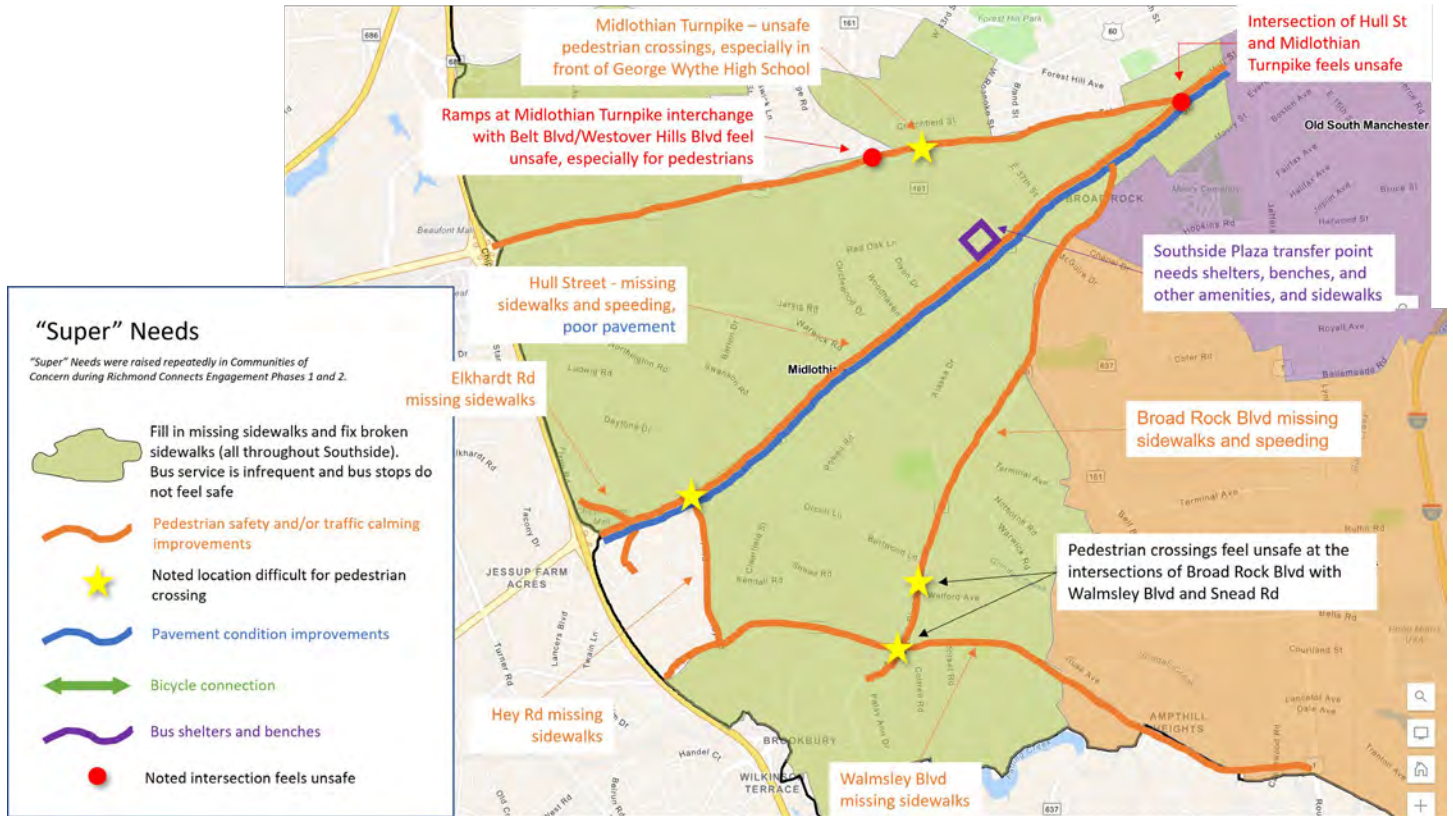


Figure 26. Southside Walmsley Super Needs



WHAT ARE THE RECOMMENDATIONS?

Recommendations were developed for the needs identified in the previous chapter. This chapter describes the process to develop the recommendations and select recommendations for inclusion in the Near-Term Action Plan. The recommendations include **projects** that address the top mappable needs and **strategies** that address the top non-mappable needs.

The project and strategy recommendations in this chapter are presented for each Investment Need Category. The full list of project recommendations for the entire City is provided in Appendix C. Recommendations are presented for each Needs Area in Appendix E. Appendix B provides more detail on how the recommendations were developed.



Developing the Project Recommendations

REVIEW OF EXISTING RECOMMENDATIONS

The process to develop recommendations began with a comprehensive inventory of all project recommendations that had been developed in previous planning and related efforts. The team collected and digitized over 8,000 individual recommendations from a large collection of prior efforts including the following (full list provided in Appendix B):

- Richmond 300 Master Plan
- Capital Improvement Program (CIP) Projects
- Unfunded CIP Project Applications
- BikePedRVA 2045 Richmond Regional Bicycle and Pedestrian Plan
- City of Richmond 2015 Bicycle Master Plan
- ConnectRVA 2045 Richmond Regional Long Range Transportation Plan
- Greater RVA Transit Vision Plan
- GRTC Transit Development Plan
- GRTC Essential Transit Infrastructure Plan
- VDOT Pedestrian Safety Action Plan
- Various neighborhood traffic studies, small area plans, transit plans, and other relevant documents

RECOMMENDATIONS FROM PUBLIC INPUT

Ideas for recommendations also came from the thousands of public comments that were compiled throughout the Richmond Connects process. The Richmond Connects team reviewed the recommendations from prior efforts and ideas from public input, and compiled the information into a Candidate Projects map, shown on the next page.

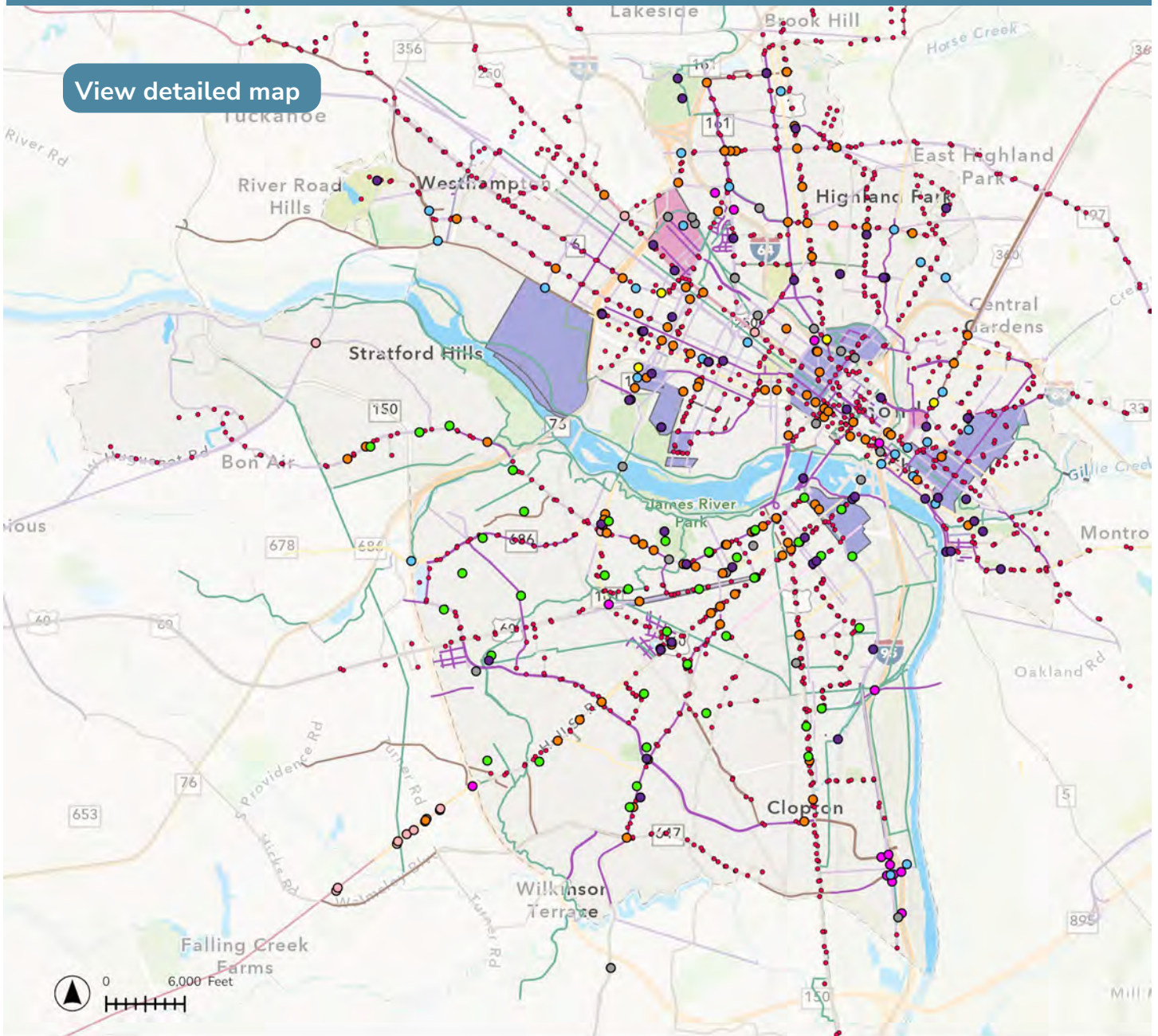
EVALUATING THE EXISTING RECOMMENDATIONS

The candidate projects were evaluated to identify those that met a Tier 1 need. This step in the process is described in more detail in Appendix B. Candidate projects that met a Tier 1 need were examined in greater detail.

DEVELOPING NEW RECOMMENDATIONS TO ADDRESS UNMET NEEDS

The Richmond Connects team also identified Tier 1 needs that did not have existing recommendations, and developed recommendations to meet those needs. This was done through a process of examining the highest Tier 1 needs and developing high level recommendations that would be refined later in the process.

Richmond Connects Candidate Projects



- | | | |
|----------------------------|-------------------------------|--|
| ● Bikeshare Station | ● Roundabout, stop sign/light | ■ New Sidewalk |
| ● E-Scooter Node | ● Road widening, interchange | ■ Introduce Street Grid/Roadway Connection |
| ● Bus Stop | ■ Bike Infrastructure | ■ Sharrow |
| ● Intersection Enhancement | ■ Bus Rapid Transit | ■ Transit Route |
| ● Speed Table | ■ Shared-Use Path | ■ Sidewalk Repair or Streetscape |

Figure 27. Map of Candidate Projects for Recommendations.

DRAFT RECOMMENDATIONS

This process of developing recommendations resulted in approximately 140 draft recommendations that were presented to the public during Phase 4 of the Community Engagement. These recommendations are shown on the next page.

The draft recommendations were presented to the public in the form of 17 surveys - one for each Needs Area. Each Needs Area had up to 16 recommendations. The number of recommendations was limited to those that addressed the very top equity-based needs. The survey questions and results, which included over 8,500 responses, are provided in the [Phase 4 Survey Results Report](#).



NEEDS AREA 2: GINTER PARK



Which transportation recommendations do you think are most important to improve equity in Richmond?

The City of Richmond spent the last year talking to residents and analyzing data about what needs to be improved so everyone can safely and easily get around by walking, biking, and riding the bus.

Here are the top recommendations for the Ginter Park area based on what we heard.

- Improve ped. safety on Brook, Chamberlayne, and Laburnum A
- Improve intersection of Laburnum Ave and Hermitage Rd B
- Roundabout at Hermitage/Arthur Ashe/Westwood C
- North-South Bus Rapid Transit D
- Northside Microtransit E
- Add seating, shelter, and amenities at bus stops F
- Increase frequency on GRTC Route 14 G
- Fall Line Trail H
- Extend buffered bike lanes on Hermitage Road I
- Brook Road Bike Lanes Protection J



Go to the next page to take the survey!

Figure 28. Phase 4 Survey Showing Draft Recommendations for Needs Area 2: Ginter Park

Richmond Connects Draft Recommendations

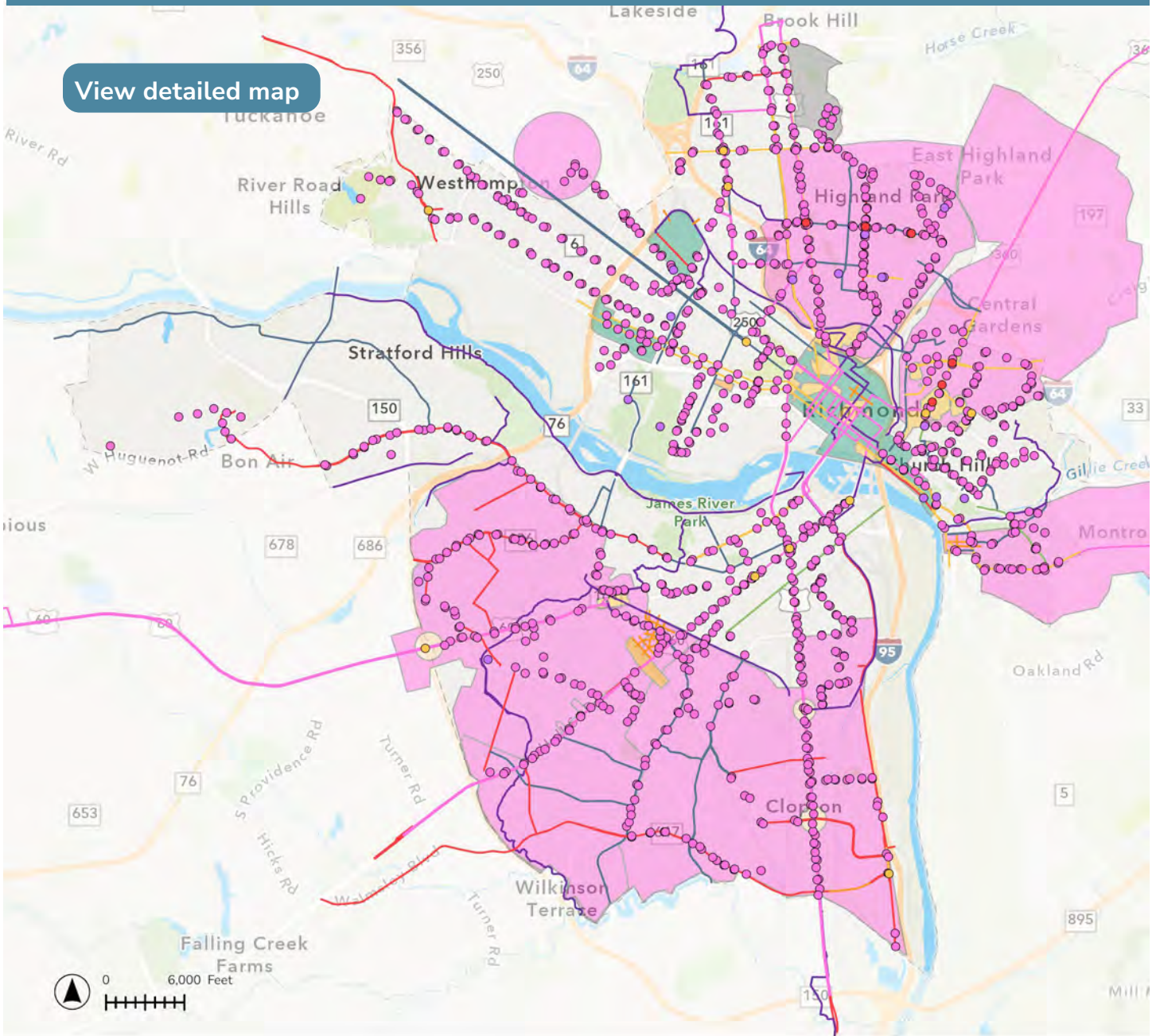


Figure 29. Map of Draft Recommendations Shared with the Public During Phase 4.

Selecting Project Recommendations for the Action Plan

The project recommendations were prioritized based on the results of the survey as well as an assessment of project readiness, engineering feasibility, and general magnitude of cost. Upon further review, some of the draft project recommendations were further developed to a greater level of specificity than was presented to the public in the Phase 4 survey. Some draft recommendations from the Phase 4 survey were broken out into multiple project recommendations. Others were combined into a more comprehensive project recommendation.

Three categories were established to determine which project recommendations should move forward into the Action Plan:

PRIORITIZE WHAT THE PEOPLE NEED: Highest priority for implementation. These projects directly address issues that Communities of Concern said were most needed, with extra weight given to projects that are direct investments in disinvested areas. These projects may be difficult to implement, but are the most important to move the needle on transportation equity. These projects are also called “High Priority Projects.”

FINISH WHAT WE STARTED: These projects are already underway. They have already received funding for design and implementation. Filling any remaining funding gaps is a priority to bring these projects to completion, making the best use of taxpayer dollars. There are two types of projects within this category:

- Priority Completion Projects - These projects were included in the draft list of recommendations presented to the public in the Phase 4 survey, and meet a top equity need.

- Other Completion Projects - These are projects that were not included in the Phase 4 survey of draft recommendations. These are projects currently in the City’s Capital Improvement Program and meet an equity need identified in the Richmond Connects needs analysis.

SHORTER TERM: These projects are low-cost or easily implementable, and have at least a moderate level of support from the general public and Communities of Concern. These projects are also called “Shorter Term/ First Steps Projects.”

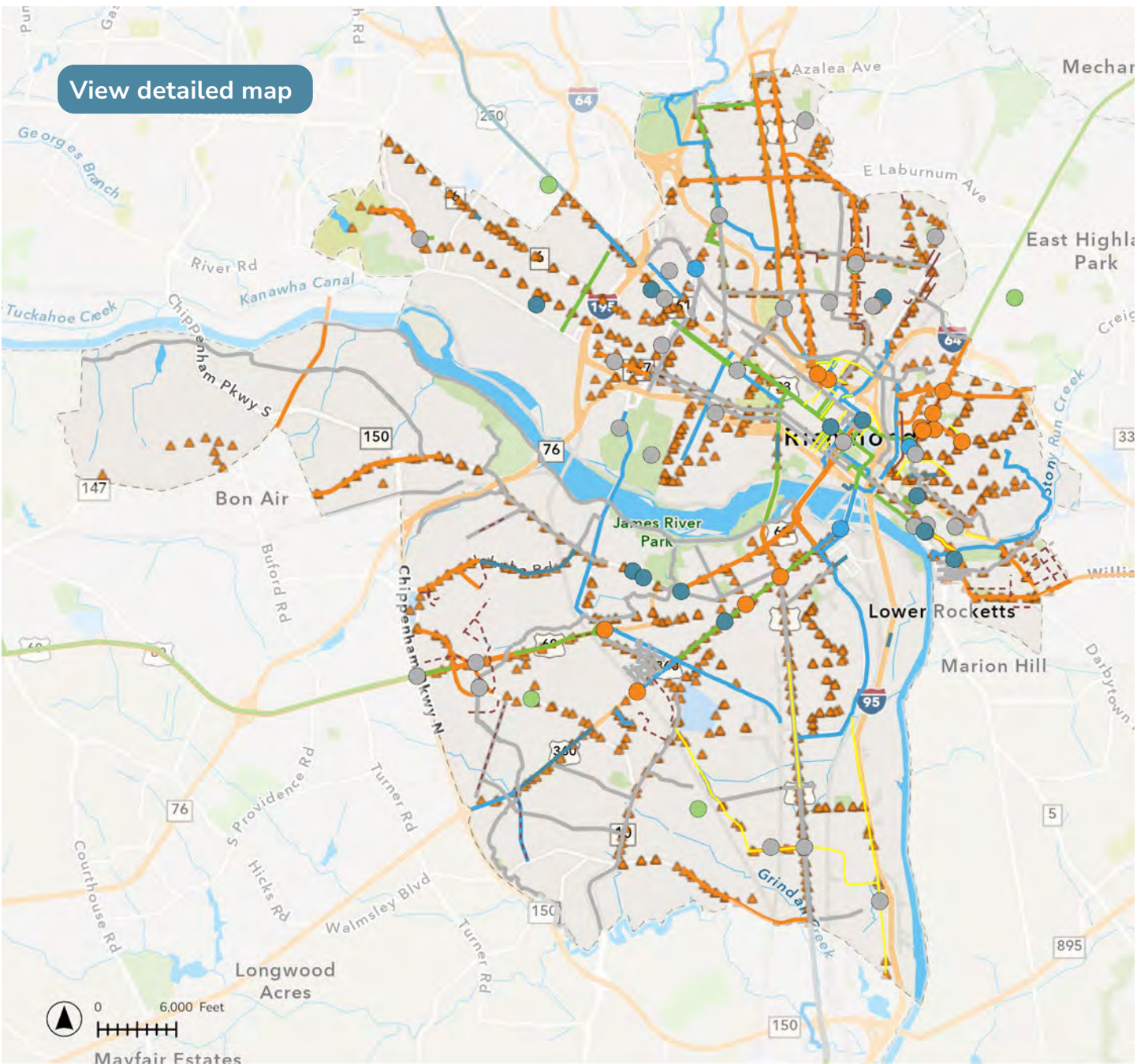
There are approximately 70 project recommendations that were not advanced to the 2040 Action Plan. These recommendations remain valid, as they still meet a high equity-based need and are included in this Strategic Plan as “Longer Term” projects. However, they do not represent the highest priority projects right now. As the City implements the projects currently in the 2024 Action Plan, these other project recommendations may be moved forward into subsequent Action Plans.

The Richmond Connects Project Recommendations Map on the next page shows the project recommendations by Action Plan project category as well as the longer term projects. A full list of all of the projects is provided in Appendix C. The project recommendations are presented for Investment Need Category at the end of this chapter. Project recommendations for each Needs Area are provided in Appendix E.

Cost Legend

- \$ - Low cost: Less than \$500,000
- \$\$ - Moderate cost: \$500,000 to \$3 mil.
- \$\$\$ - High cost: \$3 mil. to \$10 mil.
- \$\$\$\$ - Very high cost: Over \$10 mil.

Richmond Connects Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)

Figure 31. Map of Richmond Connects Strategic Plan Final Project Recommendations.

Developing the Strategy Recommendations

The Richmond Connects team identified strategies to address the top non-mappable needs from several existing sources, including:

- Richmond 300 Master Plan
- Vision Zero Action Plan
- RVAgreen 2050 Climate Equity Action Plan

The team also developed new strategy recommendations to address the top non-mappable needs.

Selecting Strategy Recommendations for the Action Plan

These strategies were shared with a paid focus group representing various perspectives of Communities of Opportunity, who identified the top five strategies for each Investment Need Category. The focus group sorted the remaining strategies into high, medium, or low priorities.

The Richmond Connects Advisory Committee then reviewed the strategy priorities from the focus group. The Advisory Committee represented professional and advocacy perspectives. They examined the strategies from an implementation lens, and in some cases elevated different strategies into the top five and combined various strategies together.

The final list of strategy recommendations reflects a combination of the Communities of Opportunity perspectives from the focus group and the professional and advocacy perspectives from the Advisory Committee.

The strategy recommendations are presented by Investment Need Category, along with the Action Plan project recommendations, in the following pages.

Strategies to Address Non-Mappable Pedestrian Needs
Investment Need Category 1B: Pedestrian

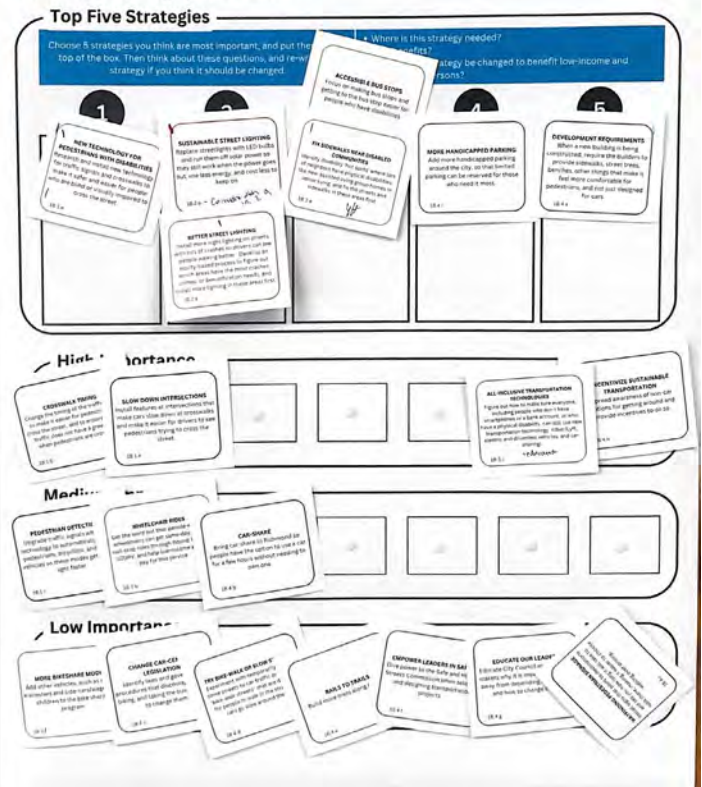


Figure 32. Ranked strategies of Investment Need Category 1B (Pedestrian) by one of the focus groups.

Many of these strategies are from existing plans, including:

- Richmond 300 Master Plan,
- RVAgreen 2050, or
- Vision Zero Action Plan.

The language was simplified to make it more accessible to everyday Richmonders, and modified based on community of opportunity feedback. These are noted with an asterisk* in the Strategy Recommendations tables.

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

1A: BICYCLE



Project recommendations to improve Richmond's bicycle network and meet an equity-based bicycle need include a variety of on-street bicycle facilities, off-road trails and greenways, bikeway connections over bridges, and new bikeshare stations, as well as shared-use paths as part of streetscape projects, creating additional protection between vehicle lanes and existing bike lanes, and measures to slow vehicle speeds on roads with on-street bike lanes.

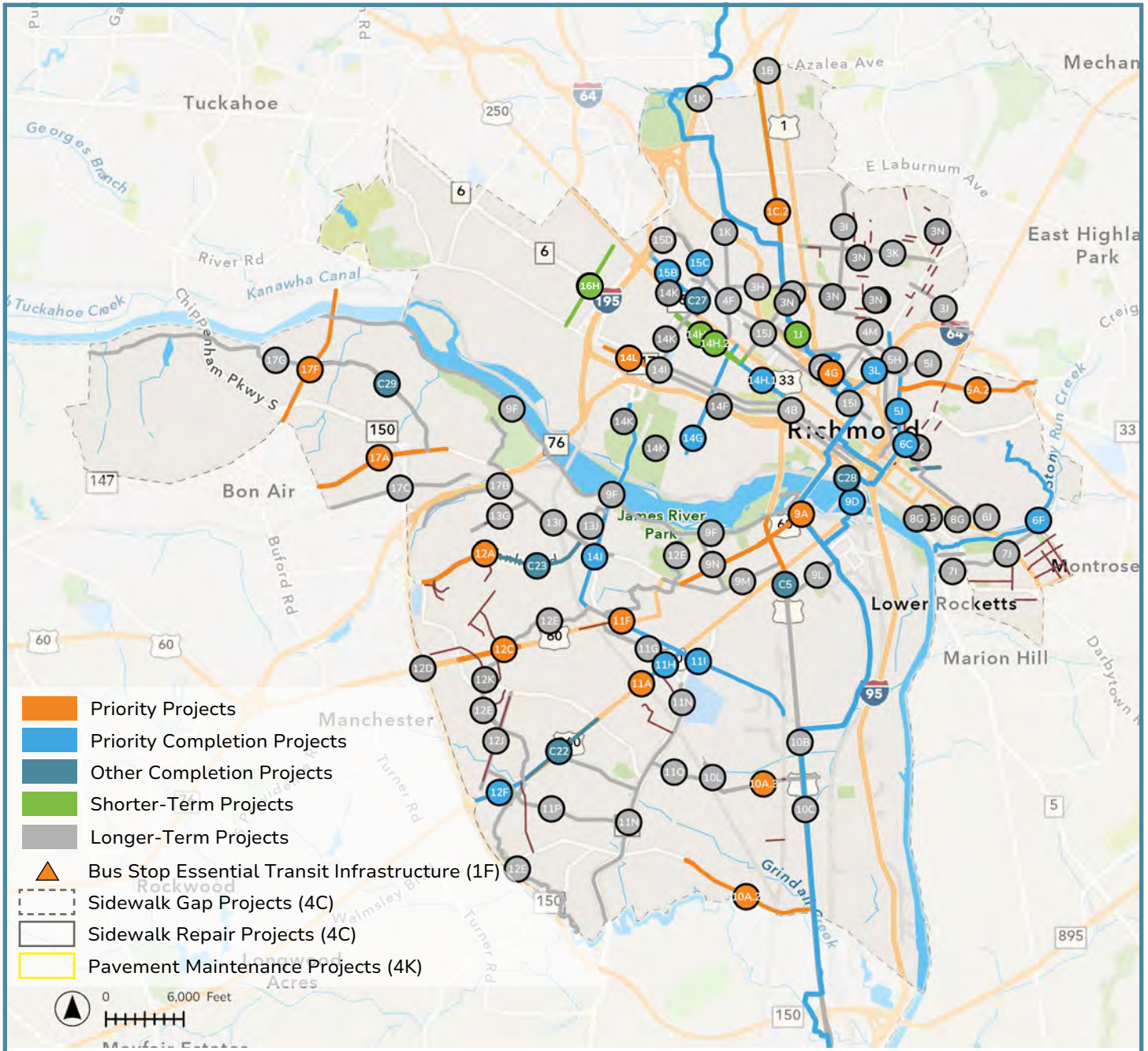


Figure 33. Map of Project Recommendations for the Bicycle Investment Need Category (INC 1A)

Project Recommendations for INC 1A: Bicycle

| ID | Category | Title | Relevance | Page |
|-------|---------------------|---|-----------|------|
| 17F | Priority Projects | Huguenot Road Bikeway | Primary | 288 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Primary | 286 |
| 14L | Priority Projects | Carytown Pedestrian Safety Improvements | Primary | 290 |
| 12F | Priority Completion | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | Primary | 291 |
| 9D | Priority Completion | Mayo Bridge Pedestrian and Bicycle Facilities | Primary | 292 |
| 14H.1 | Priority Completion | Franklin Street Cycle Track - Lombardy Street to Belvidere Street | Primary | 294 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | Primary | 293 |
| 6F | Priority Completion | Gillies Creek Greenway | Primary | 294 |
| 5J | Priority Completion | Oliver Hill Way Bike Lanes | Primary | 294 |
| 1I | Priority Completion | Fall Line Trail | Primary | 295 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Primary | 295 |
| 3L | Priority Completion | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | Primary | 295 |
| 11I | Priority Completion | James River Branch Trail | Primary | 295 |
| 14G | Priority Completion | Allen Avenue Bike-Walk Street | Primary | 294 |
| 14J | Priority Completion | State Route 161 Bicycle Infrastructure | Primary | 294 |
| C13 | Other Completion | Jefferson Avenue Improvements | Primary | 298 |
| C22 | Other Completion | Hull Street Improvements Phase I - Hey Road to Warwick Road | Primary | 300 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Primary | 300 |
| C27 | Other Completion | Science Museum BRT Shared Use Path | Primary | 301 |
| C9 | Other Completion | Scott's Addition Green Space | Primary | 297 |
| 14H.2 | Shorter Term | Monument Avenue Bike Lanes | Primary | 305 |
| 1J | Shorter Term | Brook Road Bike Lanes Protection | Primary | 304 |
| 16H | Shorter Term | Malvern Avenue Sight Distance Evaluation | Primary | 306 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Primary | 307 |
| 3K | Longer Term | Brookland Park Boulevard Bikeway | Primary | 307 |
| 3N | Longer Term | Northside Bikeshare Stations | Primary | 308 |
| 13G | Longer Term | Bliley Road Sidewalk and Bike Lanes | Primary | 308 |
| 15J | Longer Term | Lombardy Street Protected Bike Lanes | Primary | 308 |
| 15I | Longer Term | Leigh Street Bike Lanes - Dinneen St to 8th St | Primary | 308 |
| 5I | Longer Term | Hospital Street/ Bowling Green Road/ Wood Street Bikeway | Primary | 308 |
| 7I | Longer Term | Rockett's Landing to Fulton Bike Connection | Primary | 308 |

Project Recommendations for INC 1A: Bicycle

| ID | Category | Title | Relevance | Page |
|------|-------------------|--|-----------|------|
| 9F | Longer Term | Riverside Shared-Use Path | Primary | 308 |
| 1K | Longer Term | Hermitage Road Buffered Bike Lanes | Primary | 309 |
| 9M | Longer Term | Bainbridge Street/Forest Hill Avenue Bike Lanes | Primary | 309 |
| 5H | Longer Term | Valley Road Shared Use Path | Primary | 309 |
| 4M | Longer Term | 1st Street Cycle Track | Primary | 309 |
| 3J | Longer Term | Magnolia Street Bikeway | Primary | 309 |
| 7J | Longer Term | Admiral Gravelly Boulevard/Jennie Scher Road Bikeway | Primary | 309 |
| 6J | Longer Term | Church Hill Bikeway Connection | Primary | 309 |
| 12K | Longer Term | Southside Community Center Bikeshare Station | Primary | 309 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | Primary | 309 |
| 15D | Longer Term | Scott's Addition/Boulevard Shared-Use Path | Primary | 309 |
| 6K | Longer Term | Venable/Mosby Bikeshare Station | Primary | 309 |
| 3H | Longer Term | Overbrook Road Bikeway | Primary | 310 |
| 12J | Longer Term | Whitehead Road Bikeway | Primary | 310 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | Primary | 310 |
| 11N | Longer Term | Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | Primary | 310 |
| 3M | Longer Term | Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | Primary | 310 |
| 8G | Longer Term | East End Bikeshare Stations | Primary | 310 |
| 14K | Longer Term | Near West End Bikeshare Stations | Primary | 310 |
| 3I | Longer Term | Fendall Ave/ N 1st St Bikeway | Primary | 310 |
| 14I | Longer Term | Mulberry Street Bikeway | Primary | 311 |
| 9L | Longer Term | Maury Street Bikeway | Primary | 311 |
| 9N | Longer Term | West 29th Street Bikeway | Primary | 311 |
| 17B | Longer Term | Powwhite Greenway | Primary | 311 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | Primary | 311 |
| 17G | Longer Term | Cherokee Road Bikeway | Primary | 311 |
| 10L | Longer Term | Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | Primary | 311 |
| 13J | Longer Term | Prince Arthur Road Bikeway Connection | Primary | 311 |
| 11O | Longer Term | Terminal Avenue Bike Lanes - Broad Rock Boulevard to Belt Boulevard | Primary | 311 |
| 11P | Longer Term | Bikeways on Bryce Lane and Snead Road | Primary | 311 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | Secondary | 217 |
| 12C | Priority Projects | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | Secondary | 219 |

Project Recommendations for INC 1A: Bicycle

| ID | Category | Title | Relevance | Page |
|-------|---------------------|---|-----------|------|
| 10A.3 | Priority Projects | Terminal Boulevard Shared Use Path | Secondary | 225 |
| 10A.2 | Priority Projects | Walmsley Boulevard Shared Use Path | Secondary | 223 |
| 12A | Priority Projects | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | Secondary | 229 |
| 9A | Priority Projects | Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements | Secondary | 233 |
| 11F | Priority Projects | Richmond High School of the Arts Pedestrian Safety Improvements | Secondary | 249 |
| 5A.2 | Priority Projects | Fairfield Avenue/ Fairfield Way Traffic Calming | Secondary | 265 |
| 4K | Priority Projects | Richmond Connects Equity-Centered Pavement Maintenance Prioritization | Secondary | 271 |
| 4G | Priority Projects | Reconnect Jackson Ward | Secondary | 277 |
| 11A | Priority Projects | Southside Plaza Pedestrian Connections Across Railroad Tracks | Secondary | 281 |
| 6C | Priority Completion | Shockoe Valley Street Improvements | Secondary | 292 |
| 15C | Priority Completion | Arthur Ashe Boulevard Bridge Replacement | Secondary | 292 |
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Secondary | 301 |
| C29 | Other Completion | Cherokee Road Roadside Safety Improvements | Secondary | 301 |
| C5 | Other Completion | Richmond Highway Phase II Improvements | Secondary | 296 |
| 1B | Longer Term | Azalea Avenue Streetscape Improvements | Secondary | 307 |
| 12D | Longer Term | Route 60/Route 150 Interchange Improvements | Secondary | 307 |
| 10B | Longer Term | Richmond Highway Great Street Transformation | Secondary | 307 |
| 10C | Longer Term | Richmond Highway Pedestrian Safety Improvements | Secondary | 307 |
| 4B | Longer Term | Main Street/Cary Street Two-Way Street Conversion | Secondary | 309 |
| 14F | Longer Term | Randolph Connection Over I-195 | Secondary | 310 |
| 11G | Longer Term | East Belt Boulevard Improvements | Secondary | 310 |
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Secondary | 311 |

Strategy Recommendations for INC 1A: Bicycle

BIKE LANE BARRIERS (1A.1)

Install temporary barriers between bike lanes and car lanes for a brief test period. This could include testing more robust separation, including more flex posts spaced closer together that are placed at the edge of the parking lane, removeable planters, or other more robust forms of separation.

Next Steps:

DPW

- Hire a Lighter, Quicker, Cheaper coordinator.
- Identify appropriate staff to lead this effort.
- Use the Richmond Connects needs assessment and project list to develop a pipeline for bike lane demo projects.
- Identify key metrics of success on which DPW/OETM should collect data during demos.
- Identify dedicated funding for demo projects and a dedicated project manager for implementing and monitoring these demo projects.

OETM

- Advocate for demos.
- Provide support in acquiring funding.
- Support DPW project managers.



LQC Implementation could involve: Installing temporary barriers (bollards, planters, etc.) between bike and car lanes to test which are best.

PUBLIC SAFETY CAMPAIGN (1A.2)*

Conduct a campaign to teach bicyclists, pedestrians, and drivers of their rights and responsibilities, including how to safely share the road, how to safely park a car to avoid blocking the bike lane, promoting the health benefits of cycling, and discouraging distracted driving and distracted walking.

**This strategy is originally from the Vision Zero Action Plan, Culture strategies and actions, which reads, "Conduct strategic, multi-modal high visibility enforcement campaigns with educational components that are designed to reach all users of the transportation system." The following next steps are intended to support the action as presented in the Vision Zero Action Plan.*

Next Steps:

OETM

- Identify key staff.
- Identify community partners, such as OSC, RPD, Office of the Mayor, BikeWalk RVA, VA Community Voice, Safe-Routes-to-School, local universities, Strong Towns, local news organizations, etc.
- Facilitate community partnership work sessions to set and track campaign objectives, collectively develop various messaging that spans a range of interest levels and educational backgrounds, and identify ways to distribute the messages online and in-person that reach all Richmonders, including people who have limited technology access.
- Identify funding, including small grants for community partners to help disseminate collectively-defined messaging.

Community Partnerships

- Participate in community partnership work sessions.
- Spread messaging and report back.



LQC Implementation could involve: Signage to post "no parking" in bike lanes; Allow and incentivize community organizations to post 'notices' on cars in the bike lanes; and Pop-up events and educational resources.



Partners in this strategy could include: OSC, RPD, Office of the Mayor, BikeWalk RVA, VA Community Voice, Safe-Routes-to-School, local universities, Strong Towns, and local news organizations.

Strategy Recommendations for INC 1A: Bicycle

MORE BIKE RACKS (1A.3)*

Install more bike racks and bike corrals for bikes and scooters, and provide free locks or locks on racks, focusing on Communities of Opportunity areas first. Install bike racks or corrals in parking spaces between bike lanes and vehicle lanes, especially at the first parking space at intersections to improve sight distance.

**This strategy is originally from Richmond 300, Objective 8.3, Strategy F, which reads, "Increase the number of bike racks on sidewalks and/or use the curb to provide on-street bike parking."*

Next Steps:

OETM

- Work with DPW and PDR to establish processes for responding to requests for new bike racks in the public right-of-way and proactively identifying locations for bike rack installation. Identify dedicated staff and funding streams.
- Develop a free bike lock program. Identify potential funding sources and community partnerships. Define parameters for eligibility.

DPW & PDR

- Support OETM to establish the processes and identify staff and funding streams.



LQC Implementation could involve: Installing bike racks or corrals in parking spaces between bike lanes and vehicle lanes.



Partners in this strategy could include: Community organizations and businesses

ACCESS TO BIKES (1A.4)*

Make RVA bikeshare free for RRHA and other low-income residents permanently, and reduce the price of bikeshare on an income-based sliding scale for all Richmonders. Add more bikeshare stations near bus stops and low-income communities. Add alternative sit-on bikes for those with limited mobility, explore options for family bike carts, and remove rental time and distance limits. For those without access to free bikeshare, recycle and fix up old bicycles, and give them to low-income residents for free through an application process.*

**This strategy is originally from the RVAgreen 2050 Climate Equity Action Plan 2030, Strategy TM-2.1, Action iv, which reads, "Expand the bike and e-bike share program citywide and make it accessible and affordable."*

Next Steps:

OETM

- Assess funding availability for additional subsidies for low-income bike riders.
- Assess funding availability for alternative cycle models with sit-on bikes and/or bikes with side cars or carts for children.
- Complete a bikeshare and bike access plan to document the costs of, benefits of, and precedents for bike-share and bike access improvements and programs.



LQC Implementation could involve: Have bike cards available to check out at public libraries



Partners in this strategy could include: BikeWalk RVA and other community partners

Strategy Recommendations for INC 1A: Bicycle

OTHER HIGH IMPORTANCE STRATEGIES

- **FREE AND REDUCED BIKESHARE:** Make bikeshare free to all RRHA residents permanently, and reduce the price of bikeshare on an income-based sliding scale.
- **BIKE SHARE DISTRIBUTION:** Add more bikeshare stations near bus stops and low-income communities, and remove rental time and distance limits.
- **BIKE UPCYCLING:** Recycle and fix up old bicycles, and give them to low-income residents for free through an application process.
- **CLEAN BIKE LANES:** Clean the bike lanes more frequently.

MEDIUM IMPORTANCE STRATEGIES

- None

LOW IMPORTANCE STRATEGIES

- None

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **BIKE LANE STREET SWEEPERS:** Purchase additional bike lane street-sweepers to keep bike lanes clean. (INC 7 Maintenance)
- **E-BIKE VOUCHERS:** Give out vouchers to reduce the price of electric bikes for people with low incomes. (INC 10 Sustainability)
- **INTERCONNECTED TRAILS:** Create an interconnected parks system that is connected by trails and greenways, so people can travel throughout the city without having to get on the road throughout the city, with primary sections near key focus areas. (INC 6 Connectivity)
- **REVENUE FOR SAFETY PROJECTS:** Use the money from writing tickets to fund projects that improve pedestrian and bicycle safety. (INC 5 Safety)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

1B: PEDESTRIAN



Project recommendations in the Pedestrian investment need category include corridor pedestrian safety improvements, new sidewalks construction, sidewalk maintenance program improvements, traffic calming, crosswalks with warning signs, pedestrian hybrid beacons, shared use paths, and streetscape improvements.

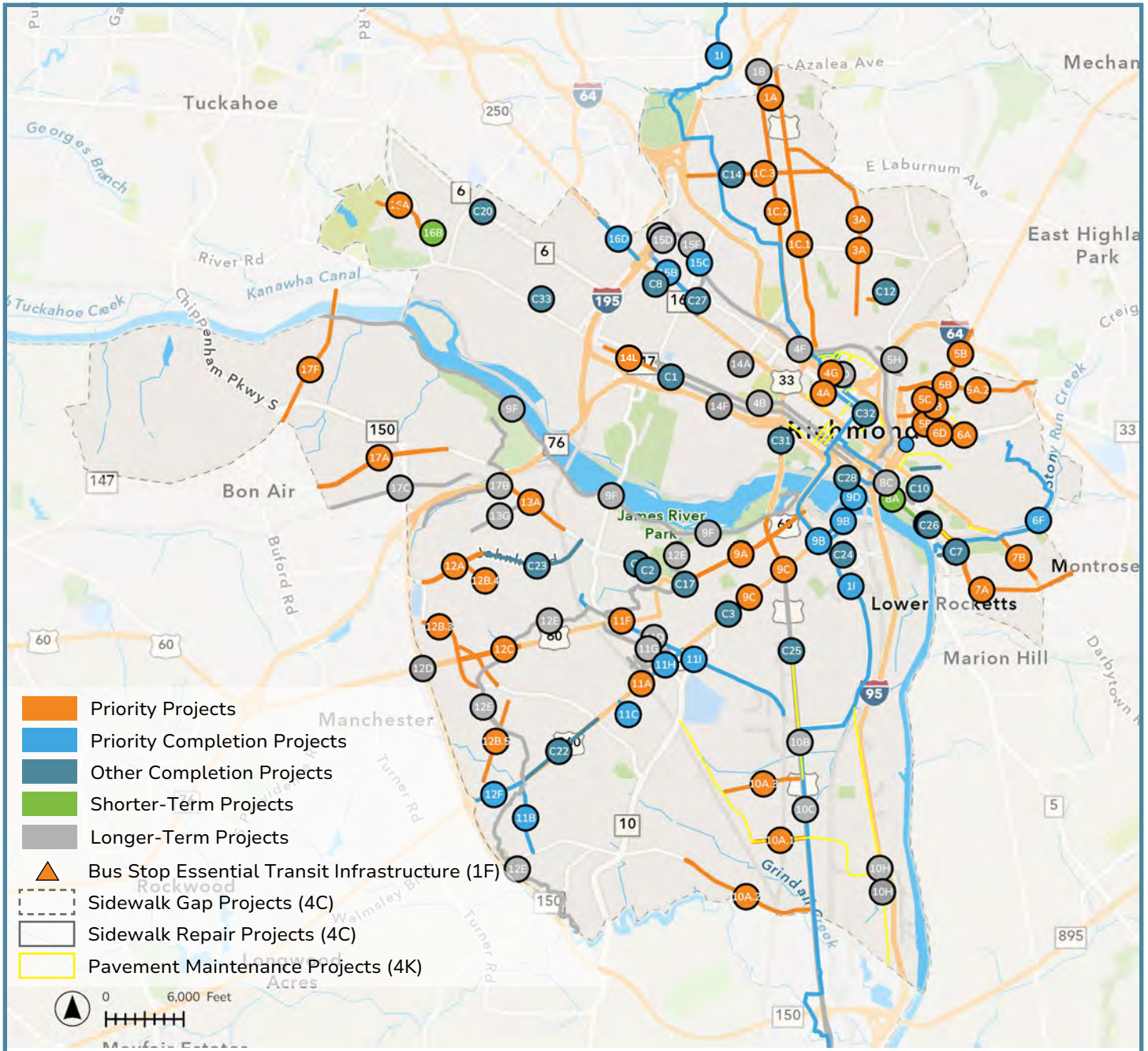


Figure 34. Map of Project Recommendations for the Pedestrian Investment Need Category (INC 1B)

Project Recommendations for INC 1B: Pedestrian

| ID | Category | Title | Relevance | Page |
|-------|-------------------|--|-----------|------|
| 5B | Priority Projects | Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements | Primary | 211 |
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Primary | 205 |
| 1C.3 | Priority Projects | Laburnum Avenue Safety Improvements | Primary | 213 |
| 1C.1 | Priority Projects | Chamberlayne Avenue Pedestrian Safety Improvements | Primary | 215 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | Primary | 217 |
| 10A.3 | Priority Projects | Terminal Boulevard Shared Use Path | Primary | 225 |
| 10A.1 | Priority Projects | Bells Road Sidewalks | Primary | 221 |
| 10A.2 | Priority Projects | Walmsley Boulevard Shared Use Path | Primary | 223 |
| 3A | Priority Projects | North Avenue Pedestrian Safety Improvements | Primary | 227 |
| 12A | Priority Projects | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | Primary | 229 |
| 9A | Priority Projects | Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements | Primary | 233 |
| 6A | Priority Projects | Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming | Primary | 231 |
| 7B | Priority Projects | Government Road Streetscape Improvements | Primary | 244 |
| 9C | Priority Projects | Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike | Primary | 233 |
| 12B.5 | Priority Projects | Southside Pedestrian Improvements - Whitehead Road | Primary | 259 |
| 3B | Priority Projects | Dove Street Pedestrian Safety Improvements | Primary | 261 |
| 12B.1 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road north of US Route 60 | Primary | 251 |
| 12B.2 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road south of US Route 60 | Primary | 253 |
| 12B.3 | Priority Projects | Southside Pedestrian Improvements - Carnation Street | Primary | 255 |
| 12B.4 | Priority Projects | Southside Pedestrian Improvements - German School Road | Primary | 257 |
| 11F | Priority Projects | Richmond High School of the Arts Pedestrian Safety Improvements | Primary | 249 |
| 5A.1 | Priority Projects | Coalter Street Traffic Calming | Primary | 263 |
| 5A.2 | Priority Projects | Fairfield Avenue/ Fairfield Way Traffic Calming | Primary | 265 |
| 7A | Priority Projects | Williamsburg Road/ Williamsburg Avenue Traffic Calming | Primary | 268 |
| 1A | Priority Projects | Westbrook Avenue Pedestrian Improvements | Primary | 270 |

Project Recommendations for INC 1B: Pedestrian

| ID | Category | Title | Relevance | Page |
|-----|---------------------|---|-----------|------|
| 13A | Priority Projects | Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy | Primary | 278 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Primary | 286 |
| 16A | Priority Projects | Three Chopt Road Sidewalks | Primary | 283 |
| 14L | Priority Projects | Carytown Pedestrian Safety Improvements | Primary | 290 |
| 9B | Priority Completion | Hull Street Streetscape - Mayo Bridge to 9th Street | Primary | 291 |
| 11C | Priority Completion | Southwood Parkway Sidewalk | Primary | 291 |
| 12F | Priority Completion | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | Primary | 291 |
| 9D | Priority Completion | Mayo Bridge Pedestrian and Bicycle Facilities | Primary | 292 |
| 11B | Priority Completion | Hey Road Improvements | Primary | 292 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | Primary | 293 |
| 6F | Priority Completion | Gillies Creek Greenway | Primary | 294 |
| 16D | Priority Completion | Broad Street Streetscape with Pulse BRT Expansion | Primary | 293 |
| 1I | Priority Completion | Fall Line Trail | Primary | 295 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Primary | 295 |
| 11I | Priority Completion | James River Branch Trail | Primary | 295 |
| C10 | Other Completion | Shockoe Bottom BRT Streetscape Improvements | Primary | 297 |
| C13 | Other Completion | Jefferson Avenue Improvements | Primary | 298 |
| C15 | Other Completion | Nicholson Street Streetscape | Primary | 299 |
| C20 | Other Completion | Westhampton Area Improvements - Phase III | Primary | 300 |
| C22 | Other Completion | Hull Street Improvements Phase I - Hey Road to Warwick Road | Primary | 300 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Primary | 300 |
| C25 | Other Completion | Richmond Highway Improvements | Primary | 300 |
| C26 | Other Completion | Route 5 Relocation/Williamsburg Road Intersection Improvement | Primary | 301 |
| C27 | Other Completion | Science Museum BRT Shared Use Path | Primary | 301 |
| C3 | Other Completion | Hull Street at 29th Street Pedestrian Hybrid Beacon | Primary | 296 |
| C31 | Other Completion | Belvidere Street Gateway - Phase IV | Primary | 301 |
| C32 | Other Completion | Biotech Research Park Roadway Improvements | Primary | 301 |
| C33 | Other Completion | Mary Munford Elementary School Pedestrian Safety Improvements | Primary | 301 |
| C4 | Other Completion | Main Street Safety Curb Extensions | Primary | 296 |
| C5 | Other Completion | Richmond Highway Phase II Improvements | Primary | 296 |

Project Recommendations for INC 1B: Pedestrian

| ID | Category | Title | Relevance | Page |
|-----|---------------------|--|-----------|------|
| C7 | Other Completion | Riverfront/ Orleans BRT Streetscape Improvements | Primary | 297 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | Primary | 297 |
| C9 | Other Completion | Scott's Addition Green Space | Primary | 297 |
| 16B | Shorter Term | York Road Sidewalks | Primary | 306 |
| 8A | Shorter Term | Dock Street Pedestrian Improvements | Primary | 303 |
| 16H | Shorter Term | Malvern Avenue Sight Distance Evaluation | Primary | 306 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Primary | 307 |
| 1B | Longer Term | Azalea Avenue Streetscape Improvements | Primary | 307 |
| 13G | Longer Term | Bliley Road Sidewalk and Bike Lanes | Primary | 308 |
| 4B | Longer Term | Main Street/Cary Street Two-Way Street Conversion | Primary | 309 |
| 5H | Longer Term | Valley Road Shared Use Path | Primary | 309 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | Primary | 309 |
| 15D | Longer Term | Scott's Addition/Boulevard Shared-Use Path | Primary | 309 |
| 11G | Longer Term | East Belt Boulevard Improvements | Primary | 310 |
| 17B | Longer Term | Powwhite Greenway | Primary | 311 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | Primary | 311 |
| 12C | Priority Projects | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | Secondary | 219 |
| 5C | Priority Projects | Fairfield Pedestrian Security and Shade Project | Secondary | 238 |
| 6D | Priority Projects | Church Hill Street Lighting | Secondary | 240 |
| 4A | Priority Projects | Downtown Safety Spot Improvements | Secondary | 242 |
| 4G | Priority Projects | Reconnect Jackson Ward | Secondary | 277 |
| 11A | Priority Projects | Southside Plaza Pedestrian Connections Across Railroad Tracks | Secondary | 281 |
| 17F | Priority Projects | Huguenot Road Bikeway | Secondary | 288 |
| 6C | Priority Completion | Shockoe Valley Street Improvements | Secondary | 292 |
| 15C | Priority Completion | Arthur Ashe Boulevard Bridge Replacement | Secondary | 292 |
| C1 | Other Completion | Cary Street Safety Curb Extensions | Secondary | 296 |
| C12 | Other Completion | Highland Grove/ Dove Street Redevelopment | Secondary | 298 |
| C14 | Other Completion | Laburnum Median Improvements | Secondary | 298 |
| C17 | Other Completion | Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements | Secondary | 299 |
| C2 | Other Completion | Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets | Secondary | 296 |
| C24 | Other Completion | Maury Street Streetscape | Secondary | 300 |

Project Recommendations for INC 1B: Pedestrian

| ID | Category | Title | Relevance | Page |
|-----|------------------|--|-----------|------|
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Secondary | 301 |
| 11D | Longer Term | Southside Plaza Street Grid | Secondary | 307 |
| 12D | Longer Term | Route 60/Route 150 Interchange Improvements | Secondary | 307 |
| 8C | Longer Term | East Main Street Streetscape Improvements | Secondary | 307 |
| 10B | Longer Term | Richmond Highway Great Street Transformation | Secondary | 307 |
| 10C | Longer Term | Richmond Highway Pedestrian Safety Improvements | Secondary | 307 |
| 9F | Longer Term | Riverside Shared-Use Path | Secondary | 308 |
| 14A | Longer Term | Stuart Circle Roundabout Improvement | Secondary | 309 |
| 14F | Longer Term | Randolph Connection Over I-195 | Secondary | 310 |
| 10H | Longer Term | Commerce Road Improvements at Walmsley Boulevard | Secondary | 310 |
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Secondary | 311 |
| 15E | Longer Term | Norfolk Street Bridge | Secondary | 311 |
| 15F | Longer Term | MacTavish Avenue Bridge | Secondary | 311 |

Strategy Recommendations for INC 1B: Pedestrian

BETTER STREET LIGHTING (1B.1)*

Install more night lighting, including human-scaled lighting, on streets with lots of crashes so drivers can see people walking better. Replace street lights with LED bulbs, and run them off solar power so they still work when the power goes out. Develop an equity-based process to figure out which areas have the most crashes, crimes, or beautification needs, and install more lighting with solar-powered LED bulbs in these areas first. Focus street lighting projects on “Smart City” technologies, which can be add-ons to the LED street light conversions, including monitors related to environmental quality, climate change, pedestrian movement, and safety.

**This strategy incorporates strategy concepts from several other plans, including:*

- *Vision Zero Action Plan, Legislative and Budget strategies and actions*
 - *“Enhance lighting on the high injury street network to improve visibility.”*
- *RVAgreen 2050 Climate Equity Action Plan 2030, Strategy BE-1.1, Action i, which reads:*
 - *“Convert all city-owned streetlights to LED, integrate solar options where feasible, and streamline efficiency measures; Prioritize improvements in formerly redlined neighborhoods and proactively communicate climate impact and resilience benefits with the communities.”*

Next Steps:

OETM

- Convene a community meeting to discuss the street lighting prioritization process and seek feedback on ways to make it more equitable.
- Seek additional dedicated CIP funding to implement street lighting projects using an equity-based, community-led prioritization process.

DPU

- Revise internal processes to include equity, climate justice, and crime risks in street lighting priorities.

DPW

- Support PDR in developing public realm standards to include requirements for pedestrian-level lighting per the Richmond 300 Master Plan Objective 4.4.



LQC Implementation could involve:

Demonstration with movable construction lights, solar powered lights.



Partners in this strategy could include:

Mayor’s Office & Council, community partners, Richmond Police Department

Strategy Recommendations for INC 1B: Pedestrian

PRIORITIZE FIXING BUS STOPS AND SIDEWALKS NEAR DISABLED COMMUNITIES (1B.2)*

Identify disability hot-spots where lots of neighbors have physical disabilities, like near assisted living group homes or senior living, and destinations these people frequently go to. Fix the streets and sidewalks and make ADA upgrades to bus stops in these areas first. Preserve and increase the tree canopy during sidewalk projects.

This strategy is related to several strategies from other adopted plans, including:

- Vision Zero Action Plan, Executive strategies and actions:
 - “Provide safe access to transit stops in high priority areas as determined by the Greater Richmond Transit Company (GRTC)”
 - “Identify and address transportation challenges for mature road users.”
- Richmond 300, Objective 7.1, Strategy B, which reads:
 - “Provide safe and Americans with Disabilities Act (ADA)-compliant access to transit stops in the high-injury street network as determined by GRTC (per the Vision Zero Action Plan).”
- Richmond 300, Objective 8.1, Strategy D, which reads:
 - “Construct ADA-compliant sidewalks and street crossing and retrofit existing sidewalks with ADA-compliant ramps, per federal requirements.”

Next Steps:

OETM

- Work with residents, community organizations, and disability advocates and representatives to identify and develop map of disability hot-spots.

DPW

- Review and revise the prioritization rubric used to determine sidewalk maintenance and ADA upgrade priority, to include disability hot-spots as a priority.
- Expand the ADA audit currently completed for the downtown core and adjacent neighborhoods to include the entire city. Focus on completing the audit in disability hot-spots first.
- Hire an ADA compliance position, and allocate annual CIP funds dedicated to ADA compliance.



LQC Implementation could involve:

Demonstrations with temporary/movable ADA ramps made of rubber.



Partners in this strategy could include:

Richmond’s Office of Aging & Disability Services, Senior Connections, Disability advocacy groups, Other community partners

NEW TECHNOLOGY FOR PEDESTRIANS WITH DISABILITIES (1B.3)*

Research and install new technology for traffic signals and crosswalks, in accordance with PROWAG, to make it safer and easier for people who are blind or visually impaired to cross the street.

*This strategy is originally from several Richmond 300 strategies, including:

- Objective 10.1, Strategy A, which reads: “Continue to implement technology that prioritizes traffic signal timing for walking, biking, and transit;”
- Objective 10.1, Strategy E, which reads: “Leverage new and existing technologies to accommodate individuals with visual impairments.”

Next Steps:

DPW

- Hire an Emerging Technology Coordinator.
- Research emerging technologies and test improvements via demonstration projects before large investments are made.



LQC Implementation could involve:

Demonstrating technologies in disability hotspots identified in Strategy 1B.2.



Partners in this strategy could include:

OETM, OIPI, VDOT, OOS, DIT

Strategy Recommendations for INC 1B: Pedestrian

DEVELOPMENT REQUIREMENTS (1B.4)*

When a new building is being constructed, require the builders to provide wide sidewalks, street trees, benches, and other improvements that create a sense of pedestrian priority. Discourage the creation of new surface parking lots along pedestrian-oriented and transit accessible corridors.

**This strategy is originally from several Richmond 300 strategies, including:*

- *Objective 1.1, Strategy E, which reads: "Rezone parcels in Nodes with design requirements that encourage walking, such as providing sidewalks, street trees, shade structures, pedestrian-level lighting, street furniture, and street-level windows and doors; prohibiting parking facing the street; and limiting driveway entrances."*
- *Objective 4.4, Strategy A, which reads: "Develop city-wide public realm standards to include shade trees, bike parking, bike share, signage, public art, screened parking, street furniture, pedestrian-level lighting, and other elements in the public right-of-way that enhance walkability."*

This strategy includes strengthening the Better Streets Manual to require new developments to provide the preferred pedestrian travel zone and buffer zone widths instead of the minimum widths. Requirements need to include requiring developers to provide adequate width sidewalks, either by deeding right-of-way or providing easements.

PDR is currently working on rewriting the Zoning Ordinance, which is a primary mechanism for achieving this strategy.

Next Steps:

PDR

- Amend the Zoning Ordinance to require necessary public improvements, including providing sidewalks, street trees, benches, and other improvements that make the public realm feel designed for pedestrians instead of cars. This could include creating a zoning overlay in Nodes and along Great Streets that specifies more complete and prescribed minimums for improvements to the transportation infrastructure. Include requirements for developers to provide the preferred pedestrian travel zone and buffer zone widths from the Better Streets Manual instead of the minimum widths, either by deeding right-of-way or providing easements.
- Consider zoning mechanisms to discourage surface lots in favor of multi-story parking garages, or multimodal improvements with a logical nexus to the development project.

COR Dept. of Finance

- Consider taxation mechanisms to discourage surface lots in favor of multi-story parking garages, or multimodal improvements with a logical nexus to the development project.

OETM & DPW

- Work with PDR to incorporate this strategy into the Zoning Ordinance rewrite.



Partners in this strategy could include:
Private developers, community advocates, OOS

Strategy Recommendations for INC 1B: Pedestrian

SLOW DOWN INTERSECTIONS AND PRIORITIZE NON-CAR TRAVELERS (1B.5)*

Install features at intersections that make cars slow down at crosswalks and make it easier for drivers to see pedestrians trying to cross the street. This could include raised crosswalks, curb extensions (e.g. curb bump-outs) at intersections, removing slip lanes, and preventing drivers from parking too close to the intersection. At intersections with cycle tracks, eliminate left turn on red and install 'left turn yield to bikes' signs. Combine these features with pedestrian friendly design and pedestrian detection signals that prioritize non-car users to get the green light/walk sign faster, making bus, walking, and bikes the priority at intersections.

**This strategy incorporates several Vision Zero Action Plan Legislative and Budget strategies and actions, including:*

- "Fund engineering design projects to adjust target speed and design speed where feasible and appropriate."
- "Communicate appropriate speeds through good design."
- "Apply signal timing/crossing modifications."
- "Implement proven geometric intersection treatments."
- "Install or upgrade pedestrian crossing treatments."

Virginia Commonwealth University completed a Pedestrian Safety Study in 2023 that makes several recommendations in the Monroe Park Campus and Academic Medical Center that are relevant to this strategy, including:

- No Turn on Red signage
- Pedestrian crossing improvements (longitudinal crosswalk markings, curb extensions, and corner clearance markings)
- Signal improvements (leading pedestrian intervals, rectangular rapid flashing beacons, pedestrian hybrid beacons, and left-turn hardening)
- Roadway improvements (speed tables, raised intersections, and road closures).

This strategy includes evaluating these potential improvements and identifying locations where they are most needed over the entire City.

Next Steps:

DPW

- Support current signal timing adjustments, and advocate for continued improvements to prioritize non-car travelers at intersections.
- Install new paint, visibility improvements, curb extensions, vertical features, and lighting improvements at intersections to improve pedestrian safety.
- Identify locations where 2-way stop intersections can be converted to 4-way stop control.



LQC Implementation could involve: movable planters, paint, flex posts, rubber pedestrian islands, curb extensions with paint and flex posts, and raised pedestrian crosswalks

Strategy Recommendations for INC 1B: Pedestrian

OTHER HIGH IMPORTANCE STRATEGIES

- **INCENTIVIZE SUSTAINABLE TRANSPORTATION:** Spread awareness of non-car options for getting around and provide incentives to do so.
- **CROSSWALK TIMING:** Change the timing of the traffic lights to make it easier for pedestrians to cross the street, and to ensure turning traffic does not have a green light when pedestrians are crossing.

MEDIUM IMPORTANCE STRATEGIES

- **MORE BIKESHARE MODES:** Add other vehicles, such as sit-on e-scooters and side-cars/wagons for children to the bike-sharing program.
- **ALL-INCLUSIVE TRANSPORTATION TECHNOLOGIES:** Figure out how to make sure everyone, including people who don't have smartphones or a bank account, or who have a physical disability, can still use new transportation technology (Uber/Lyft, electric and driverless vehicles, and car-sharing).
- **WHEELCHAIR RIDES:** Get the word out that people who use wheelchairs can get same-day, direct non-stop rides through Round Trip and UZURV, and help low-income people pay for this service.

LOW IMPORTANCE STRATEGIES

- **TRY BIKE-WALK OR SLOW STREETS:** Experiment with temporarily closing some streets to car traffic or creating "bike-walk streets" that are designed for people to walk in the street and cars go slow around them.
- **CAR-SHARE:** Bring car-share to Richmond so people have the option to use a car for a few hours without needing to own one.
- **EMPOWER LEADERS IN SAFETY:** Give power to the Safe and Healthy Streets Commission when selecting and designing transportation projects and make sure the Commission talks to the residents.

- **EDUCATE OUR LEADERS:** Educate City Council and decision-makers why it is important to move away from depending only on cars and how to change things.
- **RAILS TO TRAILS:** Build more trails along railroads.
- **CHANGE CAR-CENTRIC LEGISLATION:** Identify laws and government procedures that discourage walking, biking, and taking the bus, and work to change them.
- **WAYFINDING PEDESTRIAN SIGNAGE:** Install signs that point to destinations and tell you how long it will take to walk there, making it easier to choose walking over driving.

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **REVENUE FOR SAFETY PROJECTS:** Use the money from writing tickets to fund projects that improve pedestrian and bicycle safety. (INC 5 Safety)
- **INTERCONNECTED TRAILS:** Create an interconnected parks system that is connected by trails and greenways, so people can travel throughout the city without having to get on the road throughout the city, with primary sections near key focus areas. (INC 6 Connectivity)
- **DELIVERY MANAGEMENT:** Figure out how to manage delivery trucks, vans, drones, and robots traveling on the roads and sidewalks, and parking next to the curb. (INC 3 Freight)
- **PUBLIC SAFETY CAMPAIGN:** Conduct a safety campaign to teach drivers, bicyclists, and pedestrians their rights and responsibilities and how to safely share the road, and to discourage distracted driving and distracted walking. (INC 5 Safety)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

2: TRANSIT



Project recommendations in the Transit investment need category include extending and expanding the Pulse bus rapid transit, adding on-demand microtransit zones, increasing local bus frequencies, identifying park-and-ride locations, traffic signal technology improvements for transit signal priority, identifying a permanent location for a downtown transfer center, and identifying locations for bus priority treatments.

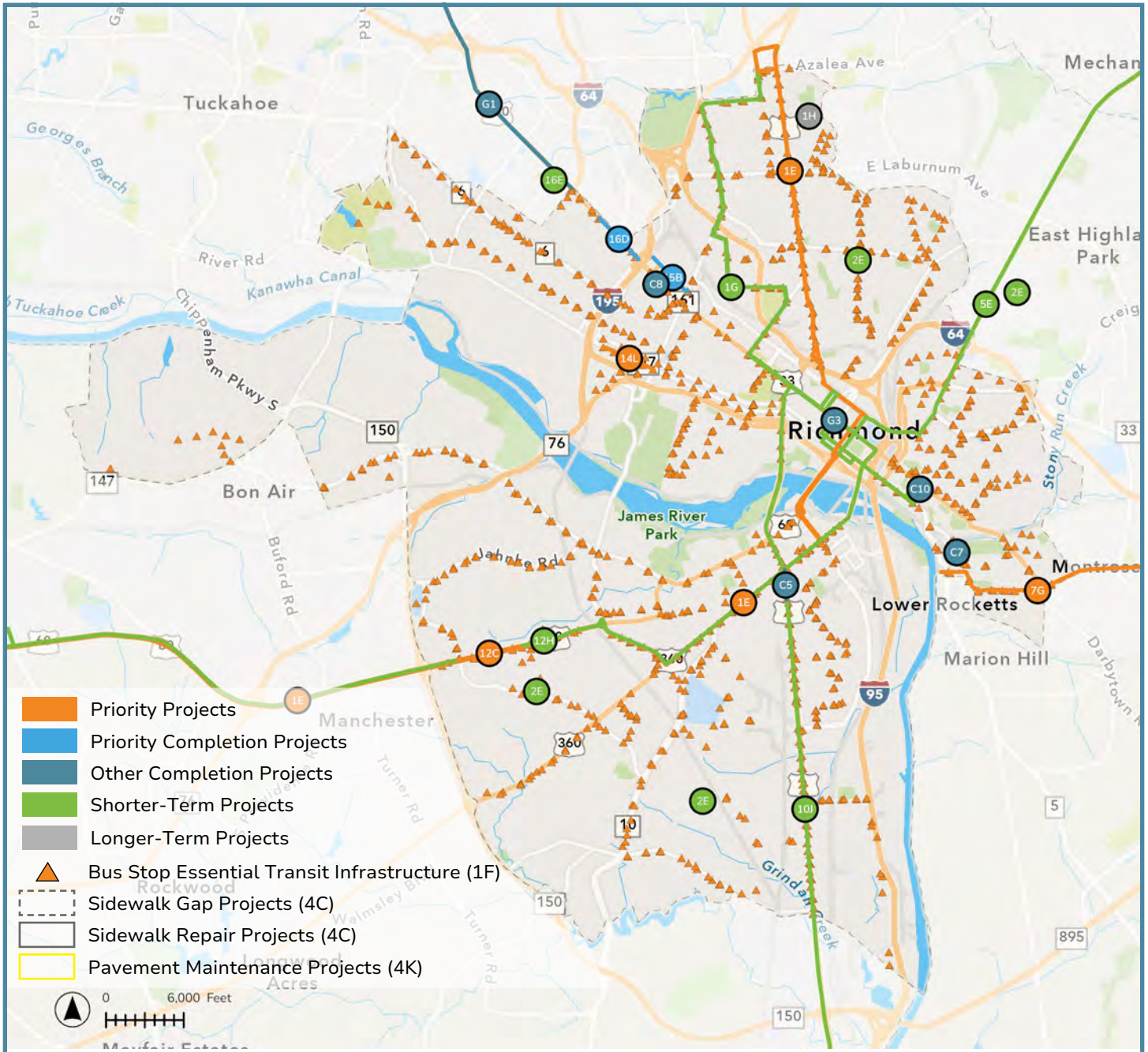


Figure 35. Map of Project Recommendations for the Transit Investment Need Category (INC 2)

Project Recommendations for INC 2: Transit

| ID | Category | Title | Relevance | Page |
|-----|---------------------|---|-----------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Primary | 236 |
| 7G | Priority Projects | Pulse Bus Rapid Transit Eastern Extension | Primary | 246 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Primary | 280 |
| 16D | Priority Completion | Broad Street Streetscape with Pulse BRT Expansion | Primary | 293 |
| C11 | Other Completion | Centralized Transit Signal Priority and Emergency Vehicle Preemption | Primary | 297 |
| G1 | Other Completion | Western Pulse Extension | Primary | 302 |
| G2 | Other Completion | GRTC Dedicated Lanes Study | Primary | 302 |
| G3 | Other Completion | Downtown Transfer Center | Primary | 302 |
| 12H | Shorter Term | GRTC Route 1A (Midlothian Turnpike) Improvements | Primary | 303 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Primary | 303 |
| 10J | Shorter Term | Richmond Highway Transit Improvements | Primary | 304 |
| 1G | Shorter Term | GRTC Route 14 Increased Frequency | Primary | 304 |
| 16E | Shorter Term | Willow Lawn Park-and-Ride | Primary | 306 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Primary | 305 |
| 11J | Longer Term | Southside Plaza Transfer Center | Primary | 307 |
| 1H | Longer Term | Ridesharing Vouchers | Primary | 308 |
| 12C | Priority Projects | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | Secondary | 219 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | Secondary | 293 |
| C10 | Other Completion | Shockoe Bottom BRT Streetscape Improvements | Secondary | 297 |
| C5 | Other Completion | Richmond Highway Phase II Improvements | Secondary | 296 |
| C6 | Other Completion | Richmond Signal System Phase IV | Secondary | 296 |
| C7 | Other Completion | Riverfront/ Orleans BRT Streetscape Improvements | Secondary | 297 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | Secondary | 297 |

Strategy Recommendations for INC 2: Transit

PRIORITIZE BUS RELIABILITY AND LONGER SERVICE HOURS (2.1)

Prioritize spending money to hire more bus drivers and buy more buses to extend GRTC service hours. Invest in signal and communication technology to make the bus system more reliable. Focus on the areas and bus routes that are late or off-schedule most frequently. Explore the potential for bus-only lanes (including 24-hour and peak-period only).

Next Steps:

GRTC

- Advocate for a transparent process to prioritize reliability concerns and mitigation strategies through a comprehensive, publicly-shared reliability assessment and reliability improvement plan. Reliability issues stemming from City of Richmond owned assets (e.g. signal timing) should be named and priority given to these improvements as they are identified.



LQC Implementation could involve: Temporary demonstrations of bus-only lanes.



Partners in this strategy could include: DPW, OETM, and COR representatives on the GRTC Board of Directors

FARE-FREE GRTC (2.2)

Prioritize keeping the bus free to reduce barriers to entry, increase access, and minimize bus loading times for better reliability.

Next Steps:

OETM and GRTC

- Support and advocate for a 10 year commitment to fare-free.

TRAIN MORE BUS DRIVERS (2.3)

Create a program, combining strengths and abilities from multiple city departments and other agencies, to hire and train bus drivers from low-income areas and high schools. Retain bus drivers with living wages, benefits, and a positive work environment.

Next Steps:

GRTC

- Work with DMV to support existing programs to increase CDL drivers such as the 'troops-to-trucks' program that trains ex-military civilians to get a CDL, which can be used to drive buses.
- Work with DMV, Office of Community Wealth Building, Mayor's Youth Academy, Richmond Public Schools, local community colleges, local universities, and other partners to develop pipeline programs to train at-risk-youth for jobs in the transit industry.



Partners in this strategy could include: OCWB, DMV, RPS, higher education institutions

Strategy Recommendations for INC 2: Transit

IMPROVE BUS SERVICE (2.4)

In areas where fixed route bus service exists, focus investments to make these bus routes more reliable and frequent, and improve sidewalks and pedestrian crossings. Provide micro-transit and other shared-mobility solutions in areas that are not covered by frequent, reliable, and accessible fixed-route bus service.

Next Steps:

OETM

- Support GRTC in providing micro-transit and other non-traditional transit to communities not currently served by reliable, frequent fixed route service.



LQC Implementation could involve: Piloting micro-transit and other new shared ride programs.

OTHER HIGH IMPORTANCE STRATEGIES

- **SIGNAL PRIORITY FOR BUSES:** Upgrade the traffic signal technology so the signals can automatically detect buses and hold the green light so the buses run faster and more reliably.
- **IMPROVE SAFETY:** Improve safety on buses, possibly with security.
- **MORE REGION BUS ROUTES:** Create more regional bus routes, especially in counties.

MEDIUM IMPORTANCE STRATEGIES

- **BUS ARRIVAL TIME DISPLAYS:** Add real-time displays showing bus arrival times to bus stops, especially in low-income areas.
- **FREE RIDES FOR LATE BUSES:** Develop a program for bus riders users to get rides on a free Uber/Lyft if their bus is 15 minutes later than scheduled.
- **AFTER-HOURS RIDES:** Invest money in an Uber-like service where bus riders can take a shared van instead of the bus from their block (instead of a bus stop) to their destination during hours that the bus doesn't run, and take this van for free if they are low-income.

LOW IMPORTANCE STRATEGIES

- **CAR-SHARING:** Bring more car-sharing programs into the city, cover car-sharing costs for low income Richmonders.

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **ELECTRIFY TRANSPORTATION:** Transition GRTC's buses to electric buses. Increase the number of Uber/Lyft and other vehicles for hire and car-share vehicles that are electric vehicles. (INC 10 Sustainability)
- **HOUSING NEAR TRANSIT:** Encourage affordable housing located near bus stops and areas easily accessible by bus, bike, or walking. Make sure the housing stays affordable, and make sure Richmonders are educated and provided resources to locate existing affordable housing near transit. (INC 4 Land Use)
- **HOUSING DIVERSITY:** Loosen the laws so that more types of housing (apartments, townhouses, small homes, etc.) for a variety of income levels can be built easily. (INC 4 Land Use)
- **HOUSING VOUCHERS:** Make sure landlords honor housing choice vouchers and don't use them as a way to discriminate in housing applications. (INC 4 Land Use)

Strategy Recommendations for INC 2: Transit

- **NEW JOBS IN NODES:** Bring new businesses and more jobs into the Nodes - these are areas where jobs and people are today and will continue to grow in the future, and make sure they are well-served by bus, bike, and walk access. (INC 4 Land Use)
- **BILINGUAL TRANSPORTATION INFORMATION:** Distribute resources both online and in hard copy, and in both Spanish and English, about Richmond's transportation options and how to use them. Work with Greyhound, Amtrak, GRTC, and other regional travel providers to ensure materials and booking platforms are available in both English and Spanish. (INC 6 Connectivity)
- **EXPAND GRTC:** Support GRTC bus route expansion and spend city money to advertise the areas around bus stops to builders and businesses as good places to put more affordable housing and good paying jobs (INC 8 Economic Development)
- **FREE WIFI AT BUS STOPS:** Add free wifi at bus stops in areas with limited technology access (INC 8 Economic Development)
- **BUS STOP SECURITY:** Add lighting and armed security at the bus stops. (INC 5 Safety)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

3: FREIGHT



Three projects directly relevant to the Freight investment need category are the Deepwater Terminal Road Connector, Maury Street Streetscape, and Commerce Road Improvements. Projects secondarily relevant to freight include street connection projects and bikeway projects that will provide a separate space for bicyclists on streets that trucks frequently use.

Project Recommendations for INC 3: Freight

| ID | Category | Title | Relevance | Page |
|-----|-------------------|---|-----------|------|
| C21 | Other Completion | Deepwater Terminal Road Connector to Goodes Street | Primary | 300 |
| C24 | Other Completion | Maury Street Streetscape | Primary | 300 |
| 10H | Longer Term | Commerce Road Improvements at Walmsley Boulevard | Primary | 310 |
| 4G | Priority Projects | Reconnect Jackson Ward | Secondary | 277 |
| 12D | Longer Term | Route 60/Route 150 Interchange Improvements | Secondary | 307 |
| 7C | Longer Term | Old Fulton Street Grid | Secondary | 307 |
| 2C | Longer Term | Roundabout at Hermitage Rd/ Arthur Ashe Boulevard/ Westwood Ave/ Brookland Pkwy | Secondary | 308 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | Secondary | 310 |
| 10F | Longer Term | Walmsley Boulevard Street Connection | Secondary | 310 |
| 11N | Longer Term | Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | Secondary | 310 |
| 4H | Longer Term | Reconnect Clay and 6th Streets | Secondary | 311 |

Strategy Recommendations for INC 3: Freight

DELIVERY MANAGEMENT (3.1)

Figure out how to manage delivery trucks, vans, drones, and robots traveling on the roads and sidewalks, and parking next to the curb. Develop methods (signs, phone apps) to help delivery drivers find loading zones off of main streets, including improving alleys and encouraging delivery drivers to utilize alleys. Discourage and enforce penalties for delivery vehicles and pick up/drop-off vehicles from blocking bike lanes and sidewalks.

Next Steps:

DPW

- Complete a curbside and right-of-way management plan. This plan should include an assessment of delivery modes and need for regulating ordinances. It should address drones, delivery robots, rideshare pick-up and drop-off, meal delivery drivers, dockless scooter and bikeshare parking (especially to prevent blocking ADA pedestrian paths), and increased demand for traditional delivery trucks.
- Identify locations for on-street temporary loading zones. Install with proper signage and pavement markings.
- Hire an Emerging Technology Coordinator to assess drone and robot delivery modes.

PDR

- Require temporary delivery locations in development, with standards for signage and marking.



Partners in this strategy could include: OETM, business and restaurant owners

MAXIMIZE PORT AND RAILWAYS (3.2)*

Support the Richmond Marine Terminal and freight rail as economic development engines for the City. Work with these entities to use Richmond's port and railways to their full capacities to help city growth, improve reliability of goods delivery to city stores and job sites, and create full time jobs. Improve truck access to the Richmond Marine Terminal in alignment with Vision Zero objectives.

**This strategy is originally from Richmond 300, Objective 11.4, Strategy C, which reads "Implement strategies to support the Richmond Marine Terminal and freight rail as economic development engines for the City."*

Next Steps:

DED

- Work closely with the Port of Richmond to assess barriers to capacity building and threats to port resiliency to be included in the next update of the Richmond Connects Action Plan via a food or general resiliency plan.



Partners in this strategy could include: Port of Virginia Richmond Marine Terminal, DRPT OETM, DPW

Strategy Recommendations for INC 3: Freight

FOOD ACCESS AND URBAN FARMING (3.3)*

Provide funding to community organizations and collectives working on food insecurity and food access. Prioritize funding and land for local food production, and provide incentives to mobile farm pantries and farmers markets on wheels.

**This strategy is originally from Richmond 300, Objective 17.4, Strategy D, which reads "Attract healthy food retailers to low-income areas by increasing residential density and providing financial and technical support for retailer creation, expansion, remodeling, or equipment upgrades."*

Next Steps:

OOS

- Identify funding to support these programs, identify lead staff, and make COR procurement opportunities accessible.



LQC Implementation could involve: pop-up mobile community gardens, raised planters, and farm stands.



Partners in this strategy could include: OETM, DED, PCRf, OCWB, Chamber of Commerce, PDR

FREE GROCERY DELIVERY (3.4)

Provide money to cover grocery delivery service fees for low-income and elderly areas and neighborhoods in food deserts.

Next Steps:

OETM

- Develop program parameters and seek grant funding.



LQC Implementation could involve: pilot program.



Partners in this strategy could include: RRHA, OCWB, DSS, Office of Aging & Disability Services

FOOD RESILIENCY PLANNING & ZONING (3.5)

Complete a supply chain resiliency plan for low-income Richmond neighborhoods that describes how to get people food access when transportation, health, or climate emergencies happen. Ensure zoning updates allow for flexible use of space to meet food insecurity and resiliency issues identified through this planning. Further develop program parameters for food access in this plan.

Next Steps:

OOS

- Identify funding to support this planning effort and identify lead staff.



Partners in this strategy could include: PDR, OETM, PlanRVA

Strategy Recommendations for INC 3: Freight

OTHER HIGH IMPORTANCE STRATEGIES

- **FREE GROCERY DELIVERY:** Provide money to cover grocery delivery service fees for low-income and elderly areas and neighborhoods in food deserts.
- **FOOD ACCESS AND URBAN FARMING:** Prioritize funding to community organizations and collectives working on food insecurity and food access. Prioritize funding and land for local food production, and provide incentives to mobile farm pantries and farmers markets on wheels.
- **COMMUNITY GARDENS:** Plant trees, bushes and other landscaping that will grow fruits & vegetables in public parks & green spaces. Allow for planting by residents in city-owned green spaces.
- **ADDRESS ZONING CHANGES:** Address zoning changes needed to address resiliency plan.

MEDIUM IMPORTANCE STRATEGIES

- None

LOW IMPORTANCE STRATEGIES

- None

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

4: LAND USE



Project recommendations directly relevant to the Land Use investment need category include implementing the parking recommendations from the 2020 Parking Study Report, completed as part of the *Richmond 300* Master Plan, working with residents to revitalize areas where poor accessibility is primarily due to a lack of relevant destinations, developing a new park where access to greenspace is limited, and transforming US Route 1 into a Great Street.

Project Recommendations for INC 4: Land Use

| ID | Category | Title | Relevance | Page |
|-----|---------------------|--|-----------|------|
| 10B | Longer Term | Richmond Highway Great Street Transformation | Primary | 307 |
| 12L | Longer Term | Midlothian Area Revitalization | Primary | 307 |
| 4L | Longer Term | Downtown/Shockoe Parking Recommendations | Primary | 308 |
| 15H | Longer Term | Scott's Addition Parking Recommendations | Primary | 308 |
| 10N | Longer Term | Greenspace/Park near Richmond Highway | Primary | 309 |
| 14D | Longer Term | Carytown Parking Recommendations | Primary | 309 |
| 7G | Priority Projects | Pulse Bus Rapid Transit Eastern Extension | Secondary | 246 |
| 4G | Priority Projects | Reconnect Jackson Ward | Secondary | 277 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Secondary | 280 |
| 11I | Priority Completion | James River Branch Trail | Secondary | 295 |
| G3 | Other Completion | Downtown Transfer Center | Secondary | 302 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Secondary | 303 |
| 16E | Shorter Term | Willow Lawn Park-and-Ride | Secondary | 306 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Secondary | 305 |
| 11D | Longer Term | Southside Plaza Street Grid | Secondary | 307 |
| 7C | Longer Term | Old Fulton Street Grid | Secondary | 307 |
| 10M | Longer Term | Richmond Highway Revitalization | Secondary | 308 |
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Secondary | 311 |
| 4H | Longer Term | Reconnect Clay and 6th Streets | Secondary | 311 |

Strategy Recommendations for INC 4: Land Use

COORDINATE TRANSIT AND DEVELOPMENT (4.1)*

Include GRTC in conversations with Richmond’s Office of Equitable Development, Department of Planning and Development Review, Office of Equitable Transit and Mobility, and Department of Public Works, to coordinate new housing and new development with transit planning. Work with developers and property managers to offer affordable units in Transit-Oriented Developments and fill them with voucher recipients.

**This strategy is adapted from Richmond 300, Objective 6.1, Strategy D, which reads “Encourage collaboration across PDR, the Department of Economic Development (DED), the Department of Housing and Community Development (HCD), the Department of Public Works (DPW), and GRTC to focus infrastructure improvements and rezoning at Priority Growth Nodes to position them for future transit stops (make them pre-Transit-Oriented Development [TOD] ready).”*

Next Steps:

PDR

- Establish a TOD task force that meets quarterly to collaborate on TOD.
- Align new development and allowance of greater density in development with existing and planned transportation improvements and transit lines.
- Work with developers and property managers to offer affordable units in Transit-Oriented Developments and fill them with voucher recipients.



Partners in this strategy could include:
GRTC, OETM, PlanRVA

ACCESS TO PARKS (4.2)*

Work with GRTC to improve transit access to existing parks. Create new parks throughout the city so all Richmond residents live within a ten minute walk of a park. When deciding where to put a new park, make sure residents can get to the park by riding the bus or provide new bus service there. Improve ADA-accessibility to and within parks.

**This strategy is originally from Richmond 300, Objective 17.1, which reads “Increase the percentage of Richmonders within a 10-minute walk of quality open space to 100%, prioritizing low-income areas with a high heat vulnerability index rating, with a long-term goal of having all Richmonders within a 5-minute walk of a quality open space.”*

Next Steps:

PCRF

- Develop a Parks Master Plan.

OETM

- Work with PCRF in the development of the Parks Master Plan to coordinate with transportation assets.
- Share transportation accessibility modeling tools with PCRF to highlight areas with the worst access to parks by walking and by transit.
- Work with GRTC to identify bus route and frequency improvements that can improve access to parks, which could include adding bus stops at parks.



LQC Implementation could involve: Pop-up parklets or ‘Park’-ing days demonstrating parking lots and other sites as potential greening/park sites.



Partners in this strategy could include:
GRTC, PDR

Strategy Recommendations for INC 4: Land Use

PRIORITIZE HANDICAPPED PARKING (4.3)

Preserve limited street parking as accessible spaces for people with physical disabilities when parking is removed or moved elsewhere.

This strategy addresses the issues that Richmond is too car-centric overall and poor access is exacerbated for Richmonders who have physical disabilities. People with physical disabilities and seniors often have a more acute need for access to a destination from a car than able-bodied persons.

Next Steps:

DPW Parking & Capital Projects

- Update the COR parking assessment as part of an overall curbside management plan, considering accessible spaces as the priority parking for downtown.



LQC Implementation could involve: signage



Partners in this strategy could include:

DPW Right-of-Way, PDR, OETM

ZONING REWRITE (4.4)*

Rewrite the Zoning Ordinance to, among other things, build up the Nodes, encourage housing density near transit, limit surface parking in Nodes, supply diversity in housing, and address home ownership barriers.

**This strategy is originally from Richmond 300, Objective 1.1, Strategy A, which reads "Re-write the Zoning Ordinance to achieve the goals set forth in Richmond 300."*

Next Steps:

PDR

- Lead the effort to rewrite the Zoning Ordinance.

OETM

- Participate in the zoning rewrite effort.
- Support PDR to communicate the Transit-Oriented Development and affordable housing needs, and how the Zoning Ordinance rewrites will address these with City Council.

Strategy Recommendations for INC 4: Land Use

HOUSING VOUCHERS (4.5)*

Increase awareness and improve relationships with landlords regarding the Housing Choice Voucher program, particularly in areas within Nodes and a half mile of high-frequency transit stops, and highlight the new State Law (HB6 Virginia Fair Housing Law), which prevents landlords from discriminating against renters with Housing Choice Vouchers. Track landlord acceptance of housing choice vouchers, especially in Transit-Oriented Developments.

**This strategy is originally from Richmond 300, Objective 14.1, Strategy C, which reads "Increase awareness and improve relationships with landlords regarding the Housing Choice Voucher program, particularly in areas within Nodes and a half mile of high-frequency transit stops, and highlight the new State Law (HB6 Virginia Fair Housing Law), which prevents landlords from discriminating against renters with Housing Choice Vouchers."*

Communities of Concern said one of the biggest barriers to affordable housing they encounter is landlords who do not honor housing choice vouchers and use them as a way to discriminate in housing applications. This strategy is intended to educate landlords. It is also intended to work in conjunction with Strategy 4.1 Coordinate Transit and Land Use to offer affordable units in Transit-Oriented Developments and fill them with voucher recipients.

Next Steps:

PDR

- Research incentives and zoning strategies for affordable housing in TOD zones as part of the Zoning Ordinance rewrite.
- Incorporate all legally allowable affordable housing incentives into the Zoning Ordinance, especially in TOD areas.
- As part of the TOD task force that will be established under Strategy 4.1, continue to research and deploy new incentives and strategies for affordable housing in Transit-Oriented Developments, and share information with TOD developers on the Virginia Fair Housing Law.

RRHA

- Track voucher use in TOD areas.

CAO office, City Council, and DCHD

- Advocate for inclusionary zoning at the state level.



Partners in this strategy could include: HCD, OETM

Strategy Recommendations for INC 4: Land Use

OTHER HIGH IMPORTANCE STRATEGIES

- None

MEDIUM IMPORTANCE STRATEGIES

- None

LOW IMPORTANCE STRATEGIES

- **CARPOOLING:** Help people organize carpools and give them money to make it more attractive.

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **NODE IDENTITY:** Create an attractive easy-to-recognize identity for areas where more jobs and housing are desired, like in the Southside Nodes, to attract builders and businesses and bring more shopping, affordable housing, and jobs to these areas (INC 8 Economic Development)
- **COMMUNITY VISION:** Work with community residents to create a vision for what the community should look and feel like in the future in these low-density areas where more housing and jobs are needed, like Southside Nodes. Set city policies to make sure new roads, paths, and buildings are built in line with that vision. (INC 8 Economic Development)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

5: SAFETY/SECURITY



Most of the project recommendations relate to the Safety/Security investment need category. Projects specific to safety include roundabouts, interchange improvements, corridor safety improvements, traffic calming, street lighting, curb extensions, and safety spot improvements.

Project Recommendations for INC 5: Safety/Security

| ID | Category | Title | Relevance | Page |
|------|---------------------|--|-----------|------|
| 5B | Priority Projects | Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements | Primary | 211 |
| 1C.3 | Priority Projects | Laburnum Avenue Safety Improvements | Primary | 213 |
| 1C.1 | Priority Projects | Chamberlayne Avenue Pedestrian Safety Improvements | Primary | 215 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | Primary | 217 |
| 12C | Priority Projects | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | Primary | 219 |
| 9A | Priority Projects | Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements | Primary | 233 |
| 5C | Priority Projects | Fairfield Pedestrian Security and Shade Project | Primary | 238 |
| 6D | Priority Projects | Church Hill Street Lighting | Primary | 240 |
| 4A | Priority Projects | Downtown Safety Spot Improvements | Primary | 242 |
| 9C | Priority Projects | Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike | Primary | 247 |
| 11F | Priority Projects | Richmond High School of the Arts Pedestrian Safety Improvements | Primary | 249 |
| 5A.2 | Priority Projects | Fairfield Avenue/ Fairfield Way Traffic Calming | Primary | 265 |
| 7A | Priority Projects | Williamsburg Road/ Williamsburg Avenue Traffic Calming | Primary | 268 |
| 9B | Priority Completion | Hull Street Streetscape - Mayo Bridge to 9th Street | Primary | 291 |
| 6C | Priority Completion | Shockoe Valley Street Improvements | Primary | 292 |
| 14G | Priority Completion | Allen Avenue Bike-Walk Street | Primary | 294 |
| C1 | Other Completion | Cary Street Safety Curb Extensions | Primary | 296 |
| C17 | Other Completion | Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements | Primary | 299 |
| C18 | Other Completion | Street Lighting - General | Primary | 299 |
| C2 | Other Completion | Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets | Primary | 296 |

Project Recommendations for INC 5: Safety/Security

| ID | Category | Title | Relevance | Page |
|-------|-------------------|--|-----------|------|
| C29 | Other Completion | Cherokee Road Roadside Safety Improvements | Primary | 301 |
| C4 | Other Completion | Main Street Safety Curb Extensions | Primary | 296 |
| 8A | Shorter Term | Dock Street Pedestrian Improvements | Primary | 303 |
| 12D | Longer Term | Route 60/Route 150 Interchange Improvements | Primary | 307 |
| 8C | Longer Term | East Main Street Streetscape Improvements | Primary | 307 |
| 10C | Longer Term | Richmond Highway Pedestrian Safety Improvements | Primary | 307 |
| 2C | Longer Term | Roundabout at Hermitage Rd/ Arthur Ashe Boulevard/ Westwood Ave/ Brookland Pkwy | Primary | 308 |
| 4B | Longer Term | Main Street/Cary Street Two-Way Street Conversion | Primary | 309 |
| 14A | Longer Term | Stuart Circle Roundabout Improvement | Primary | 309 |
| 16C | Longer Term | Three Chopt Road/York Road/ Henri Road Roundabout | Primary | 311 |
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Secondary | 205 |
| 10A.3 | Priority Projects | Terminal Boulevard Shared Use Path | Secondary | 225 |
| 10A.1 | Priority Projects | Bells Road Sidewalks | Secondary | 221 |
| 10A.2 | Priority Projects | Walmsley Boulevard Shared Use Path | Secondary | 223 |
| 3A | Priority Projects | North Avenue Pedestrian Safety Improvements | Secondary | 227 |
| 12A | Priority Projects | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | Secondary | 229 |
| 6A | Priority Projects | Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming | Secondary | 231 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Secondary | 236 |
| 7B | Priority Projects | Government Road Streetscape Improvements | Secondary | 244 |
| 12B.5 | Priority Projects | Southside Pedestrian Improvements - Whitehead Road | Secondary | 259 |
| 3B | Priority Projects | Dove Street Pedestrian Safety Improvements | Secondary | 261 |
| 12B.1 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road north of US Route 60 | Secondary | 251 |
| 12B.2 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road south of US Route 60 | Secondary | 253 |
| 12B.3 | Priority Projects | Southside Pedestrian Improvements - Carnation Street | Secondary | 255 |
| 12B.4 | Priority Projects | Southside Pedestrian Improvements - German School Road | Secondary | 257 |
| 5A.1 | Priority Projects | Coalter Street Traffic Calming | Secondary | 263 |
| 1A | Priority Projects | Westbrook Avenue Pedestrian Improvements | Secondary | 270 |
| 13A | Priority Projects | Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy | Secondary | 278 |
| 17F | Priority Projects | Huguenot Road Bikeway | Secondary | 288 |

Project Recommendations for INC 5: Safety/Security

| ID | Category | Title | Relevance | Page |
|-------|---------------------|---|-----------|------|
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Secondary | 286 |
| 16A | Priority Projects | Three Chopt Road Sidewalks | Secondary | 283 |
| 11C | Priority Completion | Southwood Parkway Sidewalk | Secondary | 291 |
| 12F | Priority Completion | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | Secondary | 291 |
| 9D | Priority Completion | Mayo Bridge Pedestrian and Bicycle Facilities | Secondary | 292 |
| 11B | Priority Completion | Hey Road Improvements | Secondary | 292 |
| 14H.1 | Priority Completion | Franklin Street Cycle Track - Lombardy Street to Belvidere Street | Secondary | 294 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | Secondary | 293 |
| 5J | Priority Completion | Oliver Hill Way Bike Lanes | Secondary | 294 |
| 1I | Priority Completion | Fall Line Trail | Secondary | 295 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Secondary | 295 |
| 3L | Priority Completion | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | Secondary | 295 |
| 15C | Priority Completion | Arthur Ashe Boulevard Bridge Replacement | Secondary | 292 |
| 14J | Priority Completion | State Route 161 Bicycle Infrastructure | Secondary | 294 |
| C10 | Other Completion | Shockoe Bottom BRT Streetscape Improvements | Secondary | 297 |
| C11 | Other Completion | Centralized Transit Signal Priority and Emergency Vehicle Preemption | Secondary | 297 |
| C13 | Other Completion | Jefferson Avenue Improvements | Secondary | 298 |
| C15 | Other Completion | Nicholson Street Streetscape | Secondary | 299 |
| C19 | Other Completion | Street Lighting - LED Conversion | Secondary | 299 |
| C20 | Other Completion | Westhampton Area Improvements - Phase III | Secondary | 300 |
| C22 | Other Completion | Hull Street Improvements Phase I - Hey Road to Warwick Road | Secondary | 300 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Secondary | 300 |
| C24 | Other Completion | Maury Street Streetscape | Secondary | 300 |
| C25 | Other Completion | Richmond Highway Improvements | Secondary | 300 |
| C26 | Other Completion | Route 5 Relocation/Williamsburg Road Intersection Improvement | Secondary | 301 |
| C27 | Other Completion | Science Museum BRT Shared Use Path | Secondary | 301 |
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Secondary | 301 |
| C3 | Other Completion | Hull Street at 29th Street Pedestrian Hybrid Beacon | Secondary | 296 |
| C31 | Other Completion | Belvidere Street Gateway - Phase IV | Secondary | 301 |
| C32 | Other Completion | Biotech Research Park Roadway Improvements | Secondary | 301 |

Project Recommendations for INC 5: Safety/Security

| ID | Category | Title | Relevance | Page |
|-----|------------------|---|-----------|------|
| C33 | Other Completion | Mary Munford Elementary School Pedestrian Safety Improvements | Secondary | 301 |
| C5 | Other Completion | Richmond Highway Phase II Improvements | Secondary | 296 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | Secondary | 297 |
| C9 | Other Completion | Scott's Addition Green Space | Secondary | 297 |
| 16B | Shorter Term | York Road Sidewalks | Secondary | 306 |
| 1J | Shorter Term | Brook Road Bike Lanes Protection | Secondary | 304 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Secondary | 307 |
| 1B | Longer Term | Azalea Avenue Streetscape Improvements | Secondary | 307 |
| 3K | Longer Term | Brookland Park Boulevard Bikeway | Secondary | 307 |
| 13G | Longer Term | Bliley Road Sidewalk and Bike Lanes | Secondary | 308 |
| 15J | Longer Term | Lombardy Street Protected Bike Lanes | Secondary | 308 |
| 15I | Longer Term | Leigh Street Bike Lanes - Dinneen St to 8th St | Secondary | 308 |
| 5I | Longer Term | Hospital Street/ Bowling Green Road/ Wood Street Bikeway | Secondary | 308 |
| 7I | Longer Term | Rockett's Landing to Fulton Bike Connection | Secondary | 308 |
| 1K | Longer Term | Hermitage Road Buffered Bike Lanes | Secondary | 309 |
| 9M | Longer Term | Bainbridge Street/Forest Hill Avenue Bike Lanes | Secondary | 309 |
| 5H | Longer Term | Valley Road Shared Use Path | Secondary | 309 |
| 4M | Longer Term | 1st Street Cycle Track | Secondary | 309 |
| 3J | Longer Term | Magnolia Street Bikeway | Secondary | 309 |
| 7J | Longer Term | Admiral Gravelly Boulevard/Jennie Scher Road Bikeway | Secondary | 309 |
| 6J | Longer Term | Church Hill Bikeway Connection | Secondary | 309 |
| 15D | Longer Term | Scott's Addition/Boulevard Shared-Use Path | Secondary | 309 |
| 3H | Longer Term | Overbrook Road Bikeway | Secondary | 310 |
| 12J | Longer Term | Whitehead Road Bikeway | Secondary | 310 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | Secondary | 310 |
| 11N | Longer Term | Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | Secondary | 310 |
| 3M | Longer Term | Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | Secondary | 310 |
| 10H | Longer Term | Commerce Road Improvements at Walmsley Boulevard | Secondary | 310 |
| 11G | Longer Term | East Belt Boulevard Improvements | Secondary | 310 |
| 3I | Longer Term | Fendall Ave/ N 1st St Bikeway | Secondary | 310 |
| 14I | Longer Term | Mulberry Street Bikeway | Secondary | 311 |

Project Recommendations for INC 5: Safety/Security

| ID | Category | Title | Relevance | Page |
|-----|-------------|---|-----------|------|
| 9L | Longer Term | Maury Street Bikeway | Secondary | 311 |
| 9N | Longer Term | West 29th Street Bikeway | Secondary | 311 |
| 17B | Longer Term | Powhite Greenway | Secondary | 311 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | Secondary | 311 |
| 17G | Longer Term | Cherokee Road Bikeway | Secondary | 311 |
| 10L | Longer Term | Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | Secondary | 311 |
| 11O | Longer Term | Terminal Avenue Bike Lanes - Broad Rock Boulevard to Belt Boulevard | Secondary | 311 |
| 11P | Longer Term | Bikeways on Bryce Lane and Snead Road | Secondary | 311 |

Strategy Recommendations for INC 5: Safety/Security

SAFE ROUTES TO SCHOOL (5.1)*

Continue to seek more money for Safe Routes to School safety projects like more school crossing guards, better school-zone speed enforcement, and walking school bus programs. Hire school bus monitors to increase safety and security on school buses.

**This strategy is originally from the Vision Zero Action Plan Legislative and Budget recommendations, which reads, "Expand Safe Routes to School to all schools, and integrate Vision Zero principles into the school transportation policies and efforts at Richmond Public Schools."*

Next Steps:

OETM

- Advocate to allocate City funds to SRTS to leverage additional funds.

Richmond Public Schools

- Hire school bus monitors to increase safety and security on school buses.

Richmond Police Department

- Better enforce school-zone speed limits.



Partners in this strategy could include:

Greater Richmond Fit4Kids, VDOT, community partners

CROSSWALK VISIBILITY (5.2)*

Improve intersections to make sure drivers can see people crossing the street and people waiting to cross, including increasing lighting at unsafe intersections and deploying sight clearance techniques.

**This strategy is originally from the Vision Zero Action Plan Legislative and Budget recommendations, which reads, "Evaluate and update policy regarding sight distance at intersections (on-street parking and other factors) to improve safety."*

Virginia Commonwealth University completed a Pedestrian Safety Study in 2023 that makes several recommendations in the Monroe Park Campus and Academic Medical Center that are relevant to this strategy, including No Turn on Red signage, pedestrian crossing improvements (longitudinal crosswalk markings, curb extensions, and corner clearance markings), signal improvements (leading pedestrian intervals, rectangular rapid flashing beacons, pedestrian hybrid beacons, and left-turn hardening), and roadway improvements (speed tables, raised intersections, and road closures). This strategy includes evaluating these potential improvements and identifying locations where they are most needed over the entire City.

Next Steps:

DPW

- Assess intersection lighting improvement prioritization for pedestrian safety.
- Create a transparent and accessible process for improving street lighting in areas with high safety/security needs.
- Identify locations where crosswalk visibility improvements are needed. Install improvements, which could include curb bump-outs, including curb bump-outs, pedestrian refuge islands, intersection murals, and crosswalk murals, and other intersection improvements to slow down vehicles.



LQC Implementation could involve: Temporary or movable pedestrian refuge islands, raised crosswalks, curb bump-outs, test "road diets", left turn hardening hardening, chicanes, intersection murals, and crosswalk murals (placed in front of the crosswalk so as to not impede the crosswalk striping).

Strategy Recommendations for INC 5: Safety/Security

COMPLETE STREETS (5.3)

Change project development and funding processes to develop, design, and fund projects that prioritize pedestrians, bicyclists, and transit. Develop and design projects to holistically improve all sustainable modes, not just addressing one mode or issue at a time. Prepare corridor plans for safety for all modes along Great Streets as designated in *Richmond 300*.

Next Steps:

OETM

- Develop a legislative agenda and educational materials for key city leaders to advocate for changing local transportation funding processes to prioritize projects that holistically prioritize pedestrians, bicyclists, and transit.
- Develop key talking points and bill amendments to advocate to state and federal legislators to change state and national transportation funding processes to prioritize projects that holistically prioritize pedestrians, bicyclists, and transit.
- Develop an equity scorecard for reviewing all large transportation projects.

DPW

- Develop corridor plans to redesign the Great Streets to prioritize pedestrians, transit, and bicyclists.
- Support OETM to advocate for changes to local, state, and federal funding programs.

STUDY AND DEMO CAR-FREE STREETS (5.4)*

Identify opportunities for using Richmond's streets to create great places for people and improve pedestrian safety through temporary or permanent street closures. This could include temporary weekend closures of Cary Street in Carytown, Hull Street in Old Manchester during Mayo Bridge rehabilitation, Shockoe Slip, Floyd Avenue, Grace Street, or other streets.

This strategy is originally from Richmond 300, Objective 8.1, Strategy F which reads "Consider permanent or temporary street closures and expanding and improving bike-walk streets, which are not entirely closed to cars but use physical infrastructure to slow cars. This could include, but is not limited to, weekend closures of Riverside Drive for bicycle and pedestrian use and/or weekend closures of Cary Street in Carytown for bicycle, pedestrian, and retail use."

This strategy is related to Strategy 6.5 Try Bike-Walk and Slow Streets under INC 6 Connectivity.

Next Steps:

OETM

- Identify potential locations with resident and business support for street closure demonstrations.
- Study the potential access, safety, traffic, and business benefits and drawbacks of closing the street to vehicles, and identify time periods for temporary testing.
- Conduct temporary tests with data collection to validate impacts.



LQC Implementation could involve: weekend demos.



Partners in this strategy could include: PDR, DPW, local business associations

Strategy Recommendations for INC 5: Safety/Security

ESSENTIAL PUBLIC FACILITIES (5.5)

Install more benches throughout the city and build free-standing public restrooms along routes where lots of people walk, or provide financial incentives to businesses for allowing public use of restrooms.

Next Steps:

OETM

- Identify key staff and funding sources.
- Work with community organizations to designate key areas of need.



LQC Implementation could involve:
temporary benches, parklets, and pop-up placemaking events.



Partners in this strategy could include: DPW, PDR, community partners

Strategy Recommendations for INC 5: Safety/Security

OTHER HIGH IMPORTANCE STRATEGIES

- **DESIGN FOR SLOW SPEEDS:** Change the streets so it's not easy to drive fast.
- **REVENUE FOR SAFETY PROJECTS:** Use the money from writing tickets to fund projects that improve pedestrian and bicycle safety.

MEDIUM IMPORTANCE STRATEGIES

- **BUS SAFETY:** Add lighting and armed security at the bus stops.
- **SPEED CAMERAS:** Use cameras for automated enforcement to issue notifications, warnings, and tickets for speeding.
- **CRASH REPORTING:** Work with local news reporters to report on crashes without victim-blaming.
- **NO RIGHT ON RED:** Make all intersections No Right Turn On Red.
- **RED LIGHT CAMERAS:** Use cameras for automated enforcement to issue warnings and tickets for running red lights.
- **SPOKESPEOPLE FOR SAFETY:** Get the Mayor and City leasers to talk about why safety is important and tell people the City will be stepping up enforcement (issuing warnings and writing tickets) in a way that does not negatively impact minority or low-income people more than others.

LOW IMPORTANCE STRATEGIES

- **SPEED LIMIT SIGNAGE:** Closer-spaced speed limit signs.
- **NEW SPEED TECHNOLOGY:** Look into other potential tools and strategies for reducing speeding. Include exploration of 'smart roads' or other technology that can communicate with cars and smartphones when someone is in an intersection and ones that can stop distracted driving.

- **POLICE TRAINING:** Train police officers on transportation safety priorities and how to communicate with Communities of Opportunity, and enforce laws without escalating.

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **BIKE LANE STREET SWEEPERS:** Purchase additional bike lane street-sweepers to keep bike lanes clean. (INC 7 Maintenance)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

6: CONNECTIVITY



Project recommendations for the Connectivity investment need category include new street connections, including over highways and across railroad tracks. Several shared use path and trail projects will create key connections for pedestrians and bicyclists. Microtransit will provide critical connections to the bus system, especially in areas where densities are not high enough to support fixed-route transit service.

Project Recommendations for INC 6: Connectivity

| ID | Category | Title | Relevance | Page |
|-------|---------------------|---|-----------|------|
| 4G | Priority Projects | Reconnect Jackson Ward | Primary | 277 |
| 11A | Priority Projects | Southside Plaza Pedestrian Connections Across Railroad Tracks | Primary | 281 |
| 14L | Priority Projects | Carytown Pedestrian Safety Improvements | Primary | 290 |
| 6F | Priority Completion | Gillies Creek Greenway | Primary | 294 |
| 1I | Priority Completion | Fall Line Trail | Primary | 295 |
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Primary | 301 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Primary | 305 |
| 16H | Shorter Term | Malvern Avenue Sight Distance Evaluation | Primary | 306 |
| 11D | Longer Term | Southside Plaza Street Grid | Primary | 307 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Primary | 307 |
| 7C | Longer Term | Old Fulton Street Grid | Primary | 307 |
| 9F | Longer Term | Riverside Shared-Use Path | Primary | 308 |
| 5H | Longer Term | Valley Road Shared Use Path | Primary | 309 |
| 6J | Longer Term | Church Hill Bikeway Connection | Primary | 309 |
| 14F | Longer Term | Randolph Connection Over I-195 | Primary | 310 |
| 10F | Longer Term | Walmsley Boulevard Street Connection | Primary | 310 |
| 4H | Longer Term | Reconnect Clay and 6th Streets | Primary | 311 |
| 15E | Longer Term | Norfolk Street Bridge | Primary | 311 |
| 15F | Longer Term | MacTavish Avenue Bridge | Primary | 311 |
| 10A.3 | Priority Projects | Terminal Boulevard Shared Use Path | Secondary | 225 |
| 10A.1 | Priority Projects | Bells Road Sidewalks | Secondary | 221 |
| 10A.2 | Priority Projects | Walmsley Boulevard Shared Use Path | Secondary | 223 |
| 12A | Priority Projects | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | Secondary | 229 |
| 7G | Priority Projects | Pulse Bus Rapid Transit Eastern Extension | Secondary | 246 |
| 12B.5 | Priority Projects | Southside Pedestrian Improvements - Whitehead Road | Secondary | 259 |

Project Recommendations for INC 6: Connectivity

| ID | Category | Title | Relevance | Page |
|-------|---------------------|---|-----------|------|
| 12B.1 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road north of US Route 60 | Secondary | 251 |
| 12B.2 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road south of US Route 60 | Secondary | 253 |
| 12B.3 | Priority Projects | Southside Pedestrian Improvements - Carnation Street | Secondary | 255 |
| 12B.4 | Priority Projects | Southside Pedestrian Improvements - German School Road | Secondary | 257 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Secondary | 280 |
| 16A | Priority Projects | Three Chopt Road Sidewalks | Secondary | 283 |
| 9D | Priority Completion | Mayo Bridge Pedestrian and Bicycle Facilities | Secondary | 292 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Secondary | 295 |
| 3L | Priority Completion | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | Secondary | 295 |
| 14G | Priority Completion | Allen Avenue Bike-Walk Street | Secondary | 294 |
| 14J | Priority Completion | State Route 161 Bicycle Infrastructure | Secondary | 294 |
| C21 | Other Completion | Deepwater Terminal Road Connector to Goodes Street | Secondary | 300 |
| C22 | Other Completion | Hull Street Improvements Phase I - Hey Road to Warwick Road | Secondary | 300 |
| C27 | Other Completion | Science Museum BRT Shared Use Path | Secondary | 301 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | Secondary | 297 |
| C9 | Other Completion | Scott's Addition Green Space | Secondary | 297 |
| G2 | Other Completion | GRTC Dedicated Lanes Study | Secondary | 302 |
| G3 | Other Completion | Downtown Transfer Center | Secondary | 302 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Secondary | 303 |
| 10J | Shorter Term | Richmond Highway Transit Improvements | Secondary | 304 |
| 14H.2 | Shorter Term | Monument Avenue Bike Lanes | Secondary | 305 |
| 16B | Shorter Term | York Road Sidewalks | Secondary | 306 |
| 10M | Longer Term | Richmond Highway Revitalization | Secondary | 308 |
| 1H | Longer Term | Ridesharing Vouchers | Secondary | 308 |
| 3N | Longer Term | Northside Bikeshare Stations | Secondary | 308 |
| 15I | Longer Term | Leigh Street Bike Lanes - Dinneen St to 8th St | Secondary | 308 |
| 5I | Longer Term | Hospital Street/ Bowling Green Road/ Wood Street Bikeway | Secondary | 308 |
| 7I | Longer Term | Rockett's Landing to Fulton Bike Connection | Secondary | 308 |
| 1K | Longer Term | Hermitage Road Buffered Bike Lanes | Secondary | 309 |
| 10N | Longer Term | Greenspace/Park near Richmond Highway | Secondary | 309 |
| 9M | Longer Term | Bainbridge Street/Forest Hill Avenue Bike Lanes | Secondary | 309 |

Project Recommendations for INC 6: Connectivity

| ID | Category | Title | Relevance | Page |
|-----|-------------|--|-----------|------|
| 4M | Longer Term | 1st Street Cycle Track | Secondary | 309 |
| 3J | Longer Term | Magnolia Street Bikeway | Secondary | 309 |
| 12K | Longer Term | Southside Community Center Bikeshare Station | Secondary | 309 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | Secondary | 309 |
| 15D | Longer Term | Scott's Addition/Boulevard Shared-Use Path | Secondary | 309 |
| 6K | Longer Term | Venable/Mosby Bikeshare Station | Secondary | 309 |
| 3H | Longer Term | Overbrook Road Bikeway | Secondary | 310 |
| 3M | Longer Term | Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | Secondary | 310 |
| 8G | Longer Term | East End Bikeshare Stations | Secondary | 310 |
| 14K | Longer Term | Near West End Bikeshare Stations | Secondary | 310 |
| 3I | Longer Term | Fendall Ave/ N 1st St Bikeway | Secondary | 310 |
| 14I | Longer Term | Mulberry Street Bikeway | Secondary | 311 |
| 17B | Longer Term | Powhite Greenway | Secondary | 311 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | Secondary | 311 |
| 10L | Longer Term | Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | Secondary | 311 |

Strategy Recommendations for INC 6: Connectivity

INTERCONNECTED TRAILS (6.1)*

Create an interconnected system of parks, trails, and greenways, with primary trail sections connecting to Nodes and Great Streets, so people can travel throughout the city while avoiding using the streets. Use railroad alignments to build more trails (i.e. “rails-to-trails”). Identify opportunities for utilizing public alleys as biodiverse shared streets and active transportation corridors.

**This strategy is originally from Richmond 300, Objective 8.2, Strategy A: “Develop greenways throughout the city connecting Nodes, neighborhoods, and adjacent localities; focus efforts specifically in South Richmond and including, but not limited to, the following greenways: the Fall Line Trail, James River Branch, Kanawha Canal, Manchester Canal, and South Bank of the James River.”*

Next Steps:

PCRF

- Develop the Parks Master Plan
- Update the publicly accessible Parks and Open Space map to include existing and planned greenways and trails.

DPW

- Identify and assess gaps in the future Greenways network established in Richmond 300 (Figure 27 in the Richmond 300 Master Plan).
- Seek funding, including alternative parks funding, to build these trails.
- Work with VDOT’s office of trails, Department of Conservation, and tourism groups to raise capital for such a network.



Partners in this strategy could include: OETM, PDR, VDOT, PlanRVA, DED, community partners like Friends of James River Park, Friends of Bryan Park, and Friends of Forest Hill Park.

BILINGUAL TRANSPORTATION INFORMATION & SIGNAGE (6.2)

Distribute resources both online and in hard copy, and in both Spanish and English, about Richmond’s transportation options and how to use them. Work with Greyhound, Amtrak, GRTC, and other regional travel providers to ensure materials, signs, and booking platforms are available in both English and Spanish. Require all City and GRTC transportation materials to be bilingual.

Next Steps:

OETM

- Work with the Office of Immigrant and Refugee Engagement and GRTC to conduct a comprehensive review of signs and other transportation materials for language accessibility.
- Change City requirements to require all transportation materials to be provided in English and Spanish.

GRTC

- Change requirements to require all transportation materials to be provided in both English and Spanish, if not required already.
- Conduct a review of existing transportation materials and prepare a plan to replace monolingual materials.



LQC Implementation could involve: quick installation of bilingual signage



Partners in this strategy could include: Office of Immigrant and Refugee Engagement, Amtrak, Greyhound

Strategy Recommendations for INC 6: Connectivity

WHEELCHAIR RIDES (6.3)

Get the word out that people who use wheelchairs can get same-day, direct, non-stop rides through Round Trip and UZURV, and help low-income people pay for this service.

Next Steps:

OETM

- Create and execute an on-the-ground information dissemination plan about this existing program.



LQC Implementation could involve: signage and awareness materials.



Partners in this strategy could include: Department of Aging & Disability Services, GRTC, PlanRVA, and community partners like Senior Connections

BRING TRANSIT TO MORE PEOPLE (6.4)

Increase the percentage of housing and jobs near transit, by both expanding bus service into areas that are not served, and by increasing job and housing density in areas already served by transit. Support GRTC bus route expansion. Advertise the areas around bus stops to builders and businesses as good places to put more affordable housing and good paying jobs.

This strategy is related to Strategy 4.1 Coordinate Transit and Development under INC 4 Land Use.

Next Steps:

PDR

- Include CVTA in the TOD task force

OETM

- Build a relationship with the CVTA members and offer to provide assistance with data and engagement.



Partners in this strategy could include: CVTA, GRTC

Strategy Recommendations for INC 6: Connectivity

TRY BIKE-WALK OR SLOW STREETS (6.5)*

Experiment with creating bike-walk streets that are designed for people to walk in the street and cars go slow around them.

**This strategy is originally from Richmond 300, Objective 8.1, Strategy F which reads "Consider permanent or temporary street closures and expanding and improving bike-walk streets, which are not entirely closed to cars but use physical infrastructure to slow cars. This could include, but is not limited to, weekend closures of Riverside Drive for bicycle and pedestrian use and/or weekend closures of Cary Street in Carytown for bicycle, pedestrian, and retail use."*

Next Steps:

OETM & DPW

- Incorporate into an OETM Lighter/Quicker/Cheaper program to demo creative solutions to the most pressing transportation problems.



LQC Implementation could involve:
Demonstration days



Partners in this strategy could include: PDR, community partners

OTHER HIGH IMPORTANCE STRATEGIES

- **ACCESSIBLE BUS STOPS:** Focus on making bus stops and getting to the bus stop easier for people who have disabilities.
- **BIKE SHARE DISTRIBUTION:** Add more bike-share stations near bus stops and low-income communities. Consider dockless bikes.
- **MORE BIKE RACKS:** Install more bike racks.
- **ELECTRIC CAR SHARE:** Create an electric vehicle car-share program where folks can rent an EV by the hour, and make it low-cost for people with low incomes. (INC 10 Sustainability)
- **FREE GROCERY TRIPS:** Provide free Lyft/Uber rides to and from the grocery store for low-income residents. (INC 8 Economic Development)
- **FREE RIDES TO WORK:** Expand the free rides to work program, which includes childcare drop offs, encourage employers to pay for this to offset costs, and give priority to Richmonders living in unsafe areas. (INC 8 Economic Development)

MEDIUM IMPORTANCE STRATEGIES

- None

LOW IMPORTANCE STRATEGIES

- None

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **E-BIKE VOUCHERS:** Give out vouchers to reduce the price of electric bikes for people with low incomes. (INC 10 Sustainability)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

7: MAINTENANCE



Three project recommendations are primarily relevant to the Maintenance investment need category. The Richmond Connects Equity-Driven Sidewalks Projects recommendation is to create a new citywide program to fill sidewalk gaps, repair broken sidewalks, and install curb ramps in the areas with highest equity-based needs. The Richmond Connects Equity-Centered Pavement Maintenance Prioritization recommends to move pavement maintenance projects that Communities of Concern have consistently identified as high need to the top of the repaving cycle list and seek additional funds to repave these roads. The Arthur Ashe Boulevard Bridge Replacement has secured federal funds, and the Richmond Connects recommendation highlights this as a key opportunity for providing safe, separate, protected facilities for pedestrians and bicyclists.

Project Recommendations for INC 7: Maintenance

| ID | Category | Title | Relevance | Page |
|-----|---------------------|--|-----------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Primary | 205 |
| 4K | Priority Projects | Richmond Connects Equity-Centered Pavement Maintenance Prioritization | Primary | 271 |
| 15C | Priority Completion | Arthur Ashe Boulevard Bridge Replacement | Primary | 292 |
| 9C | Priority Projects | Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike | Secondary | 247 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Secondary | 286 |
| 6C | Priority Completion | Shockoe Valley Street Improvements | Secondary | 292 |
| 12H | Shorter Term | GRTC Route 1A (Midlothian Turnpike) Improvements | Secondary | 303 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Secondary | 305 |
| 8C | Longer Term | East Main Street Streetscape Improvements | Secondary | 307 |

Strategy Recommendations for INC 7: Maintenance

MAINTENANCE INFORMATION & TRANSPARENCY (7.1)

Educate Richmonders on who to call for road and sidewalk maintenance, how they can help spread the word, and what maintenance they and their neighbors are responsible for. Promote the 311 app, phone line, and website, and continue to make maintenance prioritization and progress transparent.

Next Steps:

OSC

- Coordinate with DPW and OETM on key messaging.



Partners in this strategy could include: DPW, OSC

MAINTENANCE TRACKER (7.2)

Create an online tracker for maintenance projects in the 311 app so residents can see what is being worked on, when it is expected to be completed, and what is up next.

Next Steps:

DIT

- Work with DPW to create an online maintenance tracker in the 311 app.



Partners in this strategy could include: DPW, OSC

MAINTENANCE PROGRESS SHARING (7.3)

Host events every six months to share city maintenance progress and work with residents to determine what needs to happen next. Invite City Council members and decision makers to have a role in these meetings. Locate these meetings at venues in the community.

Next Steps:

OSC

- Work with City Councilmembers to determine time and places to host progress meetings.



Partners in this strategy could include: DPW, OETM

Strategy Recommendations for INC 7: Maintenance

BIKE LANE AND STREET CLEANING (7.4)

Frequently clean the bike lanes and travel lanes. Replace broken trash bins with durable bins to reduce instances of trash spilling out from high winds. Communicate to residents that it is illegal to store trash, including yard debris, in the public right-of-way, including the bike lanes.

Next Steps:

DPW

- Publish bike lane and street cleaning schedule.
- Make adjustments to clean the bike lanes and streets more frequently.

DPU

- Examine city trash can emptying schedule and identify resources (money, additional staff) needed to empty cans more frequently.
- Research options for more durable bins. Prepare a plan to replace bins with more durable options.



Partners in this strategy could include: Venture Richmond (Clean Streets program)

OTHER HIGH IMPORTANCE STRATEGIES

- None

MEDIUM IMPORTANCE STRATEGIES

- **Bike Lane Street-Sweepers:** Purchase additional bike lane street-sweepers to keep bike lanes clean.

LOW IMPORTANCE STRATEGIES

- None

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

8: ECONOMIC DEVELOPMENT



Project recommendations for the Economic Development investment need category include working with residents to revitalize areas with poor job and retail access because of a lack of nearby relevant destinations, providing vouchers for ridesharing or other transit alternatives to improve job access in high need areas, and planning for BRT along Mechanicsville Turnpike and Williamsburg Road.

Project Recommendations for INC 8: Economic Development

| ID | Category | Title | Relevance | Page |
|-----|---------------------|---|-----------|------|
| 7B | Priority Projects | Government Road Streetscape Improvements | Primary | 244 |
| C12 | Other Completion | Highland Grove/ Dove Street Redevelopment | Primary | 298 |
| 10B | Longer Term | Richmond Highway Great Street Transformation | Primary | 307 |
| 12L | Longer Term | Midlothian Area Revitalization | Primary | 307 |
| 10M | Longer Term | Richmond Highway Revitalization | Primary | 308 |
| 1H | Longer Term | Ridesharing Vouchers | Primary | 308 |
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Primary | 311 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Secondary | 236 |
| 7G | Priority Projects | Pulse Bus Rapid Transit Eastern Extension | Secondary | 246 |
| 4K | Priority Projects | Richmond Connects Equity-Centered Pavement Maintenance Prioritization | Secondary | 271 |
| 4G | Priority Projects | Reconnect Jackson Ward | Secondary | 277 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Secondary | 280 |
| 9B | Priority Completion | Hull Street Streetscape - Mayo Bridge to 9th Street | Secondary | 291 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | Secondary | 293 |
| 16D | Priority Completion | Broad Street Streetscape with Pulse BRT Expansion | Secondary | 293 |
| 1I | Priority Completion | Fall Line Trail | Secondary | 295 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Secondary | 295 |
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Secondary | 301 |
| C9 | Other Completion | Scott's Addition Green Space | Secondary | 297 |
| G1 | Other Completion | Western Pulse Extension | Secondary | 302 |
| G3 | Other Completion | Downtown Transfer Center | Secondary | 302 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Secondary | 303 |
| 16E | Shorter Term | Willow Lawn Park-and-Ride | Secondary | 306 |

Project Recommendations for INC 8: Economic Development

| ID | Category | Title | Relevance | Page |
|-----|--------------|--|-----------|------|
| 2E | Shorter Term | Link: On-Demand Microtransit | Secondary | 305 |
| 11J | Longer Term | Southside Plaza Transfer Center | Secondary | 307 |
| 1B | Longer Term | Azalea Avenue Streetscape Improvements | Secondary | 307 |
| 7C | Longer Term | Old Fulton Street Grid | Secondary | 307 |
| 3K | Longer Term | Brookland Park Boulevard Bikeway | Secondary | 307 |
| 3N | Longer Term | Northside Bikeshare Stations | Secondary | 308 |
| 10N | Longer Term | Greenspace/Park near Richmond Highway | Secondary | 309 |
| 5H | Longer Term | Valley Road Shared Use Path | Secondary | 309 |
| 12K | Longer Term | Southside Community Center Bikeshare Station | Secondary | 309 |
| 6K | Longer Term | Venable/Mosby Bikeshare Station | Secondary | 309 |
| 8G | Longer Term | East End Bikeshare Stations | Secondary | 310 |

Strategy Recommendations for INC 8: Economic Development

FREE RIDES TO WORK AND DAY CARE (8.1)

Expand the free rides to work program, which currently includes child care drop-offs, so Richmonders who are on the waitlist can be served. Encourage employers to financially contribute to this program. Give priority to Richmonders living in Communities of Concern.

Next Steps:

OETM

- Secure additional funding and vendors to provide this service.
- Assign a dedicated manager to this program.



Partners in this strategy could include:
OCWB, DSS

FREE GROCERY TRIPS (8.2)

Provide free Lyft/Uber rides to and from the grocery store for low-income residents and seniors, or consider providing free grocery delivery services.

Next Steps:

OETM

- Identify key staff and dedicated funding. Coordinate with GRTC. Start with a small pilot.



LQC Implementation could involve: pilot program



Partners in this strategy could include: DSS, RRHA, GRTC

ASSESS INVESTMENT EQUITY RISKS (8.3)

Before a new building is built or a large transportation project is implemented, evaluate the risks and benefits of this investment to equity and displacement. Identify strategies to keep existing residents from getting pushed out. Provide education on and access to abatement and displacement mitigation programs.

**This strategy is related to Richmond 300, Objective 11.2, Strategy A, which reads, "Develop equity scorecard to evaluate public-private development projects, including items such as ensuring residents within a community are first hired/considered for development projects."*

Next Steps:

OETM

- Develop an equity scorecard to evaluate equity risks and benefits of transportation infrastructure projects, private developments, and developments on City-owned properties.

PDR

- Require private developers to complete the equity scorecard as part of the development review process.

DPW

- Complete the equity scorecard for transportation projects as part of the project implementation workflow.



Partners in this strategy could include:
Private developers, Community partners

Strategy Recommendations for INC 8: Economic Development

NODE IDENTITY BRANDING (8.4)*

Create an attractive easy-to-recognize identity for areas where more jobs and housing are desired, like in the Southside Nodes, to attract builders and businesses and bring more shopping, affordable housing, transit service, and jobs to these areas.

**This strategy is originally from Richmond 300, Objective 11.5, Strategy D: "Develop marketing materials for Nodes that highlight the uniqueness of each Node, the forthcoming zoning and infrastructure improvements, and information on economic development incentives that are available in the area."*

Next Steps:

PDR

- Continue the Node task force meetings in the CAO's office to develop branding for priority Nodes.
- Pursue small area planning grants.
- Designate Nodes as UDAs to access state planning dollars.



LQC Implementation could involve: pop-up placemaking and wayfinding.



Partners in this strategy could include: OSC, CAO Office, OETM

COMMUNITY VISION (8.5)*

Work with community residents to create a vision for what the community should look and feel like in the future in low-density areas where more housing and jobs are needed, like Southside Nodes. Set city policy to make sure new roads, paths, and buildings are built in line with that vision.

**This strategy is related to Richmond 300, Objective 1.2 which reads "Develop and adopt small area plans for areas that require more examination." While Richmond 300 Objective 1.2, Strategy B identifies small area plans for the Priority Growth Nodes at Shockoe, the Southside Plaza Area, and Stony Point, small area plans should also be developed for the other Nodes in Southside. Many of these Nodes have a high percentage of residents that are in Communities of Concern, who do not own a car. These areas are currently low-density, and it is difficult to justify providing frequent bus service to these areas from a financial standpoint. This strategy is intended to build up the housing and jobs in these Southside Nodes to make transit service more attractive and financially justifiable.*

Next Steps:

PDR

- Pursue small area planning grants.
- Designate Southside Nodes as UDAs to access site planning dollars.
- Prioritize Nodes in or near Communities of Opportunity and Southside Nodes for small area planning.



LQC Implementation could involve: pop-up placemaking and wayfinding.



Partners in this strategy could include: community partners such as VA Community Voice, neighborhood associations, and local economically disadvantaged developers.

Strategy Recommendations for INC 8: Economic Development

WEALTH-BUILDING & HOME OWNERSHIP RESOURCES (8.6)*

Create a central place where low-income and minority residents can go to get information on homeownership and household financial planning, including information and help applying for home and maintenance loans and grants, financial literacy classes, and help with investing. Provide education to residents on credit and buying a house. Give grants to existing community members to buy or fix up houses to build wealth and preserve existing neighborhoods (i.e. preventing neighborhoods from being redeveloped from out-of-town developers). Create incentives for small and local developers.

**This strategy is originally from Richmond 300, Objective 14.1, Strategy D, which reads “Create a center for homeownership that is a clearinghouse for information on City programs, grants, loans, and education, partnering with state agencies such as Virginia Housing Development Authority (VHDA) and the Virginia Department of Housing and Community Development to increase homeownership, particularly among Black and Latino households.” This strategy is included in Richmond Connects because it was a top need identified in conversations with and prioritized by Communities of Concern.*

Next Steps:

OCWB & DHCD

- Apply for grants and seek resources to establish and expand existing programs.



Partners in this strategy could include:

OETM, PDR, community partners like Maggie Walker Land Trust, Project Homes, Habitat for Humanity, Rebuild Together.

ATTRACT GROCERY STORES (8.7)*

Attract healthy food retailers to low-income areas by increasing residential density and providing financial and technical support for retailer creation, expansion, remodeling, or equipment upgrades.

**This strategy is taken verbatim from Richmond 300, Objective 17.4, Strategy D. It is repeated here to address the need that Richmonders consistently expressed in the Richmond Connects engagement process. The next steps presented here are intended to support advancement of the original Richmond 300 strategy.*

Next Steps:

PDR

- Conduct a food access assessment. Work with DED to identify sites where grocery retailers are most needed and could be good candidates. Identify site improvements that could be done to “ready” a site for this type of use.

DED

- Promote the grocery retailer sites identified to developers and provide incentives.



Partners in this strategy could include:

OETM, DPW

Strategy Recommendations for INC 8: Economic Development

OTHER HIGH IMPORTANCE STRATEGIES

- **INCENTIVE TRANSPORTATION INVESTMENT:** Work out deals with builders and developers to include new transportation amenities if they include affordable housing in their buildings.
- **CHILDCARE ACCESS:** Create more affordable daycare options and identify transportation barriers to childcare.
- **FREE GROCERY TRIPS:** Provide free Lyft/Uber rides to and from the grocery store for low-income residents. City should have a contract with Instacart.
- **FREE WIFI AT BUS STOPS:** Add free wifi at bus stops in areas with limited technology access.

MEDIUM IMPORTANCE STRATEGIES

- **DEVELOPER/RESIDENT COMMUNICATION:** Work with residents to create neighborhood-specific guidelines for the Department of Public Works, other city offices, as well as builders and developers on how best to get in touch with them and how best to talk to them about future projects.
- **ENCOURAGE FEWER CARS TO WORK:** Incentivize employers in the City to encourage less use of cars, including allowing work-from-home days, help with carpooling, helping to understand reliability issues of employees taking the bus, and helping their employees to bike/walk by providing showers and changing rooms.

LOW IMPORTANCE STRATEGIES

- None

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **E-BIKE VOUCHERS** Give out vouchers to reduce the price of electric bikes for people with low incomes. (INC 10 Sustainability)

- **ELECTRIC CAR SHARE** Create an electric vehicle car-share program where folks can rent an EV by the hour, and make it low-cost for people with low incomes. (INC 10 Sustainability)
- **SCOOTER DISTRIBUTION:** Make sure e-scooters are distributed throughout the city, and low-income areas are included. (INC 9 Technology)
- **REVENUE FOR SAFETY PROJECTS:** Use the money from writing tickets to fund projects that improve pedestrian and bicycle safety. (INC 5 Safety/Security)
- **PUBLIC AMENITIES:** Install more benches throughout the city and build free-standing public restrooms along routes where lots of people walk, or provide financial incentives to businesses for allowing public use of restrooms. (INC 5 Safety/Security)
- **HOUSING NEAR TRANSIT:** Encourage affordable housing located near bus stops and areas easily accessible by bus, bike, or walking. Make sure the housing stays affordable, and make sure Richmonders are educated and provided resources to locate existing affordable housing near transit. (INC 4 Land Use)
- **HOUSING DIVERSITY:** Loosen the laws so that more types of housing (apartments, townhouses, small homes, etc.) for a variety of income levels can be built easily. (INC 4 Land Use)
- **HOUSING VOUCHERS:** Make sure landlords honor housing choice vouchers and don't use them as a way to discriminate in housing applications. (INC 4 Land Use)
- **NEW JOBS IN NODES:** Bring new businesses and more jobs into the Nodes - these are areas where jobs and people are today and will continue to grow in the future, and make sure they are well-served by bus, bike, and walk access. (INC 4 Land Use)
- **MOBILITY AND PARKING APP:** Create a user-friendly app that can guide you to key destinations (health care, parks, shopping, etc.) and describe the bus routes, schedules, and transfers to minimize travel time. Include all RVA public parking pricing and restrictions so residents can know when and where they can park and see prices in advance. (INC 4 Land Use)

Strategy Recommendations for INC 8: Economic Development

- **BUILD UP THE NODES:** Encourage more density and more walkable new development in the *Richmond 300* Nodes. Bring new businesses and more jobs into the Nodes, and make sure they are well-served by bus, bike, and walk access. Require developments in Nodes be dense and walkable. Prioritize city investments to make the Nodes walkable and dense. (INC 4 Land Use)
- **ACCESS TO PARKS:** Create new parks throughout the city so all Richmond residents live within a ten minute walk of a park. When deciding where to put a new park, make sure residents can get to the park by riding the bus. Require developers to provide public greenspace. (INC 4 Land Use)
- **ACCESS TO FOOD:** Bring more grocery stores and farmers markets to low-income areas, and make sure they have affordable prices and good quality. (INC 4 Land Use)
- **DELIVERY MANAGEMENT:** Figure out how to manage delivery trucks, vans, drones, and robots traveling on the roads and sidewalks, and parking next to the curb. Develop methods (signs, phone apps) to help delivery drivers find loading zones off of main streets. (INC 3 Freight)
- **MAXIMIZE PORT AND RAILWAYS:** Make sure that Richmond's port and railways are being used to their full capacities to help city growth, ensure goods make it to city stores and job sites, and to create full time jobs. (INC 3 Freight)
- **FOOD ACCESS AND URBAN FARMING:** Provide funding to community organizations and collectives working on food insecurity and food access. Prioritize funding and land for local food production, and provide incentives to mobile farm pantries and farmers markets on wheels. (INC 3 Freight)
- **EDIBLE LANDSCAPING IN PARKS:** Plant trees, bushes and other landscaping that will grow fruits & vegetables in public parks & green spaces. Allow for planting by residents in city-owned green spaces. (INC 3 Freight)
- **FOOD RESILIENCY PLANNING:** Complete a supply chain resiliency plan for low-income Richmond neighborhoods that describes how to get people food access when transportation, health, or climate emergencies happen. (INC 3 Freight)
- **FREE GROCERY DELIVERY:** Provide money to cover grocery delivery service fees for low-income and elderly areas and neighborhoods in food deserts. (INC 3 Freight)
- **HELP FOOD ACCESS GROUPS:** Provide funding to community organizations and collectives working on food insecurity and food access. (INC 3 Freight)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

9: TECHNOLOGY



Three project recommendations directly relevant to the Technology investment need category include installing LED streetlights, implementing a city-owned fiber optic network, and integrating traffic management software. Strategy recommendations aim to enhance connectivity without creating additional barriers for vulnerable Richmonders.

Project Recommendations for INC 9: Technology

| ID | Category | Title | Relevance | Page |
|-----|-------------------|---|-----------|------|
| C16 | Other Completion | Richmond Fiber Optic Network System | Primary | 299 |
| C19 | Other Completion | Street Lighting - LED Conversion | Primary | 299 |
| C6 | Other Completion | Richmond Signal System Phase IV | Primary | 296 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Secondary | 236 |
| C18 | Other Completion | Street Lighting - General | Secondary | 299 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Secondary | 305 |
| 11J | Longer Term | Southside Plaza Transfer Center | Secondary | 307 |
| 3N | Longer Term | Northside Bikeshare Stations | Secondary | 308 |
| 6K | Longer Term | Venable/Mosby Bikeshare Station | Secondary | 309 |
| 8G | Longer Term | East End Bikeshare Stations | Secondary | 310 |
| 14K | Longer Term | Near West End Bikeshare Stations | Secondary | 310 |

Strategy Recommendations for INC 9: Technology

BUS ARRIVAL TIME DISPLAYS (9.1)

Add real-time displays showing bus arrival times to bus stops, especially in low-income areas.

Next Steps:

OETM

- Work with GRTC to identify and prioritize bus stop locations.
- Collaborate with GRTC to apply for grants to purchase and install real-time bus arrival displays.



Partners in this strategy could include: GRTC

ALL-INCLUSIVE TRANSPORTATION TECHNOLOGIES AND MARKETING (9.2)*

Figure out how to make new transportation technology, including e-bikes and bikeshare, scooter share, car-sharing, and electric vehicles, accessible to everyone, including non-English speakers, people who don't have smartphones or a bank account, and people who have a physical disability. Help educate people on disability transportation services offered already (e.g. CARES and USERV GRTC programs).

**This strategy is originally from Richmond 300, Objective 10.2, Strategy D, which reads "Develop programs to ensure equitable access to new mobility for individuals who are un-banked and/or do not have smart phones, and who are physically disabled."*

Next Steps:

OETM

- Explore information kiosks and booking kiosks as an option for multimodal hubs.
- Explore internet connectivity at bus stops and multimodal hubs.
- Work with experts on accessibility for ESL and senior populations to document barriers to accessing transportation technology.
- Hire an Emerging Technology Coordinator who will also be tasked with how to making technologies accessible to vulnerable Richmonders.



LQC Implementation could involve: kiosks



Partners in this strategy could include: Office of Aging and Disability Services, RRHA, OCWB, Office of Immigrant & Refugee Engagement, OSC

Strategy Recommendations for INC 9: Technology

AFTER-HOURS RIDES (9.3)

Create an After-Hours Rides program - an uber-like service where bus riders can take a shared van instead of the bus from their block (instead of a bus stop) to their destination during hours that the bus doesn't run, and take this van for free if they are low-income.

Next Steps:

OETM

- Collaborate with GRTC on applying for grants to accomplish this.



LQC Implementation could involve: service pilot.



Partners in this strategy could include: GRTC, PlanRVA

MOBILITY AND PARKING APP (9.4)

Create a user-friendly app to help RVA residents find bikeshare, scooters, and street parking, including electric vehicle parking, in real-time, and see prices and restrictions in advance. It should include trip planning for getting around without a car, and serve as a multimodal guide to key destinations (health care, parks, shopping, etc.) with walk routes, bike routes, and bus routes, schedules, and transfers to minimize travel times.

Next Steps:

DPW

- Develop a curbside management plan, including a full parking assessment and ADA compliance assessment.
- Work with DIT to develop a concept for the app, including the information it would provide, and desired functionalities.



Partners in this strategy could include: OETM, PDR, DIT, OSC

Strategy Recommendations for INC 9: Technology

OTHER HIGH IMPORTANCE STRATEGIES

- **DELIVERY MANAGEMENT:** Figure out how to manage delivery trucks, cans, drone and robots traveling on the road and sidewalks, and parking next to the curb. Develop methods (signs, phone apps) to help delivery drivers find loading zones off main street.
- **SPEED CAMERAS:** Use cameras for automated enforcement to issue warnings and tickets for speeding.
- **RED LIGHT CAMERAS:** Use cameras for automated enforcement to issue warnings and tickets for running red lights. Priority in all school zones.

MEDIUM IMPORTANCE STRATEGIES

- **SCOOTER DISTRIBUTION:** Make sure e-scooters are distributed throughout the city, including low-income areas.

LOW IMPORTANCE STRATEGIES

- **NEW SPEED TECHNOLOGY:** Look into other potential tools and strategies for reducing speeding. Maybe one related to 'smart roads' or other technology that can communicate with cars and smart phones when someone is in an intersection.
- **SIGNAL PRIORITY FOR BUSES:** Upgrade the traffic signal technology so the signals can automatically detect buses and hold the green light so the buses run faster and more reliably.
- **CAR-SHARING:** Bring more car-sharing programs into the city, cover car-sharing costs for low income Richmonders.

RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **FREE WIFI AT BUS STOPS:** Add free wifi at bus stops in areas with limited technology access (INC 8: Economic Development)
- **E-BIKE VOUCHERS:** Give out vouchers to reduce the price of electric bikes for people with low incomes. (INC 10 Sustainability)

RECOMMENDATIONS BY INVESTMENT NEED CATEGORY

10: SUSTAINABILITY



The strategy recommendations are the primary instrument for advancing the Sustainability investment need category. Project recommendations align with sustainability goals. In some instances, project descriptions intentionally include street trees and vegetation to combat the urban heat island effect and provide shade, planting native landscaping, using permeable pavement where possible, and replacing asphalt with vegetated spaces.

Project Strategies for INC 10: Sustainability

| ID | Category | Title | Relevance | Page |
|------|---------------------|---|-----------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Secondary | 205 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | Secondary | 217 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Secondary | 236 |
| 5C | Priority Projects | Fairfield Pedestrian Security and Shade Project | Secondary | 238 |
| 5A.2 | Priority Projects | Fairfield Avenue/ Fairfield Way Traffic Calming | Secondary | 265 |
| 7A | Priority Projects | Williamsburg Road/ Williamsburg Avenue Traffic Calming | Secondary | 268 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Secondary | 286 |
| 12F | Priority Completion | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | Secondary | 291 |
| 11B | Priority Completion | Hey Road Improvements | Secondary | 292 |
| 16D | Priority Completion | Broad Street Streetscape with Pulse BRT Expansion | Secondary | 293 |
| C13 | Other Completion | Jefferson Avenue Improvements | Secondary | 298 |
| C19 | Other Completion | Street Lighting - LED Conversion | Secondary | 299 |
| C21 | Other Completion | Deepwater Terminal Road Connector to Goodes Street | Secondary | 300 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Secondary | 300 |
| C26 | Other Completion | Route 5 Relocation/Williamsburg Road Intersection Improvement | Secondary | 301 |
| C29 | Other Completion | Cherokee Road Roadside Safety Improvements | Secondary | 301 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Secondary | 303 |
| 1J | Shorter Term | Brook Road Bike Lanes Protection | Secondary | 304 |
| 16E | Shorter Term | Willow Lawn Park-and-Ride | Secondary | 306 |
| 11J | Longer Term | Southside Plaza Transfer Center | Secondary | 307 |
| 10B | Longer Term | Richmond Highway Great Street Transformation | Secondary | 307 |
| 10N | Longer Term | Greenspace/Park near Richmond Highway | Secondary | 309 |

Project Strategies for INC 10: Sustainability

| ID | Category | Title | Relevance | Page |
|-----|-------------|---|-----------|------|
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Secondary | 311 |
| 16C | Longer Term | Three Chopt Road/York Road/ Henri Road Roundabout | Secondary | 311 |

Strategy Recommendations for INC 10: Sustainability

ENCOURAGE ELECTRIFICATION EQUITABLY (10.1)*

Transition GRTC fleet to electric buses. Provide equitable financial or other incentives for purchasing, renting, and sharing electrified mobility like EVs, e-bikes, and electric scooters. Research options to make e-bikes and EVs accessible and affordable, like e-bike vouchers and rebates. Install EV and e-bike chargers equitably. Prepare an Electric Vehicle Action Plan to assist with deployment and adoption of e-bike and EV technology.

*This strategy is originally from RVAGreen 2050, Strategy TM-3.2, Action i, which reads, "Support equitable planning for the build-out of electric vehicle charging stations throughout the City and ensure equitable distribution of these stations geographically."

Next Steps:

OETM & OOS

- Complete the Electric Vehicle Action Plan and implement it.
- Hire an Emerging Technology Coordinator to research and promote collaboration to deploy these technologies in an equitable way.

GRTC

- Develop a fleet transition plan to transition fleet to cleaner fuel vehicles.

USE COOLER MATERIALS (10.2)*

Use light color roofs and roofs with plants (green roofs) to cool the air and reduce heat.

*This strategy is originally from RVAGreen 2050, Strategy ENV-2.1, Action ii, which reads, "Develop a cool surfaces program for lighter color and green roofs and lighter color surfaces such as streets and parking lots."

Next Steps:

OOS

- Continue the conversation to embed climate sensitive building practices into city policies.
- Research and share best practices with DPW and PDR on new materials and risks and benefits of using them.



Partners in this strategy could include:
DPW, OETM, PDR, Private developers

Strategy Recommendations for INC 10: Sustainability

COOLING CENTERS (10.3)*

Provide shade and cooling areas like cooling centers at community centers and libraries, and shelters and solar-powered fans at bus stops, with special attention paid to transit transfer centers. Figure out where temperatures are the hottest and which communities are most at risk for heat-related illnesses, and provide shade and cooling in these areas first.

**This strategy is originally from RVA Green 2050, Strategy C-2.4, Actions i and ii, which read, "Identify community facilities such as community centers and libraries to serve as resilience hubs and cooling centers to the community" and "Provide funding to these facilities to enable them to serve as resilience hubs for low-income, elderly, young, and populations experiencing homelessness."*

Next Steps:

OOS

- Convene a heat island working group to collaborate across departments to find funding and staff to implement.



LQC Implementation could involve: Pop-up cooling stations on high heat days, movable planters, and movable shade structures.



Partners in this strategy could include: OETM, DPW, PCRF, GRTC, Community Organizations

SUSTAINABLE BUILDING & CONTRACTING REQUIREMENTS (10.4)*

Change the requirements for new buildings so builders, including the City, are required to put in sidewalks with street trees, and use materials that reduce flooding, keep pollution out of rivers and streams, and don't make the air hotter. Require City contracts to prioritize vendors that are minority-owned and energy-efficient contractors that use green energy and green vehicles, and have green certifications.

**This strategy is originally from Richmond 300, Objective 8.1, Strategy B, which reads "Require developers to construct sidewalks and street trees as part of their development projects (see Goal 4), including single-family infill developments in neighborhoods."*

Next Steps:

OOS

- Assess if green practices can be incorporated into COR contracting process.
- Continue the conversation to embed climate sensitive building practices into city policies.
- Work with PDR and City Council to develop heat island overlays that have strict requirements for heat mitigation elements.



Partners in this strategy could include: OETM, PDR, OMBE, Procurement Office

Strategy Recommendations for INC 10: Sustainability

MORE PLANTS & EDIBLE LANDSCAPING (10.5)*

Plant more trees, landscaping, and other green infrastructure along streets throughout the City to create more shade, absorb rainwater, provide food, and improve water quality. The tree canopy should be preserved and increased in sidewalk projects. Plant fruit and vegetable producing landscaping along sidewalks and in public parks and green spaces where possible. Allow residents to plant in city-owned green spaces. Explore planting fruiting trees within the right-of-way, with proper identification signage, for public use. Encourage neighbors to 'adopt' these gardens and tend to them.

**This strategy is originally from Richmond 300, Objective 17.4, Strategy A, which reads: "Expand the community garden program by developing standards and guidelines for community gardens on public lands to ensure transparency, continuity of use, community benefit, and access to a water source."*

Next Steps:

PCRF

- Identify staff, such as a city arborist, to lead this strategy.
- Research the potential costs, benefits, and precedents for this practice.
- Form partnerships with local universities and other community partners to test pilot plots.



LQC Implementation could involve: pop-up mobile community gardens and movable raised planters.



Partners in this strategy could include: OOS, DPW, local universities, community partners

COMMUNITY LOCATED FOOD & EDUCATION (10.6)*

Bring fresh-food vendors into communities through partnerships, allow fee-free vegetable vending on site and in neighborhood parks, and bring education on environmental and bodily health into the communities at the same time.

**This strategy is originally from Richmond 300, Objective 17.4, Strategy E, which reads "Expand where farmers' markets, grocery stores, and other healthy food retailers are permitted, especially in Nodes and along enhanced transit corridors."*

Next Steps:

PCRF, Richmond Area Health District

- Identify key staff and funding needed.



LQC Implementation could involve: Program Pilot



Partners in this strategy could include: Community partners

Strategy Recommendations for INC 10: Sustainability

OTHER HIGH IMPORTANCE STRATEGIES

- **COMMUNITY GARDENS:** Find areas (community places, education, impacts the most community members) that could be used as small community gardens and develop plans for use of those spaces.
- **EV MAINTENANCE JOB TRAINING:** Create electric vehicle maintenance job training programs for low-income residents.
- **FREE EV CHARGING:** Make city-owned, solar-powered EV charging free to public.

MEDIUM IMPORTANCE STRATEGIES

- **MEASURE AIR POLLUTION:** Track how much air pollution the city creates, identify opportunities for reducing air pollution, and share the findings with the public.
- **CLEAN AIR ADVOCATE:** Hire someone to work with transportation-related pollution and install air quality sensors, especially in low-income neighborhoods.
- **IMPROVE NEIGHBORHOODS WITH EV CHARGING:** Allow the money that is made from EV charging to go towards improvements in low-income neighborhoods where folks don't own many cars.
- **DEPAVING:** Take on depaving projects to replace pavement with green space.
- **ELECTRIC CITY VEHICLES:** Purchase electric vehicles for all new City government vehicles.

LOW IMPORTANCE STRATEGIES

- **ELECTRIC CAR-SHARE:** Create an electric vehicle car-share program where folks can rent an EV by the hour, and make it low-cost for people with low incomes.

- **CITY COMPOSTING:** Provide free mulch and compost to residents for gardening; Collect landscaping scraps and provide a place to deposit food scraps for compost from residents and city properties to make the mulch and compost.

RELEVANT STRATEGIES FROM OTHER INVESTMENT CATEGORIES

- **FOOD ACCESS AND URBAN FARMING:** Provide funding to community organizations and collectives working on food insecurity and food access. Prioritize funding and land for local food production, and provide incentives to mobile farm pantries and farmers markets on wheels. (INC 3 Freight)

“HOW WE DO BUSINESS” STRATEGIES

Equally as important as what projects and programs we implement, is how we implement them. In order to achieve the goals of the adopted Equity Agenda, the City of Richmond must take an “equity in all policies” approach.¹ This means the outcomes and distinct recommendations of this plan cannot be taken as a comprehensive shift towards equity in transportation without an accompanying update to ‘how we do business’ across all of the City, including all of DPW. If the same guiding principles, equity factors, equitable transportation vision, and equity agenda that guided this process are not implemented across all levels of decision making and investment in transportation, equity goals will not be realized.

Several themes and policy challenges in “how we do business” as a City government have emerged through this process. Many of these do not fit neatly into a line on a map or a bounded, action-oriented strategy or program that can be prioritized. Many of these challenges represent institutional, pervasive, systemic culture shifts and policy changes that must happen from the inside out. The three Guiding Principles (Figure 36) from Path to Equity lay the groundwork for these ‘How We Do Business’ strategies, listed in the table on the following pages.

WALK THE WALK, NOT JUST TALK THE TALK

Ensure that implementation and enforcement of any policy, program, or regulation does not disproportionately impact or burden, or displace, low-income communities and communities of color, and lifts up everyone.

PUT YOUR MONEY WHERE YOUR MOUTH IS

Ensure taxpayer money spent on transportation projects, in city procurement, and for employee labor are weighted towards reducing income disparities and addressing the growing wealth gap in low-income communities and communities of color/BIPOC.

LISTEN MORE THAN YOU TALK

Ensure outreach is equitable, community-based, accessible to all, begins early in the process, and that communities are given decision-making power.

Figure 36. Guiding Principles from the Path to Equity Policy Guide.

¹ https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Planning-for-Equity-Policy-Guide-rev.pdf

“How We Do Business” Strategies

LIGHTER QUICKER CHEAPER PROGRAM

Develop a program with dedicated funding to implement quick fixes and demo projects for the most pressing transportation needs. This program should eventually be a Richmonder-led process that is supported by City staff and funding.

The length of time to plan, engineer, fund, and implement a transportation project can be stifling to community safety and equity. Communities need a grassroots process to design, fund, and quickly build improvements to their neighborhoods, with support from City staff. This will move the needle towards community-led processes. It represents the highest level of citizen power and redresses the placative nature of many engagement processes.

Next Steps:

OETM

- Develop program parameters
- Develop guidebook for LQC process for Richmonders to follow
- Identify dedicated funding for annual program



Partners in this strategy could include: Richmonders, DPW, Participatory Budgeting Committee, City Council, community partners

PEOPLE LED PROCESSES

Support and expand participatory budgeting and people-led planning processes, shifting to true community voice and power. Empower communities to have a direct vote on how their tax dollars are spent and how planning is accomplished.

Key components of environmental justice include deferring to local knowledge and co-creating solutions.¹ Moving towards people-led processes gives power back in the hands of disenfranchised communities and builds change from the bottom up rather than top down. It allows for the highest degree of citizen participation and embodies the goals of empowering communities.

Next Steps:

Richmonders

- Collaborate with participatory budgeting committee already underway



Partners in this strategy could include: OETM, DPW, City Council, CAO, Finance

¹ https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Planning-for-Equity-Policy-Guide-rev.pdf

“How We Do Business” Strategies

SHIFT THE CAR NARRATIVE

Work with Richmonders to raise awareness and education around disparities created by a car-centric culture, and the history of this injustice and disparities it has perpetuated. Continue to research and measure outcomes of car-centric design and culture on health and wealth outcomes.

Much of the systemic and embedded conversation around transportation involves single-occupant vehicles. The shift towards car-free and car-light lifestyles requires the support of significant programmatic and infrastructure improvements. A community understanding of why it is important to reduce car trips is vital to this effort. This information is not readily available, and a lack of understanding of the purpose of certain multimodal improvements means these projects often face resistance, including from internal DPW staff. An inside-out culture must happen for this to take hold and make lasting change.

Next Steps:

OETM

- Partner with community organizations to help distribute information on benefits of non-car modes and what improvements must be made to accomplish this mode shift.
- Acknowledge discomfort and provide data and tools to support this shift.



Partners in this strategy could include: Richmonders, community organizations

MESSAGING TRANSPARENCY

Develop guidelines for temporary signs and information kiosks to accompany construction of improvements. Communicate what is underway and what are the benefits via signage at implementation sites. Develop outreach guidelines for both property owners and renters.

Knowledge is power. Richmonders often lack the knowledge to understand the intent of certain roadway treatments and improvements, and only see it as a burden or a taking. The City of Richmond must work to improve messaging and information sharing about every transportation project that is implemented. Benefits must be documented with data and research. Evidence-based decision-making must be transparent. Messaging cannot rely only on digital means; signs, placards, information kiosks, in-person ambassadors, and pamphlets must be considered as information-sharing mechanisms every time a project is planned or started on City streets.

Next Steps:

OSC

- Research, develop, and deploy alternative messaging strategies other than digital only.



Partners in this strategy could include: OETM, DPW, City Council

“How We Do Business” Strategies

EQUITABLE, HOLISTIC PROJECT PRIORITIZATION & FUNDING

Incorporate equity into the processes for prioritizing sidewalk, maintenance, and other ongoing improvement line items in the CIP. Make these processes transparent and community driven. Work to break down silos in transportation funding such as bus stops vs. sidewalks, which come from completely different funding mechanisms. Continue work within DPW to incorporate improvements into existing funding streams and improvement programs (e.g. bike lanes with pavement maintenance), and bundle projects to accomplish multiple modal improvements in one project. Develop corridor master plans with ultimate build-out so that improvements can work towards a clear end vision.

Next Steps:

DPW & OETM

- Assess all prioritization processes for adherence to equity goals.
- Develop equitable transportation scorecard for all processes.



Partners in this strategy could include: City Council

PROGRAMMATIC FUNDING

Consider ways to elevate programs into the same status of importance as capital improvements. Oftentimes programmatic recommendations receive cents compared to the dollars that capital projects receive, when these can often close the gaps in accessibility for the most vulnerable residents.

Next Steps:

OETM

- Research barriers to programmatic funding.
- Propose legislative changes to overcome the barriers.
- Lobby local legislators to change funding categories to improve funds for equitable programming not just capital improvements.



Partners in this strategy could include: DPW, City Council

ACQUIRE FUNDING EQUITABLY

Research and deploy equitable practices in municipal bonding and other revenue generating mechanisms.

Next Steps:

CAO

- Consider partnerships with Public Finance Initiative and other organizations already activating in this space.¹



Partners in this strategy could include: Finance, OETM, DPW, City Council

¹ <https://www.nlc.org/wp-content/uploads/2022/11/Racial-Equity-and-Bonds-Brief-2.pdf>

“How We Do Business” Strategies

PROCURE EQUITABLY

Purchase from disadvantaged businesses. Incorporate equity in the required components of procurement scoring criteria.

Next Steps:

OETM

- Assess weaknesses and strengths of current procurement processes for transportation projects.
- Advocate for inclusion of equity-based scoring criteria to be mandatory in procurements.¹

HIRE EQUITABLY

Promote workforce equity when making hiring decisions and acknowledge city dollars can close the wealth gaps.

Next Steps:

DHR

- Utilize GARE resource guides on how to make public sector jobs opportunities for advancing racial equity.²



Partners in this strategy could include: DPW, City Council

1 https://racialequityalliance.org/wp-content/uploads/2015/12/GAREContract_For_Equity.pdf

2 <https://racialequityalliance.org/wp-content/uploads/2015/02/Public-Sector-Jobs-Final1.pdf>



RELATIONSHIP TO CITY'S POLICY FRAMEWORK

This plan is part of an overall framework of policy that defines how the City of Richmond does business. While this plan is organized around 11 Investment Need Categories, there are other existing priorities that are not replaced through this planning effort. These include:

- Complete Streets Policy
- Vision Zero
- Transit-Oriented Development
- Freight Planning
- Economic Development
- Housing Policy
- Richmond 300 Master Plan

This chapter describes how the Richmond Connects Strategic Plan supports and furthers these policies and initiatives.

Complete Streets Policy

In 2014 the City committed to a Complete Streets policy (Resolution 2014-R172-170), which directed staff to develop an implementation guide for Complete Streets. This resulted in the 'better streets manual' which includes:

1. Guidance on creating a complete street. It presents Street Typologies and presents guidance on all street elements within the right-of-way
2. Geometric Design Guidelines (Right-of-Way Design and Construction Standards Manual): Provides standards for designing and constructing the infrastructure within the right-of-way.
3. Right-of-Way Excavation and Restoration Manual: Provides information on construction of the infrastructure in the right-of-way.

This guide was used in developing the recommendations in this plan, and should be solidified even further into requirements rather than guidelines.

Vision Zero

'Vision Zero is a multidisciplinary global strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero has proved successful across Europe — and now it's gaining momentum in major American cities.

The initiative aims to change the long-held belief and mindset that traffic fatalities and serious injuries are inevitable. Vision Zero espouses the belief that traffic related deaths and serious injuries are preventable.'

The City has developed a Vision Zero action plan. The Vision Zero action plan was used in developing the strategies and projects in Richmond Connects, and is a core of the recommendations in this plan. The Vision Zero action plan and the Richmond Connects plan should be thought of as supportive documents to each other.

Transit-Oriented Development

A key policy focus for City Council and the Planning Department has been Transit-Oriented Development (TOD). This policy acknowledges the mutually dependent elements of land use and transportation investment that must be implemented in a cohesive manner to achieve desired results. Ensuring that future development contains densities and designs that are supportive of future transit is vital to a connected future where all can thrive. This plan embraces the TOD policies and is in full support of the TOD zoning and development requirements being implemented by the Office of Equitable Development and PDR.

Recent changes that support TOD include parking minimum removal, accessory dwelling units, TOD rezoning.

Freight Planning

The City of Richmond for planning purposes designates the state designated freight corridors as the COR freight corridors. The needs for freight were captured in the Richmond Connects needs assessment, and often prioritizes separation of modes along these corridors (ie. shared use path and physically separated bike lanes are suitable for these corridors where heavy truck traffic may be present). The routes that are high freight needs and are Richmond's freight corridors are below:

The policy considerations for freight movement are reiterated in the City's Better Streets Manual:

"The movement of freight within the City is important to consider when designing a complete street. The corridors of statewide significance need to be designed to accommodate large trucks, while still considering the needs of the more vulnerable users. National corridors, as defined by the Virginia Office of Intermodal Planning and Investment, include Interstates 95 and 64. These corridors provide access to the City's streets that either serve the industrial uses or to alternative routes through

the City based on the vehicle and load requirements (size and weight). Design decisions on these streets should consider the size of these large trucks and their turning movement requirements. VDOT’s website identifies designated (STAA) truck routes and restrictions.”



Figure 37. Freight Network

Designated Truck Routes and Length Restrictions - current state and federal policy states that “STAA” trucks (these are twin-trailers, triple saddlemounts, and automobile or watercraft transporters, including stinger-steered) must use these highways to travel in Virginia except where otherwise directed by signs on the highway. An additional one road-mile of travel is allowed off the designated system for terminals, food, rest or repairs (except off the “Virginia Access Highways”). Otherwise, additional access to terminals off the designated system is by permit only.”

Economic Development

ECONOMIC DEVELOPMENT AUTHORITY: STRATEGIC PLAN FOR EQUITABLE ECONOMIC DEVELOPMENT

Richmond Connects’ policies and recommendations align with the Economic Development Authority’s vision to build a vibrant and equitable economy. Needs analysis mapping prioritized investments in areas with high

economic development needs-- highest need areas are identified by low market value with poor access to relevant jobs and retail destinations. Recommendations in this investment need category support the goals and initiatives in the City’s Strategic Plan for Equitable Economic Development (SPEED), such as developing high-density mixed-use areas in priority growth nodes, advancing equity in all city processes, and measuring successful outcomes using metrics such as the share of residents who bike, walk, and take transit to work.

RICHMOND 300: CHAPTER 4, DIVERSE ECONOMY

Many recommendations in Richmond Connects support *Richmond 300*’s Diverse Economy vision that “Richmond is home to a variety of businesses and industries that offer opportunities for quality employment and capital investment.” Richmond Connects transportation recommendations directly impact Objective 11.1: “Increase the areas of appropriately zoned land near various transportation modes and housing to retain, create, and attract employers.” A strategy identified by the *Richmond 300* plan is to “Support infrastructure projects with transportation options to move individuals from their homes to their jobs and also create job opportunities near where people live, specifically focused on low-income areas, low car-ownership areas, and areas along the high-injury network.” Richmond Connects actively works toward that vision by recommending equitable transportation investments that prioritize connecting people with job opportunities without requiring the use of a car.

RELEVANT RICHMOND CONNECTS RECOMMENDATIONS

Recommendations that advance the Economic Development goals of SPEED and *Richmond 300* include strategies specific to economic development (Investment Need Category 8: Economic Development) and projects that take place within Nodes and economic development

initiative areas, such as City Center and the Diamond District. Microtransit, transit frequency, and free rides to work are all strategies to increase accessibility to jobs. Node identity branding and community visioning are strategies to enhance economic vitality.

Housing Policy

RICHMOND 300 CHAPTER 5: INCLUSIVE HOUSING

The Master Plan envisions a city where all people can access quality housing choices. Richmond Connects strategies support development in the *Richmond 300* Nodes with robust transit investments so that transportation household costs become less burdensome. Building up housing in the Nodes will reduce car dependency and mitigate rising housing costs. Chapter 5 of the Master Plan lists several objectives related to housing and transportation-- increase the number of mixed-income communities along enhanced transit corridors (Objective 14.4), encourage greater density along enhanced transit corridors and at Nodes (Objective 14.5), and transform RRHA public housing properties into well-designed, walkable, mixed-use, mixed-income, transit adjacent communities (Objective 14.6). Project recommendations in the Action Plan such as streetscape improvements, safety improvements that make walking, biking, and using transit more comfortable, and increased transit frequency within the Priority Growth Nodes will support Transit-Oriented Development for those areas.

CITY OF RICHMOND STRATEGIC PLAN TO END HOMELESSNESS 2020-2030

The City's plan to end homelessness acknowledges that transportation can be a barrier to connecting people experiencing homelessness or at risk of homelessness to resources. By making recommendations that make walking, biking, and using transit more accessible, we can reduce the transportation cost burden for the most vulnerable residents. Strategies such as keeping GRTC

fare-free, improving transit reliability, and supporting Transit-Oriented Development will make moving around Richmond easier for all residents regardless of housing status.

JACKSON WARD COMMUNITY PLAN

One of the five major themes outlined in the Jackson Ward Community Plan is "Expand Equitable Transportation" with a focus on expanding the multi-modal network to allow safe and seamless movement throughout the neighborhood and the rest of the city. Reconnect Jackson Ward, North/South BRT expansion, improving pedestrian safety on Chamberlayne, microtransit, and pavement maintenance are all project recommendations that advance equitable transportation within Jackson Ward and Gilpin.

OAK GROVE/BELLMEADE SMALL AREA PLAN

The Oak Grove/Bellmeade Small Area Plan is a collaboration between RRHA and the City of Richmond to create a resident-driven vision for the future of the area, including the transformation of Hillside Court (Southside's only public housing complex). The Fall Line Trail, North-South BRT, and bus stop accessibility improvements are transportation projects in the small area plan that have been included in the Richmond Connects recommendations.

Richmond 300 Master Plan

The transportation and land use philosophies in Richmond Connects are strategically aligned with those laid out in *Richmond 300*. *Richmond 300* strategy 6.1.e calls to update the Richmond Connects Plan “to include a specific project list to develop more multi-modal transportation options in a safe network tied to the Future Land Use Plan.” The *Richmond 300* Nodes were used by the Richmond Connects team in data analysis and in project recommendations - for example, revitalization of the Chippenham/Midlothian Node in Needs Area 12 became a strategy.

Richmond 300's “Future Connections” section has maps of greenways, on-street bike facilities, enhanced transit routes, street connections, improved interchanges, and bridges, all of which were included in the initial list of thousands of past plan recommendations. Many of these projects were later included in the Phase 4 engagement survey, the Action Plan, and the Strategic Plan. Further, transportation-related goals, objectives, and strategies from *Richmond 300*'s “Equitable Transportation” section informed the Richmond Connects team on the non-mappable strategies. For instance, certain objectives like increasing miles of greenways (8.2), expanding and improving on-street networks and amenities serving bicyclists (8.3), and increasing transit service (8.3) all helped to guide what projects Richmond Connects would prioritize. *Richmond 300* had some Small Area Plans for several Nodes which had some specific transportation recommendations.

Richmond 300 also incorporated a parking study for 7 areas of the city, which included specific parking recommendations for each of these areas. The Richmond Connects team used the top parking recommendations from areas that had high Tier 1 INC 4 (Land Use) needs - Scott's Addition and Downtown/Shockoe - and included those in the Phase 4 engagement survey. Those recommendations are incorporated into the Strategic Plan.

DOWNTOWN CORE PLAN (*RICHMOND 300*)

The Richmond Connects Phase 4 survey included several projects that aligned with *Richmond 300*'s goals for Downtown. This included a recommendation to convert Main and Cary Streets from 1-way to 2-way; bike facilities on 1st, 2nd, and 3rd Streets; the Fall Line Trail; Reconnect Jackson Ward; connections between existing riverfront and canal bike infrastructure; rehabilitation of the Mayo Bridge with ped/bike infrastructure; North-South BRT; and improving the urban realm through streetscape projects in Manchester.

GREATER SCOTT'S ADDITION SMALL AREA PLAN

The Richmond Connects Phase 4 survey included several projects that aligned with *Richmond 300*'s goals for Scott's Addition. This included recommendations to connect across CSX tracks at MacTavish Ave and Norfolk Ave.

PRIORITY NEIGHBORHOOD AMENDMENT

PDR staff developed a draft Priority Neighborhoods amendment in response to City Council Resolution Resolution 2022-R035, which was adopted on May 31, 2022.

This amendment was in collaboration with the Richmond Redevelopment & Housing Authority, and prioritizes redevelopment of RRHA communities. Creating more livable, affordable, and safe housing is a priority, and resonates with the equity-centered goals of this planning effort. Gentrification should be monitored and displacement risk mitigated to stay equity-centered.

Beyond *Richmond 300*, transportation recommendations from other, more recent PDR plans were incorporated into Richmond Connects.

SHOCKOE SMALL AREA PLAN

The Shockoe Small Area Plan has a “Transportation and Connectivity” section and a goal to “Expand Equitable Transportation” by “enhancing walking, biking, and transit infrastructure to provide universal access to all users, prioritizing areas that lack infrastructure.” Some of the strategies from this section that were prioritized in the Richmond Connects process included improving pedestrian crossing conditions along Dock Street, incorporating essential bus stop infrastructure, and adding pedestrian and bike connections across the Mayo Bridge.

RECONNECT JACKSON WARD

Richmond Connects includes the transportation recommendations from this plan.

JACKSON WARD/GILPIN COMMUNITY PLAN

Richmond Connects included transportation recommendations from this Draft plan. This included Reconnect Jackson Ward and adding a potential route of the Fall Line Trail through Gilpin, including closing Baker Street to cars. Closing Baker Street to cars was not prioritized by survey respondents so it was not included in the Action Plan.

CITY CENTER SMALL AREA PLAN

The recommendation to re-connect 6th and Clay Streets was included in the survey, but was not prioritized by the respondents.

A photograph of construction workers in safety gear (hard hats, high-visibility vests) at a site. One worker is in the foreground on the right, looking towards the left. Another worker is in the background on the left, leaning over a piece of machinery. The scene is outdoors on a paved area with some equipment and containers in the background.

NEXT STEPS

Each project and strategy recommendation will need to be carried forward by various offices and partners. Each will need a champion, and each will have a different path and timeline for implementation.

Appendix C contains the full list of project recommendations, and details for each project including first steps for implementation. Strategy recommendations were provided by Investment Need Category in the “What are the Recommendations?” chapter. Next steps for each responsible City Department were identified. This chapter describes potential funding sources. The strategy recommendations should first be developed using internal agency funds to develop program parameters and cost estimates before funding can be applied for. Several programs have an opportunity for a pilot program, which can be developed quickly to test a concept.

For the hard infrastructure projects, there are additional considerations for the types of projects and ways of packing projects to score best across the various programs. Details of potential funding sources are discussed in this chapter, organized by type of ‘first steps’ contained in the project tables.

Planning & Engineering

This plan contains immediate action items for City staff and partner organizations to tackle first. Many of these contain a first step to complete additional planning, engineering and detailed design work. These projects must be developed further to pursue funding, and should include additional public engagement to define and refine the preferred local alternative. To accomplish these planning documents and engineering studies, the City must allocate new resources, use existing office operating budgets, or pursue additional study funds.

Programs that can support planning, design, engineering, and NEPA work include:

REGIONAL PROGRAMS

CVTA and other regional funding programs are discussed later in this chapter.

STATE PROGRAMS

SMART SCALE

SMART SCALE (§33.2-214.1) is about picking the right transportation projects for funding and ensuring the best use of limited tax dollars. It is the method of scoring planned projects and funding projects that meet one or more transportation needs identified in Virginia's Transportation Plan, VTrans. These needs are referred to as VTrans Mid-term Needs. Transportation projects are scored based on an objective, outcome-based process that is transparent to the public and allows decision-makers to be held accountable to taxpayers. Once projects are scored and prioritized, the Commonwealth Transportation Board (CTB) has the best information possible to select the right projects for funding.

Projects must address improvements to a Corridor of Statewide Significance, Regional Network, or Urban Development Area. Projects may also address an identified safety need. Needs must be identified in the statewide long-range transportation plan, VTrans.

Good to fund any type of transportation project, with a focus on larger scale and higher cost vehicular infrastructure. Only for new transportation projects, no maintenance costs.

Good for vehicular capacity, bicycle/pedestrian, economic development, technology, safety, congestion mitigation, rehabilitation/maintenance.

Revenue Sharing

Provides additional funding for use by the City to construct, reconstruct, improve, or maintain roadway systems. Locality funds are matched, dollar for dollar, with state funds, with statutory and Commonwealth Transportation Board Policy limitations on the amount of state funds authorized per locality. The City must allocate funds within the CIP to provide matching funds to support a Revenue Sharing project. Limit of \$5 million matching funds for each locality per year (future changes expected), with limits on the total number of projects a locality can submit.

Good to fund mid-range projects for all types of transportation projects, new infrastructure or maintenance.

Good for vehicular capacity, bicycle/pedestrian, safety, congestion mitigation, rehabilitation/maintenance.

State of Good Repair (SGR) - Bridge

Bridge program provides funding for National Bridge Inventory (NBI) bridges that are structurally deficient (SD) and owned by the Virginia Department of Transportation (VDOT) and/or localities.

Bridges eligible for SGR-Bridge funding are identified as Structurally Deficient Structures in the National Bridge Inventory (NBI). A list of eligible structures is posted online in January of each year.

This program is good for rehabilitation/maintenance of existing transportation infrastructure.

State of Good Repair (SGR) - Pavement

Pavement program provides funding for the reconstruction and rehabilitation of deteriorated pavements on the Interstate and Primary Systems, including Primary Extensions.

Routes eligible for SGR VDOT Paving funds are on the interstate and primary systems with a Critical Condition Index (CCI) less than 60. Routes eligible for SGR Local paving funds are municipality-maintained primary extensions with a CCI less than 60. A list of eligible routes is posted online in January of each year.

Good for rehabilitation/maintenance of existing transportation infrastructure.

Highway Safety Improvement Program (HSIP)

Provides funding using a data-driven strategic approach to reduce the motorized and non-motorized fatalities and serious injuries on all public roads (State or locally maintained) in the Commonwealth of Virginia. Scoring based on proportion of fatalities and serious injuries in the locality and/or project area.

Good for vehicular, bicycle, pedestrian safety or other projects with safety benefits, such as systemic improvements.

Transportation Alternatives (TA)

The program is intended to fund projects that expand non-motorized travel choices and enhance the transportation experience by improving the cultural, historical, and environmental aspects of transportation infrastructure. It focuses on providing pedestrian and bicycle facilities and other community improvements.

Good for bicycle, pedestrian, or transit projects.

Congestion Mitigation and Air Quality (CMAQ)

Provides federal funding for transportation projects and programs that help improve air quality and reduce traffic congestion. Funding is available for areas that do not meet the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).

The purpose of CMAQ is to fund transportation projects that contribute to improving air quality. Eligible projects include transit, non-recreational bike and pedestrian facilities, alternate fuel projects, diesel retrofits, traffic monitoring/management/control facilities, signals, intersection improvements, intelligent transportation systems (ITS), teleworking, ride-sharing, etc. CMAQ allocations are ineligible for use on projects that add additional through lanes to a roadway unless high-occupancy toll or high-occupancy vehicle (HOV) in nature.

Good for bicycle/pedestrian, congestion mitigation, and technology related projects.

Regional Surface Transportation Block Grants (RSTBG)

Federal funding sub-allocated to Metropolitan Planning Organizations (MPOs) with an urbanized area population of 200,000 or more.

RSTBG is used to preserve and improve the conditions and performance on highways, bridges, tunnels, pedestrian facilities, bicycle infrastructure, and transit capital projects. Also eligible for ITS, technology projects, travel demand management (TDM) projects, and port facilities. Funding can be used for planning or implementation.

OIPI Multimodal Planning Technical Assistance Program

Provides funding to develop implementable plans that advance community visions aligned with the vision, goals, and objectives established by the Commonwealth Transportation Board (CTB) in the statewide transportation plan, VTrans. In addition, the program encourages intergovernmental cooperation, regional planning, public-private partnerships, and coalitions. This program accepts applications on a rolling basis; however, awards are based on funding availability.

OIPI Growth and Accessibility Planning (GAP)

Provides technical assistance for multiple areas of planning activities including: Multimodal planning within an existing or planned UDA or Growth Area; Develop or evaluate strategies to address emerging planning issues; Develop accessibility planning process; and conduct multimodal planning outside urbanized areas.

DRPT Making Efficient and Responsible Investments in Transit (MERIT)

Statewide grants program that provides financial assistance to support public transportation services. Includes operating expenses assistance, capital projects and investments, demonstration projects assistance, technical assistance for transit planning, and public transportation workforce development programs.

VDOT, DRPT, OIPI direct technical assistance programs

FEDERAL PROGRAMS

Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (USDOT / Office of the Secretary of Transportation (OST))

The Rebuilding American Infrastructure with Sustainability and Equity (or RAISE) program funds capital investments in surface transportation that will have a significant local or regional impact, especially in areas of persistent poverty or historically disadvantaged, overburdened, or underserved communities. Air, Bike/Ped, Bridge, Maritime, Railway, Roadway, Transit

Grants To Assist Areas of Persistent Poverty (USDOT / Federal Transit Administration (FTA))

The Grants to Assist Areas of Persistent Poverty (AoPP) program supports planning, engineering, technical studies, or financial planning in project development to better serve areas of persistent poverty.

BIKE/PED, TRANSIT

Mobility, Access, & Transportation Insecurity: Creating Links to Opportunity Demonstration Research Program (USDOT / Federal Transit Administration (FTA))

The Mobility, Access, & Transportation Insecurity: Creating Links to Opportunity Demonstration Research Program funds the planning, deployment, and impact evaluation of strategies which mitigate transportation insecurity among communities.

TRANSIT

Pilot Program for Transit-Oriented Development (TOD) Planning (USDOT / Federal Transit Administration (FTA))

The Pilot Program for Transit-Oriented Development (TOD) funds the integration of land use and transportation planning, economic development, accessibility, and multimodal connectivity, and mixed-use development in new capital projects.

BIKE/PED, ROADWAY, TRANSIT

Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program (PROTECT) (USDOT / Federal Highway Administration (FHWA))

The Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Grant program supports planning and construction projects which improve surface transportation and community resilience to natural disasters.

BIKE/PED, MARITIME, ROADWAY,TRANSIT

Reconnecting Communities Pilot (RCP) Program (USDOT / Office of the Secretary of Transportation (OST))

The Reconnecting Communities Pilot Program (RCP) funds planning and construction to remove, retrofit, or mitigate transportation facilities such as highways and rail lines that create mobility, access, or economic barriers to community connectivity.

BIKE/PED, RAILWAY, ROADWAY,TRANSIT

Safe Streets and Roads for All (SS4A) Grant Program (USDOT / Office of the Secretary of Transportation (OST))

The Safe Streets and Roads for All (SS4A) program funds a range of initiatives to prevent death and serious injury on multimodal roads and streets involving all roadway users.

BIKE/PED, ROADWAY, TRANSIT

Strengthening Mobility and Revolutionizing Transportation (SMART) Grants (USDOT / Office of the Secretary of Transportation (OST))

The Strengthening Mobility and Revolutionizing Transportation (SMART) program supports public sector agencies to conduct planning and prototyping demonstration projects focused on advanced smart community technologies and systems.

AIR, BIKE/PED, MARITIME, RAILWAY, ROADWAY, TRANSIT

Thriving Communities Program (USDOT / Office of the Secretary of Transportation (OST))

TCP facilitates the planning and development of transportation and community revitalization activities and provides tools to ensure that under-resourced communities can access the historic funding provided in the Bipartisan Infrastructure Law (BIL).

Lighter, Quicker, Cheaper

Other recommendations have action steps that will result in actual improvements on the ground without further technical analysis, but with additional public engagement. These are the Lighter, Quicker, Cheaper project recommendations, notated in the project table. These fall under many categories, and can include many types of improvements. The type and design of these projects will be selected and further developed with community members and organizations.

A first round of projects will be funded via CVTA local dollars. Richmond Connects recommends allocating funds annually to complete these projects to address the most pressing safety and accessibility issues that cannot wait for engineering. These will also serve to test project concepts and effectiveness before the concrete is poured, and most importantly, to test public support for projects before the full amount is allocated.

Pursue Funding

Other recommendations have 'pursue funding' as the first next step. These projects were already being designed at the time of plan adoption, and have crossed significant hurdles already. However, finding funding for these projects can take anywhere from 1 to 10 years, depending on the funding program sought.

CAPITAL IMPROVEMENT PLAN (CIP)

One of the two quickest, most direct ways to fund projects is through the local CIP. Projects that are small - generally under 1 million dollars - can be considered for direct adoption into the CIP. However, these city funds are often best spent as leverage funds to match state and federal grant amounts rather than to fully fund a project. There are several line items such as the Complete Streets line item that Richmond Connects recommends mimicking in the CIP to fund rolling improvements based on the Richmond Connects prioritization of needs and projects.

CVTA LOCAL

The other of the two most flexible and most quickly available funds is the local percentage of the CVTA dollars. This funding program is relatively new, and is the result a bill passed by the State Legislature of Virginia in 2020 . It follows the footsteps of NOVA and Hampton Roads in establishing a regional tax (additional regional 0.7 percent sales and use tax and a wholesale gas tax of 7.6 cents per gallon of gasoline and 7.7 cents per gallon of diesel fuel) to generate funds that can only be spent on transportation in the region.

One portion of these funds - 50% - goes to the localities, and is then distributed based on population size. City of Richmond directly received 16% of that half dedicated to localities. These funds are to be used to "improve local mobility, which may include construction, maintenance, or expansion of roads, sidewalks, trails, mobility services, or transit located in the locality" (§ 33.2-3701. Central Virginia Transportation Fund).

These funds could be considered to expand the sidewalks program and support the programmatic recommendations that are not eligible for other funding sources.

CVTA REGIONAL

Another portion of those funds (35%) is allocated to the region as a whole and is distributed based on a project application and scoring process administered by planRVA and CVTA. Projects that are eligible (as of December 2023) include:

- Highway projects: Note that on Arterial Roadways, those with an existing ADT > 20,000 are eligible. CoSS designated by the state are eligible.
- Transit projects that are capital projects are eligible.
- Bike/ Pedestrian projects are limited to regional trail networks or connections to regional trail networks.

- Multimodal projects that are eligible include: Park and Ride lots, Rail and Port, limited to leveraging funds/local match funds for other federal and state fund sources, for park and ride lots for construction or expansion; rail and port capacity or capital improvements
- Bridge projects that are on VDOT's State of Good Repair (SGR) eligibility list and meet CVTA Highway regionally-eligible criteria
- Preliminary Engineering

Several regional trail segments are in the Richmond Connects project list, as well as spurs that connect to them. These would be good projects and could be bundled as an 'access to regional trails' project in future funding cycles. The Capital expenses of installing the NS BRT would also fit the criteria of this program and should be prioritized for future years applications.

REGIONALLY ADMINISTERED FEDERAL FUNDS

CMAQ

The Congestion Mitigation and Air Quality (CMAQ) program provides federal funding for transportation projects and programs that help improve air quality and reduce traffic congestion. The federal government provides CMAQ funds to the Commonwealth of Virginia, a portion of which must be used on projects and programs selected by a regional agency of locally-elected officials known as a metropolitan planning organization. Projects must be located in areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas)

RSTBG

The Surface Transportation Block Grant provides states and regions with flexible federal funding that may be used for a wide variety of highway and transit projects. Regional Surface Transportation Block Grant (RSTBG)

funds are automatically suballocated to regional metropolitan planning organizations within the State. RSTBG investments in the Richmond region support passenger and freight movement along the region's surface transportation systems. The funds can be used to preserve and improve the conditions and performance on highways, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects.

In the context of Richmond Connects, large scale multi use paths and sidewalk projects could make up future RSTBG grant applications.

IJA

Federal funding for surface transportation is reauthorized every 5 years. The most recent reauthorization is the Infrastructure Investment and Jobs Act (IIJA) Jobs Act (IIJA), which governs all federal transportation policy and funding through 2026. This reauthorization also included more than \$200 billion for USDOT to award via competitive grants. The current administration of the funding is focused on improving the state of repair, eliminating inequities, and reducing emissions from transportation. The \$200 billion is set aside between the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Railroad Administration (FRA), and the Federal Motor Carrier Safety Administration (FMCSA). Approximately \$116 billion of the \$200 billion allocated to grant programs is aimed towards planning for multimodal infrastructure.

The following programs are geared towards multimodal:

RAISE Grant - \$30 billion over five years for a competitive grant that can be geared towards roads, rail, transit, and port projects that help achieve national, state, and/or regional objectives. Replaces TIGER/BUILD grant that supported the GRTC Pulse Bus Rapid Transit.

Safe Streets and Roads for All (SS4A) - \$6 billion over five years in planning and implementation funding for improving street safety, reorienting streets towards people focus, and attempting to reduce severe/fatal injury crashes associated with non-vehicles.

Reconnecting Communities - \$1 billion over five years focused on tearing down or bridging transportation infrastructure that divides communities and promoting community connections that are people- versus vehicle-focused.

Transportation Infrastructure Finance and Innovation Act (TIFIA) - \$1.25 billion over five years to help finance large transportation projects with direct loans, loan guarantees, and credit risk assistance.

Capital Investment Grants (CIG) - \$23 billion over five years for expanding or building new transit infrastructure.

Bus & Bus Facilities Grants - \$2 billion over five years to procure, repair, and/or enhance buses as well as construct, enhance, and/or bring to a state of repair bus-related facilities.

Ferry Grants - \$2.5 billion over five years, of which \$0.5 billion is for the procurement, repair, and/or enhancement of ferries to low to no emissions, and \$2 billion is for rural essential ferry services.

Active Transportation Infrastructure Investment Program (ATIIP) - \$1 billion in yearly dollars that must be re-appropriated every year during the five year period. Focused on planning and construction of active transportation networks in communities.

Strengthening Mobility and Revolutionizing Transportation (SMART) - \$1 billion in yearly dollars that must be re-appropriated every year during the five year period. Focused on piloting innovative technologies that improve safety and system operation efficiency.

The following programs are geared towards sustainability:

Electric Vehicle Implementation - \$7.5 billion over five years aimed towards electrification of the transportation system, with a focus on infrastructure.

PROTECT - \$7.3 billion in formula grant funding and \$1.4 billion in competitive grant funding over five years for opportunities focused on planning, capacity building, and targeted climate mitigation, and/or resiliency infrastructure funding.

Culvert Restoration - \$5 billion over five years set aside for culvert restoration, removal, and replacement to reduce the impacts on wetland environments and fisheries.

Port Emission Reductions - \$0.4 billion over five years focused on curbing freight emissions at port facilities.

Healthy Streets - \$0.5 billion over five years focused on planning and implementation of streetscape treatments to reduce the urban heat island effect in communities.

The following programs are geared towards maintenance:

Bridge Investment Program (BIP) - \$43 billion over five years to repair, rehabilitate, replace, and/or protect bridges that are in disrepair.

Bridge State of Good Repair - \$2.5 billion over five years towards transit state of good repair grants that target heavy rail transit and station retrofit program for compliance with the ADA regulations.

Restoration and Enhancement Grant - \$0.25 billion over five years for repairs to passenger rail infrastructure.

The following programs are geared towards railroad

Eliminating Rail Crossings - \$5 billion over five years in grant funding focused solely on the elimination of at-grade railroad crossings.

Consolidated Railroad Infrastructure Safety Improvement (CRISI) - \$10 billion over five years to improve the safety, efficiency, and reliability of intercity passenger and freight rail.

Federal-State Partnership for Intercity Passenger Rail - \$43.5 billion over five years for the expansion or construction of new intercity passenger rail routes, as well as capital projects focused on state of good repair.

Railroad Improvement Financing (RRIF) - \$0.6 billion over five years for financing railroad projects with direct loans, loan guarantees, and credit risk assistance.

Carbon Reduction

CRP funding may be used on a wide range of projects that support the reduction of transportation emissions. Projects must be identified in the Statewide Transportation Improvement Program (STIP)/Transportation Improvement Program (TIP) and be consistent with the Long-Range Statewide Transportation Plan and the Metropolitan Transportation Plan(s). (23 U.S.C. 134 and 23 U.S.C. 135)

Capital Investment Grants

The Capital Investments Grants (CIG) program supports fixed guideway investments, including new or expanded rapid, commuter, and light rail.

Tracking Progress Towards Equity

Another next step will be progress tracking the City's progress in completing the recommendations in this plan. As the projects and programs begin to be implemented, we must ask two things:

1. *Did we do what we said we were going to do?*

The City should create a dashboard or annual reporting process to report on what phase projects and programs from the plan are in, and which have been completed.

2. *Did we make an impact in outcomes? Does what we did move the equitable transportation needle?*

The City should also measure the impacts of the completed projects on equity metrics. Long-term tracking of the projects' and programs' success will mean the City can be nimble and reallocate funds to different project types if those completed don't have the intended effect. The City must stay vigilant and be continuously asking how best can we reconfigure to meet the ever changing spatial distribution of inequity. This strategic plan includes many new programs and strategies that haven't been tested. The City must try these new approaches to solving problems, but also be mindful of the impacts they may or may not have. A continuous monitoring process can help avoid repeating mistakes of the past, and avoid creating unintended barriers and 'side effects' of planning decisions.

One metric that can be used yearly is to compare multimodal accessibility to race and income. Another potential metric to track is percent of household budget spent on transportation versus race and income. Once race and income are not predictors of transportation accessibility or transportation cost burden, we will have accomplished a large portion of the goals of this plan.

Another way to monitor on-going outcomes of the implementation of the recommendations is by directly surveying Richmodners. Asking questions about their perception of well-being, their perception of the effectiveness of projects and programs, and their perspectives of the "before and after" of transportation projects and programs, can help indicate if the projects or programs are successful. The City must not complete projects to complete projects, but must complete them to accomplish the goal of equitable transportation laid out in the Master Plan.

Additionally, the City should continue its focus on tracking ADA accessibility, until the entire city is ADA accessible. Once this goal is met, we will have overcome significant barriers faced by the disabled and limited mobility population.

Conclusion

A plan is only as good as its implementation. City leaders must embrace this document and shift gears to implementation in a timely manner to make effective improvements towards a more equitable city. Old ideas and expectations must be examined, and the City must actively embed equity in all facets of the community to make lasting and meaningful change.

APPENDICES

A. Needs Analysis

B. Recommendations Development

C. Project Recommendations Details

D. Public Engagement

E. Summaries for Each Needs Area

F. Functional Classifications Map

G. Bike Network Map

H. List of Acronyms

APPENDIX A: NEEDS ANALYSIS

Introduction

Richmond Connects is a comprehensive transportation plan that identifies needs and projects addressing 11 distinct investment need categories (INCs). It differs from past transportation planning practices in several important ways.

- The INCs focus on safe, sustainable, multimodal travel, and they account for and support the City's growth management framework, the interaction between transportation and land use, technological innovation that is changing access to work and services, and the City's proactive approach to addressing climate change.
- It enriches the needs analysis conducted for each INC with explicit consideration of the Equity Factors (EFs) defined in the City's Path to Equity policy framework in order to elevate needs and projects serving residents that have historically been marginalized in the planning process and who face mobility and accessibility challenges as a result of past investments.
- The plan focuses on the accessibility provided by the City's multimodal transportation network. It focuses on identifying where, how, and for whom accessibility is degraded before identifying needs and defining potential projects to enhance travel choices and access to key destinations for all Richmonders.

A unique challenge of this analysis was that the expression of need was not constant across all needs categories. Some needs were best understood in terms of which facilities travelers use: if a traveler comes from an area of high pedestrian need, for example, then investments along *any* street they travel will improve their traveling conditions, not just those in their area of residence. Others were best understood at a neighborhood level: if safety is an issue in an area, for example, then improvements should be applied to streets directly in that neighborhood. On top of this, no need existed in a vacuum: all had to reflect the equity considerations relevant to the need and ask where investment need and underserved communities overlap.

After defining the various categories for improvement, along with the targets for equity considerations, the following steps were used to assign investment need to network facilities in the city of Richmond:

1. Score EFs at the census block level.
2. Score INCs at the census block level.
3. Weight investment needs categories by equity factors.
4. Where relevant, push weighted investment needs to network facilities.
5. Update weighted needs (3) and needs on the networks (4) with information from public comments.

The scoring of equity factors and investment needs categories involved a several overlapping inputs and methods. Because of this, the appendix will begin with a definition of data sources and core concepts before diving into the needs analysis process. These concept definitions will help frame the construction of the EFs and INCs.

Data

A diverse array of data was used to produce EFs and INCs for the needs analysis. Sources and relevant processing are detailed below (in alphabetical order).

ASSISTED LIVING FACILITY BEDS

Source: VDOH (nursing homes); VDSS (assisted living facilities)

Date: 2022

Method: Count nursing home and assisted living facility beds in each block group. Use block group area to calculate bed density.

Included in:

- EF 9
 - EF 9 informs EF 6, EF 7, EF 8, and EF 10

BIKE SHARE STATIONS

Source: OETM.

Date: Acquired 2022, then representing the most current data

Method: Calculate the shortest walking time to any bike share location from all blocks.

Included in:

- INC 1A
- INC 9

BUILDING SETBACK

Source: City of Richmond structures

Date: Acquired 2022, then representing the most current data

Definition: Setback is defined as the closest distance between a building and any street centerline.

Method: Calculate the mean building setback from street centerlines in each block.

Included in: EF 5

CLIMATE RISK EXPOSURE

Source: RVA Green

Date: Acquired 2022, then representing the most current data

Method: Observe the heat vulnerability index for each tract.

Observe the urban heat island index for each block group.

Calculate the share of residential parcel area and share of total area in a flood risk zone by block. Additionally, identify the roads in each block that are within a flood risk zone by road link centroid. The latter is used for weighted mileage calculations.

Included in:

- EF 8 (heat vulnerability index, urban heat island index, flood risk for residential parcels)
- EF 10 (flood risk for roads)
- INC 10 (heat vulnerability index, flood risk for total area)

CRASHES

Source: VDOT (specifically the files “CrashData_Basic”, which gives point locations of crashes, and “CrashData_Details”, which gives information about the modes involved).

Date: Includes all crashes from January 1, 2015 to June 30, 2022

Method: Identify non-motorized crashes and severe or fatal non-interstate crashes in each block. Use block area to calculate crash densities.

Included in:

- EF 5 (non-motorized)
- EF 6 (non-motorized)
- INC 5 (severe or fatal non-interstate)

CRIME

Source: Richmond Police Department.

Date: Includes all crimes from January 1, 2022 to June 21, 2022

Definition: Violent crimes are defined as homicides, sex offenses, robberies, and assaults. Property crimes are defined as burglaries, vice, theft, and vehicle theft.

Method: Use area-weighted interpolation to estimate crimes in each block from crimes by dispatch zone (the reporting geometry for the crime data). Use block area to calculate violent and property crime densities.

Included in: INC 5

CURB AND ALLEY CITATIONS

Source: City of Richmond parking citations

Date: Includes all citations from April 1, 2021 to October 31, 2021

Definition: Curb citations are defined as citations with a citation type of “loading zone”. Alley citations are citations with a citation type of “prohibited alley” or “parking alley”.

Method: Count the number of citations by block and type. Use appropriate mileage totals by block to calculate densities.

Included in: INC 3

CURB AND ALLEY SPACE

Source: City of Richmond on-street parking (curbs); City of Richmond transportation surfaces (alleys)

Date: Acquired 2022, then representing the most current data

Definition: Curbs are defined as on-street parking facilities with type “loading zone”.

Method: Sum the curb and alley mileage by block using intersection.

Included in: INC 3

DEMOGRAPHIC CHARACTERISTICS

Source: Replica synthesized population

Date: Represents 2021 Q2

Method: Calculate shares of relevant Communities of Concern by block group. Additionally, identify individual persons in each block group if they are in any community of concern. The latter is used for the calculation of Communities of Concern population densities for different combinations of characteristics.

Included in:

- EF 1
- EF 2
- EF 3
- EF 9
 - EF 9 informs EF 6, EF 7, EF 8, and EF 10

ELECTRIC VEHICLE CHARGING STATIONS

Source: Virginia Clean Cities (uses the same location data as US DOE Alternative Fuels Data Center)

Date: Acquired 2022, then representing the most current data

Definition: Electric vehicle charging stations were defined as all Level 2 and DC fast chargers.

Method: Calculate the shortest walking time to any electric vehicle charging station from all blocks.

Included in: INC 10

ELECTRIC VEHICLE OWNERSHIP

Source: City of Richmond Commissioner of the Revenue’s Office

Date: Acquired 2022, then representing the most current data

Method: Count the amount of EV ownership by block using a spatial intersection of EV ownership points with blocks.

Included in: INC 10

ENTERPRISE ZONES

Source: Virginia Department of Housing and Community Development.

Date: 2017, but authoritative until 2028

Definition: Enterprise zones are a federal economic development and community development tax benefit established as part of the 2017 Tax Cuts and Jobs Act available to investors with capital gains designed to encourage long-term private investment in low-income urban, suburban, and rural census tracts. The zones were nominated by each governor in the spring of 2018 and are comprised of low-income census tracts. Zones were eligible for nomination based on 2015 and 2016 American Community Survey data. Virginia had 901 eligible census tracts, and per the Tax and Jobs Act, each state was only able to nominate 25 percent or 212 tracts, and could have up to 5 percent or 11 as contiguous tracts. Virginia nominated the maximum number of census tracts allotted. The designations are permanent until Dec. 31, 2028.

Method: Identify blocks in enterprise zones using a spatial intersection of block centroids and enterprise zones.

Included in: INC 8

EXISTING TRANSIT ROUTES

Source: GRTC

Date: Fall 2022

Method: Identify blocks with a transit route using a spatial intersection.

Included in:

- INC 1B
- INC 2

HIGH INJURY STREET NETWORK

Source: City of Richmond Vision Zero Action Plan

Date: Report released 2021; network based on crash data from 2017-2019

Definition: The high injury street network was developed as part of the Vision Zero action plan so that “transportation safety investments... can address the corridors with a greater likelihood of crashes”. These streets comprise 7% of all Richmond road mileage, but 62% of fatal or serious injury crashes.

Method: Match the high injury street network features to edges in the routing network to identify the links comprising the high injury speed network; this allows summarization of travel volumes along the high injury street network. Identify blocks along the high injury street network using a spatial intersection.

Included in:

- INC 1A (identification)
- INC 1B (identification)
- INC 2 (identification)
- EF 5 (travel volumes along the network)

INFRASTRUCTURE CONDITION

Source: City of Richmond transportation bridge condition index (bridges); City of Richmond sidewalk condition inventory (sidewalks); DPW pavement condition index (pavement); City of Richmond traffic signal poles (signal infrastructure)

Date: Acquired 2022, then representing the most current data.

Definition: Bridges in poor condition are defined as bridges tagged with a condition of “poor”. Sidewalks in poor condition are defined as sidewalks with high levels of cracking, ponding, and/or vertical uplifting. Pavement in poor condition is defined as the set of streets tagged with a pavement condition of “poor”, “very poor”, “serious”, or “failed”. Signal infrastructure in poor condition is defined as the set of in-service signals with a high (bad) condition score.

Method: Observe the facilities meeting the definitions above.

Included in: INC 7

INNER RING SUBURBS

Source: Data maintained by City of Richmond Dept. of Planning and Development Review, created as part of the *Richmond 300* Master Plan by the Center for Urban and Regional Analysis at VCU.

Date: Master Plan adopted 2020

Definition: In preparation for the *Richmond 300* Master Plan, the Center for Urban and Regional Analysis at VCU conducted an urban design analysis and classified the city's neighborhoods into 11 urban design typologies. Areas designated as "Streetcar neighborhood" are considered to be inner ring suburbs.

Method: Identify blocks in inner ring suburbs using a spatial intersection of block centroids and inner ring suburbs.

Included in: EF 4

INTERCITY SERVICE FACILITIES

Source: Digitized passenger terminal locations, including bus passenger terminals, rail passenger terminals, and pickup locations for private intercity buses.

Date: 2022

Method: Calculate the shortest walking time to any intercity service facility from all blocks.

Included in: INC 6

MARKET VALUE ANALYSIS

Source: Plan RVA

Date: Originally developed 2017, but updated 2021

Definition: Analysis performed by the Reinvestment Fund, funded by Richmond Memorial Health Foundation. The market value analysis categorizes areas into nine market types "A" through "I" using the characteristics and vitality of the residential real estate market.

Method: Identify blocks in areas categorized as G, H, or I using a spatial intersection of block centroids and relevant market value areas.

Included in: INC 8

NEIGHBORHOODS AFFECTED BY URBAN RENEWAL

Source: University of Richmond Renewing Inequality project (<https://dsl.richmond.edu/panorama/renewal/#view=-1848.78/-479.46/2.62&viz=map&city=richmondVA&loc=12/37.5646/-77.4167>)

Date: Acquired 2022.

Method: Identify blocks in neighborhoods affected by urban renewal using a spatial intersection of block centroids and these neighborhoods.

Included in: EF 3

NEIGHBORHOODS DISSECTED BY HIGHWAYS

Source: Interstate highway construction (RVA Green 2050)

Date: 2022

Method: Identify blocks within a quarter-mile of Interstate highways, including I-95, I-64, I-195, and Powhite Parkway using a spatial intersection of blocks and a highways buffer.

Included in: EF 2

PARCELS

Source: City of Richmond

Date: Acquired 2022, then representing the most current data.

Method: Identify parcels in each block by parcel centroid. Observe the land use of parcels. Use the land use to make appropriate filters when calculating shares by block.

Included in:

- EF 8 (share of residential parcels in a flood risk zone)
- INC 3 (share of all parcels that are industrial)

QUALITY OPEN SPACE

Source: City of Richmond parks

Date: Acquired 2022, then representing the most current data.

Definition: Quality open spaces are defined as parks with type “regional park”, “neighborhood park”, or “open space”.

Method: Calculate the shortest walking time to any quality open space from all blocks.

Included in: INC 4

REDLINED NEIGHBORHOODS

Source: RVA Green

Date: Acquired 2022, then representing the most current data.

Method: Identify blocks in redlined neighborhoods using a spatial intersection of block centroids and these neighborhoods.

Included in: EF 1

RICHMOND 300 GREAT STREETS

Source: *Richmond 300*

Date: *Richmond 300* Master Plan adopted 2020

Method: Identify blocks with a Great Street using a spatial intersection. Rank Great Streets by their fulfillment of Complete Streets policy on a 0 to 5 scale, with 5 being the maximum score. This score is produced by assigning 1 point each for the presence of sidewalks, crosswalks, transit stops, tree locations, and bike path infrastructure.

Included in:

- INC 1A (identification)
- INC 1B (identification)
- INC 2 (identification)
- INC 3 (identification)
- INC 4 (Complete Streets policy)

RICHMOND 300 NODES

Source: *Richmond 300*

Date: *Richmond 300* Master Plan adopted 2020

Method: Identify blocks in national/regional or neighborhood *Richmond 300* nodes using a spatial intersection of block centroids and nodes.

Included in:

- INC 1A
- INC 1B
- INC 2
- INC 3
- INC 4

SURFACE PARKING

Source: City of Richmond transportation surfaces

Date: Acquired 2022, then representing the most current data.

Method: Calculate the share of total block area covered by surface parking for each block.

Included in: INC 4

TECHNOLOGICAL MOBILITY SUBSTITUTES AND UNBANKED RESIDENTS

Source: Path to Equity survey data (from previous GAP-TA study in Richmond)

Date: Study release 2022; Path to Equity data based on 2021 surveys and 2019 US Census ACS

Definition: Access is evolving from being a function primarily of transportation infrastructure and services to include shared mobility and virtual means of accessing destinations. Virtual access depends on reliable data connections, through broadband internet and/or cellular data plan. In the GAP-TA study¹ that preceded Richmond Connects, Path to Equity survey data were used to identify neighborhoods with low shares of residents having access to these technological resources.

Method: Observe scores by neighborhood.

Included in: INC 9

TRUCK LAST-MILE CONNECTORS

Source: Replica simulated daily trips

Date: Represents 2021 Q2

Definition: Last-mile connectors are defined as all roads used by trucks with a classification below “tertiary”.

Method: Sum the amount of commercial mileage on last-mile connectors by block; connectors are matched to blocks using a spatial intersection.

Included in: INC 3

¹ <https://vtrans.org/resources/120%20-%20City%20of%20Richmond%20Equitable%20Access%20Study.pdf> This document includes details on the derivation of the relevant metrics cited in this section (see “3 – Transportation Technology Accessibility”).

TRIP PRODUCTIONS AND ATTRACTIONS

Source: Replica simulated daily trips

Date: Represents 2021 Q2

Method: Replica provides the origin and destination block group for all trips. This is used to observe productions (origin end) and attractions (destination end) by different modes, purposes, and demographic groups.

Included in:

- INC 3 (commercial productions and attractions)
- INC 10 (non-home attractions for travelers in Communities of Concern)

TRIP VOLUMES

Source: Replica simulated daily trips

Date: Represents 2021 Q2

Method: Replica provides the path for each simulated trip. This is used to observe volumes on links by different modes. If necessary, volumes by link can be summed by to aggregate geometries using the spatial relationship between links.

Included in:

- EF 5 (non-motorized and total trips on high-injury street network links)
- INC 3 (non-motorized and commercial trips)
- INC 7 (total, walking, and non-walking trips)

Concept definitions

QUANTILES

A quantile defines how extreme a value is relative to other values in the population. It is analogous to a percentile: if a value is in the 75th percentile, for example, its quantile is 0.75. Univariate and multivariate quantiles served as the building blocks for scoring EFs and INCs.

The use of quantiles offered a few key benefits:

1. Quantiles reference the distribution from which they are estimated. In the needs analysis, all distributions were fit for values observed only in the city of Richmond. Because of this, quantile scores are contextualized *within the bounds of data observed in the city*. This means that high scores highlighted areas of the highest need within the city; they did not necessarily highlight areas of absolutely high need (though frequently they did).
2. Quantiles exist naturally on a [0,1] scale, where 0 indicates the minimum value, and 1 indicates the maximum value. This put all EFs and INCs on a consistent, easily interpretable scale, where 0 implied no need and 1 implied maximum need.
3. The consistent scaling of univariate and multivariate quantiles allowed complex expressions of EFs and INCs – often including an array of different elements – to be modularized and scored simply. To identify areas where a single element implied a high need, univariate quantiles were used; to identify areas where combinations of multiple elements implied high need, multivariate quantiles were used; to identify areas where any one of multiple elements implied high need, the maximum of unique univariate quantiles was observed.

Below, the particularities of univariate and multivariate quantiles used in the needs analysis are detailed.

Univariate quantiles

Univariate quantiles were used to identify areas where one element indicated relatively high need. These univariate quantiles were calculated by estimating a Gaussian kernel density over the element and observing the value of the cumulative density function (CDF) at each point. The use of a non-parametric density limited the challenge of forcing parametric distributions onto samples of inconsistent centers and spreads.

Multivariate quantiles

Multivariate quantiles – simply the multivariate extension of the univariate quantiles discussed above – were used to identify areas where two or more elements all indicated relatively high need. These multivariate quantiles were calculated by estimating a multivariate distribution over the component elements and observing the value of the cumulative density function (CDF) at each point. The distribution itself was fit using a marginal Gaussian copula, which allows for easy translation between univariate distributions [for each element] and their multivariate interaction [for all elements]. This approach had a few primary benefits:

- Combining elements in a multivariate distribution guaranteed that the multivariate quantiles would identify samples where all marginal values were relatively high. This was required for identifying the confluence of high individual needs.
- The multivariate CDF was agnostic to the scale of individual margins. This was important because scoring often required combining elements with vastly different scales.
- The “marginal” part of the marginal Gaussian copula ensured that unique univariate distributions could be specified for each element. While many constructions of multivariate distributions require that all margins belong to the same distribution family, the marginal copula provided the flexibility to represent individual elements more accurately. It also allowed for the specification of non-parametric marginal distributions, which limited the challenge of forcing parametric distributions onto samples of inconsistent centers and spreads. In this analysis, kernel densities were always used as the marginal distributions.
- The dependence structure of the marginal Gaussian copula was defined solely by the correlations of the marginal elements. Not only did this eliminate unnecessary complexities in the fitting process, but also yielded easy interpretation of the relationship between margins.

ACCESSIBILITY

Accessibility (or access) measures cumulative opportunities reachable from a zone. The cumulative opportunities are defined as a weighted sum of destinations. In general, the weights are functions of travel time between zones: the greater the distance between two zones, the lesser the weight between them. In this analysis, an additional weight for “destination relevance” was sometimes considered, which attempted to measure how much particular destination types mattered to travelers from a zone. Destination relevance considered various demographic characteristics of residents, including age, employment status, and income. Accessibility can also be normalized by the number of competitive travelers that can reach the same destinations from other zones.²

In Richmond Connects, access was measured for multiple modes – auto, walk, bike, and transit – as well as for six destination categories – jobs, shopping, social, school, health, and community. Several individual destinations were considered within each of these six categories. Accessibility performance for each mode (walk, bike, transit, auto) is analyzed independently, with the exception that walk network conditions can impact transit accessibility performance due to the role of walking in transit access and egress.

It is important to note that accessibility scores do not indicate a need on their own. Some residents prefer areas with limited multimodal accessibility and have the ability to pay for homes in these neighborhoods and for vehicles and technology to provide access. Rather, this analysis focuses on underperforming access and diagnosing factors that contribute to poor performance. Underperformance is typically assessed as the gap between the access provided by the current system and the potential accessibility under a hypothetical ideal

² These concepts are explained in greater detail in the Richmond Equitable Access GAP-TA study that preceded and informed the analysis undertaken for Richmond Connects. <https://vtrans.org/resources/120%20-%20City%20of%20Richmond%20Equitable%20Access%20Study.pdf>

condition. Areas with the greatest need are those that could have high accessibility under ideal conditions but have significantly lower access under existing conditions. The ideal varies by the potential cause of underperforming accessibility.

A few unique expressions of the “ideal” case were used in the needs analysis to isolate the factors contributing to instances of underperformance. These led to multiple accessibility indices, which are detailed below.

Quality of service index

The quality of service (QOS) index highlights need based on the quality of the user experience when traveling by a given mode. Zones with a quality of service need are those where accessibility would be relatively high if facilities offered a comfortable, high-quality experience, but where current facilities are discontinuous (have gaps) and/or offer a low-quality experience due to poor conditions or design characteristics. Many of the most intuitive simple measures of multimodal infrastructure are operationalized within this quality of service index (e.g., sidewalks, bike facilities, transit stop shelters).

The QOS index is based on the accessibility to destinations (specific to each travel purpose) provided by a given non-auto mode using a hypothetical ideal network versus the existing conditions network. In the ideal network, all links have optimal facilities/conditions to enhance access and no conditions that degrade access (except those that cannot realistically be changed, such as elevation change or presence of a bridge). Locations exhibiting need are those where the ideal access could be relatively high and the existing conditions access is small in proportion to the ideal.

The features used to modify network travel times for calculation of the QOS index are defined in the table below. Starred factors were used in the previous GAP-TA work; unstarred factors were added for Richmond Connects. All data was acquired in 2022 and, at the time, represented the most currently available data.

| Mode | Factor | Application | Data Sources |
|---------|---|---|---|
| Walk | Sidewalks* | Links where sidewalks are present have enhanced walkability | CoR GIS Transportation Surfaces |
| | Street trees* | Links with street trees have enhanced walkability | CoR Sidewalk Condition Inventory |
| | Sidewalk uplifting, ponding, or cracking* | Links with poor quality sidewalks have degraded walkability | CoR Sidewalk Condition Inventory |
| | Alleys* | Alleyway links have degraded walkability | CoR GIS Transportation Surfaces |
| | Bridges* | Bridge links have degraded walkability | CoR GIS Transportation Surfaces |
| | Parking lots* | Links adjacent to surface parking lots have degraded walkability | CoR GIS Transportation Surfaces |
| | Elevation change | Links with significant elevation gain (by direction of travel) have degraded walkability | National Elevation Dataset |
| | Speed of adjacent traffic | Links where vehicular operating speeds typically exceed 35 mph have degraded walkability | CoR Transportation data (posted speeds) |
| | Lighting | Links with street lighting have enhanced walkability | CoR Lighting Inventory |
| Bicycle | Bike facilities* | Links where bike lanes, sharrows, and paved shoulders are present have enhanced bikeability (varies by facility type) | VDOT Bicycle Facilities Inventory |
| | Alleys* | Alleyway links have degraded bikeability | CoR GIS Transportation Surfaces |
| | Bridges* | Bridge links have degraded bikeability | CoR GIS Transportation Surfaces |
| | Elevation change | Links with significant elevation gain (by direction of travel) have degraded bikeability | National Elevation Dataset |
| | Speed of adjacent traffic | Links where vehicular operating speeds typically exceed 35 mph have degraded bikeability | CoR Transportation data (posted speeds) |
| | Pavement quality | Links with poor pavement conditions have degraded bikeability | CoR GIS Pavement Condition Index |

| Mode | Factor | Application | Data Sources |
|---------|---------------------------|--|-----------------------------------|
| Transit | Walkability factors* | Walk quality of service can affect transit access/egress | (see above) |
| | Stop amenities | Transit stops without shelter, pad, or bench have degrade transit accessibility | GRTC stop inventory |
| | Route on-time performance | Transit links on routes with consistent on-time performance issues degrade accessibility | GRTC on-time performance by route |
| | Service frequency | Infrequent service leads to long wait times for boarding transit vehicle, degrading access | GRTC GTFS feed |

Connectivity index

The connectivity index highlights need based on network connectivity for a given mode. Zones with a connectivity need are those where accessibility would be relatively high if the network were well-connected, but where the existing network is poorly connected. The hypothetical ideal accessibility for this analysis varies by mode. For walk and bike trips, a spatial analysis of proximate zones can be used to find the distance between origins and destinations. These distances can then be converted to travel time estimates, which can then be used in the accessibility scoring procedures to generate estimates of ideal accessibility. For the transit mode, travel time estimates by car are useful for defining the ideal scenario. Although it is rare for transit services to offer travel times that are similar to automobiles, this approach provides a frame of reference highlighting where connections that can be made by car are missing or poorly served by the current transit system.

Locations with high ideal accessibility are proximate to many destinations. Locations with low ideal accessibility are proximate to very few destinations. In the latter case, the land use characteristics of the area make utilitarian non-auto trip-making unlikely, even if networks with favorable facilities are provided. The lower the existing conditions accessibility estimate is to the ideal accessibility estimate, the greater the need for improved connections linking travelers with destinations.

Relevance index

The relevance index highlights needs based on the alignment between the types of destinations reachable by a given mode and the expected travel needs of residents in each neighborhood. Zones with a relevance need are those where the access to relevant destinations is a relatively low proportion of the overall accessibility score. The hypothetical ideal accessibility for this analysis is the accessibility available to all destinations under current conditions. The ratio of accessibility weighted by destination relevance to the hypothetical accessibility indicates where land use changes may be needed. These changes could include the recruitment of missing destination types, or the addition of affordable housing to bring low-wage residents closer to relevant services and work opportunities.

FREIGHT ACCESSIBILITY

The definitions of accessibility and related indices for freight differ from the above definitions due to a focus on access to key nodes in the goods movement network. For Richmond Connects, these key nodes are identified as major port and rail terminals in and around the city.

Freight access is defined as the number of freight terminals within an 8km distance of each zone, where freight terminals are digitized points of rail terminals and Port of Richmond facilities. The QOS index expresses the extent to which congested conditions degrade travel times from zones of origin to freight terminals. A freight-specific “redundancy index” reveals whether competitive alternative routes are available for trucks when congested conditions degrade travel times from zones of origin to freight terminals (i.e., measures whether there are reasonable alternatives to the primary route). Steps for creating these measures are outlined below.

1. Using the loaded highway network, estimate free-flow travel and congested travel times from all zones to freight terminals.
2. Update the congested conditions on the network in place and resolve to get third shortest path between each zone and each freight terminal, assuming the shortest free flow path is congested.
 - a. Each network edge’s weight is multiplied by a congestion factor which is either the total congested-to-free flow travel time ratio for each zone-to-terminal path based on the regional travel model network or 1.20, whichever is higher.
 - b. Resolve the shortest path under the assumed delay condition. This yields the second shortest path.
 - c. Repeat a and b above to get the third shortest path.
3. Calculate the QOS index for each zone-to-terminal pair as the shortest travel time under congested conditions over the shortest travel time under free flow conditions.

4. Calculate the redundancy index for each zone-to-terminal pair as the ratio of the third longest congested travel time to the minimum congested travel time.
 1. Summarize paths between each zone and all freight terminals:
 - a. Count the number of freight terminals within a distance tolerance (8 km)
 - b. Get the mean QOS index to all freight terminals for each zone
 - c. Get the mean connectivity index to all freight terminals for each zone
 2. The end result allows us to map freight accessibility by zone of origin in the following ways:
 - a. Number of freight terminals within 8 km
 - b. Zones with relatively high average congested-to-free flow times in reaching freight terminals (QOS index)
 - c. Zones with relatively few alternative paths that are shorter than simply waiting in congestion along the shortest free-flow path (redundancy index)

These expressions of freight accessibility are used specifically in INC 3.

TRIP CIRCUITY

Trip circuitry describes the extent to which trips made over the network are longer than would be expected if the network provided “ideal” connectivity. It is similar to the connectivity index described above, but instead of focusing on the directness of access (potential trips), it emphasizes observed trips.

To calculate trip circuitry, begin by observing the distance of all trips originating in the city using the Replica simulated daily trips data. Summarize the total person miles of travel (PMT) generated from each block group daily. Based on the destination block group for each trip, calculate the ideal mileage for each trip as the Minkowski distance³ between the origin and destination block group centroids and summarize total expected PMT under ideal network conditions. Calculate the trip circuitry index as the ratio of total PMT to the total expected PMT. This metric is specifically used in INC 6.

3 https://en.wikipedia.org/wiki/Minkowski_distance

EDGE REDUNDANCY

Edge redundancy quantifies the importance of individual links to the connectivity of the network. This can be used to understand how detrimental the loss of a facility would be if it was to become unpassable. For example, if a link in a dense, block-like downtown network could not be used, the loss is not great because a traveler could simply traverse the block around it. However, if a bridge over a river could not be used, a traveler may have to go far out of their way to find another crossing. The downtown link has “high redundancy”; it is easy for a traveler to reconstitute the connectivity of the link using other roads in the network. The bridge has “low redundancy”; it is very costly for a traveler to reconstitute the connectivity provided by this bridge.

To calculate edge redundancy, first observe the travel time along each edge. Then, for each edge, do the following:

1. Drop the edge from the network.
2. Calculate the shortest path travel time from the origin node of the edge to the destination node of the edge.

The path calculated in (2) is the shortest path providing the connectivity of the original edge without using the edge itself. Taking the ratio of this travel time and the edge travel time yields the edge redundancy. Values close to and below 1 indicate high redundancy; increasing higher values indicate increasingly lower redundancy, with values above 20 indicating very poor redundancy. Edge redundancy is specifically used in EF 10 to weight roads by their importance to the network in a calculation of network flood risk.

Scoring Equity Factors

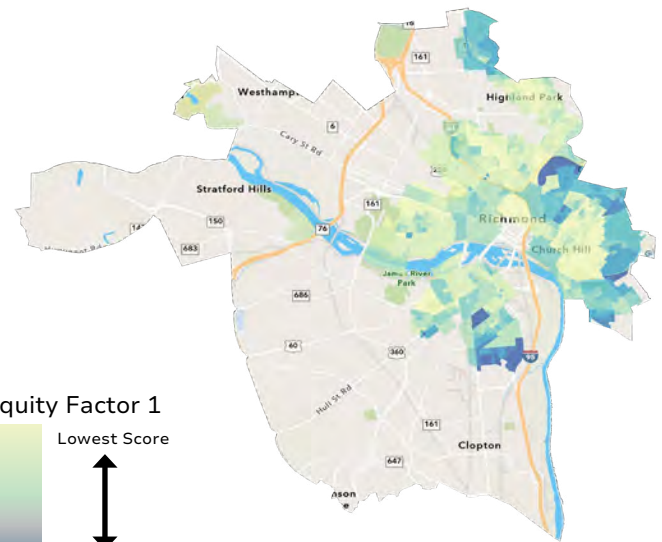
Ten Equity Factors (EFs) aimed to identify areas where Communities of Concern are subject to poorer network performance and supporting built environment conditions. A primary building block of this was identifying where these Communities of Concern exist. This equity factor – EF9 – appeared in several other equity factors to highlight need for vulnerable populations.

Equity Factor 1: Improve access to housing, jobs, services, recreation, and education, addressing remaining inequities created by redlining.

[View detailed map](#)

Areas highlighted for EF1 are those that were redlined and still have high concentrations of low income and BIPOC populations and low rates of BIPOC home ownership, and where accessibility to jobs, services, recreation, and education by the walk, bike, or transit modes is underperforming. Accessibility may underperform due to quality of service, connectivity, destination relevance/land use factors.

1. For the walking mode, calculate the QOS, connectivity, and relevance indices for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue.
3. Repeat (2) for the connectivity and relevance indices.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for walking for any reason.
5. Repeat (1) through (4) for the biking and transit modes
6. Take the multivariate quantile of the three scores observed in (4) and (5). This identifies areas where access is underperforming for **all** modes, but for **any** reason.
7. Take the multivariate quantile of the share of residents who are BIPOC, the share of residents who are low-income, and the share of residents who are BIPOC renters.
8. Take the multivariate quantile of (7) and the population density of residents who are either BIPOC, low-income, or BIPOC and renting. This identifies areas of demographic concern.
9. Take the multivariate quantile of (6) and (8).
10. Mask (9) by redlined areas.



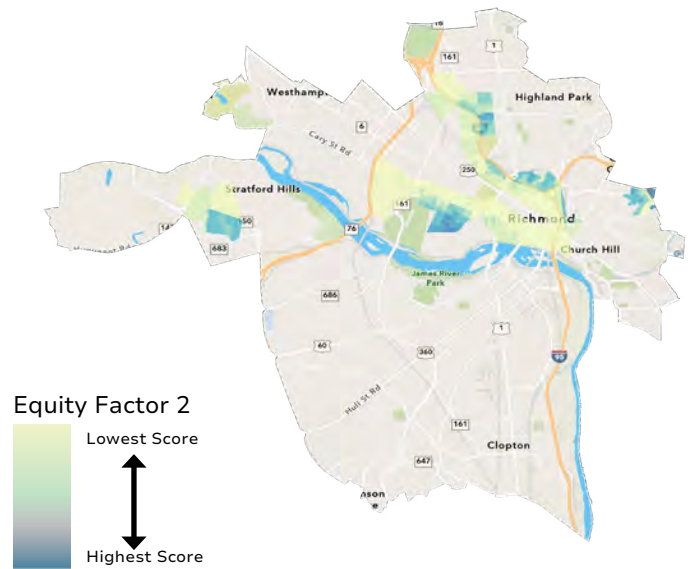
Equity Factor 1
 Lowest Score
 ↑
 ↓
 Highest Score

Equity Factor 2: Reconnect and revitalize communities to address inequities created by the highway system's dissection of neighborhoods.

Areas highlighted for EF2 are those that were dissected by highway construction and have high concentrations of low income and BIPOC populations and low rates of BIPOC home ownership, and where connectivity to jobs, services, recreation, and education by the walk, bike, and transit modes is degrading accessibility.

1. For the walking mode, calculate the connectivity index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three connectivity indices from the six possible connectivity indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a connectivity issue exists if there are at least three destination categories for which connectivity is an issue.
3. Repeat (1) through (2) for the biking and transit modes.
4. Take the multivariate quantile of the three scores observed in (2) and (3). This identifies areas where access is degraded by connectivity for all modes.
5. Take the multivariate quantile of the share of residents who are BIPOC, the share of residents who are low-income, and the share of residents who are BIPOC renters.
6. Take the multivariate quantile of (5) and the population density of residents who are either BIPOC, low-income, or BIPOC and renting. This identifies areas of demographic concern.
7. Take the multivariate quantile of (4) and (6).
8. Mask (7) by neighborhoods dissected by highways.

[View detailed map](#)

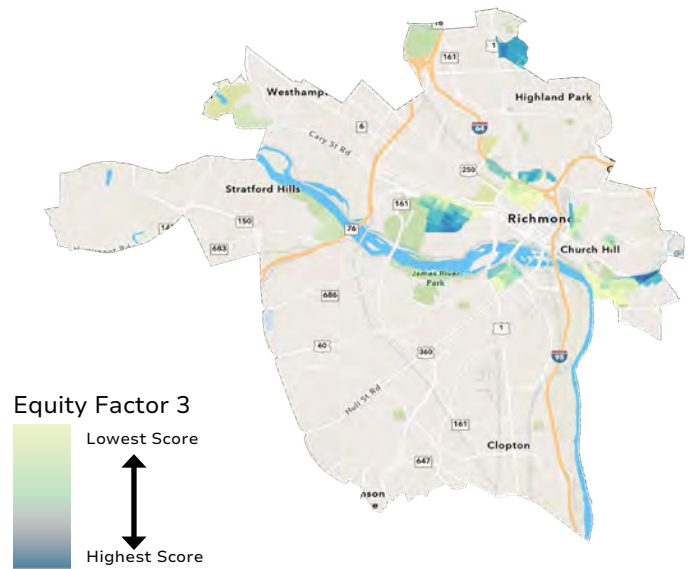


Equity Factor 3: Improve neighborhood connectivity and revitalize the fabric of the communities negatively impacted by urban renewal.

[View detailed map](#)

Areas highlighted for EF3 are those that were affected by urban renewal projects and have high concentrations of low income and BIPOC populations and low rates of BIPOC home ownership, and where connectivity to jobs, services, recreation, and education by the walk, bike, and transit modes and transit modes is degrading accessibility.

1. For the walking mode, calculate the connectivity index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three connectivity indices from the six possible connectivity indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a connectivity issue exists if there are at least three destination categories for which connectivity is an issue.
3. Repeat (1) through (2) for the biking and transit modes.
4. Take the multivariate quantile of the three scores observed in (2) and (3). This identifies areas where access is degraded by connectivity for all modes.
5. Take the multivariate quantile of the share of residents who are BIPOC, the share of residents who are low-income, and the share of residents who are BIPOC renters.
6. Take the multivariate quantile of (5) and the population density of residents who are either BIPOC, low-income, or BIPOC and renting. This identifies areas of demographic concern.
7. Take the multivariate quantile of (4) and (6).
8. Mask (7) by areas impacted by urban renewal.

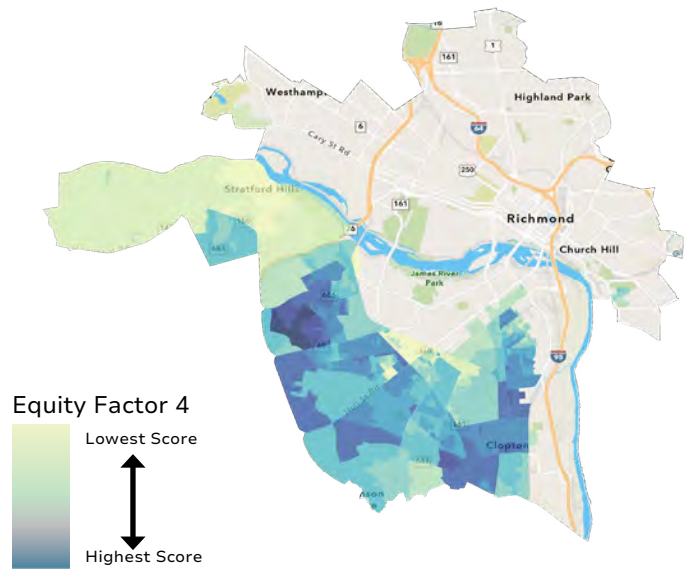


Equity Factor 4: Improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.

[View detailed map](#)

Areas highlighted for EF4 are inner ring suburbs, and where accessibility is underperforming in providing connections to jobs, services, recreation, and education by the walk, bike, and transit modes. Accessibility may underperform due to quality of service, connectivity, destination relevance/land use factors.

1. For the walking mode, calculate the QOS, connectivity, and relevance indices for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue.
3. Repeat (2) for the connectivity and relevance indices.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for walking for any reason.
5. Repeat (1) through (4) for the biking and transit modes
6. Take the multivariate quantile of the three scores observed in (4) and (5). This identifies areas where access is underperforming for **all** modes, but for **any** reason.
7. Take the multivariate quantile of share of low-income residents and population density of low-income residents.
8. Take the multivariate quantile of (6) and (7).
9. Mask (8) by inner-ring suburbs.

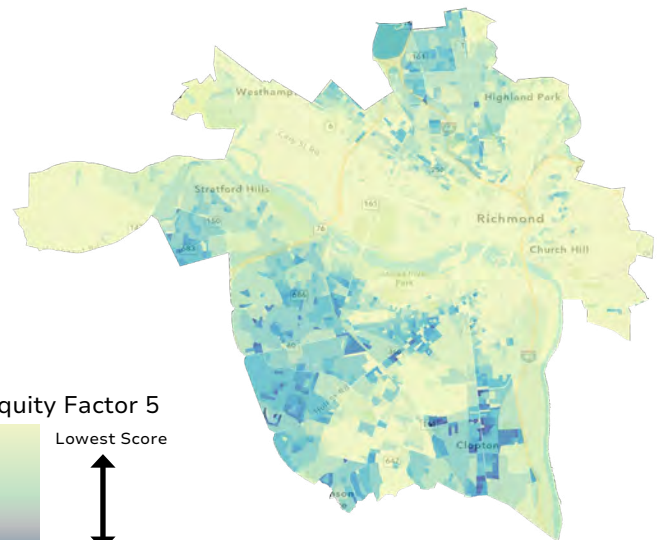


Equity Factor 5: Address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.

[View detailed map](#)

Areas highlighted for EF5 are those where accessibility is underperforming due to poor network quality (facility gaps, low quality of service, etc.) or where safety issues are concentrated; and a significant proportion of non-auto travelers must use high-speed multi-lane facilities to reach destinations (due to a lack of redundant connectivity); and building setbacks are large and/or buildings face high-speed multi-lane facilities.

1. For the walking mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue.
3. Repeat (1) through (2) for the biking and transit modes.
4. Take the multivariate quantile of the three scores observed in (2) and (3). This identifies areas where access is degraded by quality of service for **all** modes.
5. Take the univariate quantile of non-motorized crash density.
6. Take the max of (4) and (5).
7. Take the univariate quantile of the share of non-motorized travel occurring on high-speed roads. This was calculated by summing the non-motorized volumes on high-speed road links and all links by block. Links were matched to blocks using spatial intersection.
8. Take the univariate quantile of average building setback. Building setback was defined as the shortest distance between a building and any street centerline.
9. Take the multivariate quantile of (6), (7), and (8).

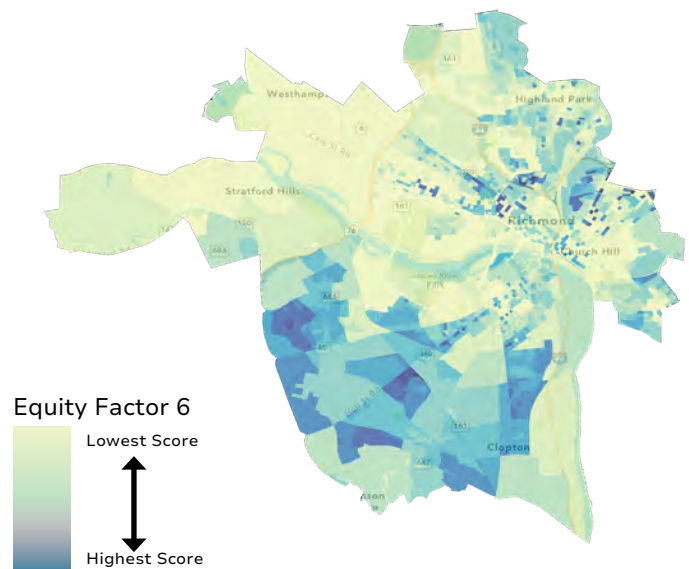


Equity Factor 6: Equitably increase the safety and comfort of cyclists and pedestrians, connecting Communities of Concern to opportunities.

[View detailed map](#)

Areas highlighted for EF6 are those where safety/security issues for bike/ped users are concentrated or walk/bike accessibility is underperforming due to poor network quality or poor connectivity; and where there is a high density of residents in Communities of Concern.

1. For the walking mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue.
3. Repeat (2) for the connectivity index.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for walking because of quality of service **or** connectivity issues.
5. Repeat (1) through (4) for the bike mode
6. Take the multivariate quantile of the two scores observed in (4) and (5). This identifies areas where access is underperforming for walk **and** bike, for either quality of service **or** connectivity issues.
7. Take the univariate quantile of non-motorized crash density.
8. Take the maximum of (6) and (7).
9. Take the multivariate quantile of (8) and the EF9 score defining Communities of Concern (for more detail, see the EF9 section). This identifies areas with vulnerable populations that face either poor non-motorized access or dangerous non-motorized conditions.

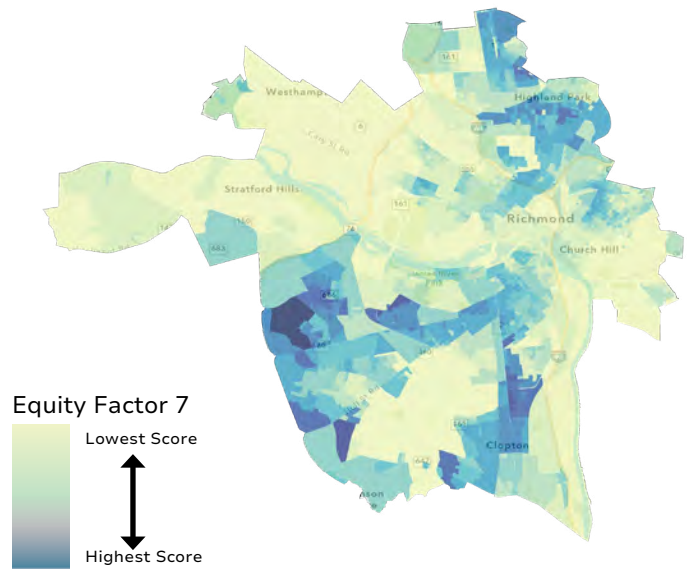


Equity Factor 7: Improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for Communities of Concern.

[View detailed map](#)

Areas highlighted for EF7 are those where transit service frequency or reliability issues degrade access for destinations relevant to Communities of Concern.

1. For the transit mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue.
3. Take the multivariate quantile of (2) and the EF9 score defining Communities of Concern (for more detail, see the EF9 section). This identifies areas with vulnerable populations for whom quality of transit service is poor.

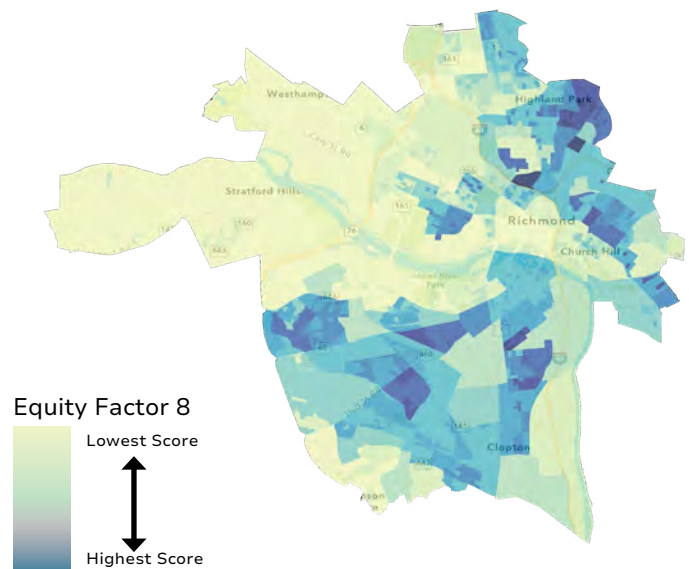


Equity Factor 8: Prioritize the needs of socially vulnerable users and address climate and environmental equity as identified in RVAGreen 2050.

Areas highlighted for EF8 are those where there is a high density of residents in Communities of Concern and exposure to adverse impacts of climate change.

1. Take the multivariate quantile of the urban heat island index, heat vulnerability index, and share of residential parcels in a flood risk zone.
2. Take the multivariate quantile of (2) and the EF9 score defining Communities of Concern (for more detail, see the EF9 section). This identifies areas with vulnerable populations facing disproportionate risk from climate change.

[View detailed map](#)

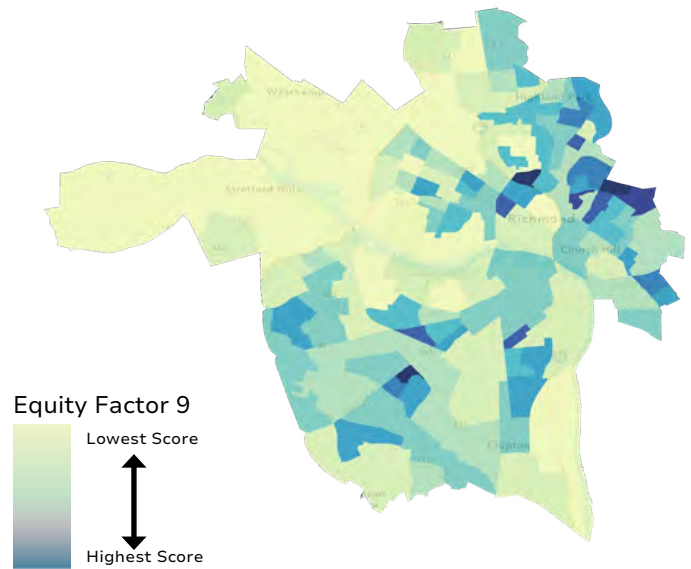


Equity Factor 9: Prioritize densely populated areas of Communities of Concern including communities of color, low-income communities, senior and limited mobility populations, families traveling with children, and at-risk youth.

Areas highlighted for EF9 are those that have relatively high concentrations of Communities of Concern populations.

1. Observe the share of residents in each of the following categories:
 - BIPOC
 - Low-income
 - Old age
 - Renters
 - English as a non-primary language
 - At-risk youth
 - BIPOC renter
2. Observe the assisted-living facility beds per person (as a proxy for mobility-limited populations)
3. Observe the multivariate quantile of all combinations of three elements from the eight possible defined in (1) and (2). Take the maximum. In essence, this asserts that there is a sufficient presence of Communities of Concern if there is a large share of residents in at least three individual communities.
4. Take the multivariate quantile of (3) and the population density of individuals in at least one community of concern. Thus, a Communities of Concern need requires both a high *share* of residents in Communities of Concern **and** a high *population* of these residents.

[View detailed map](#)

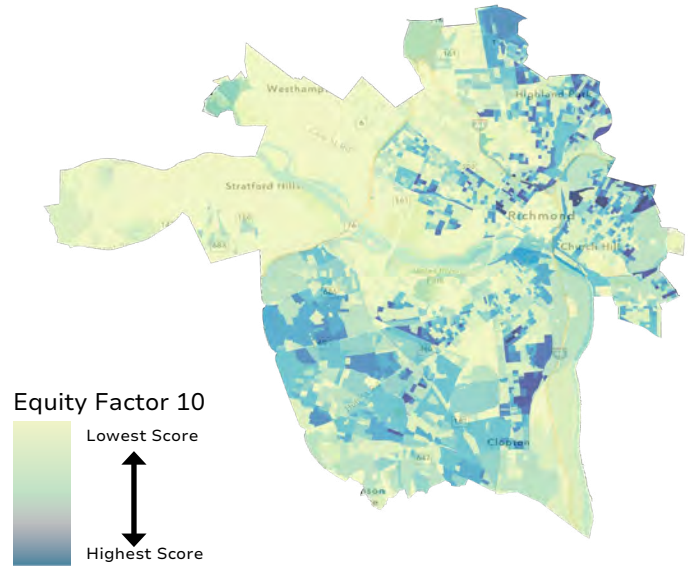


Equity Factor 10: Focus on improving climate resiliency for the most impacted communities.

Areas highlighted for EF10 are those where there is a high density of residents in Communities of Concern and where facilities are vulnerable to disruption due to climate change.

1. Calculate the share of redundancy-weighted road length in a flood risk zone. The redundancy weighting on the roads gives greater weight to roads that lack redundant connectivity and whose absence would thus cause greater issues. Redundancy is defined as the ratio between the road travel time and the minimum travel time to connect the ends of the road if the road itself was unusable.
2. Take the multivariate quantile of (1) and the EF9 score defining Communities of Concern (for more detail, see the EF9 section). This identifies areas where vulnerable populations face limited resiliency to extreme climatic events.

[View detailed map](#)



Scoring Investment Need Categories

Eleven Investment Needs Categories (INCs) aimed to define investment need in various categories for improvement in transportation facilities and supporting land use and built environment conditions. They were defined with the goal of identifying unique areas for different categories of investment.

Investment Need Category 1a: Bicycle

A bicycle need is revealed where access is significantly degraded by the absence of bicycle facilities or the presence of low-quality facilities, or where bike-share facilities are beyond a short walking distance, with less tolerance for poor/underperforming accessibility in R300 Nodes and along Great Streets and the high injury street network.

1. For the biking mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue. This covers the “presence of low-quality facilities” component.
3. Repeat (2) for the connectivity index. This covers the “absence of bicycle facilities” component.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for biking because of quality of service **or** connectivity issues.
5. Take the univariate quantile of the walk time to the nearest bike share facility. Observe the quantile on a distribution beginning at a walk time of 10 minutes, such that times less than 10 have need of 0 and times above 10 are scored with increasingly greater need.
6. Take the maximum of (4) and (5).

7. Identify zones that are in *Richmond 300* nodes, along Great Streets, or along the high injury network. If a zone does not belong to any of these three groups, scale (6) back by a factor of 0.5; if a zone belongs to at least one of these three groups, maintain the score from (6). The greater scaling factor for these groups implies there is less tolerance for poor performance within them.

Investment Need Category 1b: Pedestrian

A pedestrian need is revealed where access is significantly degraded by the absence of pedestrian facilities or the presence of low-quality facilities, with less tolerance for poor/underperforming accessibility in R300 Nodes and along Great Streets and along streets with transit routes and the high injury street network.

1. For the walking mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue. This covers the “presence of low-quality facilities” component.
3. Repeat (2) for the connectivity index. This covers the “absence of pedestrian facilities” component.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for walking because of quality of service or connectivity issues.
5. Identify zones that are in *Richmond 300* nodes, along Great Streets, along transit routes, or along the high injury street network. If a zone does not belong to any of these four groups, scale (4) back by a factor of 0.5; if a zone belongs to at least one of these four groups, maintain the score from (4). The greater scaling factor for these groups implies there is less tolerance for poor performance within them.

Investment Need Category 2: Transit

A transit need is revealed where access is significantly degraded by the absence of transit service or access is degraded by inadequate span of frequent service or unreliable service or inaccessible/ uncomfortable stops, with less tolerance for poor/underperforming accessibility in R300 Nodes and along Great Streets and along streets with transit routes and the high injury street network.

1. For the transit mode, calculate the QOS index for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three QOS indices from the six possible QOS indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a quality of service issue exists if there are at least three destination categories for which quality of service is an issue. This covers the “inadequate span of frequent service or unreliable service or inaccessible/ uncomfortable stops” component.
3. Repeat (2) for the connectivity index. This covers the “absence of transit service” component.
4. Take the maximum of the three scores observed in (2) and (3). This defines the highest need for walking because of quality of service or connectivity issues.
5. Identify zones that are in *Richmond 300* nodes, along Great Streets, along transit routes, or along the high injury street network. If a zone does not belong to any of these four groups, scale (4) back by a factor of 0.5; if a zone belongs to at least one of these four groups, maintain the score from (4). The greater scaling factor for these groups implies there is less tolerance for poor performance within them.

Investment Need Category 3: Freight

*A freight need is revealed where access from freight generators to interregional facilities is degraded by bottlenecks/delay or lack of redundancy, with **more** tolerance for poor/underperforming accessibility in R300 Nodes and along Great Streets; or where there are*

narrow last-mile connectors or modal conflicts/safety concerns; or along segments in zones with high rates of commercial vehicle trip generation and limited curb space or adequate alley/rear loading zone space; or where there is no intermodal (rail, port) facility within 5 miles of zoned industrial areas.

1. Take the multivariate quantile of freight QOS index, freight connectivity index, and freight trip generation. The inclusion of freight trip generation guarantees need will be focused on areas where freight is travelling.
2. Identify zones that are in *Richmond 300* nodes or along Great Streets. If a zone belongs to any of these two groups, scale (1) back by a factor of 0.5; if a zone does not belong to at least one of these two groups, maintain the score from (1). The greater scaling factor for these groups implies there is more tolerance for poor performance within them.
3. Identify zones where the share of industrial land use is non-zero. This is done using parcel data.
4. For the zones identified in (3), take the multivariate quantile of truck trip mileage on last-mile connectors in the zone and the share of industrial land use in the zone. Last-mile connectors are any roads below a tertiary classification.
5. For the zones identified in (3), take the multivariate quantile of the ratio of non-motorized to freight trips passing through the zone and the number of non-motorized trips passing through the zone. This identifies areas where there is a great deal of non-motorized activity, and the ratio of freight to non-motorized trips is high, which sets the stage for modal conflicts.
6. Take the multivariate quantile of (5) and the share of industrial land use in the zone.
7. Take the maximum of (4) and (6).
8. Calculate the mileage of curbs and/or alleys by zone. Based on the presence of curbs and alleys, calculate a parking citation density:
 - Curbs, no alleys: loading zone citations / curb miles

- Alleys, no curbs: (prohibited alley citations + alley parking citations) / alley miles
 - Curbs and alleys: (loading zone citations + prohibited alley citations + alley parking citations) / (curb miles + alley miles)
 - No curbs, no alleys: 0
9. Take the multivariate quantile of (8) and truck trip attractions. This identifies zones to which many trucks travel and appear to have problems with alley and curb parking.
 10. Take the univariate quantile of freight access (number of facilities within 8km).
 11. Mask (10) by industrially zoned districts.
 12. Take the maximum of (2), (7), (9), and (11).

Investment Need Category 4: Land Use

A land use need is revealed where access to competitive relevant destinations (by travel purpose – jobs, shopping, school, health care, recreation, social) by non-auto modes is inadequate or significantly lower than access to all destinations, with less tolerance for poor/underperforming accessibility in R300 Nodes; or where the minimum walk time to quality open space exceeds 10 minutes; or where a significant proportion of land area is devoted to surface parking with less tolerance for high proportions of surface parking areas in R300 Nodes; or where a great street is underdeveloped to support Complete Streets policy.

1. For the walking mode, calculate ratio of competitive, relevance-weighted access to non-competitive, not-relevance-weighted access for each of the six destination categories.
2. Observe the multivariate quantile of all combinations of three competitive relevance ratios from the six possible competitive relevance ratios (because there is one index for each destination category). Take the maximum. In essence, this asserts that travelers from a zone are at a disadvantage if there are at least three destination categories for which they are non-competitive for their relevant destinations.
3. Repeat (1) through (2) for the biking and transit modes.

4. Take the multivariate quantile of (2) and (3). This identifies areas of poor competitive relevance by all three modes.
5. Identify zones that are in *Richmond 300* nodes. If a zone is in a *Richmond 300* node, scale (4) back by a factor of 0.5; if it is not, maintain the score from (4). The greater scaling factor for *Richmond 300* nodes implies there is less tolerance for poor performance within them.
6. Take the univariate quantile of the walk time to the nearest quality open space. Observe the quantile on a distribution beginning at a walk time of 10, such that times less than 10 have need of 0 and times above 10 are scored with increasingly greater need.
7. Take the univariate quantile of the share of a zone dedicated to surface parking.
8. Identify zones that are in *Richmond 300* nodes. If a zone is in a *Richmond 300* node, scale (7) back by a factor of 0.5; if it is not, maintain the score from (7). The greater scaling factor for *Richmond 300* nodes implies there is less tolerance for poor performance within them.
9. Take a length-weighted average of complete-street fulfillment rank for Great Streets by zone. The fulfillment rank is defined subjectively by analysts on a 0-5 scale, where 5 implies closest adherence to Complete Streets policy.
10. Rescale (9) to [0,1], such that the minimum rank of 0 maps to need of 1, and the maximum rank of 5 maps to need of 0. This rescaling is done linearly. If a zone has no Great Streets, assign a need of 0.
11. Take the maximum of (5), (6), (8), and (10).

Investment Need Category 5: Safety / Security

A safety need is revealed where non-interstate crashes leading to fatality or serious injury is high, or in highly walkable (high accessibility) areas with moderate concentrations of violent crime incidents or high concentrations of property crime incidents.

1. Take the univariate quantile of severe and fatal non-interstate crash density.
2. Observe the multivariate quantile of all combinations of three walk accessibilities from the six possible accessibilities (because there is one index for each destination category). Take the maximum. In essence, this asserts that an area is high access if there are at least three destination categories for which access is high.
3. Use area-weighted interpolation to disaggregate property and violent crimes from dispatch areas to zones. At the zonal level, express both as densities.
4. Take the multivariate quantile of (2) and property crime density.
5. Take the multivariate quantile of (2) and adjusted violent crime density. The “adjustment” here accounts for the difference between “moderate” concentrations of violent crime and “high” concentrations of “property crime” (i.e., less violent crime is needed for it to be an issue). This is achieved by altering the marginal density for violent crime in the multivariate distribution; the marginal density is re-fit to map the 75th percentile to the 90th percentile.
6. Take the max of (4) and (5). This identifies areas where violent or property crimes (or both) are common.
7. Take the max of (1) and (6).

Investment Need Category 6: Connectivity

A connectivity need is revealed where observed accessibility is significantly lower than potential accessibility under a well-connected network (for walk, bike, and transit modes); or where observed trip-making is significantly longer than potential trip-making under a well-connected network; or where low/no inter-city rail or bus service is available during peak hours within a 15-minute trip.

1. For the walking mode, calculate the connectivity index for each of the six destination categories.

2. Observe the multivariate quantile of all combinations of three connectivity indices from the six possible connectivity indices (because there is one index for each destination category). Take the maximum. In essence, this asserts that a connectivity issue exists if there are at least three destination categories for which connectivity is an issue.
3. Repeat (1) through (2) for the biking and transit modes.
4. Take the multivariate quantile of the three scores observed in (2) and (3). This identifies areas where access is degraded by connectivity for all modes.
5. Take the univariate quantile of trip circuitry (see the “Trip circuitry” subsection of the “Concept definitions”).
6. Take the univariate quantile of walk time to the nearest intercity service hub.
7. Take the maximum of (4), (5), and (6).

Investment Need Category 7: Maintenance

A maintenance need is revealed where sidewalk condition, pavement condition, or bridge condition is below ‘good’ rating with less tolerance for poor condition in high volume areas, or where fleet (COR & GRTC) vehicle age or mileage, transit stop facilities, signal infrastructure, and parking payment infrastructure is within 20% of ‘useful life’ of the vehicle/feature.

1. Rasterize bridges in poor condition. Bridges in poor condition were those tagged as “poor” in the City of Richmond bridge data. This produces a binary raster: 1 for bridges in poor condition, 0 otherwise.
2. Count the total travel volume by network link using Replica’s synthetic trip data, and rasterize these counts to the same extent and cell size as (1). This produces a rasterized version of city streets, attributed with daily travel volume.
3. Normalize the values in (2) using an empirical cumulative distribution function (ECDF). ECDF normalization returns the number of elements in the sample divided by the total number of elements. For example, in a sample of size 10, the highest value

has an ECDF of 1, the second highest has an ECDF of 0.9, and so on. This method of normalization is akin to a univariate quantile, but accounts for the repeated values produced by rasterizing links.

4. Multiply (1) and (3) to get a weighted bridge condition raster.
5. Rasterize sidewalks in poor condition. Sidewalks in poor condition were those with high levels of cracking, ponding, or vertical uplifting as identified in the City of Richmond sidewalk data. This produces a binary raster: 1 for sidewalks in poor condition, 0 otherwise.
6. Count the total walking volume by network link using Replica's synthetic trip data and rasterize these counts to the same extent and cell size as (5). This produces a rasterized version of city streets, attributed with daily walking volume.
 1. Normalize the values in (6) using an empirical cumulative distribution function (ECDF).
 2. Multiply (5) and (7) to get a weighted sidewalk condition raster.
 3. Rasterize streets with pavement in poor condition. Streets with pavement in poor condition were those whose pavement condition was tagged as "poor", "very poor", "serious", or "failed" in the City of Richmond pavement data. This produces a binary raster: 1 for streets with pavement in poor condition, 0 otherwise.
 4. Count the total non-walking volume by network link using Replica's synthetic trip data and rasterize these counts to the same extent and cell size as (9). This produces a rasterized version of city streets, attributed with daily non-walking volume.
 5. Normalize the values in (10) using an empirical cumulative distribution function (ECDF).
 6. Multiply (9) and (11) to get a weighted pavement condition raster.
 7. Rasterize signal infrastructure in poor conditions. Signals in poor condition were those in service and tagged with a poor condition score in the City of Richmond traffic signal poles data. This produces a binary raster: 1 for signal infrastructure in poor condition, 0 otherwise.

8. Take the maximum of (4), (8), (12), and (13). This identifies locations with poor infrastructure of any type, weighted (if appropriate) by the volume of users impacted by the poor condition.

Investment Need Category 8: Economic Development

An Economic Development need is revealed where access to relevant jobs is reduced by lack of proximal employment destinations (not due to transportation network) in Designated Qualified Opportunity Zones; or where access to relevant retail destinations is reduced by lack of proximal retail destinations (not due to transportation network) in Designated Qualified Opportunity Zones; or where the Market Value Analysis categorized the area as lower market value (Market Categories G, H, or I).

1. Take the univariate quantile of competitive jobs access by walking assuming a perfectly connected network; evaluating access over the perfectly connected network removes any degradations based on network quality or connectivity.
2. Mask (1) by enterprise zones.
3. Take the univariate quantile of competitive retail access by walking assuming a perfectly connected network; evaluating access over the perfectly connected network removes any degradations based on network quality or connectivity.
4. Mask (2) by enterprise zones.
5. For zones in Market Categories G, H, or I, take need as 1; for all other zones, take need as the maximum of (2) and (4).

Investment Need Category 9: Technology

A Technology need is revealed in areas where high portions of the population are unbanked and where access to mobility substitutes (high-speed internet access at home, reliable cellular & data) is limited, or in areas with no access to shared mobility (reflected by bike share access).

1. Take the multivariate quantile of share of unbanked residents and total population.
2. Take the multivariate quantile of share of residents with limited web access, share of residents with no computer access, share of residents with no cell phone, and total population.
3. Take the multivariate quantile of (2) and (3).
4. Take the univariate quantile of the walk time to the nearest bike share location. Observe the quantile on a distribution beginning at a walk time of 10, such that times less than 10 have need of 0 and times above 10 are scored with increasingly greater need.
5. Take the maximum of (3) and (4).

Investment Need Category 10: Sustainability

A sustainability need is revealed where urban heat vulnerability index is high; or where relative risk of flooding is high; or where access to public electric vehicle charging stations is low or EV ownership rates are low.

1. Take the univariate quantile of the heat vulnerability index.
2. Take the univariate quantile of the share of zonal area in a flood risk zone.
3. Take the multivariate quantile of non-home driving attractions by travelers in Communities of Concern and walk time to the nearest EV station. For the walk time to nearest EV station marginal, the density is updated such that it begins at a travel time of 5 (allowing a zone to be within 5 minutes of an EV station before need begins to arise).
4. Take the univariate quantile of EV ownership. Flip the result such that low EV ownership corresponds to a higher quantile.
5. Take the maximum of (3) and (4).
6. Take the maximum of (1), (2), and (5).

Weighting INCs by EFs

Once all EFs and INCs were calculated at the block level, weighted scores were calculated and rasterized as a preparatory step for pushing need to the network. The result of the weighting process was a landscape of needs by category (the 11 defined by the INCs) that was sensitive to the equity considerations relevant to those categories.

RASTERIZATION

Rasterization was required to provide more accurate adherence to particular masking geometries. When scoring at the block level, blocks were assigned to masks on a binary basis (e.g. a block is either inside or outside a redlined area, a block either contains or doesn't contain a link in the high-injury street network). This approach made more sense for some geometries than others. Following from the previous examples, it was reasonable to assert that blocks were in a redlined area on a binary basis, because blocks generally aligned with the geometry of this large area. It was less logical to argue that an entire block should be considered "on the high-injury street network" when the line geometry of the streets did not align with the polygon geometry of the blocks. By applying these masks as a raster, the impact of the masks could be observed with greater detail.

To achieve this, some of the INCs were partially reconstructed at the raster level: INCs 1A, 1B, 2, 3, and 4. All other INCs and all EFs were rasterized using standard procedures. Descriptions of reconstructions are below:

INC1A: Bicycle

1. Rasterize the composite accessibility element score of INC1A (step (6) in the INC1A description).

2. Rasterize each of the *Richmond 300* nodes, Great Streets, and high injury street network to the same extent and cell size as (1). These are all binary rasters: 1 if the cell is part of the feature, 0 otherwise.
3. Take the maximum of the three rasters produced in (2). This identifies areas that are part of any of the three masking geometries.
4. Reclassify 0 to 0.5 in (3). This produces a “tolerance weights” raster, where there is less tolerance for poor performance in/along any of the masking geometries (because the weight is higher for these features).
5. Multiply (1) and (4) to produce INC1A.

INC1B: Pedestrian

1. Rasterize the composite accessibility element score of INC1B (step (4) in the INC1B description).
2. Rasterize each of the *Richmond 300* nodes, Great Streets, and high injury street network to the same extent and cell size as (1). These are all binary rasters: 1 if the cell is part of the feature, 0 otherwise.
3. Take the maximum of the three rasters produced in (2). This identifies areas that are part of any of the three masking geometries.
4. Reclassify 0 to 0.5 in (3). This produces a “tolerance weights” raster, where there is less tolerance for poor performance in/along any of the masking geometries (because the weight is higher for these features).
5. Multiply (1) and (4) to produce INC1B.

INC2: Transit

1. Rasterize the composite accessibility element score of INC2 (step (4) in the INC2 description).
2. Rasterize each of the *Richmond 300* nodes, Great Streets, high injury street network, and transit routes to the same extent and cell size as (1). These are all binary rasters: 1 if the cell is part of the feature, 0 otherwise.
3. Take the maximum of the four rasters produced in (2). This identifies areas that are part of any of the four masking geometries.

4. Reclassify 0 to 0.5 in (3). This produces a “tolerance weights” raster, where there is less tolerance for poor performance in/along any of the masking geometries (because the weight is higher for these features).
5. Multiply (1) and (4) to produce INC2.

INC3: Freight

1. Rasterize the composite accessibility element score of INC3 (step (1) in the INC3 description).
2. Rasterize each of the *Richmond 300* nodes and Great Streets, to the same extent and cell size as (1). These are both binary rasters: 1 if the cell is part of the feature, 0 otherwise.
3. Take the maximum of the three rasters produced in (2). This identifies areas that are part of any of the two masking geometries.
4. Reclassify 1 to 0.5 and 0 to 1 in (3). This produces a “tolerance weights” raster, where there is more tolerance for poor performance in/along any of the masking geometries (because the weight is lower for these features).
5. Multiply (1) and (4) to produce a weighted composite accessibility element score.
6. Rasterize the last-mile connector and modal conflict; curb space and alley; and intermodal facilities element scores of INC3 (steps (7), (9), and (11), respectively, in the INC3 description)
7. Take the maximum of (5) and the three rasters produced in (6) to produce INC3.

INC4: Land use

1. Rasterize the composite competitive accessibility element score of INC4 (step (4) in the INC4 description).
2. Rasterize the surface parking element score of INC4 (step (7) in the INC4 description) to the same extent and cell size as (1).
3. Rasterize the *Richmond 300* nodes to the same extent and cell size as (1). This is a binary raster: 1 if the cell is part of the feature, 0 otherwise.

4. Reclassify 0 to 0.5 in (3). This produces a “tolerance weights” raster, where there is less tolerance for poor performance in/along any of the masking geometries (because the weight is higher for these features).
5. Multiply (1) and (4) to produce a weighted composite competitive accessibility element score.
6. Multiply (2) and (4) to produce a weighted surface parking element score.
7. Rasterize the walk time to quality open space element score of INC4 (step (6) in the INC4 description) to the same extent and cell size as (1).
8. Linearly rescale the [0,5] fulfillment rank for Great Streets to [1,0] (i.e., the minimum rank maps to highest score, and the maximum rank maps to the lowest score). This is done on the raw Great Streets data – the lines themselves – not the Great Streets element score in INC4 (which is defined at the block level).
9. Rasterize the rescaled Great Streets score produced in (8) to the same extent and cell size as (1).
10. Take the maximum of (5), (6), (7), and (9) to produce INC4.

LINKING INCS TO EFS

Once all EFs and INCs were properly rasterized, the EFs used to weight each INC had to be defined. The selection of EFs was based on the relevance to the category of the INC. For example, EF7, which focuses on transit, was not used to weight INCs 1A and 1B, which dealt with bicycle and pedestrian activity, respectively. The EFs used to weight each INC are defined below.

INC1A: Bicycle

- EF1: Improve access to housing, jobs, services, recreation, and education, addressing remaining inequities created by redlining.
- EF2: Reconnect and revitalize communities to address inequities created by the highway system’s dissection of neighborhoods.

- EF3: Improve neighborhood connectivity and revitalize the fabric of the communities negatively impacted by urban renewal.
- EF4: Improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.
- EF5: Address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.
- EF6: Equitably increase the safety and comfort of cyclists and pedestrians, connecting Communities of Concern to opportunities.
- EF8: Prioritize the needs of socially vulnerable users and address climate and environmental equity as identified in RVAGreen 2050.
- EF9: Prioritize densely populated areas of Communities of Concern including communities of color, low-income communities, senior and limited mobility populations, families traveling with children, and at-risk youth.
- EF10: Focus on improving climate resiliency for the most impacted communities.

INC1B: Pedestrian

- EF1
- EF2
- EF3
- EF4
- EF5
- EF6
- EF8
- EF9
- EF10

INC2: Transit

- EF1
- EF2
- EF3
- EF4
- EF5

- EF7: Improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for Communities of Concern.
- EF8
- EF9
- EF10

INC3: Freight

- EF8
- EF9
- EF10

INC4: Land use

- EF1
- EF2
- EF3
- EF4
- EF5
- EF6
- EF7
- EF8
- EF9
- EF10

INC5: Safety and security

- EF1
- EF3
- EF4
- EF5
- EF6
- EF9

INC6: Connectivity

- EF1
- EF2
- EF3
- EF5
- EF6
- EF7
- EF8

- EF9
- EF10

INC7: Maintenance

- EF1
- EF3
- EF6
- EF8
- EF9
- EF10

INC8: Economic development

- EF1
- EF2
- EF3
- EF9
- EF10

INC9: Technology

- EF9

INC10: Sustainability

- EF1
- EF4
- EF6
- EF8
- EF9
- EF10

APPLYING WEIGHTS

With the rasters produced and EF-INC connections well defined, the weighting process was fairly simple:

1. For an INC, min-max normalize the final score raster.
This guarantees that the highest observed score always indicated the highest possible need in the city.
2. Take the mean of the relevant EF rasters for the INC.
This becomes the weighting factor.
3. Multiply (1) by (2) to produce a weighted INC.
4. Repeat (1) through (3) for all INCs.

Pushing Needs to the Network

At this point in the analysis, all needs were defined for zones. However, the unique applications of each need meant that this was *not* the optimal expression for all needs.

For some needs, the links used to travel from a zone were of more interest than the links in that zone themselves. Consider, for example, pedestrian need. Pedestrian need was defined by a poor quality of service and/or poor connectivity. While it was true that underperformance by these standards likely meant proximate network facilities are contributing, they were not the *only* facilities contributing to the underperformance. For example, if many people from this area follow the same path outside a zone to a nearby jobs center, improving links along that path will result in an improved experience for travelers from that zone. This is because investment along those links increases access for travelers from the origin zone by way of improving the conditions for walking. Thus, pedestrian need was best expressed when “pushed to the network”.

For other needs, the links in the origin zone, or simply the zone itself, were most representative of need. Consider, for example, safety and security. Safety need was defined by high rates of vehicle crashes, property crime, and violent crime in walkable areas. Addressing security concerns outside the zone, even if residents

are often taking trips outside the zone, does nothing to improve the security issues observed in the zone itself. If high rates of accidents or crime are observed in an area, measures should be taken directly in that area to address the issues. Thus, safety need was best expressed for the zone or its high-injury links.

Three INCs – 1A (bicycle), 1B (pedestrian), and 3 (freight) – were pushed to the network for interpretation. All others were expressed at the level of the appropriate weighted INC raster. The “pushing” process for INCs 1A, 1B, and 3 is outlined below.

1. For each mode, observe all trip paths by that mode on a given day. This is possible using synthesized daily travel data from Replica.
 - INC1A: all biking trips
 - INC1B: all walking trips
 - INC3: all commercial trips
2. For each zone and weighted INC, observe the median value of the EF-weighted INC in that zone.
3. Assign the values observed in (2) to the trips observed in (1) by the trip origin. Cast these values to all links on the paths. For example, imagine the median weighted INC3 value in zone A is 0.5. Then, for every commercial trip originating from zone A, assign 0.5 to all links on the trip path.
4. For each mode, weighted INC, and link, sum the values cast in (3). This totals the weighted need based on all relevant trips using each link.

Consequently, the link-level need for INCs 1A, 1B, and 3 is a function of both traveler need and trip volume. A high volume of travelers with moderate individual need will result in a high link need; similarly, a fewer number of travelers with high individual need will also result in a high link need.

Incorporation of public comments

Up to this point, the definition of need had only incorporated raw and derived data. While this observed data was rightfully set as the building block of defining need, it was important from an equity perspective to include real experiences of Richmond residents. Various public surveys throughout the course of the analysis allowed city residents to identify points of perceived issues and detail their exact concern. By manually tagging these comments to the appropriate INCs, the needs rasters and needs-on-network links could be updated with this human perspective. The process for updating needs based on comment input is described below.

1. For each INC, identify the comments associated with the INC and spatially cluster them. This was done with the goal of filtering out areas of “one-off” comments, and rather focusing attention on areas where there was a higher concentration of perceived issues. Clustering itself was done using the HDBSCAN algorithm, which accounts for varying cluster density. This was seen as a major benefit because it allowed for the identification of clusters in non-dense areas. Other clustering algorithms tend to ignore variable density, instead setting a fixed density cap; in Richmond, these methods would have resulted in over-representation of areas where high population intrinsically led to higher numbers of comments, and under-representation of comments in suburban areas.
2. Draw a convex hull around each individual cluster. After step (1), the comments are simply points tagged with a cluster ID. The convex hulls – or the smallest convex polygon containing all the comments in a cluster – defines clusters as physical areas rather than collections of points.
3. Rasterize the convex hulls produced in (2) to the extent and cell size of the matching weighted INC raster. This produces a binary raster: 1 if the area is in a comments cluster, 0 otherwise.
4. For cells within a comments cluster (as defined by (3)), boost the weighted INC score by 20%. Where this results in a score greater than 1, cap the score at 1. In this, areas that city residents have identified need are upweighted.
5. For INCs 1A, 1B, and 3 – which have a needs-on-network result in addition to the weighted INC raster – follow these additional steps:
 - Identify which links are in a comments cluster. This is achieved by intersecting the link centroids with the comments cluster. Those with centroids inside a comments cluster are the candidates for a comments boost.
 - For links within a comments cluster (as defined by (5a)), boost the needs-on-network score by 20%. Where this results in a score greater than 1, cap the score at 1. In this, areas that city residents have identified need are upweighted.

APPENDIX B: RECOMMENDATIONS DEVELOPMENT

Existing Plans

The Richmond Connects team looked at previous plans from the City of Richmond, GRTC, VDOT, and other agencies. Some of the plans had mappable projects, and some did not. In addition to the many documents reviewed, many of the existing projects came from a GIS layer created by DPW for existing Capital Improvement Program (CIP) projects. Table 2 shows all of the plans that were reviewed by the team.

Survey comment recommendations

Beyond existing recommendations from past plans, the Richmond Connects team used the more than 5,000 comments from *Richmond 300*, Path to Equity, and Richmond Connects Phase 2 engagement surveys to discover if any project recommendations emerged from public comments. Often repeated public comment recommendations were either categorized as a Super Need - if it occurred in a Community of Concerned area - or was later added as a recommendation in the Phase 4 Engagement Survey to supplement other, existing recommendations.

Figure 38. Webmap of all mapped projects

[View detailed map](#)

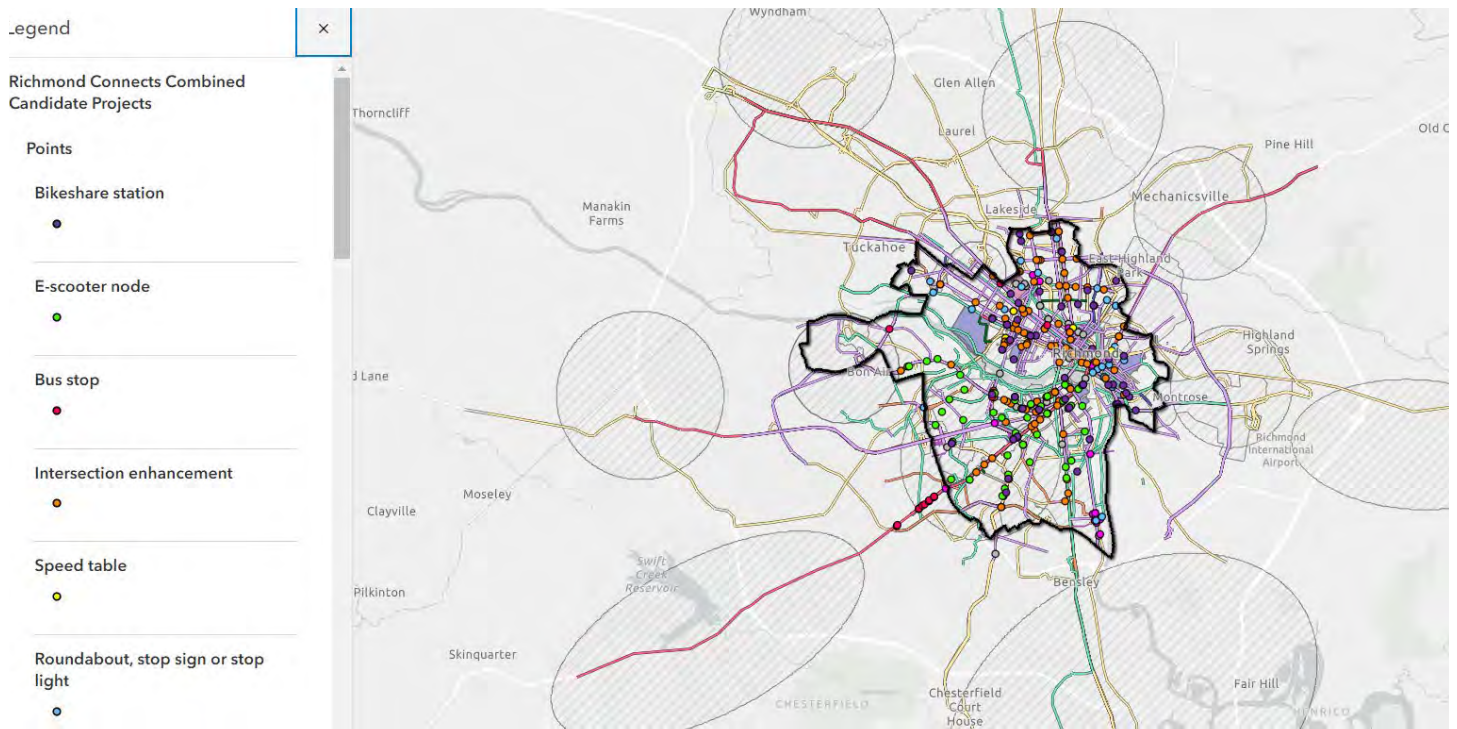


Table 2. List of all plans reviewed by Richmond Connects team to develop existing plan recommendations.

| Plan | Organization | Year |
|---|------------------|------|
| Richmond Downtown Plan | City of Richmond | 2009 |
| Richmond Riverfront Plan | City of Richmond | 2012 |
| Hull Street Corridor Revitalization Plan | City of Richmond | 2013 |
| Richmond Connects | City of Richmond | 2013 |
| Complete Streets Policy Resolution | City of Richmond | 2014 |
| Richmond Bicycle Master Plan | City of Richmond | 2014 |
| VUU/Chamberlayne Neighborhood Plan | City of Richmond | 2015 |
| Vision Zero Resolution | City of Richmond | 2016 |
| ADA Transition Plan | City of Richmond | 2017 |
| Pulse Corridor Plan | City of Richmond | 2017 |
| Richmond Transit Network Plan | City of Richmond | 2017 |
| Better Streets | City of Richmond | 2018 |
| Bliley Road Multimodal Study | City of Richmond | 2019 |
| Forest Hill Terrace Neighborhood Transportation Study | City of Richmond | 2019 |
| Huguenot Neighborhood Traffic Calming Study | City of Richmond | 2019 |
| James River Park System Master Plan | City of Richmond | 2019 |
| Scott's Addition Parking And Circulation Study | City of Richmond | 2019 |
| Richmond 300 | City of Richmond | 2020 |
| Vision Zero Presentation | City of Richmond | 2020 |
| City Of Richmond's Equity Agenda | City of Richmond | 2021 |
| Pavement Management Plan | City of Richmond | 2021 |
| Proposed Bike Lanes For Summer 2021 – Summer 2022 Resurfacing Program | City of Richmond | 2021 |
| Shockoe Small Area Plan | City of Richmond | 2021 |
| Vision Zero – 2021 Background Information | City of Richmond | 2021 |
| Vision Zero Action Plan | City of Richmond | 2021 |
| Arthur Ashe Boulevard Bridge Replacement Over CSX Railroad | City of Richmond | 2022 |
| Capital Improvement Program | City of Richmond | 2022 |
| City Center Innovation District Small Area Plan | City of Richmond | 2022 |
| Climate Equity Action Plan 2030 | City of Richmond | 2022 |
| High Risk Impaired Driver Action Plan | City of Richmond | 2022 |
| Neighborhood Traffic Management Program | City of Richmond | 2022 |
| Path To Equity | City of Richmond | 2022 |
| Unfunded CIP Projects | City of Richmond | 2022 |

| Plan | Organization | Year |
|---|----------------------|------------|
| Speed Tables List | City of Richmond | 2023 |
| 2023 Paving Plan | City of Richmond | 2023 |
| CVTA Meeting Agenda | CVTA | 2022 |
| CVTA Project Funding Applications | CVTA | 2022 |
| CVTA Technical Advisory Committee June 13Th Meeting Agenda | CVTA | 2022 |
| CVTA Regional Funding Scenario – Summary | CVTA | Not listed |
| Statewide Rail Plan | DRPT | 2017 |
| Bike Ped Network Improvement Study | FHWA | 2017 |
| Broad Street Rapid Transit Study | GRTC | 2014 |
| GRTC | GRTC | 2017 |
| GRTC TDP | GRTC | 2018 |
| Regional Public Transportation Plan | GRTC | 2021 |
| Connecting The Richmond Region | GWP | 2022 |
| Richmond's Transit Revolution | GWP | Not listed |
| VTrans 2025 Needs Assessment | OIPI | 2017 |
| VTrans Needs | OIPI | 2021 |
| RI01 Semmes Ave | OIPI | 2022 |
| RI02 Chamberlayne Ave | OIPI | 2022 |
| RI03 US360 | OIPI | 2022 |
| Port Of Virginia Master Plan Exec Summary | Port of Virginia | 2021 |
| Equity And Wealth Building Investment Agenda | Richmond Together | 2021 |
| Needs And Gaps Assessment For The Transportation Disadvantaged | RRTPO | 2015 |
| Greater RVA Transit Vision Plan | RRTPO | 2017 |
| RRTPO Regional Park & Ride Investment Strategy Richmond Regional Park And Ride Investment Strategy | RRTPO | 2019 |
| Greater RVA Transit Vision Plan: Near-Term Strategic Technical Analysis | RRTPO | 2020 |
| Connect RVA 2045 LRTP | RRTPO | 2021 |
| PlanRVA's BikePedRVA 2045 Plan | RRTPO | 2022 |
| PlanRVA's Draft BikePedRVA 2045 Plan | RRTPO | 2022 |
| Richmond Regional Transportation Safety Plan | RRTPO | 2022 |
| RRTPO Project Funding Applications | RRTPO | 2022 |
| One VCU Master Plan | VCU | Not listed |
| Assessing Richmond Transit Network Plan For Transit-Oriented Development | VCU (student thesis) | 2017 |

| Plan | Organization | Year |
|---|--------------|------------|
| Virginia Surface Transportation Plan 2035 | VDOT | 2010 |
| I-95/I-64 Overlap Study | VDOT | 2013 |
| Strategic Highway Safety Plan | VDOT | 2017 |
| PSAP | VDOT | 2018 |
| Interstate 295 Technical Memorandum | VDOT | 2021 |
| Interstate 64/664 Corridor Improvement Plan | VDOT | 2021 |
| Interstate 95 Corridor Improvement Plan | VDOT | 2021 |
| Arrive Alive | VDOT | 2022 |
| Strategic Highway Safety Plan 2022-2026 Presentation To The Commonwealth Transportation Board | VDOT | 2022 |
| PSAP Viewer | VDOT | Not listed |
| VDOT Park & Ride Investment Strategy | VDOT | Not listed |

Project Buffer and Selection

After mapping and compiling all of the existing plan recommendations and public comment recommendations, there were around 8,000 unique project idea points, lines, and polygons that needed to be delineated in some way to figure out which ones would best address needs based on quantitative INC scores and further figure out which project recommendations to include in the Phase 4 Engagement Survey and ultimately the Action Plan and Strategic Plan. The team decided to use a quantitative approach based on the Needs scores developed earlier for each INC.

First, the Richmond Connects team went through all of the projects and tagged each with any INCs it would address or relate to. Table 3 shows all of the INC assumptions for each type of project.

Table 3. Assumptions for tagging INCs by project type

| Recommendation Type | Example | Assumptions | INCs |
|--|---|--|--------------------------------|
| Enhanced, more frequent transit or new transit lines | 10 minute peak frequency on new Cary/Main BRT | More frequent transit or new transit lines lead to more people being able to get to retail and promotes sustainable non-car use. | INC2 INC6 INC8 INC10 |
| New bike infrastructure (not shared-use path) | Buffered bike lane on 2nd St from Byrd St to Duval St | More bike infrastructure would make certain areas more connected to other areas via bike and promotes sustainable non-car use. | INC1A INC5 INC6 INC10 |

| Recommendation Type | Example | Assumptions | INCs |
|---|--|--|---|
| Shared-use path | Fall Line Trail segments | Shared-use paths make biking/driving more safe for bikers/peds, increases land values nearby, promotes creative land uses, and promotes sustainable non-car use. | INC1A INC1B INC5 INC6 INC8 INC10 |
| Bikeshare station | Add bikeshare station at VUU | New bikeshare stations give bikeshare users more options to connect to new areas with a new technology and promotes sustainable non-car use. | INC1A INC8 INC9 INC10 |
| E-scooter node | Add e-scooter node at Forest Hill Park | New e-scooter nodes connect more people with new start/stop points with new technology and promotes sustainable non-car use. | INC1A INC9 INC10 |
| Bus stop enhancement | Add shelter to bus stop at Hull and Cowardin | Bus stop enhancements promote transit and safety by reducing heat vulnerability. | INC2 INC5 INC10 |
| Intersection enhancement | Add pedestrian flashing beacons at intersection of Forest Hill Ave and Kenmore Rd | Crosswalk enhancements create safety for pedestrians. | INC2 INC5 |
| Introduce street grid/ roadway connection, add bridge, road extension | Add new roadway connection over CSX tracks from Belleveille St to Hamilton St | New roadway connections/bridges are assumed to accommodate peds and bikes, and creates more connectivity. Adding street grid connections also makes an area more ready for future development. | INC1A INC1B INC3 INC4 INC6 INC8 |
| Bridge rehab | Rehabilitate Mayo Bridge | A bridge rehabilitation doesn't add new connectivity, only maintenance. Bridge rehab often can increase the weight (freight vehicles) | INC3 INC7 |
| New roundabout or other traffic calming | Add roundabout at intersection of Oliver Hill Way and I-95 exit | Roundabouts are considered traffic calming measures, which slow speeds and make it friendlier for peds and bikes. Speed of adjacent traffic is one factor for the accessibility measures in INCs 1a and 1b | INC1A INC1B INC3 INC5 |
| New stop sign or new traffic signal | Add 4-way stop sign at E Leigh St @ N 21st St | New stop signs and new traffic signals provide opportunities for pedestrian crosswalks | INC1B INC5 |
| Drainage improvements | Drainage improvements on Hull St | Drainage improvements help mitigate flooding. | INC7 INC10 |
| Speed table installation | Speed table installation on W Main St | Speed table installations creates more safety for drivers, bikers, and pedestrians. | INC1A INC1B INC5 |
| Road widening, interchange improvements, adding turn lanes | Reconfigure I-95 off-ramp termini to a right turn only and a through and left only, which would have to yield to I-95 NB traffic. Also, a barrier addition between rightmost lane coming from I-95 SB and inside RTL on I-95 SB Off-Ramp Termini at Bells Rd Interchange | Road widening, interchange improvements, and adding lanes create more safety for drivers, but not peds or bikers. | INC1A INC1B INC3 INC5 |
| New sidewalks | Install sidewalk on Bliley Rd | New sidewalks create more safety for peds so they don't have to walk on the road, helping promote sustainable, non-car use. | INC1B INC5 INC6 INC10 |
| Sidewalk maintenance or streetscape enhancement | Sidewalk repair in Maymont Area | Sidewalk maintenance and streetscape enhancements like street lamps and street trees creates more safety for peds. | INC1B INC5 INC7 INC10 |

For each project, a certain buffer area was assigned around each project's geography in GIS in order to create a proxy for how much impact the project would potentially have on the surrounding area's INC scores. Table 4 shows the buffer assumptions for each project type:

Table 4. Assumptions for buffer size by project type

| Recommendation Type | Intersection Buffer Area | Assumptions |
|--|--------------------------|--|
| Transit line | 1/4 mile | People are generally willing to walk 1/4 mile to catch a bus, sometimes up to a 1/2 mile, but beyond 1/4 mile may be considered a far walk. |
| Shared-use path | 1/4 mile | People are willing to walk 1/4 mile to walk or bike on a shared-use path, and the effects of that shared-use path will be felt by neighborhoods within 1/4 mile. |
| New sidewalk, sidewalk repair, or streetscape enhancement | 500 feet (1/10 mile) | A new or repaired sidewalk will only influence people within 500 feet of it. |
| Bike infrastructure (non-sharrow) | 1/4 mile | People are generally willing to travel 1/4 mile on a road without bike infrastructure to get to a road with dedicated bike infrastructure. People may be willing to bike more than 1/4 mile away, but that produces a wide buffer width for the purposes of looking at the nearby need scores. |
| Bike infrastructure (sharrow) | 500 feet (1/10 mile) | Only people very close to the shared-lane road will bike on it. |
| Intersection enhancement | 500 feet (1/10 mile) | The enhancement only affects the safety of the immediate intersection. General industry standard is to have a crosswalk no further than 600 feet from another marked crossing, and this measurement is generally in line with that. |
| Bus stop enhancements | 500 feet (1/10 mile) | The enhancement only affects the safety of people close to the stop. |
| Bikeshare station | 1/4 mile | People are willing to walk 1/4 mile to a bikeshare station. |
| E-scooter node | 1/4 mile | People are willing to walk 1/4 mile to an e-scooter node. |
| Bridge improvement | 50 feet (1/100 mile) | This has a negligible impact on the area around it. The maintenance calculations are very specific to the immediate area. |
| Add roundabout, stop sign, stop light | 50 feet (1/100 mile) | This has a negligible impact on the area around it. |
| Road widening, interchange improvements, adding turn lanes | 50 feet (1/100 mile) | This has a negligible impact on the area around it. |
| Speed table | 500 feet (1/10 mile) | People are more likely to walk/bike on a street with a speed table than one without it. |
| Introduce street grid/roadway connection, add bridge, road extension | 500 feet (1/10 mile) | This has an impact on networks within 500 feet. |

Once each project was assigned INCs and a buffer amount, each project was buffered the chosen amount using the “Buffer” tool. All projects for each INC were then compiled into 11 polygon layers. Using a Spatial Join, each buffer was assigned to at least one Needs Area.

Previously-calculated INC rasters were turned into integer-based polygon layers based on the INC score using the “Raster to Polygon” tool in ArcGIS.

Using the “Summarize Within” tool, quantitative scores were calculated based on the INC polygon and INC network score line layers (only for INC1A, INC1B, and INC3). For the INC polygon layers, the Summarize Within metric calculated was the percentage of area within the project’s buffer that was a Tier 1 INC polygon (>0.8 for all INCs except for INC3, which was >0.4, and INC9, which was >0.6). Additionally, network line layer scores were calculated within the buffer polygons in order to 1) calculate the total line length within the buffer polygon,

and then 2) calculate the total line length within the buffer polygon that had a network score of 0.8 or above (except for INC3, which was >0.4). Once all projects had a score based on the applicable 11 INC polygon and 3 INC network scores, all Summarize Within tables were joined together with the original project table so that each project had either a numeric score or a NULL value for each INC. The table was exported to Excel so that the team could filter and view which top projects for each INC came up for each Needs Area. A threshold was put in place to see which projects met a high Tier 1 need, either by having at least a 10% Tier 1 area in the buffer polygon or more than 2,000 feet of Tier 1 network score in the buffer polygon. Table 5 shows how many total tagged and qualified projects there were for each INC, and what percent of projects qualified in the Tier 1 Need threshold:

Table 5. Output results of qualified projects by INC

| INC | Total Tagged Projects | Total Qualified Projects | Percent Qualified |
|--------------------------|-----------------------|--------------------------|-------------------|
| 1A - Bike | 689 | 320 | 46% |
| 1B - Ped | 502 | 177 | 35% |
| 2 - Transit | 1,524 | 182 | 12% |
| 3 - Freight | 156 | 91 | 58% |
| 4 - Land Use | 30 | 12 | 40% |
| 5 - Safety | 2,113 | 321 | 15% |
| 6 - Connectivity | 518 | 108 | 21% |
| 7 - Maintenance | 82 | 5 | 6% |
| 8 - Economic Development | 231 | 23 | 10% |
| 9 - Technology | 96 | 14 | 15% |
| 10 - Sustainability | 2,062 | 204 | 10% |

Project Prioritization & Development

Using a combined quantitative and qualitative approach, the team then used this scoring methodology, plus assessing public opinion via the previous surveys, to choose the top projects for each of the 17 Needs Areas. Needs Areas that represented Communities of Concern or had higher INC scores were given more projects. Needs Areas like Broad Rock/Walmsley (NA 11) had both Communities of Concern and many Tier 1 needs, so it was given the highest amount of projects [16]. Needs Areas like Fulton (NA 7) had Communities of Concern but few Tier 1 needs, so it was given 12 projects, whereas Near West End (NA 14) had few Communities of Concern but some high Tier 1 modal needs, so it was given 14 projects. Needs Areas such as Far West End (NA 17) and Huguenot (NA 13) had few Communities of Concern and few Tier 1 needs, so they were given the fewest amount of projects [7].

The ultimate goal of choosing the medley of projects for each Needs Area was to address as many Tier 1 needs for as many INCs as possible. The first projects selected were those existing plan projects with many mentions in past surveys and high Tier 1 INC scores. Next, projects based on public comment recommendations or “Super Needs” that had high Tier 1 INC scores were selected. Then, in some areas with many Tier 1 needs but few existing projects or public comment recommendations - especially for those Needs Areas in the Southside - the Richmond Connects team created new recommendations to address the Tier 1 needs. Many of these kinds of ‘new’ projects were bicycle infrastructure-related, though some more broad projects like adding more greenspace to Needs Area 10 or revitalizing Needs Area 12 were added as well. For Needs Areas like Far West End (NA 17) with few Tier 1 needs, existing DPW CIP projects were selected. Every Needs Area had a project related to improving bus stop infrastructure. There were around 141 unique projects throughout the 17 surveys.

The vast majority of projects needed further thought before they could be added with a fleshed out description for the surveys. For any project that needed development, the Richmond Connects team created at least a brief description for the survey. See the Phase 4 Survey Results document for more information on the set-up and outcome of the surveys.

Once the surveys were closed, the Richmond Connects team calculated the relative popularity of each project. Some projects that were already designed and in the pipeline had a project description already fully fleshed out. But many of the projects were just ideas, so the team had to do some more intense project development to figure out the potential engineering feasibility and cost. The projects chosen for this further development were those that had the highest popularity based on survey feedback.

Action Plan Prioritization

After consolidating from 8,000 unique projects to 141, the list of projects needed to be further prioritized for the Action Plan. The projects were placed into 5 categories:

PRIORITIZE WHAT THE PEOPLE NEED: Highest priority for implementation. These projects directly address issues that Communities of Concern were most needed, with extra weight given to projects that are direct investments in disinvested areas. These projects may be difficult to implement, but are the most important to move the needle on transportation equity. These projects are also called “Priority Projects.” There are 39 project recommendations in the Action Plan under this category.

FINISH WHAT WE STARTED: These projects are already underway. They have already received funding for design and implementation. Filling any remaining funding gaps is a priority to bring these projects to completion, making the best use of taxpayer dollars. There are two types of projects within this category:

Priority Completion Projects: These projects were included in the draft list of recommendations presented to the public in the Phase 4 survey, and meet a top equity need. There are 17 project recommendations in the Action Plan that are Priority Completion Projects.

Other Completion Projects: These are projects that were not included in the Phase 4 survey of draft recommendations. These are projects currently in the City's Capital Improvement Program and meet an equity need identified in the Richmond Connects needs analysis process. There are 35 project recommendations in the Action Plan that are Other Completion Projects.

Shorter Term: These projects are “low-hanging fruit.” They are low-cost or easily implementable, and have at least a moderate level of support from the general public and Communities of Concern. These projects are also called “Shorter Term/First Steps Projects.” There are 11 project recommendations in the Action Plan that fall under this category.

STRATEGIC PLAN PROJECTS: There are 69 project recommendations that were not advanced to the 2024 Action Plan. These 69 project recommendations remain valid, as they still meet a high equity-based need and are included in this Strategic Plan as “Longer Term” projects. However, they do not represent the highest priority projects right now. As the City implements the projects currently in the 2024 Action Plan, these other project recommendations may be moved forward into subsequent Action Plans.

APPENDIX C: PROJECT RECOMMENDATIONS DETAILS

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-------|------|---|------------------------|--|---------------|------|
| 4C | 1.01 | Richmond Connects Equity-Driven Sidewalks Projects | High Priority Projects | Very High (\$\$\$\$) | 5.00 | 205 |
| 5B | 1.02 | Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements | High Priority Projects | Moderate (\$\$) | 5.00 | 211 |
| 1C.3 | 1.03 | Laburnum Avenue Safety Improvements | High Priority Projects | High (\$\$\$) | 4.97 | 213 |
| 1C.1 | 1.04 | Chamberlayne Avenue Pedestrian Safety Improvements | High Priority Projects | High (\$\$\$) | 4.91 | 215 |
| 1C.2 | 1.05 | Brook Road Traffic Calming and Pedestrian Safety Improvements | High Priority Projects | High (\$\$\$) | 4.91 | 217 |
| 12C | 1.06 | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | High Priority Projects | Very High (\$\$\$\$) | 4.87 | 219 |
| 10A.1 | 1.07 | Bells Road Sidewalks | High Priority Projects | High (\$\$\$) | 4.87 | 221 |
| 10A.2 | 1.08 | Walmsley Boulevard Shared Use Path | High Priority Projects | Very High (\$\$\$\$) | 4.87 | 223 |
| 10A.3 | 1.09 | Terminal Boulevard Shared Use Path | High Priority Projects | High (\$\$\$) | 4.87 | 225 |
| 3A | 1.10 | North Avenue Pedestrian Safety Improvements | High Priority Projects | Moderate (\$\$) | 4.80 | 227 |
| 12A | 1.11 | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | High Priority Projects | High (\$\$\$) | 4.67 | 229 |
| 6A | 1.12 | Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming | High Priority Projects | Moderate (\$\$) | 4.60 | 231 |
| 9A | 1.13 | Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements | High Priority Projects | High (\$\$\$) | 4.60 | 233 |
| 1F | 1.14 | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | High Priority Projects | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.56 | 236 |
| 5C | 1.15 | Fairfield Pedestrian Security and Shade Project | High Priority Projects | Low (\$) | 4.53 | 238 |
| 6D | 1.16 | Church Hill Street Lighting | High Priority Projects | Moderate (\$\$) | 4.53 | 240 |
| 4A | 1.17 | Downtown Safety Spot Improvements | High Priority Projects | Low (\$) | 4.47 | 242 |
| 7B | 1.18 | Government Road Streetscape Improvements | High Priority Projects | Very High (\$\$\$\$) | 4.47 | 244 |
| 7G | 1.19 | Pulse Bus Rapid Transit Eastern Extension | High Priority Projects | High (\$\$\$) | 4.33 | 246 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-------|------|--|------------------------|----------------------|---------------|------|
| 9C | 1.20 | Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike | High Priority Projects | High (\$\$\$) | 4.27 | 247 |
| 11F | 1.21 | Richmond High School of the Arts Pedestrian Safety Improvements | High Priority Projects | Very High (\$\$\$\$) | 4.20 | 249 |
| 12B.1 | 1.22 | Southside Pedestrian Improvements - Old Warwick Road north of US Route 60 | High Priority Projects | Moderate (\$\$) | 4.20 | 251 |
| 12B.2 | 1.23 | Southside Pedestrian Improvements - Old Warwick Road south of US Route 60 | High Priority Projects | Moderate (\$\$) | 4.20 | 253 |
| 12B.3 | 1.24 | Southside Pedestrian Improvements - Carnation Street | High Priority Projects | Moderate (\$\$) | 4.20 | 255 |
| 12B.4 | 1.25 | Southside Pedestrian Improvements - German School Road | High Priority Projects | Moderate (\$\$) | 4.20 | 257 |
| 12B.5 | 1.26 | Southside Pedestrian Improvements - Whitehead Road | High Priority Projects | High (\$\$\$) | 4.20 | 259 |
| 3B | 1.28 | Dove Street Pedestrian Safety Improvements | High Priority Projects | Moderate (\$\$) | 4.20 | 261 |
| 5A.1 | 1.28 | Coalter Street Traffic Calming | High Priority Projects | Low (\$) | 4.13 | 263 |
| 5A.2 | 1.29 | Fairfield Avenue/ Fairfield Way Traffic Calming | High Priority Projects | Low (\$) | 4.13 | 265 |
| 7A | 1.30 | Williamsburg Road/ Williamsburg Avenue Traffic Calming | High Priority Projects | Moderate (\$\$) | 4.13 | 268 |
| 1A | 1.31 | Westbrook Avenue Pedestrian Improvements | High Priority Projects | Low (\$) | 4.07 | 270 |
| 4K | 1.32 | Richmond Connects Equity-Centered Pavement Maintenance Prioritization | High Priority Projects | Very High (\$\$\$\$) | 4.07 | 271 |
| 4G | 1.33 | Reconnect Jackson Ward | High Priority Projects | Very High (\$\$\$\$) | 4.00 | 277 |
| 13A | 1.34 | Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powwhite Pkwy | High Priority Projects | Very High (\$\$\$\$) | 3.93 | 278 |
| 1E | 1.35 | North-South Bus Rapid Transit | High Priority Projects | Very High (\$\$\$\$) | 3.87 | 280 |
| 11A | 1.36 | Southside Plaza Pedestrian Connections Across Railroad Tracks | High Priority Projects | Very High (\$\$\$\$) | 3.87 | 281 |
| 16A | 1.37 | Three Chopt Road Sidewalks | High Priority Projects | High (\$\$\$) | 3.80 | 283 |
| 17A | 1.38 | Forest Hill Avenue Streetscape | High Priority Projects | Moderate (\$\$) | 3.80 | 286 |
| 17F | 1.39 | Huguenot Road Bikeway | High Priority Projects | Moderate (\$\$) | 3.30 | 288 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-------|------|---|------------------------------|------------------|---------------|------|
| 14L | n/a | Carytown Pedestrian Safety Improvements | High Priority Projects | Low (\$) | n/a | 290 |
| 9B | 2.01 | Hull Street Streetscape - Mayo Bridge to 9th Street | Priority Completion Projects | Partially Funded | 4.80 | 291 |
| 11C | 2.02 | Southwood Parkway Sidewalk | Priority Completion Projects | Partially Funded | 4.20 | 291 |
| 12F | 2.03 | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | Priority Completion Projects | Partially Funded | 3.73 | 291 |
| 6C | 2.04 | Shockoe Valley Street Improvements | Priority Completion Projects | Partially Funded | 3.73 | 292 |
| 9D | 2.05 | Mayo Bridge Pedestrian and Bicycle Facilities | Priority Completion Projects | Partially Funded | 3.67 | 292 |
| 15C | 2.06 | Arthur Ashe Boulevard Bridge Replacement | Priority Completion Projects | Partially Funded | 3.67 | 292 |
| 11B | 2.07 | Hey Road Improvements | Priority Completion Projects | Partially Funded | 3.60 | 292 |
| 16D | 2.08 | Broad Street Streetscape with Pulse BRT Expansion | Priority Completion Projects | Partially Funded | 3.53 | 293 |
| 15B | 2.09 | Clay Street Streetscape Improvements | Priority Completion Projects | Partially Funded | 3.40 | 293 |
| 6F | 2.10 | Gillies Creek Greenway | Priority Completion Projects | Partially Funded | 3.23 | 294 |
| 5J | 2.11 | Oliver Hill Way Bike Lanes | Priority Completion Projects | Partially Funded | 3.20 | 294 |
| 14H.1 | 2.12 | Franklin Street Cycle Track - Lombardy Street to Belvidere Street | Priority Completion Projects | Partially Funded | 3.20 | 294 |
| 14G | 2.13 | Allen Avenue Bike-Walk Street | Priority Completion Projects | Partially Funded | 3.0 | 294 |
| 14J | 2.14 | State Route 161 Bicycle Infrastructure | Priority Completion Projects | Partially Funded | 2.87 | 294 |
| 1I | 2.15 | Fall Line Trail | Priority Completion Projects | Partially Funded | 2.64 | 295 |

Other Completion Projects are existing CIP projects that meet an equity need. These were added after the survey on draft recommendations was closed.

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-----|------|--|------------------------------|------------------|---------------|------|
| 11H | 2.16 | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | Priority Completion Projects | Partially Funded | 2.60 | 295 |
| 3L | 2.17 | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | Priority Completion Projects | Partially Funded | 2.53 | 295 |
| 11I | 2.18 | James River Branch Trail | Priority Completion Projects | Partially Funded | 1.60 | 295 |
| C1 | 3.01 | Cary Street Safety Curb Extensions | Other Completion Projects | Partially Funded | n/a | 296 |
| C2 | 3.02 | Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets | Other Completion Projects | Partially Funded | n/a | 296 |
| C3 | 3.03 | Hull Street at 29th Street Pedestrian Hybrid Beacon | Other Completion Projects | Partially Funded | n/a | 296 |
| C4 | 3.04 | Main Street Safety Curb Extensions | Other Completion Projects | Partially Funded | n/a | 296 |
| C5 | 3.05 | Richmond Highway Phase II Improvements | Other Completion Projects | Partially Funded | n/a | 296 |
| C6 | 3.06 | Richmond Signal System Phase IV | Other Completion Projects | Partially Funded | n/a | 296 |
| C7 | 3.07 | Riverfront/ Orleans BRT Streetscape Improvements | Other Completion Projects | Partially Funded | n/a | 297 |
| C8 | 3.08 | Scott's Addition BRT Streetscape Improvements | Other Completion Projects | Partially Funded | n/a | 297 |
| C9 | 3.09 | Scott's Addition Green Space | Other Completion Projects | Partially Funded | n/a | 297 |
| C10 | 3.10 | Shockoe Bottom BRT Streetscape Improvements | Other Completion Projects | Partially Funded | n/a | 297 |
| C11 | 3.11 | Centralized Transit Signal Priority and Emergency Vehicle Preemption | Other Completion Projects | Partially Funded | n/a | 297 |
| C12 | 3.12 | Highland Grove/ Dove Street Redevelopment | Other Completion Projects | Partially Funded | n/a | 298 |
| C13 | 3.13 | Jefferson Avenue Improvements | Other Completion Projects | Partially Funded | n/a | 298 |
| C14 | 3.14 | Laburnum Median Improvements | Other Completion Projects | Partially Funded | n/a | 298 |
| C15 | 3.15 | Nicholson Street Streetscape | Other Completion Projects | Partially Funded | n/a | 299 |
| C16 | 3.16 | Richmond Fiber Optic Network System | Other Completion Projects | Partially Funded | n/a | 299 |
| C17 | 3.17 | Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements | Other Completion Projects | Partially Funded | n/a | 299 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-----|------|--|---------------------------|------------------|---------------|------|
| C18 | 3.18 | Street Lighting - General | Other Completion Projects | Partially Funded | n/a | 299 |
| C19 | 3.19 | Street Lighting - LED Conversion | Other Completion Projects | Partially Funded | n/a | 299 |
| C20 | 3.20 | Westhampton Area Improvements - Phase III | Other Completion Projects | Partially Funded | n/a | 300 |
| C21 | 3.21 | Deepwater Terminal Road Connector to Goodes Street | Other Completion Projects | Partially Funded | n/a | 300 |
| C22 | 3.22 | Hull Street Improvements Phase I - Hey Road to Warwick Road | Other Completion Projects | Partially Funded | n/a | 300 |
| C23 | 3.23 | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Other Completion Projects | Partially Funded | n/a | 300 |
| C24 | 3.24 | Maury Street Streetscape | Other Completion Projects | Partially Funded | n/a | 300 |
| C25 | 3.25 | Richmond Highway Improvements | Other Completion Projects | Partially Funded | n/a | 300 |
| C26 | 3.26 | Route 5 Relocation/Williamsburg Road Intersection Improvement | Other Completion Projects | Partially Funded | n/a | 301 |
| C27 | 3.27 | Science Museum BRT Shared Use Path | Other Completion Projects | Partially Funded | n/a | 301 |
| C28 | 3.28 | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | Other Completion Projects | Partially Funded | n/a | 301 |
| C29 | 3.29 | Cherokee Road Roadside Safety Improvements | Other Completion Projects | Partially Funded | n/a | 301 |
| C31 | 3.30 | Belvidere Street Gateway - Phase IV | Other Completion Projects | Partially Funded | n/a | 301 |
| C32 | 3.31 | Biotech Research Park Roadway Improvements | Other Completion Projects | Partially Funded | n/a | 301 |
| C33 | 3.32 | Mary Munford Elementary School Pedestrian Safety Improvements | Other Completion Projects | Partially Funded | n/a | 301 |
| G1 | 3.33 | Western Pulse Extension | Other Completion Projects | Partially Funded | n/a | 302 |
| G2 | 3.34 | GRTC Dedicated Lanes Study | Other Completion Projects | Partially Funded | n/a | 302 |
| G3 | 3.35 | Downtown Transfer Center | Other Completion Projects | Partially Funded | n/a | 302 |
| 8A | 4.01 | Dock Street Pedestrian Improvements | Shorter Term/ First Steps | Moderate (\$\$) | 3.60 | 303 |
| 12H | 4.02 | GRTC Route 1A (Midlothian Turnpike) Improvements | Shorter Term/ First Steps | Moderate (\$\$) | 3.53 | 303 |
| 5E | 4.03 | Mechanicsville Turnpike Bus Route | Shorter Term/ First Steps | Moderate (\$\$) | 3.40 | 303 |
| 10J | 4.04 | Richmond Highway Transit Improvements | Shorter Term/ First Steps | Moderate (\$\$) | 3.40 | 304 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-------|------|---|------------------------------|------------------------|---------------|------|
| 1J | 4.05 | Brook Road Bike Lanes Protection | Shorter Term/ First Steps | Low (\$) | 3.40 | 304 |
| 1G | 4.06 | GRTC Route 14 Increased Frequency | Shorter Term/ First Steps | Moderate (\$\$) | 3.37 | 304 |
| 14H.2 | 4.07 | Monument Avenue Bike Lanes | Shorter Term/ First Steps | Moderate (\$\$) | 3.20 | 305 |
| 16E | 4.08 | Willow Lawn Park-and-Ride | Shorter Term/ First Steps | Moderate (\$\$) | 3.13 | 306 |
| 2E | 4.09 | Link: On-Demand Microtransit | Shorter Term/ First Steps | Moderate (\$\$) | 3.08 | 305 |
| 16B | 4.10 | York Road Sidewalks | Shorter Term/ First Steps | Low (\$) | 2.73 | 306 |
| 16H | n/a | Malvern Avenue Sight Distance Evaluations | Shorter Term/ First Steps | Moderate (\$\$) | n/a | 306 |
| 11D | 5.01 | Southside Plaza Street Grid | Longer Term | Very High (\$\$\$\$) | 3.73 | 307 |
| 4F | 5.02 | Scott's Addition to Shockoe Shared Use Path | Longer Term | Low/Moderate (\$/\$\$) | 3.67 | 307 |
| 11J | 5.03 | Southside Plaza Transfer Center | Longer Term | Moderate (\$\$) | 3.67 | 307 |
| 1B | 5.04 | Azalea Avenue Streetscape Improvements | Longer Term | Low/Moderate (\$/\$\$) | 3.60 | 307 |
| 12D | 5.05 | Route 60/Route 150 Interchange Improvements | Longer Term | n/a | 3.60 | 307 |
| 8C | 5.06 | East Main Street Streetscape Improvements | Longer Term | Moderate (\$\$) | 3.47 | 307 |
| 7C | 5.07 | Old Fulton Street Grid | Longer Term | Very High (\$\$\$\$) | 3.40 | 307 |
| 10B | 5.08 | Richmond Highway Great Street Transformation | Longer Term | High (\$\$\$) | 3.40 | 307 |
| 12L | 5.09 | Midlothian Area Revitalization | Longer Term | n/a | 3.40 | 307 |
| 3K | 5.10 | Brookland Park Boulevard Bikeway | Longer Term | Low/Moderate (\$/\$\$) | 3.33 | 307 |
| 10C | 5.11 | Richmond Highway Pedestrian Safety Improvements | Longer Term | High (\$\$\$) | 3.33 | 307 |
| 10M | 5.12 | Richmond Highway Revitalization | Longer Term | n/a | 3.33 | 308 |
| 1H | 5.13 | Ridesharing Vouchers | Longer Term | n/a | 3.20 | 308 |
| 3N | 5.14 | Northside Bikeshare Stations | Longer Term | Low (\$) | 3.13 | 308 |
| 13G | 5.15 | Bliley Road Sidewalk and Bike Lanes | Longer Term | Moderate (\$\$) | 3.13 | 308 |
| 2C | 5.16 | Roundabout at Hermitage Rd/ Arthur Ashe Boulevard/ Westwood Ave/ Brookland Pkwy | Longer Term | High (\$\$\$) | 3.07 | 308 |
| 4L | 5.17 | Downtown/Shockoe Parking Recommendations | Longer Term | Moderate (\$\$) | 3.00 | 308 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-----|------|--|-------------|----------------------------------|---------------|------|
| 15H | 5.18 | Scott's Addition Parking Recommendations | Longer Term | Moderate (\$\$) | 3.00 | 308 |
| 15I | 5.19 | Leigh Street Bike Lanes - Dinneen St to 8th St | Longer Term | Moderate (\$\$) | 3.00 | 308 |
| 15J | 5.20 | Lombardy Street Protected Bike Lanes | Longer Term | Low (\$) | 3.00 | 308 |
| 5I | 5.21 | Hospital Street/ Bowling Green Road/ Wood Street Bikeway | Longer Term | High (\$\$\$) | 2.93 | 308 |
| 7I | 5.22 | Rockett's Landing to Fulton Bike Connection | Longer Term | Moderate (\$\$) | 2.93 | 308 |
| 9F | 5.23 | Riverside Shared-Use Path | Longer Term | Very High (\$\$\$\$) | 2.90 | 308 |
| 1K | 5.24 | Hermitage Road Buffered Bike Lanes | Longer Term | Low (\$) | 2.87 | 309 |
| 10N | 5.25 | Greenspace/Park near Richmond Highway | Longer Term | n/a | 2.87 | 309 |
| 14D | 5.26 | Carytown Parking Recommendations | Longer Term | Moderate (\$\$) | 2.80 | 309 |
| 4B | 5.27 | Main Street/Cary Street Two-Way Street Conversion | Longer Term | High (\$\$\$) | 2.77 | 309 |
| 4M | 5.28 | 1st Street Cycle Track | Longer Term | n/a | 2.73 | 309 |
| 5H | 5.29 | Valley Road Shared Use Path | Longer Term | Moderate/High (\$\$/\$\$\$) | 2.73 | 309 |
| 9M | 5.30 | Bainbridge Street/Forest Hill Avenue Bike Lanes | Longer Term | Low/Moderate (\$/\$\$) | 2.73 | 309 |
| 3J | 5.31 | Magnolia Street Bikeway | Longer Term | Low/Moderate (\$/\$\$) | 2.67 | 309 |
| 7J | 5.32 | Admiral Gravelly Boulevard/Jennie Scher Road Bikeway | Longer Term | Moderate/High (\$\$/\$\$\$) | 2.60 | 309 |
| 14A | 5.33 | Stuart Circle Roundabout Improvement | Longer Term | Moderate (\$\$) | 2.60 | 309 |
| 6J | 5.34 | Church Hill Bikeway Connection | Longer Term | Low/Moderate (\$/\$\$) | 2.53 | 309 |
| 12E | 5.35 | Reedy Creek & Pocosham Creek Greenways | Longer Term | n/a | 2.47 | 309 |
| 12K | 5.36 | Southside Community Center Bikeshare Station | Longer Term | Low (\$) | 2.47 | 309 |
| 6K | 5.37 | Venable/Mosby Bikeshare Station | Longer Term | Low (\$) | 2.40 | 309 |
| 15D | 5.38 | Scott's Addition/Boulevard Shared-Use Path | Longer Term | High (\$\$\$) | 2.40 | 309 |
| 3H | 5.39 | Overbrook Road Bikeway | Longer Term | Moderate (\$\$) | 2.33 | 310 |
| 12J | 5.40 | Whitehead Road Bikeway | Longer Term | Moderate/High (\$\$/\$\$\$) | 2.33 | 310 |
| 13I | 5.41 | Forest Hill Avenue Bikeway | Longer Term | High (\$\$\$) | 2.20 | 310 |
| 14F | 5.42 | Randolph Connection Over I-195 | Longer Term | Low (\$) to Very High (\$\$\$\$) | 2.20 | 310 |

| ID | Rank | Project Name | Category | Cost | Support Score | Page |
|-----|------|--|-------------|-----------------------------|---------------|------|
| 3M | 5.43 | Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | Longer Term | Low (\$) | 2.13 | 310 |
| 8G | 5.44 | East End Bikeshare Stations | Longer Term | Low (\$) | 2.13 | 310 |
| 10F | 5.45 | Walmsley Boulevard Street Connection | Longer Term | High (\$\$\$) | 2.13 | 310 |
| 11N | 5.46 | Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | Longer Term | High (\$\$\$) | 2.13 | 310 |
| 10H | 5.47 | Commerce Road Improvements at Walmsley Boulevard | Longer Term | High (\$\$\$) | 2.07 | 310 |
| 11G | 5.48 | East Belt Boulevard Improvements | Longer Term | Moderate/High (\$\$/\$\$\$) | 2.00 | 310 |
| 14K | 5.49 | Near West End Bikeshare Stations | Longer Term | Low (\$) | 2.00 | 310 |
| 3I | 5.50 | Fendall Ave/ N 1st St Bikeway | Longer Term | Low/Moderate (\$/\$\$) | 1.80 | 310 |
| 4D | 5.51 | Baker Street Pedestrian/Bike Only Street | Longer Term | Moderate (\$\$) | 1.80 | 311 |
| 4H | 5.52 | Reconnect Clay and 6th Streets | Longer Term | Very High (\$\$\$\$) | 1.80 | 311 |
| 9L | 5.53 | Maury Street Bikeway | Longer Term | Very High (\$\$\$\$) | 1.80 | 311 |
| 14I | 5.54 | Mulberry Street Bikeway | Longer Term | Moderate (\$\$) | 1.80 | 311 |
| 16C | 5.55 | Three Chopt Road/York Road/ Henri Road Roundabout | Longer Term | Moderate/High (\$\$/\$\$\$) | 1.70 | 311 |
| 9N | 5.56 | West 29th Street Bikeway | Longer Term | Moderate (\$\$) | 1.67 | 311 |
| 17B | 5.57 | Powhite Greenway | Longer Term | High (\$\$\$) | 1.60 | 311 |
| 17C | 5.58 | Norfolk Southern Shared Use Path | Longer Term | High (\$\$\$) | 1.60 | 311 |
| 17G | 5.59 | Cherokee Road Bikeway | Longer Term | Very High (\$\$\$\$) | 1.60 | 311 |
| 10L | 5.60 | Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | Longer Term | Moderate (\$\$) | 1.53 | 311 |
| 13J | 5.61 | Prince Arthur Road Bikeway Connection | Longer Term | Low/Moderate (\$/\$\$) | 1.50 | 311 |
| 11O | 5.62 | Terminal Avenue Bike Lanes - Broad Rock Boulevard to Belt Boulevard | Longer Term | High (\$\$\$) | 1.40 | 311 |
| 11P | 5.63 | Bikeways on Bryce Lane and Snead Road | Longer Term | High (\$\$\$) | 1.00 | 311 |
| 15E | 5.64 | Norfolk Street Bridge | Longer Term | Very High (\$\$\$\$) | 1.00 | 311 |
| 15F | 5.65 | MacTavish Avenue Bridge | Longer Term | Very High (\$\$\$\$) | 0.80 | 311 |

PRIORITIZE WHAT THE PEOPLE NEED - PRIORITY PROJECTS

4C: Richmond Connects Equity-Driven Sidewalks Projects

Support Score: 5.0 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|--|
| <p>Communities of Concern and the general public consistently said filling in sidewalk gaps and fixing broken sidewalks was a top priority need, especially in Southside, East End, and other areas in Communities of Concern, where sidewalks are lacking and a lot of people rely on walking to get around.</p> <p>This recommendation had the highest support from Communities of Concern and the general public in the survey of draft recommendations in many neighborhoods throughout the City. Many people said fixing sidewalks was the #1 improvement needed to make transportation in Richmond equitable.</p> <p>This recommendation prioritizes sidewalk gaps and maintenance in areas with high equity needs for pedestrian safety (EF6) and in areas densely populated with Communities of Concern (EF9).</p> | <p>New citywide program to fill sidewalk gaps, repair broken sidewalks, install curb ramps, and add street trees and native landscaping in areas with the highest equity-based needs, using permeable materials in high flood areas. Sidewalk projects should preserve street trees, especially large mature trees, and create healthy foundations for the growth of large mature trees.</p> <p>Projects for pursuing first include:</p> <ul style="list-style-type: none"> • 16 new sidewalk construction projects in Southside representing the highest equity-based pedestrian needs, • 9 new sidewalk construction projects in Fulton, identified by Communities of Concern as a Super Need, and • 60 blocks of sidewalk repair projects in Highland Park and Fairfield <p>These projects are listed separately, but they are not a comprehensive list of all sidewalk projects within Tier 1 equity-weighted need areas.</p> <p>Where new sidewalks may not be feasible on residential streets, try implementing bike-walk or slow streets (Strategy 6.5).</p> <p>Prioritize additional sidewalk projects to reflect the disability hot-spots that will be identified in Strategy 1B.2. The goal of this project is to repair all broken sidewalks throughout the City, and prioritize limited resources to fix sidewalks in disability hot-spots first.</p> | <ol style="list-style-type: none"> 1. Create a new line item in the Capital Improvement Program with dedicated annual funding for equity-driven sidewalk projects. 2. Pursue funding for the Priority Sidewalk Gap Projects. New sidewalk construction projects in Southside and Fulton far exceed current available funding and project limits. These projects should be pursued in smaller segments. The City should work with VDOT and federal/state legislators and program administrators to determine new ways of funding these large sidewalk construction projects. 3. Prioritize sidewalk repair for the Priority Sidewalk Repair Projects. Sidewalks on these streets in Fairfield and Highland Park are in disrepair. Communities of Concern repeatedly said these need to be fixed. 4. Revise the sidewalk maintenance process and project development process to prioritize sidewalk repair and filling in sidewalk gaps in Communities of Concern and/or disability hot-spots. This could be accomplished by: <ul style="list-style-type: none"> • Developing a new citywide sidewalk dataset (or modifying the existing dataset) to identify sidewalk gaps • Developing a process for keeping the new sidewalk dataset up-to-date and using it to identify highest-priority sidewalk projects for the new program based on equity needs • Combining this information with the equity-based pedestrian need scores and sidewalk condition scores • Working with residents, community organizations, and disability advocates and representatives to develop a process for prioritizing sidewalk repair and sidewalk construction projects that equitably prioritizes residents who have physical disabilities. 5. Pursue some of these sidewalk projects through CVTA funding because they connect to the Fall Line Trail and/or Capital Trail. Richmond Connects also encourages incorporation of BRT as qualifying connectors in the CVTA eligibility criteria (e.g. sidewalk connections to BRT will become eligible for CVTA regional funding)." |

4C: Priority Sidewalk Gap Projects

| Map ID | Project Locations | Approx. length | Right-of-Way Needed | Ballpark Cost |
|--|---|----------------|---------------------|---------------|
| Fulton Sidewalk Gap Projects | | | | |
| 1 | Carlisle Ave from Government Rd to Randall Ave | 3,000 | None | \$742,000 |
| 2 | Carlisle Ave from Union St to Fulton St | 3,000 | None | \$1,540,000 |
| 3 | Goddin St from Williamsburg Ave to Parker St | 6,000 | Major | \$8,646,000 |
| 4 | Fenton St from Bunn Ave to Kemp Ave | 3,200 | Minimal | \$1,592,500 |
| 5 | Central Ave from Newman Rd to Williamsburg Rd | 4,000 | Major | \$5,928,000 |
| 6 | Nelson Street from Waverly St to Parker St | 2,600 | None | \$651,000 |
| 7 | Randall Ave from Fenton St to Williamsburg Rd | 4,700 | Minimal | \$2,358,500 |
| 8 | Rawlings St from Government Rd to Kemp Ave | 4,300 | Minimal | \$3,202,500 |
| 9 | Waverly Ave from Williamsburg Rd to Nelwood Drive | 2,500 | None | \$3,675,000 |
| Southside Sidewalk Gap Projects | | | | |
| 10 | Terminal Ave over CSX Tracks | 1,900 | None | \$1,440,000 |
| 11 | Hey Road from Hull Street to Walmsley | 8,800 | Minimal | \$13,179,000 |
| 12 | Whitehead Rd from Elmbridge Rd to Warwick Rd | 9,100 | Major | \$13,605,000 |
| 13 | Deter Rd from Vaden Dr to German School Road | 5,500 | Minimal | \$8,301,000 |
| 14 | Vevadel Dr from Deter Rd to Beaufont Hills Ct | 750 | Minimal | \$730,000 |
| 15 | Greystone Rd from Hull Street Rd to Horner Ln | 5,900 | Minimal | \$8,805,000 |
| 16 | Bells Rd from Industry Ave to CSX | 2,300 | Major | \$3,480,000 |
| 17 | Midlothian Turnpike from Ferguson Rd to Richmond High School of the Arts | 5,300 | None | \$24,009,500 |
| 18 | Lasalle Dr/Labrook Concourse from Deter Rd to Warwick Rd | 10,300 | Minimal/ Major | \$15,402,000 |
| 19 | Winter Rd from Warwick Rd to McDowell Rd | 5,000 | None | \$7,500,000 |
| 20 | Marlowe Rd from Hioaks Rd to Jahnke Rd | 1,600 | Minimal | \$1,590,000 |
| 21 | Empearl Dr from Marlowe Rd to Luton Ln | 2,200 | Minimal | \$3,291,000 |
| 22 | Ashley Park from Marlowe Rd to where Tier 1 need segment ends | 1,400 | On private property | \$1,350,000 |
| 23 | Glenway Dr from German School Rd to Blakemore Rd, Blakemore Rd from Glenway Dr to Jahnke Rd | 3,300 | Minimal | \$3,300,000 |
| 24 | Clarkson Rd from Treehaven Dr to Kingswood St | 1,600 | Minimal | \$1,560,000 |
| 25 | Kingswood St from Clarkson Rd to Kinsley Ave | 1,300 | Minimal | \$1,292,000 |
| 26 | Kinsley Ave from Kingswood St to Broad Rock Boulevard | 3,300 | Major | \$4,986,000 |
| 27 | Bliley Rd from Whitlone Dr to Old Willow Ct | 2,416 | Minimal | \$2,416,000 |

4C: Priority Sidewalk Gap Projects



Figure 39. Map of Fulton Sidewalk Gap Projects

4C: Priority Sidewalk Gap Projects

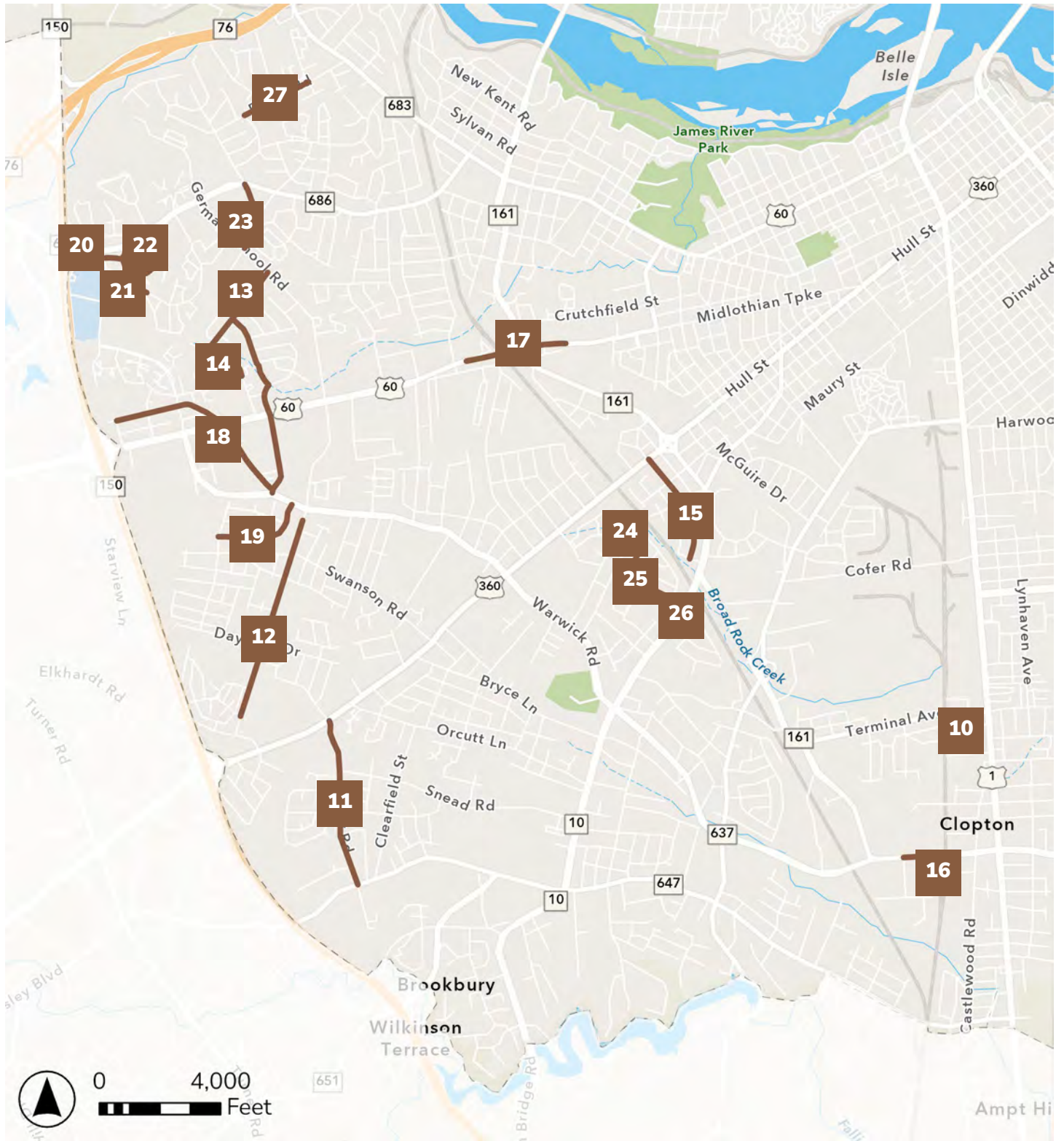


Figure 40. Map of Southside Sidewalk Gap Projects

4C: Priority Sidewalk Repair Projects

| Map ID | Project Locations | Approx. length | Sidewalk Condition Score(s) | Ballpark Cost |
|---|---|----------------|-----------------------------|---------------|
| Highland Park Sidewalk Repair Projects | | | | |
| 1 | 4th Avenue from Cypress St to Juniper St | 1,500 | 13-15 | \$146,000 |
| 2 | 3rd Avenue from Myrtle St to Spruce St | 350 | 8-15 | \$35,600 |
| 3 | Spruce St from 3rd Ave to 2nd Ave | 350 | 8-16 | \$35,600 |
| 4 | 4th Avenue from Brookland Park Boulevard to Magnolia St | 2,800 | 0-16 | \$283,000 |
| 5 | 5th Avenue from Magnolia St to Custer St | 1,500 | 8-15 | \$154,500 |
| 6 | 3rd Avenue from Burns St to Custer St | 3,400 | 13-16 | \$338,000 |
| 7 | 2nd Avenue from Burns St to Brookland Park Boulevard | 2,200 | 8-11 | \$220,600 |
| 8 | Arnold Ave from Carolina Ave to Napoleon St | 1,700 | 8 | \$174,000 |
| 9 | Northside Ave from Meadowbridge Rd to Napoleon St | 1,300 | 8 | \$132,000 |
| 10 | Highland Street from Delaware Ave to Maryland Ave | 350 | 8-21 | \$34,200 |
| 11 | Meadowbridge Rd from Pensacola Ave to Patrick Ave | 1,200 | 9-10 | \$123,000 |
| 12 | Garland Ave from Crawford Ave to Ladies Mile Rd | 1,800 | 8-17 | \$178,000 |
| 13 | Lamb Ave from Crawford Ave to Meredith St | 1,900 | 0-10 | \$188,600 |
| 14 | Barton Ave from Crawford Ave to Essex St | 1,100 | 8-17 | \$111,200 |
| 15 | Essex St from Barton Ave to Garland Ave | 1,100 | 8-15 | \$106,000 |
| 16 | Norwood Ave from Lamb Ave to North Ave | 1,000 | 0-15 | \$98,000 |
| 17 | Barton Ave from Graham Rd to Lancaster Ave | 600 | 8-15 | \$60,000 |
| 18 | Roberts St from Lamb Ave to Miller Ave | 2,000 | 9-18 | \$209,200 |
| 19 | Poe St from Lamb Ave to North Ave | 550 | 0-13 | \$56,000 |
| 20 | Lamb Ave from Minor St to Poe St | 300 | 9-13 | \$32,000 |
| 21 | Moss Side Ave from Essex St to Brookland Park Boulevard | 1,000 | 13-15 | \$109,000 |
| 22 | Brookland Park Boulevard from Hawthorne Ave to Moss Side Ave | 1,200 | 8-16 | \$118,000 |
| East End Sidewalk Repair Projects | | | | |
| 23 | Mechanicsville Turnpike/Mosby St from Fairfield Ave to Venable St | 5,500 | 8-19 | \$550,200 |
| 24 | 18th St from Balding St to Broad St | 1,900 | 8-13 | \$195,000 |
| 25 | N 20th St from Q St to Fairmount Ave | 800 | 9-14 | \$78,700 |
| 26 | Cedar St from Mosby St to 21st St | 400 | 14 | \$39,000 |

4C: Priority Sidewalk Repair Projects

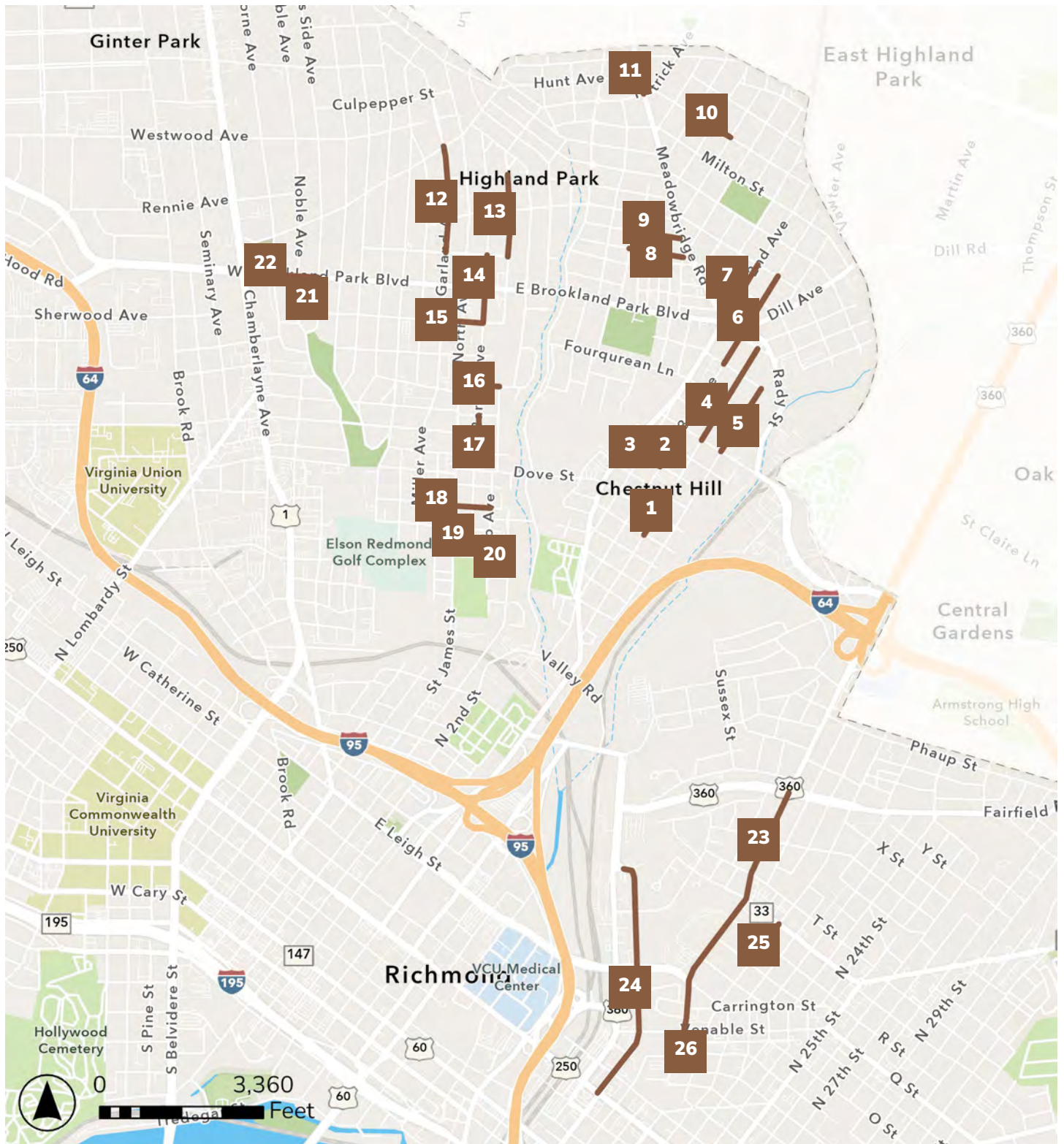


Figure 41. Map of East End & Highland Park Sidewalk Repair Projects

5B: Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements

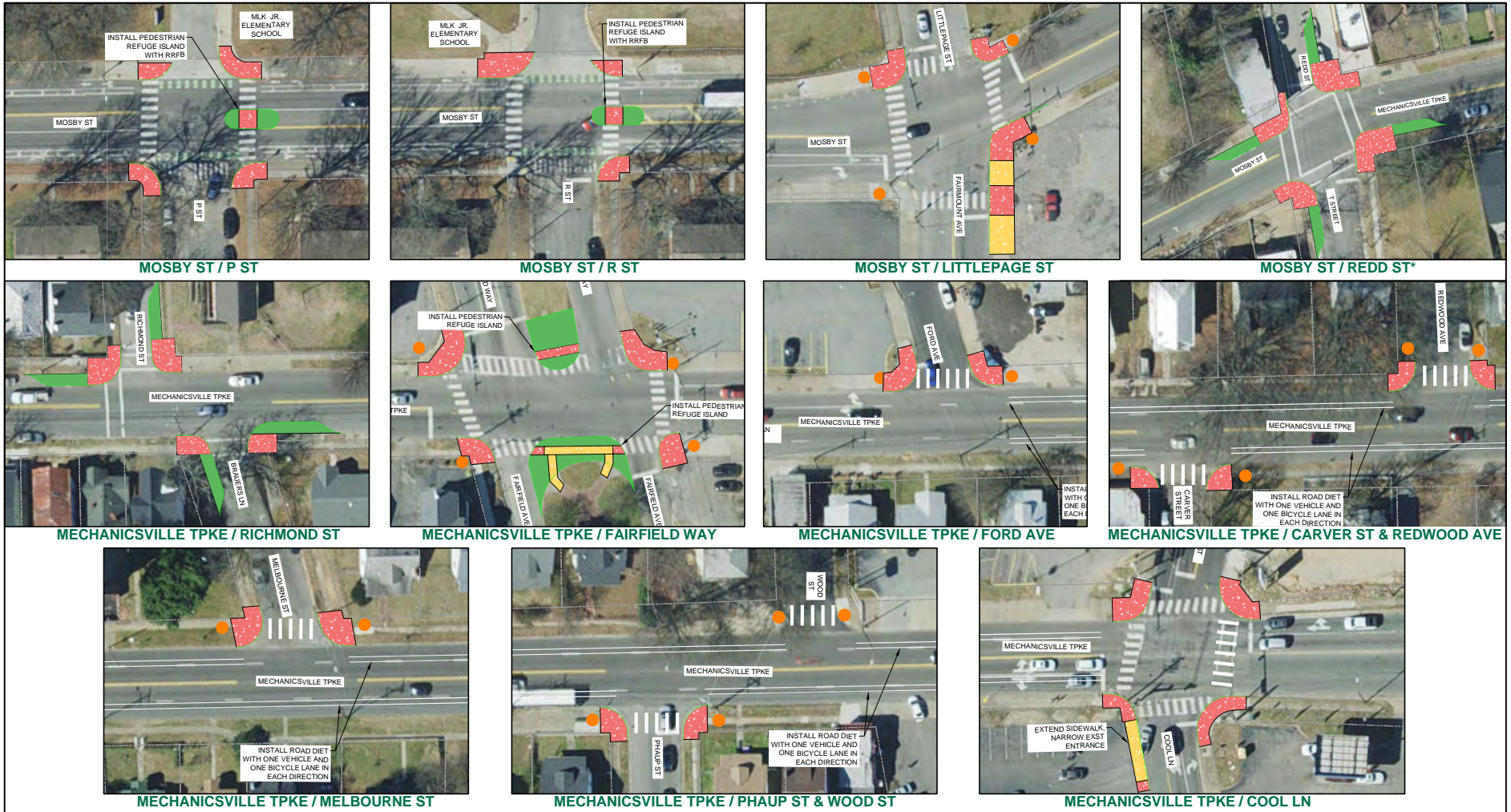
Support Score: 5

Cost: Moderate (\$\$)

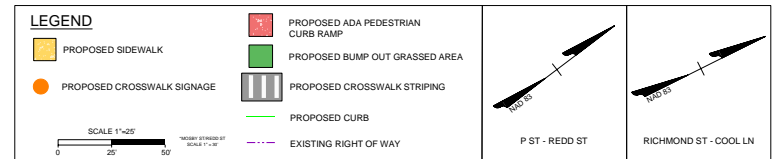
| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>Communities of Concern consistently said crossing the street feels unsafe on Mosby Street and Mechanicsville Turnpike. This was a top public comment in the East End.</p> <p>The data-based needs analysis identified Tier 1 equity-based pedestrian and safety/security needs here. This recommendation had the highest support from Communities of Concern and the general public in the survey of draft recommendations in the Fairfield area.</p> <p>This recommendation will improve infrastructure in previously redlined areas (EF1), slow traffic in areas with equity needs related to bike/ pedestrian safety (EF6), and add green infrastructure in areas with disparate climate impacts (EF8, EF10). It is located in an area with densely populated Communities of Concern (EF9).</p> | <p>Various potential improvements may be considered at 11 intersections on Mosby Street/Mechanicsville Turnpike, including:</p> <ul style="list-style-type: none"> • High visibility crosswalks, • Crosswalk signage, • Curb extensions to shorten crossing distances and slow vehicle speeds, • Pedestrian median refuges, • Rectangular rapid flashing beacons, and • Curb ramp improvements. <p>Not all improvements will be installed at all 11 intersections.</p> <p>Improvements could also include:</p> <ul style="list-style-type: none"> • A raised crosswalk in front of the school entrance • Marking lane edge lines to visibly narrow road widths to slow vehicle speeds • Converting Mechanicsville Turnpike south of I-64 from 4 lanes to 2 lanes to slow vehicle speeds <p>These improvements will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Identify benefits and drawbacks of potential improvements, including analysis of traffic impacts of potential roadway conversion, fire/EMS impacts of raised crosswalks or other vertical speed management features. 2. Share drawings of the options for improvements with the community and discuss the pros and cons. Work with the community to finalize the concept, and make sure the community supports it. 3. Develop engineering plans for improvements. 4. Identify and allocate funding. <p><i>LQC option: Crosswalk improvement</i></p> |

5B: Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements

Support Score: 5 Cost: Moderate (\$\$)



MOSBY ST / MECHANICVILLE TPKE (P ST TO COOL LN)



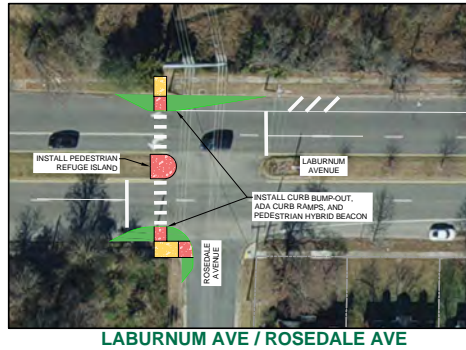
1C.3: Laburnum Avenue Safety Improvements

Support Score: 4.9 Cost: High (\$\$\$)

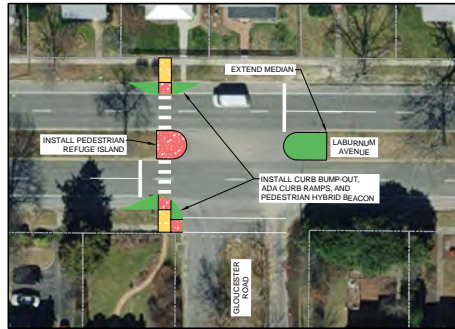
| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|--|
| <p>Communities of Concern consistently said speeding on Laburnum Avenue is a problem, and the intersection of Laburnum Avenue and Hermitage Road feels unsafe. These were identified as Super Needs.</p> <p>The data-driven needs analysis identified Tier 1 equity-based pedestrian and safety/securiy needs on Laburnum Avenue near Hermitage Road. Pedestrian safety improvements had high support from Communities of Concern and the general public in the survey of draft recommendations.</p> <p>This recommendation would improve infrastructure in previously redlined areas (EF1) and improve walkability in areas with equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8).</p> | <p>Work with the community to develop concepts for improvements to slow vehicle speeds and improve pedestrian crossings. Improvements could include installing pedestrian hybrid beacons and curb extensions at several intersections along Laburnum Avenue. These intersections could include:</p> <ul style="list-style-type: none"> • Laburnum Avenue at Montrose Avenue • Laburnum Avenue at Noble Avenue • Laburnum Avenue at Seminary Avenue • Laburnum Avenue at Rosedale Avenue <p>A pedestrian hybrid beacon already exists at the intersection of Laburnum Avenue and Monticello Street.</p> <p>Pedestrian median refuge islands could also be installed at the intersections of Laburnum Avenue at Montrose Avenue, and Laburnum Avenue at Noble Avenue.</p> <p>Roundabouts may be an option at several intersections. Roundabouts are proven to reduce vehicle speeds and reduce severe crashes. Intersections that could be considered for roundabouts include:</p> <ul style="list-style-type: none"> • Laburnum Avenue at Brook Road • Laburnum Avenue at Chamberlayne Avenue • Laburnum Avenue at North Avenue. <p>Additionally, a study is currently underway for the intersection of Laburnum Avenue and Hermitage Road to determine the best configuration for the intersection, which may include a roundabout.</p> <p>These improvements will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Complete the intersection study of Laburnum Avenue and Hermitage Road to identify feasible options that benefit all modes. Discuss the pros and cons with the community. Include the community to decide which configuration to implement. 2. Share drawings of the potential improvements at the other intersections along Laburnum Avenue with the community, and discuss the pros and cons. Work with the community to finalize the improvements at each intersection, and make sure the community supports them. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC options: Crosswalk improvements, traffic calming</i></p> |

1C.3: Laburnum Avenue Safety Improvements

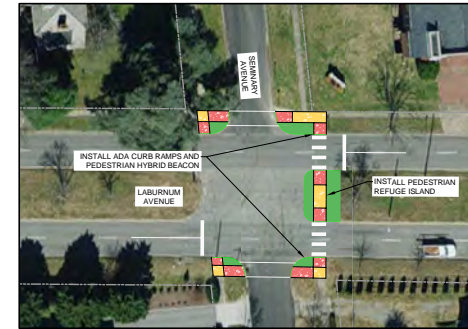
Support Score: 4.9 Cost: High (\$\$\$)



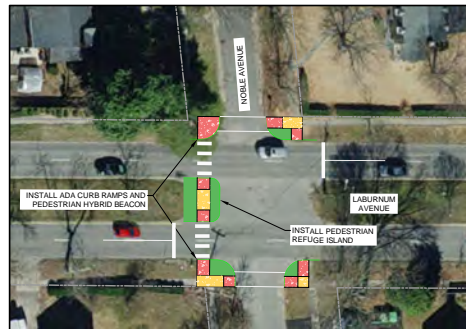
LABURNUM AVE / ROSEDALE AVE



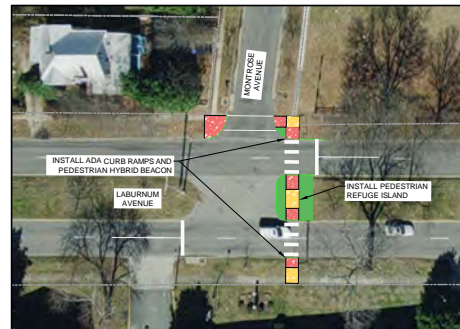
LABURNUM AVE / GLOUCESTER RD



LABURNUM AVE / SEMINARY AVE



LABURNUM AVE / NOBLE AVE



LABURNUM AVE / MONTROSE AVE

PROPOSED NEW ROUNDABOUTS:

THE FOLLOWING INTERSECTIONS ARE RECOMMENDED FOR FURTHER STUDY TO INSTALL ROUNDABOUTS:

1. LABURNUM AVE / BROOK RD
2. LABURNUM AVE / CHAMBERLAYNE AVE
3. LABURNUM AVE / NORTH AVE
4. LABURNUM AVE / HERMITAGE RD

LABURNUM AVENUE PEDESTRIAN IMPROVEMENTS ROSEDALE AVE TO MONTROSE AVE



LEGEND

| | | | |
|--|-----------------------------------|--|------------------------|
| | PROPOSED SHARED USED PATH | | PROPOSED CURB & GUTTER |
| | PROPOSED ADA PEDESTRIAN CURB RAMP | | EXISTING RIGHT OF WAY |
| | PROPOSED GRASSLANDSCAPE AREA | | |

SCALE 1"=30'

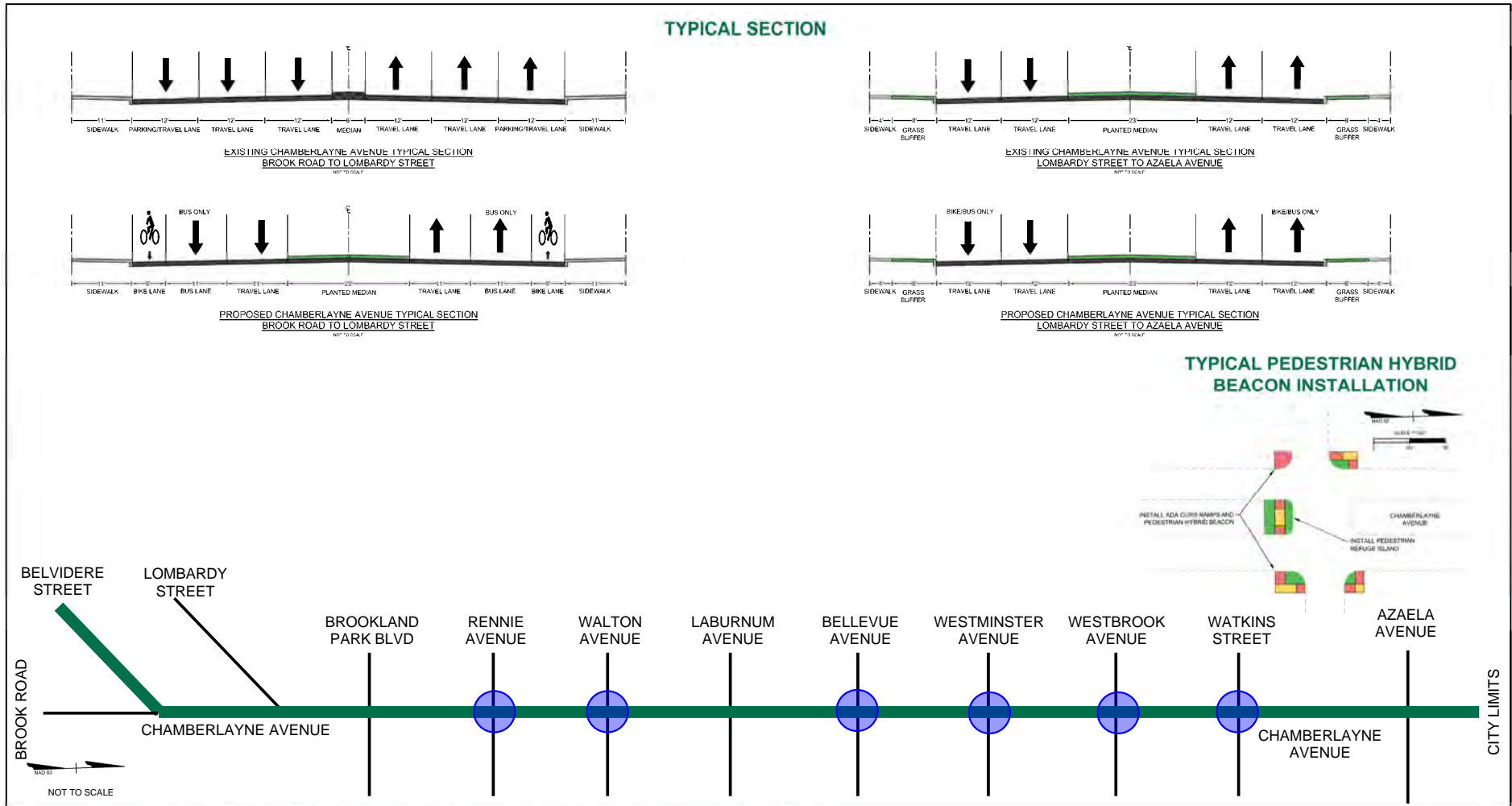
1C.1: Chamberlayne Avenue Pedestrian Safety Improvements

Support Score: 4.9 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|--|
| <p>Communities of Concern and the general public consistently said walking along and riding a bike on Chamberlayne Avenue feels unsafe, citing speeding as a contributing factor. Crossing Chamberlayne feels unsafe, especially at John Marshall High School and Westbrook Avenue.</p> <p>The data-driven needs analysis revealed high equity-driven safety/security needs along Chamberlayne Avenue. Pedestrian safety improvements on Chamberlayne Avenue was the highest supported recommendation in the survey on draft recommendations in several Northside areas. Chamberlayne Avenue is part of the high-injury street network. GRTC is planning bus rapid transit service along Chamberlayne Avenue.</p> <p>This recommendation will improve infrastructure in previously redlined areas (EF1) and improve walkability in areas with equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8).</p> <p>Improvements are already in various phases of implementation at many intersections along Chamberlayne Avenue. These include:</p> <ul style="list-style-type: none"> • Pedestrian Hybrid Beacons at Westminster Avenue (SS4A), Walton Avenue (HSIP), and Hammond Avenue (SS4A), and Sledd Street (SS4A) • High visibility crosswalks at North Avenue, Laburnum Avenue, and Brookland Park Boulevard • Red light running camera at Overbrook Road • New traffic signal at Bacon Street • Signs and pavement markings at unsignalized intersections • Flashing yellow arrows and high visibility signal backplates at signalized intersections • Transit stop accessibility improvements at 7 bus stops south of Brookland Park Boulevard • Streetlight LED conversions south of Brookland Park Boulevard | <p>Consider seeking an additional pedestrian hybrid beacon at Westbrook Avenue for access to Henderson Middle School and at North Avenue.</p> <p>In addition, a roadway conversion may be considered at along Chamberlayne to convert one of the two lanes in each direction to a bus-only lane. This potential improvement would need to be studied for feasibility and traffic impacts. GRTC Route 1 currently runs along Chamberlayne Avenue. GRTC and the City are planning to implement bus rapid transit along Chamberlayne Avenue. A roadway conversion could implement bus only lanes prior to construction of the BRT stations to improve bus reliability and calm general traffic speeds.</p> <p>Implementation of these improvements should involve conversations with the community to make sure they are adequately addressing the identified needs.</p> <p>The buffered bike lanes on Brook Road provide a protected bicycle facility for north-south travel parallel to Chamberlayne Avenue. Hardening the bike lanes protection on Brook Road is part of another Recommendation 1J.</p> | <ol style="list-style-type: none"> 1. Share drawings of the potential improvements at intersections along Chamberlayne Avenue with the community. Work with the community to identify additional improvement locations. 2. Study the potential roadway conversion. Share the findings with the community, and work with the community and GRTC to develop the preferred concept. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC options: Crosswalk improvements, traffic calming, roadway conversion demonstration, placing bike racks or corrals in select parking spaces</i></p> |

1C.1: Chamberlayne Avenue Pedestrian Safety Improvements

Support Score: 4.9 Cost: High (\$\$\$)



CHAMBERLAYNE AVENUE - ROAD DIET IMPROVEMENTS BROOK ROAD TO AZAELA AVENUE

LEGEND

- PROJECT LIMITS
- PROPOSED PEDESTRIAN CROSSING IMPROVEMENTS WITH PEDESTRIAN HYBRID BEACON (SEE TYPICAL LAYOUT ABOVE)



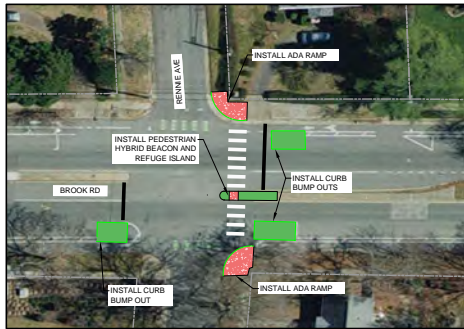
1C.2: Brook Road Traffic Calming and Pedestrian Safety Improvements

Support Score: 4.9 Cost: High (\$\$\$)

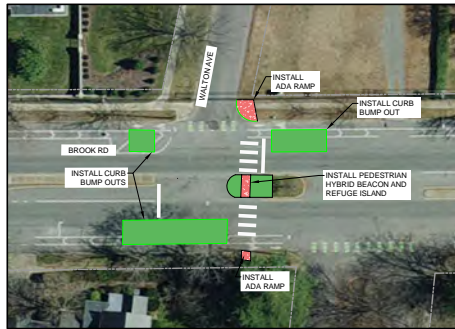
| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>Communities of Concern consistently said speeding along Brook Road is an issue. This was identified as a Super Need.</p> <p>This recommendation will improve infrastructure in previously redlined areas (EF1) and improve walkability in areas with equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8).</p> | <p>Potential improvements may include:</p> <ul style="list-style-type: none"> • Installing marked crosswalks and concrete islands in the buffer between the bike lanes and the vehicle lanes on either side of crosswalks, potentially with landscaping and vegetation • Pedestrian hybrid beacons at select intersections • Roundabouts, which are proven to slow vehicle speeds and reduce severe crashes, potentially at Laburnum Avenue and/or Brookland Parkway <p>These improvements will need to be studied for feasibility, and will be vetted with the community to determine which improvements get implemented.</p> <p>Recommendation 1J to harden the buffer between the bicycle lanes and vehicle lanes on Brook Road is related, and could potentially be combined with these recommendations into one project.</p> | <ol style="list-style-type: none"> 1. Study the potential roundabout and pedestrian hybrid beacons for feasibility. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC options: Crosswalk improvements, traffic calming</i></p> |

1C.2: Brook Road Traffic Calming and Pedestrian Safety Improvements

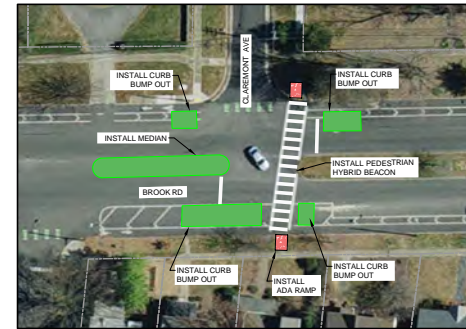
Support Score: 4.9 Cost: High (\$\$\$)



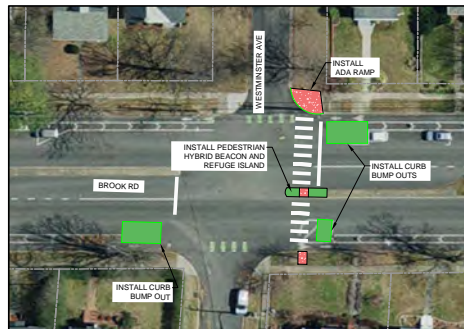
BROOK RD / RENNIE AVE



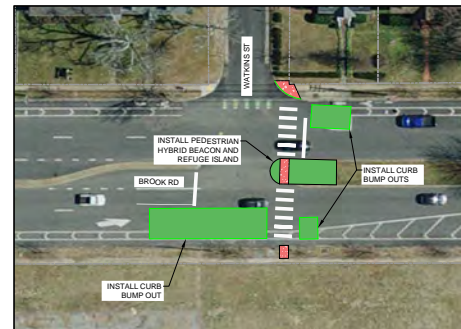
BROOK RD / WALTON AVE



BROOK RD / CLAREMONT AVE



BROOK RD / WESTMINSTER AVE



BROOK RD / WATKINS ST

PROPOSED NEW ROUNDABOUTS:

THE FOLLOWING INTERSECTIONS ARE RECOMMENDED FOR FURTHER STUDY TO INSTALL ROUNDABOUTS:

1. BROOK RD / LABURNUM AVE
2. BROOK RD / BROOKLAND PKWY

BROOK ROAD PEDESTRIAN IMPROVEMENTS WATKINS ST TO RENNIE AVE



LEGEND

| | | |
|-----------------------------------|------------------------|------------------|
| PROPOSED SHARED USED PATH | PROPOSED CURB & GUTTER | SCALE 1"=50' |
| PROPOSED ADA PEDESTRIAN CURB RAMP | EXISTING RIGHT OF WAY | |
| PROPOSED GRASS/LANDSCAPE AREA | | |



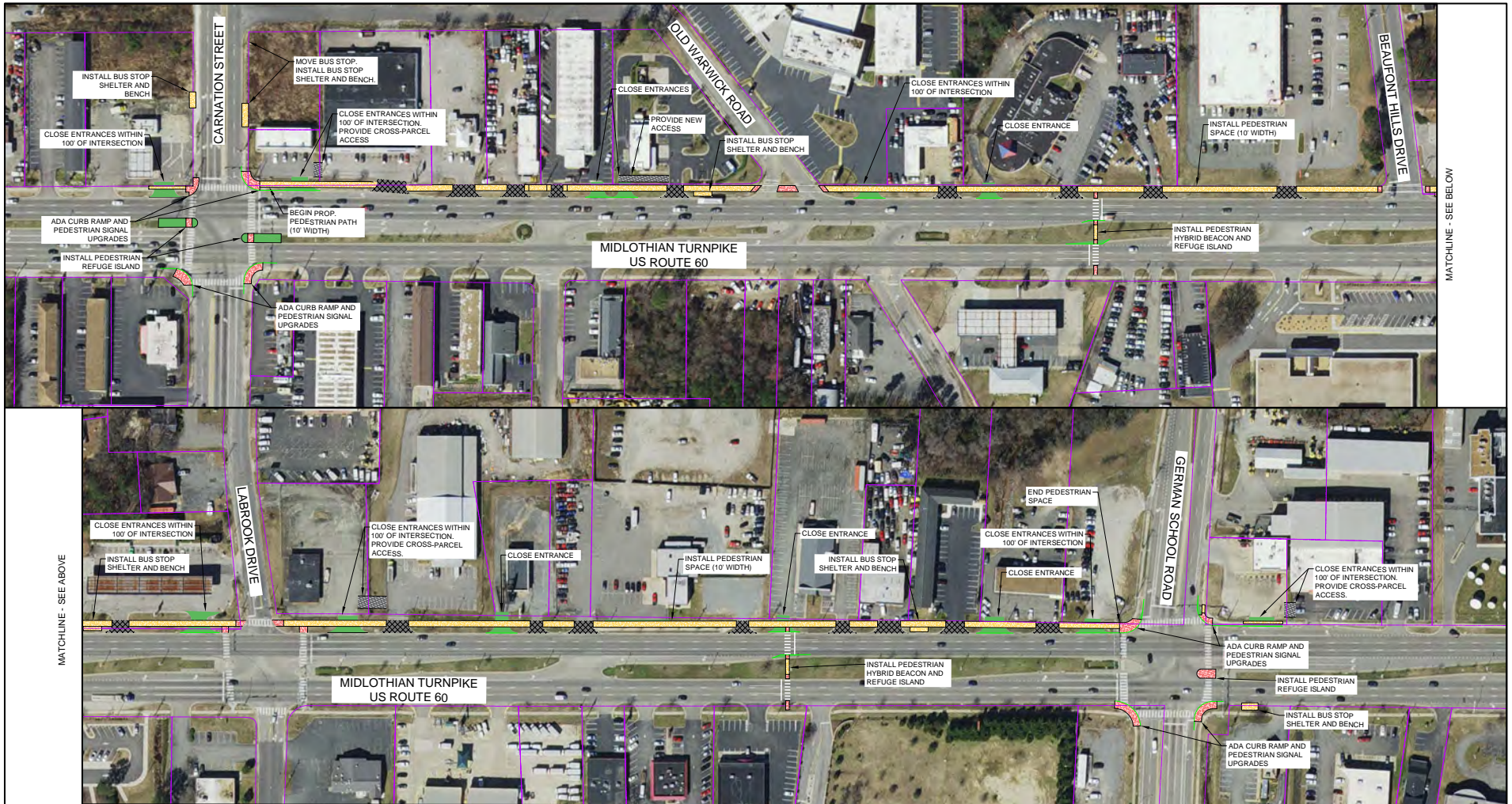
12C: Midlothian Turnpike Safety Improvements - German School Road to Carnation Street

Support Score: 4.8 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>Although sidewalks and crosswalks at signalized intersections were installed along Midlothian Turnpike in 2011, Communities of Concern consistently said pedestrian crossings on Midlothian Turnpike feel unsafe.</p> <p>The data analysis revealed very high equity-weighted pedestrian needs along this section of Midlothian Turnpike. There is a high density of Communities of Concern that live near and walk along Midlothian Turnpike. This section of Midlothian connects two Nodes. This recommendation was very highly supported in the survey of draft recommendations among all respondents overall and especially among Community of Concern respondents.</p> <p>This recommendation will improve walkability in a low-income inner-ring suburb (EF4) with equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8).</p> | <p>Potential improvements for pedestrian crossings on Midlothian Turnpike may include:</p> <ul style="list-style-type: none"> • ADA curb ramp improvements, pedestrian signal upgrades, and pedestrian median refuges islands with push-buttons at signalized intersections • Close entrances within 100 ft of intersections • Install two pedestrian hybrid beacons to provide safe crossing opportunities between signalized intersections. • Install bus shelters and benches at bus stops. • Widen sidewalk on north side from 5 ft to 8-to-10 ft to serve as a shared-use path for bicyclists and pedestrians. • Consolidate entrances to create more continuous path with fewer points of conflict with turning vehicles. • Adding a traffic signal at Old Warwick Road with crosswalks, curb ramps, and pedestrian signals. <p>Additionally, GRTC and the City are planning bus rapid transit on Midlothian Turnpike. A roadway conversion to provide bus-only lanes could be studied, which might help to slow traffic speed and improve the pedestrian experience.</p> <p>These potential improvements need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC option: Roadway conversion demonstration</i></p> |

12C: Midlothian Turnpike Safety Improvements - German School Road to Carnation Street

Support Score: 4.8 Cost: Very High (\$\$\$\$)



MIDLOTHIAN TURNPIKE - PEDESTRIAN SAFETY IMPROVEMENTS CARNATION STREET TO GERMAN SCHOOL ROAD



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED NEW ASPHALT PAVEMENT |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |
| | RECONSTRUCT EXISTING DRIVEWAY |

SCALE 1"=25'

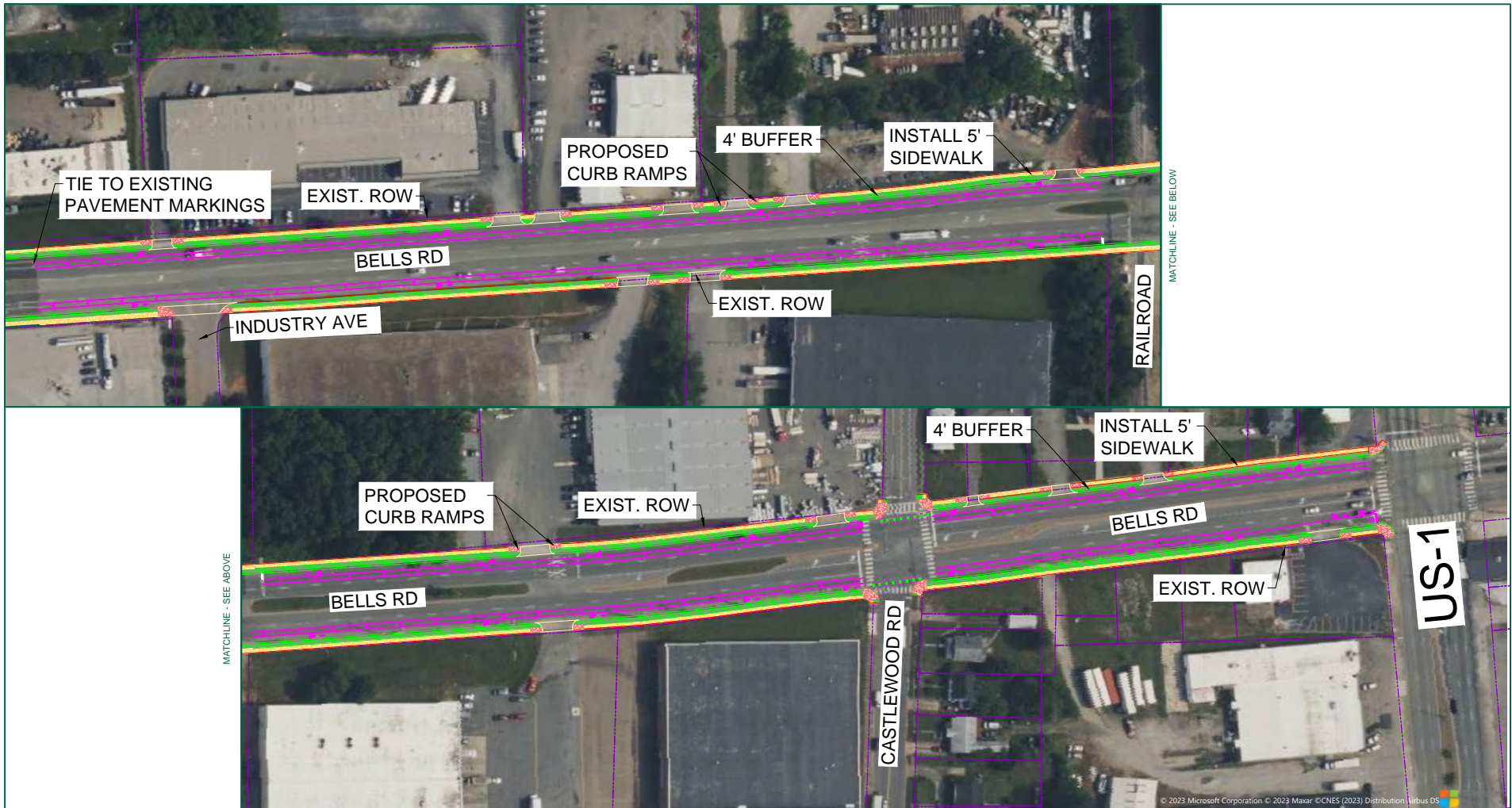
10A.1: Bells Road Sidewalks

Support Score: 4.8 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>Communities of Concern consistently said missing sidewalks and speeding on Bells Road are important issues that need to be addressed. These were identified as Super Needs.</p> <p>The data-based analysis revealed Tier 1 equity-weighted pedestrian and bicycle needs along Bells Road. Bells Road at Richmond Highway is a Richmond 300 Node. Pedestrian improvements on Bells Road, Walmsley Boulevard, and Terminal Ave was a highly supported recommendation in the survey on draft recommendations among Communities of Concern and the general public.</p> <p>This recommendation will improve pedestrian safety to connect Communities of Concern to opportunities (EF6) and provide an investment in pedestrian infrastructure in low-income inner ring suburbs where families are pushed (EF4).</p> | <p>On-street separated bike lanes on Bells Road were installed in 2023 from Richmond Highway to the west, connecting to the separated bike lanes on Warwick Road.</p> <p>Potential improvements include:</p> <ul style="list-style-type: none"> • Filling in missing sidewalk gaps on Bells Road between Richmond Highway and Belt Boulevard • Marking crosswalks across Bells Road, potentially with a rectangular rapid flashing beacon or pedestrian hybrid beacon at Belt Boulevard and at the bus stops just west of Castlewood Road <p>These improvements would need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

10A.1: Bells Road Sidewalks

Support Score: 4.8 Cost: High (\$\$\$)



BELLS RD - BIKE LANE EXTENSION & SIDEWALK GAPS BELT BOULEVARD TO US ROUTE 1



| | | | |
|--|---|--|---------------------|
| LEGEND | | | <p>SCALE 1"=50'</p> |
| PROPOSED STREETSCAPE IMPROVEMENTS PROPOSED ADA PEDESTRIAN CURB RAMP PROPOSED GRASS/ LANDSCAPE AREA | PROPOSED CURB & GUTTER EXISTING RIGHT OF WAY | | |

10A.2: Walmsley Boulevard Shared Use Path

Support Score: 4.8 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|--|
| <p>Communities of Concern consistently said the lack of sidewalks on Walmsley Boulevard is a major concern. This was identified as a Super Need. People frequently walk on this road, including to and from Boushall Middle School.</p> <p>The data-based analysis revealed Tier 1 equity-based pedestrian and bicycle needs on Walmsley Boulevard. Pedestrian improvements on Bells Road, Walmsley Boulevard, and Terminal Ave was a highly supported recommendation in the survey on draft recommendations among Communities of Concern and the general public.</p> <p>This recommendation will provide a safe connection for walking and bicycling in a low-income inner ring suburb (EF4), and improve pedestrian safety in a car-centric area (EF5) where the lack of walk and bike connections limit access (EF6).</p> | <p>Potential improvements to Walmsley Boulevard from Richmond Highway to Hopkins Road include:</p> <ul style="list-style-type: none"> • Constructing a shared use path for pedestrians and bicyclists on the north side of Walmsley Boulevard • Installing marked crosswalks across Walmsley Boulevard, potentially with rectangular rapid flashing beacons at bus stop locations <p>These improvements would need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

10A.2: Walmsley Boulevard Shared Use Path

Support Score: 4.8 Cost: Very High (\$\$\$\$)



WALMSLEY BLVD - SIDEWALK GAPS HOPKINS RD TO US ROUTE 1



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED STREETSCAPE IMPROVEMENTS |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/ LANDSCAPE AREA |
| | PROPOSED CURB & GLITTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=50'

10A.3: Terminal Boulevard Shared Use Path

Support Score: 4.8 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|--|
| <p>The data-based analysis revealed Tier 1 equity-based pedestrian and bicycle needs on Terminal Avenue. Terminal Avenue is a key connection between US Route 1 and Belt Boulevard.</p> <p>Pedestrian improvements on Bells Road, Walmsley Boulevard, and Terminal Ave was a highly supported recommendation in the survey on draft recommendations among Communities of Concern and the general public.</p> <p>This recommendation will provide a safe connection for walking and bicycling in a car-centric (EF5), low-income inner ring suburb (EF4), where the lack of walk and bike connections limit access (EF6).</p> | <p>Sidewalk was recently installed on the south side of Terminal Avenue. There is a ~200-ft gap in the sidewalk across the railroad track.</p> <p>This recommendation includes:</p> <ul style="list-style-type: none"> • Closing the gap over the railroad track • Widening the existing sidewalk to convert it to a shared-use path for pedestrians and bicyclists, providing a comfortable off-road bicycle connection <p>These improvements would need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

10A.3: Terminal Boulevard Shared Use Path

Support Score: 4.8 Cost: High (\$\$\$)



TERMINAL AVENUE - SIDEWALK WIDENING BELT BLVD TO US ROUTE 1



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED STREETSCAPE IMPROVEMENTS |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/ LANDSCAPE AREA |
| | PROPOSED CURB & GLITTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=50'

3A: North Avenue Pedestrian Safety Improvements

Support Score: 4.8 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|---|
| <p>Communities of Concern consistently said crossing North Avenue feels unsafe, especially at Brookland Park Boulevard. This was identified as a Super Need.</p> <p>The data analysis revealed a Tier 1 equity-based pedestrian need on North Avenue between Laburnum Avenue and Chamberlayne Avenue.</p> <p>Improving pedestrian safety on Chamberlayne Ave, Brook Road, and North Avenue was highly supported in the survey of draft recommendations in the Highland Park needs area, especially among Communities of Concern.</p> <p>This recommendation will improve infrastructure in previously redlined areas (EF1) and improve walkability in areas with equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8).</p> | <p>Potential improvements along North Avenue include:</p> <ul style="list-style-type: none"> • Marking crosswalks and installing curb extensions to shorten pedestrian crossing distances at Montrose Avenue, Nottingham Place, Moss Side Avenue, Corbin Street, Piney Road, and Old Brook Road. • Installing a roundabout, which can reduce vehicle speeds and reduce severe crashes, at the intersection of North Avenue at Laburnum Avenue, with improved access management and pedestrian infrastructure. • Making pedestrian improvements at the intersection of North Avenue and Brookland Park Boulevard by removing turn lanes and installing curb extensions to shorten pedestrian crossing distances, and introducing a pedestrian-only “scramble” signal phase where pedestrians can move in any direction. <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Options:</i></p> <ul style="list-style-type: none"> • <i>Traffic calming</i> • <i>Pedestrian scramble signal phase which would allow all pedestrians to cross at once without any conflicting car traffic and without lane modifications</i> • <i>Demonstration test of turn lane closure</i> |

3A: North Avenue Pedestrian Safety Improvements

Support Score: 4.8 Cost: Moderate (\$\$)



NORTH AVENUE - PEDESTRIAN IMPROVEMENTS CHAMBERLAYNE TO LABURNUM



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=30'

0 30' 60'

12A: Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road

Support Score: 4.7 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>The data analysis revealed Tier 1 equity-based pedestrian needs along Jahnke Road. The equity-based needs west of German School Road are among the highest in the City, primarily due to very poor walk accessibility in an area of high density of Communities of Concern, connecting two Richmond 300 Nodes.</p> <p>Public comments identified Jahnke Road as feeling unsafe for pedestrians. This recommendation was highly supported in the survey on draft recommendations in the Midlothian/German School Road needs area.</p> <p>This recommendation will add connections for inner ring suburbs (EF4), improve pedestrian safety, and reduce need for car ownership (EF5, EF6).</p> | <p>The City is currently implementing a project on Jahnke Road from Forest Hill Avenue to Blakemore Road that will include sidewalks and shared use paths.</p> <p>This recommendation is focused on improving pedestrian safety west of Blakemore Road, where the equity-based need analysis score is highest, past where the current project ends.</p> <p>Potential improvements include:</p> <ul style="list-style-type: none"> • Installing sidewalk or a shared use path on the north side of Jahnke Road between German School Road and Hioaks Road. • Installing a new crosswalk with pedestrian hybrid beacon at the bus stop between Blakemore Road and German School Road to provide direct pedestrian crossing. • Installing a new crosswalk with pedestrian hybrid beacon at bus stop between Westover Gardens Boulevard and Hioaks Road to provide direct pedestrian crossing. • Improved crossing facilities with ADA curb ramps and pedestrian push-buttons at Westover Gardens Boulevard. <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Option: Crosswalk improvements</i></p> |

12A: Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road

Support Score: 4.6 Cost: High (\$\$\$)



JAHNKE ROAD - PEDESTRIAN IMPROVEMENTS HIOAKS ROAD TO BLAKEMORE ROAD



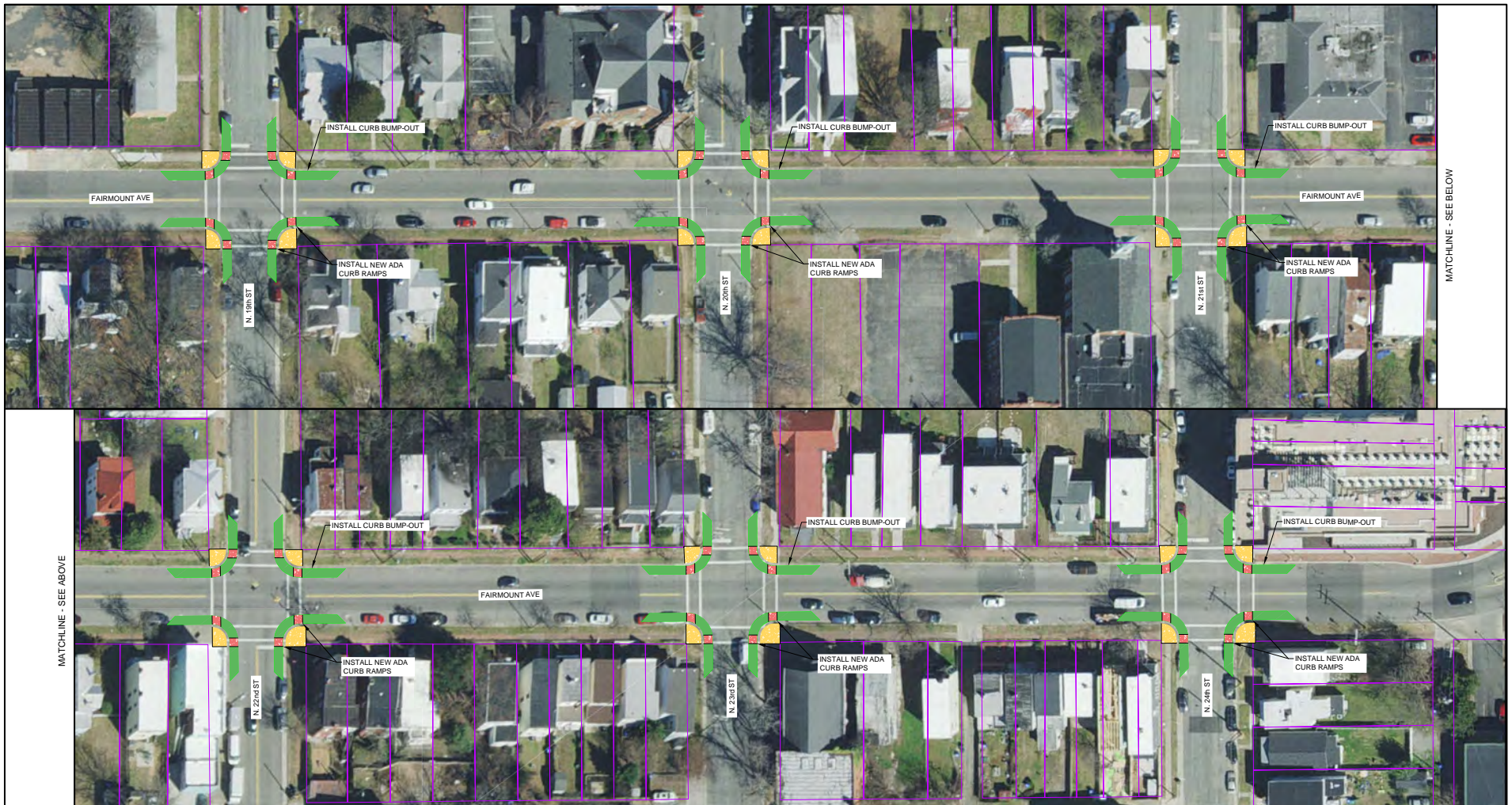
6A: Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming

Support Score: 4.2 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>Communities of Concern in the East End consistently said speeding is a concern on Fairmount Avenue. This was identified as a Super Need. They noted it is difficult for pedestrians to navigate the roundabout at 25th Street and Fairmount Ave. Public comments mentioned drivers not yielding to pedestrians and speeding.</p> <p>This recommendation will improve pedestrian safety (EF6) and invest in infrastructure in a previously redlined area (EF1).</p> | <p>Potential improvements on Fairmount Avenue may include:</p> <ul style="list-style-type: none"> • ADA curb ramp improvements and curb extensions to narrow the lane widths, slow vehicles, make pedestrians more easily visible to drivers, and reduce pedestrian crossing distances at unsignalized intersections • High visibility crosswalk marking patterns and in-road signage to warn drivers of the possible presence of pedestrians • Speed tables and/or traffic circles at select intersections, pending review of heavy vehicles and volumes • Potential crosswalk improvements at the roundabout at 25th Street, including potentially moving the crosswalks closer to the roundabout. <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Options: Temporary speed table/ traffic circle/ in-roadway signs for pedestrians, and high visibility crosswalk markings; Paint and post daylighting of intersections.</i></p> |

6A: Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming

Support Score: 4.2 Cost: Moderate (\$\$)



FAIRMOUNT AVENUE - PEDESTRIAN IMPROVEMENTS N. 19th ST. TO N. 23rd ST.



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=50'

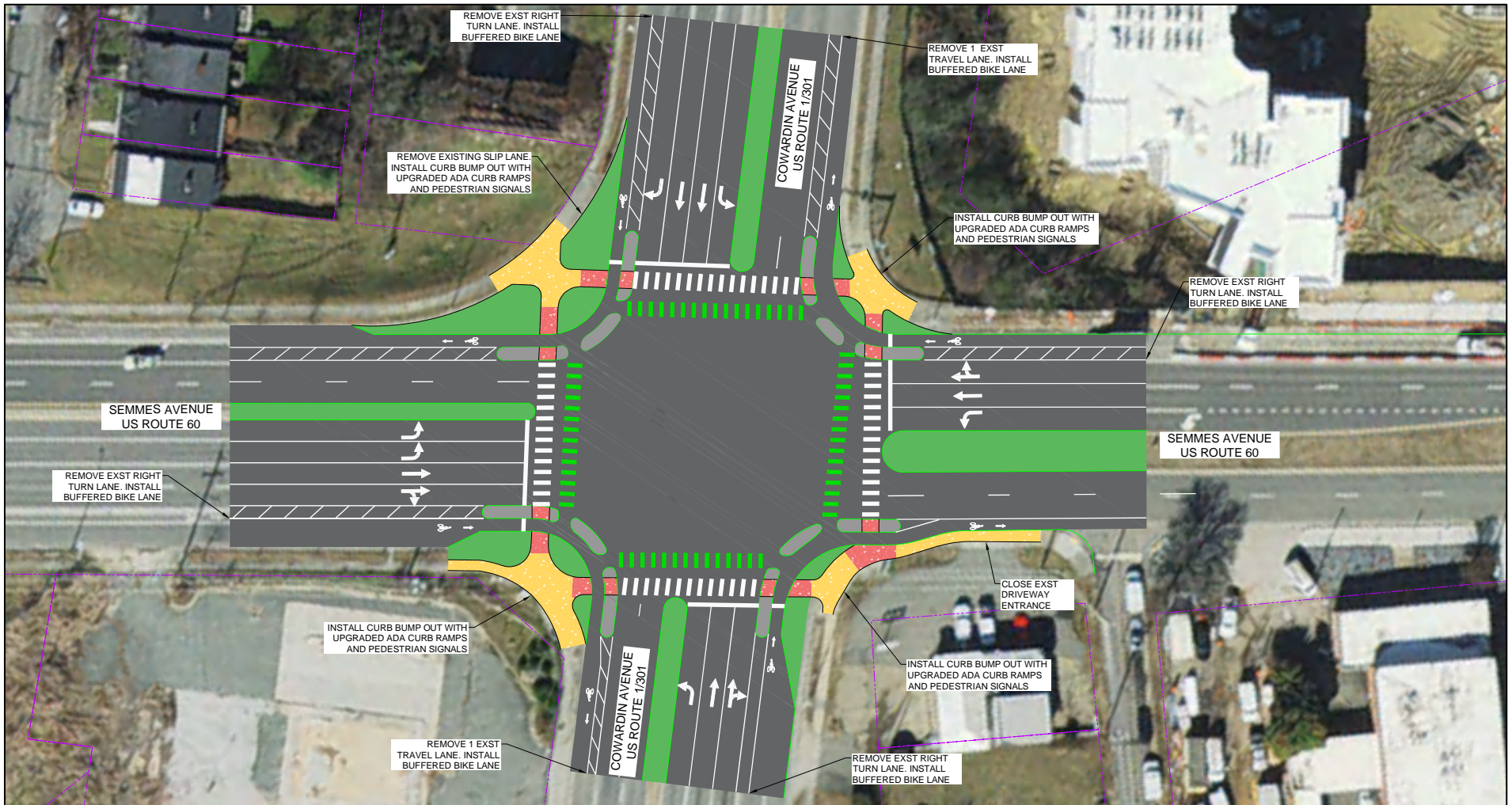
9A: Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements

Support Score: 4.6 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>Communities of Concern consistently voiced concerns about not feeling safe crossing the street along Semmes Avenue and along Cowardin Avenue. This was identified as a Super Need. Communities of Concern identified the intersection of Semmes Avenue and Cowardin Avenue as feeling unsafe.</p> <p>The data analysis identified equity-based safety/security needs along Semmes Avenue and Cowardin Avenue. This recommendation was highly supported in the survey on draft recommendations by both Communities of Concern and the general public.</p> <p>This recommendation will improve walkability in an area with high equity needs related to pedestrian safety (EF6).</p> | <p>Potential improvements could include:</p> <ul style="list-style-type: none"> • Intersection improvements at Semmes Avenue and Cowardin Avenue, including removing southbound right turn lane, ADA curb ramp improvements, and changing lane configurations to provide median refuge and reduce pedestrian crossing distances. • Roadway conversion on Semmes Avenue, potentially converting outer through lane to a parking lane to slow speeds, reduce pedestrian crossing distances, and buffer the bicycle lane. • Roadway conversion on Cowardin Avenue to reduce the number of through lanes to 2-lanes in the NB/SB directions to reduce speeds, allow for improvements to turn lanes, reduce pedestrian crossing distances, and possibly wider medians. <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Options: Crosswalk improvements, traffic calming, temporary demonstration of road diet.</i></p> |

9A: Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements

Support Score: 4.6 Cost: High (\$\$\$)



SEMMEs AVENUE & COWARDIN AVENUE BIKE & PEDESTRIAN INTERSECTION IMPROVEMENTS

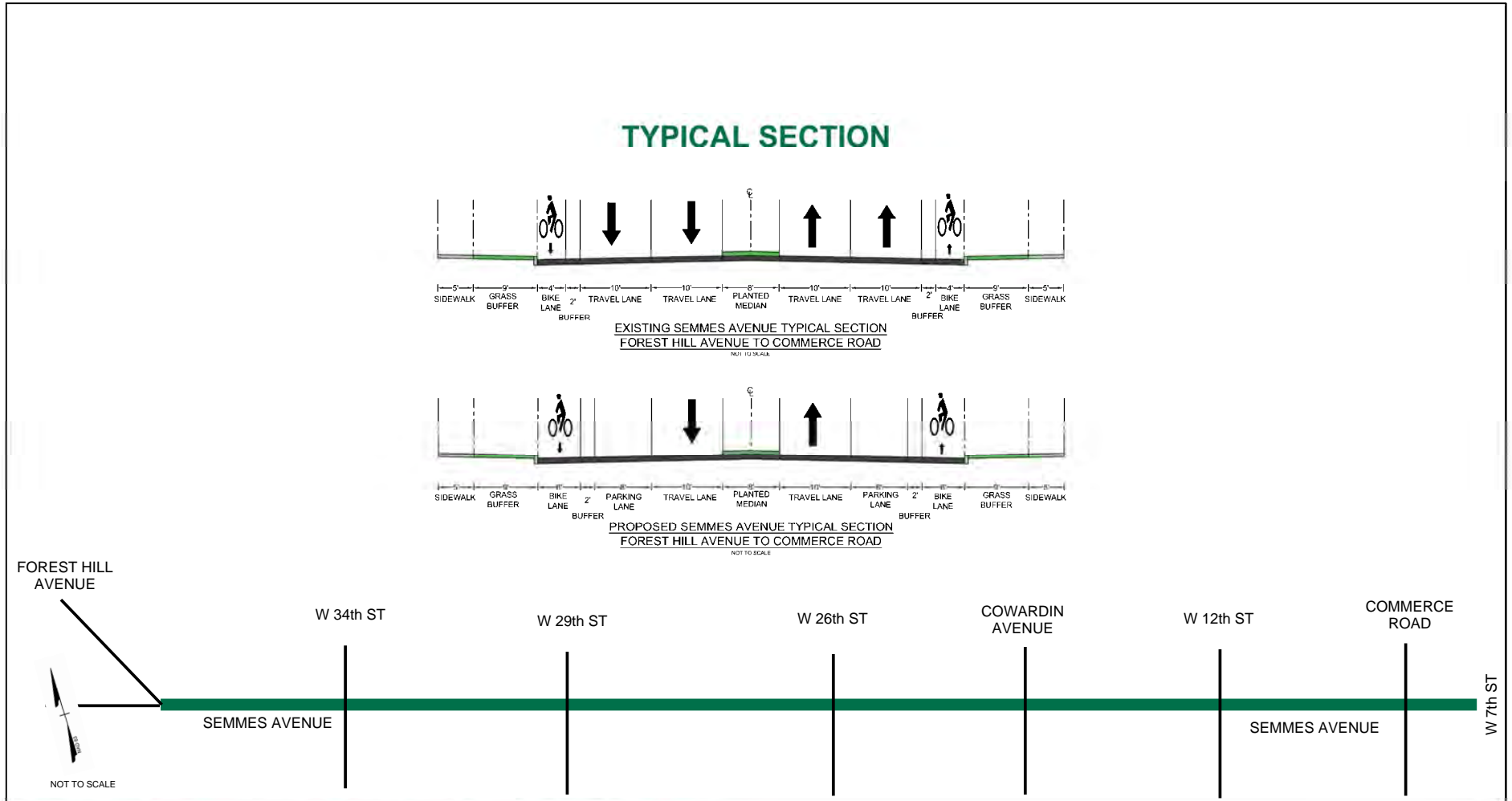


| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |



9A: Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements

Support Score: 4.6 Cost: High (\$\$\$)



SEMMES AVENUE - ROAD DIET IMPROVEMENTS FOREST HILL AVENUE TO COMMERCE ROAD



1F: Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops

Support Score: 4.5 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>Communities of Concern consistently said the lack of shelters and seating at bus stops is a very high priority. It was one of the most commonly voiced needs throughout the city. This recommendation was highly ranked in the survey of draft recommendations across nearly every area of the city.</p> | <p>Work with GRTC to install shelters, seating, trash cans, and other items at bus stops, prioritizing bus stops with high equity-based needs first.</p> <p>Work with GRTC to incorporate cooling elements at bus stops in heat-vulnerable areas, public art at bus stops in high economic development need areas, and real-time bus arrival information and WiFi in high technology need areas.</p> | <p>Work with GRTC to develop a process for identifying and implementing infrastructure elements for highest priority bus stops, incorporating the equity-based analysis of needs from Richmond Connects, including cooling elements at bus stops in heat-vulnerable areas, public art at bus stops in high economic development need areas, and real-time bus arrival information and WiFi in high technology need areas. See the Priority Bus Stop Infrastructure projects for more information.</p> |

1F: Essential Transit Infrastructure (Shelters, Seating, and Trash cans) at Bus Stops

Support Score: 4.5 Cost: Very High (\$\$\$\$)

GRTC is actively working to identify and prioritize bus stops for installing shelters, benches, trash cans, and landing pads. These types of infrastructure are referred to as “essential transit infrastructure” or ETI. GRTC’s Essential Transit Infrastructure Plan outlines GRTC’s implementation goals and strategies for installing this infrastructure. One of these goals is for 50% of GRTC bus stops to have a shelter or seating by 2027. To meet this goal, GRTC will need to install 160 shelters and 225 benches over five years.

GRTC developed a scoring system (i.e. “qualification rubric”) that considers usage and equity to qualify stops for ETI placement over the next five years. GRTC’s ETI qualification rubric is spelled out in its ETI Plan document.

The Richmond Connects team developed a “Richmond Connects Bus Stop Equity Need Index” that is intended to help GRTC prioritize which bus stops should receive shelters and benches first. This index is based on the equity-based Transit Investment Need Category (INC 2) score and heat vulnerability.

SHELTERS

GRTC’s ETI qualification rubric identifies 165 bus stops within the City of Richmond that meet the ridership and equity criteria to be “shelter eligible.” Of these 165 bus stops, 133 do not already have a shelter.

The Richmond Connects team calculated the Richmond Connects Bus Stop Equity Need Index for each these 133 bus stops. The results are presented in the map below.

BENCHES

GRTC’s ETI qualification rubric identifies 622 bus stops within the City of Richmond that meet the ridership and equity criteria to be “bench eligible.” Of these 622 bus stops, 429 do not already have a bench.

The Richmond Connects team calculated the Richmond Connects Bus Stop Equity Need Index for each these 429 bus stops. The results are presented in the map below.

PRIORITIZING FOR IMPLEMENTATION

The City of Richmond is working with GRTC to prioritize the bus stops for shelter and bench installation to reflect the highest equity needs as identified in Richmond Connects.

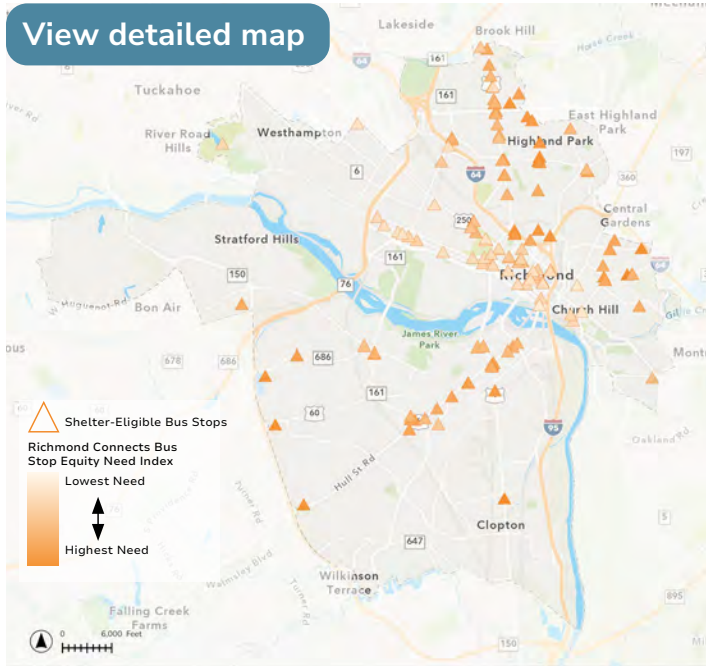


Figure 42. Shelter-eligible bus stops in the City of Richmond that do not already have a shelter, symbolized by Richmond Connects Bus Stop Equity Need Index.

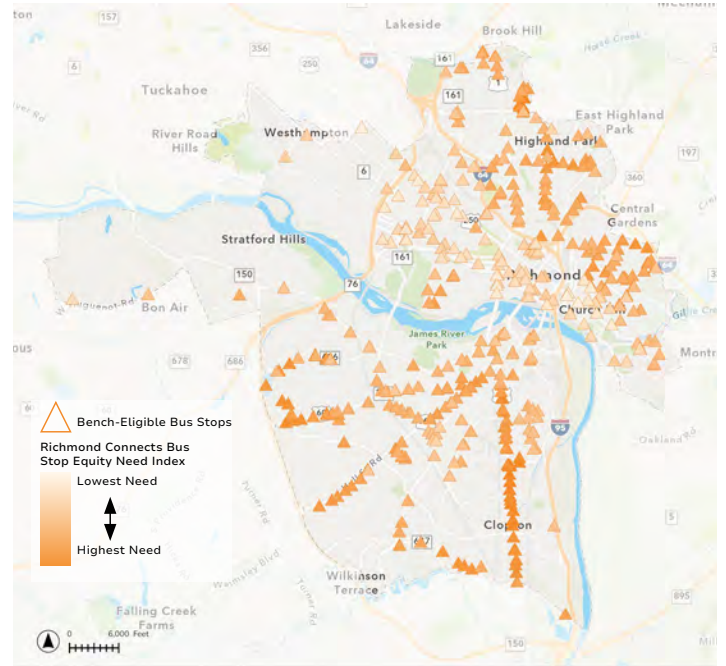


Figure 43. Bench-eligible bus stops in the City of Richmond that do not already have a bench, symbolized by Richmond Connects Bus Stop Equity Need Index.

5C: Fairfield Pedestrian Security and Shade Project

Support Score: 4.5 Cost: Low (\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|---|
| <p>The data analysis revealed several areas in Fairfield have some of the highest safety/security needs in the City based on fatal and serious injury crashes and reported crimes. Some of these areas also have high heat vulnerability and high urban heat island effect. The Tier 1 need areas for Safety/Security are also where the population includes high concentrations of Communities of Concern. There were a cluster of safety-related comments in these areas.</p> <p>This recommendation addresses safety concerns in areas with densely populated Communities of Concern (EF9) and high equity needs for bike/pedestrian safety (EF6).</p> | <p>Improve/increase lighting along streets and in alleys in high security needs areas, with special consideration for lighted shade structures to address both heat-island effects and night time security.</p> | <p>Conduct a study to examine the urban design of high security need areas and identify opportunities for applying CPTED principles in these areas.</p> |

5C: Fairfield Pedestrian Security and Shade Project

Support Score: 4.5 Cost: Low (\$)

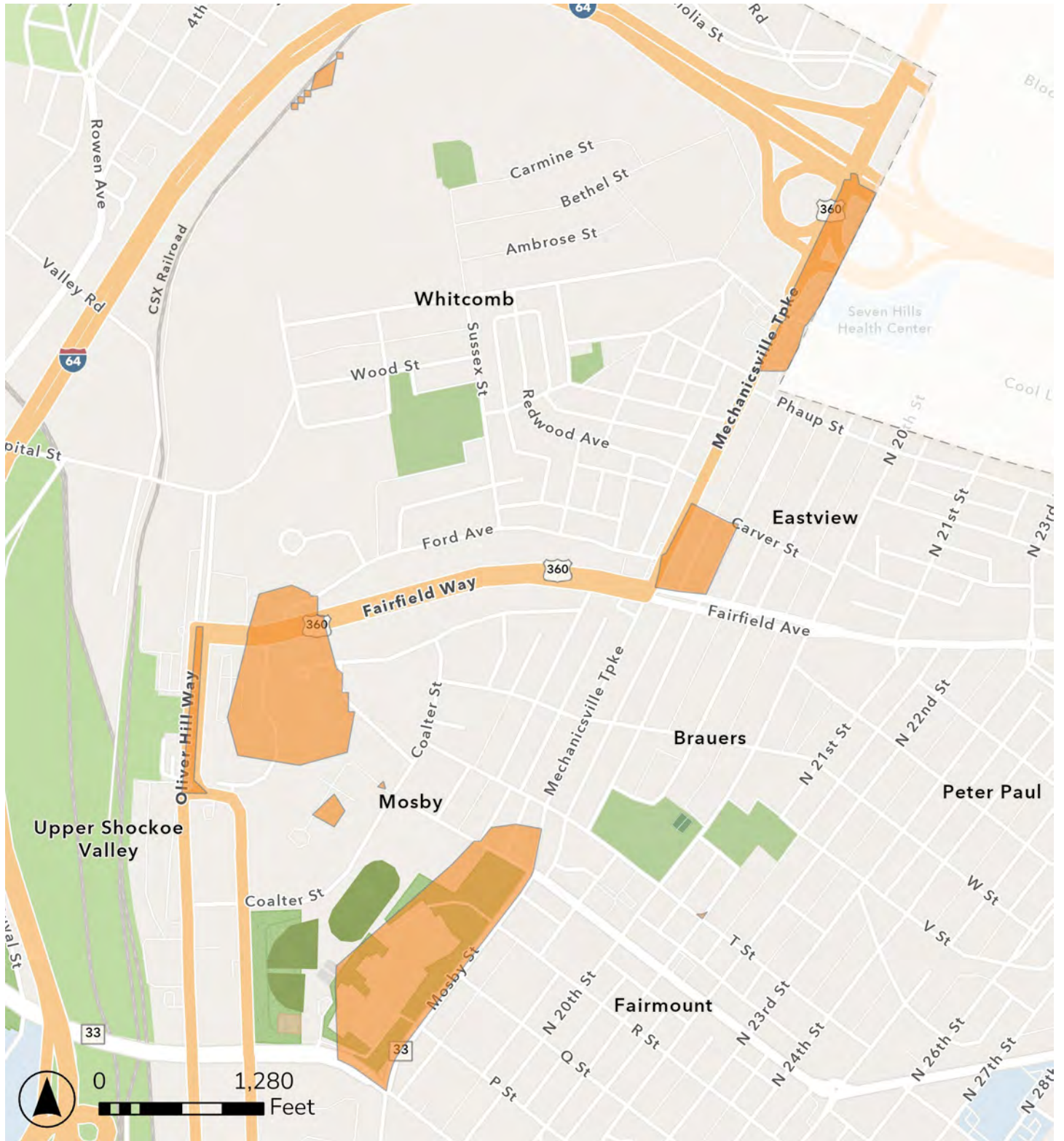


Figure 44. Fairfield Pedestrian Security and Shade Project

6D: Church Hill Street Lighting

Support Score: 4.7 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>The data analysis identified specific pockets of very high equity-based safety/security needs in the Church Hill/Nine Mile Road area. Communities of Concern expressed support for increasing lighting in these areas. This recommendation was very highly supported in the survey of draft recommendations.</p> <p>This recommendation invests in infrastructure in a previously redlined area (EF1), with bike/pedestrian safety equity needs (EF6).</p> | <p>Design and install pedestrian-scaled aesthetically-pleasing lighting in areas with high equity-based transportation safety/security needs. Design lighting to minimize light pollution and the negative health impacts associated with excessive or unnecessary artificial light at night</p> | <ol style="list-style-type: none"> 1. Develop a process to incorporate equity needs in the prioritization of installing new lights and/or replacing bulbs with LED. 2. Conduct a study to examine the urban design of high security need areas and identify opportunities for applying CPTED principles in these areas. |

6D: Church Hill Street Lighting

Support Score: 4.7 Cost: Moderate (\$\$)

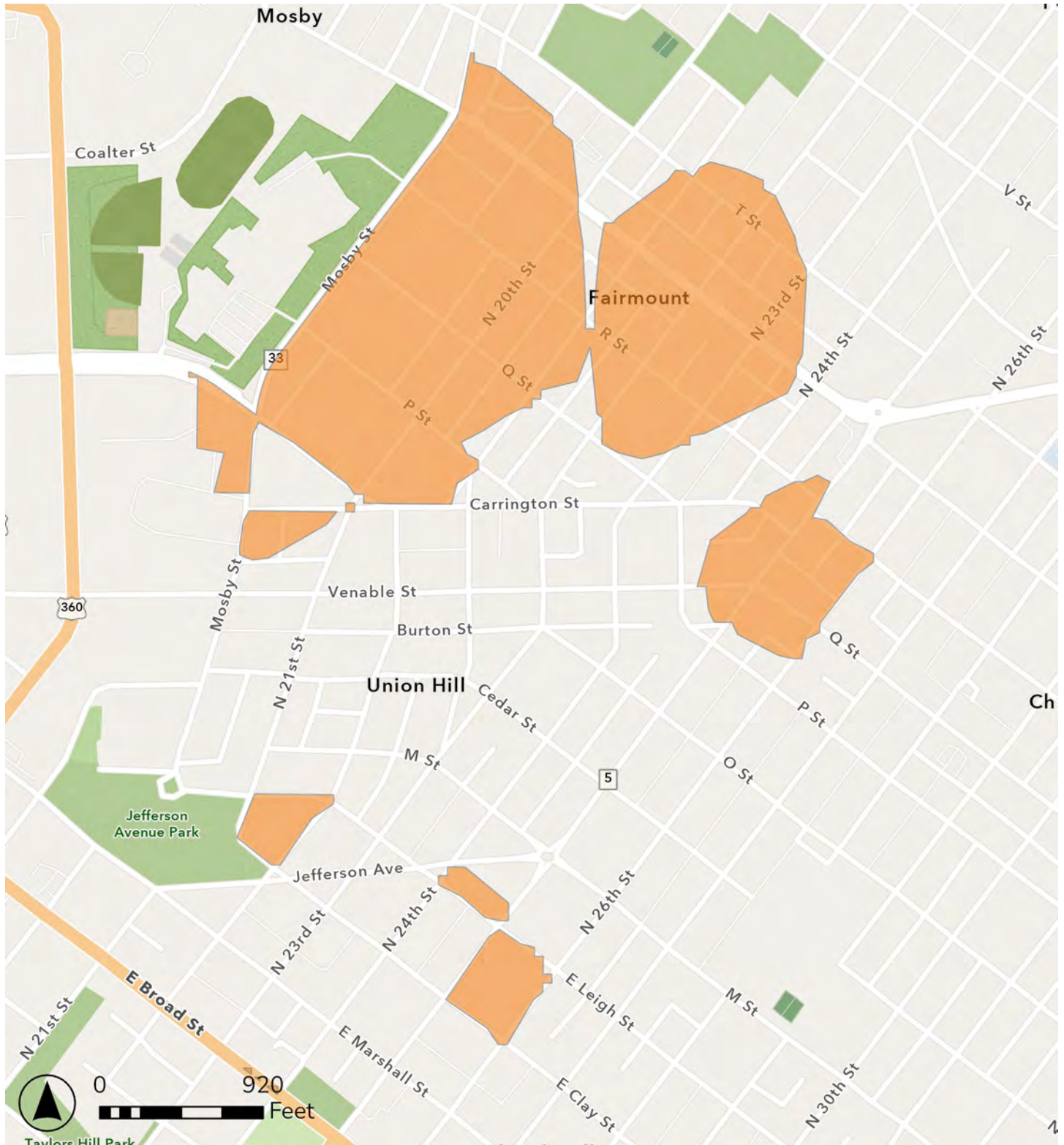


Figure 45. Church Hill Street Lighting Areas

4A: Downtown Safety Spot Improvements

Support Score: 4.4 Cost: Low (\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|---|
| <p>The data analysis results indicate the areas highlighted in Gilpin, Jackson Ward, Monroe Ward, and the Downtown Core have some of the highest safety/security equity needs in the City. These areas have high rates of violent and property crimes and high fatal and serious injury crash rates, especially crashes involving pedestrians. These areas were also clusters of safety-related public comments.</p> <p>This recommendation is located in an area with densely populated Communities of Concern (EF9).</p> | <p>Add more street lamps, pedestrian crossings, and traffic calming, and convert existing street lamps to LEDs in specified areas of high safety/security need.</p> | <p>Conduct a study to examine the urban design of high security need areas and identify opportunities for applying CPTED principles in these areas.</p> |

4A: Downtown Safety Spot Improvements

Support Score: 4.4 Cost: Low (\$)

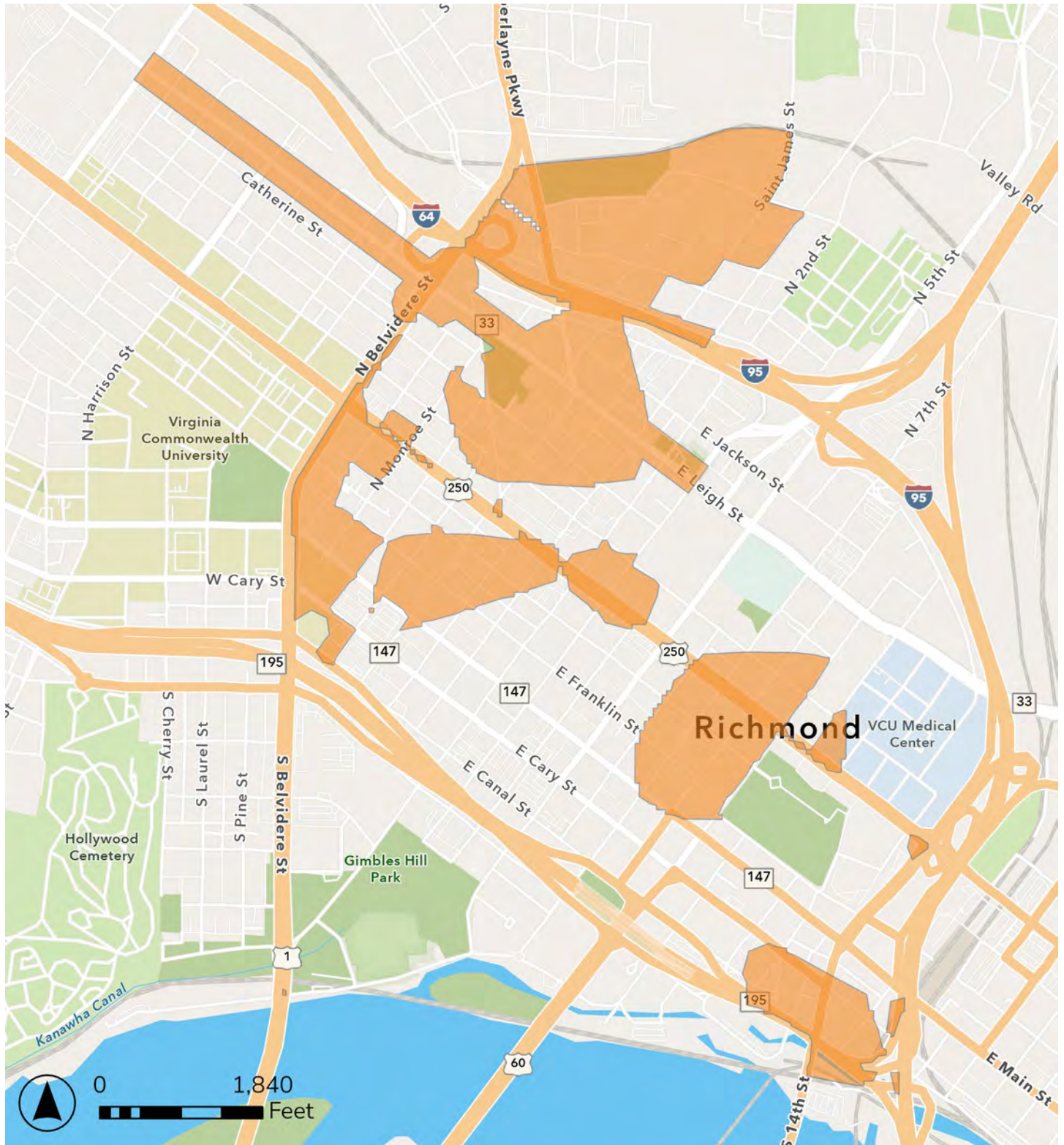


Figure 46. Downtown Safety Spot Improvement Areas

7B: Government Road Streetscape Improvements

Support Score: 4.4 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>The data analysis revealed a Tier 1 equity need in the economic development category in some areas on the west side of Government Road, primarily due to low market values, and amplified by a high density of Communities of Concern populations. The proposed sidewalk, ornamental lighting, and ADA ramp investments would provide a visible sign of investment in this area.</p> <p>This recommendation is an investment in infrastructure in a previously redlined area negatively impacted by urban renewal (EF1, EF2) with equity needs related to bike/pedestrian safety (EF6). It is located in an area with densely populated Communities of Concern (EF9).</p> | <p>The City is seeking funding to complete the stabilization of the Chimborazo Park slope failure, which includes Government Road.</p> <p>In addition to the slope repair, potential improvements on Government Road to help address the Economic Development needs could include:</p> <ul style="list-style-type: none"> • Constructing new sidewalk to fill in sidewalk gaps • Constructing ADA-compliant curb ramps • Pedestrian-scaled ornamental lighting <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Options: Crosswalk improvements, traffic calming</i></p> |

7B: Government Road Streetscape Improvements

Support Score: 4.4 Cost: Very High (\$\$\$\$)



GOVERNMENT RD SIDEWALK IMPROVEMENTS STONY RUN RD TO CARLISLE AVE



| LEGEND | |
|--------|---|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED RAILROAD CROSSING IMPROVEMENTS |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |
| | RECONSTRUCT EXISTING DRIVEWAY |



7G: Pulse Bus Rapid Transit Eastern Extension

Support Score: 4.3 Cost: High (\$\$\$)

| What is the need? Why is this project a priority to make transportation more equitable? | What should be done? | What are the first steps? |
|---|--|--|
| <p>Communities of Concern consistently said bus service in the East End is infrequent and requires too many transfers. This was identified as a Super Need.</p> <p>Providing bus service to the airport was a common public comment. East end residents representing Communities of Concern said they need bus service to White Oak Village to access grocery stores and other stores. Bus rapid transit would also represent an economic investment in this area.</p> <p>This recommendation is economic investment in a previously redlined area (EF1), reduces car dependency in an area with high equity needs related to car-centric planning (EF5) and bike/pedestrian safety (EF6). It is located in an area densely populated with Communities of Concern (EF9).</p> | <p>Extend Pulse Bus Rapid Transit (BRT) to the Richmond Airport via Williamsburg Road.</p> | <ol style="list-style-type: none"> 1. Conduct a study to identify desired densities for near-term bus and long-term BRT service, as well as barriers for implementing service, and actions to increase densities and improve readiness. 2. Implement Microtransit zone for Montrose/White Oak Village that improve transit access for Fulton residents. 3. Work with Henrico County to implement Mobility Hubs at Airport and White Oak Village |

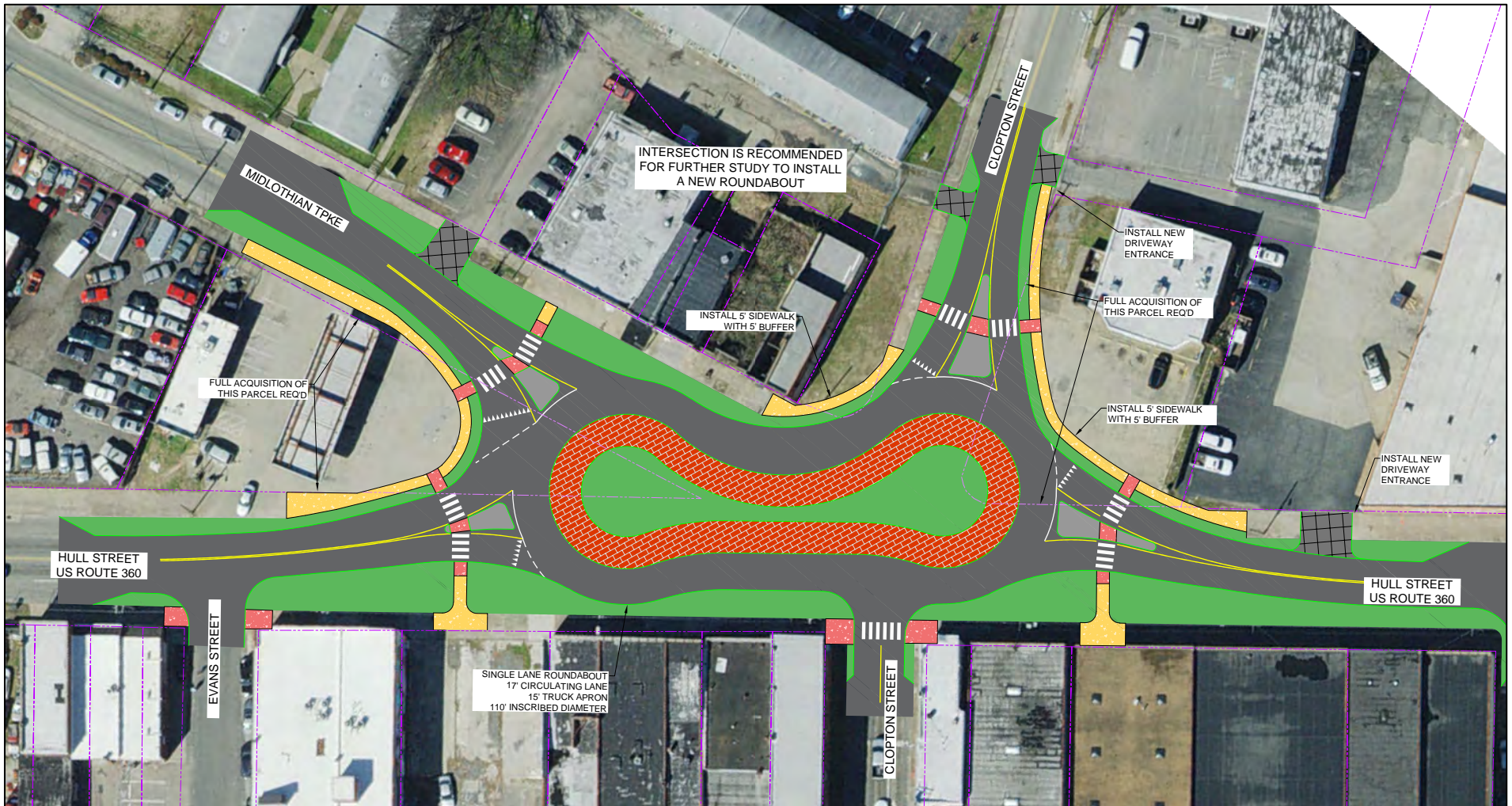
9C: Hull Street Intersection Pedestrian Improvements - at US Route 1 and at Midlothian Turnpike

Support Score: 4.2 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|--|
| <p>Communities of Concern consistently said these two intersections (Hull Street at US Route 1 and Hull Street at Midlothian Turnpike) feel unsafe. This was identified as a Super Need. General public comments noted these intersections as pedestrian barriers, and that sidewalks and roads need to be fixed.</p> <p>The data analysis shows a Tier 1 safety/security need at the intersection of Hull Street and US Route 1 due to a high number of serious crashes.</p> <p>Improves walkability in areas with high equity needs for pedestrian safety (EF6), transit reliability (EF7), and disparate climate impacts (EF8).</p> | <p>Potential improvements at the intersection of Hull Street and US Route 1 could include:</p> <ul style="list-style-type: none"> • Improvements to the bus stop at the southwest corner <p>Potential improvements at the intersection of Hull Street and Midlothian Turnpike could include:</p> <ul style="list-style-type: none"> • Marked crosswalks closer to the bus stops, possibly relocating the bus stop locations • Reconfiguring lanes on intersection approaches to shorten pedestrian crossing distances • Converting the intersection to a roundabout, which can slow vehicle speeds and reduce crash potential • Introducing a pedestrian-only “scramble” signal phase where pedestrians can move in any direction <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Option: Temporary demo test of lane configuration changes</i></p> |

9C: Hull Street Intersection Pedestrian Improvements - at US Route 1 and at Midlothian Turnpike

Support Score: 4.2 Cost: High (\$\$\$)



HULL STREET AT MIDLOTHIAN TPKE & CLOPTON STREET INTERSECTION IMPROVEMENTS



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | RECONSTRUCT EXISTING DRIVEWAY |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

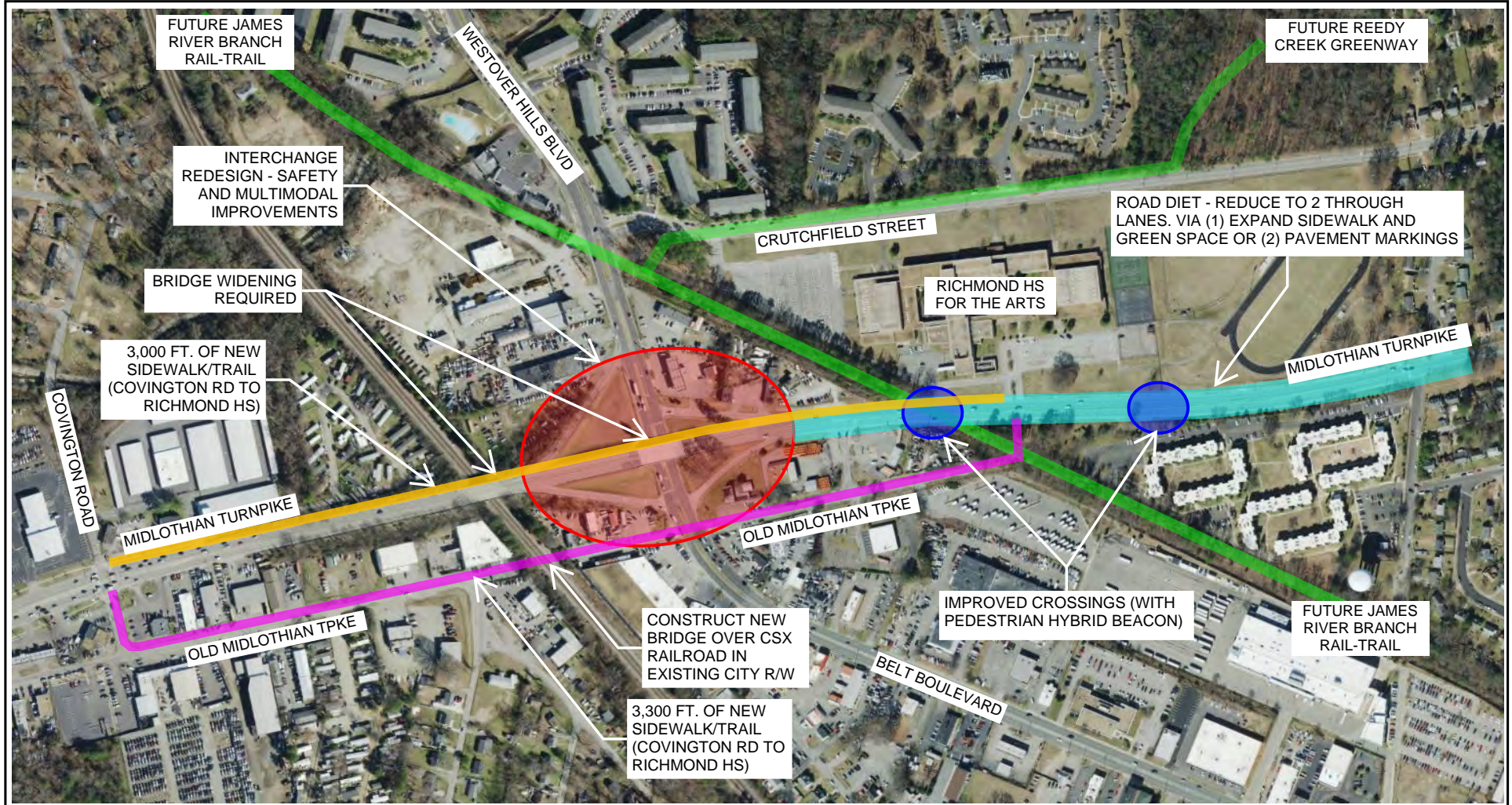
11F: Richmond High School of the Arts Pedestrian Safety Improvements

Support Score: 4.2 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|--|
| <p>Communities of Concern consistently voiced concerns about the lack of safe pedestrian access to Richmond High School of the Arts (formerly George Wythe High School), including a lack of safe pedestrian crossings across Midlothian Turnpike and lack of pedestrian paths near the grade-separated interchange of Midlothian Turnpike and Belt Boulevard. This was identified as a Super Need. Communities of Concern noted that a high school student was killed walking home from school. The data analysis reveals Tier 1 equity needs for pedestrian, safety/security, and connectivity categories.</p> <p>This recommendation will connect suburban students to their school (EF4), improve pedestrian safety and reduce the need for car ownership/use especially for low-income students (EF5, EF6, EF9).</p> | <p>The James River Branch Trail is being constructed in the CSX right-of-way, next to the Richmond High School of the Arts. The trail will have crossings at Midlothian Turnpike, Crutchfield Atreet, and Hull Street.</p> <p>Potential improvements could include:</p> <ul style="list-style-type: none"> • Pedestrian crossing with pedestrian hybrid beacon across Midlothian Turnpike at high school entrance • Shared-use path along Old Midlothian Turnpike with crossing at Belt Boulevard and CSX railroad • Redesign the grade separated interchange for multimodal safety improvements, and provide pedestrian facilities (sidewalks and crosswalks) along Midlothian Turnpike from high school to Covington Road. • Roadway conversion on Midlothian Turnpike east of Belt Boulevard to slow traffic speeds <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

11F: Richmond High School of the Arts Pedestrian Safety Improvements

Support Score: 4.2 Cost: Very High (\$\$\$\$)



RICHMOND HIGH SCHOOL FOR THE ARTS PEDESTRIAN SAFETY & ACCESS IMPROVEMENTS

LEGEND

- █ FUNDED PROJECTS UNDER DEVELOPMENT
- █ OPTION 1 (MEDIUM COST, LOW COMPLEXITY)
- █ OPTION 2 (HIGH COST, MEDIUM COMPLEXITY)
- █ OPTION 3 (HIGH COST, MEDIUM COMPLEXITY)
- █ OPTION 4 (VERY HIGH COST, HIGH COMPLEXITY)

NOT TO SCALE



12B.1: Southside Pedestrian Improvements - Old Warwick Road north of US Route 60

Support Score: 4.2 Cost: Moderate (\$\$)

| What is the need? Why is this project a priority to make transportation more equitable? | What should be done? | What are the first steps? |
|---|--|---|
| <p>The data analysis identified Old Warwick Road as being one of the highest Tier 1 equity need segments for pedestrian improvements in one of the highest pedestrian need areas. This is a key sidewalk gap in an area with a high density of Community of Concern populations where many people rely on walking to meet daily needs, where pedestrian accessibility is poor due to both lack of safe pedestrian facilities and lack of destinations within walking distance. Advisory Committee members confirmed the need to fill sidewalk gaps here. This street is on the border of the Midlothian/Chippenham Node. Filling in missing sidewalks was a Super Need identified by Communities of Concern throughout Southside.</p> <p>This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).</p> | <p>The proposed improvement on Old Warwick Road north of US Route 60 (Midlothian Turnpike) is to fill the sidewalk gap from Carnation Street to Midlothian Turnpike, and provide an improved crossing at the intersections with Carnation Street and Everglades Drive.</p> <p>This improvement may be combined with 12B.2 into one larger project.</p> <p>Recommendation 12C (Midlothian Turnpike Safety Improvements - German School Road to Carnation Street) includes a potential new traffic signal with pedestrian crossing at Old Warwick Road. This could also be incorporated into this project.</p> | <p>Prepare the engineering design plans. Identify and allocate funding.</p> |

12B.1: Southside Pedestrian Improvements - Old Warwick Road north of US Route 60

Support Score: 4.2 Cost: Moderate (\$\$)



OLD WARWICK ROAD - PEDESTRIAN IMPROVEMENTS MIDLOTHIAN TURNPIKE TO CARNATION STREET



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED NEW ASPHALT PAVEMENT |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |
| | RECONSTRUCT EXISTING DRIVEWAY |

12B.2: Southside Pedestrian Improvements - Old Warwick Road south of US Route 60

Support Score: 4.2 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>The data analysis identified Old Warwick Road as being one of the highest Tier 1 equity need segments for pedestrian improvements in one of the highest pedestrian need areas. This is a key sidewalk gap in an area with a high density of Community of Concern populations where many people rely on walking to meet daily needs, where pedestrian accessibility is poor due to both lack of safe pedestrian facilities and lack of destinations within walking distance. Advisory Committee members confirmed the need to fill sidewalk gaps here. This street is on the border of the Midlothian/Chippenham Node. Filling in missing sidewalks was a Super Need identified by Communities of Concern throughout Southside.</p> <p>This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).</p> | <p>The proposed improvement on Old Warwick Road south of US Route 60 (Midlothian Turnpike) is to fill in sidewalk gaps from Midlothian Turnpike to Warwick Drive.</p> <p>This improvement may be combined with 12B.1 into one larger project.</p> <p>Recommendation 12C (Midlothian Turnpike Safety Improvements - German School Road to Carnation Street) includes a potential new traffic signal with pedestrian crossing at Old Warwick Road. This could also be incorporated into this project.</p> | <p>Prepare the engineering design plans. Identify and allocate funding.</p> |

12B.2: Southside Pedestrian Improvements - Old Warwick Road south of US Route 60

Support Score: 4.2 Cost: Moderate (\$\$)



OLD WARWICK ROAD - PEDESTRIAN IMPROVEMENTS MIDLOTHIAN TURNPIKE TO WARWICK ROAD



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

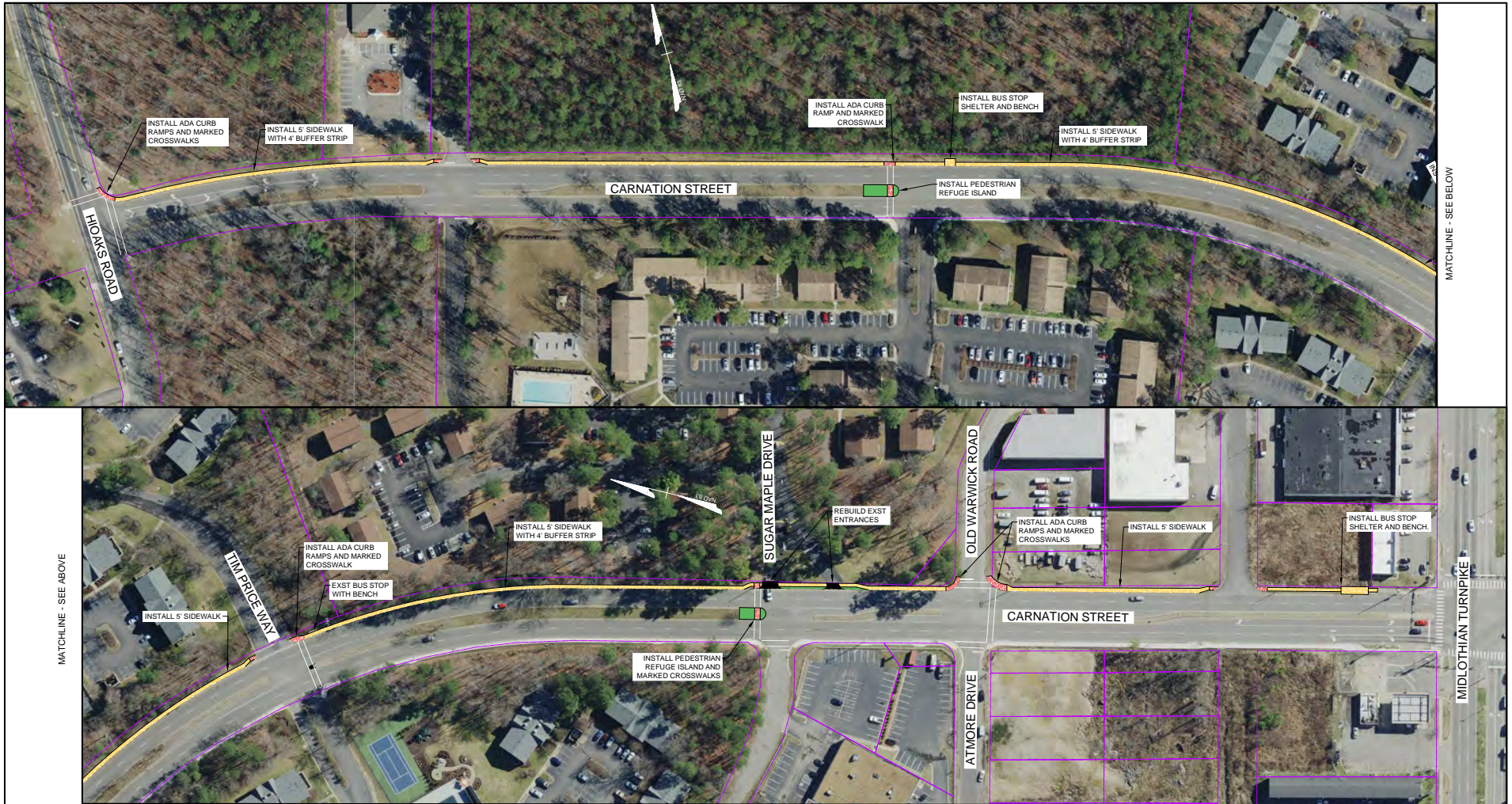
12B.3: Southside Pedestrian Improvements - Carnation Street

Support Score: 4.2 Cost: Moderate (\$\$)

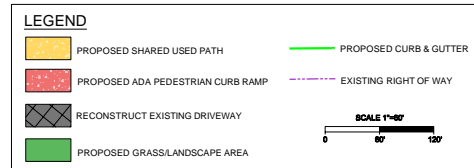
| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|---|
| <p>The data analysis identified Carnation Street as being one of the highest Tier 1 equity need segments for pedestrian improvements in one of the highest pedestrian need areas. This is a key sidewalk gap in an area with a high density of Community of Concern populations where many people rely on walking to meet daily needs, where pedestrian accessibility is poor due to both lack of safe pedestrian facilities and lack of destinations within walking distance. Advisory Committee members confirmed the need to fill sidewalk gaps here. This street is on the border of the Midlothian/ Chippenham Node. Filling in missing sidewalks was a Super Need identified by Communities of Concern throughout Southside.</p> <p>This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).</p> | <p>The proposed improvements on Carnation Street are:</p> <ul style="list-style-type: none"> • Fill in sidewalk gaps from Warwick Road to Hioaks Road • Add marked pedestrian crossings at: <ul style="list-style-type: none"> • Old Warwick Road/ Atmore Drive • Sugar Maple Drive/ Warwick Road • Tim Price Way | <ol style="list-style-type: none"> 1. Examine the identified potential crosswalk locations, and examine other potential crossing locations. Evaluate the need for additional signage or other features at new crosswalks. 2. Share the concepts with the community. Work with the community to finalize the crossing locations and treatments. 3. Prepare engineering design plans. Identify and allocate funding. |

12B.3: Southside Pedestrian Improvements - Carnation Street

Support Score: 4.2 Cost: Moderate (\$\$)



CARNATION STREET - PEDESTRIAN IMPROVEMENTS MIDLOTHIAN TURNPIKE TO HIOAKS ROAD



12B.4: Southside Pedestrian Improvements - German School Road

Support Score: 4.2 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>The data analysis identified German School Road from Glenway Drive to Jahnke Road as being one of the highest Tier 1 equity need segments for pedestrian improvements in one of the highest pedestrian need areas. This is a key sidewalk gap in an area with a high density of Community of Concern populations where many people rely on walking to meet daily needs, where pedestrian accessibility is poor due to both lack of safe pedestrian facilities and lack of destinations within walking distance. Advisory Committee members confirmed the need to fill sidewalk gaps here. This street is in the Micro Node at German School Road and Jahnke Road. Filling in missing sidewalks was a Super Need identified by Communities of Concern throughout Southside.</p> <p>This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).</p> | <p>The proposed improvements on German School Road are:</p> <ul style="list-style-type: none"> • Fill in sidewalk gaps from Glenway Drive to Jahnke Road • Add marked pedestrian crossings at: <ul style="list-style-type: none"> • Glenway Drive • Alexander Apartments/ Renaissance Apartments entrances • Food Lion entrance | <ol style="list-style-type: none"> 1. Examine the identified potential crosswalk locations, and examine other potential crossing locations. Evaluate the need for additional signage or other features at new crosswalks. 2. Share the concepts with the community. Work with the community to finalize the crossing locations and treatments. 3. Prepare engineering design plans. Identify and allocate funding. |

12B.4: Southside Pedestrian Improvements - German School Road

Support Score: 4.2 Cost: Moderate (\$\$)



GERMAN SCHOOL ROAD - PEDESTRIAN IMPROVEMENTS JAHNKE ROAD TO GLENWAY DRIVE



LEGEND

- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- RECONSTRUCT EXISTING DRIVEWAY
- PROPOSED GRASSLANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=30'

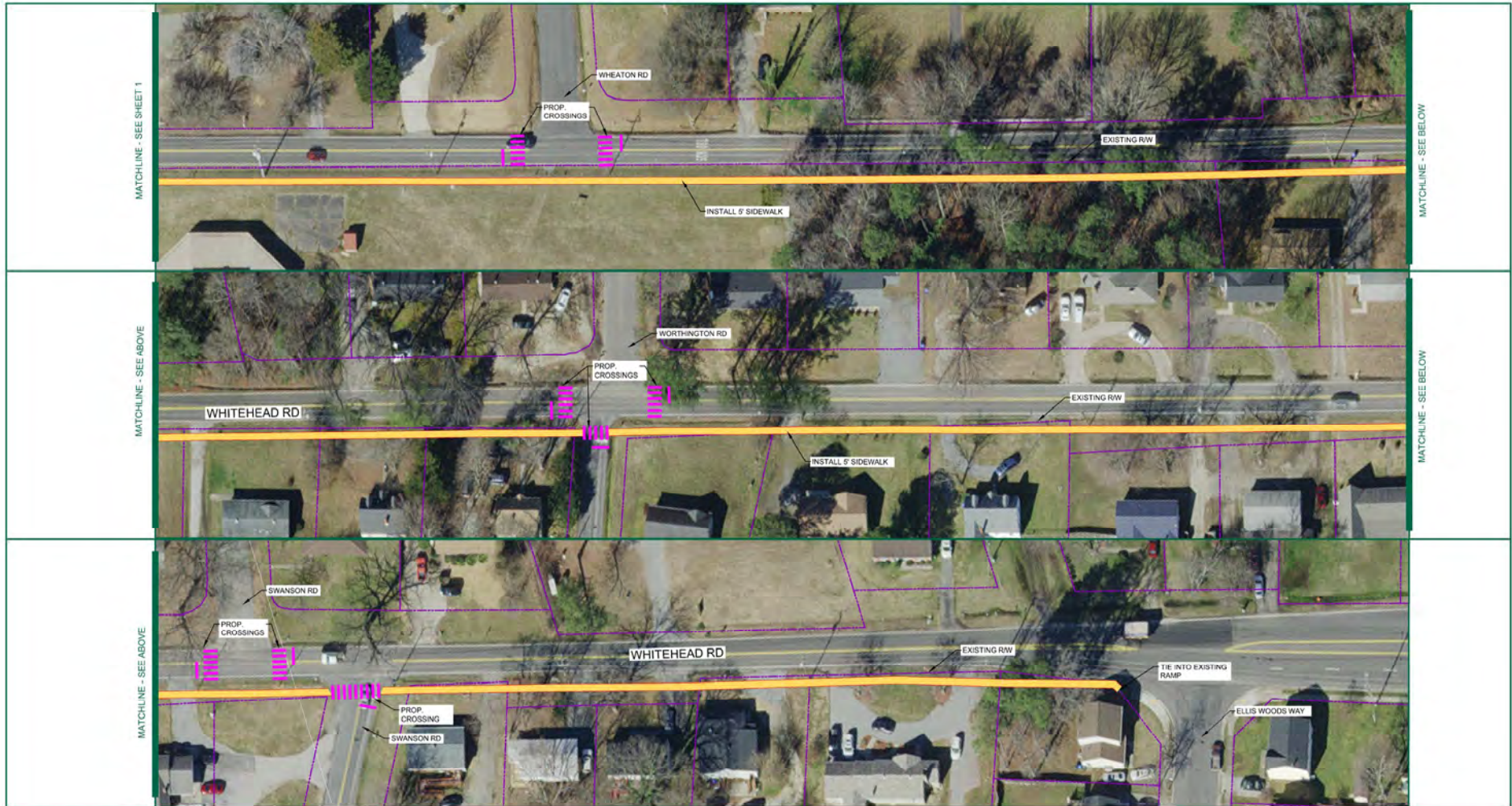
12B.5: Southside Pedestrian Improvements - Whitehead Road

Support Score: 4.2 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>The data analysis identified Whitehead Road as being one of the highest Tier 1 equity need segments for pedestrian improvements in one of the highest pedestrian need areas. This is a key sidewalk gap in an area with a high density of Community of Concern populations where many people rely on walking to meet daily needs, where pedestrian accessibility is poor due to both lack of safe pedestrian facilities and lack of destinations within walking distance. Advisory Committee members confirmed the need to fill sidewalk gaps here. This street is a key connection to Reid Elementary School and to the Hull/Chippenham Neighborhood Node. Filling in missing sidewalks was a Super Need identified by Communities of Concern throughout Southside.</p> <p>This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).</p> | <p>The proposed improvements on Whitehead Road are:</p> <ul style="list-style-type: none"> • Fill in sidewalk gaps from Elmbridge Road to Ellis Woods Way • Add marked pedestrian crossings at: <ul style="list-style-type: none"> • Daytona Drive • Wheaton Road • Worthington Road • Swanson Road | <ol style="list-style-type: none"> 1. Examine the identified potential crosswalk locations, and examine other potential crossing locations. Evaluate the need for additional signage or other features at new crosswalks. 2. Share the concepts with the community. Work with the community to finalize the crossing locations and treatments. 3. Prepare engineering design plans. Identify and allocate funding. |

12B.5: Southside Pedestrian Improvements - Whitehead Road

Support Score: 4.2 Cost: High (\$\$\$)



WHITEHEAD ROAD - SIDEWALK GAPS & CROSSINGS ELMBRIDGE ROAD TO ELLIS WOODS WAY



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED STREETSCAPE IMPROVEMENTS |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/ LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=80'

NAD 83

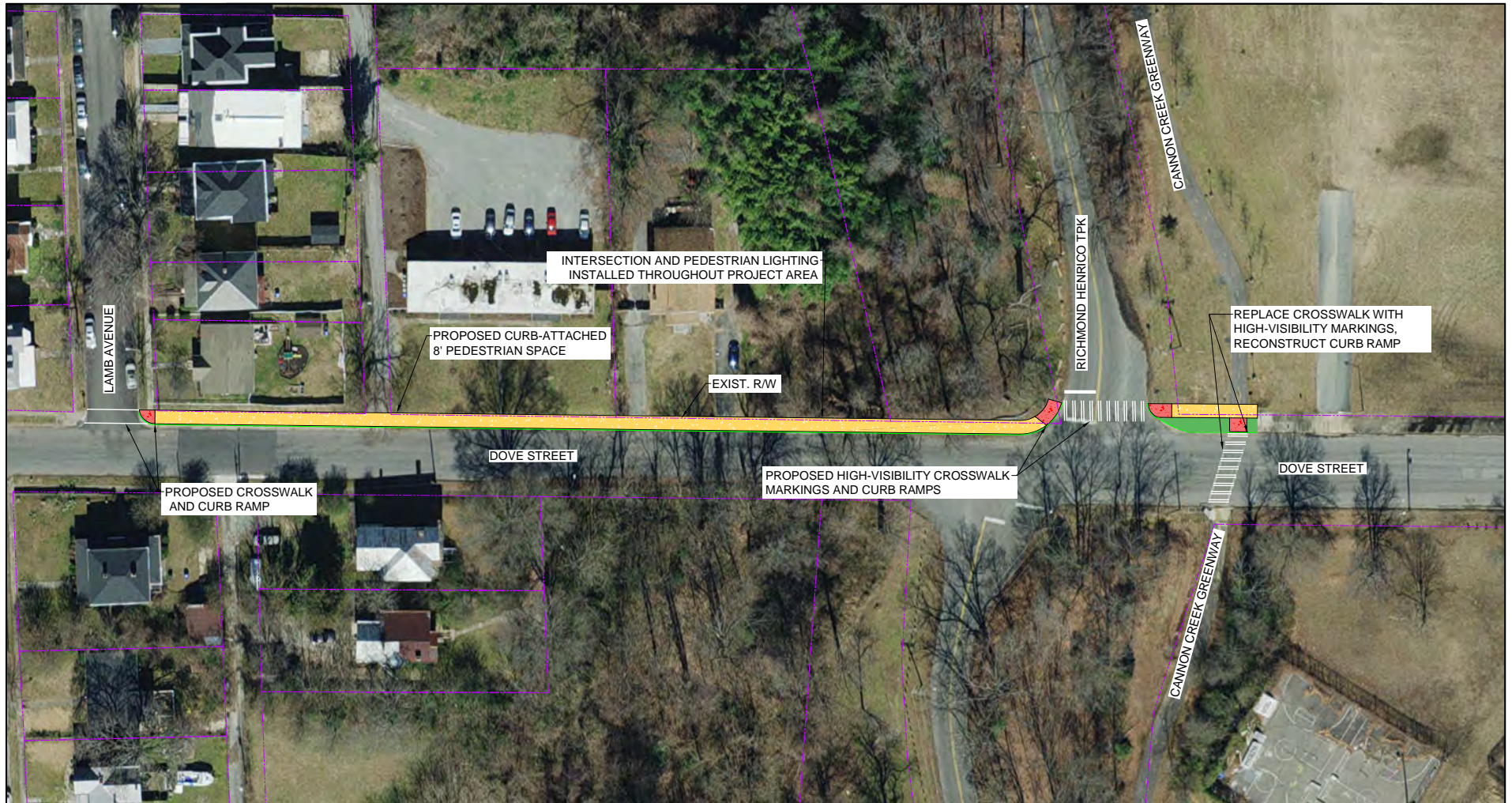
3B: Dove Street Pedestrian Safety Improvements

Support Score: 4.2 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|--|
| <p>The data analysis revealed a Tier 1 Pedestrian equity need on Dove Street from Lamb Avenue to 1st Avenue. This is a key pedestrian connection to Overby-Sheppard Elementary School. This is a key connection for pedestrians, especially Communities of Concern. Public comments noted the lack of lighting at night on Dove Street.</p> <p>This recommendation will improve walkability in an area with equity needs related to pedestrian safety (EF6), transit (EF7) and disparate climate impacts (EF8).</p> | <p>Proposed improvements include new sidewalk, ADA improvements, and lighting along Dove Street from Lamb Avenue to Althea Street, with new connection to Cannon Creek Greenway. This project will require road widening and potential drainage improvements near Richmond-Henrico Turnpike.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Option: Crosswalk improvement</i></p> |

3B: Dove Street Pedestrian Safety Improvements

Support Score: 4.2 Cost: Moderate (\$\$)



DOVE STREET - SHARED USE PATH IMPROVEMENTS LAMB AVENUE TO ALTHEA STREET



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

SCALE 1"=40'

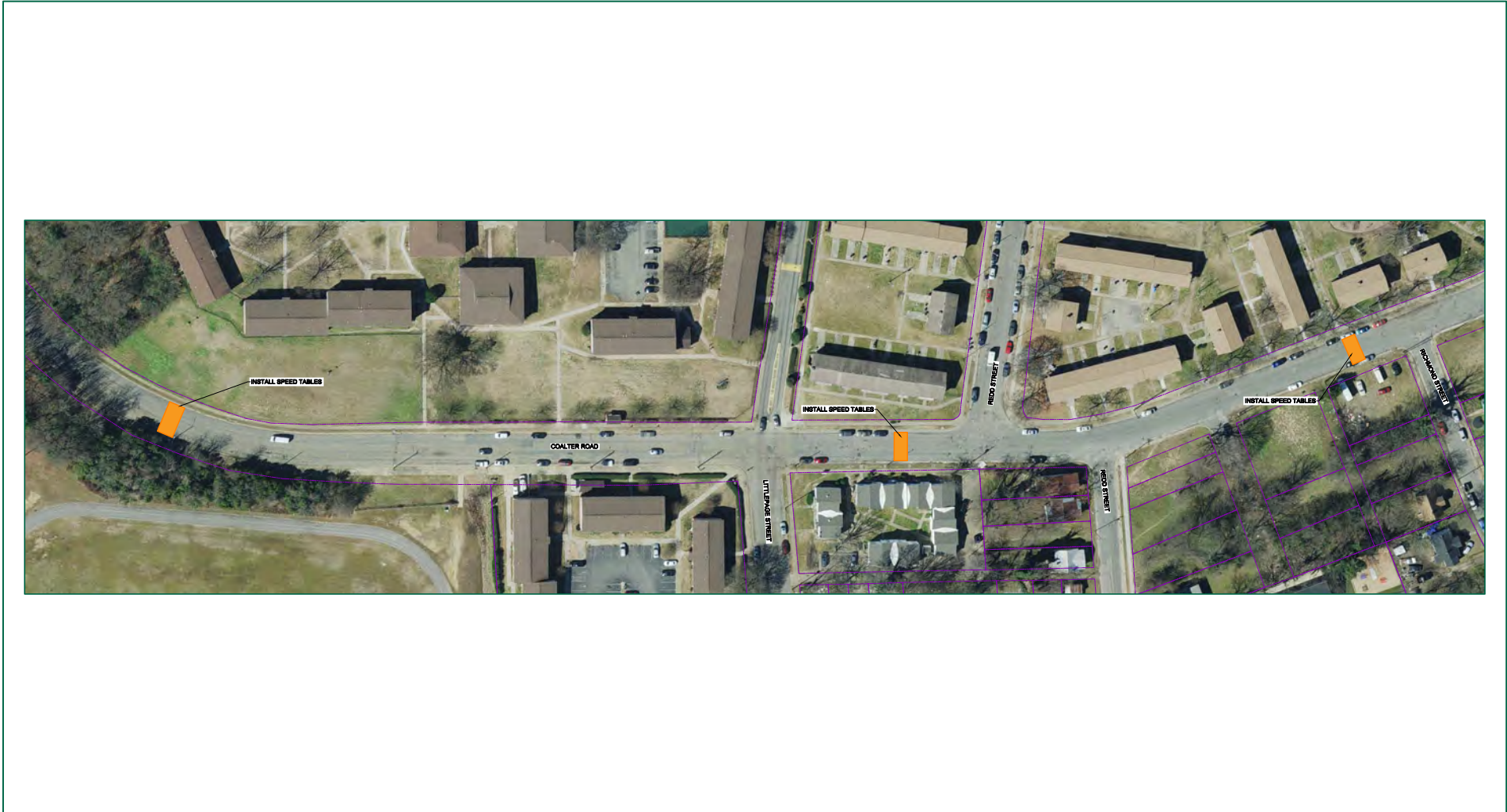
5A.1: Coalter Street Traffic Calming

Support Score: 4.1 Cost: Low (\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>Communities of Concern consistently said speeding along Coalter Street is an issue. This was identified as a Super Need.</p> <p>The data analysis revealed a Tier 1 equity-based pedestrian need Coalter Street. Focus groups confirmed speeding is an issue on Coalter Street, especially near Redd Street, and said speed bumps are needed.</p> <p>This recommendation will improve infrastructure in a previously redlined area (EF1), slow traffic in an area with equity needs related to bike/pedestrian safety (EF6), and add green infrastructure in an area with disparate climate impacts (EF8, EF10). It is located in an area with densely populated Communities of Concern (EF9).</p> | <p>Potential improvements on Coalter Street may include:</p> <ul style="list-style-type: none"> • Speed tables • Raised crosswalks at bus stops • Traffic circles at unsignalized intersections • Raised intersections • Curb extensions at intersections to reduce vehicle speeds and make pedestrians more visible to drivers • Striping lane edge lines to narrow lane widths to slow vehicle speeds • Removing on-street parking and bringing the curb further into the street to slow vehicle speeds and plant vegetation and trees to reduce urban heat island effect • Temporary intersection narrowing and raised crosswalks <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Option: Add temporary intersection narrowing and raised crosswalks.</i></p> |

5A.1: Coalter Street Traffic Calming

Support Score: 4.1 Cost: Low (\$)



COALTER STREET

..\\Misc References\\city logging

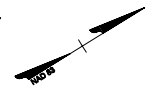
..\\Misc References\\TG-Green-grey.jpg

..\\Misc References\\LOGO Richmond Connects.JPG

LEGEND

 PROPOSED SPEED TABLES

 EXISTING RIGHT OF WAY



SCALE 1"=50'
0 50 100

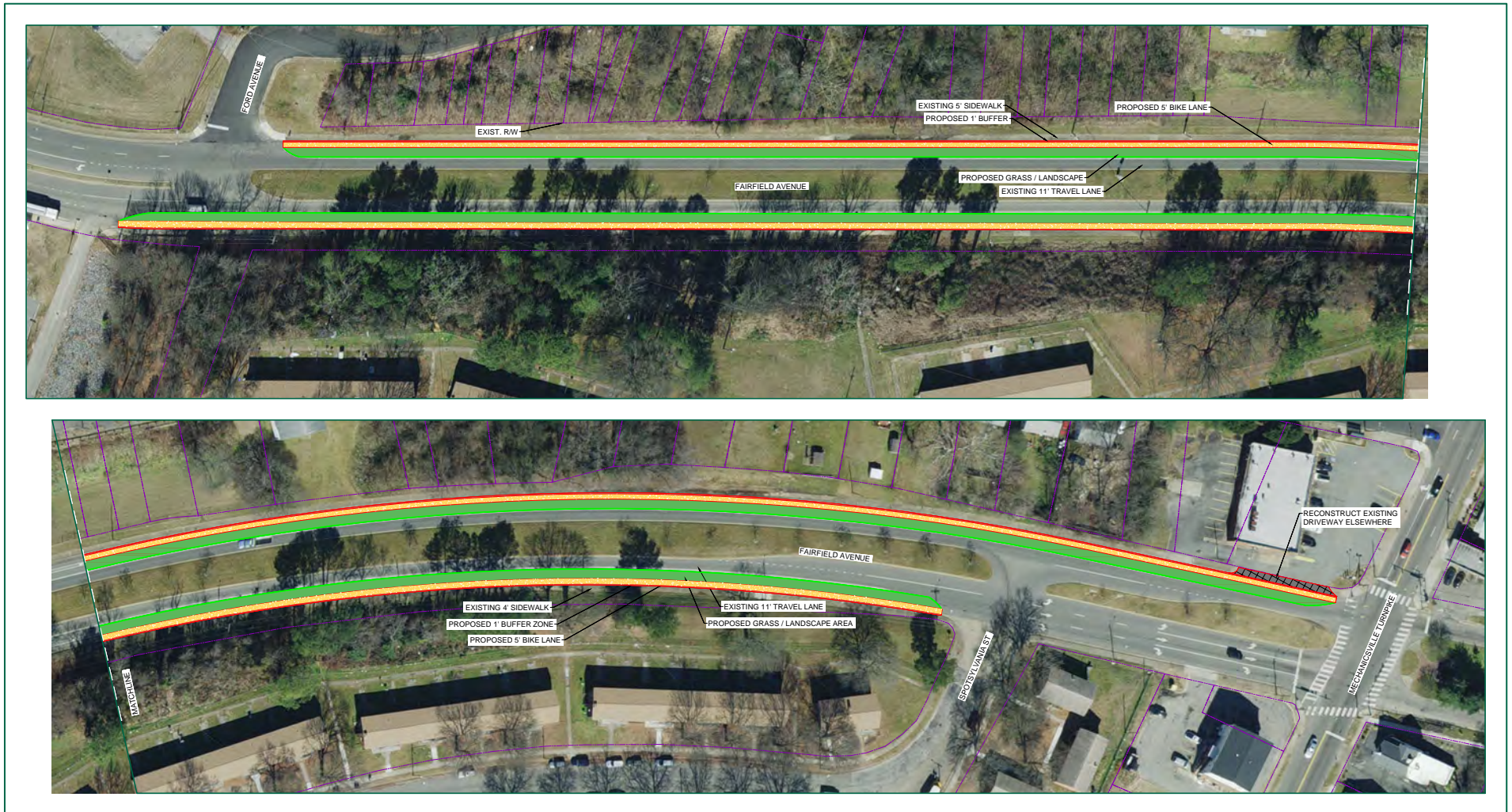
5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low (\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>Communities of Concern consistently said crossing the street on Fairfield Avenue feels unsafe. This was identified as a Super Need. Focus groups identified speeding on Fairfield Avenue as an issue along the entire street, especially for the safety of children and seniors. Fairfield Avenue and Fairfield Way are on the High Injury Street Network, with high rates of fatal and serious injury crashes, several involving loss of vehicle control or pedestrians.</p> <p>This recommendation will improve infrastructure in a previously redlined area (EF1), slow traffic in an area with equity needs related to bike/ pedestrian safety (EF6), and add green infrastructure in an area with disparate climate impacts (EF8, EF10). It is located in an area with densely populated Communities of Concern (EF9).</p> | <p>Potential improvements on Fairfield Avenue east of 20th St could include:</p> <ul style="list-style-type: none"> • Curb extensions with vegetation to slow vehicle speeds and make pedestrians more visible to drivers • Removing parking (completely or just a portion) and replacing asphalt with vegetation to reduce urban heat island effect <p>Potential improvements on Fairfield Avenue between 20th St and Mechanicsville Turnpike could include:</p> <ul style="list-style-type: none"> • Modifying the crosswalks to provide refuge in the median <p>Potential improvements on Fairfield Way west of Mechanicsville Turnpike could include:</p> <ul style="list-style-type: none"> • Hardening the buffer between the vehicle lane and bicycle lane, potentially with vegetation • Widening the median to remove asphalt and add more trees <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Option: Crosswalk improvements?</i></p> |

5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low (\$)



FAIRFIELD WAY ROAD DIET FORD AVENUE TO MECHANICSVILLE TURNPIKE



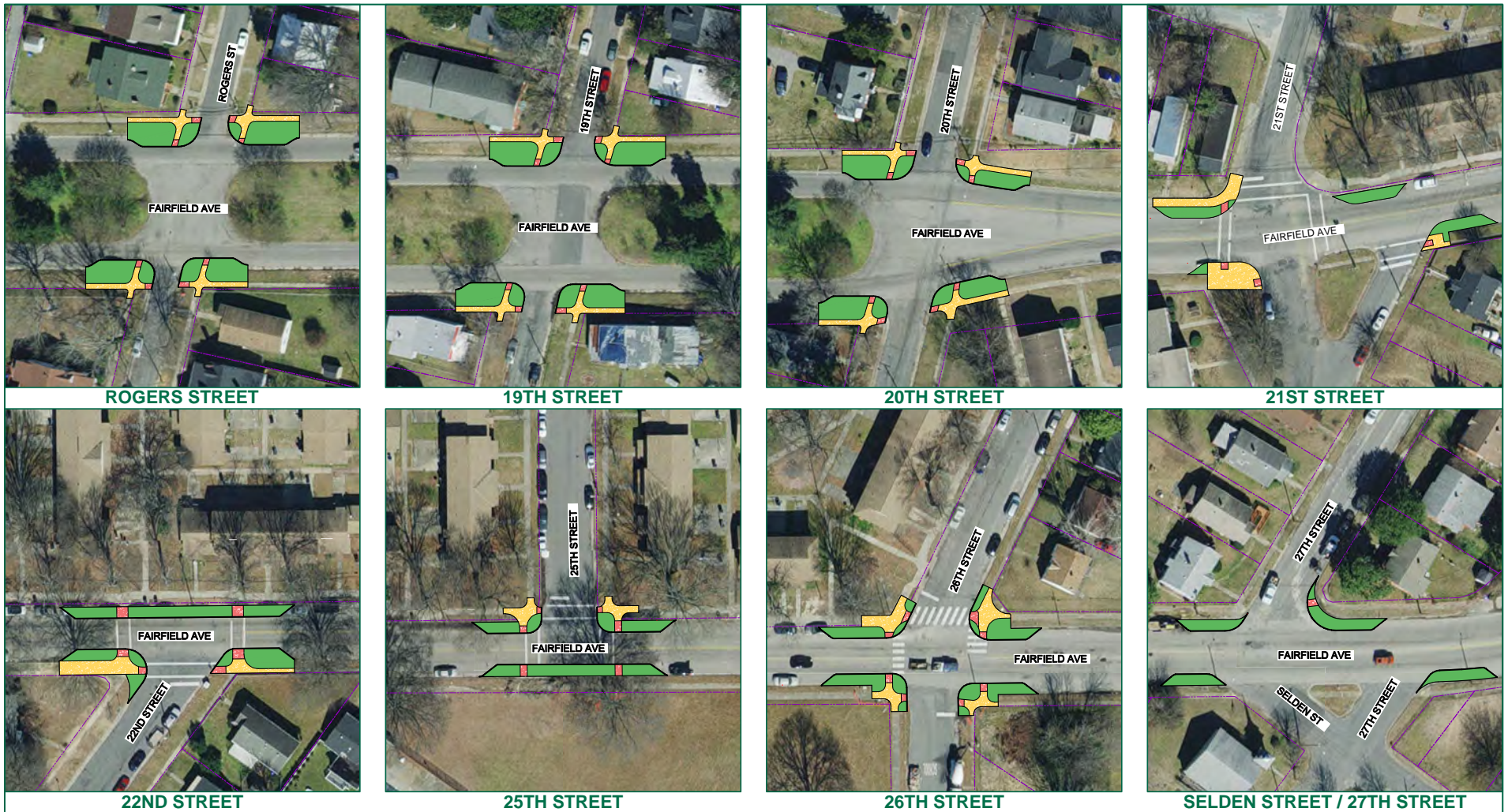
LEGEND

- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED BICYCLE LANE
- PROPOSED SIDEWALK/BIKE LANE BUFFER
- EXISTING DRIVEWAY REMOVAL
- EXISTING RIGHT OF WAY

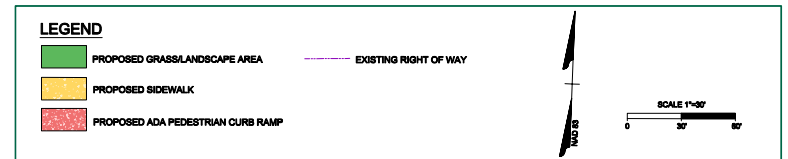
SCALE 1"=40'
0 40 80
N

5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low (\$)



FAIRFIELD AVENUE CURB EXTENSIONS ROGERS STREET TO 21ST STREET



..Misc References\city logging

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..Misc References\LOGO Richmond Connects.JPG

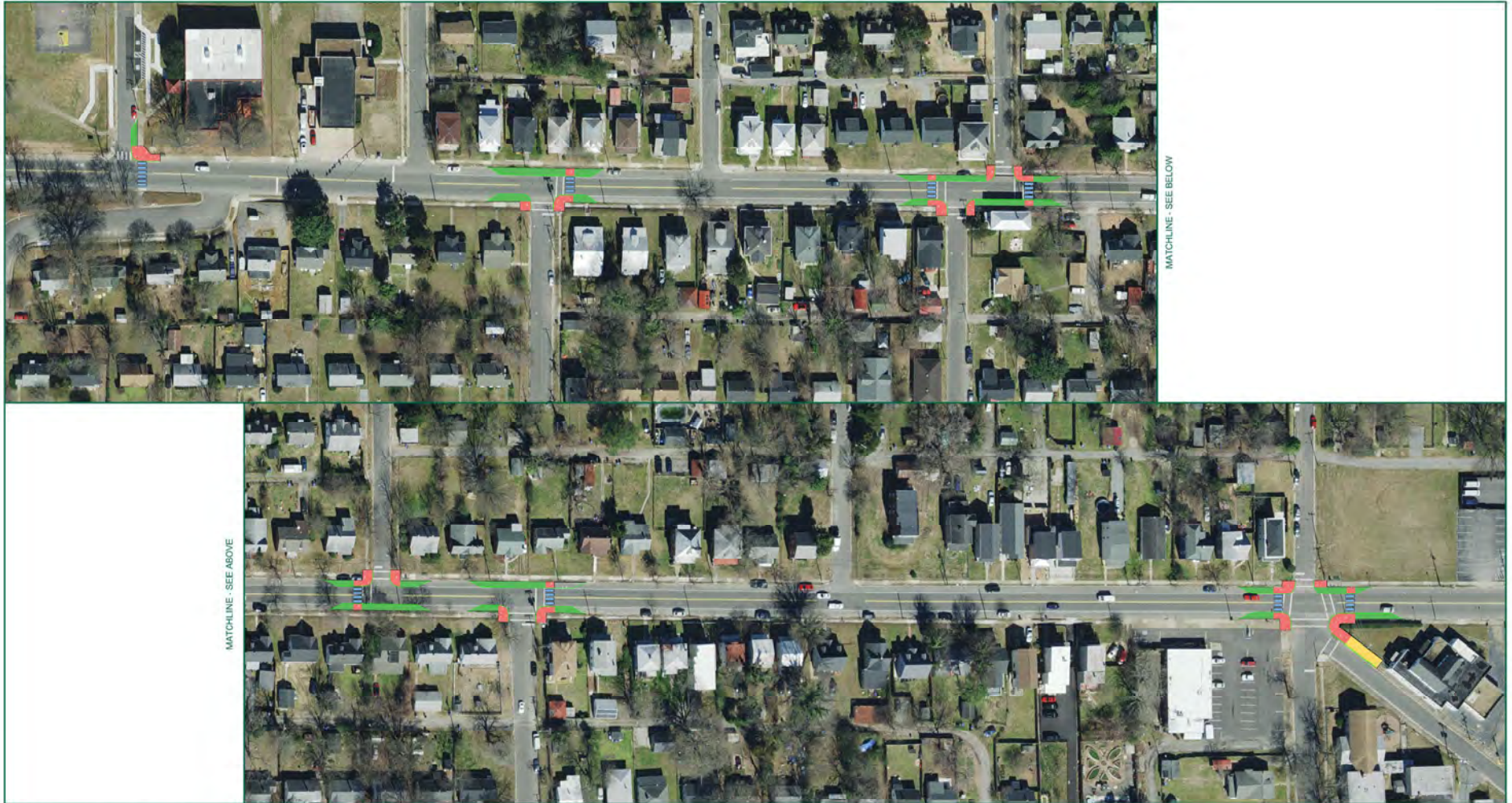
7A: Williamsburg Road/ Williamsburg Avenue Traffic Calming

Support Score: 4.1 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|---|
| <p>Communities of Concern consistently said speeding and lack of safe pedestrian crossings on Williamsburg Road are important issues. These were identified as a Super Needs.</p> <p>This recommendation will invest in infrastructure in a previously redlined area (EF1), with bike/pedestrian safety equity needs (EF6). It is located in an area densely populated with Communities of Concern.</p> | <p>Potential improvements on Williamsburg Avenue/ Williamsburg Road east/north of Hatcher Street include:</p> <ul style="list-style-type: none"> • Roadway conversion from 2 lanes each direction to 1 lane each direction to slow vehicle speeds. Asphalt can be converted to sidewalks with wide vegetated buffers or other use with vegetation to reduce urban heat island effect • Pedestrian hybrid beacons at one or more locations, potentially: <ul style="list-style-type: none"> • Stony Run Road • Admiral Gravely Boulevard • Orleans Street • Goddin Street • Plant trees or other vegetation along the road to visually enclose the space. <p>Potential improvements on Williamsburg Road west of Hatcher Street include:</p> <ul style="list-style-type: none"> • Curb extensions at unsignalized intersections to slow vehicle speeds and make pedestrians more visible to drivers • Raised crosswalks • Rectangular rapid flashing beacons at select intersections <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Work with property owners to identify locations for planting trees and vegetation. Property owners along Williamsburg Ave/Rd include City of Richmond Dept. of Parks & Recreation, Dept. of Public Utilities, Economic Development Authority, and Fulton Village HOA. 3. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 4. Prepare the engineering design plans. Identify and allocate funding. 5. Work with PDR to put PHB locations into plans to require new development to provide. <p><i>LQC Option: Crosswalk improvements, Traffic calming</i></p> |

7A: Williamsburg Road/ Williamsburg Avenue Traffic Calming

Support Score: 4.1 Cost: Moderate (\$\$)



WILLIAMSBURG ROAD - ADA IMPROVEMENTS NORTHAMPTON STREET TO SALEM STREET



| LEGEND | |
|--------|-----------------------------------|
| | PROPOSED STREETSCAPE IMPROVEMENTS |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/ LANDSCAPE AREA |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |

SCALE (1"=50')

1A: Westbrook Avenue Pedestrian Improvements

Support Score: 4.0 Cost: Low (\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|--|
| <p>The data analysis revealed a Tier 1 equity-based pedestrian need on Westbrook Avenue from Henderson Middle School to West Seminary Avenue. Sidewalks are missing on Westbrook Avenue between Chamberlayne Ave and Brook Road.</p> <p>This recommendation will increase pedestrian safety and reduce the need for car ownership (EF5, EF6). It will improve connectivity for Communities of Concern (EF7).</p> | <p>Add sidewalks along Westbrook Avenue from Brook Road to Chamberlayne Avenue. Add marked crosswalks, if needed.</p> <p>The Dept. of Public Works has requested CIP funding for a project to make drainage improvements along Westbrook Avenue. This project has not been selected for funding. If this project is selected for funding in the future, it should also include sidewalk construction.</p> | <ol style="list-style-type: none"> 1. Conduct a study to determine the appropriate crossing treatment(s) and location(s) between Brook Road and Chamberlayne Avenue. 2. Prepare design plans for sidewalk improvements as a stand-alone project (without drainage improvements). If drainage improvement project proceeds, incorporate sidewalks into that project. <p><i>LQC Option: Crosswalk improvements</i></p> |

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|---|
| <p>Communities of Concern consistently identified poor pavement condition as an issue needing to be addressed along several roads including Williamsburg Road and Government Road in the East End, generally throughout Downtown including Gilpin, and on Commerce Road, Bells Road, Richmond Highway, and Belt Boulevard in Southside. These were identified as Super Needs. Pavement condition was also a common theme in the public comments.</p> <p>This recommendation will prioritize pavement maintenance requests from Communities of Concern (EF9).</p> | <p>The Priority Pavement Maintenance Projects table lists roadways that Communities of Concern have identified as needing to be repaved. Move these repaving projects to the top of the repaving cycle list and/or seek funding for additional funds to repave these roads.</p> | <p>Move the paving projects identified in the Priority Pavement Maintenance Projects table to the top of the repaving cycle list so they are completed first, and/or seek funding for additional funds to repave these roads.</p> |

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)

| Map ID | Project Locations | Length (ft) | Pavement Condition Score(s) | Ballpark Cost |
|--|--|-------------|---------------------------------|---------------|
| Downtown & Gilpin Pavement Maintenance Projects | | | | |
| 1 | N 3rd St from Jackson St to N 5th St | 800 | Fair-Serious(17.96-57) | \$92,000 |
| 2 | N 2nd St from Broad St to Leigh St | 1,300 | Poor-Very Poor (37.33-47.84) | \$154,000 |
| 3 | N 10th St from Marshall St to Duval St Conn | 1,600 | Poor-Serious (24.16-47.69) | \$190,000 |
| 4 | Canal St from Jefferson St to 2nd St | 1,300 | Poor-Very Poor (40.24-46.49) | \$155,000 |
| 5 | 5th St from Canal St to Grace St | 1,600 | Poor-Serious(24.99-43.05) | \$188,000 |
| 6 | 4th St from Canal St to Grace St | 1,600 | Poor-Very Poor (34.44-42.49) | \$107,000 |
| 7 | 5th St from Marshall St to Leigh St | 900 | Very Poor (40.15) | \$188,000 |
| 8 | 6th St from Cary St to Franklin St | 800 | Very Poor (27.6-40.15) | \$94,000 |
| 9 | Duval St Conn from N 8th St to N 13th St | 1,700 | Very Poor-Serious (22.36-39.32) | \$205,000 |
| 10 | Hill St/Hospital Street from St Peter St to N 5th St | 2,600 | Poor - serious (15.3-38.29) | \$311,000 |
| 11 | St Peter St from Charity St to Hill St | 900 | Very poor-Serious (13.51-38.06) | \$110,000 |
| 12 | Hickory St from Calhoun St to Charity St | 500 | Very poor (35.91) | \$57,000 |
| 13 | St Paul St from Federal St to Hill St | 600 | Very Poor (28.82-31.34) | \$75,000 |
| 14 | Calhoun St from Chamberlayne Ave to St Peter St | 1,000 | very poor-serious (15.7-29.47) | \$115,000 |
| 15 | Adams St from Marshall St to Leigh St | 900 | Very Poor (26.49-28.44) | \$110,000 |
| 16 | Jackson St from Chamberlayne Pkwy to N 2nd St | 1,400 | Very Poor-Serious (16.05-27.17) | \$169,000 |
| 17 | Jefferson St from Broad St to Marshall St | 400 | Serious (25.28) | \$44,000 |
| 18 | Baker St from Chamberlayne to N 2nd St | 2,400 | Serious (14.2-23.77) | \$108,000 |
| 19 | St. James St from Hill St to Federal St | 1,300 | Serious (25.26) | \$80,000 |

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)

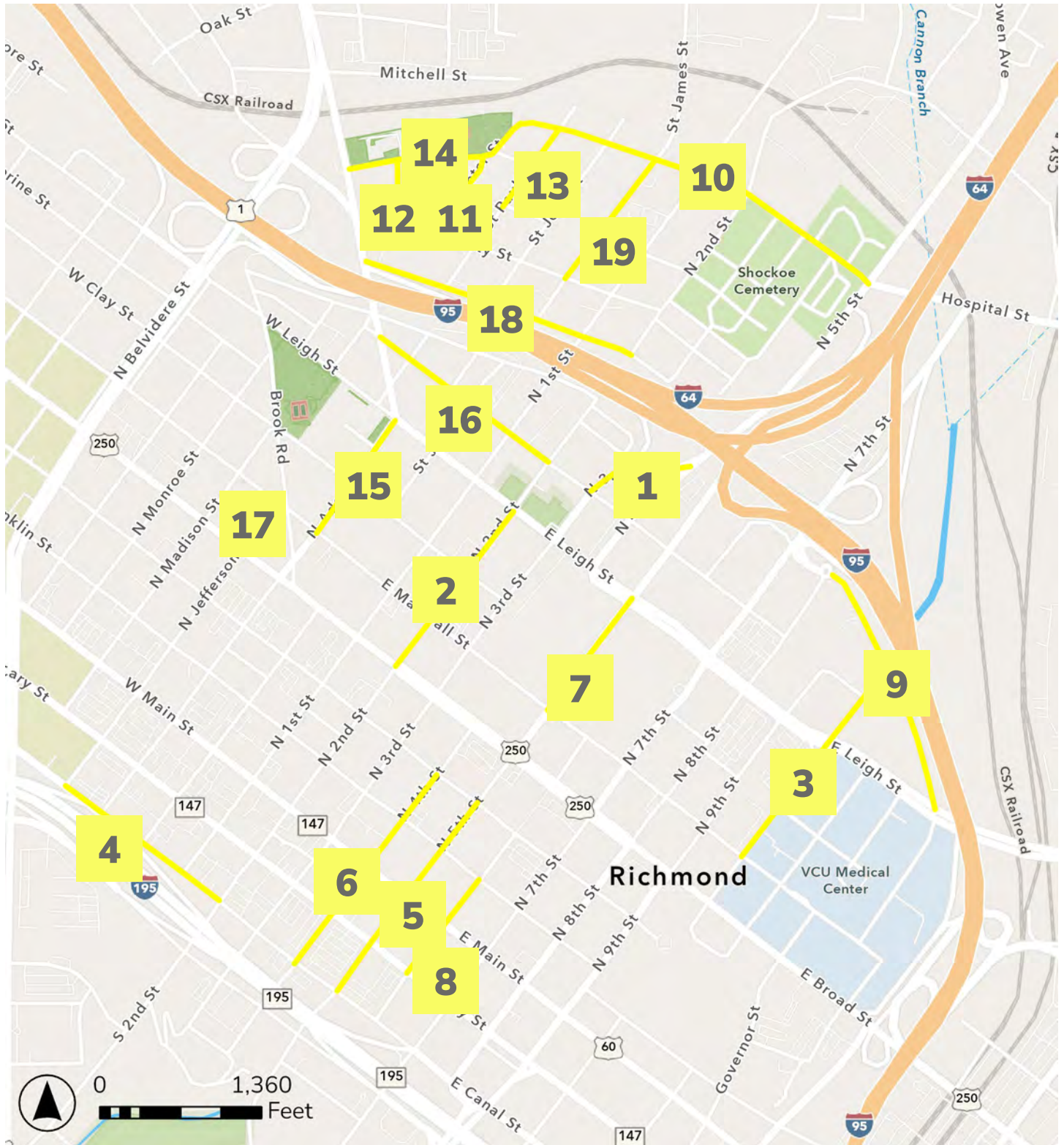


Figure 47. Map of Downtown/Gilpin Pavement Maintenance Projects

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)

| Map ID | Project Locations | Length (ft) | Pavement Condition Score(s) | Ballpark Cost |
|--|--|-------------|--------------------------------------|---------------|
| East End Pavement Maintenance Projects | | | | |
| 20 | Cedar St from Broad St to 27th St | 4,100 | Poor-Serious (48.49-10.88) | \$493,000 |
| 21 | Williamsburg Ave from Main St to Nicholson St | 3,000 | Very Poor (40.38-27.22) | \$357,000 |
| 22 | T Street from 21st St to 25th St | 1,300 | Serious-Failed (21.34-7.63) | \$158,000 |
| 23 | Government Road from Broad St to Glenwood Ave | 1,300 | Serious (19.44) | \$151,000 |
| Southside Pavement Maintenance Projects | | | | |
| 24 | Richmond Hwy from Hopkins Rd to Terminal Ave | 7,700 | Satisfactory-Very Poor (76.26-33.79) | \$921,000 |
| 25 | Belt Boulevard from Broad Rock Boulevard to Bells Rd/ Warwick Rd | 8,900 | Satisfactory-Serious (73.11-15.32) | \$1,063,000 |
| 26 | Bells Road from Belt Boulevard to Commerce Road | 9,700 | Poor-Serious (14.9-46.32) | \$1,166,000 |
| 27 | Commerce Road from Bellemeade Rd to Dupont Site Rd | 15,800 | Poor-Very Poor (12.78-43.14) | \$1,894,000 |

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)

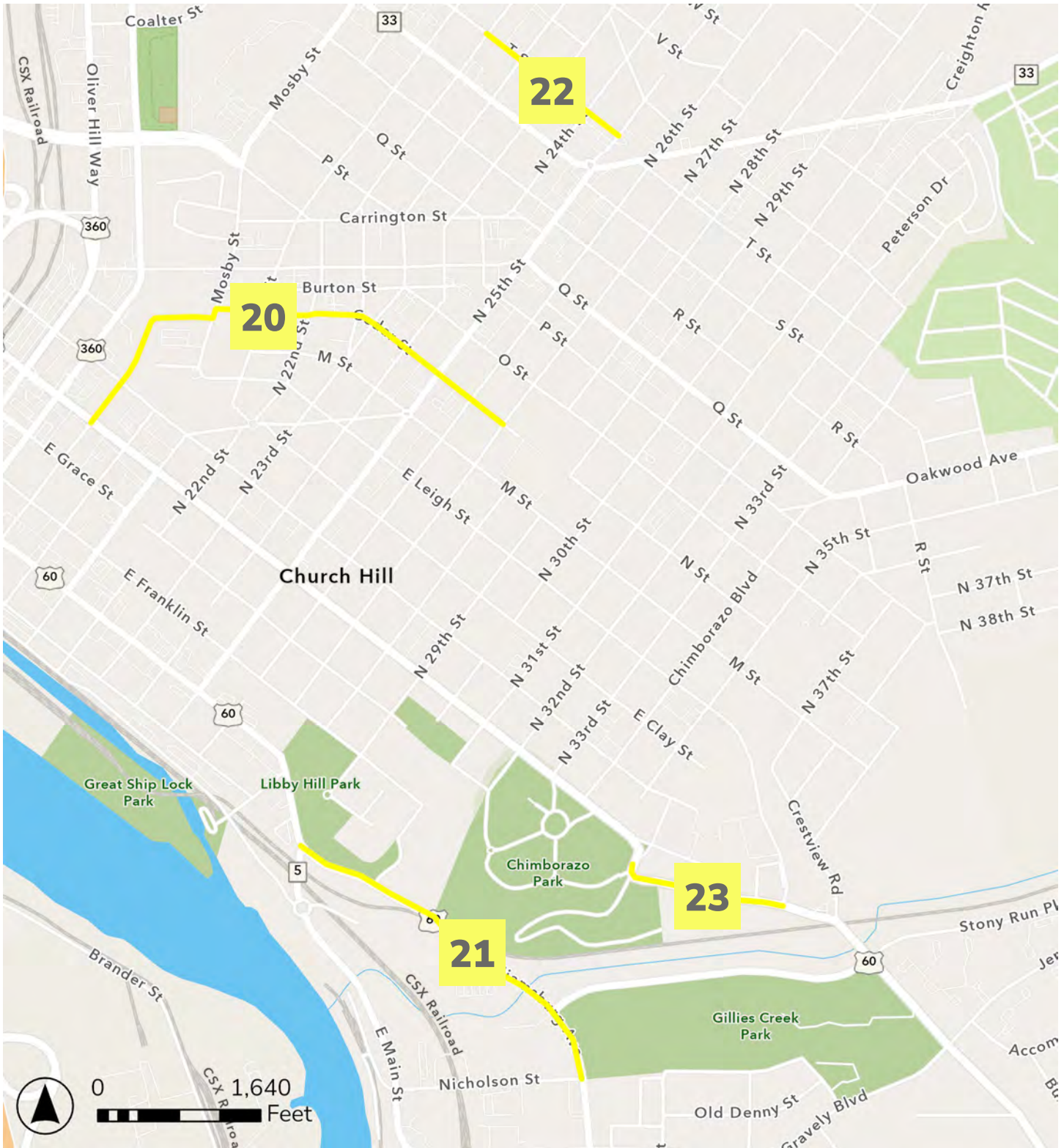


Figure 48. Map of East End Pavement Maintenance Projects

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High (\$\$\$\$)



Figure 49. Map of Southside Pavement Maintenance Projects

4G: Reconnect Jackson Ward

Support Score: 4 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|--|--|
| <p>The data analysis revealed Tier 1 needs for bicycle, pedestrian, and freight modes where a connection between Jackson Ward and Gilpin over I-95 would provide needed connectivity. Many public comments noted the lack of destinations and services in Gilpin, which a reknitting of Gilpin with Jackson Ward would help address. The lack of bicycle connections from Downtown to Northside was also a Super Need identified by Communities of Concern.</p> <p>This recommendation will improve connectivity in an area affected by neighborhood dissection (EF2) and with bike/pedestrian safety needs (EF6).</p> | <p>Community-driven process to reconnect the Jackson Ward neighborhood over I-95 through the design of a bridge over I-95 with connections for pedestrians and bicyclists.</p> | <p>Continue to work with residents to design, seek funding for, and implement a connection over I-95 to reconnect Jackson Ward and Gilpin neighborhoods.</p> |

13A: Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy

Support Score: 3.9 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|--|---|
| <p>The data analysis revealed a Tier 1 equity-based pedestrian need along Forest Hill Avenue. There is no sidewalk along the south side of Forest Hill Avenue between Dorchester Road and the Powhite Parkway interchange. Public comments mentioned the lack of sidewalks and need for safer pedestrian facilities on Forest Hill Avenue.</p> <p>This recommendation will add a pedestrian connection in an inner ring suburb (EF4). It will increase pedestrian safety and reduce the need for car ownership (EF5, EF6).</p> | <p>Potential improvements on Forest Hill Avenue from Dorchester Road to Powhite Parkway include:</p> <ul style="list-style-type: none"> • Installing new sidewalk along the south side, tying into the existing sidewalk on the north/ west side of the Powhite Parkway interchange • Adding pedestrian crosswalks and pedestrian hybrid beacons, specific locations to be determined. | <ol style="list-style-type: none"> 1. Identify potential crosswalk locations. Evaluate the need for additional signage or other features at new crosswalks. 2. Share the concepts with the community. Work with the community to finalize the crossing locations and treatments. 3. Prepare engineering design plans. Identify and allocate funding. |

13A: Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powwhite Pkwy

Support Score: 3.9 Cost: Very High (\$\$\$\$)



FOREST HILL AVENUE PEDESTRIAN IMPROVEMENTS POWHITE PARKWAY TO CSX RAILROAD



| LEGEND | | | |
|--------|---|--|-------------------------------|
| | PROPOSED SHARED USED PATH | | PROPOSED CURB & GUTTER |
| | PROPOSED ADA PEDESTRIAN CURB RAMP | | EXISTING RIGHT OF WAY |
| | PROPOSED GRASS/LANDSCAPE AREA | | RECONSTRUCT EXISTING DRIVEWAY |
| | PROPOSED RAILROAD CROSSING IMPROVEMENTS | | |

SCALE 1"=70'

0 70 140'



1E: North-South Bus Rapid Transit

Support Score: 3.8 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|--|
| <p>Bringing the Pulse BRT service to Northside and Southside was a top public comment, including among Communities of Concern. It fulfills some Tier 1 equity-based transit needs. Some areas, including east of Chamberlayne Avenue, have high economic development needs, which this would also help to address.</p> <p>This recommendation will improve connectivity in inner-ring suburb areas (EF4) and areas with high equity needs related to car-centric planning (EF5) and transit (EF7).</p> | <p>Work with GRTC to implement a new Pulse bus rapid transit (BRT) line that serves Northside and Southside. The locally preferred alternative from the GRTC North-South BRT Study is Chamberlayne Avenue, through Downtown to serve Gilpin, across the Manchester Bridge into Southside Richmond, along Hull Street, Belt Boulevard, and Midlothian Turnpike to Chesterfield Towne Center.</p> | <p>Work with GRTC to increase the frequency of GRTC Route 1A from 30-minutes to 15-minutes within the City of Richmond from Downtown to Spring Rock Green at Chippenham Parkway.</p> <p>Support GRTC to determine the specific alignment through Downtown and conduct the NEPA study. Support efforts to seek funding for design and implementation.</p> <p>This recommendation is related to Recommendation 1C.1 Chamberlayne Avenue Pedestrian Improvements. Elements of that recommendation may be relevant to this recommendation, and vice versa.</p> |

11A: Southside Plaza Pedestrian Connections Across Railroad Tracks

Support Score: 3.8 Cost: Very High (\$\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|--|
| <p>The residential neighborhoods on the west side of the CSX tracks have poor connectivity to Southside Plaza. This is in an area with Tier 1 equity-based pedestrian and bicycle Needs. There is also a pocket of Tier 1 Transit need on the south side of Hull Street on the west side of the CSX tracks. This is an area critical for connectivity to the Southside Plaza bus transfer center. The CSX tracks are a barrier to connectivity. The data analysis shows areas west of the CSX tracks have Tier 1 connectivity needs. There is also a Tier 1 economic development need in this area.</p> <p>The <i>Richmond 300</i> Master Plan identified providing a connection across the CSX tracks as a future connection in conjunction with a shared use path along the powerline right-of-way to connect to Southside Plaza.</p> <p>This recommendation will improve pedestrian safety (EF6) and connect separated areas of the city (EF2).</p> | <p>Potential options for making these connections could include:</p> <ul style="list-style-type: none"> • Utilize Deloak Avenue right-of-way to connect to the Southwood Apartments property • Convert Hull Street Road bridge to 2 lanes each direction with more space for pedestrian and bicyclists, with connections directly from Azalea Avenue • Shared-use path in the powerline right-of-way, following the alignment proposed in <i>Richmond 300</i> <p>These improvements will need to be examined in more detail to determine feasibility. Some will be very high cost. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

11A: Southside Plaza Pedestrian Connections Across Railroad Tracks

Support Score: 3.8 Cost: Very High (\$\$\$\$)



SOUTHSIDE PLAZA - PEDESTRIAN ACCESS IMPROVEMENTS ACROSS CSX RAILROAD

LEGEND

- █ FUNDED PROJECTS UNDER DEVELOPMENT
- █ OPTION 1 - GREENWAY ALONG POWER LINES (CIRCLEWOOD DR TO SOUTHSIDE PLAZA/HULL STREET)
- █ OPTION 2 - PEDESTRIAN CONNECTION BETWEEN DELOAK AVE AND SOUTHWOOD APARTMENTS/CLARKSON RD

NOT TO SCALE



16A: Three Chopt Road Sidewalks

Support Score: 3.8 Cost: High (\$\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|---|---|--|
| <p>The data analysis revealed a Tier 1 equity-based pedestrian need along Three Chopt Road from Grove Avenue to Towana Road, then continuing along Towana Road to Campus Drive. This connects the Westhampton Neighborhood Node and destinations near Grove Avenue and York Road with the University of Richmond. Needing sidewalks along Three Chopt Road was a common public comment in this area.</p> <p>This recommendation will improve pedestrian safety and access (EF6) and reduce need for car ownership (EF5).</p> | <p>Potential improvements could include:</p> <ul style="list-style-type: none"> • Installing sidewalk with curb and gutter along Three Chopt Road from Towana Road to Grove Ave • Utilizing old streetcar right-of-way that parallels Three Chopt Road to provide a pedestrian and bicycle facility • Installing sidewalk or other pedestrian facility along Towana Road to connect to University of Richmond campus | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

16A: Three Chopt Road Sidewalks

Support Score: 3.8 Cost: High (\$\$\$)



THREE CHOPT ROAD - PEDESTRIAN IMPROVEMENTS EVERVIEW ROAD TO BOATRIGHT DRIVE



LEGEND

- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- RECONSTRUCT EXISTING DRIVEWAY
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=40'

16A: Three Chopt Road Sidewalks

Support Score: 3.8 Cost: High (\$\$\$)



THREE CHOPT ROAD - PEDESTRIAN IMPROVEMENTS GROVE AVENUE TO TOWANA ROAD



LEGEND

- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- RECONSTRUCT EXISTING DRIVEWAY
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=40'

NAD 83

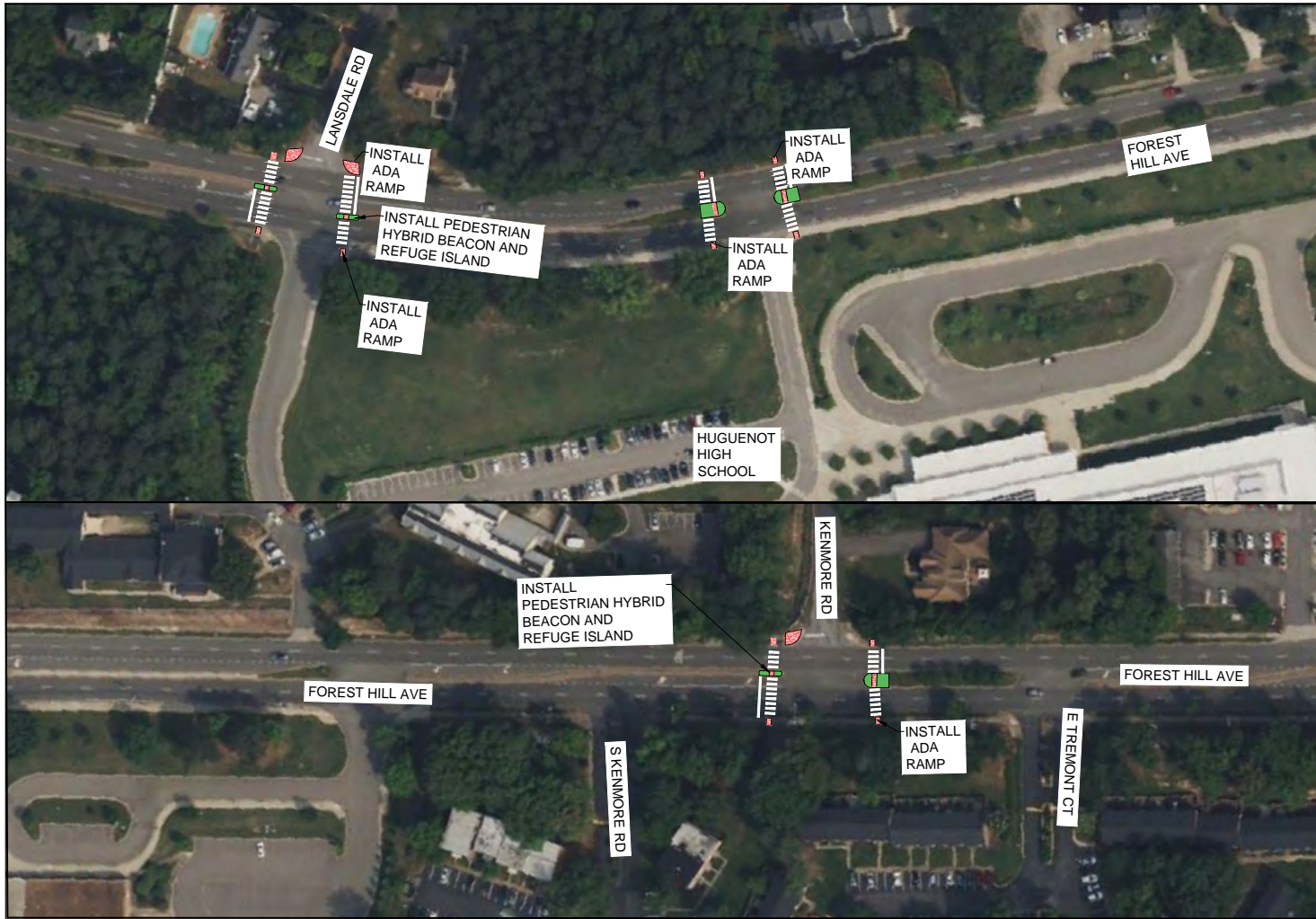
17A: Forest Hill Avenue Streetscape

Support Score: 3.8 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|--|
| <p>The data analysis revealed Tier 1 equity-based pedestrian and bicycle needs along Forest Hill Avenue. This was also reflected in public comments.</p> <p>This recommendation will improve safety in an area affected by car-centric planning (EF5) which has high equity needs for bike/pedestrian safety (EF6).</p> | <p>A streetscaping project to add curb and gutter, sidewalks, bike lanes, street lighting, landscaping, and drainage was completed on Forest Hill Avenue from East Junction Powhite Parkway to Hathaway Road in FY 2022.</p> <p>This recommendation is to extend the streetscaping project west to the City line, and add pedestrian hybrid beacon crossings at Kenmore Road, Huguenot High School entrance, and Lansdale Road.</p> <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

17A: Forest Hill Avenue Streetscape

Support Score: 3.8 Cost: Moderate (\$\$)



FOREST HILL AVENUE TRAFFIC CALMING LANSDALE RD TO KENMORE RD



| LEGEND | |
|--------|---|
| | PROPOSED SHARED USED PATH |
| | PROPOSED ADA PEDESTRIAN CURB RAMP |
| | PROPOSED GRASS/LANDSCAPE AREA |
| | PROPOSED RAILROAD CROSSING IMPROVEMENTS |
| | PROPOSED CURB & GUTTER |
| | EXISTING RIGHT OF WAY |
| | RECONSTRUCT EXISTING DRIVEWAY |

SCALE 1"=70'

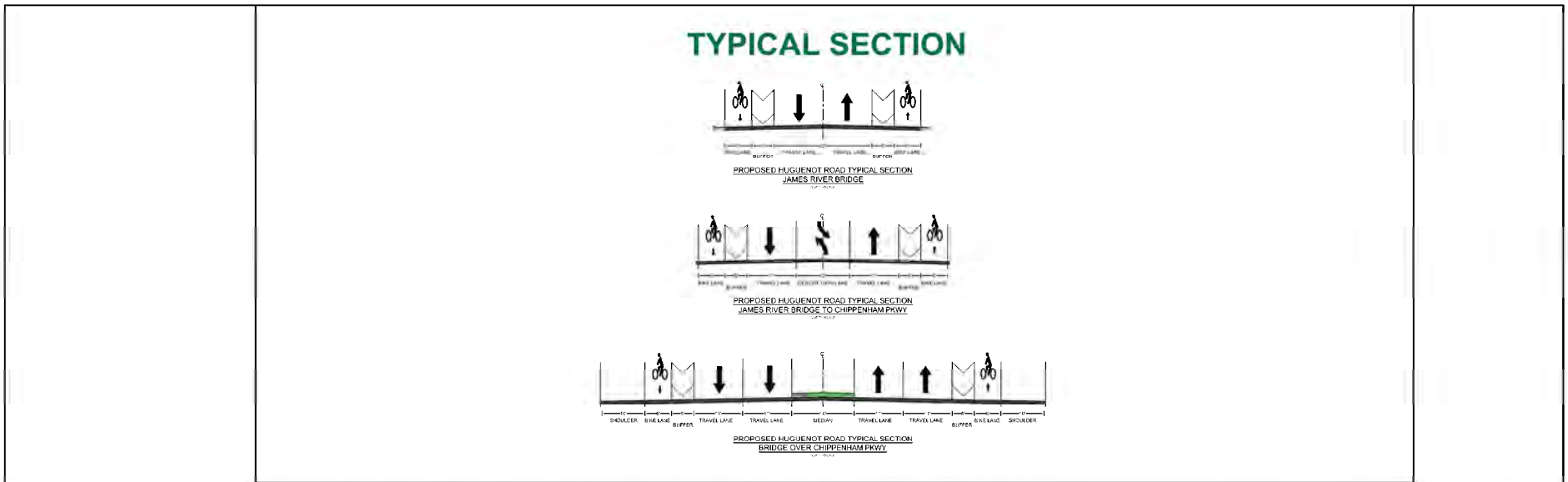
17F: Huguenot Road Bikeway

Support Score: 3.8 Cost: Moderate (\$\$)

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|--|
| <p>The data analysis revealed a Tier 1 equity-based bicycle need on Huguenot Road. This need was echoed in public comments.</p> | <p>Potential improvements on Huguenot Road could include:</p> <ul style="list-style-type: none"> • Shared use path from the Huguenot Bridge through the Chippenham Parkway interchange • Roadway conversion to repurpose one vehicle lane in each direction to a bicycle facility • Improvements to the Chippenham Parkway interchange to provide pedestrian and bicycle facilities. <p>These improvements will need to be examined in more detail to determine feasibility. They will be vetted with the community to determine which improvements get implemented.</p> | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. |

17F: Huguenot Road Bikeway

Support Score: 3.8 Cost: Moderate (\$\$)



HUGUENOT ROAD - ROAD DIET IMPROVEMENTS CHIPPENHAM PARKWAY TO JAMES RIVER BRIDGE



| | | |
|--------|-----------------------|--|
| LEGEND | | |
| | PROPOSED PROJECT AREA | |

14L: Carytown Pedestrian Safety Improvements

Support Score: N/A Cost: N/A

| <p>What is the need? Why is this project a priority to make transportation more equitable?</p> | <p>What should be done?</p> | <p>What are the first steps?</p> |
|--|---|---|
| <p>Making Cary Street a pedestrian, bicycle, and transit-only street was the most common public comment during the Richmond Connects Phase 1 survey. Public input indicated strong support for closing Cary Street to car traffic due to perceived unsafe conditions for pedestrians and bicyclists. Cary Street east of Powhite Parkway is on the High Injury Street Network. The data analysis indicates a Tier 1 equity-based need for safety/security on Cary Street near Arthur Ashe Boulevard. Several pedestrians have been severely injured in crashes on Cary Street between Arthur Ashe Boulevard and Thompson Street</p> <p>Strategy Recommendation 5.4 calls for piloting car-free, pedestrian- and bike-only streets. This could be one future option for Carytown to improve safety for users. But in the short term, other pedestrian safety enhancements could be made to Cary Street to address noted pedestrian safety concerns.</p> | <p>Potential pedestrian safety improvements could include:</p> <ul style="list-style-type: none"> • “Daylighting” intersections along Cary Street – This involves making pedestrians more visible and enhancing pedestrian crossings. It can include extending sidewalk corners with curb bump outs to slow down traffic, increase the visibility of pedestrians, and minimize crossing distances. It can also include removing the parking space closest to the crosswalk to further improve visibility. • Installing “No Right on Red” signage at select intersections to protect pedestrians. • Introduce Leading Pedestrian Intervals in the traffic signal timing to allow pedestrians time to initiate crossing to be more visible to drivers. • Adding “transit islands” at the bus stops to prevent drivers from parking in front of the bus stops, and to slow down traffic. • Installing raised crosswalks with rectangular rapid flashing beacons at intersections without traffic lights, including on Crenshaw Ave., Freeman Road., Dooley Ave., McCloy Street, or Colonial Ave. • Replacing some street parking with parklets/designated outdoor dining spaces for restaurants. | <ol style="list-style-type: none"> 1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvements with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. <p><i>LQC Options: Crosswalk improvements, traffic calming, parklet pilot, temporary transit islands installation demo.</i></p> |

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

| ID | Project Name | Equity Need | Description | Immediate Next Steps | Support Score |
|-----|--|--|---|---|---------------|
| 9B | Hull Street Streetscape - Mayo Bridge to 9th Street | Communities of Concern identified Hull Street at the Railroad Museum as a Super Need because of its constraints and need for pedestrian and bicycle improvements. Improves walkability in areas with high equity needs for pedestrian safety (EF6), transit reliability (EF7), and disparate climate impacts (EF8). | Pedestrian safety improvements along Hull Street between the Mayo Bridge and 9th Street. Street enhancements and objectives include defining Manchester through use of public art, landscaping, signage, and lighting; incorporating pedestrian safety infrastructure and pedestrian-activated crosswalks; evaluate new/reconfigured intersections at 1st and 2nd Streets; managing traffic speeds; and maintaining capacity. | Complete the Hull Street Streetscape project from Mayo Bridge to 9th Street. | 4.8 |
| 11C | Southwood Parkway Sidewalks | The data analysis indicates this improvement will address Tier 1 equity-based needs in the Pedestrian, Connectivity, and Sustainability categories. Connects suburbs where communities of concern live (EF4, EF9). Increases pedestrian safety and reduces need for car ownership (EF5, EF6). | Construct sidewalks on Southwood Parkway from Hull Street to Clarkson Road. | Complete construction of the approved sidewalk design project. | 4.2 |
| 12F | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | The data analysis indicates this project will address Tier 1 equity-based needs in the Bicycle, Pedestrian, Safety/Security, Connectivity, and Economic Development. Adds infrastructure to previously redlined and separated communities (EF1, EF4, EF9). Improves pedestrian safety and reduces need for car ownership (EF5, EF6). | Seek remaining funding for and implement the Hull Street Improvements Phase II project (Chippenham Parkway to Hey Road). Modify the design to include more frequently spaced pedestrian crosswalks with pedestrian hybrid beacons. Incorporate native landscaping that retains water and provides food and shade, and considers permeable pavement into the design. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 3.7 |

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

| ID | Project Name | Equity Need | Description | Immediate Next Steps | Support Score |
|-----|--|--|--|--|---------------|
| 6C | Shockoe Valley Street Improvements | The data analysis revealed Tier 1 equity-based needs for Pedestrian, Bicycle, and Safety/Security need categories. None of the equity factors stand out to me as well above average for the project area | Street improvements project in the vicinity of the Broad Street interchange with I-95. Improvements will be based on traffic analysis and could include roundabouts at 3 intersections on Venable Street and at Mosby and O Streets, and converting 18th Street and Oliver Hill from one-way to two-way traffic. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 4.5 |
| 9D | Mayo Bridges Pedestrian and Bicycle Facilities | Bridges feeling unsafe for walking and bicycling was identified as a Super Need. The data-based analysis revealed a Tier 1 equity-based need for bicycles on the Mayo Bridges. | Integrate pedestrian and bicycle facilities into the design of the Mayo Bridges rehabilitation project. | Continue to participate in VDOT-administered Mayo Bridges Rehabilitation project, and advocate for inclusion of desired pedestrian and bicycle facilities. Fill remaining project funding gaps to bring the project to 100% completion | 3.7 |
| 15C | Arthur Ashe Boulevard Bridge Replacement | Data analysis reveals a Tier 1 Bicycle and Tier 1 Pedestrian need. Improves pedestrian and cyclist safety and access (EF6). | Design and construct the replacement bridge for Arthur Ashe Boulevard over the CSX railroad. Incorporate dedicated bicycle and pedestrian facilities into the bridge design. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. Work with engineers to incorporate desired bicycle and pedestrian infrastructure into design. | 3.7 |
| 11B | Hey Road Improvements | The data analysis indicates this improvement will address Tier 1 equity-based needs in the Pedestrian, Connectivity, and Sustainability categories. Public comments confirmed the need for sidewalks on Hey Road. Connects suburbs to city (EF4), Improves pedestrian safety and reduces need for car ownership (EF5, EF6). Also increases opportunities for Communities of Concern (EF9). | Implement the Hey Road Improvements CIP project, which will provide wider travel lanes, curb and gutter, sidewalk, utility relocations, and a closed drainage system from Walmsley Boulevard to Hull Street. In the design of this project, include native landscaping that retains water and provides food and shade. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 3.6 |

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

| ID | Project Name | Equity Need | Description | Immediate Next Steps | Support Score |
|-----|---|---|--|---|---------------|
| 16D | Broad Street Streetscape with Pulse BRT Expansion | Public comments included a new BRT station at Malvern Avenue. Reduces car dependency in areas affected by car-centric planning (EF5). | Multimodal safety and operational improvements to the 0.5 mile stretch of Broad Street from Hamilton Street to Commonwealth Avenue. Improvements include two new Bus Rapid Transit (BRT) curbside stations, sidewalk and ADA accessible ramp improvements, pedestrian crossing improvements, access management, and other streetscape amenities. | Complete the Broad Street Streetscape Pulse BRT Expansion Phase I project using the already allocated funding. | 3.5 |
| 15B | Clay Street Streetscape Improvements | Clay Street in Scotts Addition has Tier 1 Pedestrian and Tier 1 Bicycle needs. Calms traffic in an area affected by car-centric planning (EF5). | Convert and improve the typical section of Clay Street from a two-lane, one-way street to a two-lane, two-way street along the 0.5 mile stretch between Arthur Ashe Boulevard and Belleville Street by providing a 10' travel lane in each direction, a 6' bike lane along the eastbound side of the corridor, and a parking lane on both sides of the corridor between Sheppard Street and Roseneath Road. This project will further improve multimodal safety and operations by providing traffic calming and access management through curb bump-outs and removing redundant entrances to parcels, and by providing bike, ped, and transit access improvements and crossing accommodations at two intersections and at two bus stops. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 3.4 |

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

| ID | Project Name | Equity Need | Description | Immediate Next Steps | Support Score |
|-------|---|--|--|---|---------------|
| 6F | Gillies Creek Greenway | The data analysis reveals this connection would link to the Tier 1 need Virginia Capital Trail, enhancing connectivity in an area of high densities of Communities of Concern. Invests in green bike/ pedestrian infrastructure in a previously redlined area negatively impacted by urban renewal (EF1, EF2) with equity needs related to bike/pedestrian safety (EF6). Located in an area with densely populated Communities of Concern (EF9). | Implement the Gillies Creek Greenway - a shared use path along Gillie Creek connecting Oakwood Cemetery to Gillies Creek Park and the Virginia Capital Trail - with funds already allocated. | Implement the portions of the Greenway with funds already allocated. Fill remaining project funding gaps to bring the project to 100% completion. Identify funding to design and construct remaining portions | 3.4 |
| 5J | Oliver Hill Way Bike Lanes | The data analysis revealed a Tier 1 equity-based Bicycle need on Oliver Hill Way. Creates bicycle facility in an area with high equity needs for bike safety (EF6). Located in an area with densely populated Communities of Concern (EF9) with disparate climate impacts (EF8). | Finish designing and building the bicycle facility on Oliver Hill Way from Hospital Street to Grace Street | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 4.6 |
| 14H.1 | Franklin Street Cycle Track - Lombardy Street to Belvidere Street | Extending the existing Franklin Street cycle track was a top public comment. Creates bicycle facility in areas with bike/pedestrian safety needs (EF6) affected by car-centric planning (EF5). Located in areas with densely populated Communities of Concern (EF9). | Design and implement protected bike lanes on Franklin Street from Belvidere Street to Lombardy Street. | Complete design and fill funding gaps to ensure 100% project completion. Implement the proposed bike lanes on a temporary basis until funding for permanent installations can be secured. | 3.2 |
| 14G | Allen Avenue Bike-Walk Street | The data analysis indicates this project will address a Tier 1 equity-based need in the Bicycle and Safety/Security categories. Creates an active transportation corridor in previously redlined areas (EF1) impacted by neighborhood dissection (EF2) and urban renewal (EF3). Located in areas with densely populated Communities of Concern (EF9) with disparate climate impacts (EF8). | Implement the Allen Avenue bike-walk street that has already been designed from Colorado Avenue to Leigh Street | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 3.0 |
| 14J | State Route 161 Bicycle Infrastructure | The data analysis reveals this project addresses a Tier 1 equity-based need in the Pedestrian and Connectivity categories, and it was a top public comment. Creates bicycle facility in areas with bike/pedestrian safety needs (EF6) affected by car-centric planning (EF5). | Create separated bike infrastructure on State Route 161 (Westover Hills Boulevard / 49th Street from James River Branch Trail to Boulevard Bridge; Park Drive from the Boulevard Bridge to Blanton Avenue and from Blanton Avenue to French Street). | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 2.9 |

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

| ID | Project Name | Equity Need | Description | Immediate Next Steps | Support Score |
|-----|---|--|---|--|---------------|
| 1I | Fall Line Trail | The Fall Line Trail was one of the most repeated public comments. It will provide connectivity in some areas with Tier 1 pedestrian and bicycle needs. Creates active transportation corridor in areas with high equity needs related to car-centric planning (EF5), bike/pedestrian safety (EF6), and disparate climate impacts (EF8). | Create a connected path for walking and cycling from Ashland to Petersburg. Several portions of the trail are in various phases of design and implementation. | Continue to design and implement the Fall Line Trail to provide a continuous connected path for walking and bicycling throughout the entire City of Richmond, connecting Ashland to Petersburg. Continue to pursue dedicated shared use paths over on-street bike lanes, and consider alternate or parallel alignments including Hermitage through the Diamond District. | 2.6 |
| 11H | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | The data analysis indicates this project will address Tier 1 equity-based needs in the Bicycle, Pedestrian, Safety/Security, Connectivity, and Economic Development. Adds infrastructure to previously redlined areas (EF1, EF9), connects inner ring suburbs (EF4), improves pedestrian safety and reduces need for car ownership (EF5, EF6). | Implement the Hull Street Shared Use Path Improvements project that will provide a shared use path and sidewalk along Hull Street between Arizona Drive and the James River Branch Trail. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 2.6 |
| 3L | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | The data analysis revealed a Tier 1 need on 5th Street north of I-95. Communities of Concern consistently voiced a need for a bicycle connection from downtown to Northside. This was identified as a Super Need. Creates an active transportation corridor, improving connectivity in an area affected by neighborhood dissection (EF2) and with bike safety needs (EF6). | Build the bike lanes on 3rd Street in Downtown and the separated bike lanes on N 5th St/ Rowen Ave from Trigg Street to Jackson Street that have already been designed. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 2.5 |
| 11I | James River Branch Trail | The data analysis indicates this project will address Tier 1 equity-based needs in the Bicycle, Pedestrian, Connectivity, and Economic Development. Improves safety for pedestrians and cyclists and reduces need for car ownership (EF5, EF6). Adds green space and connects Communities of Concern to it (EF8, EF9, EF10). | Implement the James River Branch Trail, which will create a new shared-use path along unused rail right-of-way from 49th Street to Hopkins Road. | Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion. | 1.6 |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|----|---|--|---|--|
| C1 | Cary Street Safety Curb Extensions | Tier 1 INC 5 (Safety/Security) - several Tier 1 areas along Cary Street between Belvidere and Boulevard. Tier 1 INC 1b (Pedestrian) - Some sections of Cary Street between Belvidere and Boulevard have Tier 1 need segments. | Provide funding for the installation of pedestrian safety intersection curb extensions at stop controlled intersections on West Cary Street between Belvidere Street and Arthur Ashe Boulevard. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C2 | Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets | Tier 1 INC 5 (Safety/Security) need at Forest Hill Avenue at 43rd Street. | Reduce pedestrian crossing distances along this urban arterial utilizing traffic calming measures on Forest Hill Avenue at 41st Street and 43rd Street, gaining greater pedestrian stopping/yielding compliance by motorists, and resolving vehicle conflicts to improve traffic flow. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C3 | Hull Street at 29th Street Pedestrian Hybrid Beacon | "Missing sidewalks and speeding along Hull Street" is a Super Need, which reflects a general feeling of being unsafe from a pedestrian perspective. | Install a pedestrian hybrid beacon traffic signal device on US Route 360 (Hull Street) at 29th Street to provide a place for people of all ages and abilities to safely cross the street. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C4 | Main Street Safety Curb Extensions | Tier 1 INC 1b (Pedestrian) and INC 5 (Safety/Security) needs | Install pedestrian safety intersection curb extensions at stop controlled intersections on West Main Street between Belvidere Street and Arthur Ashe Boulevard. The landscaped curb extensions will minimize the crossing distance and exposure to pedestrians on two main corridors connecting the Virginia Commonwealth University area and the Museum District. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C5 | Richmond Highway Phase II Improvements | Tier 1 INC 1b (Pedestrian) and INC 5 (Safety/Security) needs | Multi-modal safety and operations improvements along the 0.4-mile stretch of Richmond Highway between Maury Street and Hull Street by providing dedicated left-turn lanes for adjoining streets in both directions at its intersections with Decatur Street and Maury Street, adding pedestrian signal control accommodations and crossing improvements at Decatur, Stockton, and Maury, filling in missing sidewalks for Americans with Disabilities (ADA) compliance, consolidating/ eliminating unnecessary driveway entrances, and providing bike, pedestrian & transit access improvements along the corridor. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C6 | Richmond Signal System Phase IV | Addresses non-mappable needs including pedestrian detection, crosswalk timing, new technology for pedestrians with disabilities, etc. | Integrate intersections with traffic control signals to the City's traffic management software. The project provides installation of new system networks, servers, computers, conduits, fiber optic cable, wireless communication, traffic monitoring cameras and traffic signal controllers, cabinets, and other traffic signal equipment such as transit signal priority and emergency vehicle preemption | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|-----|--|---|--|--|
| C7 | Riverfront/ Orleans BRT Streetscape Improvements | Addresses Super Need: Fill in missing sidewalks and fix broken sidewalks (all throughout East End) | Streetscape improvements around the East Riverfront and Orleans BRT Stations, a project area bound by Virginia Capital Trail to the west, Carlisle Avenue to the east, Broad Street to the north, and Hatcher Street to the south. The Complete Streets process will be used to add streetscape improvements including a combo of new sidewalks and sidewalk widening for a consistent sidewalk width, ADA-compliant curb ramps, crosswalks, and pedestrian scale lighting. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C8 | Scott's Addition BRT Streetscape Improvements | Tier 1 INC 1b (Pedestrian) need | Streetscape improvements to the half mile walkshed around the Scott's Addition BRT Stations, bound by Hamilton Street to the west, N. Arthur Ashe Boulevard to the east, Patton Avenue to the north, and Stuart Avenue to the south. The Complete Streets Process will be used to address traffic pattern concerns and add streetscape improvements including new sidewalks, crosswalks, push buttons, ramps, and pedestrian scale lighting. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C9 | Scott's Addition Green Space | Tier 1 INC 1a (Bicycle) and INC 1b (Pedestrian) needs | Construct a pedestrian/bike trail in the Scott's Addition neighborhood. The proposed trail would be located on City property along a portion of Patton Avenue, south of the CSX rail line between Roseneath Road and North Boulevard. This trail will provide for the addition of green space for use residents and visitors to a rapidly developing neighborhood. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C10 | Shockoe Bottom BRT Streetscape Improvements | Top public comment. Recommendation 8A. Tier 1 INC 5 (Safety/Security) need is present between Cary St and Main St. | Pedestrian safety and accessibility improvements to the Shockoe Bottom BRT stations, bound by 17th Street to the west, 30th Street to the east, M Street to the north, and the Virginia Capital Trail to the south. Improvements include: pedestrian scale lighting, brick sidewalk construction, curb ramps and crosswalks, installing an RRFB on Dock Street at 25th Street and Pear Street, installing a PHB crossing west of Pear, new sidewalk, improved signing and striping at rail crossings along Dock and Pear, and clearing the 27th Street stairs at Main Street to provide access to Church Hill. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C11 | Centralized Transit Signal Priority and Emergency Vehicle Preemption | Addresses non-mappable needs including poor tranist service reliability, strategy to address this with technology solutions | Integrate the City's traffic signal system with the Region's Automated Vehicle Location (AVL) systems to improve safety operations and travel speeds for transit vehicles, emergency vehicles, and other City-operated vehicles equipped with AVL. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|--|---|---|--|---|
| C12 | Highland Grove/ Dove Street Redevelopment | Fill in missing sidewalks and fix broken sidewalks all throughout Northside is a Super Need. There is a Tier 1 need for INC 1b (Pedestrian) on Dove Street from 1st Ave to Lamb Ave. There is a Tier 1 need for INC 8 (Econ Dev) just east of here in Chestnut Hill. | Infrastructure improvements supporting the Richmond Redevelopment and Housing Authority (RRHA)'s development of the former Dove Street Redevelopment Area, which included construction of 139 residential units. The project includes planning, design, and improvements to right-of-way, streets, sidewalks, landscaping, streetscape and ornamental lighting, water and sewer and connection fees, and other utilities that will be designed and constructed by RRHA and approved by the City of Richmond. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C13 | Jefferson Avenue Improvements | There are Tier 1 INC 1a and INC 1b segments leading up to Jefferson Ave on Marshall St and 21st St. Green infrastructure on this project addresses some non-mappable sustainability needs (as a practice for including green infrastructure for these types of projects). | Improvements to the Jefferson Avenue corridor, reconstructing a portion of the 1/3-mile corridor to include traffic calming, pedestrian and bicycle infrastructure, and green infrastructure. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C14 | Laburnum Median Improvements | Speeding on Laburnum Avenue is a Super Need. There is a Tier 1 INC 1b (Pedestrian) need on Laburnum between Hermitage and MacArthur Ave. | Paving and infrastructure improvements to Laburnum Avenue focused on narrowing the median on Laburnum between Brook Road and Hermitage to allow for the expansion of parking lanes. Narrowing the median to provide parking lanes that people feel more comfortable parking in could be a traffic calming measure. | <p>Revisit the project design to address public comments.</p> <p>Explore and test LQC options for other traffic calming techniques to address speeding on Laburnum Avenue without narrowing the median.</p> <p>Consider reallocating funds from this project to the redesign of the intersection of Laburnum Avenue and Hermitage Road.</p> |
| <p>Public comments voiced opposition to the Laburnum Median Improvements project for several reasons:</p> <ul style="list-style-type: none"> • Parking lane will likely not be utilized, which would not have the intended traffic calming effect • Parked cars would limit sight distance for vehicles turning onto Laburnum • Removal of mature trees in the median would give the appearance of more space and encourage faster speeds • The median is a pedestrian refuge. Narrowing the median would reduce the width of this refuge. • Don't remove green space and trees from a historic neighborhood and boulevard • Instead of adding parking, use reclaimed space for a bike lane <p>Public comments referenced a survey of residents in Bellevue, Ginter Park, Rosedale, and Hermitage Road that found 75% of residents do not approve of this project and want the funds to be reallocated to the intersection of Laburnum Ave and Hermitage Road, bump-outs, and/or bike lanes.</p> | | | | |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|-----|--|--|--|---|
| C15 | Nicholson Street Streetscape | "Fill in missing sidewalks and fix broken sidewalks all throughout East End" is a Super Need. | Pedestrian safety improvements along Nicholson Street between Williamsburg Avenue and East Main Street. Street enhancements along Nicholson Street include: sidewalks, landscaping, lighting, street side parking and intersection and pedestrian safety improvements at Williamsburg Avenue. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C16 | Richmond Fiber Optic Network System | Addresses strategies including technology to meet non-mappable needs. | Implement a city-owned fiber optic network. This fiber optic network system project will create a city-wide fiber optic cable infrastructure that can be used to advance many technology initiatives. A fiber optic network for internal City use is an essential next step in technological data needed for government service. Fiber optics offers unlimited capacity, long life, and superior resilience to downtime. In addition to supporting City buildings, the system will be used to support fire station alerting, cameras, next generation 9-1-1, and the next generation radio system. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C17 | Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements | "Crossing the street feels unsafe on Semmes Avenue" is a Super Need. | Provide funding for pedestrian safety and operational improvements within the existing school zone at the intersection of Semmes Avenue, Forest Hill Avenue, and Dundee Avenue. This project includes two phases. Phase I is the construction of a new traffic control signal that relies on Phase II scope of reconnecting traffic from westbound Forest Hill Avenue to northbound 34th Street. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C18 | Street Lighting - General | Enhances safety/security in high need areas. Need for better lighting is a non-mappable need, and was a high-priority strategy in the Phase 4 focus group discussion. | Provide funding for installation of new street lights at various locations based on requests of citizens, the Police Department, and the Department of Public Works Traffic Engineering Division. This project also provides for an upgrade to the electric distribution system, upgrades to four electric sub-stations, and ancillary electric work required due to CIP projects undertaken by other departments within the City of Richmond. | Continue to implement and fund this project with allocated funding. Install lighting with pedestrian-scaled and dark sky compliant lighting. Fill funding gaps to ensure 100% project completion. |
| C19 | Street Lighting - LED Conversion | Enhances safety/security in high need areas. Need for better lighting is a non-mappable need, and was a high-priority strategy in the Phase 4 focus group discussion. Converting street lights to LED was supported. | Provide funding for street lighting projects including the installation of LED street lights based on a transition to newer lighting technology, and conversion of current street lighting to LED street lights. | Continue to implement and fund this project with allocated funding. Install lighting with pedestrian-scaled and dark sky compliant lighting. Fill funding gaps to ensure 100% project completion. |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|-----|---|---|--|--|
| C20 | Westhampton Area Improvements - Phase III | There is a Tier 1 INC 5 (Safety/Security) need on Patterson between Westview Ave and Seneca Road. There is a Tier 1 INC 3 (Freight) need on both Grove and Patterson streets. | Install streetscape amenities along the Grove Avenue and Patterson Avenue corridors. The project includes installation of sidewalk, handicap ramps, and streetlights and pavement markings, and street furniture. The project will be completed in three phases. Phase I was completed in 2018 on Patterson Avenue from Libbie Avenue to Granite Avenue. Phase II was completed in 2022 on Patterson Avenue from Granite Avenue to Seneca Road. Phase III is on North side of Patterson Avenue from Granite Avenue to Seneca Road. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C21 | Deepwater Terminal Road Connector to Goodes Street | Deepwater Terminal Road has a Tier 1 INC 3 (Freight) need | Design and construction to extend Deepwater Terminal Road 0.69 miles north to Goodes Street. The project will consist of a two-lane roadway with shoulders and drainage ditches. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C22 | Hull Street Improvements Phase I - Hey Road to Warwick Road | Super Need and Tier 1 INC 1b (Pedestrian) need | Road improvements including a raised median, turn lanes, curbs, gutters, bike lanes, a new sidewalk/shared use path on the north side of Hull Street and new sidewalks on the south side of Hull Street, street lighting and an underground drainage system. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C23 | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | Fulfills tier 1 need in INC1A, INC1B, INC6, public comments | Installation of a median with left turn lanes, curbs, gutters, sidewalks, shared-use paths, and an underground drainage system. The roadway will remain two travel lanes with landscaping. The existing traffic signals will be upgraded. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C24 | Maury Street Streetscape | Super Need in Southside: "Fill in missing sidewalks and fix broken sidewalks. Drivers do not stop for pedestrians in crosswalks. Lack of lighting at night." Maury Street from Commerce Road to 4th St is a Tier 1 INC 3 (Freight) need. There is a Tier 1 bicycle need segment on 7th street leading to Maury Street | This 0.25 mile corridor will bring complete street and operational/safety improvements to Maury Street from the planned and funded I-95 Roundabout Interchange Project gateway feature to Commerce Road, a major principal arterial, for better access to the Richmond Marine Terminal land uses. Location: Maury Street from 4th Street to Commerce Road | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C25 | Richmond Highway Improvements | Super Need throughout Southside. | Improvement of the intersection at Hopkins Road and Richmond (formerly Jefferson Davis) Highway. The scope will focus on the re-alignment of the intersection, a new traffic signal and improved pedestrian accommodations. Location: Richmond Highway from Chesterman Avenue to Decatur Street | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|-----|---|--|---|--|
| C26 | Route 5 Relocation/ Williamsburg Road Intersection Improvement | Super Need throughout East End | Design, right-of-way acquisition, and construction to improve the intersection at East Main Street and Williamsburg Avenue with new sidewalks, landscaping and signal. Location: Williamsburg Road @ E. Main Street | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C27 | Science Museum BRT Shared Use Path | Tier 1 INC 1a (bicycle) and INC 1b (pedestrian) needs | Development of a paved bicycle and pedestrian connection and shared-use path. Location: Broad Street at Robinson Street, to Terminal Place, to Leigh Street, and to Altamont Avenue in Scott's Addition. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C28 | Capital Trail/ Canal Walk Connector to Brown's Island - Phase 1 | There is a Tier 1 INC 1a (Bicycle) need across both Manchester and Mayo bridges, and a Super Need of "bridges feel unsafe for walking and bicycling." This project works toward the unmappable need of Richmond being too car-centric overall. It would enhance the connectivity of the network of Richmond's off-road trails. | Improvements to the Virginia Capital Trail connection to the Tyler T. Potterfield Memorial Bridge located on Brown's Island, via the Canal Walk in downtown Richmond. Improvements include construction of an ADA-accessible ramp from the south side of the Canal Walk up to street grade at Virginia Street and E. Byrd Street; a barrier-separated bike lane extending along E. Byrd Street to the City floodwall, and a short segment of paved path accessing the walkway along Haxall Point. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C29 | Cherokee Road Roadside Safety Improvements | There is a Tier 1 INC 1A (Bicycle Need) along Cherokee Road. A paved shoulder will provide more space for bicyclists, however, it could also encourage higher speeds, and does not provide a dedicated facility for bicyclists. | Construct a six foot wide paved shoulder on the north side of Cherokee Road between North Huguenot Road and Forest Hill Avenue. Additionally, the project will improve safety and drainage for the Cherokee Road corridor by adding swales on each side of the roadway. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C31 | Belvidere Street Gateway - Phase IV | There is a Tier 1 INC 1b segment on Belvidere to the north. | Improves pedestrian access and safety along Belvidere Street at the intersections with Rowe Street, Idlewood Avenue, and Spring Street. | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C32 | Biotech Research Park Roadway Improvements | There is a small Tier 1 INC 1b (Pedestrian) need segment on Jackson St between 5th St and Navy Hill Dr. N | Street, traffic, and streetscape improvements related to the Biotechnology Research Park. Location: 800 E Leigh Street | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |
| C33 | Mary Munford Elementary School Pedestrian Safety Improvements | Small Tier 1 INC 1b (Pedestrian) need segment at school entrance. | Installation of school flasher assemblies on both Cary Street and Grove Avenue, and a stamped asphalt crosswalk at the intersection of Grove Avenue and Commonwealth Avenue. Location: Cary Street, Westmoreland Street, Grove Avenue, Commonwealth Avenue | Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion. |

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

| ID | Project Title | Equity Need | Description | Immediate Next Steps |
|----|----------------------------|--|--|---|
| G1 | Western Pulse Extension | Extending frequent reliable BRT westward will improve overall access to jobs, including higher-paying jobs systemwide. Improving access to higher paying jobs outside of Richmond city limits was a common theme in discussions with Communities of Concern. | Extend the Pulse BRT westward along Broad Street from its current terminus at Willow Lawn to Short Pump. | Continue to work with GRTC and PlanRVA to study and pursue funding for the Pulse extension to Short Pump. |
| G2 | GRTC Dedicated Lanes Study | Making GRTC bus service more reliable was a common theme in discussions with Communities of Concern. Investments like bus-only lanes, transit signal priority, and queue jumps are infrastructure investments that can improve bus service reliability. | GRTC is conducting a study to identify locations for bus priority treatments to improve on-time performance and reliability system wide. In addition, feasible segments of the existing Pulse BRT route will be identified to convert to peak or all-day dedicated bus only lanes in order to achieve and maintain greater than 50% dedicated lanes on the Pulse corridor. | Support GRTC to identify locations for and implement bus priority treatments to improve on-time performance and reliability. |
| G3 | Downtown Transfer Center | Improving the existing GRTC bus system and having comfortable, safe spaces to wait for transfers were common theme in discussions with Communities of Concern. | Work with GRTC to identify a permanent location for the Downtown Transfer Center that is accessible to the high frequency Pulse BRT and a focal point of the Downtown. | Continue to work with GRTC to advance discussions about a permanent, highly visible, centralized location for the Downtown Transfer Center, and seek funding opportunities. |

SHORTER TERM - SHORT-TERM PROJECTS

| Project ID/ Name | Support Score | What is the Need? Why is this Project a Priority to make transportation more equitable? | What should be done? | What are the first Action Steps? | Cost |
|---|---------------|---|---|--|-----------------|
| 8A: Dock Street Pedestrian Improvements | 3.6 | <p>The data analysis indicates a Tier 1 equity-based Safety/ Security need on Dock Street. A common theme in the public comments was crossing Dock Street feels unsafe for pedestrians because of lack of crosswalks and cars going too fast.</p> <p>This recommendation will invest in previously redlined area (EF1) and improves walkability in areas with equity needs related to bike/pedestrian safety (EF6) and disparate climate impacts (EF8). It is located in area with densely populated Communities of Concern (EF9).</p> | Design and implement raised intersections, and curb ramp improvements to slow vehicle speeds on Dock Street from 18th St to Pear St and provide more frequent and safe pedestrian crossings to access the Virginia Capital Trail. Speed tables are already funded and will be implemented soon. | Develop engineering design plans. Implement. | Moderate (\$\$) |
| 12H: GRTC Route 1A (Midlothian Turnpike) Improvements | 3.5 | <p>More frequent bus service along Midlothian Turnpike and extending bus service to Chesterfield Towne Center was a common need identified in public comments, including from Communities of Concern, especially for better job access. This will improve connections for previously redlined areas and widespread communities (EF1, EF4), reduce the need for car ownership, and increase opportunities for financial mobility (EF5, EF7, EF9).</p> | Increase the frequency of bus service along Midlothian Turnpike from Downtown Richmond to Stonebridge to every 15 minutes, and make permanent the bus route extension from Stonebridge to Chesterfield Towne Center. | Work with GRTC to identify needed resources to increase frequency on GRTC Route 1A that runs along Midlothian Turnpike. Support GRTC to find permanent funding sources for service to Chesterfield Towne Center. | Moderate (\$\$) |
| 5E: Mechanicsville Turnpike Bus Route | 2.7 | <p>The data analysis revealed a Tier 1 equity-based Economic Development need in the Fairfield, Eastview, Brauers, and Whitcomb areas. Mechanicsville Turnpike is one of five corridors in the 2017 Greater RVA Transit Vision Plan planned for BRT. Bus Rapid Transit in this corridor would provide an economic investment in the area and provide better transit access to these areas that have high densities of Communities of Concern. This would improve reliability for areas with high equity needs related to transit (EF7). It is located in areas densely populated with Communities of Concern (EF9).</p> | Create a Bus Rapid Transit (BRT) route along Mechanicsville Turnpike from the Pulse downtown to Mechanicsville and beyond I-295 (vicinity of Walnut Grove). | <p>Support GRTC to begin new bus route along Mechanicsville Turnpike to Laburnum Ave by 2028.</p> <p>PDR and Office of Community Wealthbuilding to begin an economic development initiative in Fairfield to address Tier 1 Economic Development needs.</p> | Moderate (\$\$) |

SHORTER TERM - SHORT-TERM PROJECTS

| Project ID/ Name | Support Score | What is the Need? Why is this Project a Priority to make transportation more equitable? | What should be done? | What are the first Action Steps? | Cost |
|--|---------------|---|--|---|-----------------|
| 10J: Richmond Highway Transit Improvements | 3.4 | The data analysis revealed Tier 1 equity-based transit needs along Richmond Highway, especially south of Cofer Road, including in the Route 1/Bellemeade and Route 1/Bells Road Nodes. Public comments indicated buses do not run frequently enough along US Route 1 in these areas. Infrequent bus service along Richmond Highway was identified as a Super Need among Communities of Concern. This will improve transportation access (EF7), increase chances for economic growth/personal financial mobility (EF1, EF9), connect suburbs, and mitigate necessity of owning a car (EF4, EF5). | Increase bus frequencies along US Route 1 (Richmond Hwy) (GRTC Bus Route 3B/3C) to from every 30 minutes to every 15-20 minutes. | Implement Microtransit service in the Broad Rock/ Cherry Gardens/ Richmond Highway zone to improve transit accessibility along US Route 1. Work with GRTC to increase GRTC Route 3B frequency from 30 minutes to 15-20 minutes. | Moderate (\$\$) |
| 1J: Brook Road Bike Lanes Protection | 3.4 | Cars parking in bike lanes was a common issue identified throughout the Richmond Connects process. This recommendation will improve bike safety in areas impacted by car-centric planning (EF5), with high equity needs related to bike/pedestrian safety (EF6), and with disparate climate impacts (EF8). | Install fixed bollards and curbed median between bike lanes and parking lanes. Median could include green infrastructure with stormwater management features. Apply the bollards and curbed median along Brook Road, and if successful, this treatment could be replicated on streets with similar configurations, such as Malvern Avenue. | Prepare engineering design plans. Identify and allocate funding. LQC implementation could include placing bike racks or corrals in select parking spaces. Brook Road could be a first test case for implementing Strategy 1A.1: Bike Lane Barriers | Low (\$) |
| 1G: GRTC Route 14 Increased Frequency | 3.4 | The data analysis revealed Tier 1 equity-based transit needs along Hermitage Road. Several public comments noted it takes too many transfers to get to this area by transit. This recommendation will improve transit reliability for areas with high equity needs related to car-centric planning (EF5) and transit (EF7). | Increase frequency on GRTC Route 14 (Hermitage/East Main) from 30 minutes to 15 minutes, and provide same level of service after 7 pm. | Work with GRTC to increase frequency on Route 14 to 15 minutes. | Moderate (\$\$) |

SHORTER TERM - SHORT-TERM PROJECTS

| Project ID/ Name | Support Score | What is the Need? Why is this Project a Priority to make transportation more equitable? | What should be done? | What are the first Action Steps? | Cost |
|-----------------------------------|---------------|--|--|---|-----------------|
| 14H.2: Monument Avenue Bike Lanes | 3.2 | Extending the existing Franklin Street cycle track was a top public comment. Monument Avenue is a Tier 1 equity-based Bicycle need. | Design and implement protected bike lanes or shared use path(s) on or along Monument Avenue from Lombardy Street/ Stuart Circle to Arthur Ashe Boulevard, and eventually to Henrico County line. Include crosswalks and evaluate feasibility of curb extensions to increase visibility of pedestrians and pedestrians' sight distance of oncoming vehicles. Extend bike lanes on Lombardy Street south from Broad Street to Monument Avenue. | Present potential design to community for input and feedback. Finalize design. Identify and allocate funding and/or implement with repaving if possible. Implement the proposed concept on a temporary basis until funding for permanent installation can be secured. | Moderate (\$\$) |
| 2E: Link: On-Demand Microtransit | 3.1 | Having a park-and-ride near the Willow Lawn BRT station was a top public comment. This recommendation will help reduce car dependency in an area affected by car-centric planning (EF5). | Identify a location for a park-and-ride near the Willow Lawn Pulse Bus Rapid Transit terminus. This recommendation may also be relevant to the Rocketts Landing end of line BRT station too. | Support Henrico County in efforts to identify and implement park-and-ride at Willow Lawn. City of Richmond Dept. of Planning & Development Review to conduct a study of potential opportunities, risks, and benefits of acquiring land within City limits for park-and-ride to serve Willow Lawn BRT station. | Moderate (\$\$) |

SHORTER TERM - SHORT-TERM PROJECTS

| Project ID/ Name | Support Score | What is the Need? Why is this Project a Priority to make transportation more equitable? | What should be done? | What are the first Action Steps? | Cost |
|---|---------------|---|--|---|-----------------|
| 16E: Willow Lawn Park-and-Ride | 3.1 | Microtransit extends the reach of the transit system, improving transit accessibility especially in areas with the highest equity-based transit needs, but where land use densities are not high enough to justify fixed route transit service. It also complements fixed route transit service by making a connection between low density neighborhoods and transit stops, especially valuable for seniors and persons with limited mobility who cannot walk long distances to access the bus stop. This creates on-demand transit options for areas impacted by car-centric planning (EF5) and with high equity needs for bike/ pedestrian safety (EF6), and transit reliability (EF7). Focused in densely populated areas of Communities of Concern (EF9). | Create a new Microtransit program where riders can request on-demand shared rides to or from GRTC bus stops or other activity centers in high equity-need areas. | Implement the microtransit zones as outlined in the Richmond Microtransit study. Implement Mobility Hubs as described in the Richmond Microtransit study. | Moderate (\$\$) |
| 16B: York Road Sidewalks | 2.7 | The 1-block segment of York Road from Three Chopt Road to Somerset Avenue connects to a Tier 1 Pedestrian need segment. This project is included because it is a short segment of sidewalk construction with low cost and high readiness. | Design and implement new sidewalk construction to fill in sidewalk gaps on York Road from Three Chopt Road to Somerset Avenue. | Develop engineering design plans. Seek funding. | Low (\$) |
| 16H: Malvern Avenue Sight Distance Evaluation | N/a | Public comments noted concerns about sight distance with the configuration of bicycle lanes between parking lanes and the curb. This configuration can present sight distance issues for drivers seeing pedestrians trying to cross the street, and for drivers in driveways seeing oncoming traffic. | Measure sight distance from driveways along Malvern Avenue with bike lane and parking lane configuration, collect vehicle speed data, evaluate sight distance deficiencies and speeding issues, and work with neighborhood to develop solutions, which could include removing a few individual parking spots at select locations to address sight distance concerns. | Identify locations for data collection. Collect sight distance and vehicle speed data. | Moderate (\$\$) |

LONGER TERM PROJECTS

| Project ID/Name | Support Score | What's needed? | Cost |
|--|---------------|---|----------------------|
| 11D: Southside Plaza Street Grid | 3.733 | Redevelop Southside Plaza as a walkable, mixed-use development with a more connected street grid. | Very High (\$\$\$\$) |
| 4F: Scott's Addition to Shockoe Shared Use Path | 3.667 | Create new shared-use path for walking and cycling to connect Scott's Addition, Downtown, and Shockoe Bottom that could connect with Gilpin and the Calhoun Community Center. The alignment is not final and is subject to change. | Low/Moderate (\$/\$) |
| 11J: Southside Plaza Transfer Center | 3.667 | Improve the bus transfer center at Southside Plaza with bus bays, additional seating and shading, cooling, real-time bus arrival information, and WiFi. | Moderate (\$\$) |
| 1B: Azalea Avenue Streetscape Improvements | 3.6 | Install new streetscape with shared use paths and roadway conversion on Azalea Ave from Brook Rd to Chamberlayne Ave. Work with Henrico County to coordinate redevelopment of Azalea streetscape west of City Line. | Low/Moderate (\$/\$) |
| 12D: Route 60/Route 150 Interchange Improvements | 3.6 | Find funding for the Route 60/Route 150 Interchange Improvements Project. Partner with Chesterfield County and VDOT to improve the Midlothian Turnpike and Chippenham Parkway interchange to provide a safe path for pedestrians and bicyclists on Midlothian Turnpike through the interchange and to destinations to the west. | n/a |
| 8C: East Main Street Streetscape Improvements | 3.467 | Replace traffic signals, brick sidewalk repair, replace concrete sidewalk with brick sidewalk, tree planting, ornamental lights, and handicap ramps, along both sides of East Main Street from 15th Street to 25th Street. | Moderate (\$\$) |
| 7C: Old Fulton Street Grid | 3.4 | Recreate a street grid in the Industrial Area in Rocketts Landing. Add new roads as development occurs in the block bounded by the East Main Street, Williamsburg Avenue, Nicholson Street, and Orleans Street. | Very High (\$\$\$\$) |
| 10B: Richmond Highway Great Street Transformation | 3.4 | Transform US Route 1 (Richmond Hwy) into a Great Street with buildings oriented towards the street, a greenway (the Fall Line Trail), street trees, underground utilities, and lighting, and other amenities and encourage redevelopment and business growth. | High (\$\$\$) |
| 12L: Midlothian Area Revitalization | 3.4 | Refine and formalize the Midlothian Conceptual Plan from <i>Richmond 300</i> to support and further define the vision for this area as a walkable village center that connects to the Stonebridge development in Chesterfield County and has its own unique identity as an attractive gateway into the city. Work with residents to determine the best way to revitalize this area and encourage redevelopment through rezoning and more detailed planning. | n/a |
| 3K: Brookland Park Boulevard Bikeway | 3.333 | Provide a bikeway on Brookland Park Boulevard to address concerns about not feeling safe riding a bicycle on this road. | Low/Moderate (\$/\$) |
| 10C: Richmond Highway Pedestrian Safety Improvements | 3.333 | Provide more closely-spaced pedestrian crossings across Richmond Highway with crosswalks and other protection devices as appropriate, such as flashing beacons. Several improvements are in various phases of implementation, including: - Recently completed pedestrian safety improvements at Hull Street - Retiming traffic signals along the entire corridor to better manage speeds - New intersection reconfiguration at Harwood St/Hopkins Rd - New pedestrian hybrid beacon at Dinwiddie Ave - New signalization from Maury St to Hull St | High (\$\$\$) |

LONGER-TERM PROJECTS

| Project ID/Name | Support Score | What's needed? | Cost |
|---|---------------|--|----------------------|
| 10M: Richmond Highway Revitalization | 3.333 | Work with residents to determine the best way to revitalize the US Route 1 (Richmond Highway) corridor area, encourage redevelopment, and limit involuntary displacement of residents, especially in the Route 1/Bellemeade and Route 1/Bells Nodes. Transportation investments here will not be effective until there are more job & shopping destinations with which to connect. | n/a |
| 1H: Ridesharing Vouchers | 3.2 | Provide vouchers or subsidies for ridesharing or other transit alternatives to improve job access in areas with high Economic Development needs. | n/a |
| 3N: Northside Bikeshare Stations | 3.133 | New bikeshare stations at VUU, at Battery Park, at Ann Hardy Plaza, at the North Ave. Library, and on the Cannon Creek Greenway. | Low (\$) |
| 13G: Bliley Road Sidewalk and Bike Lanes | 3.133 | Install sidewalk, curb at gutter, storm drainage, and bike lanes on Bliley Road. | Moderate (\$\$) |
| 2C: Roundabout at Hermitage Rd/ Arthur Ashe Boulevard/ Westwood Ave/ Brookland Pkwy | 3.067 | Replace the existing intersection configuration at Hermitage Rd, Arthur Ashe Boulevard, Westwood Ave, and Brookland Pkwy with a modern roundabout. | High (\$\$\$) |
| 4L: Downtown/Shockoe Parking Recommendations | 3.000 | Implement the following recommendations to reduce reliance on surface parking in Downtown/Shockoe: pursue opportunities for public/private parking asset development, identify opportunities for shared parking, and create an on-street parking permit program. | Moderate (\$\$) |
| 15H: Scott's Addition Parking Recommendations | 3 | Implement the following recommendations to reduce reliance on surface parking in Scott's Addition: pursue opportunities for public/private parking assets; create parking benefit district; promote shared parking; and execute fee-for-use parking pilots | Moderate (\$\$) |
| 15I: Leigh Street Bike Lanes - Dinneen St to 8th St | 3 | Bike lanes were recently installed on Leigh Street from Dinneen Street to Myers Street. Installing bike lanes from 8th Street to the MLK Bridge is a project in the DPW pipeline. Design and install bike lanes to bridge the gap from Dinneen Street to 8th Street to provide a continuous bikeway. | Moderate (\$\$) |
| 15J: Lombardy Street Protected Bike Lanes | 3 | Upgrade the existing standard bike lanes on Lombardy Street to protected bike lanes. | Low (\$) |
| 5I: Hospital Street/ Bowling Green Road/ Wood Street Bikeway | 2.933 | Add a bikeway (facility type TBD) to Hospital St, Bowling Green Rd, and Wood St from Gilpin to Sussex Street. | High (\$\$\$) |
| 7I: Rockett's Landing to Fulton Bike Connection | 2.933 | Add bike connection from Rockett's Landing to Fulton via Nicholson St or Orleans St (facility type TBD). Enhance pedestrian crossings at the intersection of Orleans St and Old Osborne Tpk (VA Route 5). | Moderate (\$\$) |
| 9F: Riverside Shared-Use Path | 2.900 | Add a shared-use path along the south bank of the James River. This trail could follow the rail alignment, or be located adjacent to Riverside Drive. This trail could connect to the Potterfield Bridge and to the Reedy Creek Greenway. This project can also include a new bridge to connect the south point of the Potterfield Bridge with Belle Isle. | Very High (\$\$\$\$) |

LONGER-TERM PROJECTS

| Project ID/Name | Support Score | What's needed? | Cost |
|--|---------------|---|-----------------------------|
| 1K: Hermitage Road Buffered Bike Lanes | 2.867 | Extend the buffered bike lanes on Hermitage Rd from Westbrook Ave north to Henrico County line and south to I-95 and work with Henrico County to extend the bike lanes further north. South of I-95, identify the appropriate bike infrastructure to implement. | Low (\$) |
| 10N: Greenspace/Park near Richmond Highway | 2.867 | Develop a new park within 10 minutes of the Route 1/ Bellemeade Node or Route 1/Bells Node, working with residents to design the park. Transportation investments here will not be effective until there are more greenspace destinations with which to connect. | n/a |
| 14D: Carytown Parking Recommendations | 2.8 | Implement the following recommendations to reduce reliance on surface parking in Carytown: promote shared parking; create a parking benefit district; execute fee-for-use parking pilots; and assess curbside parking time limits. | Moderate (\$\$) |
| 4B: Main Street/Cary Street Two-Way Street Conversion | 2.766 | Change traffic direction on Main and Cary Streets from one-way to two-way, creating a safer environment for pedestrians, bicyclists, and motor vehicles | High (\$\$\$) |
| 4M: 1st Street Cycle Track | 2.733 | Extend the 2-way cycle track on 1st Street north from where it currently terminates at Duval Street over I-95 and into Gilpin and Highland Park. | n/a |
| 5H: Valley Road Shared Use Path | 2.733 | Add a shared-use path on Valley Rd from Richmond-Henrico Tpke to Hospital Street. | Moderate/High (\$\$/\$\$\$) |
| 9M: Bainbridge Street/ Forest Hill Avenue Bike Lanes | 2.733 | Add separated bike lanes on Bainbridge Ave/Forest Hill Ave from Roanoke St to Fall Line Trail. | Low/Moderate (\$/\$\$) |
| 3J: Magnolia Street Bikeway | 2.667 | Add a bikeway on Magnolia St from 1st Ave to Mechanicsville Turnpike. | Low/Moderate (\$/\$\$) |
| 7J: Admiral Gravelly Boulevard/Jennie Scher Road Bikeway | 2.6 | Add bikeway (facility type TBD) on Admiral Gravelly Boulevard/ Jennie Scher Rd from Williamsburg Rd to Gillies Creek Greenway | Moderate/High (\$\$/\$\$\$) |
| 14A: Stuart Circle Roundabout Improvement | 2.6 | Construct a new roundabout at the intersection of Monument Avenue, Lombardy Street, Stuart Circle, and W Franklin Street with landscaped splitters, sidewalks, and crosswalks. | Moderate (\$\$) |
| 6J: Church Hill Bikeway Connection | 2.533 | Provide a dedicated bikeway from the Leigh Street Viaduct to Government Road. One option for the alignment could follow Mosby Street to Princess Anne Avenue to N 21st Street to E Clay Street to N 23rd Street to Marshall Street to N 35th Street to Glenwood Avenue. | Low/Moderate (\$/\$\$) |
| 12E: Reedy Creek & Pocosham Creek Greenways | 2.467 | Create a continuous pedestrian/bike path along Reedy Creek and Pocosham Creek, connecting from the Falling Creek Reservoir near Belmont Rd and Chippenham Parkway in the Brookbury neighborhood to Forest Hill Park. | n/a |
| 12K: Southside Community Center Bikeshare Station | 2.467 | Add a bikeshare station at Southside Community Center. | Low (\$) |
| 6K: Venable/Mosby Bikeshare Station | 2.4 | New bikeshare station near the intersection of Venable St and Mosby Street. | Low (\$) |
| 15D: Scott's Addition/ Boulevard Shared-Use Path | 2.4 | Construct a shared-use path to connect Scott's Addition with areas east of Arthur Ashe Boulevard, including a grade-separated crossing at Arthur Ashe Boulevard. | High (\$\$\$) |

LONGER-TERM PROJECTS

| Project ID/Name | Support Score | What's needed? | Cost |
|--|---------------|--|--------------------------------|
| 3H: Overbrook Road Bikeway | 2.333 | Add a bikeway (facility type TBD) on or along Overbrook Road, which is a key bicycle connection between neighborhoods in the east, new growth in the west, and Battery Park. A potential first segment could be from North Avenue to Chamberlayne Avenue. | Moderate (\$\$) |
| 12J: Whitehead Road Bikeway | 2.333 | Add a bikeway (facility type TBD) on Whitehead Rd from existing bike lanes on German School Rd to Elkhardt Rd. | Moderate/High (\$\$/\$\$\$) |
| 13I: Forest Hill Avenue Bikeway | 2.2 | Continue the existing bike lanes on Forest Hill Avenue that currently end between 46th and 47th Streets further west across Westover Hills Boulevard and through the Chippenham Parkway interchange. Provide a protected bikeway on Forest Hill Avenue between Westover Hills Boulevard and Chippenham Parkway, as this is a key freight route. | High (\$\$\$) |
| 14F: Randolph Connection Over I-195 | 2.2 | Provide a new connection for pedestrians and bicyclists over I-195 near Petronious S. Jones Park. | Low (\$) to Very High (\$\$\$) |
| 3M: Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | 2.133 | Extend Lombardy St bike lanes on N Lombardy Street from Overbrook Road to Brook Road | Low (\$) |
| 8G: East End Bikeshare Stations | 2.133 | New bikeshare stations at Libby Hill Park, Great Shiplock Park, and Chimborazo Park. | Low (\$) |
| 10F: Walmsley Boulevard Street Connection | 2.133 | Connect the two ends of Walmsley Boulevard, creating a continuous road between US Route 1 (Richmond Highway) and Commerce Road. | High (\$\$\$) |
| 11N: Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | 2.133 | Add more protection between bicycle lanes and vehicle lanes on Broad Rock Boulevard/Iron Bridge Rd. Extend protected bike lanes on Iron Bridge Rd south to City limits and north to existing separated bike lane at Broad Rock Boulevard and Belt Boulevard. | High (\$\$\$) |
| 10H: Commerce Road Improvements at Walmsley Boulevard | 2.067 | Convert the intersection of Commerce Rd and Walmsley Boulevard into a multi-lane roundabout. Provide new sidewalk on Commerce Rd between Bells Access Road and Walmsley Boulevard, new dedicated turn lanes, pedestrian crossing improvements, and improvements to the I-95 ramps at exit 69. This project will improve freight access to the Richmond Marine Terminal and the Commerce Road industrial area, while also slowing vehicle speeds and improving pedestrian safety. | High (\$\$\$) |
| 11G: East Belt Boulevard Improvements | 2 | On Belt Boulevard between Midlothian Turnpike and Hull Street Road: Provide a 10-foot wide shared use path with a 4-foot wide buffer along the south side of the road. Provide a 5-foot wide sidewalk on the north side of the road. Install a raised median, dedicated turn lanes, and pedestrian crossing improvements. | Moderate/High (\$\$/\$\$\$) |
| 14K: Near West End Bikeshare Stations | 2 | Add bikeshare stations at the VMFA, Byrd Park, Maymont, Carillon, and the Scott's Addition Pulse Station. | Low (\$) |
| 3I: Fendall Ave/ N 1st St Bikeway | 1.8 | Add a bikeway (facility type TBD) connecting the existing protected bike lanes on N 1st Street at Duval St in Downtown over I-95/I-64, continuing north on N 1st St to Monteiro St, to Poe St, to Home St, and north on Fendall Ave to North Ave near the Henrico County line. | Low/Moderate (\$/\$\$) |

LONGER-TERM PROJECTS

| Project ID/Name | Support Score | What's needed? | Cost |
|---|---------------|---|-----------------------------|
| 4D: Baker Street Pedestrian/Bike Only Street | 1.8 | Close Baker Street from N 1st St to Brook Rd to car traffic and add street trees, creating a shaded pedestrian- and bike-only street. Include native landscaping that retains water, and provides food and shade. | Moderate (\$\$) |
| 4H: Reconnect Clay and 6th Streets | 1.8 | After the demolition of the Coliseum, build a new road to reconnect 6th Street from Leigh to Marshall, and a new road to reconnect Clay Street between 5th and 7th. | Very High (\$\$\$\$) |
| 9L: Maury Street Bikeway | 1.8 | Add a bikeway (facility type TBD) on Maury St from Route 1 to Commerce Rd/Fall Line Trail. | Very High (\$\$\$\$) |
| 14I: Mulberry Street Bikeway | 1.8 | New two-way bikeway (facility type TBD) on Mulberry Street or other parallel street. This new bikeway would provide a north-south connection in the vicinity of Arthur Ashe Boulevard from the bikeway in Byrd Park to the proposed shared-use path in Scott's Addition. | Moderate (\$\$) |
| 16C: Three Chopt Road/ York Road/ Henri Road Roundabout | 1.7 | Replace impervious asphalt with green infrastructure and provide positive guidance for motor vehicles and bicycles through this area. at Intersection of Three Chopt Road, York Road, and Henri Road. | Moderate/High (\$\$/\$\$\$) |
| 9N: West 29th Street Bikeway | 1.667 | Add bikeway (facility type TBD) on W 29th St from Riverside Dr to Bainbridge Street. | Moderate (\$\$) |
| 17B: Powhite Greenway | 1.6 | Add a shared-use path along Powhite Creek. | High (\$\$\$) |
| 17C: Norfolk Southern Shared Use Path | 1.6 | Add a shared-use path along Norfolk Southern railroad from Granite Hall Ave to City Line. | High (\$\$\$) |
| 17G: Cherokee Road Bikeway | 1.6 | Reconstruct Cherokee Rd to include a bikeway (facility type TBD). | Very High (\$\$\$\$) |
| 10L: Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | 1.533 | Reconstruct Terminal Ave from Belt Boulevard to Lynhaven Ave to add bike lanes, and add a bike lane on Belt Boulevard from Terminal Ave to connect to the buffered bike lanes that are in the DPW pipeline on Hopkins Rd from Holly Springs to Walmsley Boulevard. | Moderate (\$\$) |
| 13J: Prince Arthur Road Bikeway Connection | 1.5 | Provide a bikeway connection (facility type TBD) on Prince Arthur Road from Forest Hill Avenue to Riverside Drive, and on Riverside Drive from Prince Arthur Road to Westover Drive. This would provide a connection between the Jahnke Road bikeway and the Westover Hills Boulevard bridge over the James River into Byrd Park. | Low/Moderate (\$/\$\$) |
| 11O: Terminal Avenue Bike Lanes - Broad Rock Boulevard to Belt Boulevard | 1.4 | Reconstruct Terminal Ave from Broad Rock Boulevard to Belt Boulevard to add bike lanes. | High (\$\$\$) |
| 11P: Bikeways on Bryce Lane and Snead Road | 1 | Create new bikeways (facility type TBD) on or along Bryce Lane from Hey Rd to Broad Rock Boulevard and on Snead Rd from Whitehead Rd to Broad Rock Boulevard. | High (\$\$\$) |
| 15E: Norfolk Street Bridge | 1 | Add a new bridge over CSX, connecting Norfolk Street from N Hamilton St to Belleville Street. | Very High (\$\$\$\$) |
| 15F: MacTavish Avenue Bridge | 0.8 | Add a new bridge over CSX, connecting MacTavish Ave or another parallel street. | Very High (\$\$\$\$) |

APPENDIX D: PUBLIC ENGAGEMENT

Equity-focused community engagement was the cornerstone of the Richmond Connects process. The Richmond Connects process was designed to empower Richmonders to make their voices heard, and use that information at every step. The process was designed to seek out and compensate people for their intimate knowledge of what transportation inequities exist, and collaboratively develop solutions to break down the thickest barriers to accessing opportunities.

Phase 1: What Needs to be Improved?

SUMMER 2022

The first phase of community engagement focused on gathering community perspectives to identify needs - barriers or gaps in the transportation system. The effort centered around a simple survey that asked “What needs to be improved to make transportation in Richmond safe and easy for everyone?”

Thousands of Richmonders had already provided valuable input to answer this question during the development of the *Richmond 300* Master Plan in 2018 and 2019, and during the Path to Equity process in 2021. Over 3,900 public comments were compiled and presented to the public in an online webmap that represented a starting point for identifying needs. Through a variety of face-to-face and online engagement activities, Richmonders provided over 1,100 additional comments for a total of over 5,000 public comments.

5,009 public comments on what needs to be improved were collected during Phase 1, including 3,907 comments from prior planning efforts, and 1,102 new comments from the Phase 1 survey.

As throughout the Richmond Connects process, the focus of the engagement activities was on reaching people who experience the most injustices, encounter the most barriers, and who are typically underrepresented in planning processes.

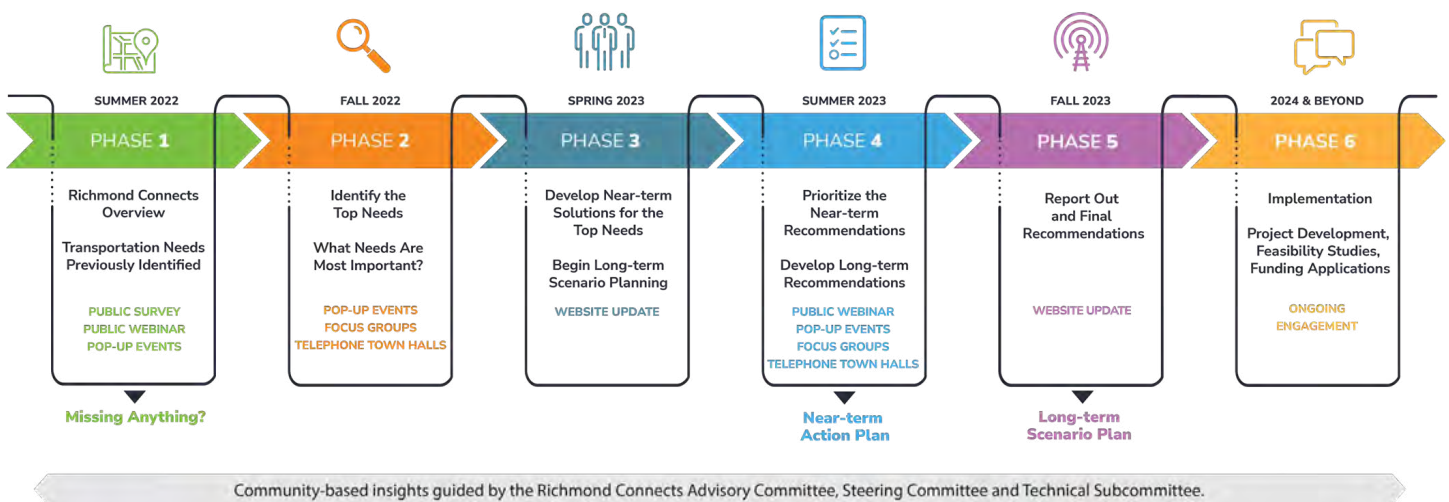


Figure 50. Public engagement timeline

Phase 1 engagement activities included:

- Que Pasa Festival - June 11, 2022
- Armstrong High School Senior Class Cookout - June 13, 2022
- Jubilation in June Festival - June 17, 2022
- Online meeting - June 21, 2022
- Facebook Live - June 21, 2022
- BikeWalk RVA event at Legend Brewery - July 14, 2022
- National Night Out - August 2, 2022
- Email blasts
- Social media posts

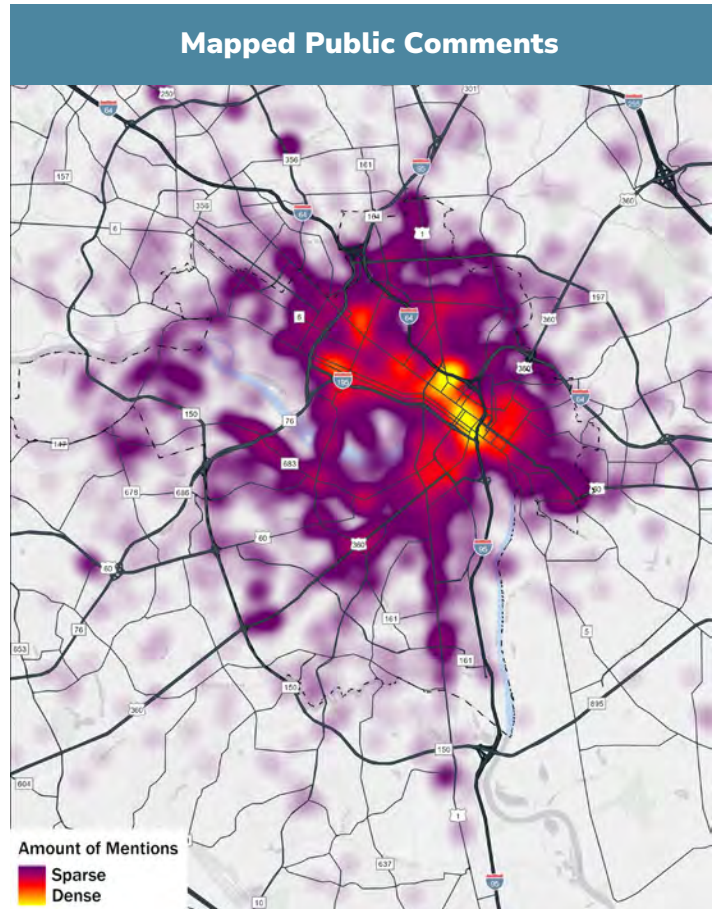


Figure 51. Heat map of locations where people put their public comments on the online map for the Phase 1 survey

COMMON THEMES FROM PHASE 1

Pedestrian:

- Adding sidewalks where there are none
- Improving existing pedestrian crossings
- Improving existing sidewalks
- Adding pedestrian crossings where there are none
- Closing streets to vehicles to make ped-only streets

Bicycle:

- Improve the safety of existing bicycle infrastructure
- Make bicycle infrastructure more connected
- Add bicycle infrastructure where there is none

Transit:

- Add more BRT, including a North/South BRT
- Improve bus stops with better lighting, covering, and seating
- Add transit connections throughout the City and the surrounding Counties
- Add more intense transit like light rail
- Add high-speed rail to DC

Safety:

- Make bike infrastructure more protected
- Use traffic calming measures to decrease speeds on certain roads, such as road diets or one-way to two-way conversions
- Improve safety of pedestrian crossings

Maintenance:

- Repair potholes
- Repair or add sidewalks
- Clean debris & trash from bicycle lanes
- Connectivity:
- Improve transit connections to certain neighborhoods
- Add BRT to high-traffic areas like the Airport & Short Pump
- Add or reconnect crossings between neighborhoods disconnected by highways

Land Use:

- Add parking in some areas
- Take away parking in some areas
- Eliminate street parking for some streets
- Increase density near transit

Technology:

- Add more bikeshare stations
- Add more EV charging stations

Freight:

- Improve alleyways for delivery trucks
- Improve curbside access for delivery trucks
- Economic Development:
- Address food deserts with grocery stores

Sustainability:

- Address urban heat islands
- Convert GRTC to electric fleet

The full results of the Phase 1 survey can be viewed in the [online dashboard](#).* Mapped comments can be viewed in the [online map](#).

**Note: The dashboard does not include the public comments from Richmond 300 Community Conversation #1.*

Phase 2: What Needs are Most Important?

FALL 2022 - WINTER 2023

In Phase 2, the top needs from Phase 1 were identified in Richmond's Communities of Concern and presented back to the community. Phase 2 engagement asked "Which needs should be addressed first?" It focused on summarizing and distilling the wide universe of needs identified in Phase 1 into top needs within Communities of Concern.

Engagement activities in this phase included:

1. 90-Second Video
2. General Updates to Existing Base
3. Opt-In for Text Messages
4. In-Person Pop-Ups
5. Telephone Town Hall Meetings
6. Initial Needs Maps Online Review
7. Focus Group Sessions

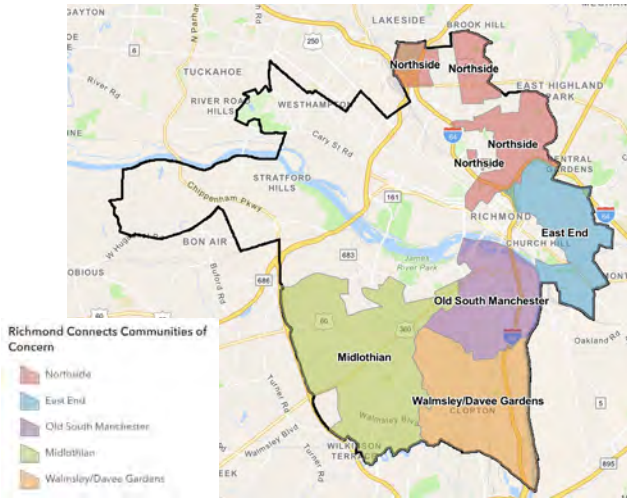


Figure 52. Communities of Concern in City of Richmond. These areas were identified as areas whose residents are most likely to be experiencing transportation injustices, based on demographic data including income, renter status, race, mobility, age, and other factors.

While the Phase 1 engagement activities were successful at reaching high numbers of survey responses, the results represent a higher proportion of white Richmonders than Richmond’s population. There were fewer survey results for people who are low-income, BIPOC, Hispanic, and under age 25.

Richmond Connects is intended to be an equity-centered plan to use transportation investments to improve access to opportunities and reduce barriers for individuals who are most burdened. It is these most burdened individuals who are BIPOC, Hispanic, low-income, under 25, have limited mobility, especially if an individual identifies with more than one of these categories. These people are typically hardest to reach through conventional outreach methods.

The community outreach during Phase 2 focused heavily on engaging residents in Communities of Concern in meaningful conversations. It was not focused on generating high numbers of responses.

The Richmond Connects team provided updates to the general public and purposefully focused resources on activities, including in-person pop-ups and focus groups, to engage individuals within Communities of Concern. While these engagement activities produced lower numbers of responses and cannot be tied to statistically significant quantitative analysis of results, the interaction with individuals within the Communities of Concern was more robust, inclusive, and encouraged two-way dialogue to understand the communities’ needs from their perspectives.



Figure 53. East End Focus Group. Phase 2 Engagement activities focused on deeper conversations with people in Communities of Concern, resulting in more robust understanding of the needs of people and communities who experience transportation inequities.

90-SECOND VIDEO

The Richmond Connects team prepared a 90-second video to explain what Richmond Connects is and some key themes of what we heard needs to be fixed. The team posted this video on the RVAConnects.com website and shared it on social media and through e-blasts.



Screenshot of RVAConnects.com Website Showing 90-Second Video

GENERAL UPDATES TO EXISTING BASE

The Richmond Connects team sent numerous e-blasts and social media posts to keep the general public abreast of progress during Engagement Phase 2.

Social Media Posts:

- Nov. 18 – Facebook Post – Watch the new video
- Dec. 1 – Facebook Post – Sign up for text messages
- Dec 13 – Facebook post – Watch the new video and learn about...
- Dec. 16 – Facebook post – Sign up for text messages
- Dec. 20 – Facebook post – “Improve roads and transit stops at Southside Plaza.” Watch this short video and learn about...
- Dec. 27 – Facebook post – Sign up to receive text messages
- Jan. 3 – Facebook post – “Better crosswalks near Mosby and Q Street.” Watch this short video and learn about...
- Jan. 10 – Facebook post – “Improve bike safety along Brook Road.” Watch this short video and learn about...

E-Blasts:

- Subject: Watch the Richmond Connects Video! Sent Mon, November 14th, 2022 4:15 PM (1,000 recipients)
- Subject: Richmond Connects Telephone Town Hall Meetings. Sent Tue, December 6th, 2022 4:00 PM (927 recipient)
- Subject: Review Initial Data of Transportation Needs. Sent Wed, February 1st 10:00 AM (937 recipients)

OPT-IN FOR TEXT MESSAGES



Opt-In for Texts Flyer. Distributed during pop-up engagement.

The Richmond Connects team set up an SMS text opt-in service through SlickText that allows people to opt-in to receive text messages. This builds a database of mobile phone numbers for ongoing outreach and engagement through SMS text. The primary purpose in Phase 2 is to start allowing people to opt-in. It is anticipated that this service will be used in future phases to deliver on-going awareness and participation through project updates, news, events, and text surveys.

The Richmond Connects team promoted the opt-in for text messages in several ways:

- Placing a static banner at the top of the RVAconnects.com website
- Adding a message to the rotating banner of the RVAconnects.com website
- Social media posts
- E-blasts
- Handing out flyers during the in-person pop-ups
- Printing a message and QR code onto snack bag giveaways that were used during the in-person pop-ups

As of February 21, 2023, the database contained 46 mobile phone numbers not inclusive of the Richmond Connects team. While the number of opt-ins remains small at this point, a geo-fencing advertisement campaign is an option for increasing the database of phone numbers, however it requires a significant cost and allocation of resources.

IN-PERSON POP-UPS

In the first phase of engagement, the Richmond Connects team compiled the transportation-related input that thousands of Richmonders had already provided for the *Richmond 300 Master Plan* and the *Path to Equity Policy Guide*. Over 3,000 comments had already been provided for these efforts! The Richmond Connects team developed a survey for viewing these comments and providing new comments. Together with the prior comments, the input from Phase 1 totaled over 5,000 individual responses. Many of the responses were mapped, and others were not. The team is using the set of 5,000 comments in multiple ways to identify needs and develop recommendations.

In the second phase of engagement, the Richmond Connects team examined all 5,000 comments from Phase 1 and from these comments identified **the top 10 needs in the areas that had the highest densities of residents in Communities of Concern**.



Richmond Connects Team Member Chenice Brown conducting outreach with banner poster

The team prepared five banners illustrating the top 10 needs in the five areas of Communities of Concern. The team took these portable banners into the communities to talk with residents about these issues, ask if they agree these are the top issues, and identify which of these issues are most important to address first.



Banner posters for the in-person pop-ups asked people in Communities of Concern which of the top 10 issues they would fix first.

Table 6. In-Person Pop-Up Outreach Events and Locations

| Event & Location | Day | Communities of Concern |
|---|----------------|---|
| John Marshall High School Family Engagement Night | Nov. 15, 2022 | Northside – primarily low-income African American families |
| Neighborhood Resource Center COVID Testing Day | Nov. 17, 2022 | East End |
| Kanawha Plaza Grand Illumination RVA | Dec. 2, 2022 | Northside, Manchester – all demographics |
| Big Apple Grocery Pop-Up, Richmond Hwy | Dec. 3, 2022 | Walmsley – primarily Spanish-speaking, African American, and low-income |
| Christmas on McArthur | Dec. 10, 2022 | Northside |
| Hillside Community Holiday Event | 10-Dec-22 | Manchester – primarily low-income African American |
| Q-Market Pop-Up, 1167 Southwood Pkwy | Dec. 17, 2022, | Walmsley – primarily Hispanic |
| Southside Plaza Pop-Up, 507 E. Southside Plaza | Dec. 17, 2022, | Walmsley |
| Night Market at Stone Brewery | Dec. 18, 2022 | East End – primarily white |
| Rays Barber Shop Holiday Toy Drive | Dec. 18, 2022 | Northside – primarily low-income African American |
| Peter Paul Development Center Family Dinner | Dec. 20, 2022 | East End – low income, all Communities of Concern |
| Southside Community Center | Dec. 29. 2022 | Walmsley |
| Broad Rock Community Center | Dec. 29. 2022 | Walmsley |

Table 6 lists the locations and dates where the Richmond Connects team conducted in-person outreach. These locations were purposefully selected to reach residents in Communities of Concern, including BIPOC, persons in low-income households, seniors, youth and young adults, and persons whose primary language is not English.

The tables below show the results from the in-person pop-ups, combined with the results from the focus groups, as described in the next section. The issues are displayed in descending order of dot votes. The issue with the most dot votes is shown at the top.

Table 7. Ranked Top Issues in East End Communities of Concern

| Rank | Issue | Total # of Dot Votes | Neighborhood Resource Center COVID Testing Day | Peter Paul Development Center Family Dinner | Night Market at Stone Brewery | East End Focus Group |
|------|---|----------------------|--|---|-------------------------------|----------------------|
| 1 | Many streets lack sidewalks, and existing sidewalks are cracked | 43 | 3 | 23 | 10 | 7 |
| 2 | Crossing Mosby Street at MLK Middle School feels unsafe | 40 | 0 | 34 | 0 | 6 |
| 3 | Crossing the street feels unsafe, especially at Mechanicsville Tpke and Fairfield Ave | 36 | 0 | 28 | 0 | 8 |
| 4 | Potholes and poor pavement, especially on Williamsburg Road and Government Road | 26 | 8 | 0 | 13 | 5 |
| 5 | Speeding on Fairmount Ave | 23 | 0 | 21 | 0 | 2 |
| 6 | Bicycle connections lacking between Fulton and Rocketts Landing | 21 | 0 | 0 | 17 | 4 |
| 7 | No shelters at benches and bus stops | 20 | 4 | 8 | 4 | 4 |
| 8 | Buses are infrequent and require too many transfers from East End, especially Fulton | 13 | 8 | 0 | 0 | 5 |
| 9 | Speeding and lack of safe pedestrian crossings on Williamsburg Road | 11 | 7 | 0 | 0 | 4 |
| 10 | Riding a bike on the Leigh Street viaduct feels unsafe | 3 | 0 | 0 | 3 | 0 |

At the pop-up events, Richmond Connects team members also asked people if there are other major transportation issues that need to be addressed first, before any of the top 10 issues shown on the banner posters. The bullets below each table describe other major issues that people mentioned.

Other issues in the East End (some provide specific locations to issues already identified):

- Crossing the street feels unsafe at:
- Williamsburg Rd and Darbytown Rd
- The roundabout at 23rd St and Phaup St
- The roundabout on 25th St and Fairmount Ave (Family Dollar)
- Redd St/T St and Mechanicsville Tnpk
- Traffic goes too fast on Coalter Street (1500 block) in Mosby Court
- There's no bus shelter at Westhampton and Williamsburg Rd

Table 8. Ranked Top Issues in East End Communities of Concern

| Rank | Issue | Total # of Dot Votes | John Marshall High School Family Engagement Night | Kanawha Plaza Illuminate RVA | Rays Barber Shop Holiday Toy Drive | Christmas on MacArthur | Northside Focus Group |
|------|--|----------------------|---|------------------------------|------------------------------------|------------------------|-----------------------|
| 1 | Many streets lack sidewalks or existing sidewalks are broken | 65 | 0 | 10 | 7 | 43 | 5 |
| 2 | Speeding on major streets, like Laburnum Ave, Brook Rd, and Chamberlayne Ave | 57 | 3 | 6 | 11 | 33 | 4 |
| 3 | Intersection at Laburnum Ave and Hermitage Rd feels unsafe | 55 | 1 | 6 | 0 | 47 | 1 |
| 4 | Pulse BRT does not serve Northside | 41 | 1 | 4 | 9 | 22 | 5 |
| 5 | Potholes and poor pavement on streets | 34 | 0 | 4 | 7 | 18 | 5 |
| 6 | Riding a bike from Northside to downtown feels unsafe | 33 | 0 | 4 | 0 | 28 | 1 |
| 7 | Lack of bus stops, especially near senior housing | 30 | 0 | 9 | 0 | 14 | 7 |
| 8 | Crossing the street on North Avenue feels unsafe | 28 | 2 | 12 | 12 | 0 | 2 |
| 9 | Walking and riding a bike on Chamberlayne feels unsafe | 27 | 3 | 3 | 6 | 13 | 2 |
| 10 | Riding a bike on Brookland Park Boulevard feels unsafe | 12 | 0 | 2 | 0 | 9 | 1 |

Other issues in the Northside (some provide specific locations to issues already identified):

- Crossing the street feels unsafe at:
 - Chamberlayne and John Marshall High School
 - Poor lighting in the VMFA area
- Clean-up/beautification needed on:
 - Laburnum Ave and around Bryan Park
 - Cannon Creek area, Brookland Parkway, and Dove Street
 - Robin Hood Road
- Street cleaning blows leaves right into the bike lanes
- Traffic goes too fast on:
 - Bellevue Ave at Crestwood Rd
 - Dumbarton
- Drivers run stop signs at Bellevue and Crestwood / Fauquier and Bellevue.

- Crashes on Westbrook Rd and Chamberlayne Ave
- Lack of left turn lanes at every intersection along Rt 1 and along Chamberlayne, and city bus “cut in” needs to be reviewed
- Bike lanes needed Brook Rd to Lombardy to Grace
- Inability to walk to Scott’s Addition
- Fall Line Trail – information requested
- Lack of sidewalks on Fauquier Ave and side streets
- Potholes on Riverside Dr. – Pony Pasture cause you to fall off your bike

No other issues were recorded in the Manchester area during the in-person pop-up events.

Table 9. Ranked Top Issues in Manchester Communities of Concern

| Rank | Issue | Total # of Dot Votes | Kanawha Plaza Illuminate RVA | Hillside Community Holiday Event | Southside Focus Group |
|------|--|----------------------|------------------------------|----------------------------------|-----------------------|
| 1 | Drivers do not stop for pedestrians in crosswalks | 19 | 7 | 10 | 2 |
| 2 | Many streets lack sidewalks and lighting at night | 18 | 9 | 7 | 2 |
| 3 | Crossing the street feels unsafe, especially Hull St, Semmes Ave, and Cowardin | 16 | 6 | 8 | 2 |
| 4 | Potholes and poor pavement | 14 | 11 | 0 | 3 |
| 5 | Bus stops lack shelter and benches | 13 | 6 | 5 | 2 |
| 6 | Intersections at Cowardin Ave, Hull St, and Semmes Ave feel unsafe | 10 | 3 | 5 | 2 |
| 7 | Pulse BRT does not serve Southside | 9 | 2 | 5 | 2 |
| 7 | Belvidere, Manchester, and Mayo Bridges feel unsafe for walking and bicycling | 9 | 6 | 0 | 3 |
| 9 | Infrequent bus service and lack of stops in Southside | 7 | 5 | 0 | 2 |
| 10 | Speeding along Hull St | 6 | 4 | 0 | 2 |



Figure 54. Pop-Up at Kanawha Plaza Grand Illumination Event. This pop-up engaged a variety of demographics on needs in the Northside and Manchester area Communities of Concern.

Table 10. Ranked Top Issues in Walmsley Communities of Concern

| Rank | Issue | Total # of Dot Votes | Big Apple Grocery | Broad Rock & Southside Community Centers | Q-Market and Southside Plaza | Southside Focus Group |
|------|---|----------------------|-------------------|--|------------------------------|-----------------------|
| 1 | Potholes and poor pavement maintenance on Rte 1 (Richmond Hwy) | 15 | 5 | 4 | 5 | 1 |
| 2 | Potholes and poor pavement maintenance on Commerce Rd | 13 | 6 | 1 | 4 | 2 |
| 3 | No shelters and benches at bus stops | 12 | 3 | 5 | 4 | 0 |
| 4 | Many streets in Southside lack sidewalks, and existing sidewalks are broken | 11 | 3 | 5 | 2 | 1 |
| 4 | Missing sidewalks on Rte 1 (Richmond Hwy) | 11 | 1 | 1 | 8 | 1 |
| 6 | Speeding on Rte 1 (Richmond Hwy) | 10 | 2 | 5 | 3 | 0 |
| 6 | Lack of sidewalks on Walmsley Boulevard | 10 | 3 | 3 | 3 | 1 |
| 8 | Infrequent bus service and lack of stops in Southside | 6 | 2 | 1 | 2 | 1 |
| 8 | Very few bike paths in Southside | 6 | 1 | 3 | 1 | 1 |
| 10 | Potholes and poor pavement maintenance on Bells Rd | 4 | 1 | 2 | 0 | 1 |

Other issues in the Walmsley area (some provide specific locations to issues already identified):

- The water that creates large puddles and hazards along the Richmond Hwy (right side as you travel south) is a huge problem for all travelers.
- Rain along Commerce Rd. is bad under the bridge.
- More bike racks would be good.
- The free GRTC Transit service is great for kids that do not have another way of getting around. Not everyone can afford a new vehicle.
- Better sidewalks and bus stops along Richmond Highway and Bells Rd. would be great.

The in-person pop-up events did not gather input on the top issues in the Midlothian area. Southside focus group participants identified issues that came up during conversation in the focus group session.



Figure 55. Pop-Up at Big Apple Grocery. This pop-up engaged Spanish-speaking, African American, and low-income individuals on needs in the Walmsley area Communities of Concern.

Table 11. Ranked Top Issues in Midlothian Communities of Concern

| Issue | Total # of Dot Votes | Southside Focus Group |
|--|----------------------|-----------------------|
| Missing sidewalks on Hull St, Hey Rd, and Elkhardt Rd near River City Middle School | 1 | 1 |
| Potholes and poor road maintenance throughout Southside, especially Old Warwick Rd and Hull St | 1 | 1 |
| Dangerous pedestrian crossings along Midlothian Tpke | 1 | 1 |
| Southside Plaza bus transfer station lacks sidewalks and amenities | 1 | 1 |
| Speeding along Hull St | 1 | 1 |
| Bus service is infrequent and bus stops do not feel safe | 1 | 1 |
| Missing sidewalks along Hull St | 1 | 1 |
| Speeding and missing sidewalks on Broad Rock Rd | 0 | 0 |
| Very few bike paths in Southside | 0 | 0 |
| Missing and broken sidewalks throughout Southside | 0 | 0 |

TELEPHONE TOWN HALL MEETINGS

The Richmond Connects team held two Telephone Town Hall Meetings in early December 2022:

- Wednesday December 7, 2022, 6:00 PM to 7:00 PM
- Thursday December 8, 2022, 12:00 PM to 1:00 PM

The Telephone Town Hall Meetings were targeted to select zip codes in Communities of Concern. Residents in these areas received phone calls inviting them to join the Telephone Town Hall Meeting. No internet connection was required. Participants participated directly from their phone.

Over 1,400 people accepted the phone call. At peak participation, over 300 people participated in the 12/7 meeting and 275 people participated in the 12/8 meeting.

The Richmond Connects team gave an overview of the Richmond Connects process and answered questions. The team shared the top needs in the Communities of Concern areas. Participants answered polls to provide feedback and asked questions.

Participants were asked if they agree with the top needs their neighbors identified. 83% of participants in the 12/7 meeting and 80% of participants in the 12/8 meeting who responded said Yes or Mostly Yes.

The Richmond Connects team used the questions asked during the Telephone Town Hall Meetings to prepare a Frequently Asked Questions page, which will be available on the RVAconnects.com website.

INITIAL NEEDS MAPS ONLINE REVIEW

The Richmond Connects team released initial results of the data-driven needs analysis as a StoryMap for stakeholder and public review. The results consisted of two maps for each of the 11 Investment Need Categories:

- The **unweighted need map** showed the areas of the City that have transportation-related infrastructure and service needs for that Investment Need Category
- The **weighted need map** applied the additional weight to reflect the 10 Equity Factors

The Richmond Connects team asked the Advisory Committee to review these initial results of the data-driven needs analysis and provide comments. This information was made available to the public as well. Viewers could provide comments on the maps between January 18th and February 6th, 2023. 29 comments were received on the initial needs maps.

FOCUS GROUPS

Three focus group sessions were held in January and February 2023 to share the weighted needs maps with people who live in or represent one or more Communities of Concern. Community members reviewed the needs maps and provided feedback on what makes sense and what is missing. These focus groups were conducted to hear and understand what residents in Richmond’s Communities of Concern thought was accurate in the data-driven needs maps, and what was missing. The focus group sessions for Phase 2 were held:

- East End: Thursday January 19, 2023 | 5:30 pm to 7:30 pm | Neighborhood Resource Center
- Southside: Thursday January 26, 2023 | 5:30 pm to 7:30 pm | Hull Street Library
- Northside: Thursday February 2, 2023 | 5:30 pm to 7:30 pm | Six Points Innovation Center

The Richmond Connects team received applications for focus group participants from the general public and selected participants who identified with at least one community of concern (e.g. BIPOC, low-income, senior, youth, limited mobility, etc.).

The focus groups discussed the needs maps for the entire City of Richmond, often focusing on the neighborhoods within the surrounding area (i.e. many of the comments from the East End focus group pertain to the East End, and other areas throughout the City were discussed as well).

REVIEW OF NEEDS MAPS

The Richmond Connects team shared the weighted needs maps for five of the eleven Investment Need Categories established by Path to Equity, including:

- Bicycle (INC 1a)
- Pedestrian (INC 1b)
- Transit (INC 2)
- Safety/Security (INC 5)
- Maintenance (INC 7)

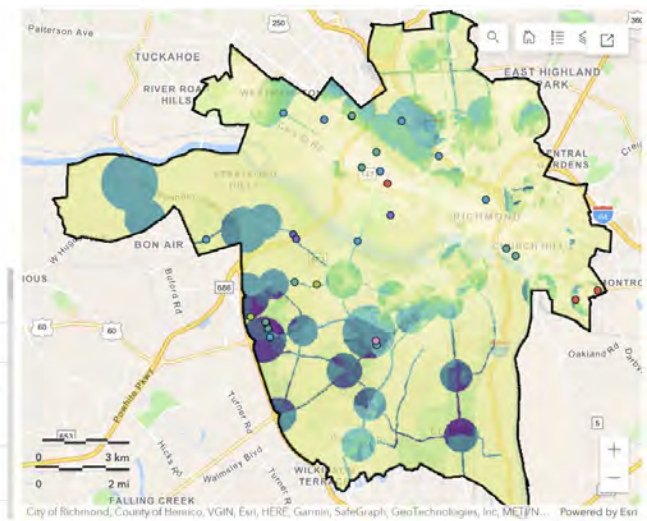
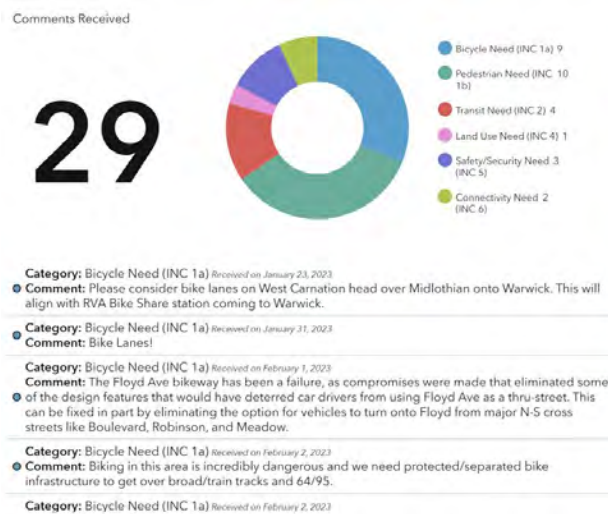


Figure 56. Dashboard of Comments Received on Initial Weighted Needs Maps

These maps represent the weighted needs from the analysis of data, but do not yet reflect public input.

Each of the weighted needs maps included a scale from low to high need. Participants viewed each map and reflected on their experiences. Facilitators asked participants to identify 1-3 things that made sense on the maps and 1-3 things they felt were missing from the maps.

KEY THEMES

Comments on the **bicycle** needs map included existing bike lanes that need enhanced protection, streets that need new bike infrastructure, a lack of bike infrastructure connectivity, and a lack of bike infrastructure overall in Southside.

Comments on the **pedestrian** needs map discussed certain intersections and roads that needed additional pedestrian crossing improvements and areas that need sidewalks.

Comments on the **transit** needs map talked about a lack of reliability in the bus system, a lack of connectivity to certain areas, bus stops lacking shelters and benches, a lack of frequency notably to and from the East End, certain intersections that need bus stops, and issues of accessibility with the bus.

Comments on the **safety/security** needs map mostly discussed pedestrian crossings, safe bus stops, issues with roundabouts, and traffic calming infrastructure along certain streets.

Comments on the **maintenance** needs map mostly revolved around certain roads that needed sidewalk improvements or have potholes.

The full list of comments for each focus group is available in each focus group summary report.

- [East End Focus Group Report](#)
- [Southside Focus Group Report](#)
- [Northside Focus Group Report](#)

Phase 3: Needs Reporting

SPRING 2023

Phase 3 of the Richmond Connects Engagement process occurred from March 2023 to May 2023. This phase focused on synthesizing and distilling the results from the data-driven analysis and public input into a succinct description of the top transportation needs.

This phase produced a series of 17 3-page needs summaries - one for each of the 17 unique Needs Areas. The 3-page summaries present the equity-based transportation needs that resulted from a year-long effort of analysis and public engagement.

These 3-pagers were shared with the public on the website and through email, text message, and social media communication.

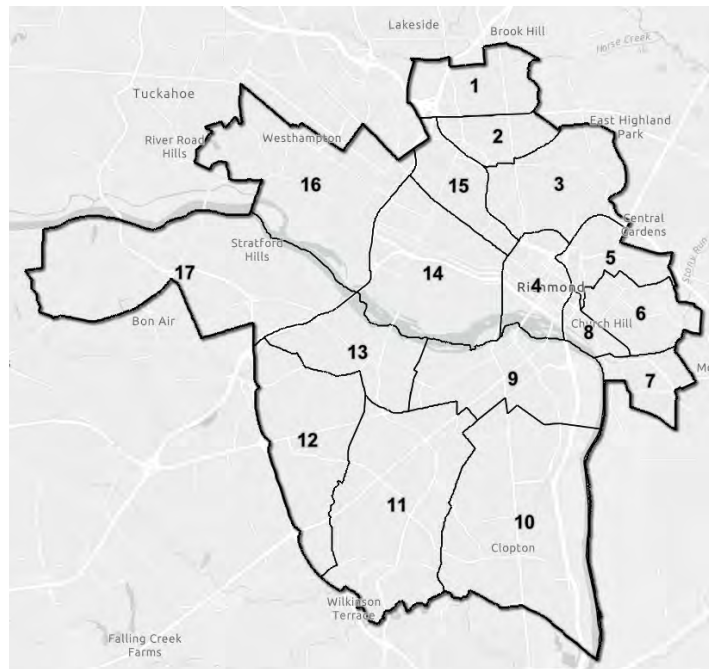


Figure 57. Map of the 17 Needs Areas in the City of Richmond. The Richmond Connects process defined 17 different areas of Richmond according to each area's equity-based transportation needs.

Neighborhood Needs

SEE THE TOP NEEDS FOR DIFFERENT AREAS OF RICHMOND!

Which areas are in greatest need of improvements?
Which streets are most important for improving access to opportunities and removing barriers?

The Richmond Connects team has completed a year-long effort to identify equity-based transportation needs. These needs are based on a rigorous analysis of data and robust community engagement. The needs describe areas and streets that are most important for improving equity in Richmond.

Click on the map below to see what equity-based needs are most important where you live!

Webpage sharing the needs identification results

EQUITY CONTEXT DOWNTOWN, INCLUDING GILPIN NEED AREA 4



Transportation investments will focus on improving climate resiliency for the most impacted communities.
- Path to Equity Policy Guide, Equity Factor 10

Equity needs in the greater Downtown area include several compounding factors.

Some Downtown neighborhoods have high concentrations of Communities of Concern, including **renters, low-income households, BIPOC individuals, and BIPOC renters.**

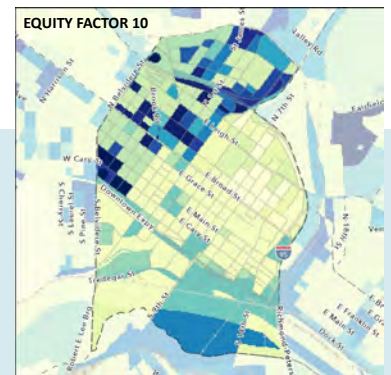
Certain neighborhoods in Downtown, such as **Gilpin and Jackson Ward**, were **redlined** and dissected by the construction of the interstate highways.

Still today, these areas have high concentrations of **low-income BIPOC** populations and low rates of **BIPOC home ownership.**

It's sometimes hard to **walk or bike** in these areas because it feels **unsafe** to do so.

Climate Resiliency

Roads in this area, especially around Jackson Ward, Monroe Ward, and Gilpin, are in a flood risk zone and **vulnerable to disruption due to climate change**, and there is a high density of Communities of Concern.



Areas shown in darker greens and blues are more prone to flooding and vulnerability to climate change. These areas also have high densities of residents in communities of concern.

Richmond Connects is a plan to improve equity in Richmond through transportation investments. Richmond Connects identifies transportation projects that will improve equity, as outlined in the 10 Equity Factor statements in the Path to Equity policy guide. These equity factor statements were written by the Path to Equity Advisory Committee, including community representatives.

Example Needs Summary for Needs Area 4

Phase 4: Draft Recommendations

SUMMER - FALL 2023

In Phase 4, the Richmond Connects team began developing recommendations to address the top needs. This work included cataloging thousands of past plan recommendations and analyzing thousands of prior survey results. Based on this data and input, the Richmond Connects team identified 7 to 16 recommendations to meet the top equity-based transportation needs in each of the 17 Needs Areas. The fourth phase of engagement presented these draft recommendations to the public.

PHASE 4 SURVEYS

The Richmond Connects team collected public input on the draft recommendations through 17 different surveys - one for each Needs Area.

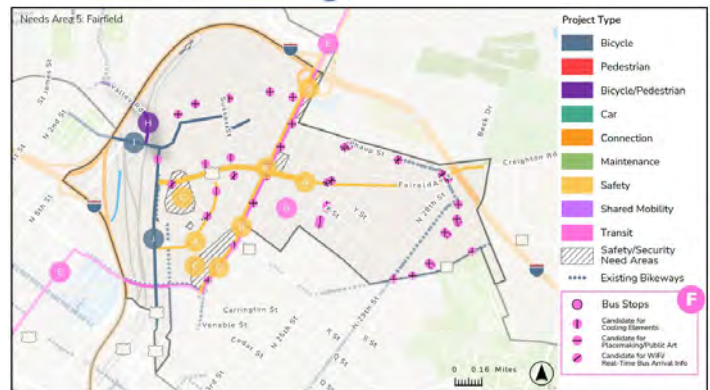
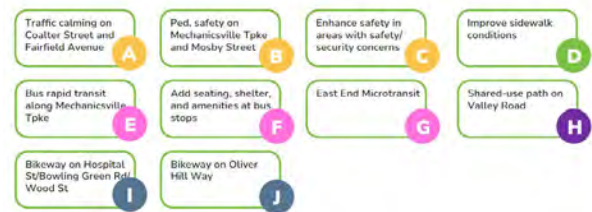
The surveys presented each recommendation in the Needs Area individually and asked, “Do you think this recommendation is a high priority?” Respondents could select either Yes or No. There was no limit on how many recommendations they could say yes to.

The surveys also presented all recommendations in the Needs Area and asked, “Which 5 recommendations do you think are the MOST important?” Respondents then selected five of the 7-16 recommendations.

The result of this survey effort are documented in the Phase 4 Survey Results Report.

PHASE 4 ENGAGEMENT ACTIVITIES

The vast majority of activities conducted in this Phase 4 of Engagement related to getting responses to the survey. Some engagement efforts directed Richmonders to the online survey via QR codes. However, in order to counter the fact that online surveys usually skew whiter and wealthier, much of the effort in this phase was given to reaching Communities of Concern, especially with paper surveys.



Example of the draft recommendations for Needs Area 5: Fairfield

The Richmond Connects Outreach Team went to dozens of locations throughout the city to amplify voices of Black, Hispanic, low-income, 65+, and other Communities of Concern. Engagement activities in this phase included:

- Collection of online survey responses
- Posting flyers at bus stops
- Social media posts
- Utility mailers
- Website updates
- E-blasts and Text Messages
- In-Person Pop-Up Engagement Events in Communities of Concern
- Dot-Voting Engagement at Gilpin and Southwood Community Days
- National Night Out
- Telephone Town Hall Meetings

Collection of Online Survey Responses

The Richmond Connects team used Survey123 on ArcGIS Online to collect the vast majority of survey responses. On the Richmond Connects website, a map dashboard showed all 140+ recommendations and the boundaries of the 17 Needs Areas. People could click on points, lines, and polygons of the recommendations to learn more about what the recommendation was in a pop-up. If one clicked on a pop-up of the Needs Area boundary, it linked them to that Area's survey. Respondents could take all 17 surveys if they wanted. On the left side of the dashboard, viewers could see the results of each survey to date.



Survey dashboard showing 140+ projects and Needs Area boundaries

The survey was live from July 15 to September 15, 2023 and received 8,591 responses. The majority of responses were for Needs Area 14 (Near West End); this was due to the media coverage about recommendation 14C – Close Cary Street to Cars – which was a very popular recommendation.

The following sections describe the engagement efforts that were used to drive people to the online survey and collect paper versions of the same survey.

Posting Flyers at Bus Stops

To reach more Richmonders, especially those in Communities of Concern, the team posted fliers at various GRTC stops around the city. The flyers showed a preview of the recommendations in the area:



Route 1 Corridor:

- #1297-Hull and Route 1
- #1402-R.S. Express Route 1 and Courtland
- #1414-Hopkins and Route 1
- #1396-Buford and Route 1
- #1390-Route 1 and Bellemeade

Broad Rock/Walmsley

- #36-James's food Store -Broad Rock and Kinsley
- #339-Broad Rock-Rock Creek Apartments
- #309-Second Baptist Church
- #327-Broad Rock-Family Dollar
- #311-Walmsley and Broad Rock

Midlothian/Germacn School Rd.

- #1757-Midlothian and Erich Rd.
- #1765-Roses Midlothian Tnpg
- #3819-German School and Midlothian
- #1776-Midlothian Tnpg
- #2307-Midlothian Tnpg

Chestnut/Highland Park

- #147-4th Ave and Rowland St
- #137-4th and Chestnut
- #544-Famiy Dollar on 4th Ave and Meadow bridge Rd.
- #1718-Meadowbridge Rd.-Boaz and Ruth

Fairfield

- #3591-22nd St. and Fairfield way
- #79-W and 22nd ST
- #1725 Mechanicsville and Fairmount Ave.
- #769-Coalter and Redd St.



Flyer posted at bus stop 327

Social Media Posts

The Richmond Connects team sent weekly e-blasts and social media posts to keep the general public abreast of progress during Engagement Phase 4. All were posted in order to get Richmonders to take the survey.



Example of a social media post for Phase 4 Engagement

Richmond Connects has identified projects and recommendations for improving transportation equity in all areas of #RVA! This has been a year-long process to analyze data and gather public input. Check out where you live, work or visit! Take our survey and tell us if you agree with these recommendations! By doing so, you can enter to win a \$100 gift card! #RichmondConnects #community #survey #yourvoicematters #transportation <https://rvaconnects.com/survey4/>

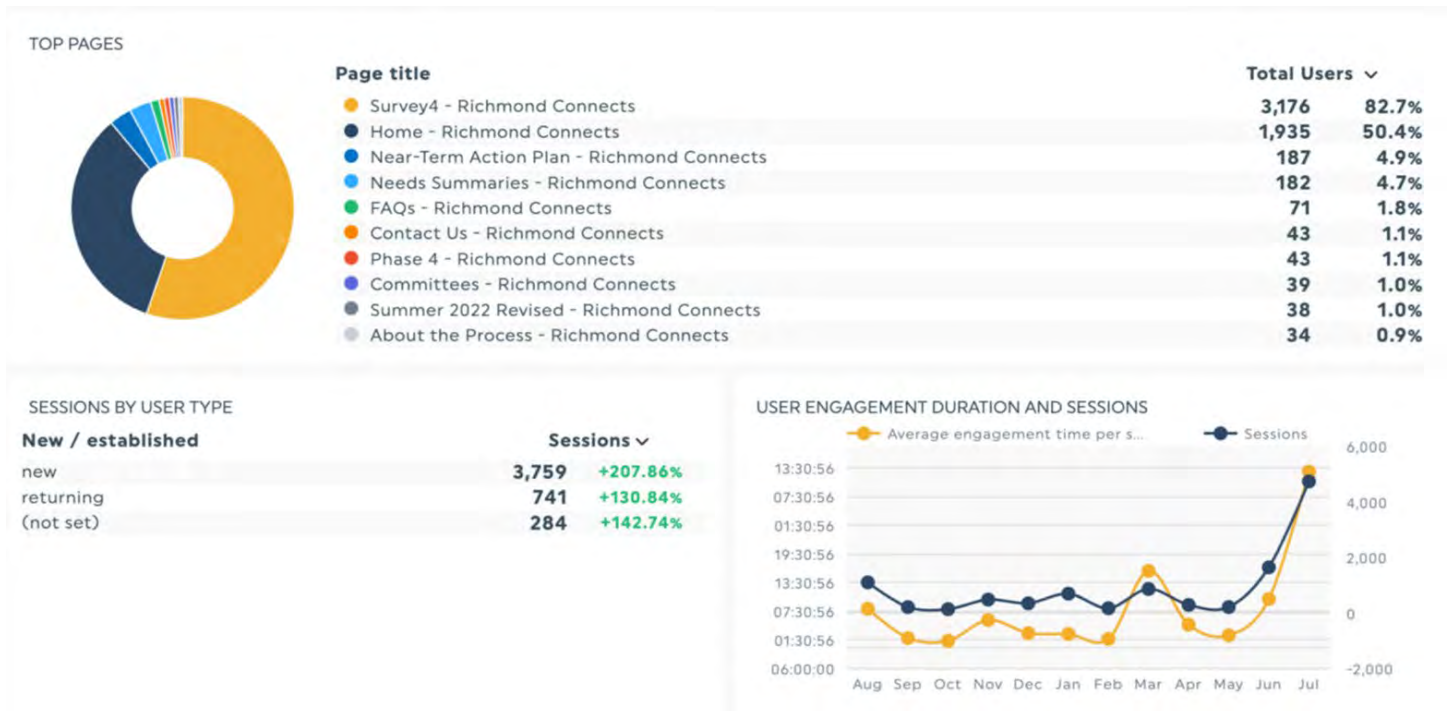
Utility Mailers

The Richmond Connects team designed English/Spanish buckslips to go inside of Richmonders' utility bills for July-August 2023.



Website Updates

On July 7, 2023 the top needs for the 17 areas of Richmond were added to a survey page along with direct links to each area’s survey and needs narrative. Meeting summaries and presentations were added for the Steering Committee and Advisory Board pages in July, September and October.



Website Stats Snapshot: Analytics show significant traffic and engagement on the survey page.

E-Blasts and Text Messages

The Richmond Connects team sent an e-blast to the Richmond Connects email distribution list on Friday July 14th, 2023 to 932 recipients.

A text message was sent to the 63 mobile phone numbers in the opt-in database on July 14, 2023 at 10:00 am with a 44% Click Rate:

Check out these projects and recommendations for improving transportation in RVA! Do you agree? Take our survey! [Slkt.io/YaP0](https://slkt.io/YaP0)



E-Blast sent to 932 recipients on July 14, 2023

In-Person Pop-Up Engagement Events in Communities of Concern

Beyond getting people to take the survey online, the Richmond Connects team recognized that surveys tend to skew toward communities that already have more political capital. In order to reach those traditionally-underrepresented groups, the Engagement Team met people in Communities of Concern where they already were, and brought paper versions of surveys for them to fill out. More than 600 surveys were obtained through this method.

The list below shows the various locations where the Richmond Connects team conducted in-person outreach. These locations were purposefully selected to reach residents in Communities of Concern, including BIPOC, persons in low-income households, seniors, youth and young adults, and persons whose primary language is not English.

- Area 1 – Northside Above Laburnum/Washington Park
 - John Marshall High School-4225 Old Brook Rd. (1)
 - CVS-1205 Bellevue Ave. (1)
 - Mary Scott Elementary-4011 Moss Side. (1)
 - Ruby Red Beauty Supply-Laburnham Ave. (1)
- Area 2 – Ginter Park
 - 711 Laburnham and Pilots Lane (2)
 - Family Dollar- 2917 North Ave. (2)
 - Manchu Chicken- 2914 North Ave. (2)
 - Hotchkiss Recreation Center-Brookland Park Boulevard. (2)
- Area 3 – Highland Park/Chestnut Hill
 - John Marshall High School-4225 Old Brook Rd.
 - Stop and GO-3701 Meadowbridge Rd. 23222
 - Family Dollar-1404 E. Brookland Park Boulevard.
 - Chicken Box-3000 3rd Ave-23222
 - Sunoco Gas Station-1401 E. Brookland Park Boulevard.
 - New York Fried Chicken-3000 Meadowbridge Rd.-23222
 - Battery Park-598 Overbrook Rd.-23222
 - Brooklyn Park Boulevard-Blocks 200-9W.
- Area 4- Downtown/Gilpin

- Kroger and Lombardy
- Beautiful Beauty Supply-1801 Chamberlayne Ave.-23222
- Monroe Park
- Tiger Mart-200 W. Hill St.-23220
- Jamaica House-416 W. Broad St.-23220
- Nurturing Minds Café-420 W. Broad St.-23220
- Herms Kitchen-315 N.2nd St.-23219
- Tenant Council Gilpin Court-1000 St. John St.
- Advance on Chamberlayne-2405 Chamberlayne Ave.-23222
- 711-Chamberlayne-2308 Chamberlayne Ave.-23222
- Main Library-101 E. Franklin St.-23219
- 2nd and Broad St.
- EDI (office of community wealth building)-900 E. Marshall St.

- McDonalds -17th and Broad St.
- Exxon Gas-17th and Broad St.
- Lulu's-21 N. 17th St.
- Farm Fresh-2320 E. Main St.
- CVS-2400 E. Main St.
- Virginia ABC-2525 E. Main St.
- Hall of Fades Barber Shop-2304 E. Main St.

Area 9- Manchester/Swansboro

- George Wythe High School-4314 Crutchfield St.-23235

Area 5 – Fairfield

- Peter Paul Block Party-1708 N.22nd st-23223
- Lucks Field-1403 Nth 20th St.-23223
- Mosby Garden Wednesday's -1530 Coalter St.-23223
- Mosby Community Day-1536 Coalter St-23223
- Armstrong Highschool- 2300 Cool Lane-23223
- Mosby Tenant Council-1543 Coalter St.-23223
- 804 Market-1601 Mechanicsville Tnpk.-23223
- Fairfield Elementary School-2510 Phaup St.-23223

Area 6 – Church Hill/Nine Mile

- Market on 25th St-1330 N 25th St,-23223
- Library 25th St-1200 N. 25th-23223
- Mo's Nine Mile-2905 Nine Mile Rd.-23223
- EDI (Office of Community Wealth Building) 701 N 25th St.

Area 7- Fulton

- Artisan Hill Apartments-1021 Carlisle Ave.-23231
- NRC-1519 Williamsburg Rd.-23231
- Krispes-1625 Williamsburg rd-23231
- Ms. Girles-4809 Parker St.-23231
- Blue Atlas Restaurant & Market-23231
- Triple Crossing Beer Fulton-5203 Hatcher St.-23231
- Ellis Auto Service-1722 Williamsburg Rd.-23231
- Rise Academy-2010 Carlisle Ave.-23231
- Ashley Oaks and Woodcraft Apartments-Jennie Scher Rd.-23231 (low-income housing)

Area 8- Shockoe

- Metropolitan Business league-1717 E. Cary St
- Blacker the Berry Juice Bar-10 Nth 18th St.



Pop-up at Richmond Outlet of Goodwill of Central and Coastal Virginia in Needs Area 12

America's Night Out Against Crime is a national event where neighborhoods throughout the city host events like block parties, cookouts, parades, and more, with police and first responders. The Richmond Connects team attended the National Night Out events in both Northside and Southside on August 1, 2023, to get people to fill out paper surveys.

Telephone Town Hall Meetings

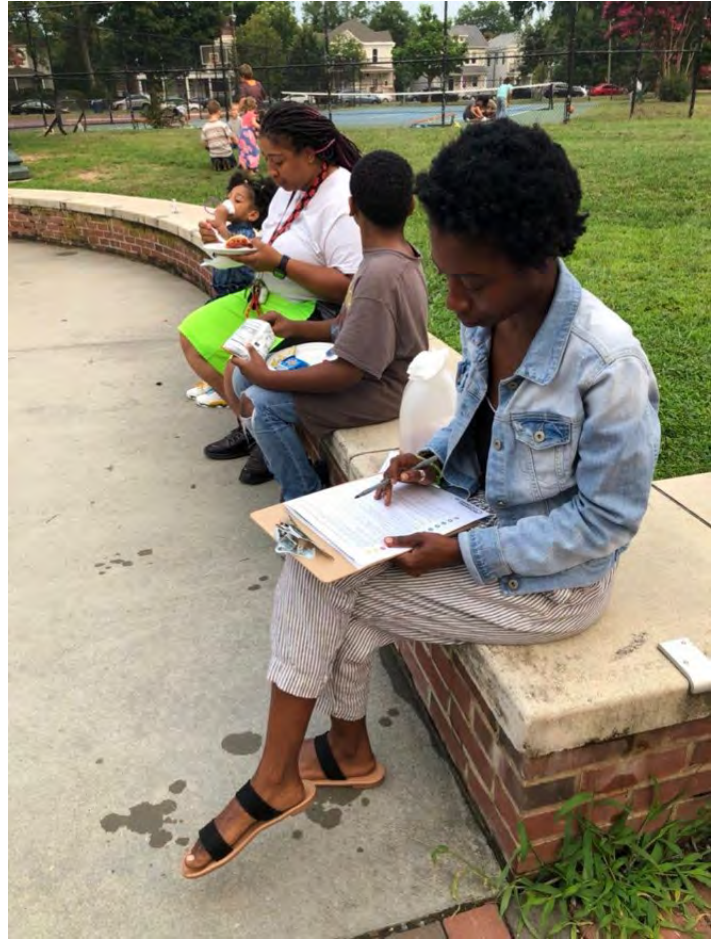
The Richmond Connects team held two Telephone Town Hall Meetings in August 2023:

- Monday, August 7, 2022, 6:00 PM to 7:00 PM
- Tuesday, August 8, 2022, 12:00 PM to 1:00 PM

The Telephone Town Hall Meetings dialed out to the entire City of Richmond. Residents received phone calls inviting them to join the Telephone Town Hall Meeting. No internet connection was required. Participants participated directly from their phone. The meetings were available in English and Spanish.

On the Monday August 7th evening meeting, over 43,000 phone numbers of Richmonders were dialed out to, and over 10,000 people joined the meeting. At peak participation, there were almost 2,800 people in the meeting at one time.

On the Tuesday August 8th midday meeting, over 8,600 people joined the meeting. At peak participation, there were over 1,800 people in the meeting at one time.



People filling out surveys at the Northside National Night Out

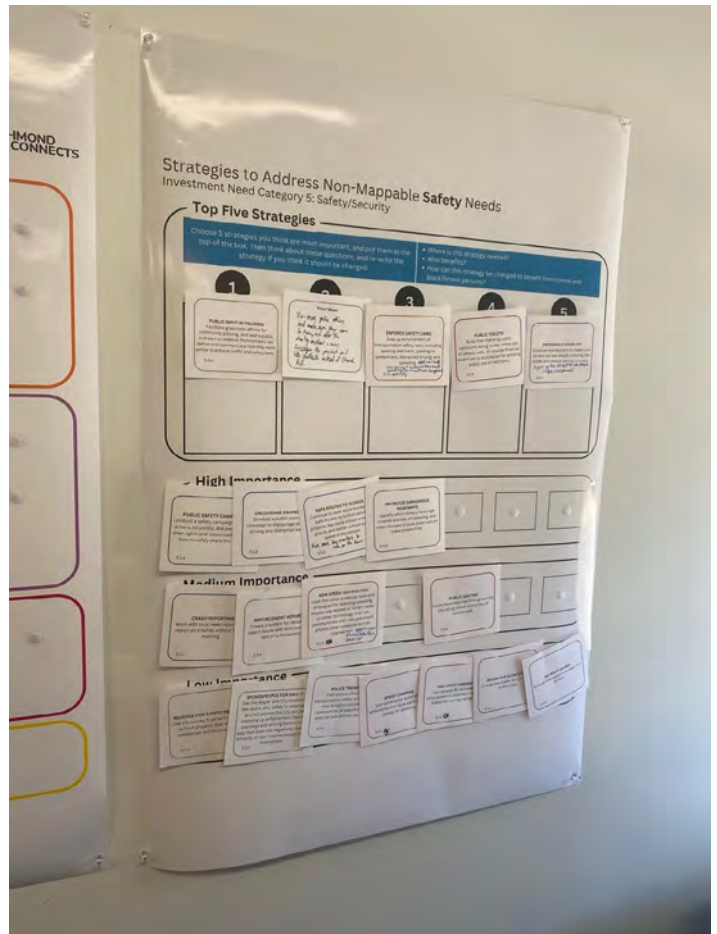
FOCUS GROUP

The Focus Group was conducted on September 15, 2023, with 21 Richmond residents that represented different Communities of Concern like under 25, over 65, Black, and low-income, among others. They were divided into two groups. Each group looked at non-mappable strategies to address needs within each of the 11 Investment Need Categories. They could categorize strategies as high, medium, or low priority, or could put a strategy in their top 5 most important. They could change the language of existing strategies or add their own ideas.

The full documentation of the focus group meeting, including results, is available in the [Focus Group Summary report](#).



Focus group participants looking at strategies for INC 4: Land Use



"After" poster with prioritized strategies about INC 5: Safety/ Security

APPENDIX E: SUMMARIES FOR EACH NEEDS AREA

Needs Area 1: Northside Above Laburnum

Needs Area 2: Ginter Park

Needs Area 3: Highland Park/Chestnut Hill

Needs Area 4: Downtown

Needs Area 5: Fairfield

Needs Area 6: Church Hill/Nine Mile

Needs Area 7: Fulton

Needs Area 8: Shockoe

Needs Area 9: Manchester/Swansboro

Needs Area 10: Southside Route 1 Corridor

Needs Area 11: Broad Rock/Walmsley

Needs Area 12: Midlothian/German School Road

Needs Area 13: Westover Hills

Needs Area 14: Near West End

Needs Area 15: Greater Scott's Addition/Carver

Needs Area 16: Far West End

Needs Area 17: Huguenot

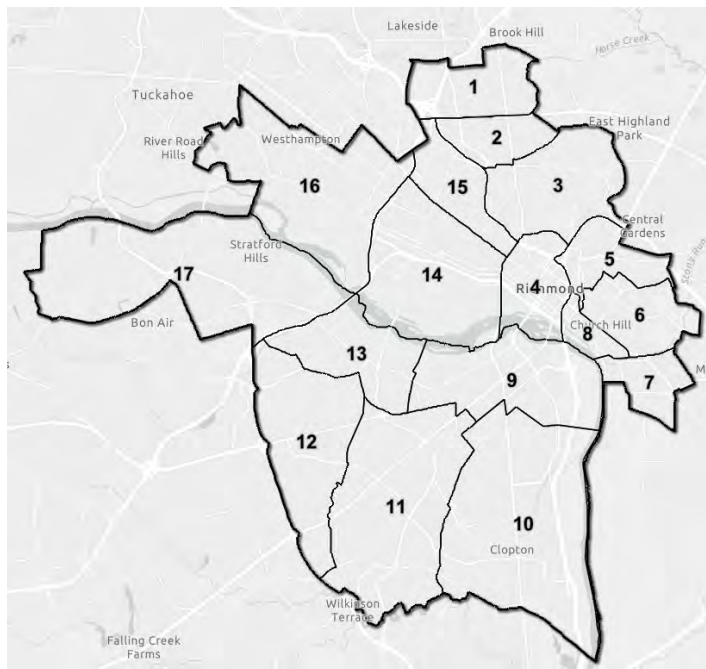
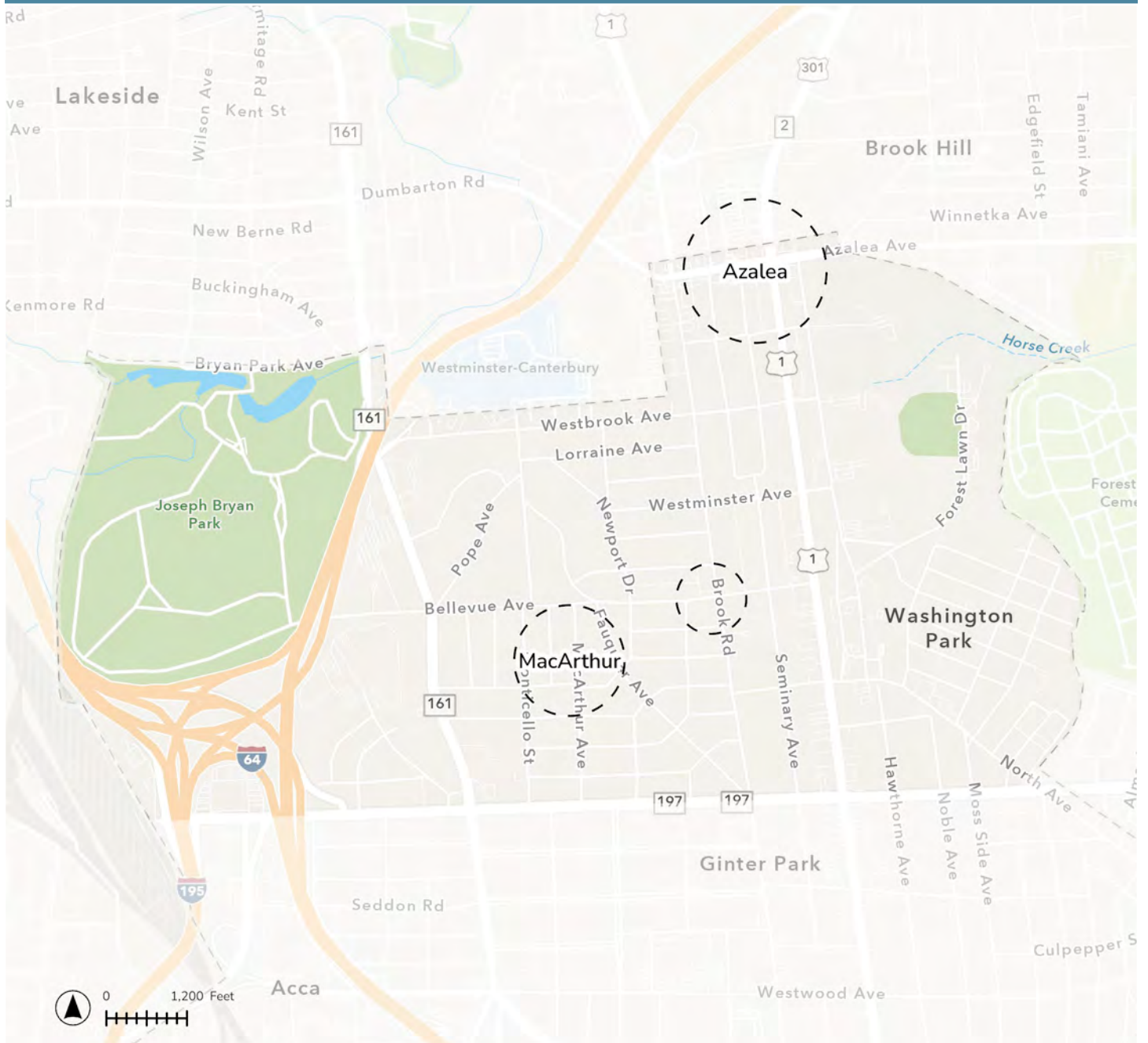


Figure 58. Needs Areas

NEEDS AREA SUMMARIES

1: Northside Above Laburnum



TOP TRANSPORTATION NEEDS

NORTHSIDE ABOVE LABURNUM AVE

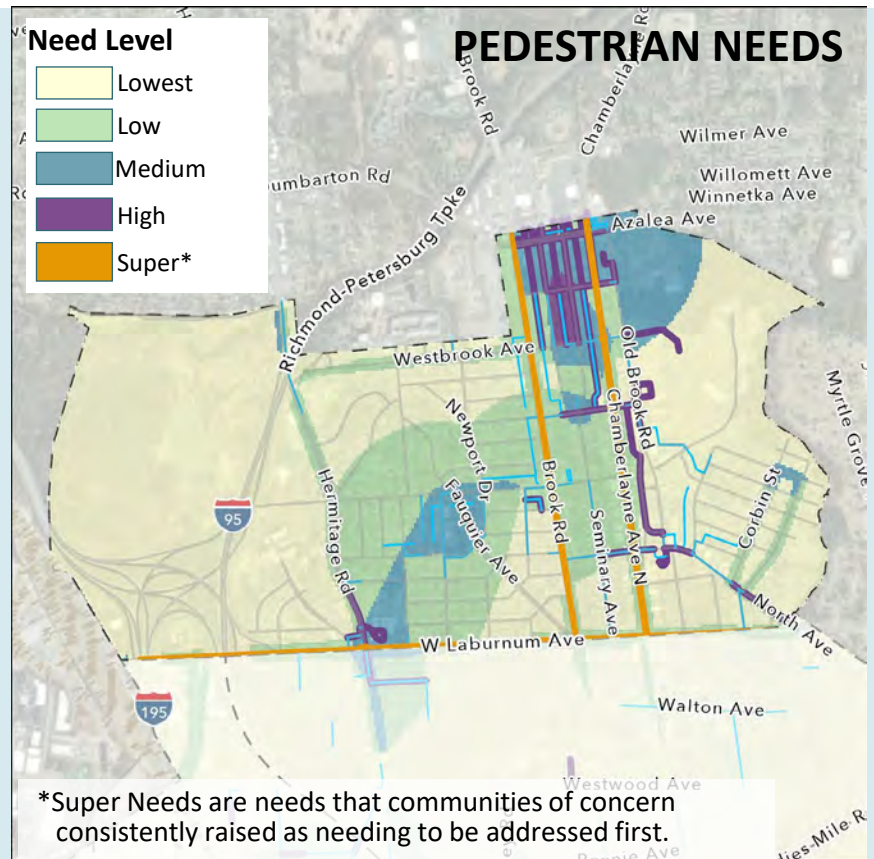
NEED AREA 1



TOP PEDESTRIAN NEEDS

- Chamberlayne, Laburnum Ave, and Brook Rd feel unsafe. These roads have high-speed traffic, and it's hard to cross the street.
- Pedestrian needs are highest in and near the Azalea neighborhood node.
- Walk trips from Communities of Concern often use North Ave, Old Brook Rd, Old Brook Cir, and Westminster Ave to get to Ginter Elementary, Henderson Middle, and John Marshall High schools.

Pedestrian needs here are generally lower than several other areas of Richmond.



TOP BICYCLE NEEDS

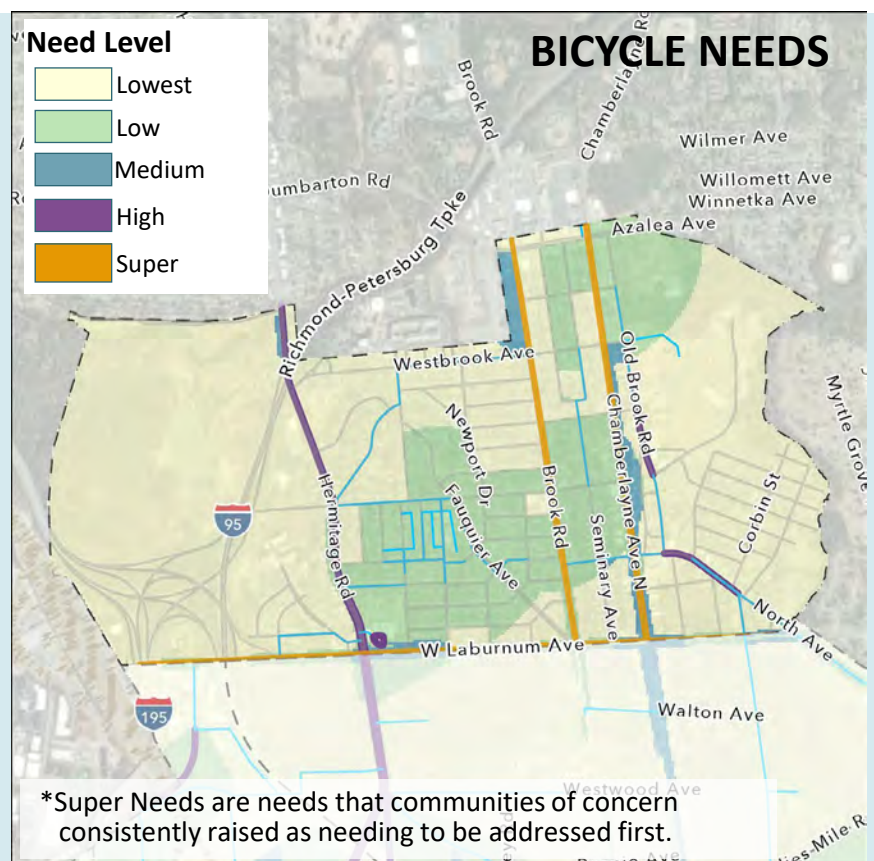
Bike trips from Communities of Concern use these streets the most:

- Hermitage Rd
- North Ave
- Old Brook Rd

“Super” needs from public input:

- *Riding a bike on Brook Rd feels unsafe because of speeding.*
- *Riding a bike on Chamberlayne Ave feels unsafe because of speeding.*

Bicycle needs here are generally lower than several other areas of Richmond.



TOP TRANSPORTATION NEEDS

NORTHSIDE ABOVE LABURNUM AVE

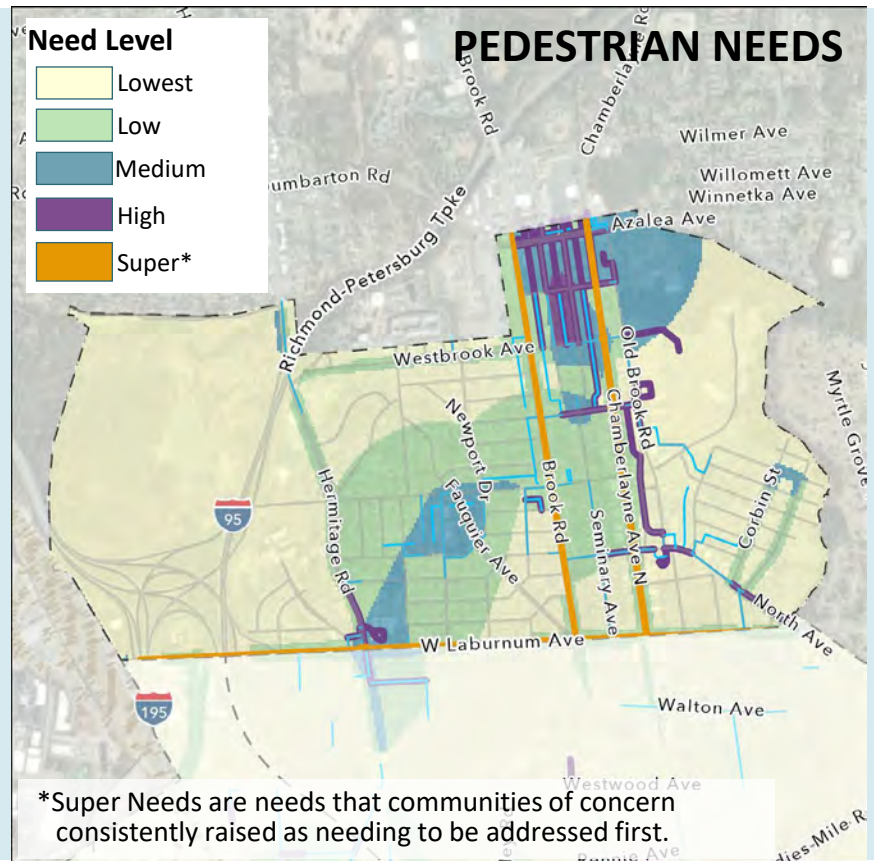
NEED AREA 1



TOP PEDESTRIAN NEEDS

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Pedestrian needs here are generally lower than several other areas of Richmond.



TOP BICYCLE NEEDS

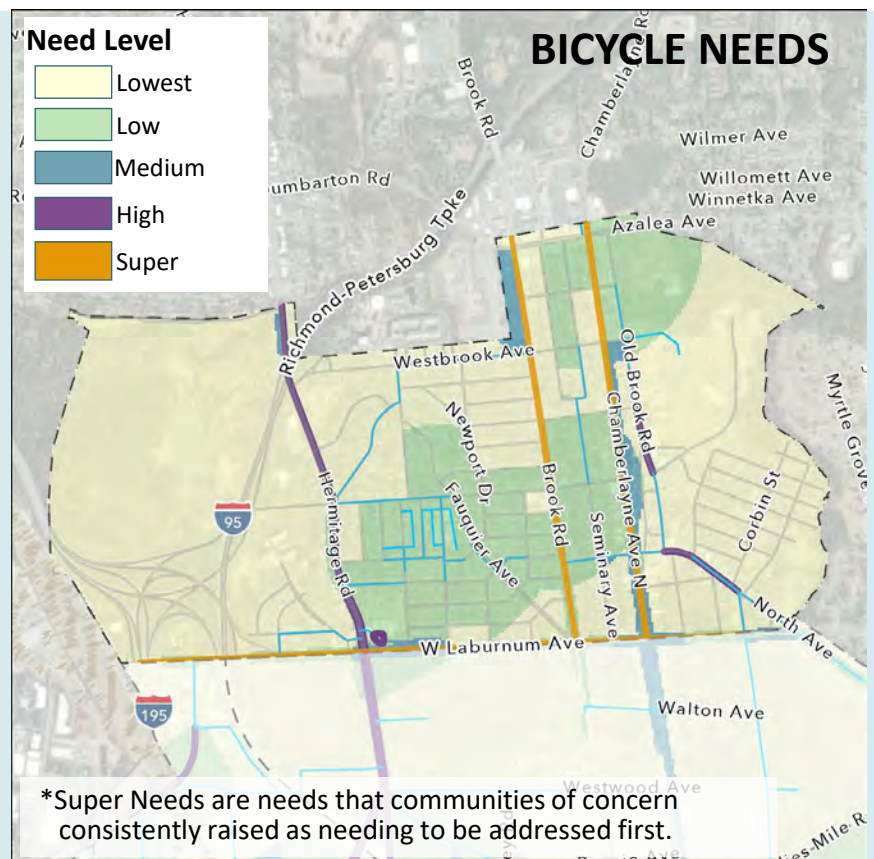
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TOP TRANSPORTATION NEEDS

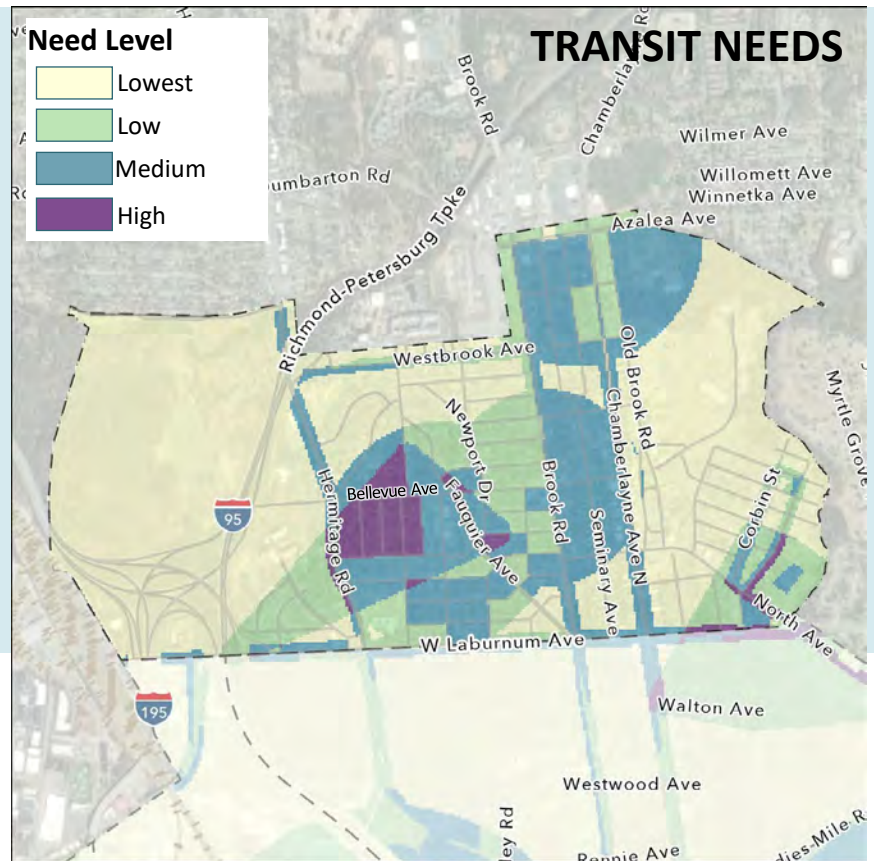
NORTHSIDE ABOVE LABURNUM AVE

NEED AREA 1



TOP TRANSIT NEEDS

- Transit needs in this area are highest near Hermitage Rd and Bellevue Ave
- Buses are unreliable – on-time performance here not satisfactory
- Lack of shelters and benches at bus stops
- Pulse BRT does not serve Northside

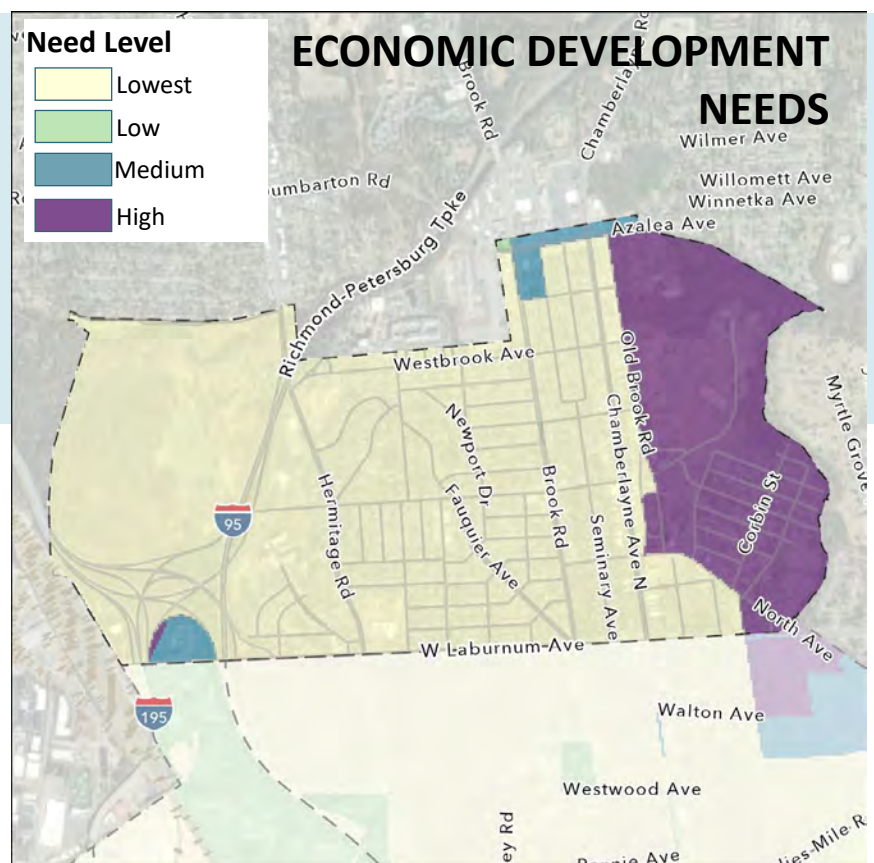


ECONOMIC DEVELOPMENT

High economic development needs in Washington Park east of Old Brook Rd are mostly due to low market value of homes.

Other high needs include:

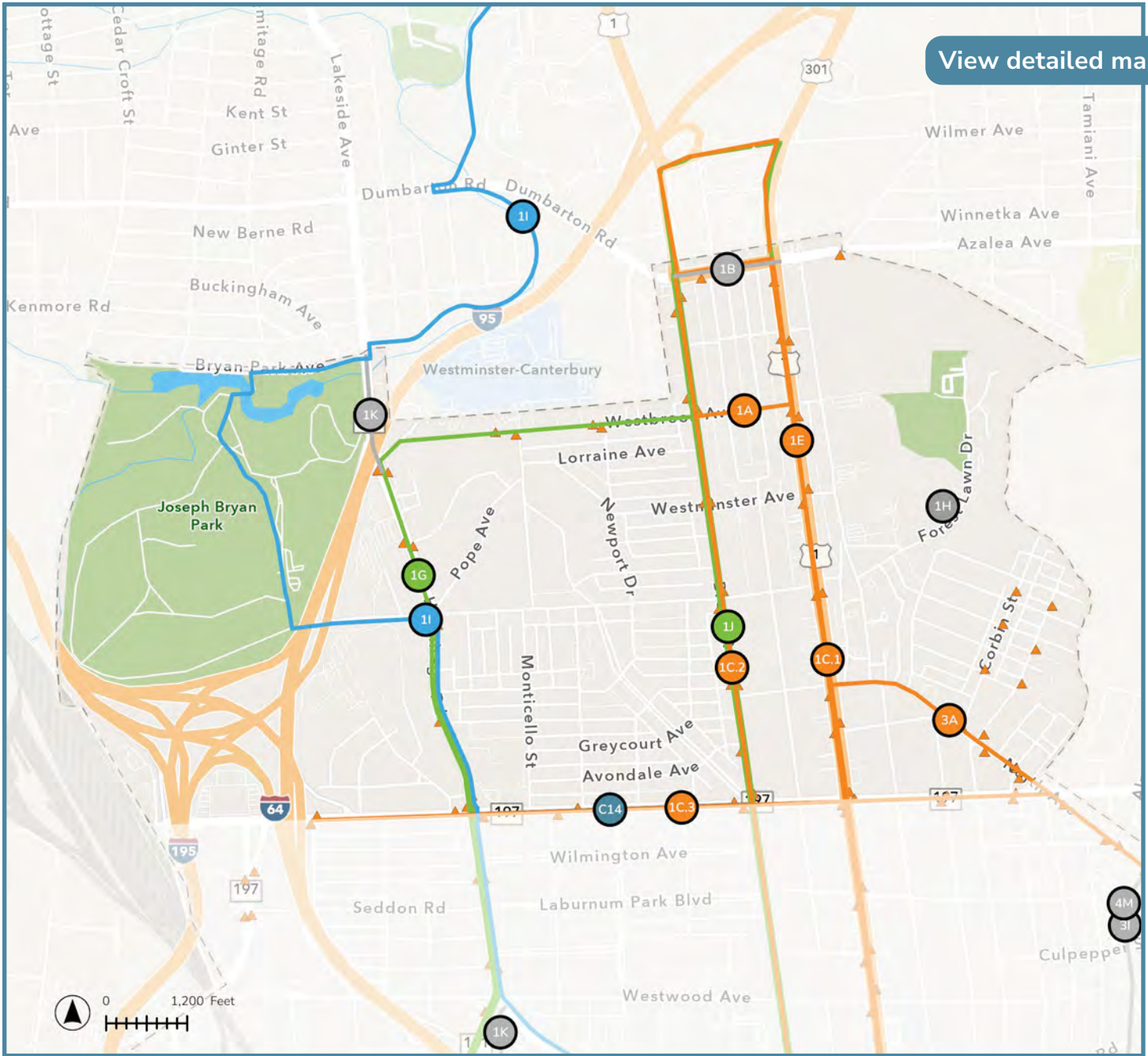
- Safety/Security – High number of serious crashes on Chamberlayne Ave
- High Maintenance Needs at:
 - Brook Rd at Azalea Ave
 - Brook Rd at Westbrook Ave





NEEDS AREA SUMMARIES

1: Northside Above Laburnum Project Recommendations



[View detailed map](#)

- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

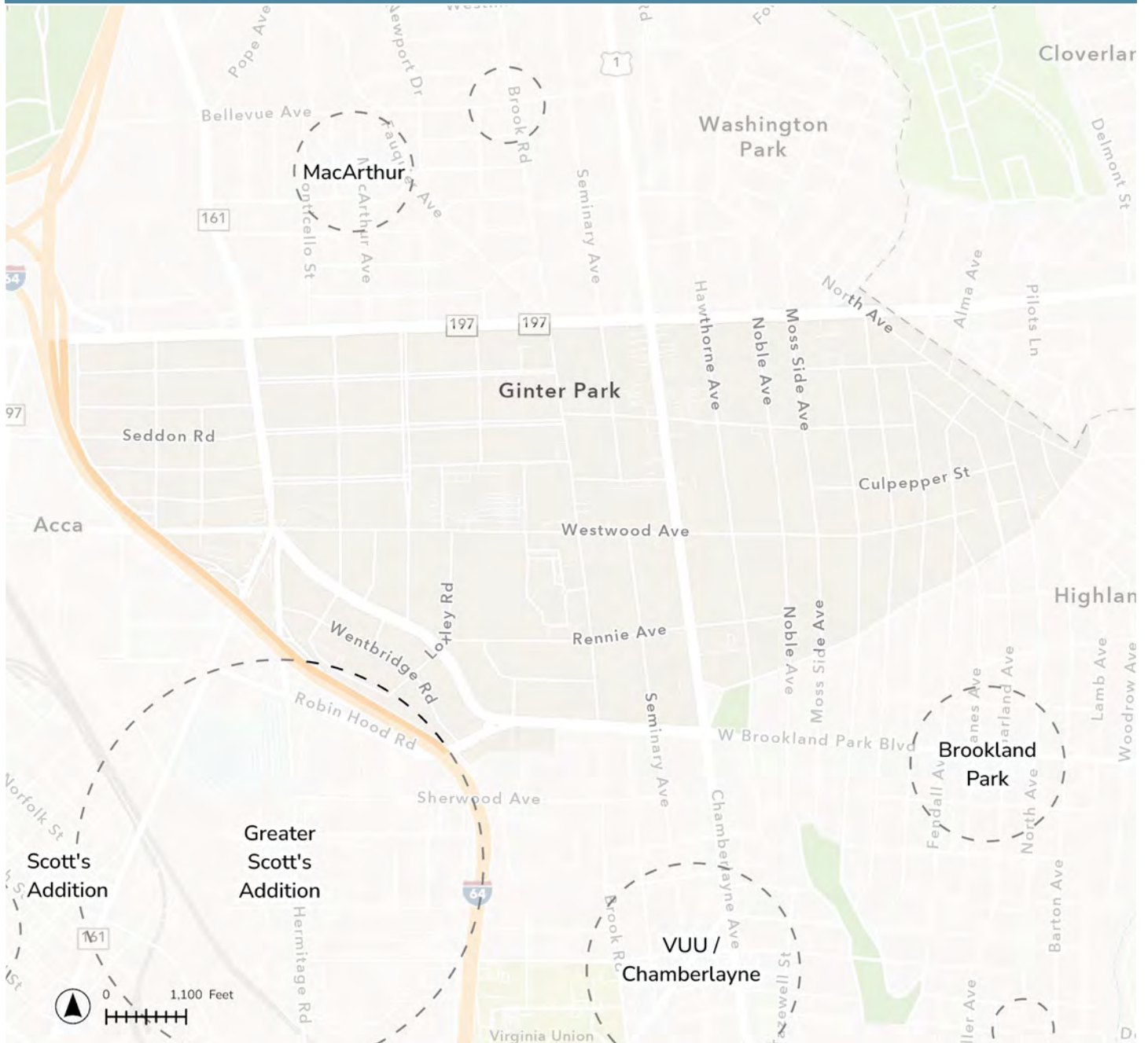
1: Northside Above Laburnum Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|------|---------------------|---|--|---------------|------|
| 1C.3 | Priority Projects | Laburnum Avenue Safety Improvements | High (\$\$\$) | 5.0 | 213 |
| 1C.1 | Priority Projects | Chamberlayne Avenue Pedestrian Safety Improvements | High (\$\$\$) | 4.9 | 215 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | High (\$\$\$) | 4.9 | 217 |
| 3A | Priority Projects | North Avenue Pedestrian Safety Improvements | Moderate (\$\$) | 4.8 | 227 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 1A | Priority Projects | Westbrook Avenue Pedestrian Improvements | Low (\$) | 4.1 | 270 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Very High (\$\$\$\$) | 3.9 | 280 |
| 1I | Priority Completion | Fall Line Trail | n/a | 2.6 | 295 |
| C14 | Other Completion | Laburnum Median Improvements | n/a | n/a | 298 |
| 1J | Shorter Term | Brook Road Bike Lanes Protection | Low (\$) | 3.4 | 304 |
| 1G | Shorter Term | GRTC Route 14 Increased Frequency | Moderate (\$\$) | 3.4 | 304 |
| 1B | Longer Term | Azalea Avenue Streetscape Improvements | Low/Moderate (\$/\$\$) | 3.6 | 307 |
| 1K | Longer Term | Hermitage Road Buffered Bike Lanes | Low (\$) | 2.9 | 309 |
| 1H | Longer Term | Ridesharing Vouchers | n/a | 3.2 | 308 |



NEEDS AREA SUMMARIES

2: Ginter Park



EQUITY CONTEXT

GINTER PARK

NEED AREA 2



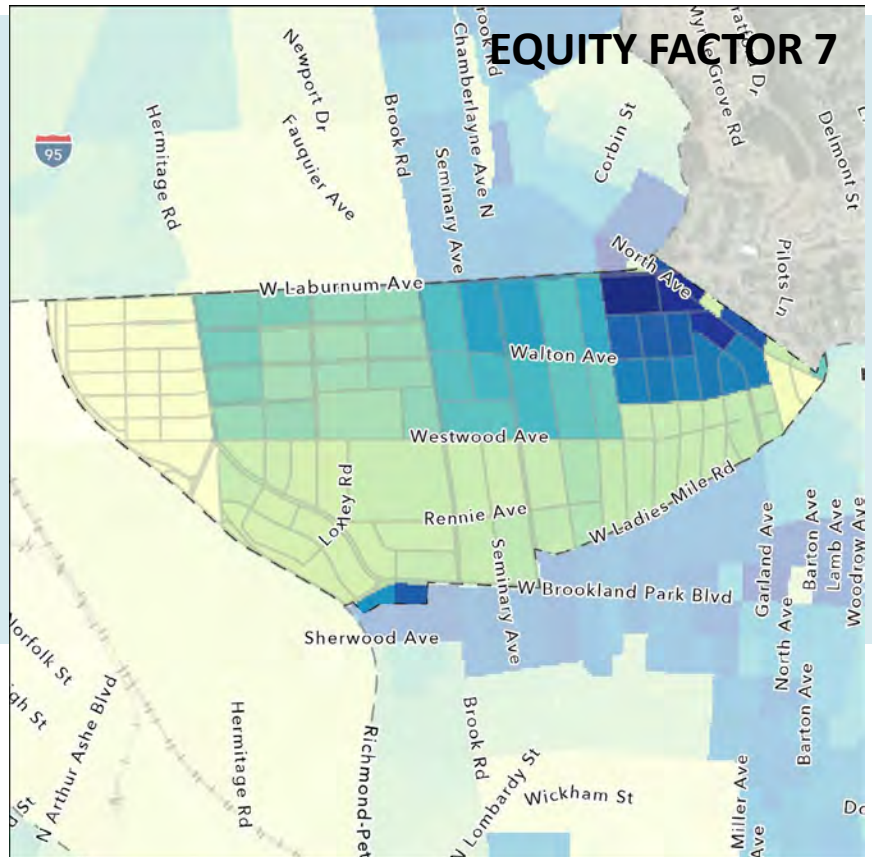
Compared to other areas in Richmond, there are fewer transportation inequities in Ginter Park.

Transportation inequities are primarily located in the northeastern parts of this area, where there are higher densities of Communities of Concern, including **BIPOC individuals, low-income households, at-risk youth, and individuals with mobility issues.**

Quality of Transit Service

In the northeastern parts of Ginter Park with the highest densities of Communities of Concern, the **lack of benches and shelters at bus stops** degrades the quality of transit service.

Some roads in the northeastern parts of Ginter Park are **in a flood risk zone** and vulnerable to disruption due to climate change.



Areas shown in dark blue are where transit service frequency or reliability issues degrade access for destinations relevant to communities of concern.

Transportation investments will improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for communities of concern.

- Path to Equity Policy Guide, Equity Factor 7

TOP TRANSPORTATION NEEDS

GINTER PARK

NEED AREA 2



TOP PEDESTRIAN NEEDS

- Chamberlayne, North Ave, Laburnum Ave, and Brook Rd feel unsafe. High-speed traffic and hard to cross the street
- The intersection at Laburnum Ave and Hermitage Rd feels unsafe
- “Super” needs from public input:
 - *Traffic calming needed on streets like Chamberlayne Ave, Laburnum Ave, and Brook Rd*

Pedestrian needs here are generally lower than several other areas of Richmond.

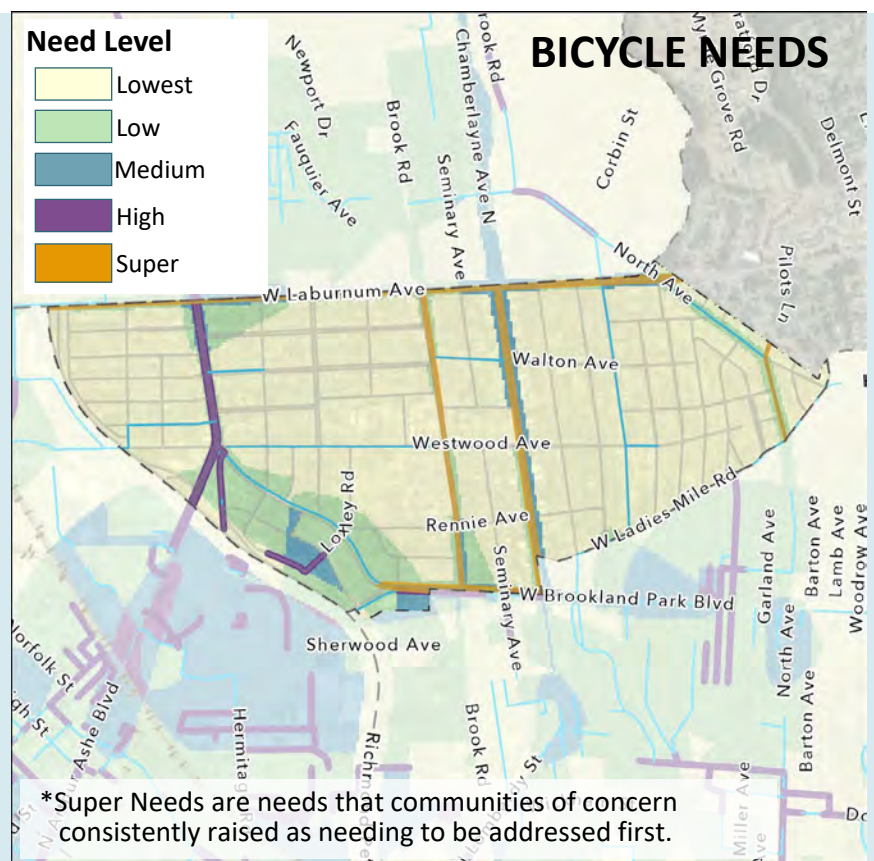


*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP BICYCLE NEEDS

- Bike trips in these areas use Hermitage Rd the most
- Riding a bike on Chamberlayne Ave feels unsafe because of high-speed traffic
- “Super” needs from public input:
 - *Riding a bike on streets like Brookland Park Blvd, Laburnum Ave, and Brook Rd feels unsafe because of speeding*

Bicycle needs here are generally lower than several other areas of Richmond.



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS

GINTER PARK

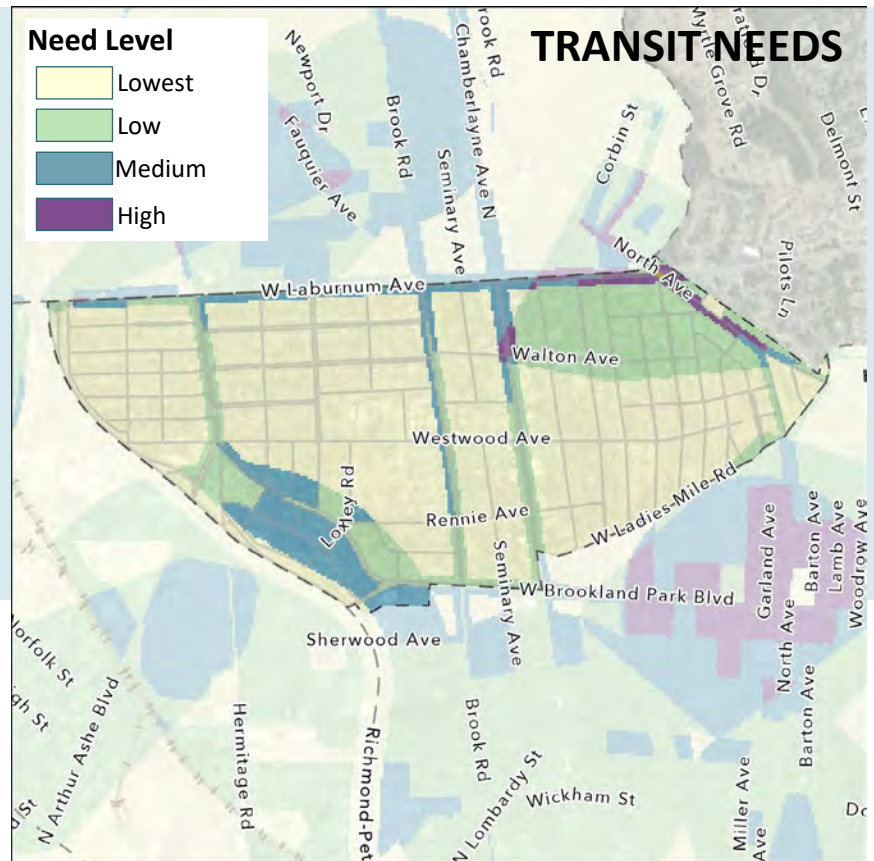
NEED AREA 2



TOP TRANSIT NEEDS

- Transit needs in this area are highest on Laburnum Ave and North Ave
- Lack of benches and shelters at bus stops
- Pulse BRT does not serve Northside

Transit needs here are generally lower than several other areas of Richmond.

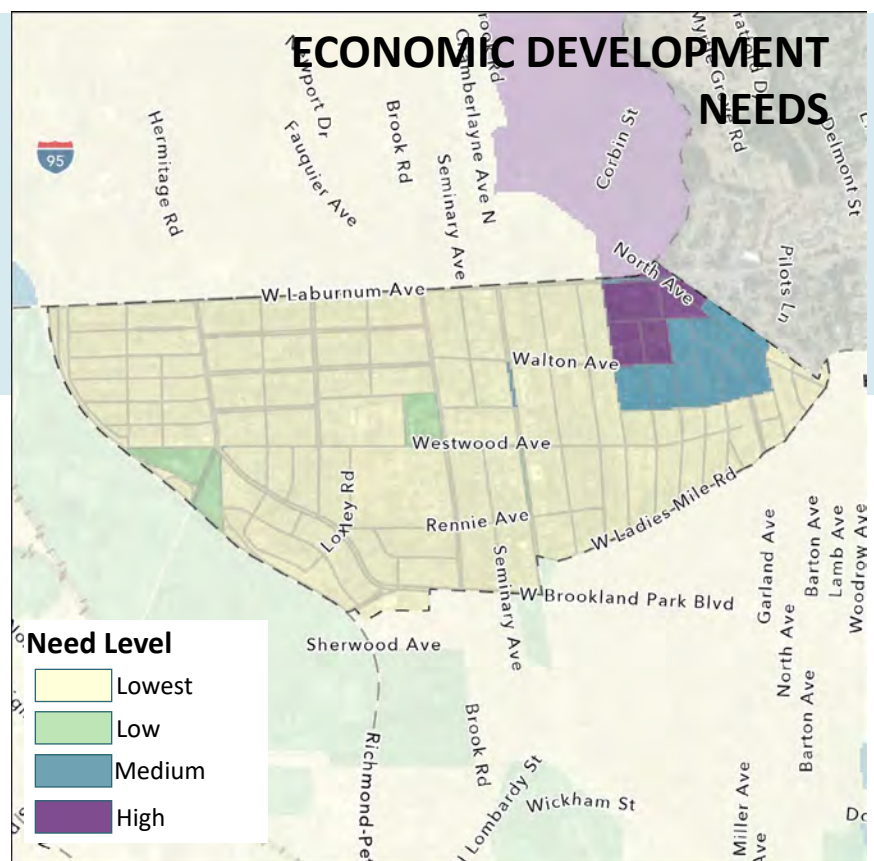


ECONOMIC DEVELOPMENT

High economic development needs east of Moss Side Ave and north of Culpeper St are mostly due to low market value of homes.

Other high needs for this area include:

- Safety/Security – High number of serious crashes on Chamberlayne Ave and on Arthur Ashe Blvd
- High Maintenance Needs at:
 - Laburnum Ave at Chatham Rd
 - Brook Rd at Wilmington Ave

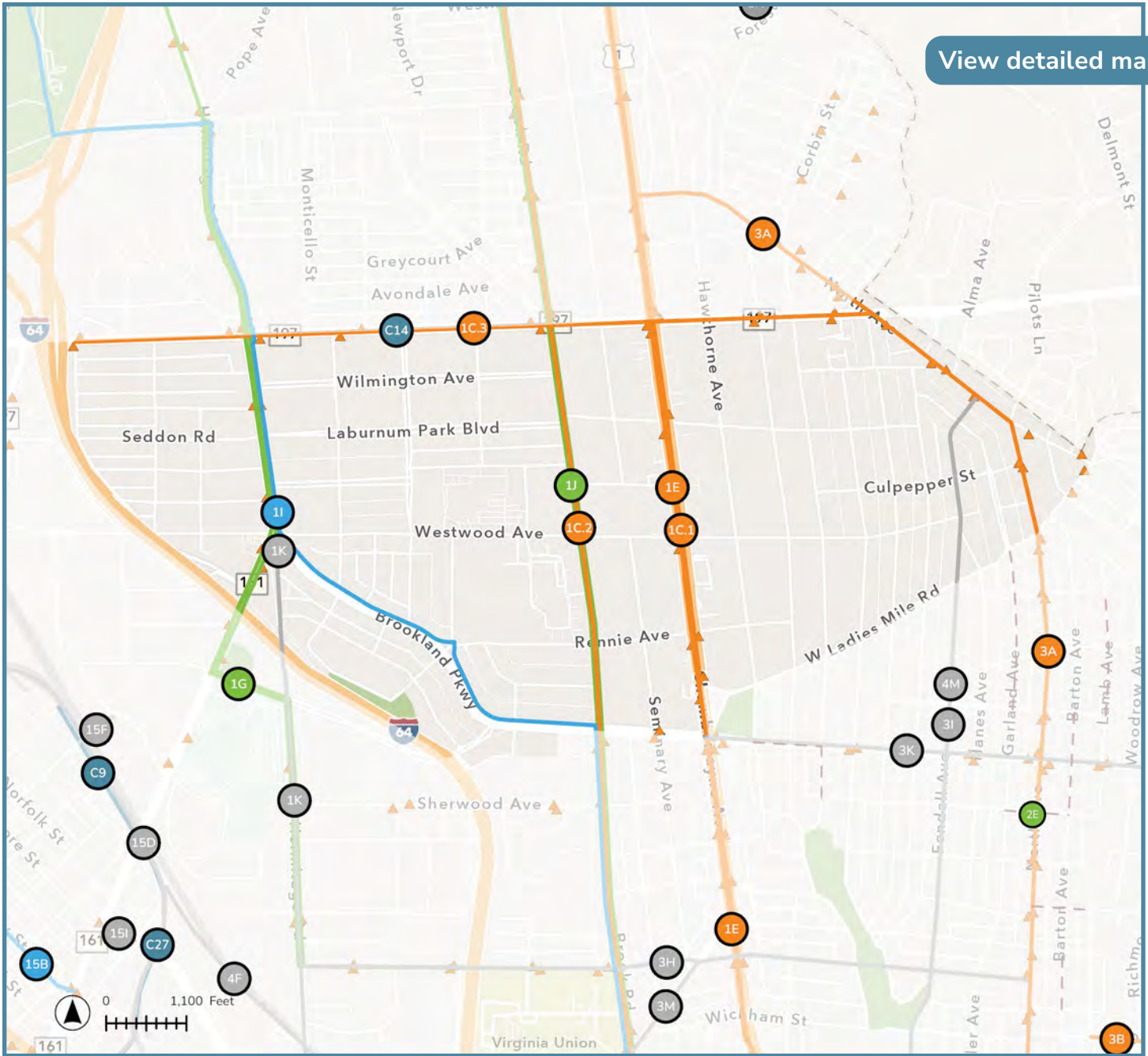




NEEDS AREA SUMMARIES

2: Ginter Park Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

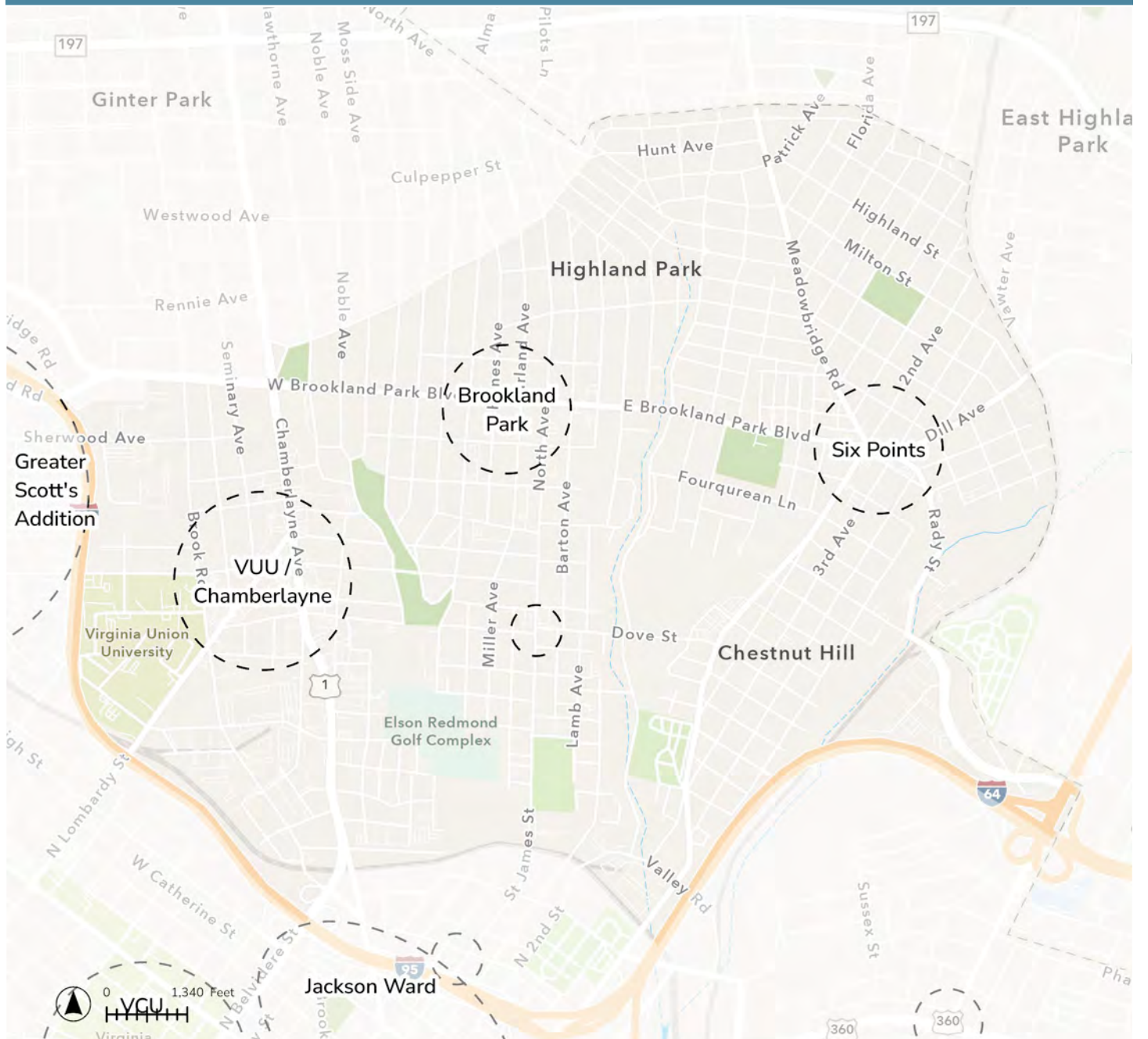
2: Ginter Park Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|-------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Moderate (\$\$) | 2.5 | 286 |
| 17F | Priority Projects | Huguenot Road Bikeway | Moderate (\$\$) | 3.3 | 288 |
| C29 | Other Completion | Cherokee Road Roadside Safety Improvements | n/a | n/a | 301 |
| 17G | Longer Term | Cherokee Road Bikeway | Very High (\$\$\$\$) | 1.6 | 311 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | High (\$\$\$) | 2.2 | 310 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | High (\$\$\$) | 1.6 | 311 |
| 17B | Longer Term | Powwhite Greenway | High (\$\$\$) | 1.6 | 311 |



NEEDS AREA SUMMARIES

3: Highland Park/Chestnut Hill



EQUITY CONTEXT

HIGHLAND PARK/ CHESTNUT HILL

NEED AREA 3



Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVAGreen 2050.

- Path to Equity Policy Guide, Equity Factor 8

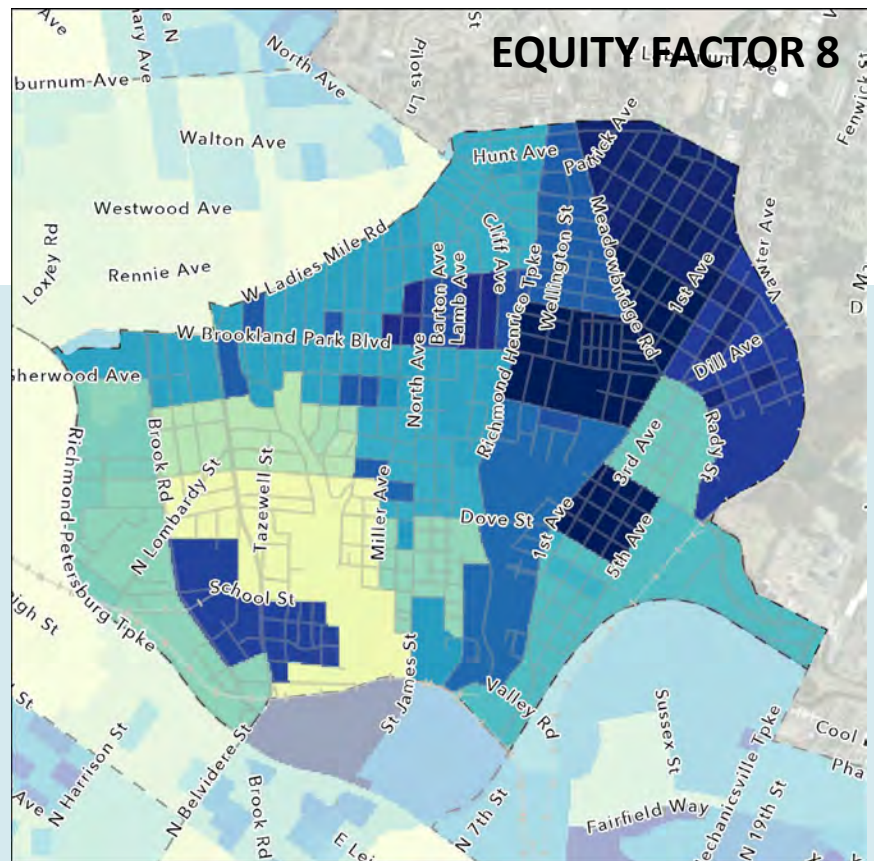
Equity needs in the Highland Park/Chestnut Hill area include several compounding factors.

Portions of Highland Park and Chestnut Hill have high concentrations of Communities of Concern, including **BIPOC residents, BIPOC renters, at-risk youth, low-income households, and persons with limited mobility.**

It's hard to get to the places you most need to because **transit service is either infrequent or unreliable**, especially for Communities of Concern.

Social Vulnerability to Climate Change

Some neighborhoods in Highland Park and Chestnut Hill are more **vulnerable to the effects of climate change**, including flood risk, high heat vulnerability, and urban heat island effect.



Areas shown in dark blue are more prone to flooding during intense precipitation events, have high heat vulnerability, experience urban heat island effect, and have a high density of Communities of Concern.

Some roads in this area are **in a flood risk zone** and vulnerable to disruption due to climate change, and there is a high density of Communities of Concern.

TOP TRANSPORTATION NEEDS

HIGHLAND PARK/ CHESTNUT HILL

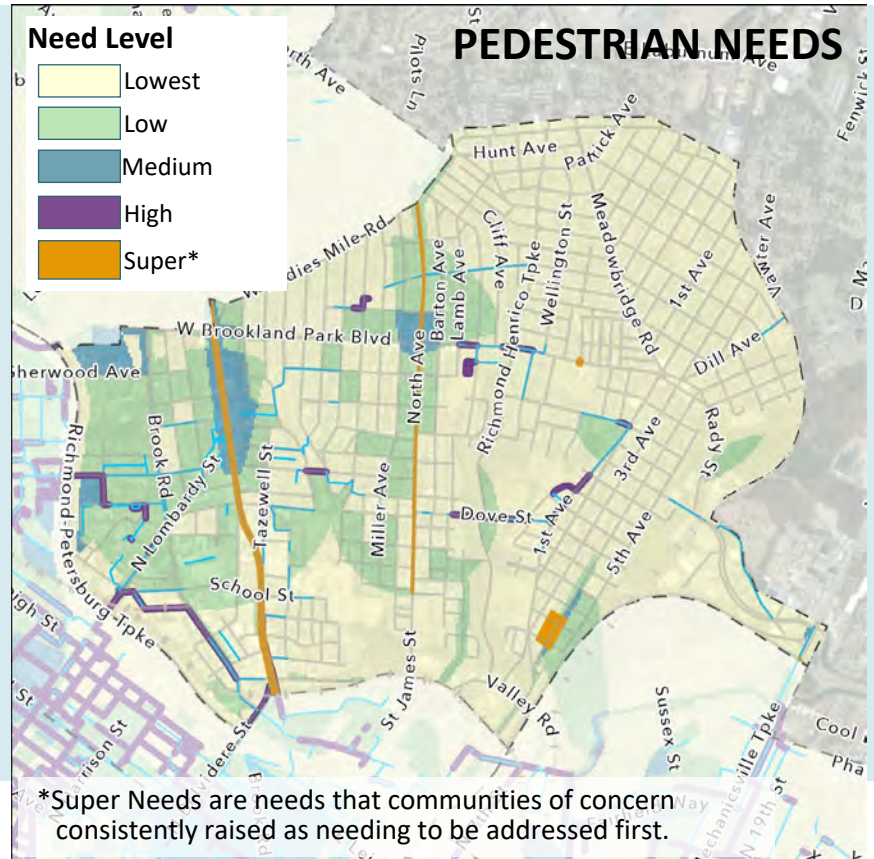
NEED AREA 3



TOP PEDESTRIAN NEEDS

- Chamberlayne, North Ave, and Brook Rd feel unsafe. High-speed traffic and hard to cross the street.
- Dove Street, 1st Ave near Overby-Sheppard Elementary School
- Brook Rd, School St connecting VUU to Gilpin and Downtown
- Poor sidewalk condition throughout Highland Park

Pedestrian needs here are generally lower than several other areas of Richmond.



TOP BICYCLE NEEDS

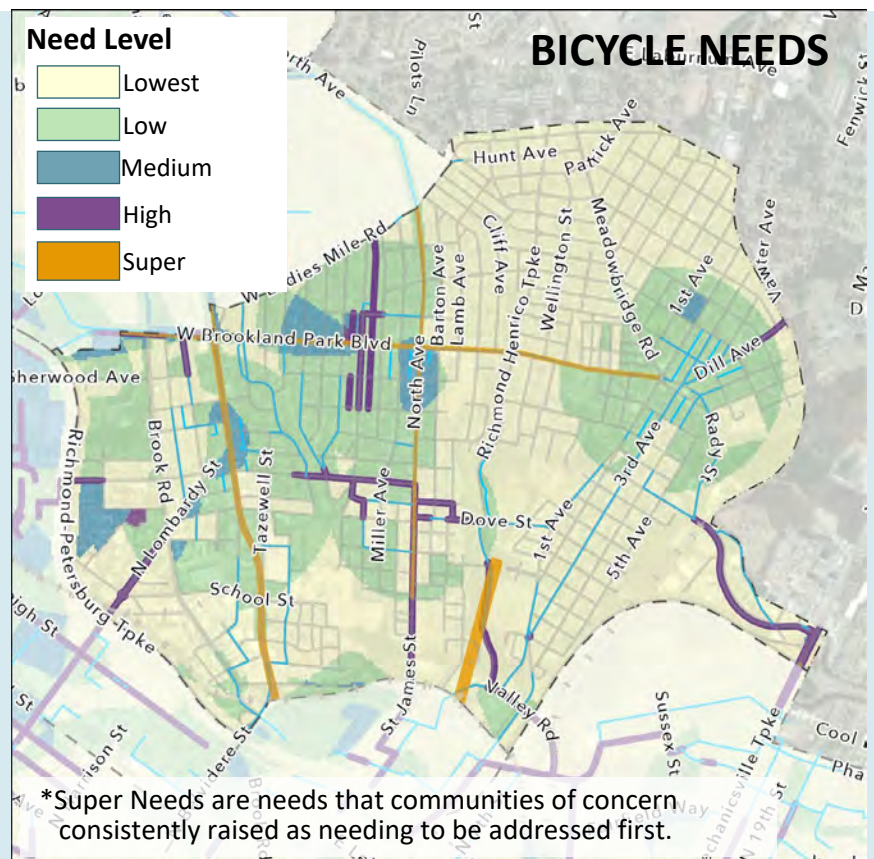
Bike trips from Communities of Concern use these streets the most:

- Overbrook Rd
- North Ave south of Overbrook Rd
- Lombardy St south of Brook Rd
- Fendall Ave, and alley parallel to east
- Cannon Creek Greenway along Richmond Henrico Turnpike
- Magnolia St

“Super” needs from public input:

- *Riding a bike on Brookland Park Blvd feels unsafe*
- *Riding a bike from Downtown to Northside feels unsafe*

Bicycle needs here are generally lower than several other areas of Richmond.



TOP TRANSPORTATION NEEDS

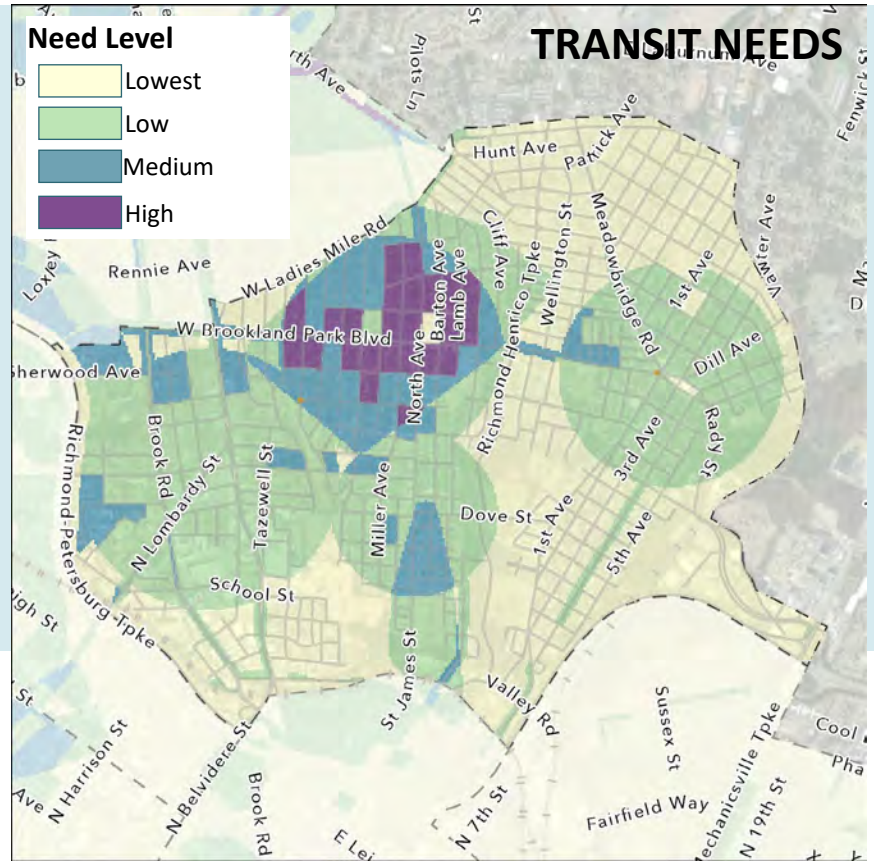
HIGHLAND PARK/ CHESTNUT HILL

NEED AREA 3



TOP TRANSIT NEEDS

- Transit needs in this area are highest in the Brookland Park neighborhood node
- Buses are unreliable – on-time performance here is among the worst in the City
- Lack of shelters and benches at bus stops
- Pulse BRT does not serve Northside

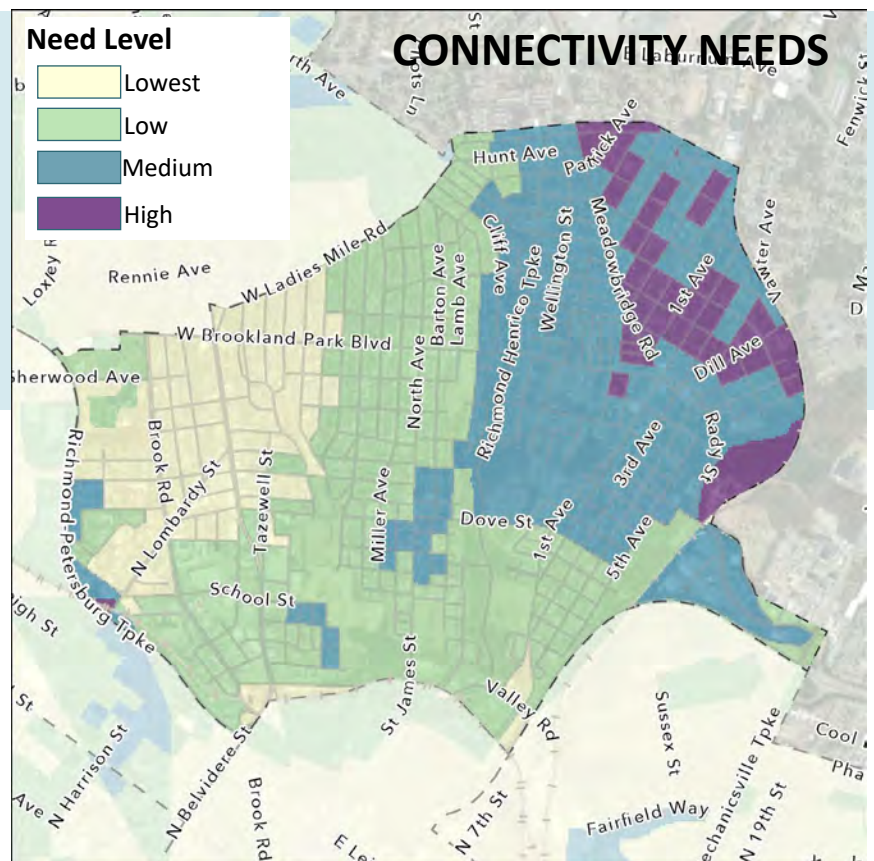


CONNECTIVITY NEEDS

- Poor access to intercity rail or intercity bus service
- High density of populations in communities of concern
- High exposure to adverse impacts of climate change

Other high needs include:

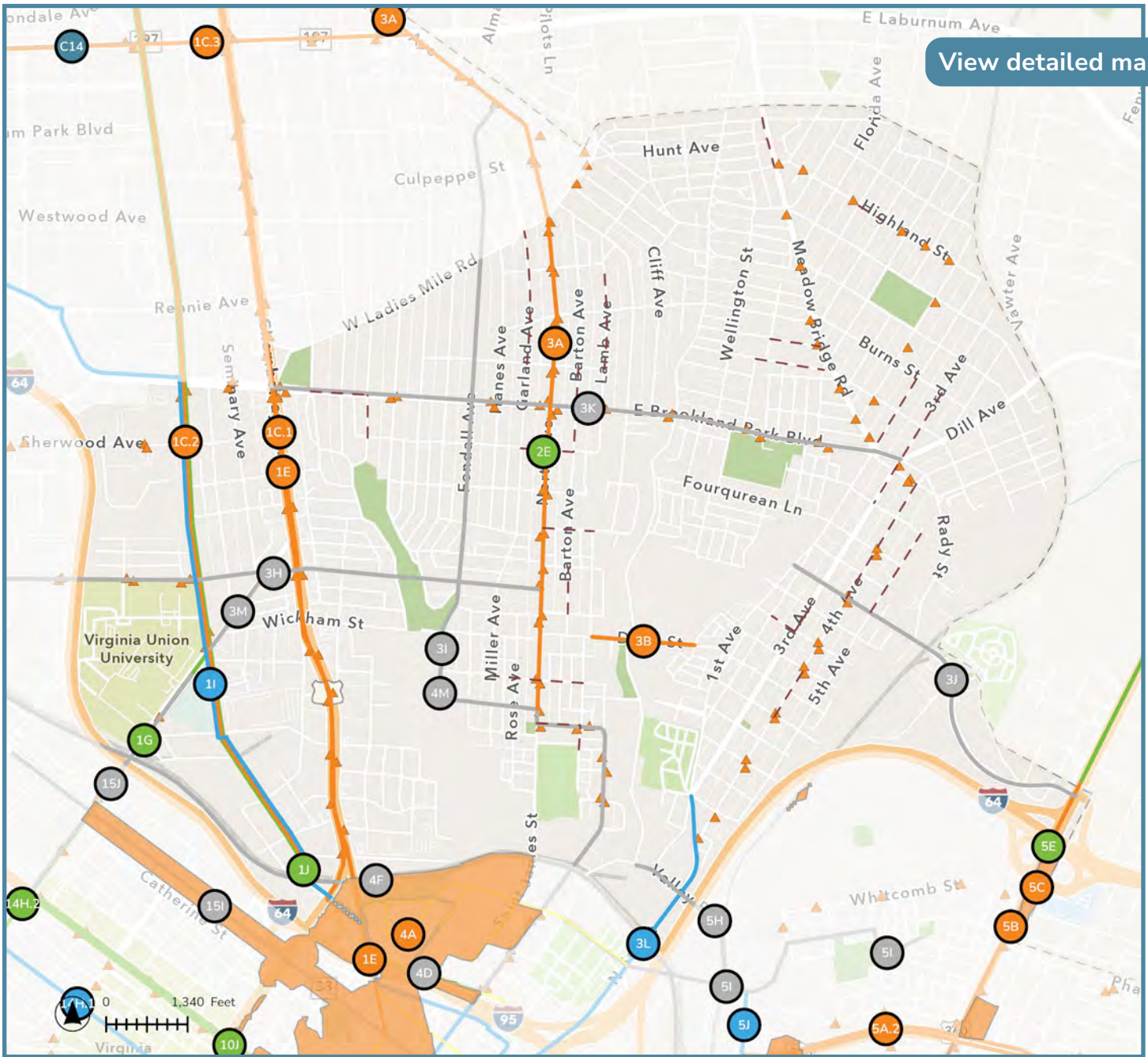
- Safety/Security – High serious crashes and high crime around Chamberlayne Ave north of Lombardy St
- Economic Development - High needs in Chestnut Hill are mostly due to low market values





NEEDS AREA SUMMARIES

3: Highland Park/Chestnut Hill Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

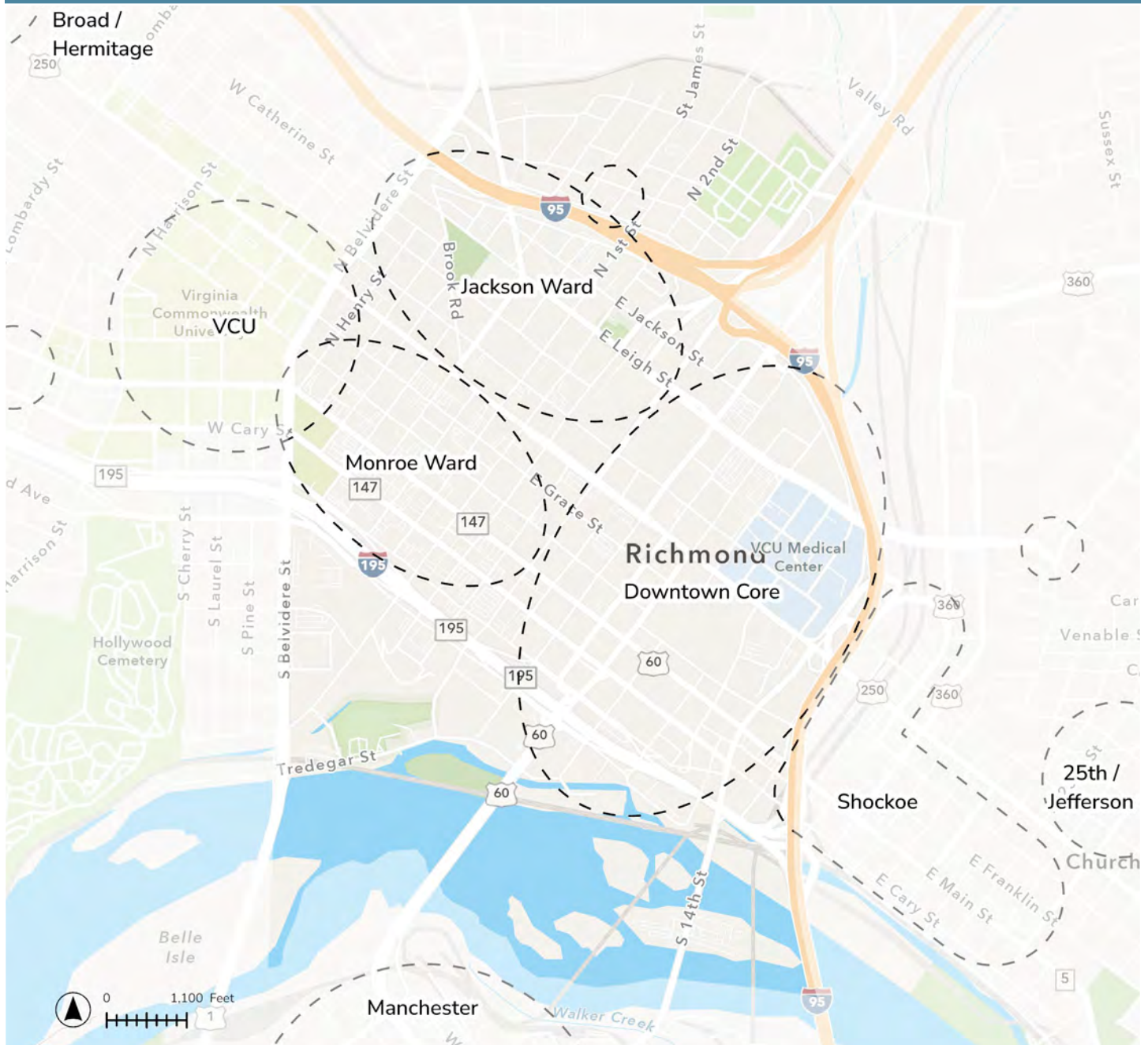
3: Highland Park/Chestnut Hill Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|------|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 1C.1 | Priority Projects | Chamberlayne Avenue Pedestrian Safety Improvements | High (\$\$\$) | 4.9 | 215 |
| 1C.2 | Priority Projects | Brook Road Traffic Calming and Pedestrian Safety Improvements | High (\$\$\$) | 4.9 | 217 |
| 3A | Priority Projects | North Avenue Pedestrian Safety Improvements | Moderate (\$\$) | 4.8 | 227 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 3B | Priority Projects | Dove Street Pedestrian Safety Improvements | Moderate (\$\$) | 4.2 | 261 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Very High (\$\$\$\$) | 3.9 | 280 |
| 1I | Priority Completion | Fall Line Trail | n/a | 2.6 | 295 |
| 3L | Priority Completion | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | n/a | 2.5 | 295 |
| C12 | Other Completion | Highland Grove/ Dove Street Redevelopment | n/a | n/a | 298 |
| 1J | Shorter Term | Brook Road Bike Lanes Protection | Low (\$) | 3.4 | 304 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.1 | 305 |
| 4M | Longer Term | 1st Street Cycle Track | n/a | 2.7 | 309 |
| 3K | Longer Term | Brookland Park Boulevard Bikeway | Low/Moderate (\$/\$\$) | 3.3 | 307 |
| 3I | Longer Term | Fendall Ave/ N 1st St Bikeway | Low/Moderate (\$/\$\$) | 1.8 | 310 |
| 3M | Longer Term | Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd | Low (\$) | 2.1 | 310 |
| 15J | Longer Term | Lombardy Street Protected Bike Lanes | Low (\$) | 3.0 | 308 |
| 3J | Longer Term | Magnolia Street Bikeway | Low/Moderate (\$/\$\$) | 2.7 | 309 |
| 3N | Longer Term | Northside Bikeshare Stations | Low (\$) | 3.1 | 308 |
| 3H | Longer Term | Overbrook Road Bikeway | Moderate (\$\$) | 2.3 | 310 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Low/Moderate (\$/\$\$) | 3.7 | 307 |



NEEDS AREA SUMMARIES

4: Downtown



EQUITY CONTEXT

DOWNTOWN, INCLUDING GILPIN

NEED AREA 4



Transportation investments will focus on improving climate resiliency for the most impacted communities.

- Path to Equity Policy Guide, Equity Factor 10

Equity needs in the greater Downtown area include several compounding factors.

Some Downtown neighborhoods have high concentrations of Communities of Concern, including **renters, low-income households, BIPOC individuals, and BIPOC renters.**

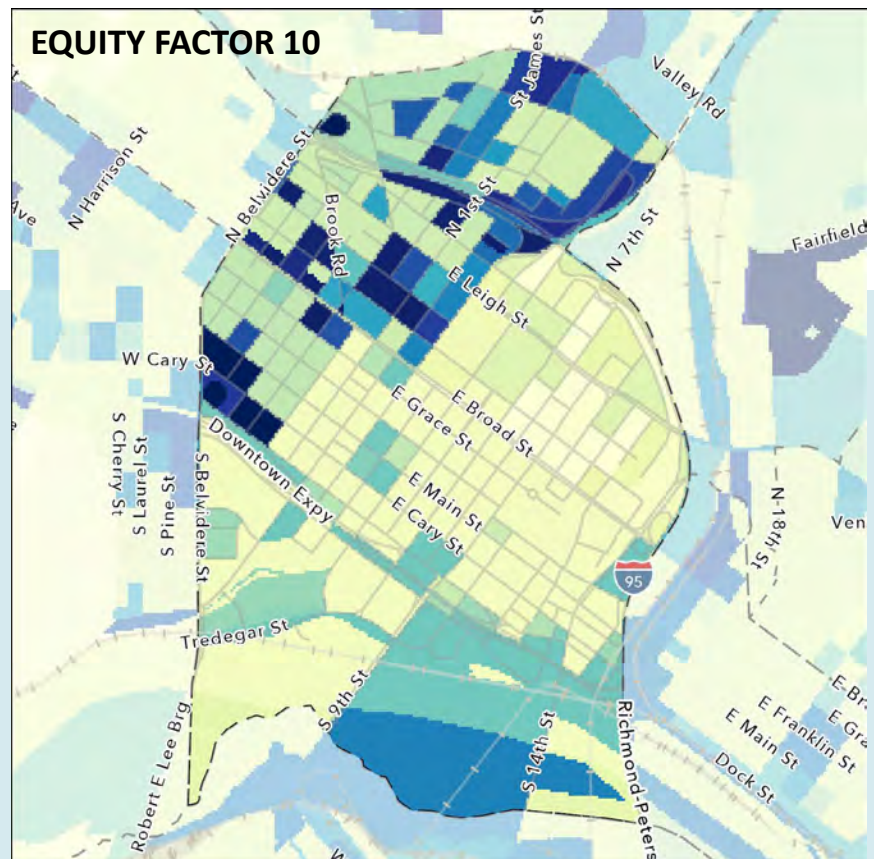
Certain neighborhoods in Downtown, such as **Gilpin and Jackson Ward**, were **redlined** and dissected by the construction of the interstate **highways.**

Still today, these areas have high concentrations of **low-income BIPOC** populations and low rates of **BIPOC home ownership.**

It's sometimes hard to **walk** or **bike** in these areas because it feels **unsafe** to do so.

Climate Resiliency

Roads in this area, especially around Jackson Ward, Monroe Ward, and Gilpin, are in a flood risk zone and **vulnerable to disruption due to climate change**, and there is a high density of Communities of Concern.



Areas shown in darker greens and blues are more prone to flooding and vulnerability to climate change. These areas also have high densities of residents in communities of concern.

TOP TRANSPORTATION NEEDS DOWNTOWN, INCLUDING GILPIN NEED AREA 4



TOP PEDESTRIAN NEEDS

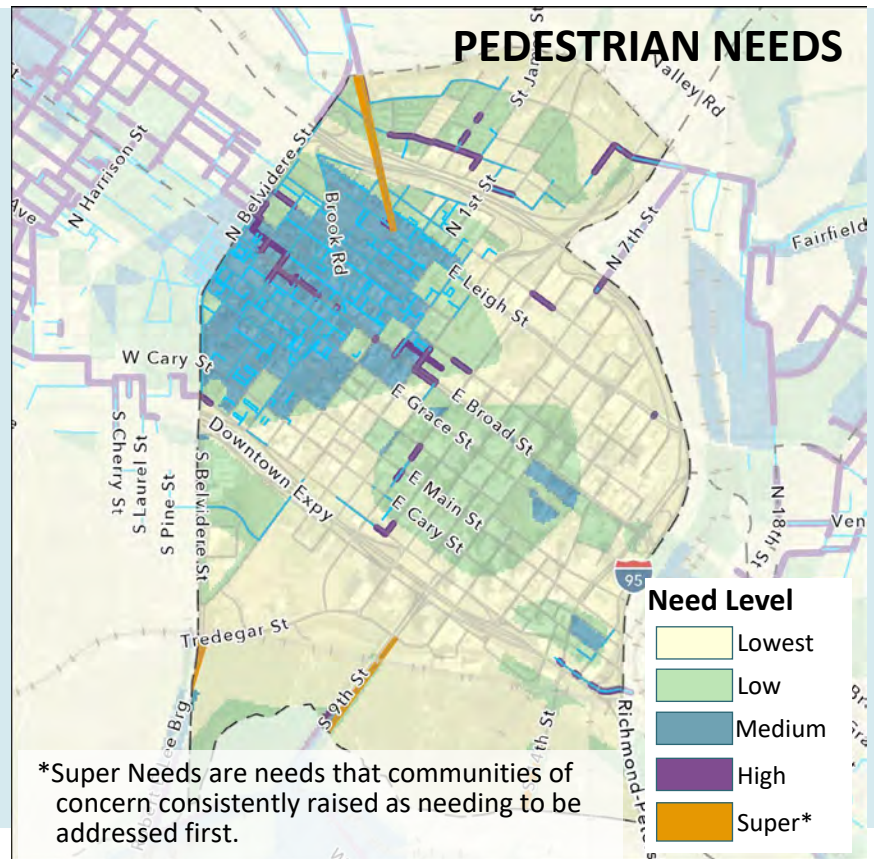
Walk trips from Communities of Concern use these streets the most:

- Charity Street in Gilpin
- 4th St, Hospital St over to Fairfield
- Entire street network in Jackson Ward and western Monroe Ward

“Super” Need from public input:

- *Walking along Chamberlayne feels unsafe. Cars speed, and it is not friendly for people with disabilities.*

Pedestrian needs here are generally lower than several other areas of Richmond.



TOP BICYCLE NEEDS

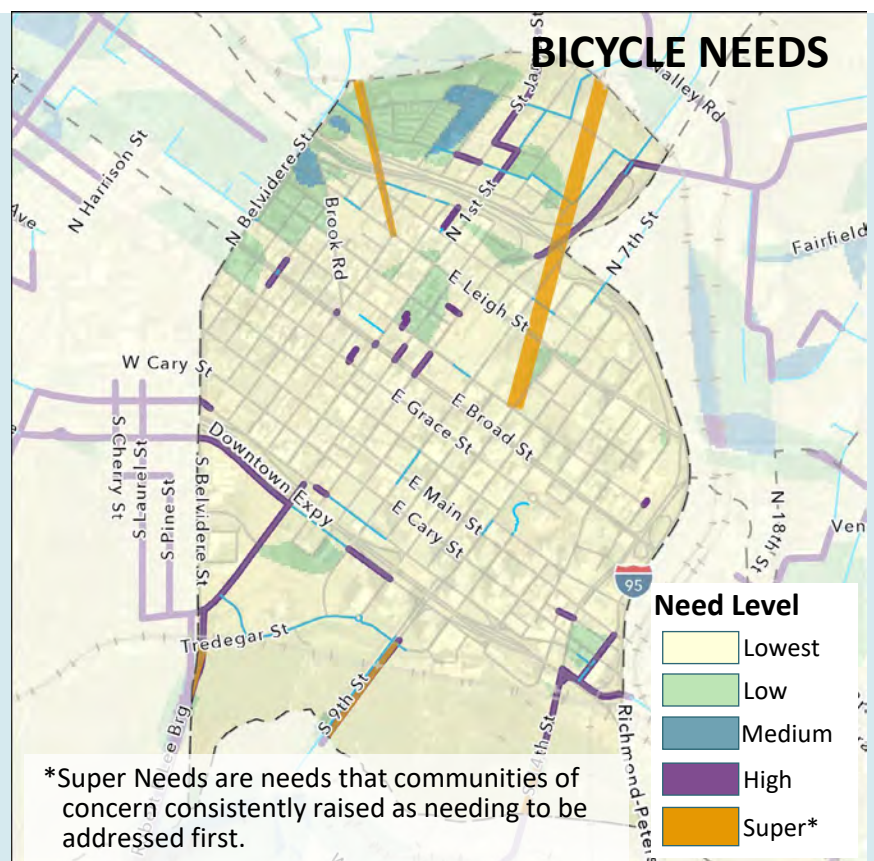
Bike trips from Communities of Concern use these streets the most:

- Byrd St, 2nd St south of Downtown Expy
- 5th St, Hospital St over to Fairfield
- 1st St to St James St in Gilpin
- All 3 bridges over James River
- 14th St bridge to Dock St

“Super” Needs from public input:

- *Riding a bike from Northside to Downtown feels unsafe.*
- *Riding a bike on Chamberlayne feels unsafe because of speeding vehicles.*

Bicycle needs here are generally lower than several other areas of Richmond.



TOP TRANSPORTATION NEEDS

DOWNTOWN, INCLUDING GILPIN

NEED AREA 4



TOP TRANSIT NEEDS

Transit needs in this area are the lowest in the entire City.

Themes from public input:

- It's difficult to transfer from Pulse to local bus service, sometimes required to cross busy Broad Street. Why can't all buses use the Pulse stations?
- Bus stops feel unsafe, too exposed to sun/weather
- Bus ride takes too long, does not run on time

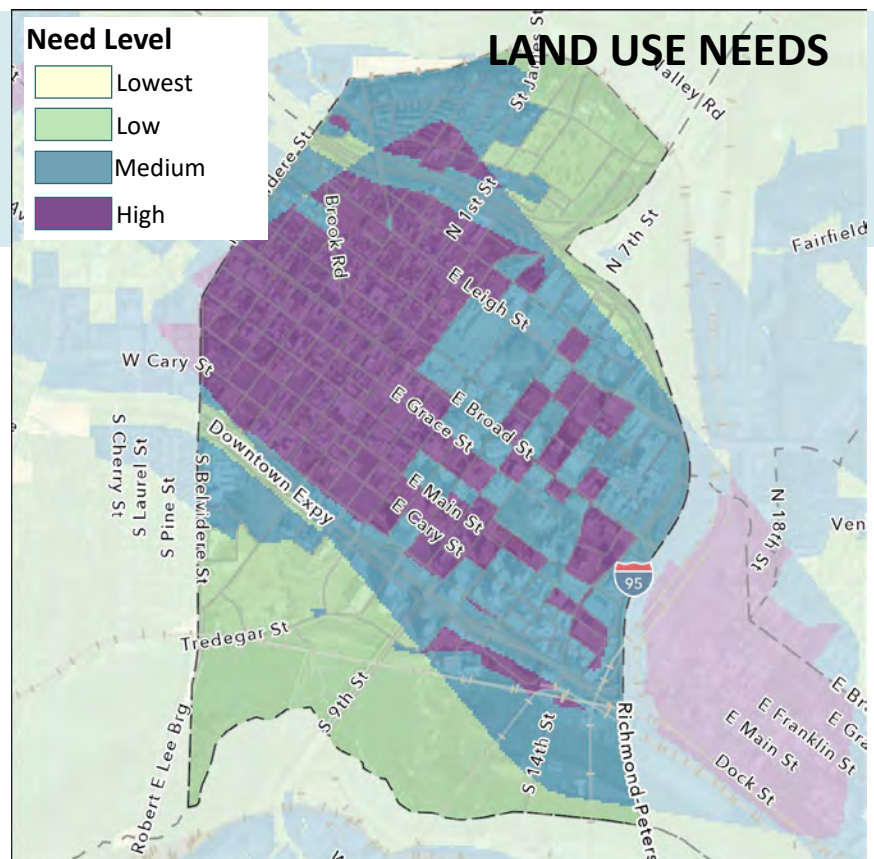


LAND USE NEEDS

- Many areas in Downtown have an abundance of surface parking lots.

Other high needs include:

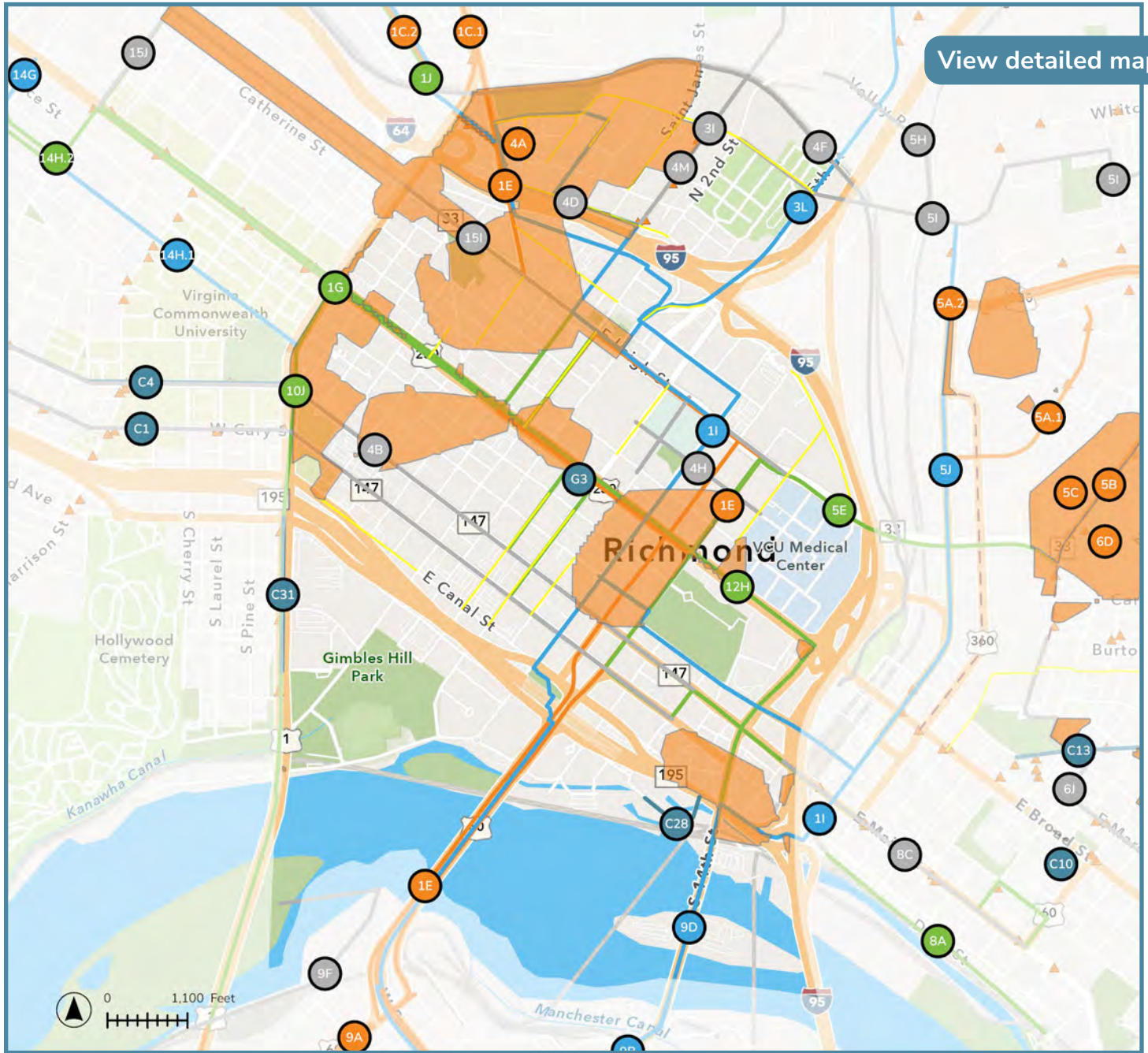
- Safety/Security – Even though it's walkable, some areas feel unsafe due to high crime.
- Maintenance – Poor pavement and sidewalk condition, especially in Jackson Ward and Gilpin.
- Technology – High portions of Gilpin residents are unbanked and lack reliable access to internet.
- Sustainability - High flood risk in some areas.





NEEDS AREA SUMMARIES

4: Downtown Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

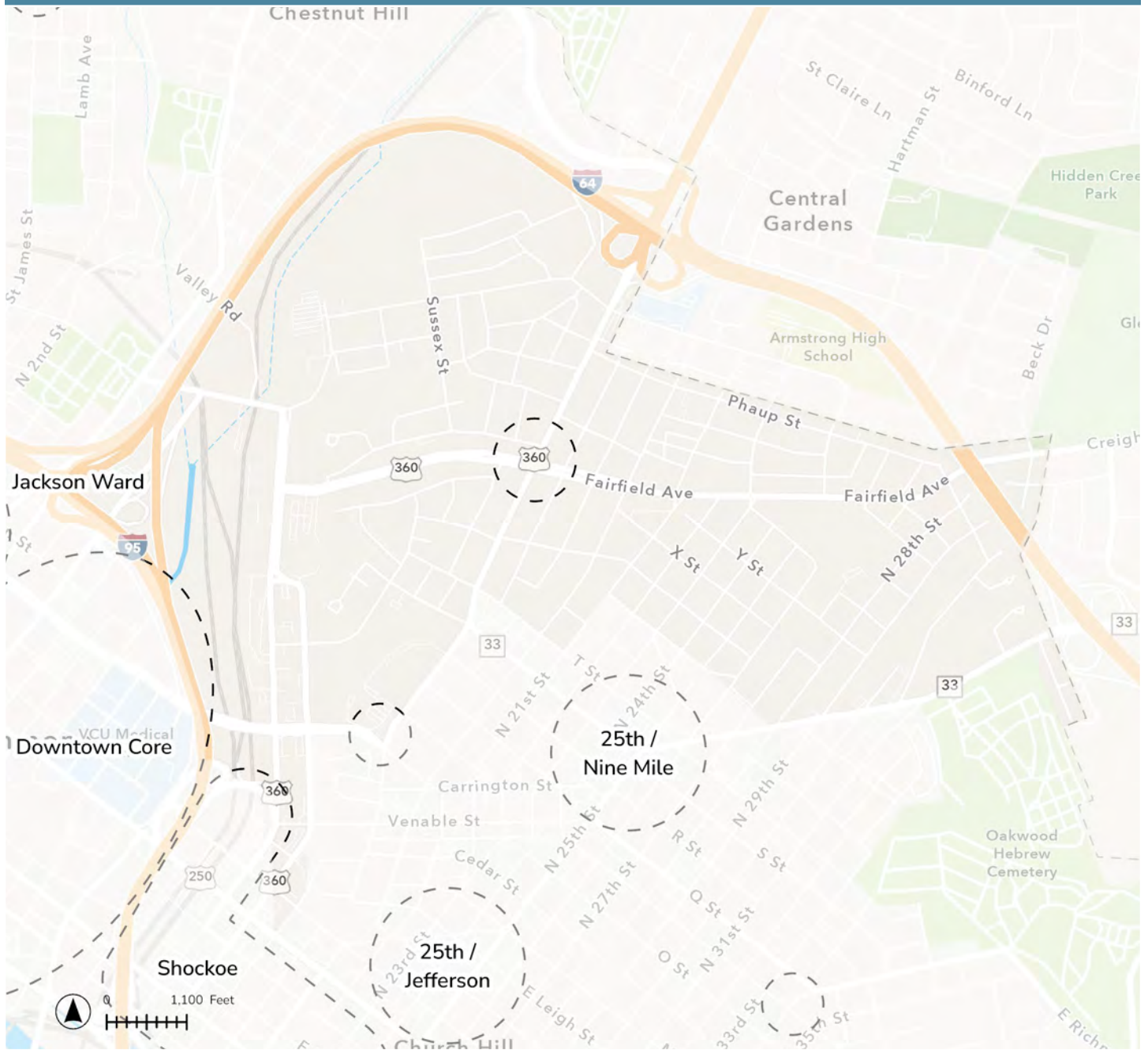
4: Downtown Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 4A | Priority Projects | Downtown Safety Spot Improvements | Low (\$) | 4.5 | 242 |
| 4G | Priority Projects | Reconnect Jackson Ward | Very High (\$\$\$\$) | 4.0 | 277 |
| 4K | Priority Projects | Richmond Connects Equity-Centered Pavement Maintenance Prioritization | Very High (\$\$\$\$) | 4.1 | 271 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Very High (\$\$\$\$) | 3.9 | 280 |
| 1I | Priority Completion | Fall Line Trail | n/a | 2.6 | 295 |
| 3L | Priority Completion | Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes | n/a | 2.5 | 295 |
| C31 | Other Completion | Belvidere Street Gateway - Phase IV | n/a | n/a | 301 |
| C32 | Other Completion | Biotech Research Park Roadway Improvements | n/a | n/a | 301 |
| C28 | Other Completion | Capital Trail/Canal Walk Connector to Brown's Island - Phase 1 | n/a | n/a | 301 |
| G3 | Other Completion | Downtown Transfer Center | n/a | n/a | 302 |
| 4M | Longer Term | 1st Street Cycle Track | n/a | 2.7 | 309 |
| 4D | Longer Term | Baker Street Pedestrian/Bike Only Street | Moderate (\$\$) | 1.8 | 311 |
| 4L | Longer Term | Downtown/Shockoe Parking Recommendations | Moderate (\$\$) | 3.0 | 308 |
| 3I | Longer Term | Fendall Ave/ N 1st St Bikeway | Low/Moderate (\$/\$) | 1.8 | 310 |
| 15I | Longer Term | Leigh Street Bike Lanes - Dinneen St to 8th St | Moderate (\$\$) | 3.0 | 308 |
| 4B | Longer Term | Main Street/Cary Street Two-Way Street Conversion | High (\$\$\$) | 2.8 | 309 |
| 4H | Longer Term | Reconnect Clay and 6th Streets | Very High (\$\$\$\$) | 1.8 | 311 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Low/Moderate (\$/\$) | 3.7 | 307 |



NEEDS AREA SUMMARIES

5: Fairfield



EQUITY CONTEXT

FAIRFIELD AREA

NEED AREA 5



Transportation investments will improve access to housing, jobs, services, recreation, and education, addressing remaining inequities created by redlining.

- Path to Equity Policy Guide, Equity Factor 1

Equity needs in the Fairfield Area of the East End include several compounding factors.

Neighborhoods in the Fairfield area have some of the highest densities of Communities of Concern, including **renters and BIPOC renters, low-income households, BIPOC individuals, and at-risk youth.**

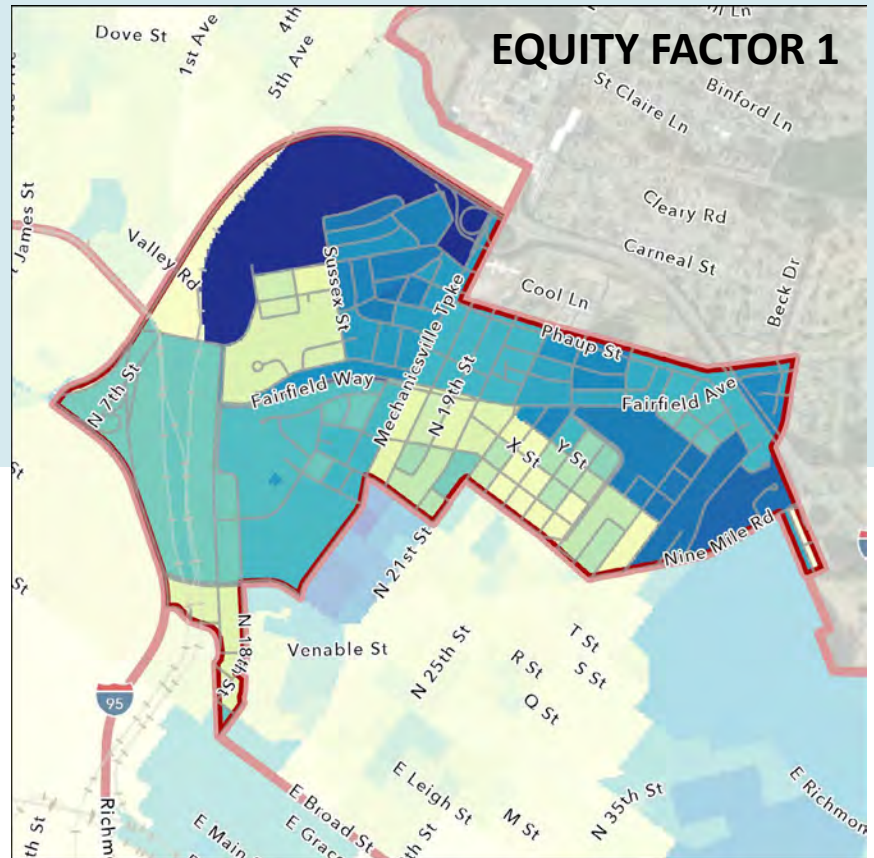
Redlined Areas

Some parts of this area were **redlined** and still have high concentrations of **low-income BIPOC populations** and **low rates of BIPOC home ownership.**

It's hard to get to the places you most need to because **transit service** is either **infrequent** or **unreliable** in these areas.

It's hard to get around by walking or biking in this area because **there aren't always direct paths** to get where you need to go, or **it doesn't feel safe.**

Some neighborhoods in this part of the East End are more **vulnerable to the effects of climate change**, including flood risk, high heat vulnerability, and urban heat island effect.



Areas shown in dark blues and greens were redlined, have high concentrations of low income BIPOC populations, and have low rates of BIPOC home ownership. They are also areas where it is hard to get to places by walking, bicycling, or taking transit.

TOP TRANSPORTATION NEEDS

FAIRFIELD AREA

NEED AREA 5



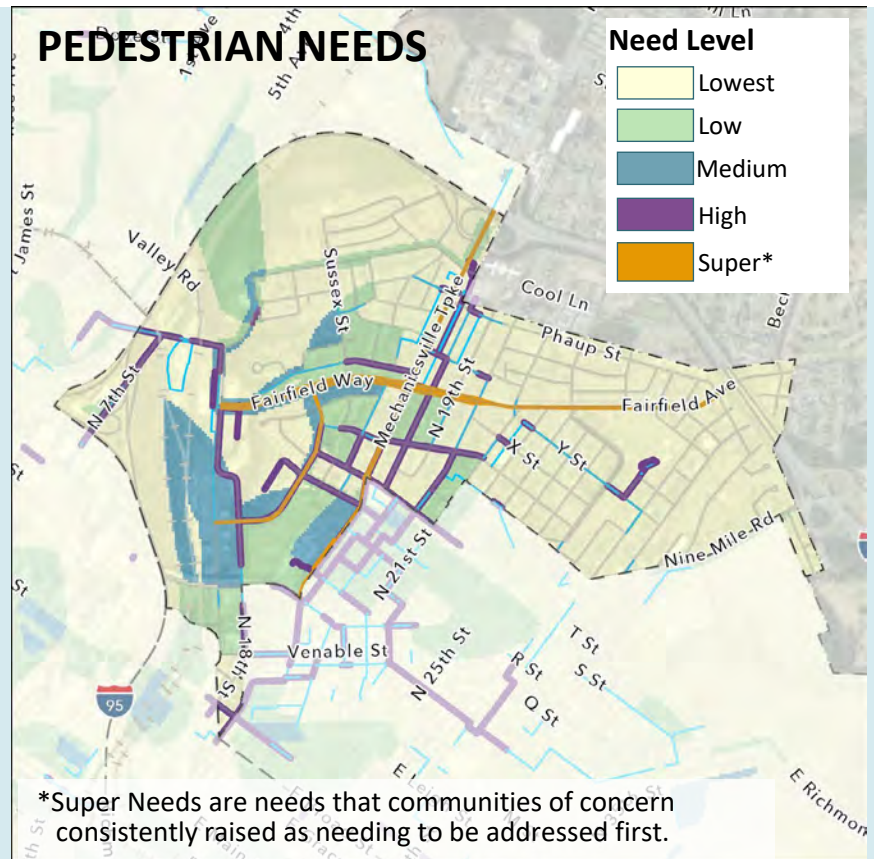
TOP PEDESTRIAN NEEDS

Walk trips from Communities of Concern use these streets the most:

- Rogers St
- Mechanicsville Turnpike
- Coalter St
- Littlepage St
- Redd St/T St
- Brauers Ln
- 18th St/ Oliver Hill Way

“Super” needs from public input:

- *Mechanicsville Turnpike feels unsafe to cross, especially at Redd St/T St and Fairfield Ave*
- *Need safer ways to cross Fairfield Ave, especially to/from bus stops*
- *Speeding on Coalter Street*
- *Mosby St– Speeding in front of MLK Middle School. Difficult for pedestrians to cross. Drivers don’t use left turn lanes properly.*
- *Broken sidewalks throughout East End*



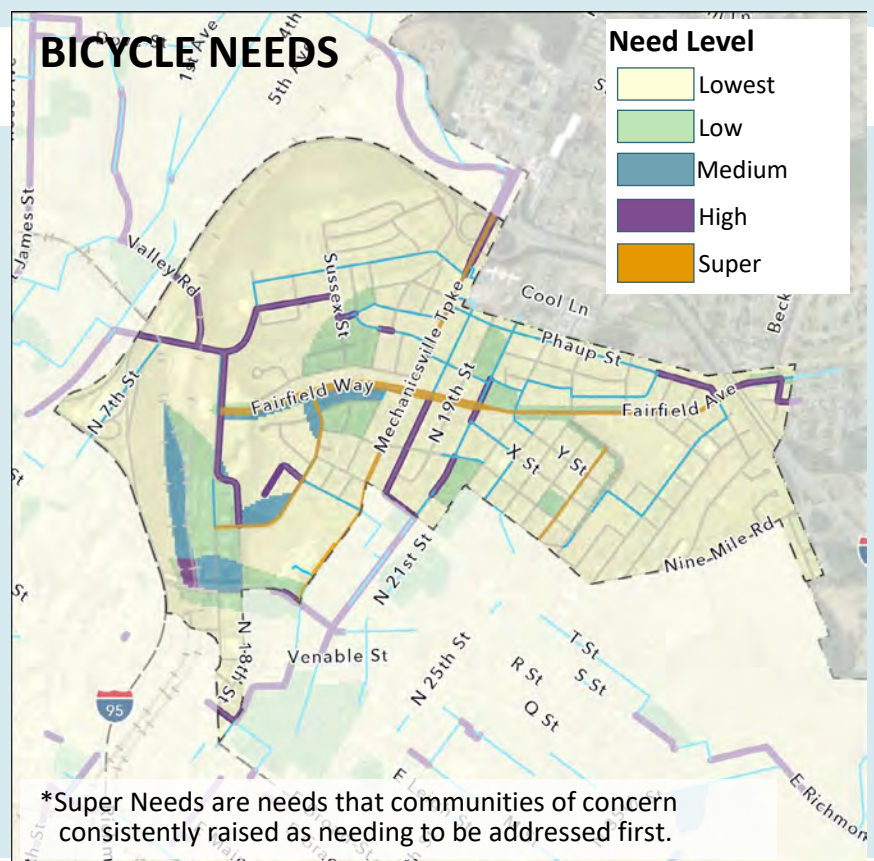
TOP BICYCLE NEEDS

Bike trips from Communities of Concern use these streets the most:

- Hospital Street
- Wood Street
- Oliver Hill Way
- Rogers Street

“Super” needs from public input:

- *Bike and car conflicts on Mosby Street in front of MLK Middle School*
- *Bike lanes needed on 25th St*



Bicycle needs in this area are generally lower than several other areas of Richmond.

TOP TRANSPORTATION NEEDS

FAIRFIELD AREA

NEED AREA 5



TOP TRANSIT NEEDS

Transit needs are generally low throughout this area.

Themes from public input:

- *Buses are unreliable*
- *Long waits at bus stops*
- *No protection from sun/weather*
- *Need safer ways to cross Fairfield Ave at bus stops*
- *Bus stops don't feel safe, especially at Mosby Court*
- *Bus ride takes too long*
- *Seniors have a hard time accessing bus stops*
- *Need more bus connections to jobs and shopping north of the City boundary*

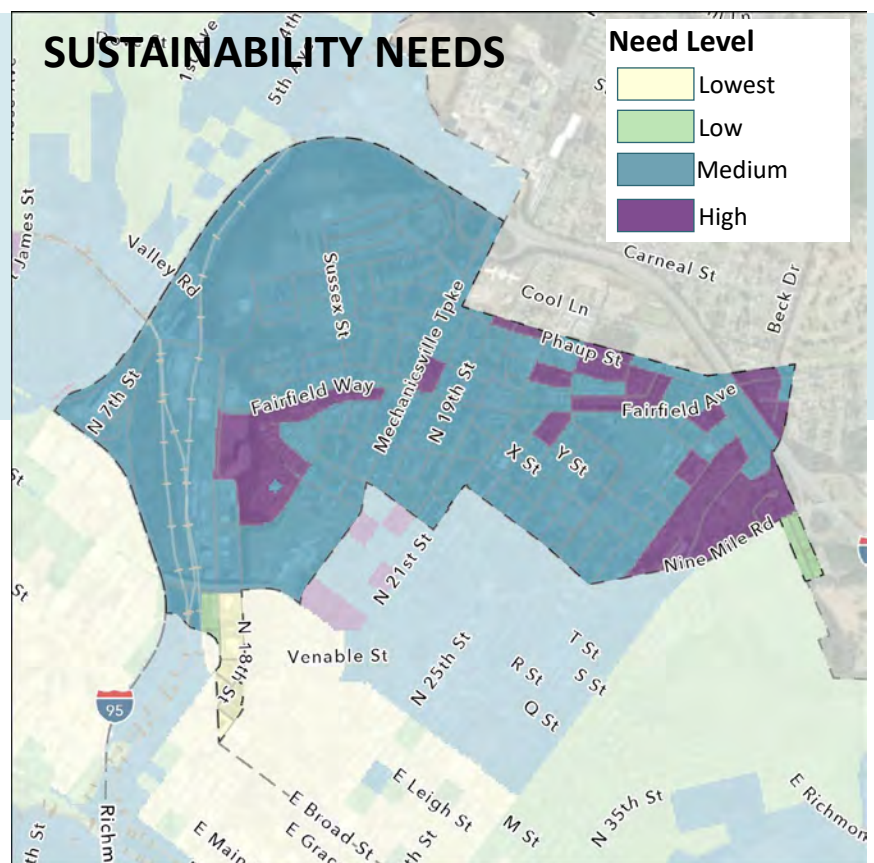


SUSTAINABILITY NEEDS

- This area has high heat vulnerability and few or no EV charging stations.
- There is some risk of flooding in this area.

Other high needs include:

- **Freight** – Freight trips frequently use Hospital St, Fairfield Way, and Mechanicsville Tpke.
- **Maintenance** – Poor sidewalk and pavement condition, especially on Rogers St, Mechanicsville Tpke, and Fairfield Ave east of 28th St.
- **Economic Development** – Market values of properties here are lower compared to other areas.

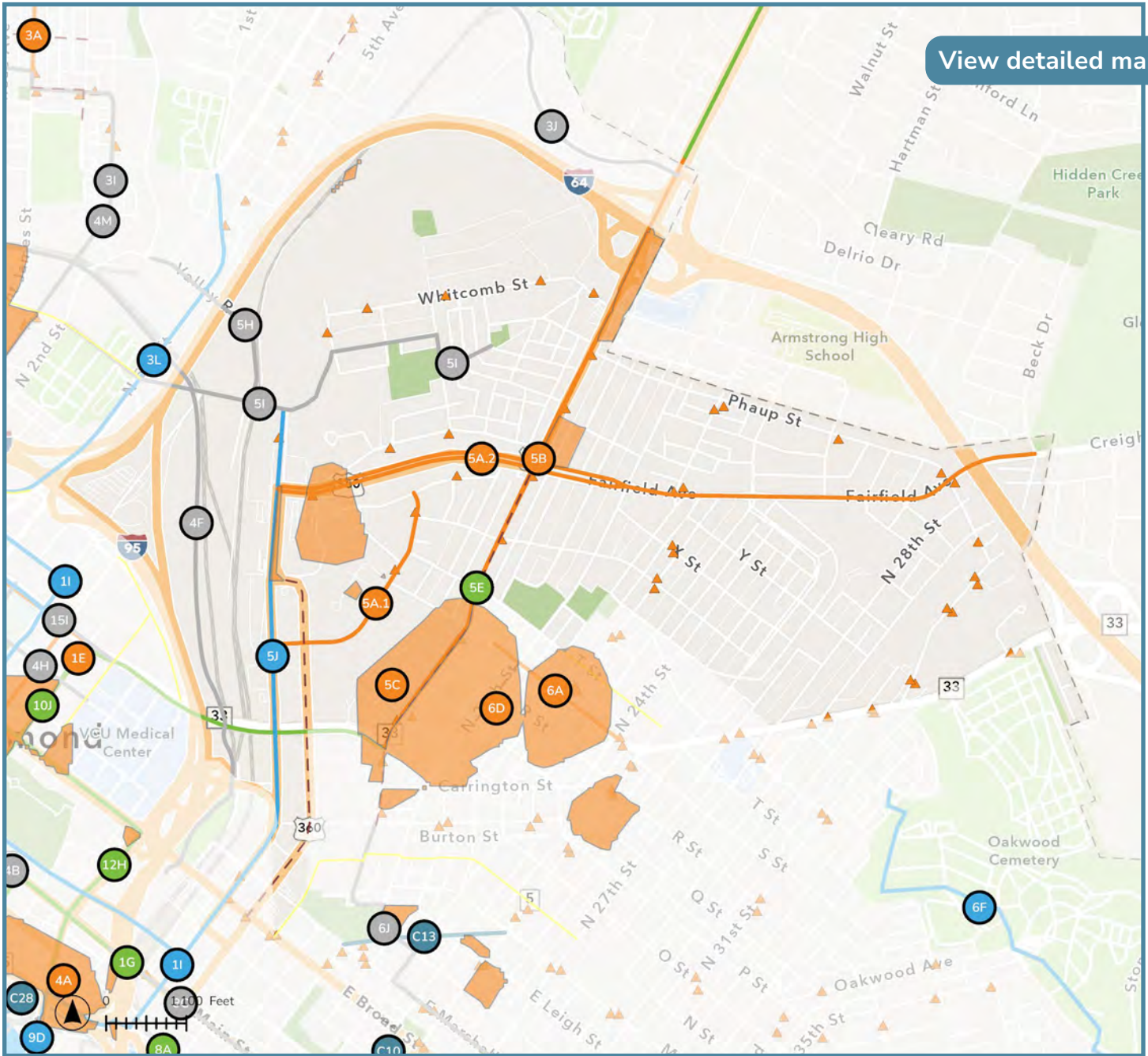




NEEDS AREA SUMMARIES

5: Fairfield Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

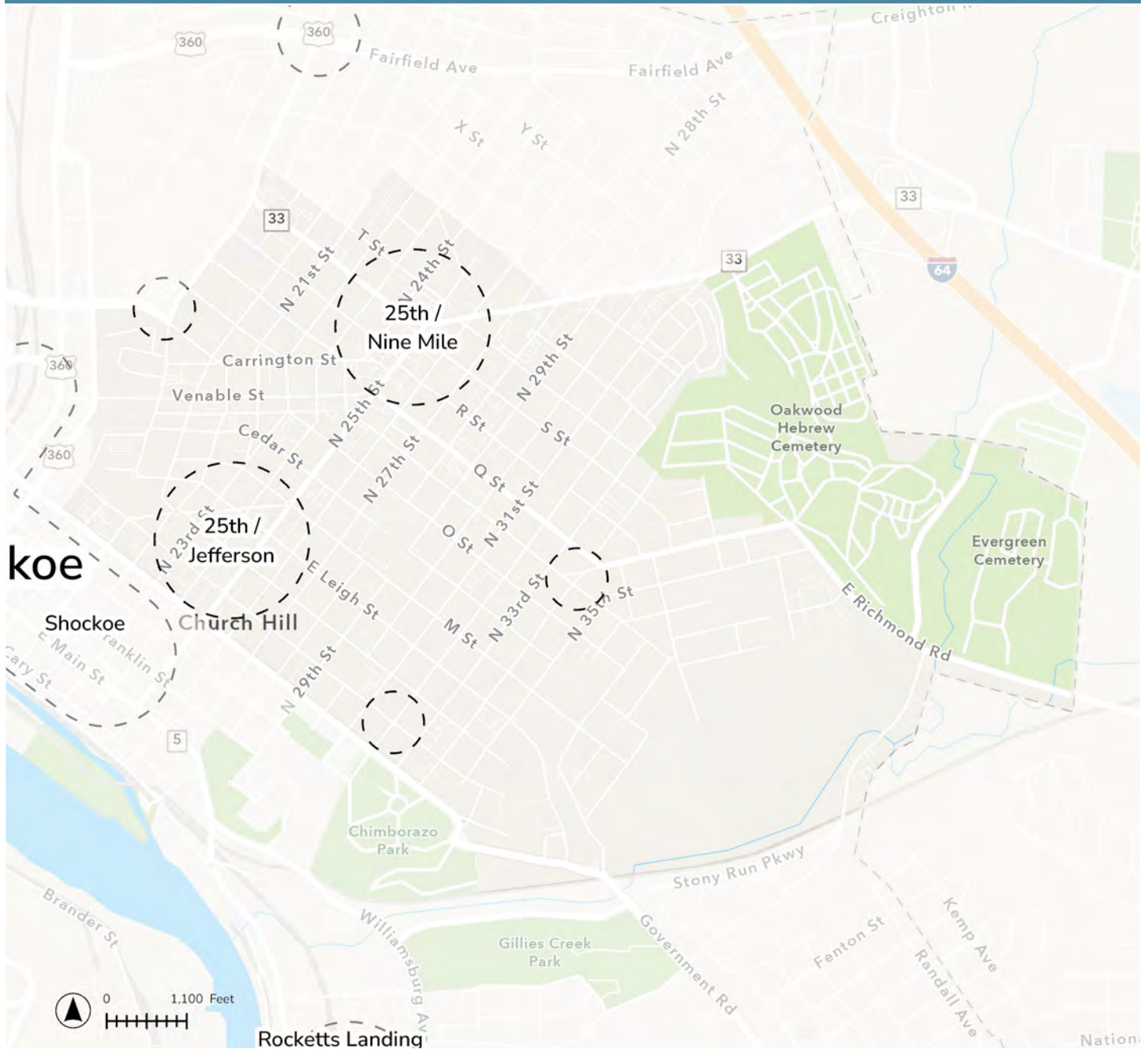
5: Fairfield Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|------|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.00 | 205 |
| 5B | Priority Projects | Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements | Moderate (\$\$) | 5.00 | 211 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.56 | 236 |
| 5C | Priority Projects | Fairfield Pedestrian Security and Shade Project | Low (\$) | 4.53 | 238 |
| 5A.1 | Priority Projects | Coalter Street Traffic Calming | Low (\$) | 4.13 | 263 |
| 5A.2 | Priority Projects | Fairfield Avenue/ Fairfield Way Traffic Calming | Low (\$) | 4.13 | 265 |
| 5J | Priority Completion | Oliver Hill Way Bike Lanes | n/a | 3.20 | 294 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Moderate (\$\$) | 3.40 | 303 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.08 | 305 |
| 5I | Longer Term | Hospital Street/ Bowling Green Road/ Wood Street Bikeway | High (\$\$\$) | 2.93 | 308 |
| 5H | Longer Term | Valley Road Shared Use Path | Moderate/ High (\$\$/\$\$\$) | 2.73 | 309 |



NEEDS AREA SUMMARIES

6: Church Hill/Nine Mile



TOP TRANSPORTATION NEEDS

CHURCH HILL/NINE MILE ROAD AREA

NEED AREA 6



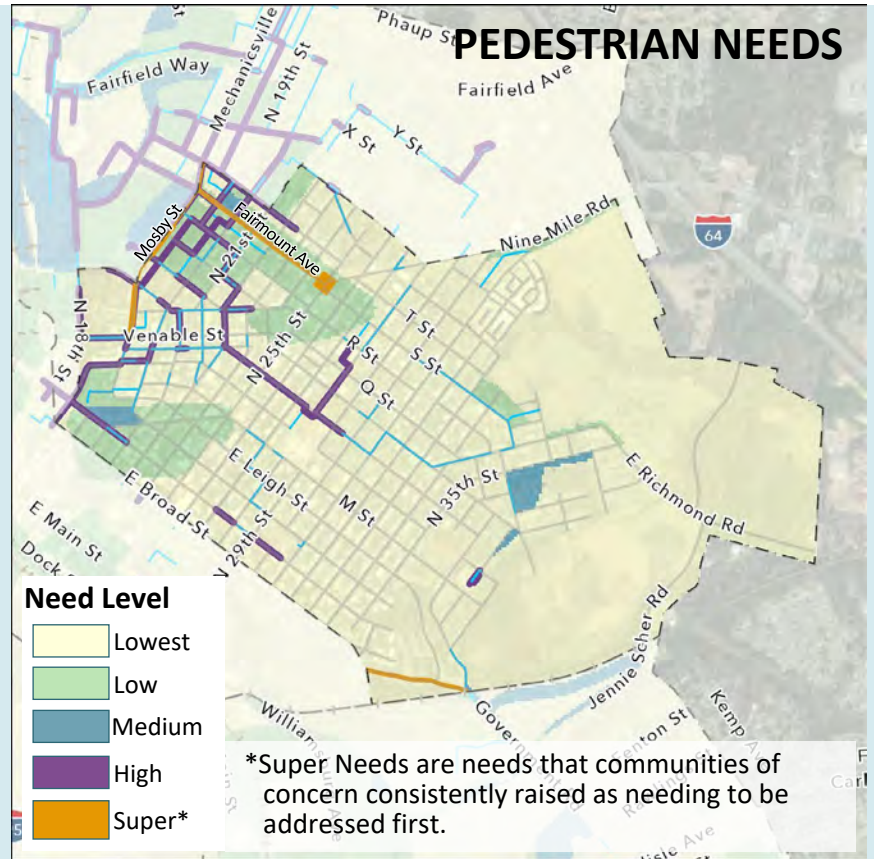
TOP PEDESTRIAN NEEDS

The highest pedestrian needs are concentrated around Union Hill, especially around MLK Middle School.

“Super” needs from public input:

- Unsafe crossings at multiple points throughout the Fairmount Ave. corridor, especially at the intersection with N. 25th St.
- Speeding on Fairmount Ave & broken sidewalks.
- Improve sidewalks throughout Church Hill.
- Speeding in front of MLK Middle School.

Pedestrian needs here are generally lower than several other areas of Richmond.



TOP BICYCLE NEEDS

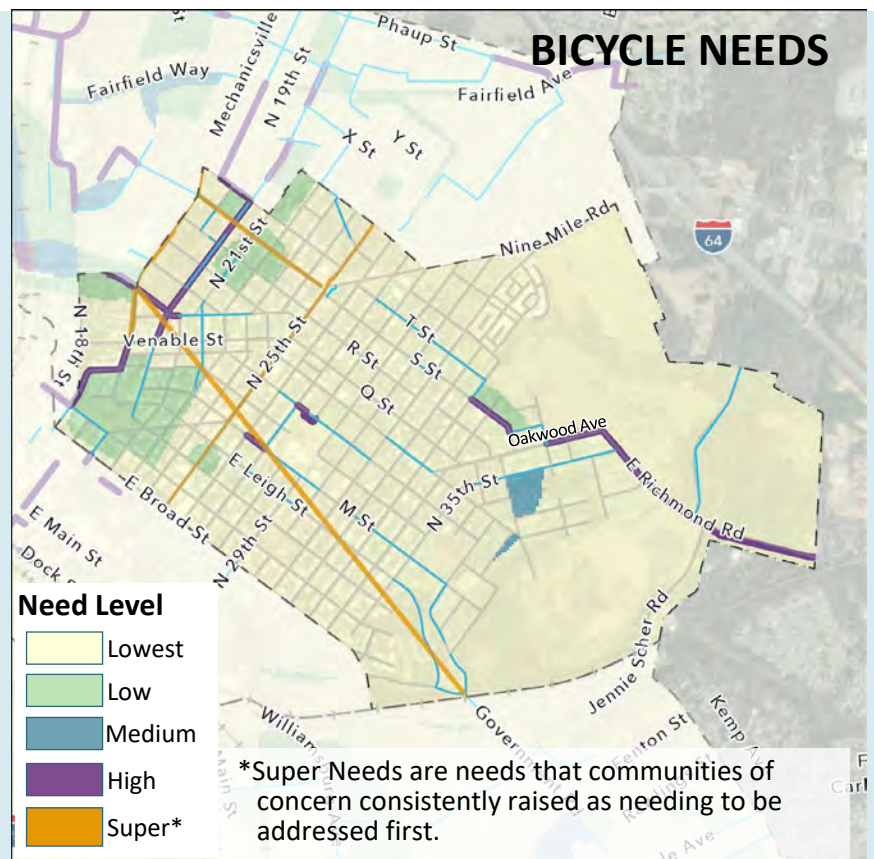
Bike trips from Communities of Concern use these streets the most:

- E Richmond Rd
- Oakwood Ave
- N. 20th St
- Mosby St

“Super” needs identified in public comments:

- It feels unsafe to bike on streets like Fairmount Ave
- Bike lanes are needed along N. 25th St
- Bike connection is needed to connect Leigh St. Viaduct with Government Rd. bike infrastructure

Bicycle needs here are generally lower than several other areas of Richmond.



TOP TRANSPORTATION NEEDS

CHURCH HILL/NINE MILE ROAD AREA

NEED AREA 6

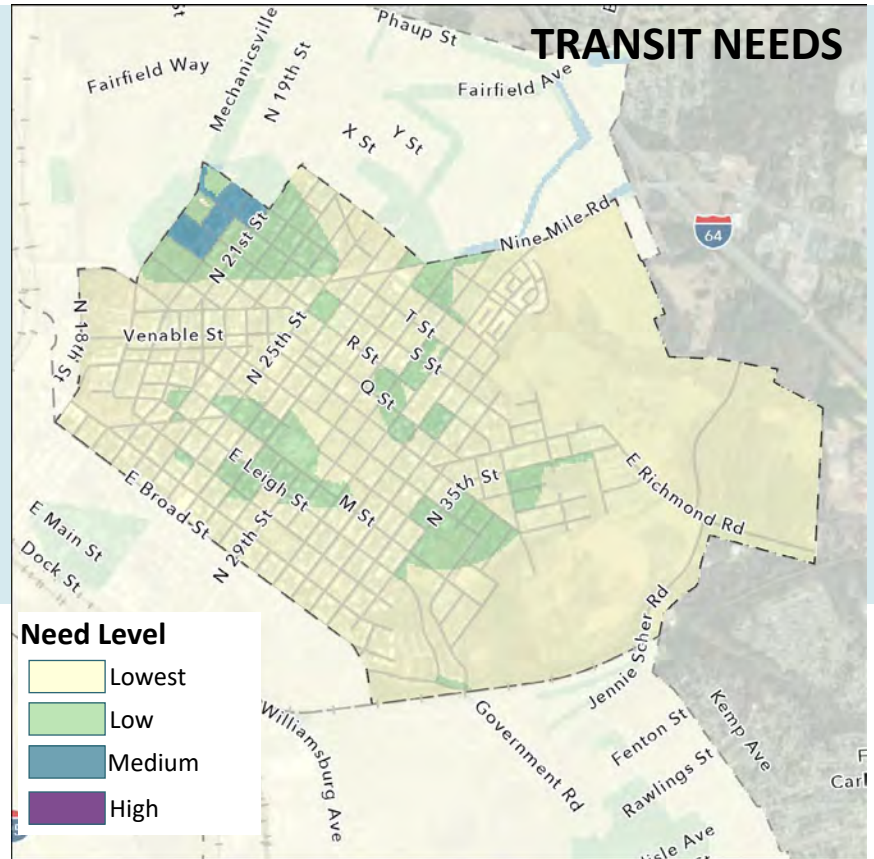


TOP TRANSIT NEEDS

Transit needs are generally low throughout this area.

Themes from public input:

- Add more transit routes to/from Church Hill North
- Bus stops lack seating and/or shelter
- Bus routes to/from this area may be infrequent and often unreliable, with long wait times

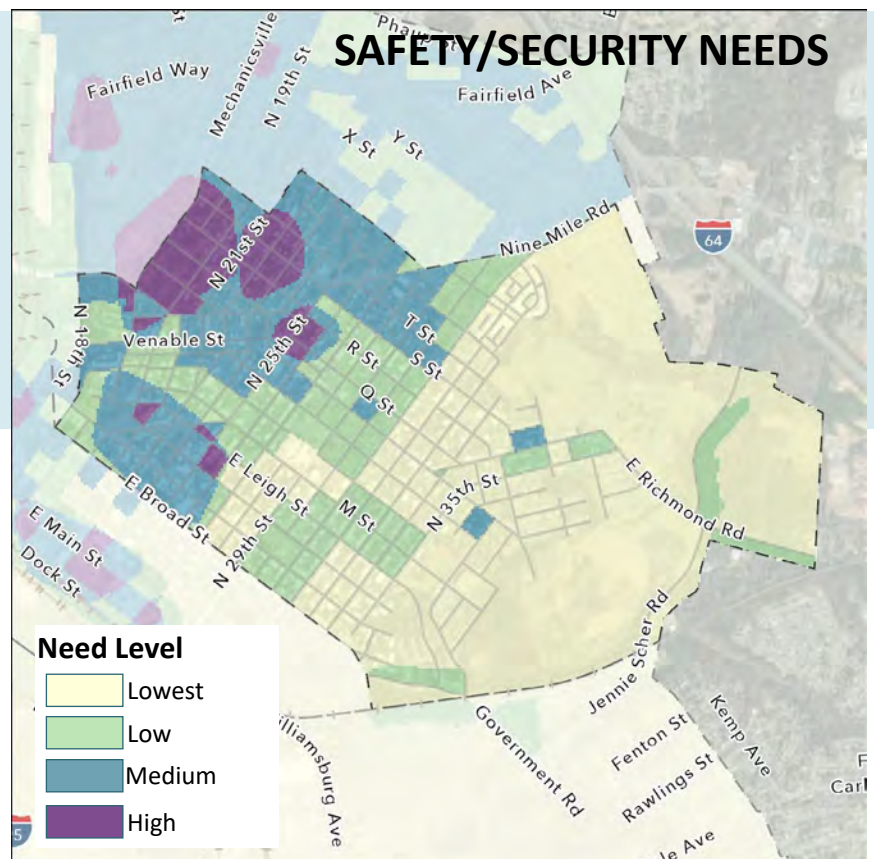


SAFETY/SECURITY

- Even though it's walkable, some areas feel unsafe due to high crime.
- There are a high number of serious crashes along some roads in this area.

Other high needs:

- Maintenance – Poor pavement and sidewalk condition, especially along Nine Mile Rd
- Land Use – Lack of relevant competitive access, especially areas around Jefferson Park
- Sustainability - High heat vulnerability in some areas, especially around Mosby St

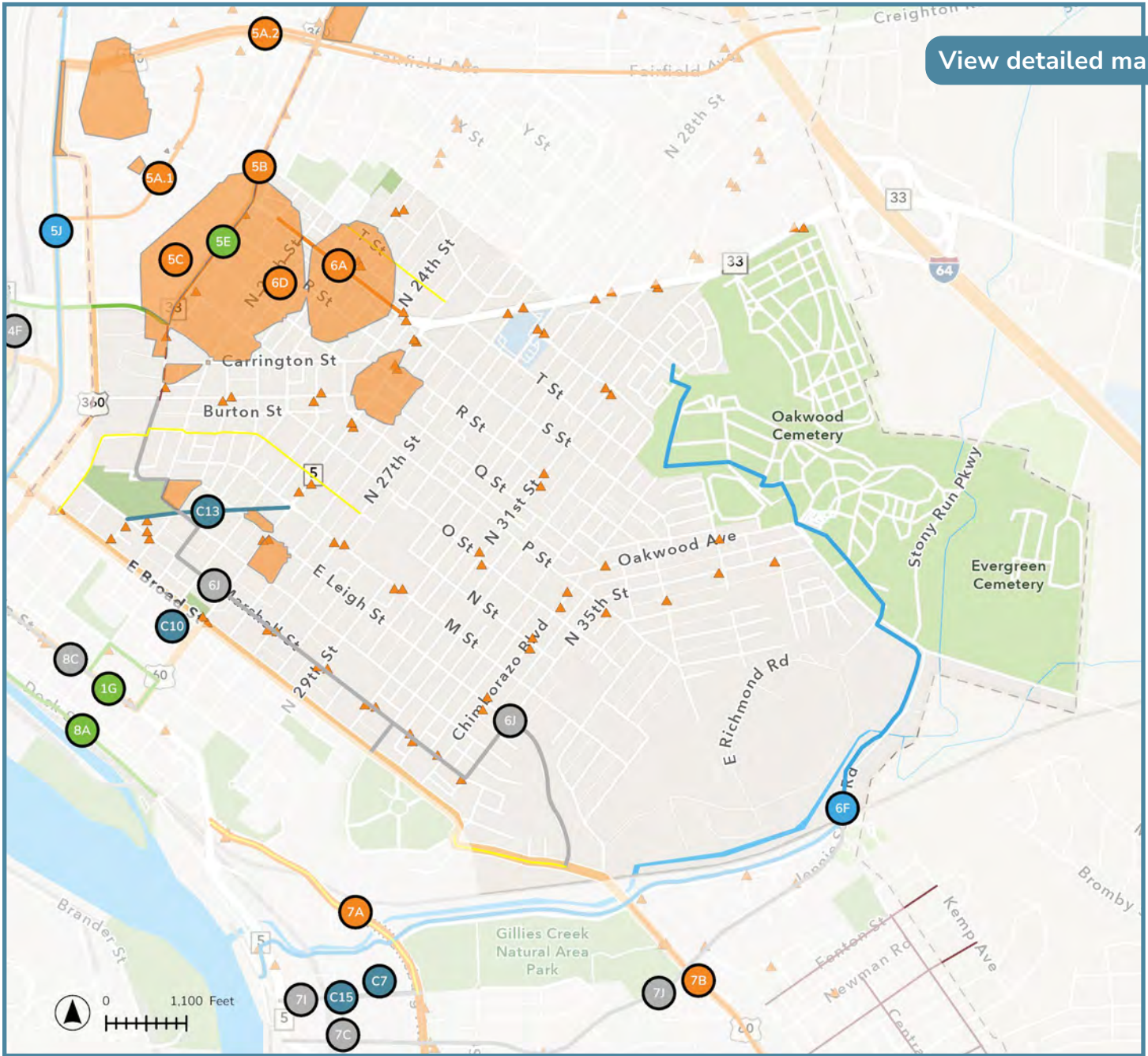




NEEDS AREA SUMMARIES

6: Church Hill/Nine Mile Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- ▲ Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

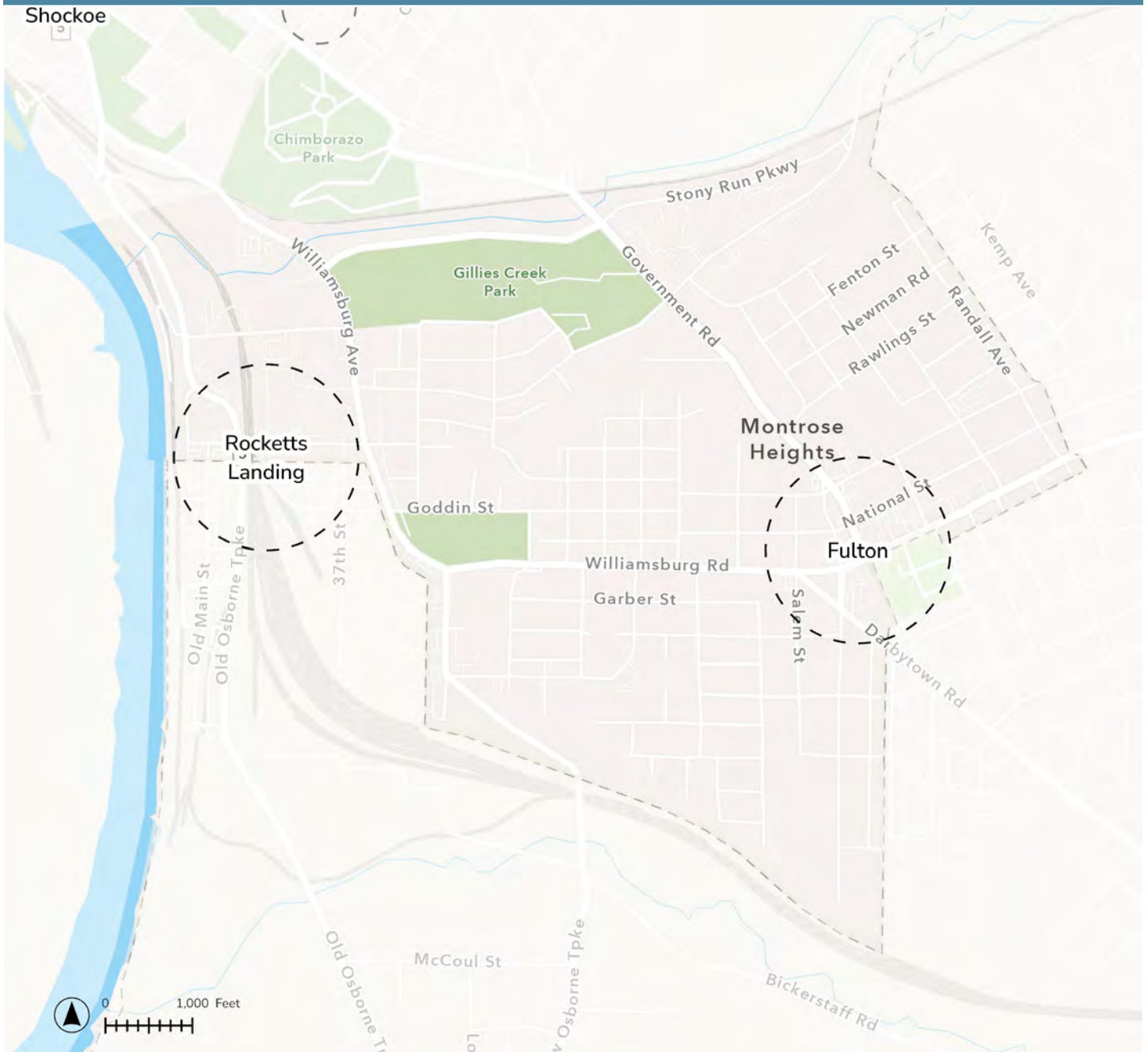
6: Church Hill/Nine Mile Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 5B | Priority Projects | Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements | Moderate (\$\$) | 5.0 | 211 |
| 6A | Priority Projects | Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming | Moderate (\$\$) | 4.6 | 231 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 6D | Priority Projects | Church Hill Street Lighting | Moderate (\$\$) | 4.5 | 240 |
| 6C | Priority Completion | Shockoe Valley Street Improvements | n/a | 3.7 | 292 |
| 6F | Priority Completion | Gillies Creek Greenway | n/a | 3.2 | 294 |
| C13 | Other Completion | Jefferson Avenue Improvements | n/a | n/a | 298 |
| C10 | Other Completion | Shockoe Bottom BRT Streetscape Improvements | n/a | n/a | 297 |
| 5E | Shorter Term | Mechanicsville Turnpike Bus Route | Moderate (\$\$) | 3.4 | 303 |
| 6J | Longer Term | Church Hill Bikeway Connection | Low/ Moderate (\$/\$\$) | 2.5 | 309 |
| 6K | Longer Term | Venable/Mosby Bikesare Station | Low (\$) | 2.4 | 309 |



NEEDS AREA SUMMARIES

7: Fulton



EQUITY CONTEXT

FULTON AREA

NEED AREA 7



Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVAGreen 2050.

- Path to Equity Policy Guide, Equity Factor 8

Equity needs in the Fulton area include several compounding factors.

Portions of these neighborhoods have high concentrations of Communities of Concern, including **BIPOC individuals, BIPOC renters, renters, low-income households, and at-risk youth.**

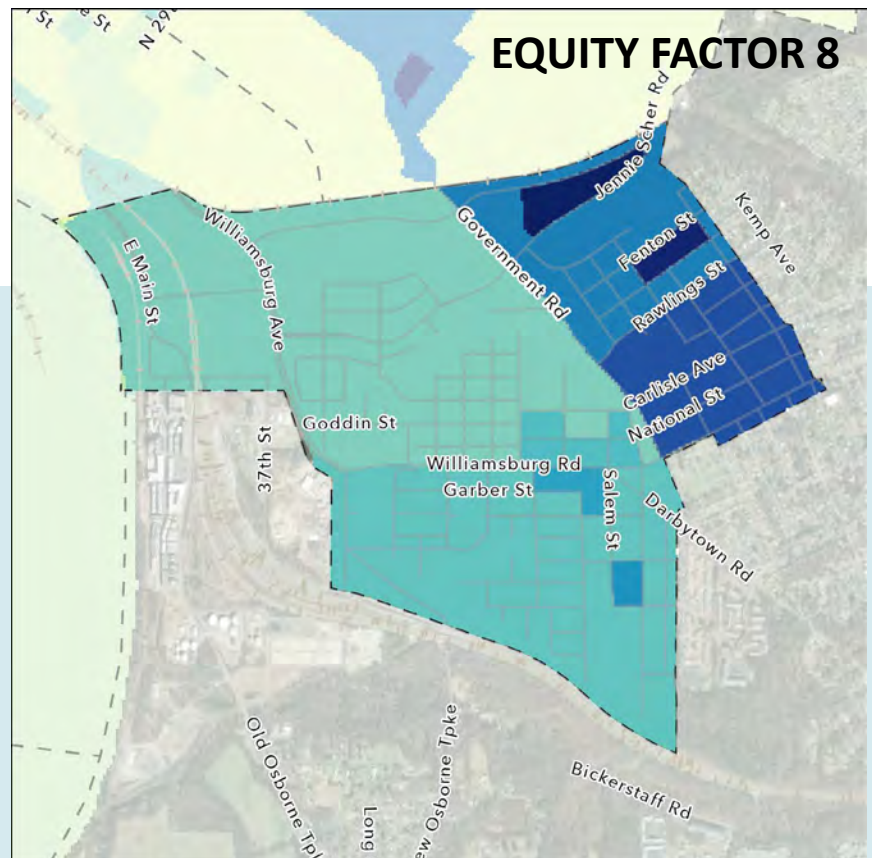
Portions of this area were **redlined** or targets of **urban renewal** and still have high concentrations of **low-income BIPOC** populations and low rates of **BIPOC home ownership.**

It's **hard to get around** by **walking** or **biking** because there aren't direct paths to get where you need to go, or it doesn't feel **safe.**

Social Vulnerability to Climate Change

Some neighborhoods around Fulton are more vulnerable to the effects of climate change, including **flood risk, high heat vulnerability, and urban heat island effect.**

Some roads in this area, are in a **flood risk zone** and **vulnerable to disruption due to climate change.**



Areas shown in dark blue are more prone to flooding during intense precipitation events, have high heat vulnerability, experience urban heat island effect, and have a high density of Communities of Concern.

TOP TRANSPORTATION NEEDS

FULTON AREA

NEED AREA 7



TOP PEDESTRIAN NEEDS

Pedestrian needs here are generally low in this area, compared to other areas.

- Walk access is good.
- Sidewalks exist, with varying degrees of maintenance condition.
- Connectivity is good.

“Super” needs from public input:

- *Pedestrian safety and/or speed calming is needed on streets like Williamsburg Rd and Government Rd*
- *Lack of safe pedestrian crossing at the intersection of Williamsburg Rd and Darbytown Rd*



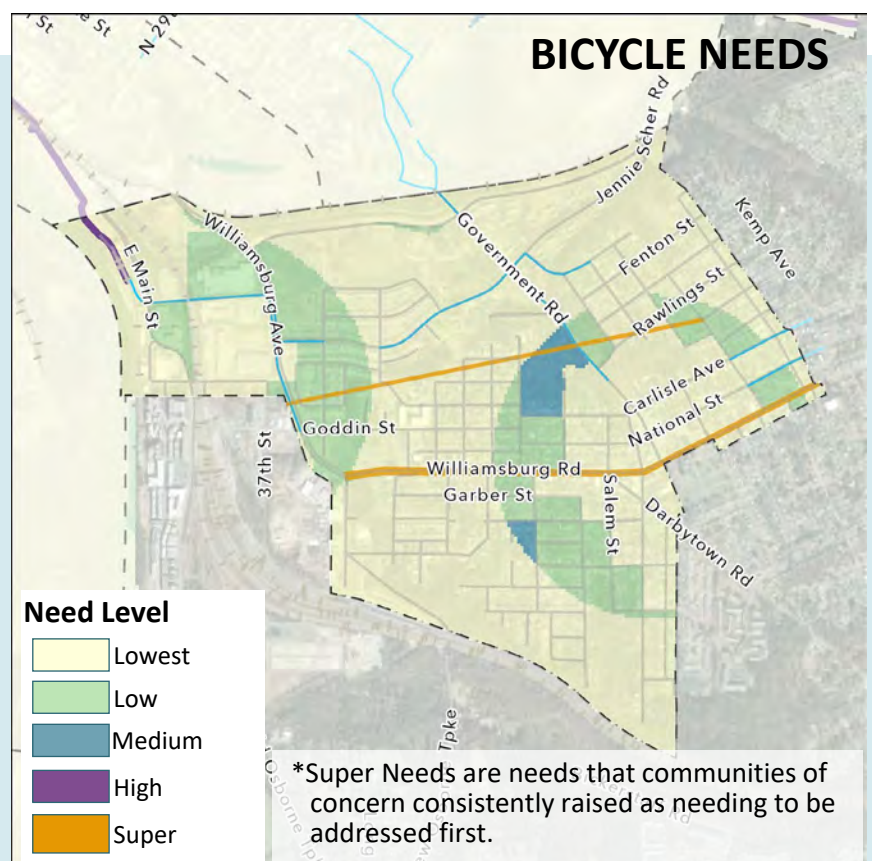
TOP BICYCLE NEEDS

Bicycle needs here are generally low in this area, compared to other areas.

- Bike access is good. There are a lot of destinations within biking distance.
- Streets are connected in a grid pattern.
- Traffic speeds are generally low.

“Super” needs from public input:

- *Bike connection is needed to connect Fulton with Rockett’s Landing*
- *Bike lanes needed along Williamsburg Rd*



TOP TRANSPORTATION NEEDS

FULTON AREA

NEED AREA 7

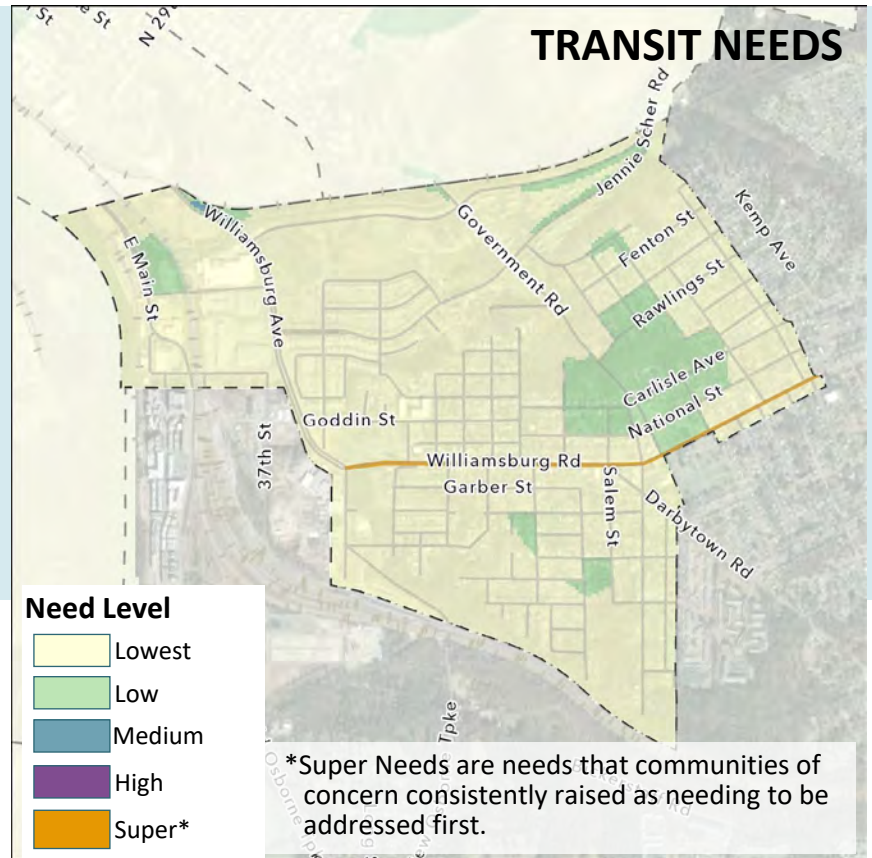


TOP TRANSIT NEEDS

Transit needs are generally low here compared to other areas in the city.

“Super” needs from public input:

- *More frequent transit is needed throughout Fulton, especially along Williamsburg Rd.*
- *Pulse BRT does not serve Fulton directly.*

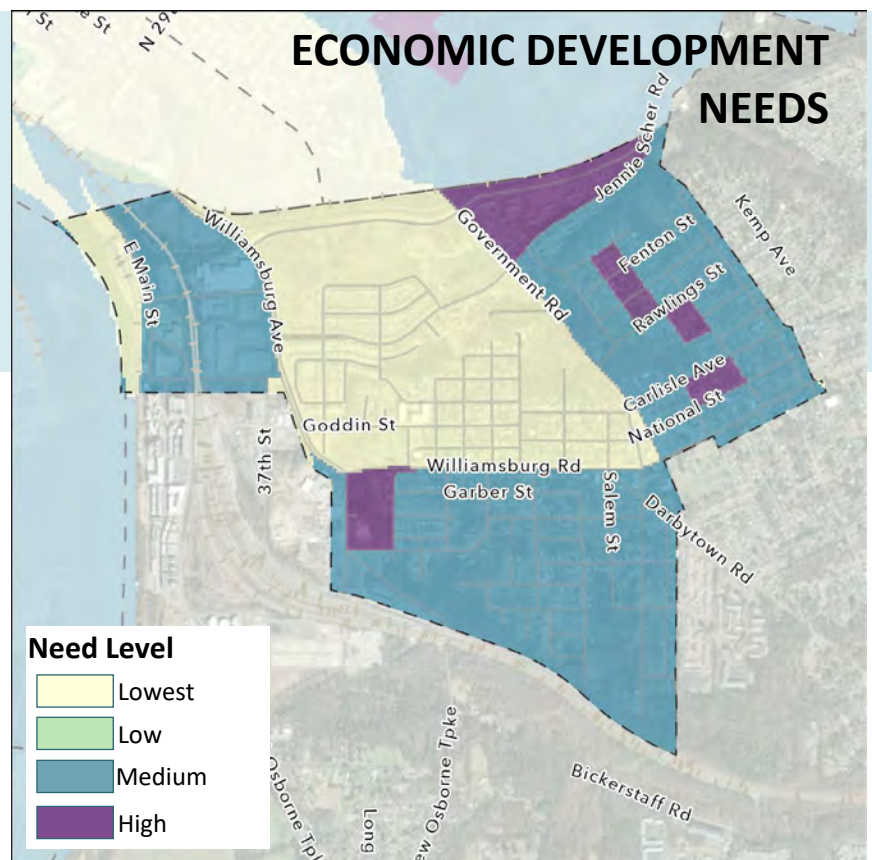


ECONOMIC DEVELOPMENT

- Some neighborhoods within the Fulton area have low market value compared to nearby areas.

Other high needs include:

- **Safety/Security** - Serious crashes have occurred along some roads in this area, including Williamsburg Rd.
- **Freight** – Several roads in this area are frequently used for freight trips, including E Main St, Williamsburg Ave, Stony Run Rd, and Government Rd.

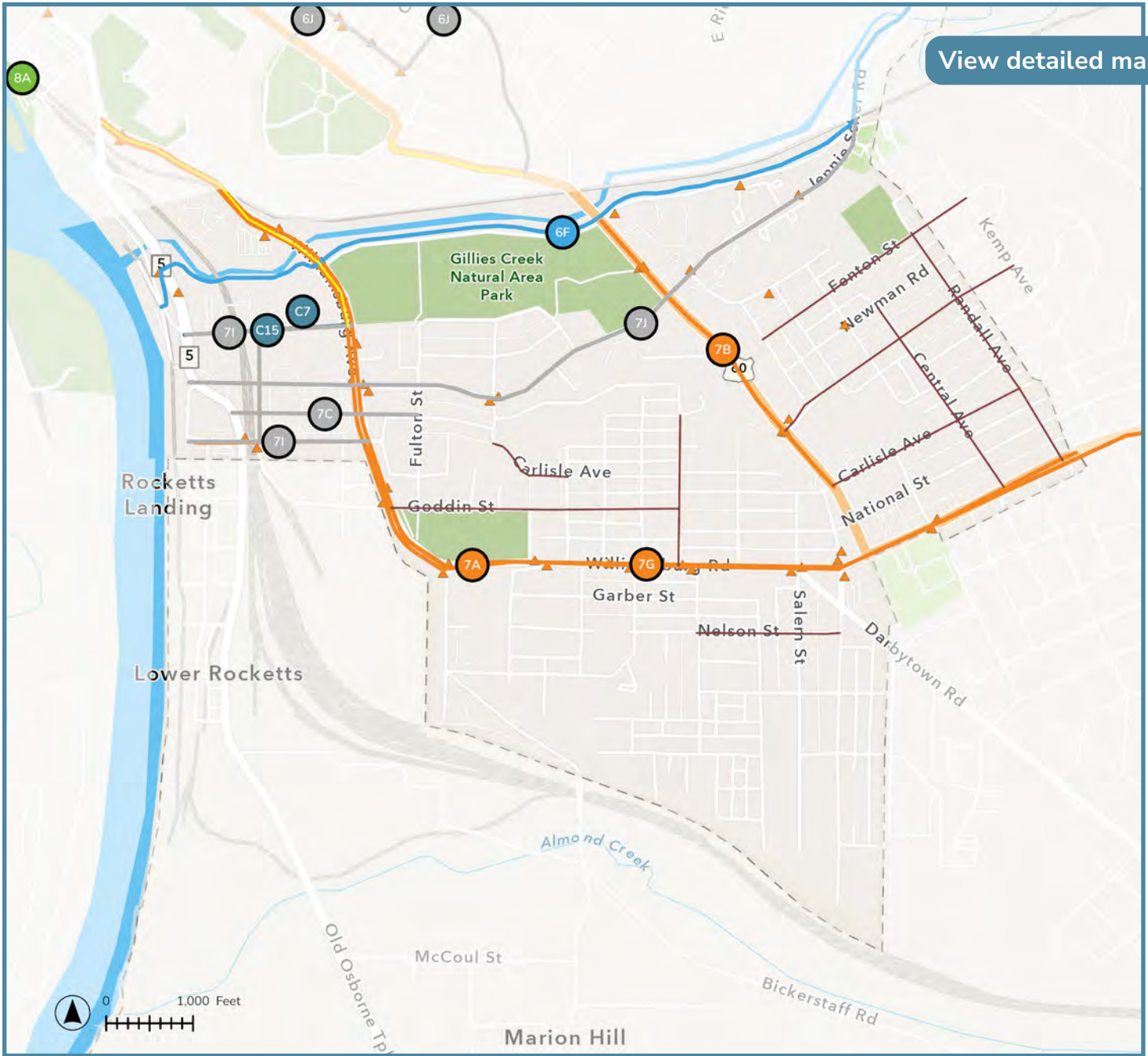




NEEDS AREA SUMMARIES

7: Fulton Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

7: Fulton Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 7B | Priority Projects | Government Road Streetscape Improvements | Very High (\$\$\$\$) | 4.5 | 244 |
| 7G | Priority Projects | Pulse Bus Rapid Transit Eastern Extension | High (\$\$\$) | 4.3 | 246 |
| 7A | Priority Projects | Williamsburg Road/ Williamsburg Avenue Traffic Calming | Moderate (\$\$) | 4.1 | 268 |
| 6F | Priority Completion | Gillies Creek Greenway | n/a | 3.2 | 294 |
| C15 | Other Completion | Nicholson Street Streetscape | n/a | n/a | 299 |
| C7 | Other Completion | Riverfront/ Orleans BRT Streetscape Improvements | n/a | n/a | 297 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.1 | 305 |
| 7J | Longer Term | Admiral Gravelly Boulevard/Jennie Scher Road Bikeway | Moderate/ High (\$\$/\$\$\$) | 2.6 | 309 |
| 7C | Longer Term | Old Fulton Street Grid | Very High (\$\$\$\$) | 3.4 | 307 |
| 7I | Longer Term | Rockett's Landing to Fulton Bike Connection | Moderate (\$\$) | 2.9 | 308 |



NEEDS AREA SUMMARIES

8: Shockoe



EQUITY CONTEXT

SHOCKOE AREA

NEED AREA 8



Shockoe Bottom is the oldest neighborhood in Richmond and has the most notorious past. It was second only to New Orleans in significance during the slave trade and was home to Lumpkins Slave Jail, a holding area for enslaved people being sold at auction. After the end of slavery in America, Shockoe Bottom became a Black neighborhood with Black-owned shops and restaurants.

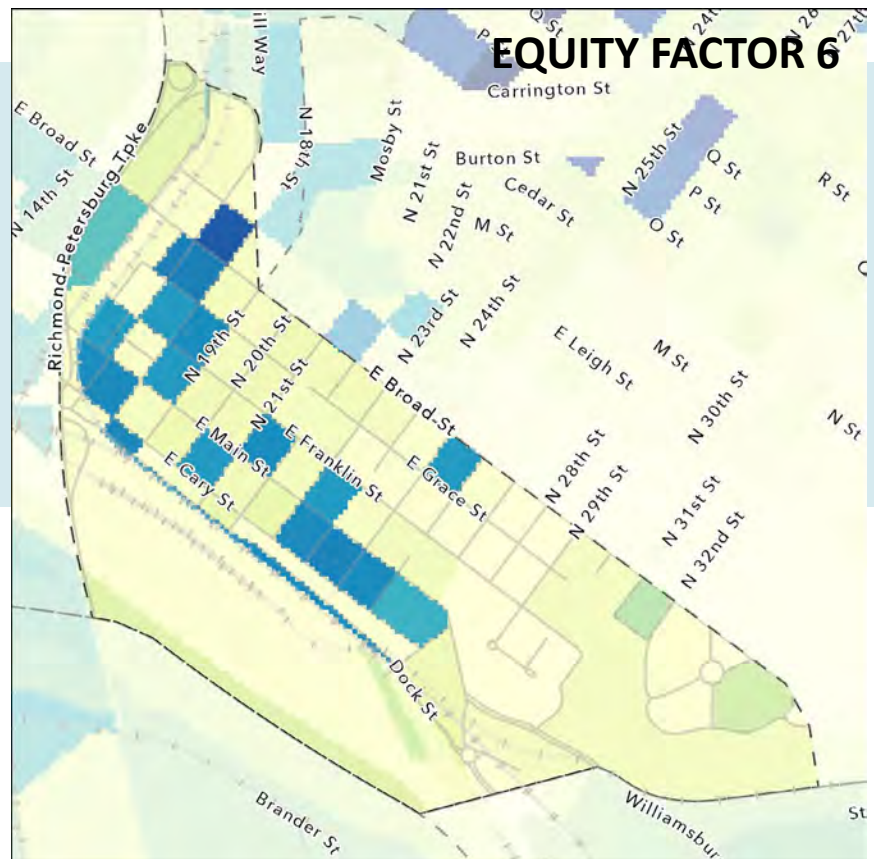
In the 1930s, some portions of this area overlapping with Church Hill to the northeast were **redlined**. In the 1950s, the **construction of the Richmond-Petersburg Turnpike** took Black-owned land and partially covered the Lumpkins Slave Jail site, including slave burial sites.

Today, this area has relatively low densities of Communities of Concern. Over 90 percent of Shockoe Bottom residents are renters, but only 30 percent are BIPOC, and 15 percent of residents are low-income.

Pedestrian and Bicyclist Safety and Access

This is an area of **high pedestrian and bike crashes**. It's also cut off from Downtown to the west by the highway.

Some roads in this area, especially around Shockoe Valley, are in a **flood risk zone** and vulnerable to disruption due to **climate change**.



Areas shown in darker blue are where safety or security issues for pedestrians and bicyclists are concentrated, or where walk or bike access is limited and there is a high density of communities of concern. .

Transportation investments will equitably increase the safety and comfort of cyclists and pedestrians, connecting communities of concern to opportunities.

- Path to Equity Policy Guide, Equity Factor 6

TOP TRANSPORTATION NEEDS

SHOCKOE AREA

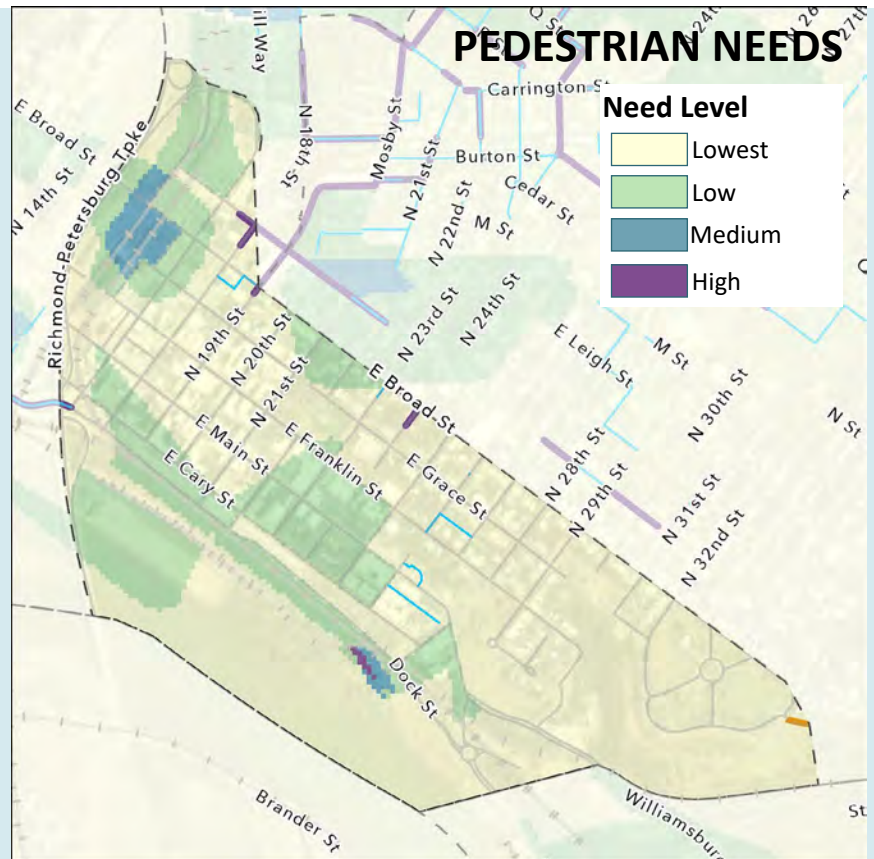
NEED AREA 8



TOP PEDESTRIAN NEEDS

In general, equity-weighted pedestrian needs are low in this area.

- Walk access is good. There are a lot of destinations within walking distance.
- Sidewalks exist on almost every street, with varying degrees of maintenance condition.
- Connectivity to other areas is okay, but there are issues with elevation change. There are challenges getting to Downtown, Church Hill, and Union Hill.



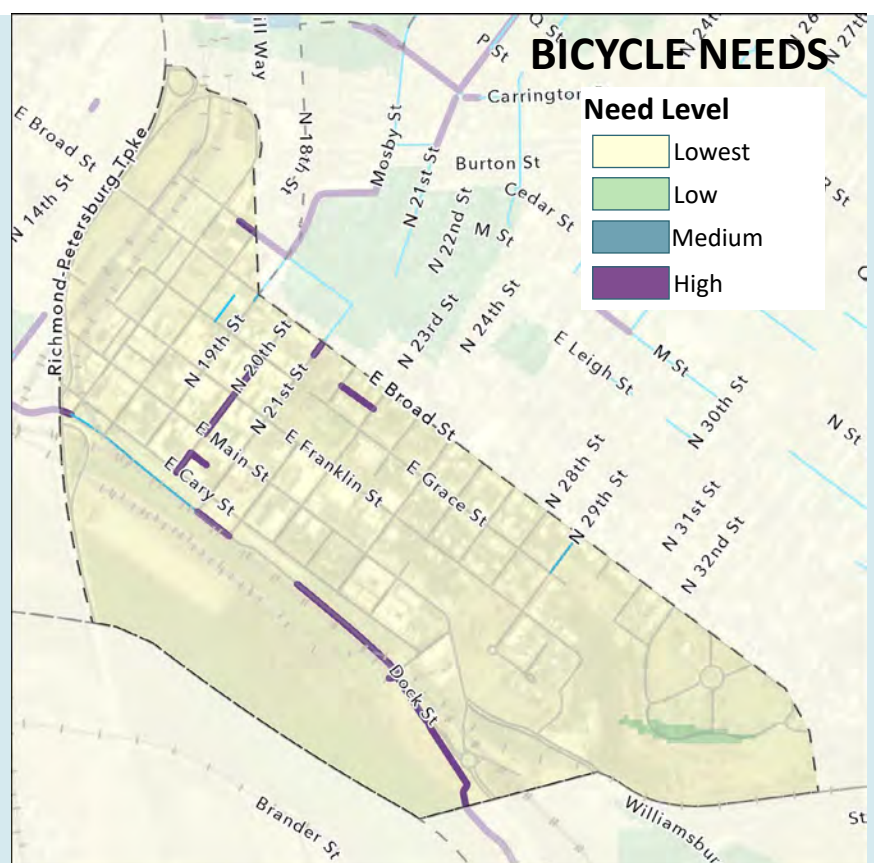
TOP BICYCLE NEEDS

In general, equity-weighted bicycle needs are low in this area.

- Bike access is good. There are a lot of destinations within biking distance.
- Streets are connected in a grid pattern, but traffic speeds can be an issue on some streets.

Bike trips from Communities of Concern use these streets the most:

- 20th St
- Dock St



TOP TRANSPORTATION NEEDS

SHOCKOE AREA

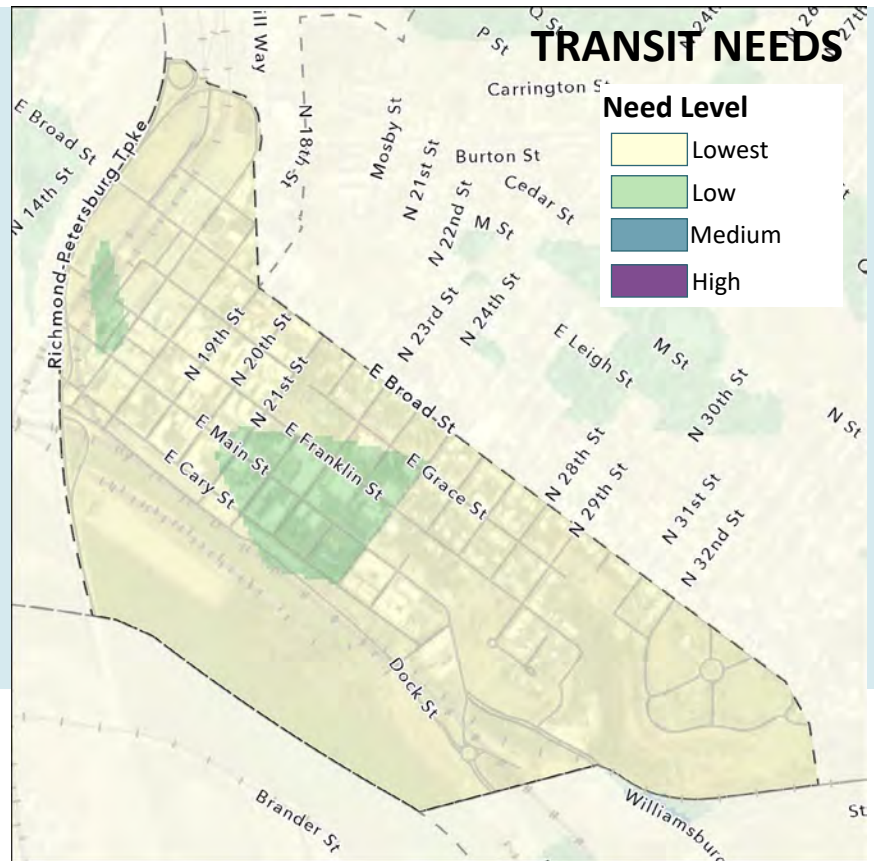
NEED AREA 8

TOP TRANSIT NEEDS

Transit needs are relatively low here compared to other areas.

Needs identified by public comments:

- *Add a transit route more directly connecting Downtown to the heart of Shockoe*
- *Bus-only lanes for Pulse BRT along E. Main St*
- *Add a transit route along Oliver Hill Way*

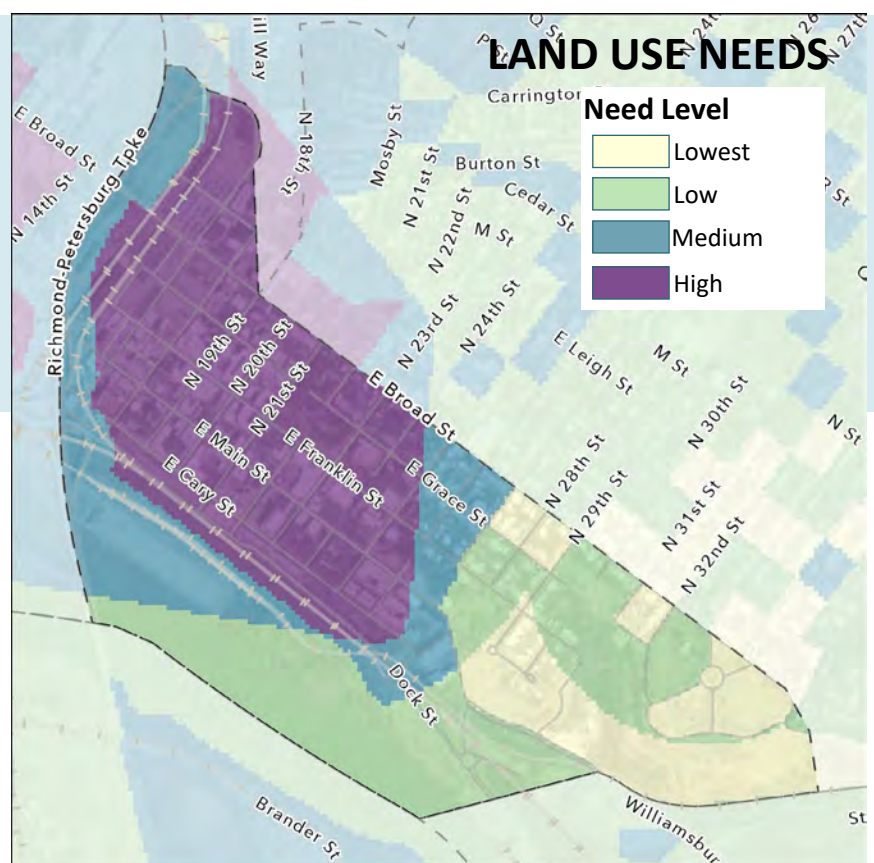


LAND USE NEEDS

There is an abundance of surface parking lots, especially in Shockoe Bottom.

Other high needs include:

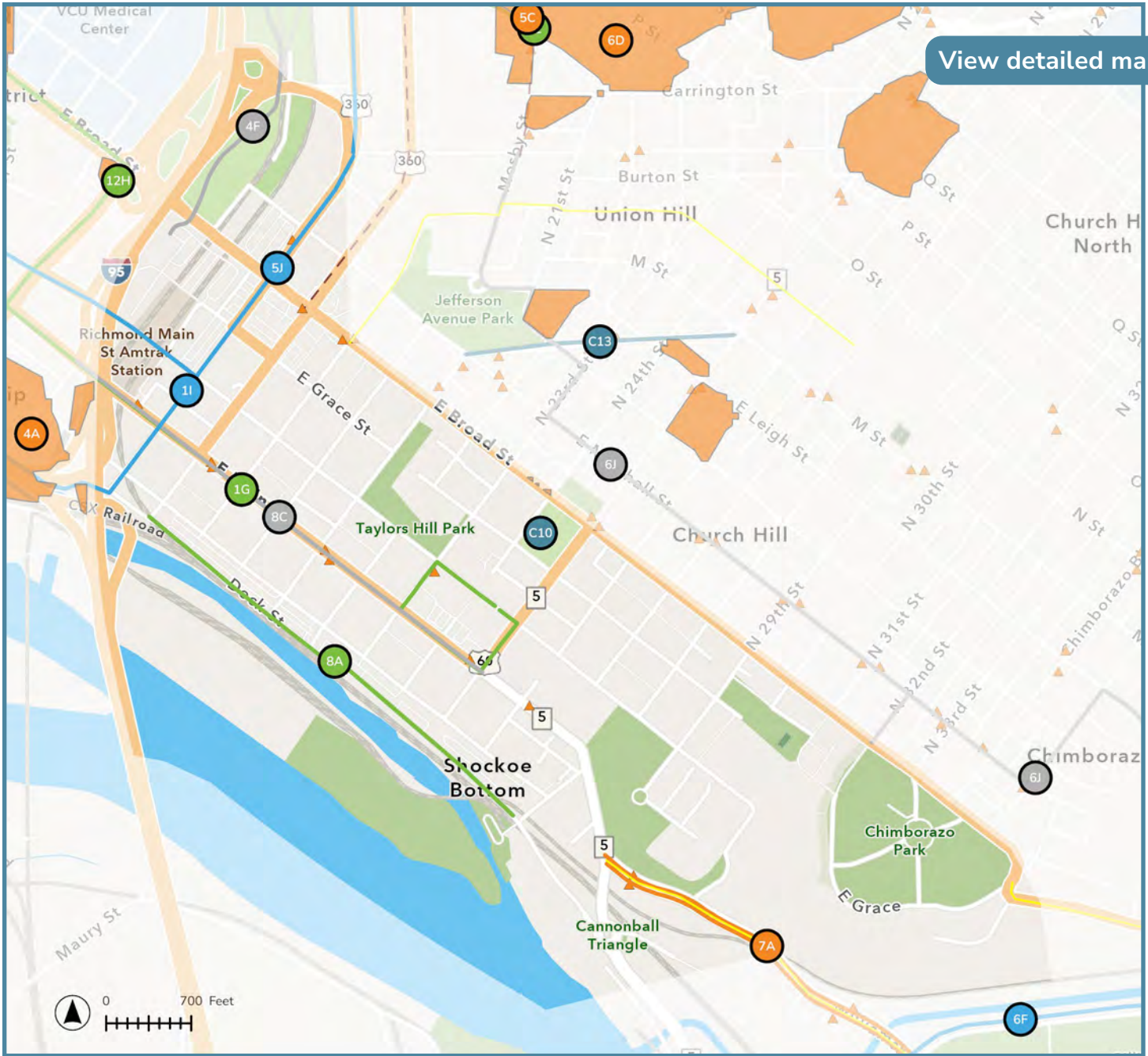
- **Safety/Security Needs** – even though it's walkable, there are often pedestrian crashes, especially between VCU Health parking areas and Downtown.
- **Sustainability Needs** – high flood risk in some areas.





NEEDS AREA SUMMARIES

8: Shockoe Project Recommendations



[View detailed map](#)

- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects

- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

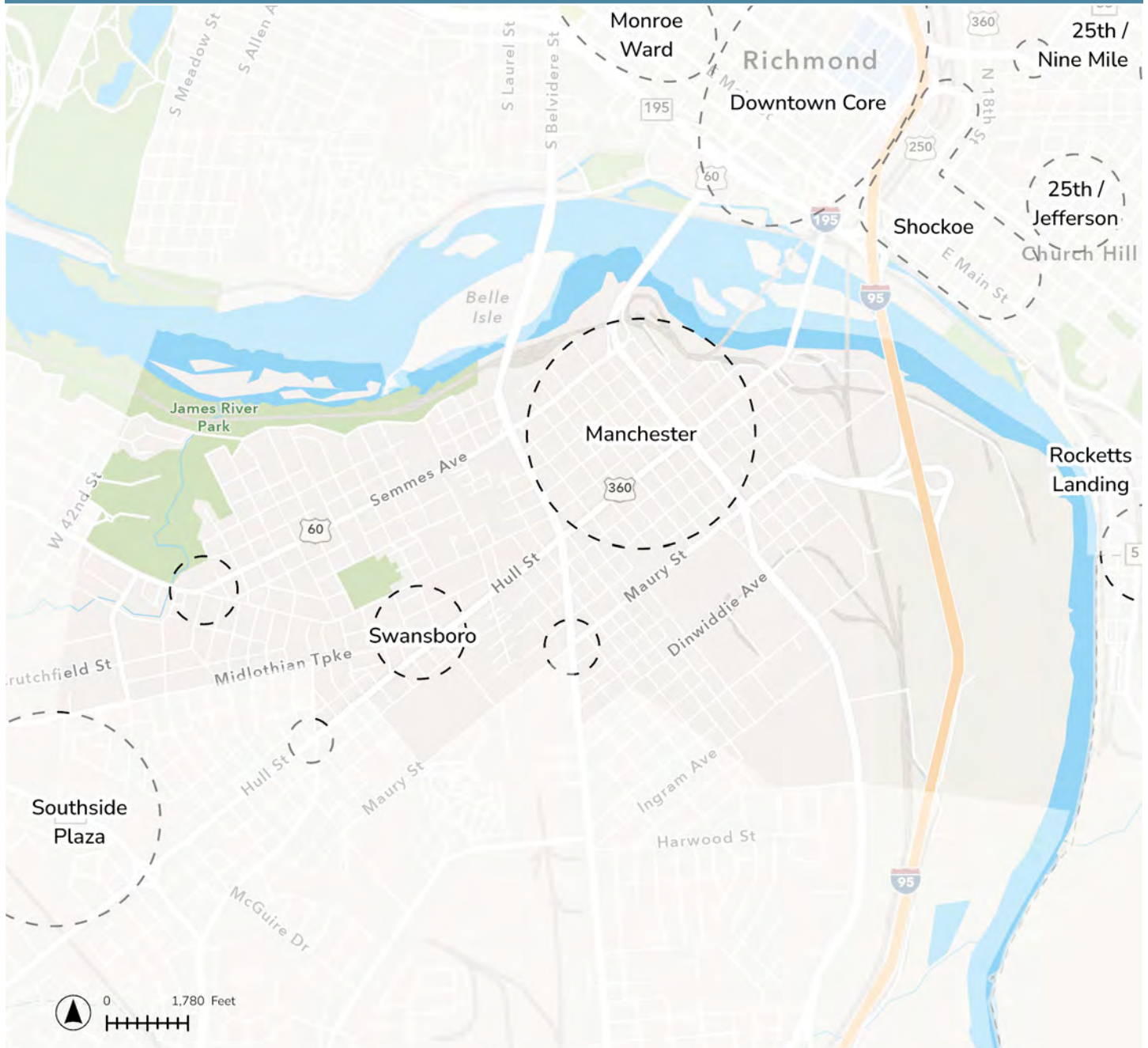
8: Shockoe Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 5J | Priority Completion | Oliver Hill Way Bike Lanes | n/a | 3.2 | 294 |
| C7 | Other Completion | Riverfront/ Orleans BRT Streetscape Improvements | n/a | n/a | 297 |
| C26 | Other Completion | Route 5 Relocation/Williamsburg Road Intersection Improvement | n/a | n/a | 301 |
| C10 | Other Completion | Shockoe Bottom BRT Streetscape Improvements | n/a | n/a | 297 |
| 8A | Shorter Term | Dock Street Pedestrian Improvements | Moderate (\$\$) | 3.6 | 303 |
| 4L | Longer Term | Downtown/Shockoe Parking Recommendations | Moderate (\$\$) | 3.0 | 308 |
| 8G | Longer Term | East End Bikeshare Stations | Low (\$) | 2.1 | 310 |
| 8C | Longer Term | East Main Street Streetscape Improvements | Moderate (\$\$) | 3.5 | 307 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Low/Moderate (\$/\$\$) | 3.7 | 307 |



NEEDS AREA SUMMARIES

9: Manchester/Swansboro



EQUITY CONTEXT

MANCHESTER/SWANSBORO AREA

NEED AREA 9



Transportation investments will improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for communities of concern.

- Path to Equity Policy Guide, Equity Factor 7

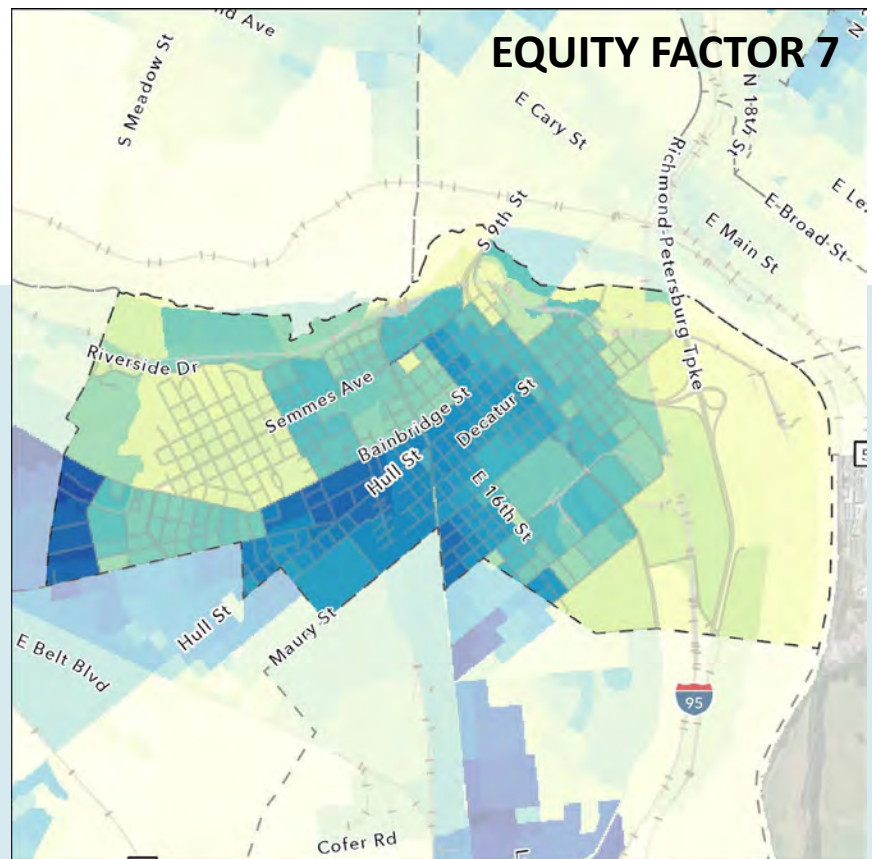
Equity needs in the Manchester and Swansboro areas in Southside include several compounding factors.

Portions of these neighborhoods have high concentrations of Communities of Concern, including **BIPOC individuals, BIPOC renters, renters, and low-income households.**

Roads in these areas are in a **flood risk zone** and **vulnerable** to disruption due to **climate change.**

Transit Reliability

It's hard to **get to** the places you most need to because **transit service** is either **infrequent** or **unreliable**, especially for Communities of Concern.



Areas shown in dark blue are where transit service frequency or reliability issues degrade access for destinations relevant to communities of concern.

It can be challenging to get around via **biking** or **walking** because there may not be direct paths to destinations without walking or riding your bike along **high-speed roads.**

TOP TRANSPORTATION NEEDS

MANCHESTER/SWANSBORO AREA

NEED AREA 9



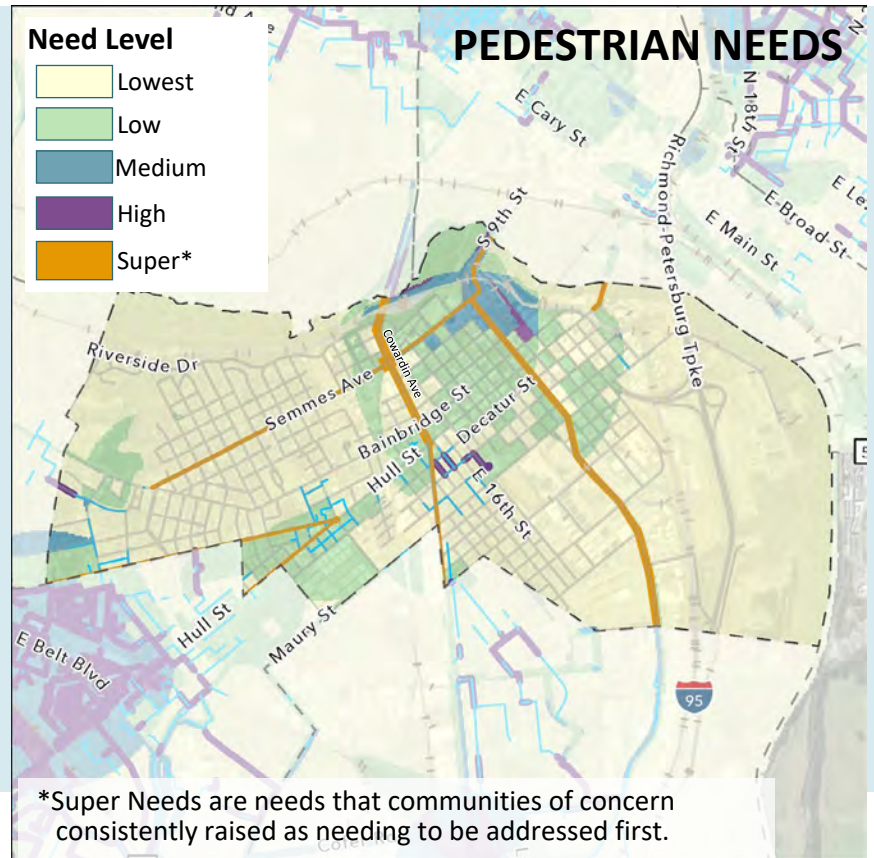
TOP PEDESTRIAN NEEDS

Pedestrian needs are highest:

- Coming off of the Manchester and Mayo Bridges
- Around Old Town Manchester

“Super” needs from public input:

- *Crossing feels unsafe at the intersection of Cowardin Ave and Semmes Ave.*
- *Pedestrian safety and/or speed calming is needed on streets like Semmes Ave, Cowardin Ave, Hull St., and Midlothian Tpk.*
- *Sidewalks are missing along Route 1.*



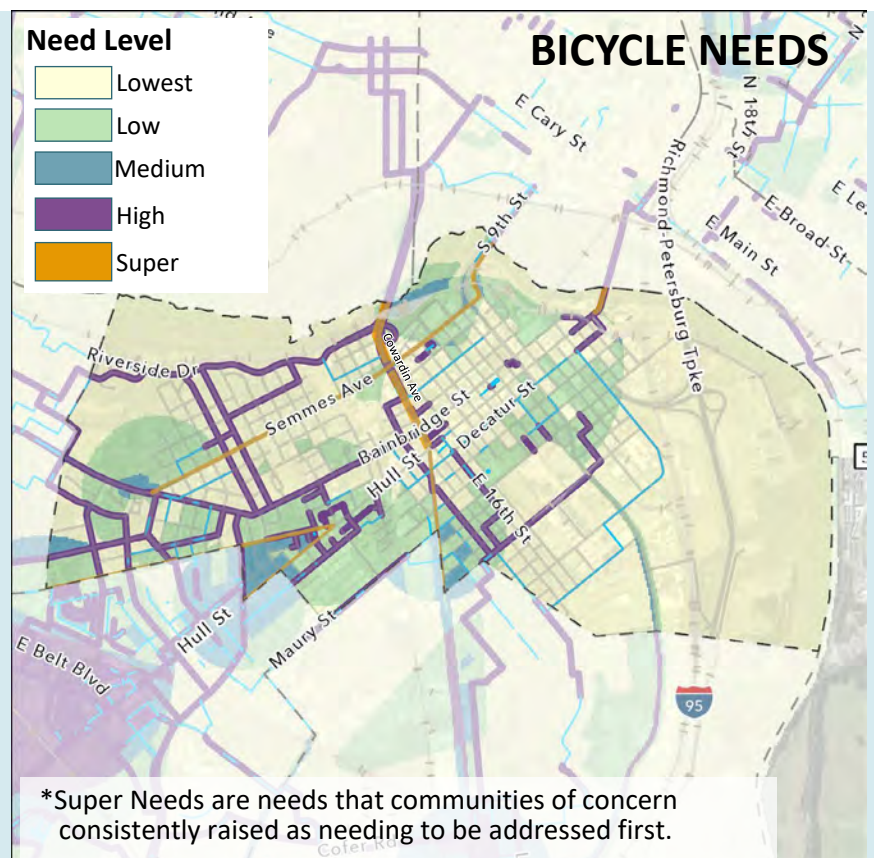
TOP BICYCLE NEEDS

Bike trips from Communities of Concern use these streets the most:

- Riverside Dr
- Bainbridge St
- Cowardin Ave

“Super” needs from public input:

- *Biking feels dangerous on streets like Semmes Ave, Cowardin Ave, Hull St., and Midlothian Tpk because of driving speeds.*



Bicycle needs here are generally lower than several other areas of Richmond.

TOP TRANSPORTATION NEEDS

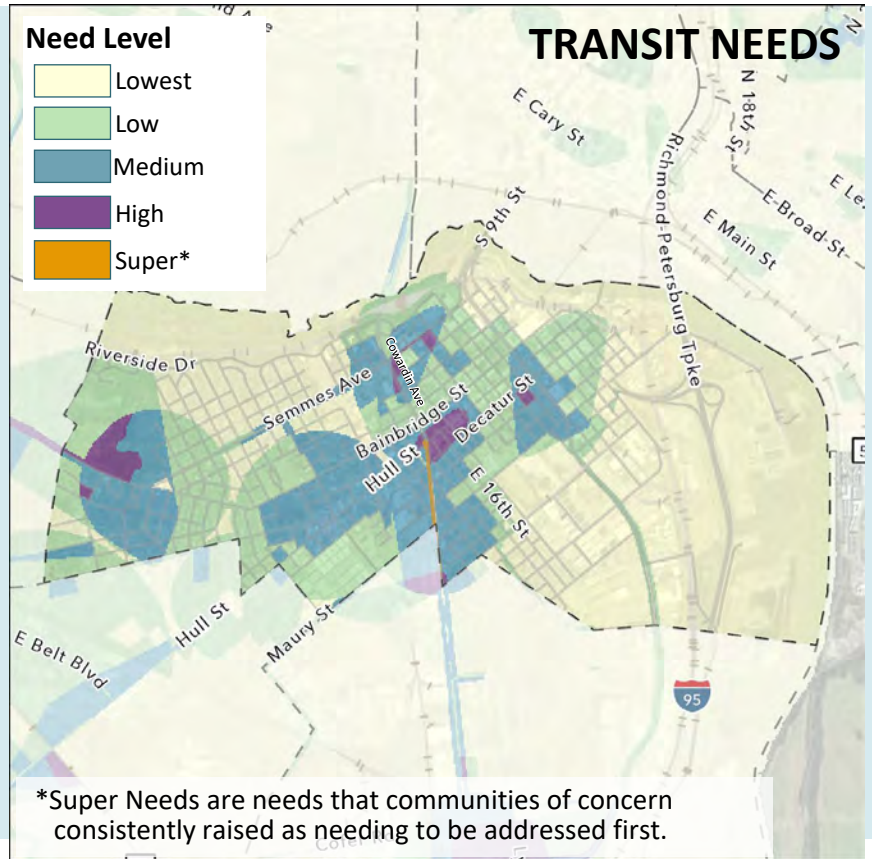
MANCHESTER/SWANSBORO AREA

NEED AREA 9



TOP TRANSIT NEEDS

- Bus stops on US Route 1 (Richmond Highway) lack shelters and benches.
- More frequent transit is needed near Cowardin and Hull Streets.
- Pulse BRT does not serve Southside.
- Themes identified in public comments:
 - Desire for N/S BRT that includes a station in Manchester
 - Buses are often unreliable and/or infrequent
 - Long waits at bus stops
 - No protection from sun/weather at most bus stops



SAFETY/SECURITY NEEDS

- Along roads like Hull St, Semmes Ave, Maury St, and Cowardin Ave, there have been severe pedestrian crashes.

Other high needs include:

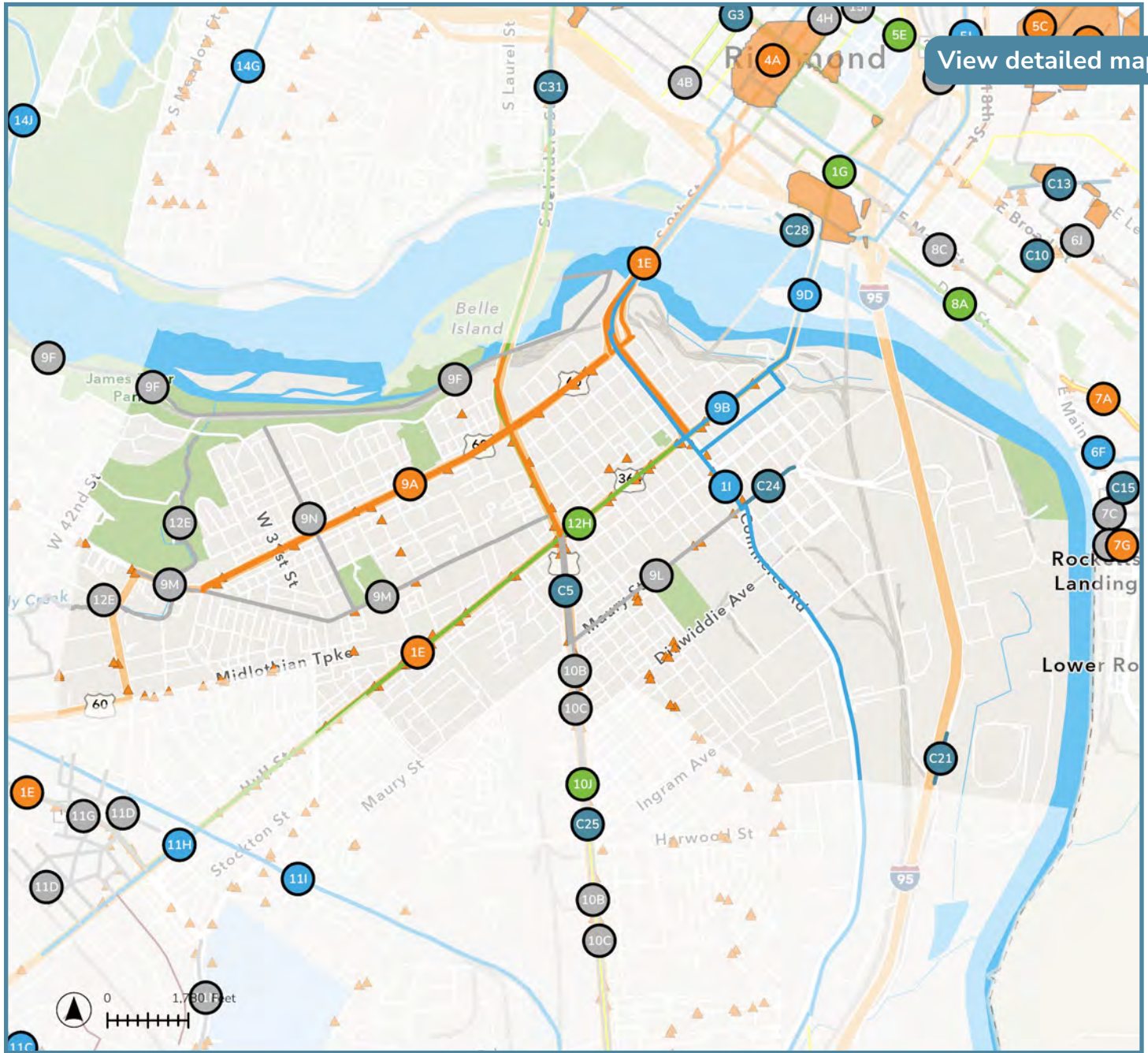
- Freight – Several roads in this area are frequently used for freight trips, including Cowardin Ave, Hull St, Maury St, and Commerce Rd.
- Economic Development – Low market value in some areas





NEEDS AREA SUMMARIES

9: Manchester/Swansboro Projects Recommendations



[View detailed map](#)



NEEDS AREA SUMMARIES

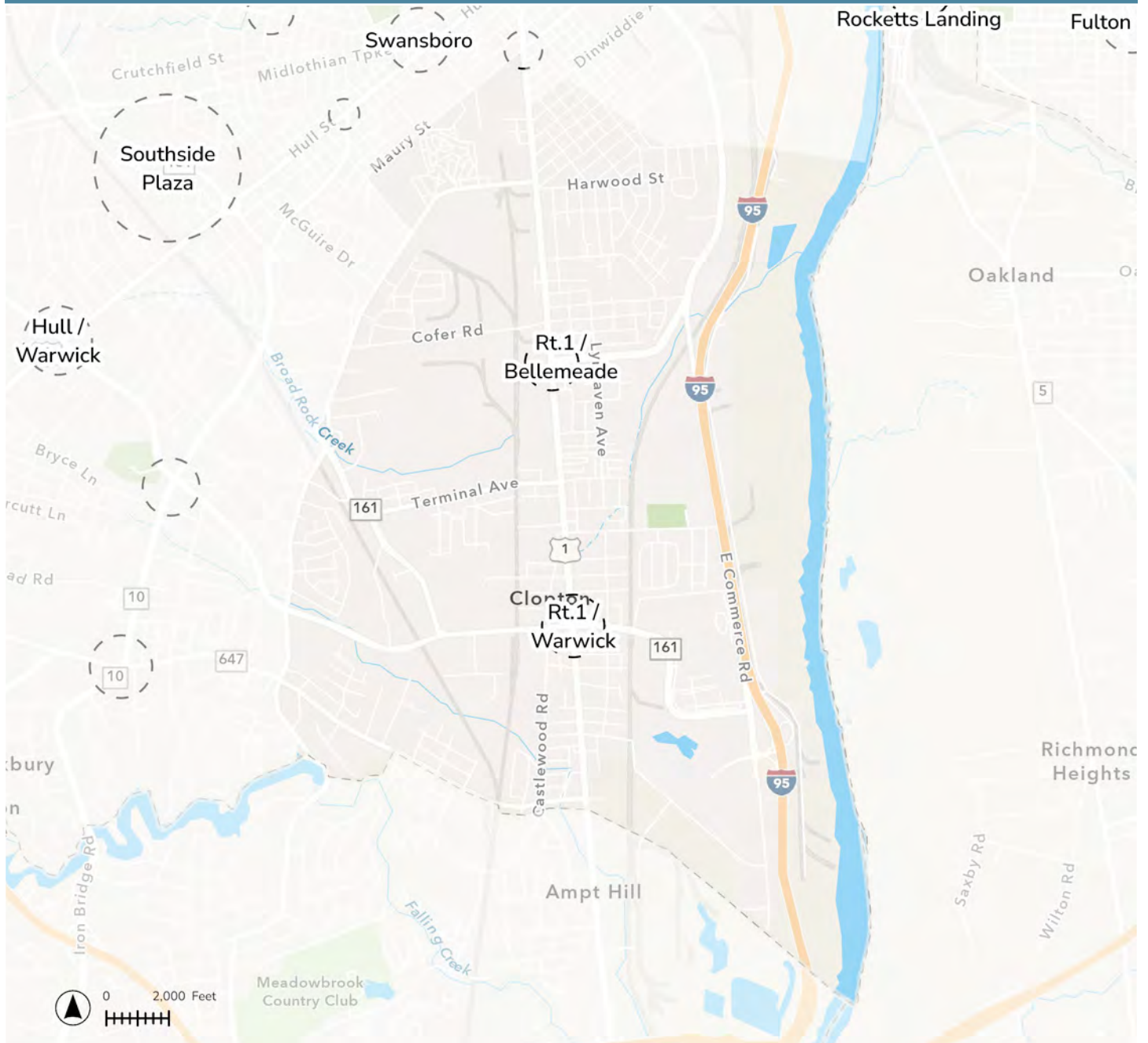
9: Manchester/Swansboro Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|--|--|---------------|------|
| 9A | Priority Projects | Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements | High (\$\$\$) | 4.6 | 233 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 9C | Priority Projects | Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike | High (\$\$\$) | 4.3 | 247 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Very High (\$\$\$\$) | 3.9 | 280 |
| 9B | Priority Completion | Hull Street Streetscape - Mayo Bridge to 9th Street | n/a | 4.8 | 291 |
| 9D | Priority Completion | Mayo Bridge Pedestrian and Bicycle Facilities | n/a | 3.7 | 292 |
| 1I | Priority Completion | Fall Line Trail | n/a | 2.6 | 295 |
| C21 | Other Completion | Deepwater Terminal Road Connector to Goodes Street | n/a | n/a | 300 |
| C3 | Other Completion | Hull Street at 29th Street Pedestrian Hybrid Beacon | n/a | n/a | 296 |
| C5 | Other Completion | Richmond Highway Phase II Improvements | n/a | n/a | 296 |
| C17 | Other Completion | Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements | n/a | n/a | 299 |
| 9M | Longer Term | Bainbridge Street/Forest Hill Avenue Bike Lanes | Low/Moderate (\$/\$\$) | 2.7 | 309 |
| 9L | Longer Term | Maury Street Bikeway | Very High (\$\$\$\$) | 1.8 | 311 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | n/a | 2.5 | 309 |
| 9F | Longer Term | Riverside Shared-Use Path | Very High (\$\$\$\$) | 2.9 | 308 |
| 9N | Longer Term | West 29th Street Bikeway | Moderate (\$\$) | 1.7 | 311 |



NEEDS AREA SUMMARIES

10: Southside Route 1 Corridor



EQUITY CONTEXT

RT 1 CORRIDOR AREA

NEED AREA 10

Transportation investments will improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.

- Path to Equity Policy Guide, Equity Factor 4

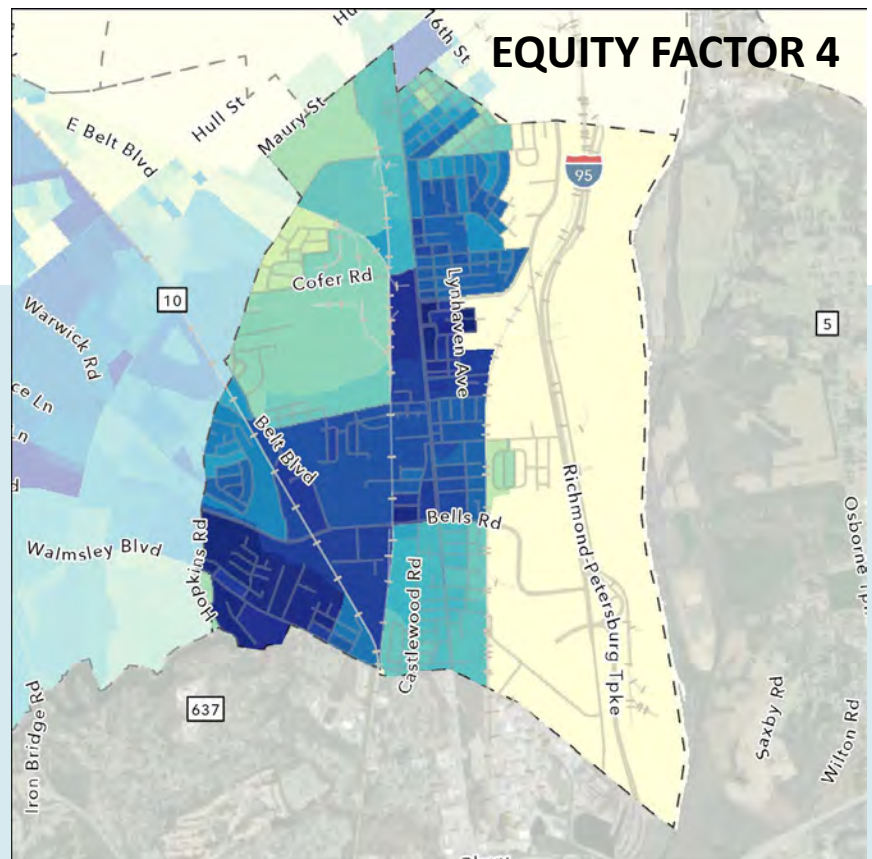
Equity needs in the Route 1 Corridor Area in Southside include several compounding factors.

Portions of these neighborhoods have high concentrations of Communities of Concern, including **BIPOC individuals, BIPOC renters, renters, and low-income households.**

It's hard to get around using transit in this area because **bus service is infrequent and can be unreliable.**

Inner-Ring Suburbs

Most of the residential neighborhoods in this area were built to be car-centric. These neighborhoods have low accessibility to destinations and have low-income households.



Areas shown in dark blue are more difficult to get to destinations by biking, walking, or transit, and there's a high density of Communities of Concern.

Some neighborhoods near the Route 1 Corridor are more vulnerable to the effects of **climate change**, including **flood risk, high heat vulnerability, and urban heat island effect.**

TOP TRANSPORTATION NEEDS

RT 1 CORRIDOR AREA

NEED AREA 10

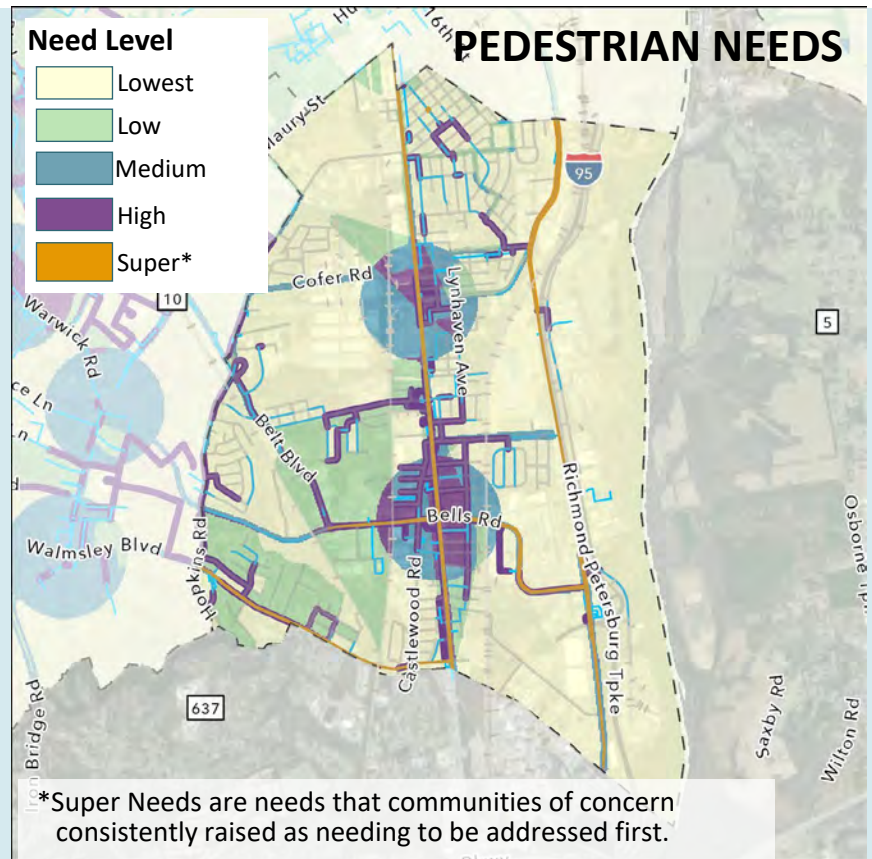


TOP PEDESTRIAN NEEDS

- Destinations are not close, and connectivity is poor.
- Pedestrian facilities that do exist have poor quality of service.
 - Broken sidewalks
 - Poor lighting
 - Adjacent to high-speed traffic
 - Lack of street trees

“Super” Needs from public input:

- *It feels dangerous to walk along high-speed roads like Route 1, Bells Rd, and Walmsley Blvd.*

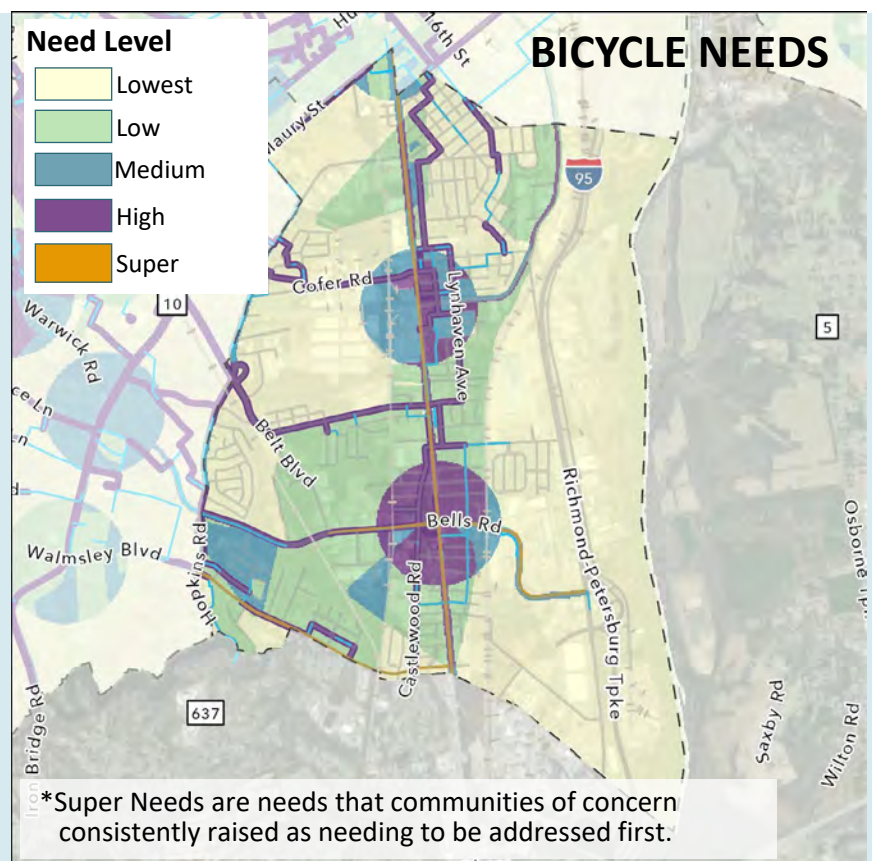


TOP BICYCLE NEEDS

- Key Bike Connections:
 - US 1 Richmond Hwy
 - Lynhaven Ave
 - Terminal Ave
 - Bells Road
 - Walmsley Blvd
- High needs within the Node at US 1 Richmond Hwy/ Bells Rd

“Super” Needs from public input:

- *It feels dangerous to bike along high-speed roads like Route 1, Bells Rd, and Walmsley Blvd.*



TOP TRANSPORTATION NEEDS

RT 1 CORRIDOR AREA

NEED AREA 10

TOP TRANSIT NEEDS

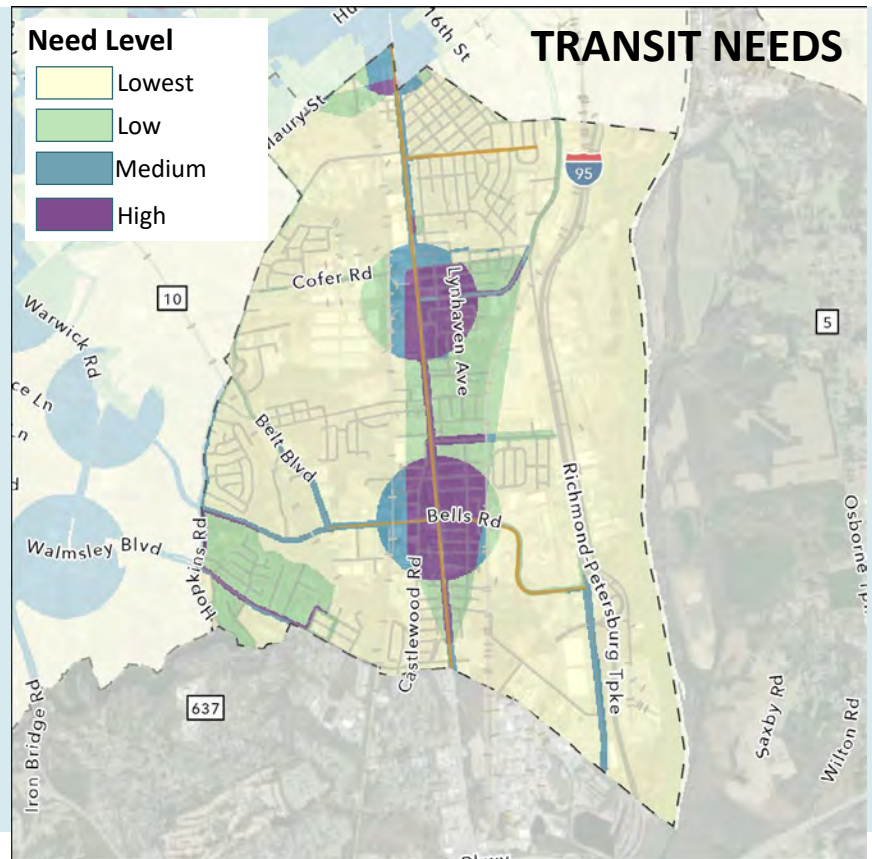
Transit needs are highest in the Nodes along Route 1.

It's hard to get places by transit from here because:

- Buses don't come frequently (30 to 60 minute service)
- Buses are unreliable – poor on-time performance
- Lack of shelters and benches at bus stops
- Lack of sidewalk and bike facility connections to bus stops

“Super” Needs from public input:

- *Bus service is infrequent and bus stops lack shelters and benches, especially on US 1 Richmond Highway and Bells Rd*

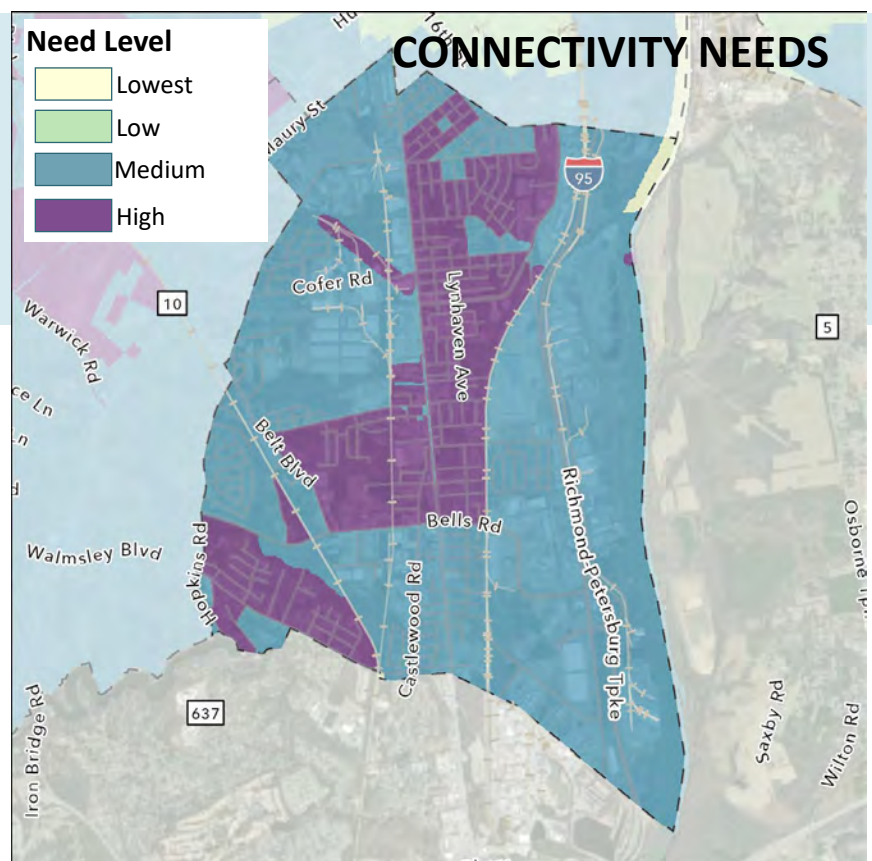


CONNECTIVITY NEEDS

- Trips to and from this area take a longer amount of time due to the disconnected nature of travel modes.

Other high needs include:

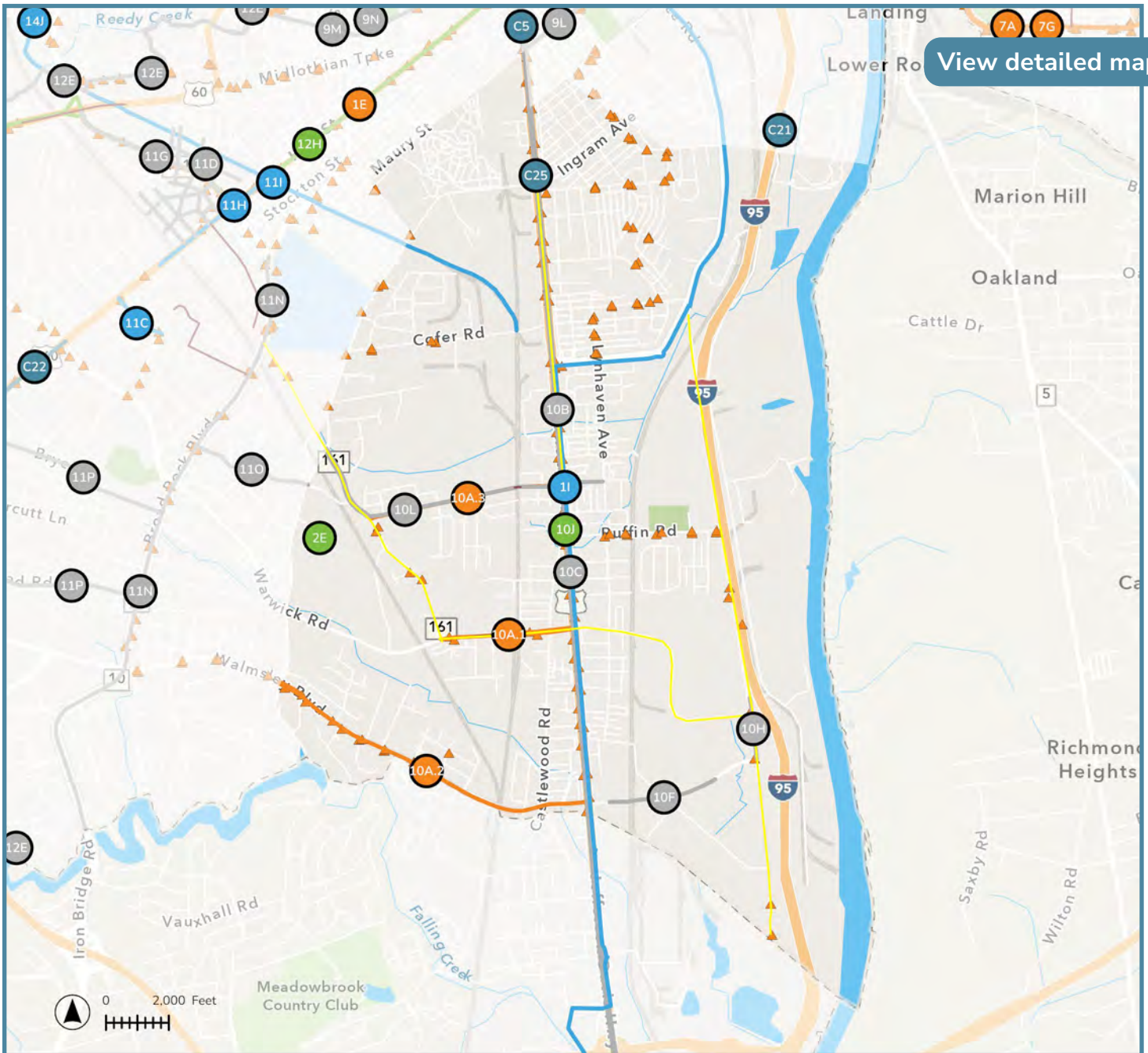
- Freight - Several roads in this area are frequently used for freight trips, including Route 1, Bells Rd, Commerce Rd, and Bellemeade Rd.
- Economic Development – Low market value in some areas
- Land Use – Some neighborhoods are far from public open space.





NEEDS AREA SUMMARIES

10: Southside Route 1 Corridor



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

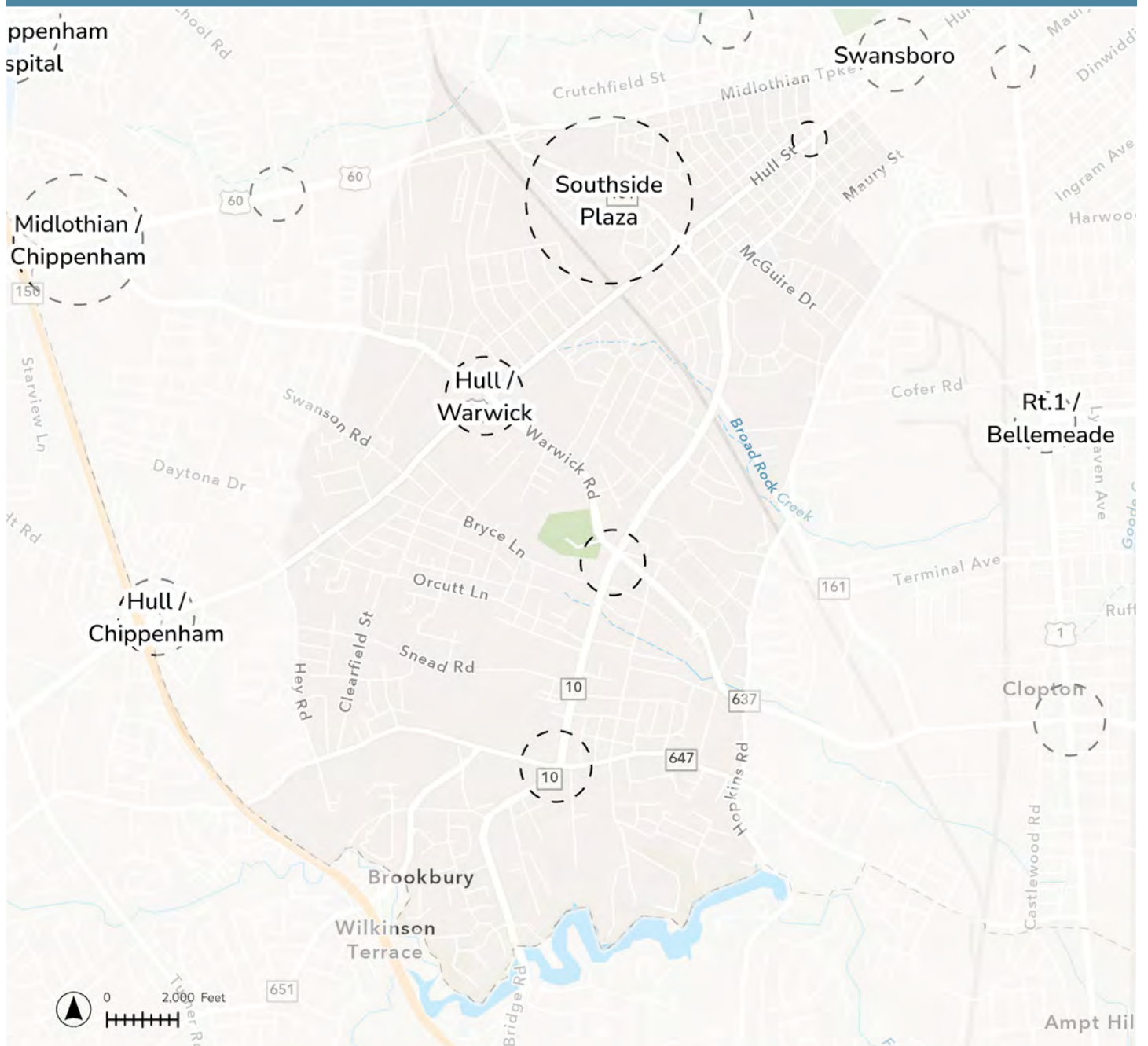
10: Southside Route 1 Corridor

| ID | Category | Title | Cost | Support Score | Page |
|-------|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 10A.1 | Priority Projects | Bells Road Sidewalks | High (\$\$\$) | 4.9 | 221 |
| 10A.2 | Priority Projects | Walmsley Boulevard Shared Use Path | Very High (\$\$\$\$) | 4.9 | 223 |
| 10A.3 | Priority Projects | Terminal Boulevard Shared Use Path | High (\$\$\$) | 4.9 | 225 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 1I | Priority Completion | Fall Line Trail | n/a | 2.6 | 295 |
| 11I | Priority Completion | James River Branch Trail | n/a | 1.6 | 295 |
| C24 | Other Completion | Maury Street Streetscape | n/a | n/a | 300 |
| C25 | Other Completion | Richmond Highway Improvements | n/a | n/a | 300 |
| 10J | Shorter Term | Richmond Highway Transit Improvements | Moderate (\$\$) | 3.4 | 304 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.1 | 305 |
| 10H | Longer Term | Commerce Road Improvements at Walmsley Boulevard | High (\$\$\$) | 2.1 | 310 |
| 10N | Longer Term | Greenspace/Park near Richmond Highway | n/a | 2.9 | 309 |
| 10B | Longer Term | Richmond Highway Great Street Transformation | High (\$\$\$) | 3.4 | 307 |
| 10C | Longer Term | Richmond Highway Pedestrian Safety Improvements | High (\$\$\$) | 3.3 | 307 |
| 10M | Longer Term | Richmond Highway Revitalization | n/a | 3.3 | 308 |
| 10L | Longer Term | Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd | Moderate (\$\$) | 1.5 | 311 |
| 10F | Longer Term | Walmsley Boulevard Street Connection | High (\$\$\$) | 2.1 | 310 |



NEEDS AREA SUMMARIES

11: Broad Rock/Walmsley



EQUITY CONTEXT

BROAD ROCK/WALMSLEY AREA

NEED AREA 11



Transportation investments will improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.

- Path to Equity Policy Guide, Equity Factor 4

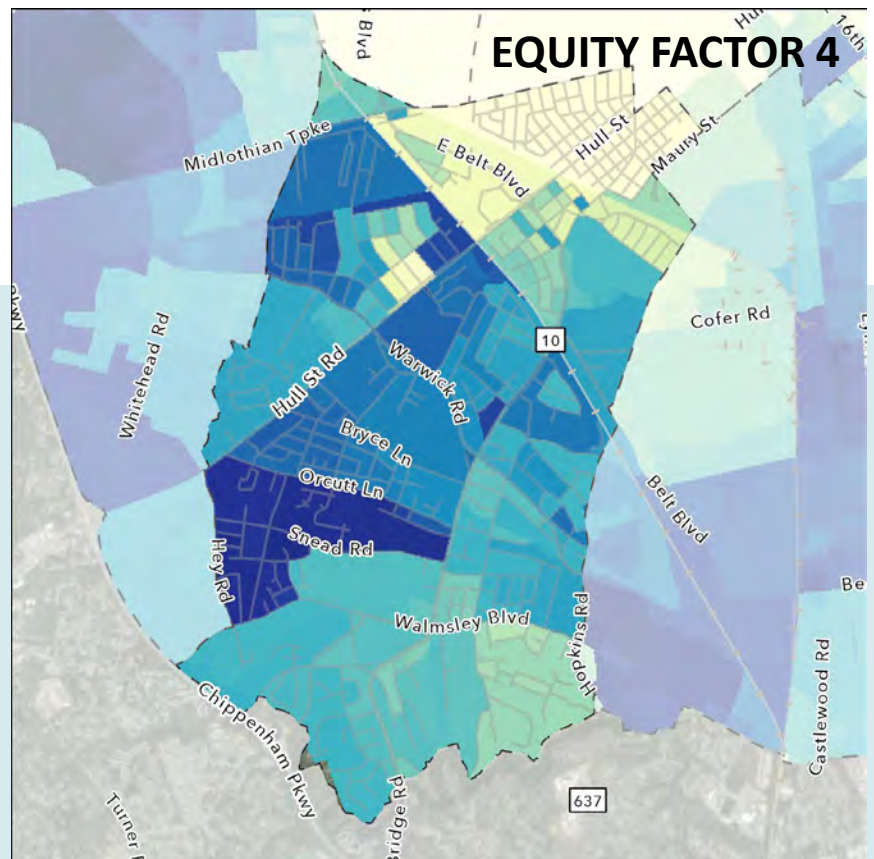
Equity needs in the neighborhoods around the Broad Rock and Walmsley areas include several compounding factors.

Portions of these neighborhoods have high concentrations of Communities of Concern, including **at-risk youth, low-income households, residents of older age, and BIPOC renters.**

It's hard to get around by walking or biking in this area because **there aren't direct paths** to get where you need to go, or **it doesn't feel safe.**

Inner-Ring Suburbs

Portions of this area are considered to be inner-ring suburbs – they have poor accessibility and are largely low-income.



Areas shown in darker blue are inner-ring suburbs with have a high concentration of COCs and have poor accessibility - where it's difficult to places by biking, walking, or transit.

There is a high density of **Communities of Concern**, and areas are more prone to **flooding** during intense precipitation events, have **high heat vulnerability**, and experience **urban heat island** effect.

TOP TRANSPORTATION NEEDS

BROAD ROCK/WALMSLEY AREA

NEED AREA 11



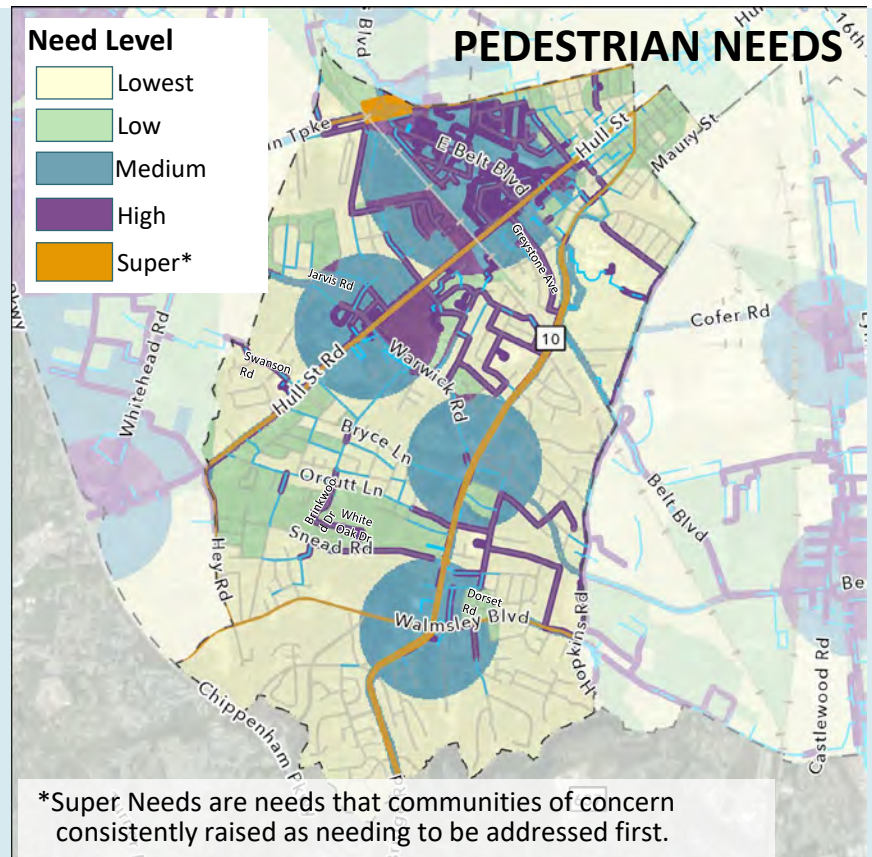
TOP PEDESTRIAN NEEDS

Pedestrian needs are highest:

- In and around Southside Plaza
- Connecting routes between major roads; on Snead Rd; on Brinkwood Dr/White Oak Dr; on Swanson Rd; and on Dorset Rd

“Super” Needs from public input:

- Speeding and/or missing sidewalks:
 - *Hull Street Rd*
 - *Broad Rock Blvd*
 - *Walmsley Blvd*
 - *Southside Plaza*
- Pedestrian crossings feel unsafe at
 - *Broad Rock Blvd & Walmsley Blvd*
 - *Broad Rock Blvd & Snead Rd*
 - *Hull Street Rd & Hey Rd*



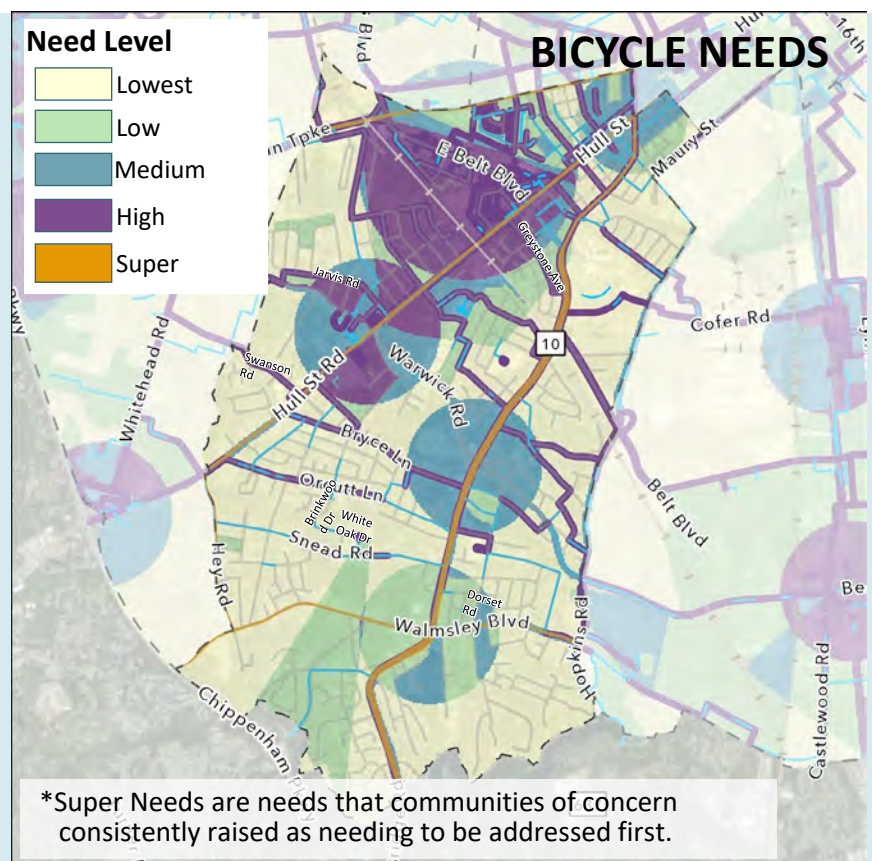
TOP BICYCLE NEEDS

Bike trips from Communities of Concern use these streets the most:

- Streets in and around Southside Plaza
- Broad Rock Blvd
- Jarvis Rd
- Bryce Lane
- Greystone Ave

“Super” Needs from public input:

- *Vehicles drive too fast*
- *Lack of bicycle facilities on Hull Street Rd*
- *Lack of bikeshare in Southside*



TOP TRANSPORTATION NEEDS

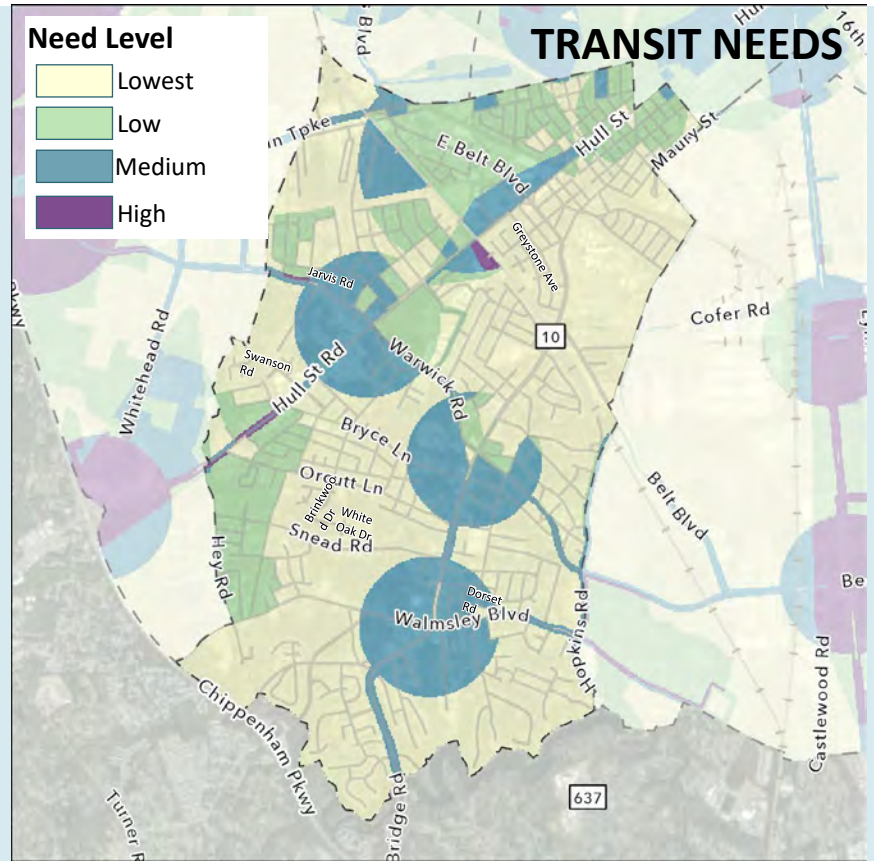
BROAD ROCK/WALMSLEY AREA

NEED AREA 11



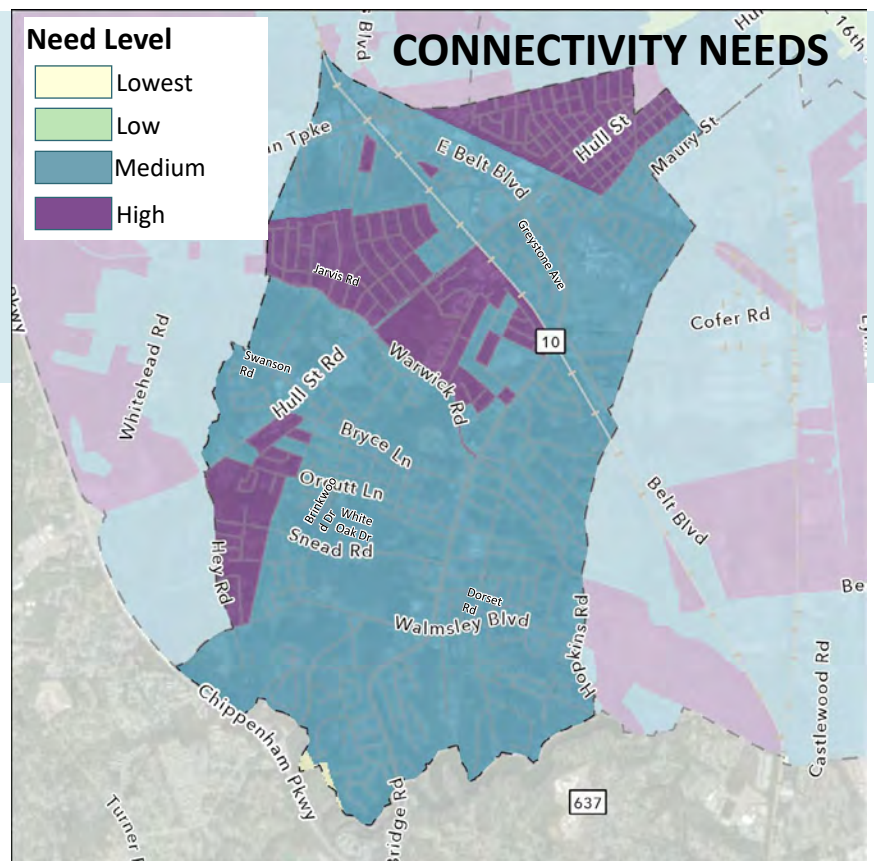
TOP TRANSIT NEEDS

- Some areas are relatively well-served by transit, especially Southside Plaza.
- Other areas, though, have infrequent or unreliable bus service.
- Many areas here need additional shopping and work destinations to be built nearby before transit makes sense.
- Even if bus service were provided, Trips would take a long time because few stores and other places are nearby.
- Bus stops throughout this area often lack shelters and benches.



CONNECTIVITY NEEDS

- These areas are car-centric, and it takes longer to get to and from these neighborhoods from other parts of the City.



Other high needs include:

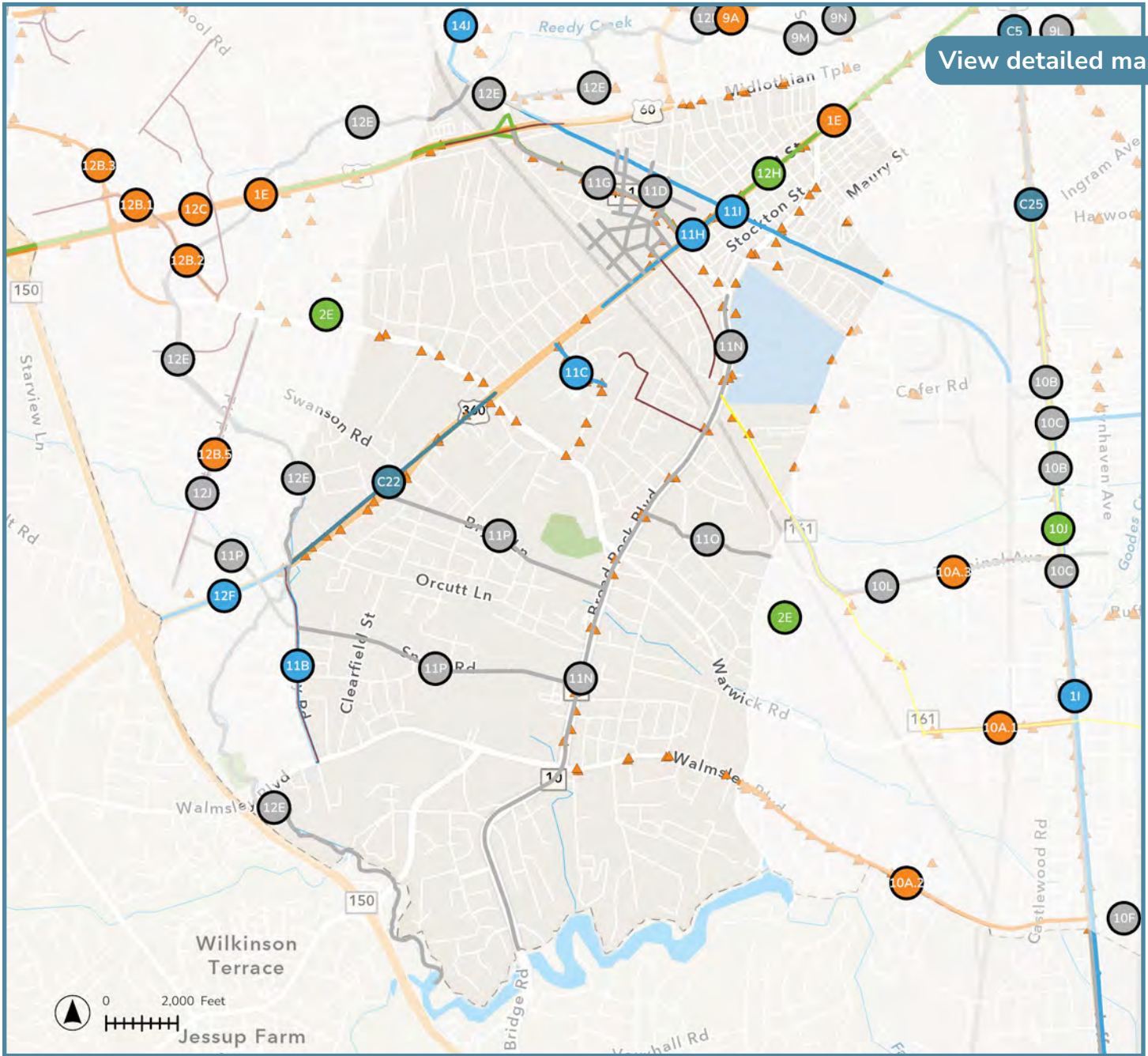
- Land Use – There is an abundance of surface parking lots, and areas may be far from greenspace.
- Economic Development – Low market value in some areas
- Safety/Security – There are multiple serious pedestrian crashes on streets like Warwick Rd., Broad Rock Rd., and Hull St.



NEEDS AREA SUMMARIES

11: Broad Rock/Walmsley Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

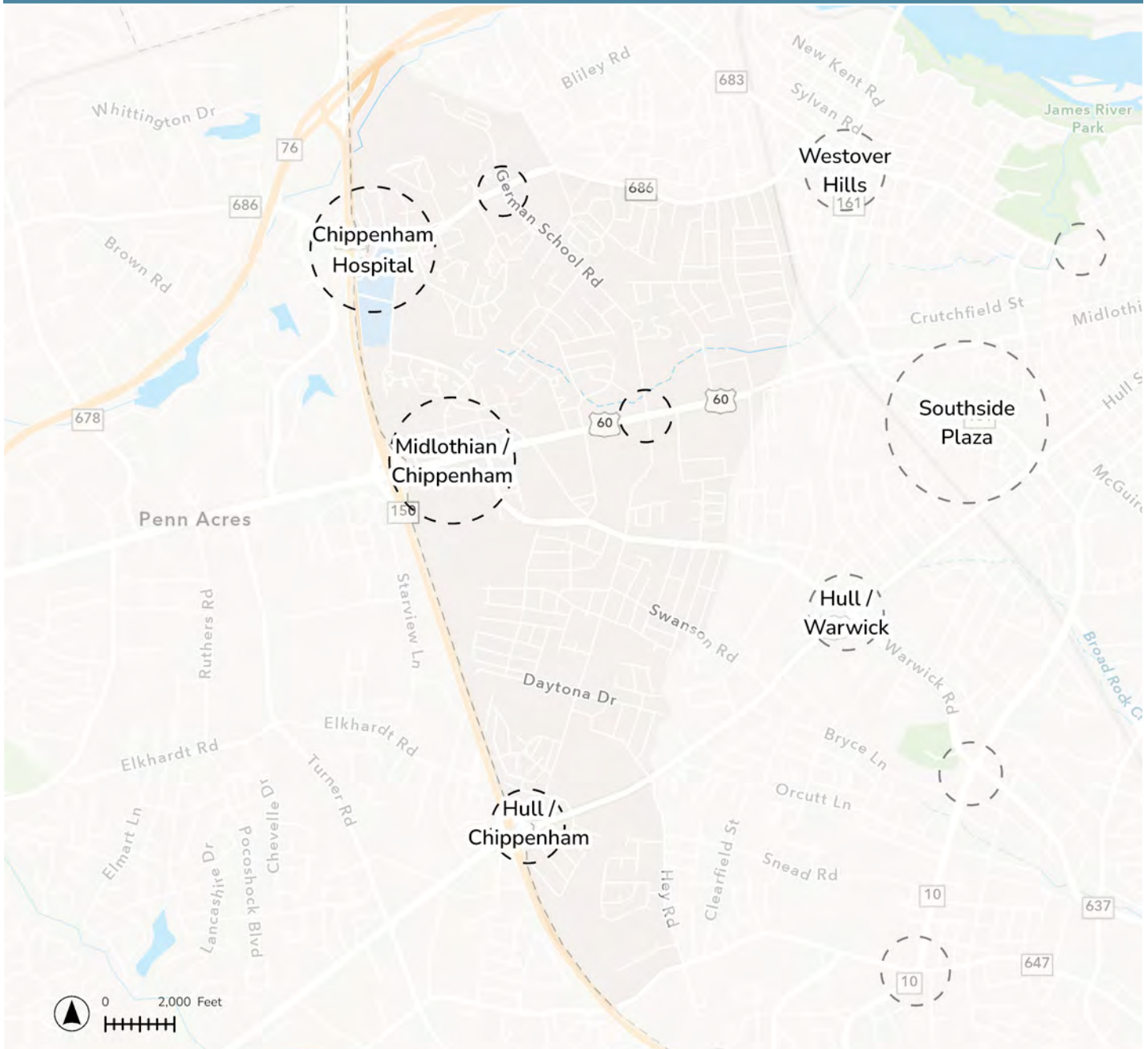
11: Broad Rock/Walmsley Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 1E | Priority Projects | North-South Bus Rapid Transit | Very High (\$\$\$\$) | 3.9 | 280 |
| 11F | Priority Projects | Richmond High School of the Arts Pedestrian Safety Improvements | Very High (\$\$\$\$) | 4.2 | 249 |
| 11A | Priority Projects | Southside Plaza Pedestrian Connections Across Railroad Tracks | Very High (\$\$\$\$) | 3.9 | 281 |
| 11C | Priority Completion | Southwood Parkway Sidewalk | n/a | 4.2 | 291 |
| 11B | Priority Completion | Hey Road Improvements | n/a | 3.6 | 292 |
| 11H | Priority Completion | Hull Street Shared Use Path - Arizona Drive to James River Branch Trail | n/a | 2.6 | 295 |
| 11I | Priority Completion | James River Branch Trail | n/a | 1.6 | 295 |
| C3 | Other Completion | Hull Street at 29th Street Pedestrian Hybrid Beacon | n/a | n/a | 296 |
| C22 | Other Completion | Hull Street Improvements Phase I - Hey Road to Warwick Road | n/a | n/a | 300 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.1 | 305 |
| 11P | Longer Term | Bikeways on Bryce Lane and Snead Road | High (\$\$\$) | 1.0 | 311 |
| 11N | Longer Term | Broad Rock Boulevard/Iron Bridge Road Protected Bikeway | High (\$\$\$) | 2.1 | 310 |
| 11G | Longer Term | East Belt Boulevard Improvements | Moderate/High (\$\$/\$\$\$) | 2.0 | 310 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | n/a | 2.5 | 309 |
| 11D | Longer Term | Southside Plaza Street Grid | Very High (\$\$\$\$) | 3.7 | 307 |
| 11J | Longer Term | Southside Plaza Transfer Center | Moderate (\$\$) | 3.7 | 307 |
| 11O | Longer Term | Terminal Avenue Bike Lanes - Broad Rock Boulevard to Belt Boulevard | High (\$\$\$) | 1.4 | 311 |



NEEDS AREA SUMMARIES

12: Midlothian/German School Road



EQUITY CONTEXT

MIDLOTHIAN/GERMAN SCHOOL RD AREA

NEED AREA 12



Transportation investments will improve access to housing, jobs, services, and education to address the isolation of low-income inner ring suburbs where families are pushed.

- Path to Equity Policy Guide, Equity Factor 4

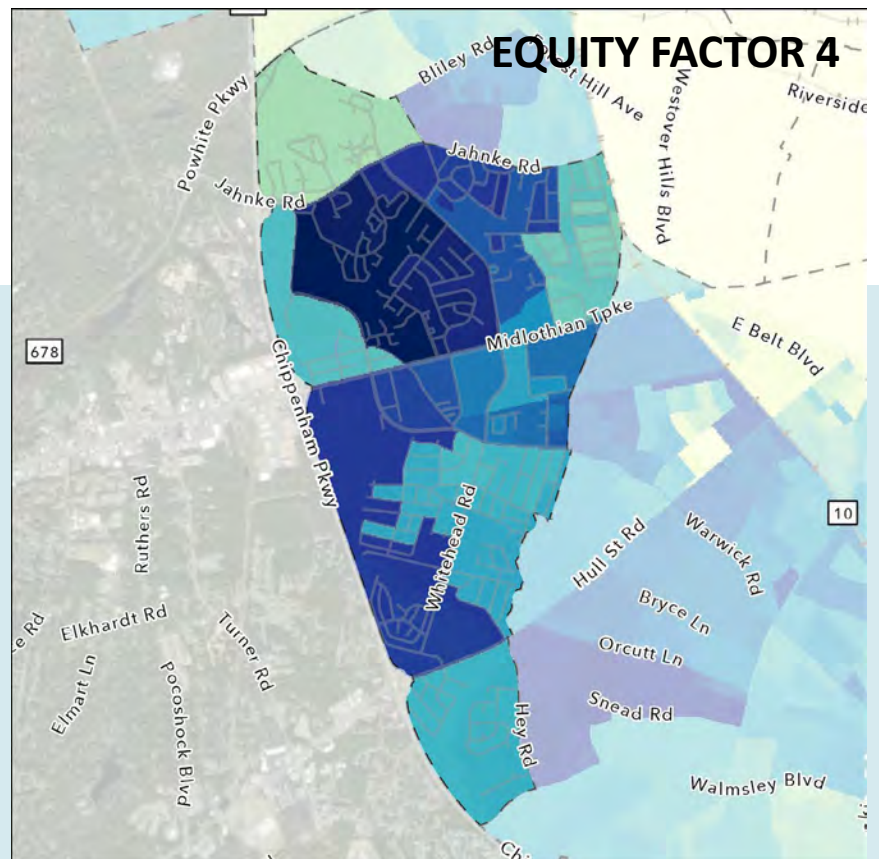
Equity needs in the area around Midlothian Turnpike and German School Road include several compounding factors.

Portions of these neighborhoods have high concentrations of Communities of Concern, including **renters, low-income households, residents of older age, and BIPOC renters.**

It's hard to get to the places you most need to because **transit service** is either **infrequent** or **unreliable** in these areas.

Inner-Ring Suburbs

Portions of this area are considered to be inner-ring suburbs – they have poor accessibility and are largely low-income.



Areas shown in darker blue are inner-ring suburbs with have a high concentration of COCs and have poor accessibility - where it's difficult to places by biking, walking, or transit.

It's hard to get around by walking or biking in this area because **there aren't direct paths** to get where you need to go, or **it doesn't feel safe.**

TOP TRANSPORTATION NEEDS

MIDLOTHIAN/GERMAN SCHOOL RD AREA

NEED AREA 12



TOP PEDESTRIAN NEEDS

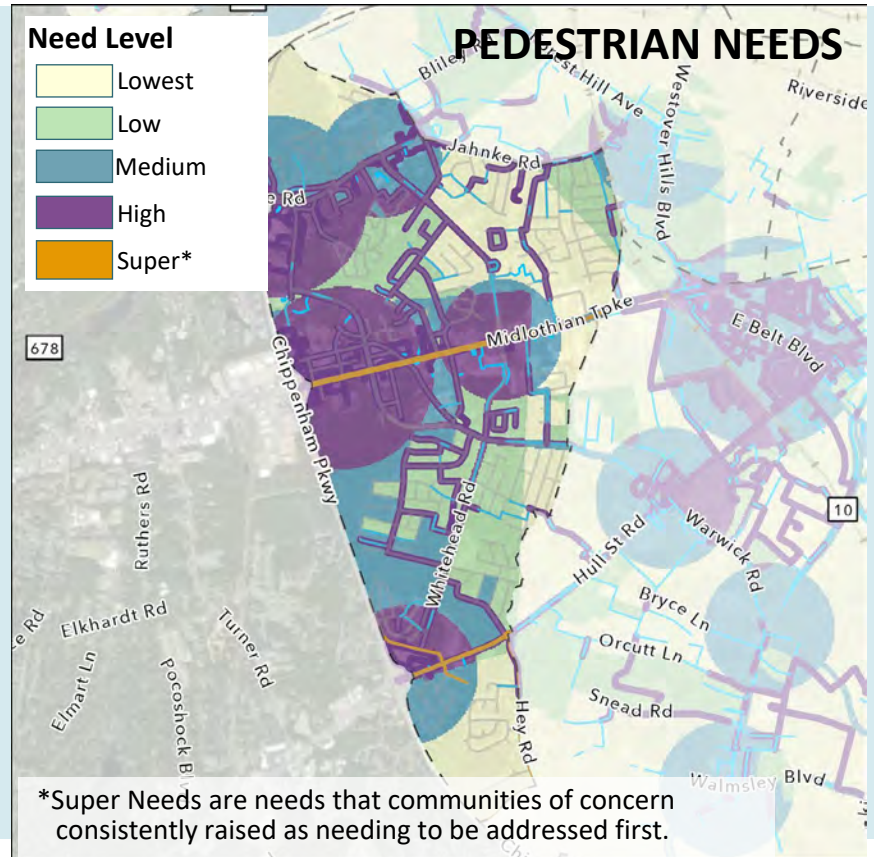
Pedestrian need scores here are among the highest in Richmond, especially in the Nodes.

Key Pedestrian Connections:

- Beaufont Hills Dr > Vevadel Dr
- Deter Rd
- German School Rd
- Glenway Dr > Blakemore Rd
- Jahnke Rd west of German School Rd
- Carnation St > Warwick Rd
- Whitehead Rd from Elkhardt Rd to German School Rd

“Super” Needs from public input

- *Missing sidewalks on Elkhardt Rd. and Hull St.*
- *It feels unsafe to walk along roads like Hull St. and Midlothian Tpke.*



TOP BICYCLE NEEDS

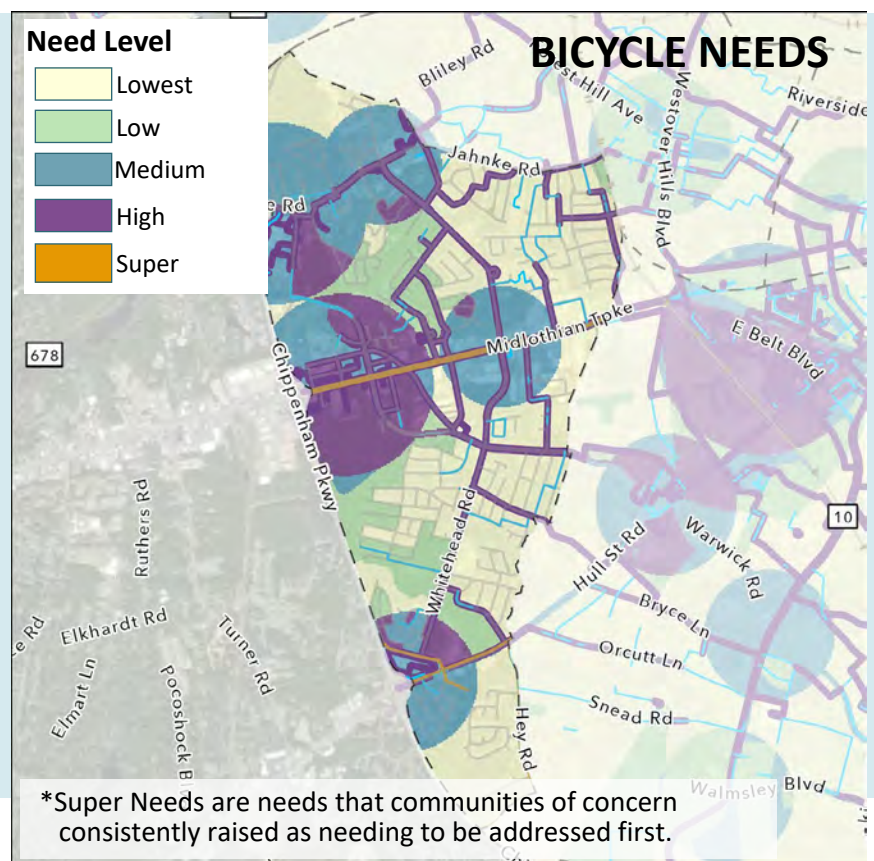
Key Bike Connections:

- Midlothian Turnpike
- Whitehead Rd
- German School Rd
- Glenway Dr > Blakemore Rd
- Beaufont Hills Dr > Vevadel Dr
- Deter Rd
- Warwick Rd > Old Warwick Rd

Bicycle need scores are high within the Nodes.

“Super” Needs from public input:

- *Potential future bike/ped connection along utility line*
- *Enhanced bike facilities are needed along Midlothian Turnpike*



TOP TRANSPORTATION NEEDS

MIDLOTHIAN/GERMAN SCHOOL RD AREA

NEED AREA 12



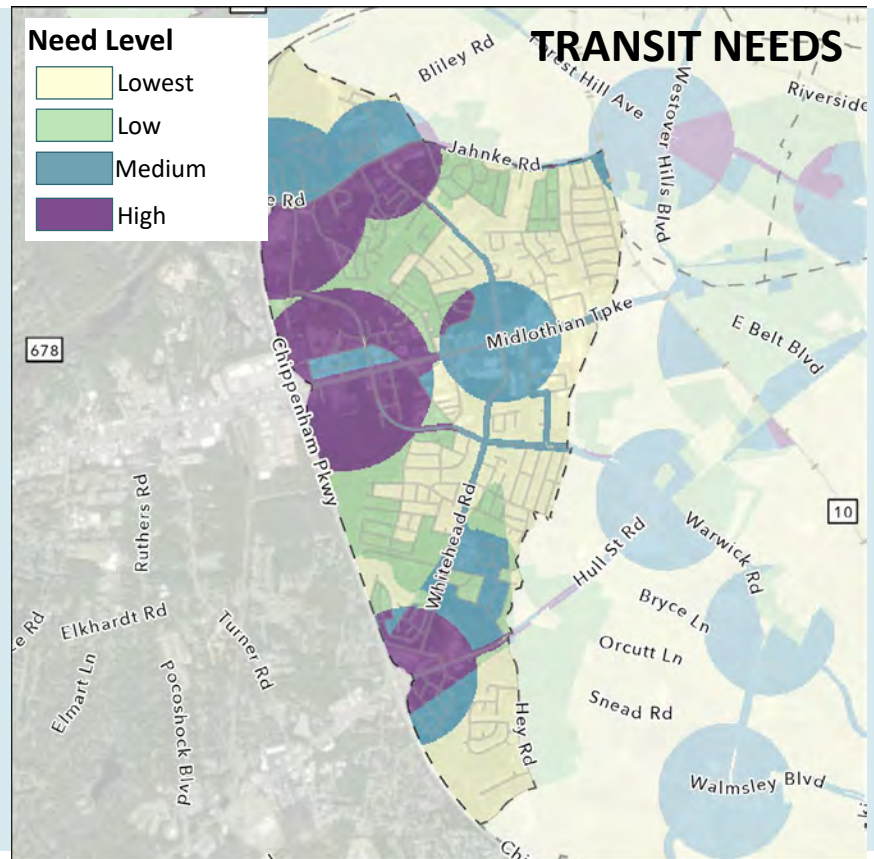
TOP TRANSIT NEEDS

Some portions of this area have the highest transit need scores in the entire City:

- Midlothian/Chippenham Node
- Hull St/Chippenham Node
- Other Node areas are high too

It's hard to get places by transit from here because:

- Many places are not near a bus route
- Buses don't come frequently. Only 1 bus every 30 to 60 minutes.
- Lack of shelters and benches at bus stops
- Lack of sidewalk and bike facility connections to bus stops

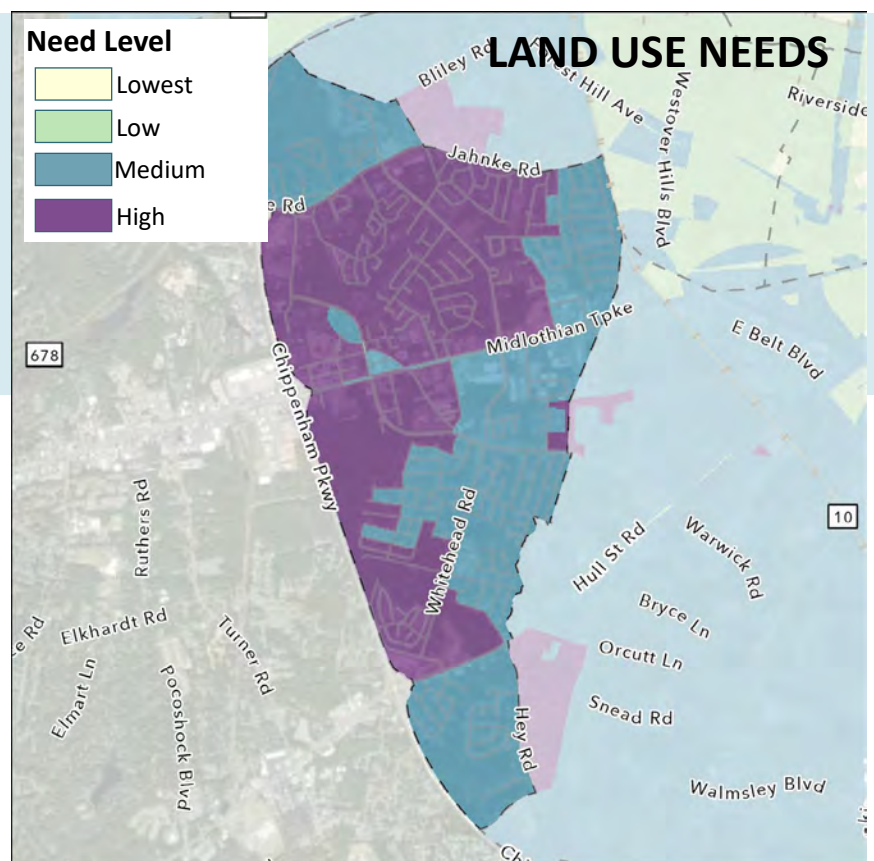


LAND USE NEEDS

- Land use needs in this areas relate to both a lack of quality greenspace within walking distance and an abundance of surface parking lots.

Other high needs include:

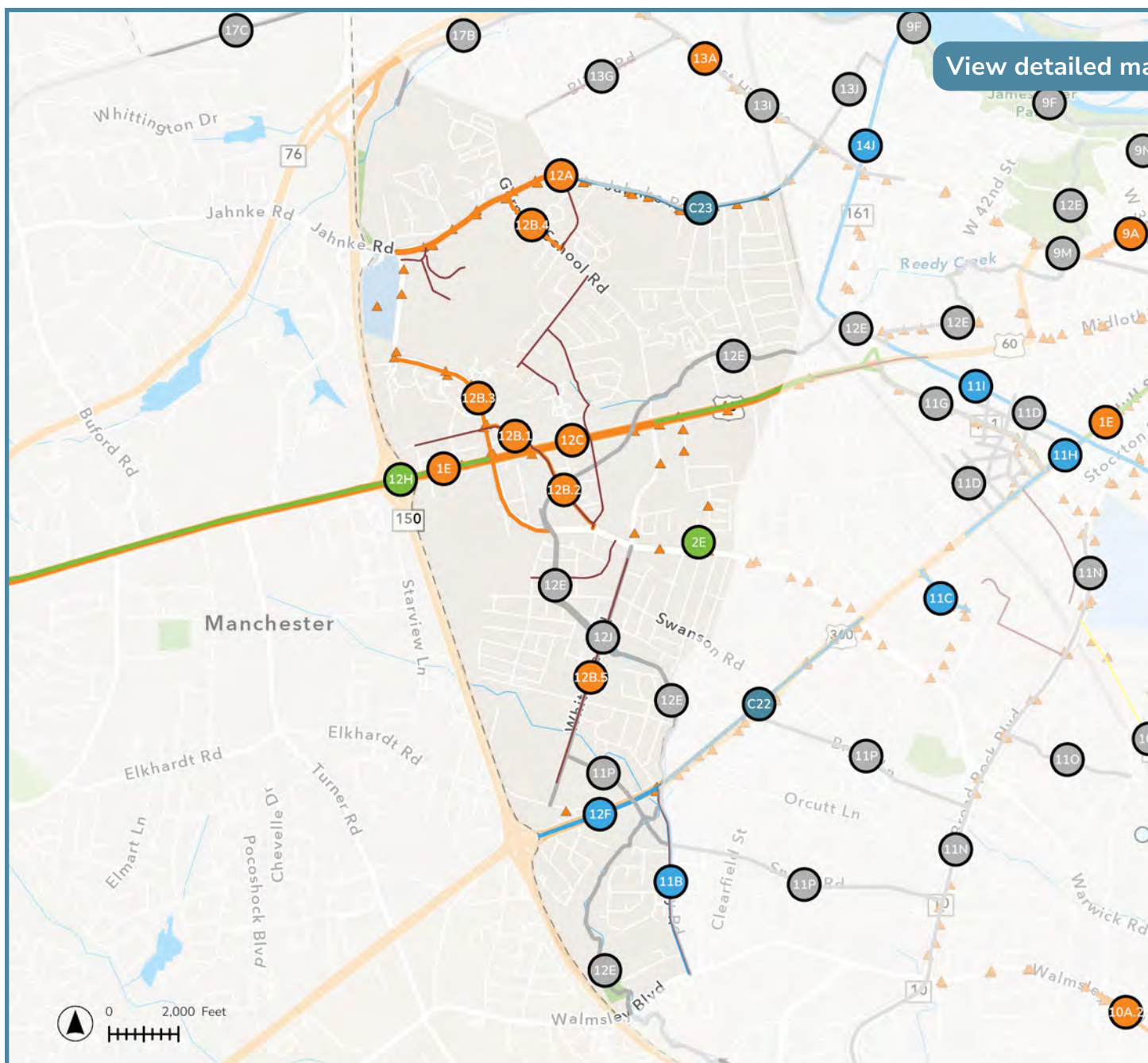
- Connectivity – It takes longer to get to destinations from here.
- Safety/Security – There are many serious pedestrian crashes along streets like Jahnke Rd, Hull St, and Midlothian Tpke.





NEEDS AREA SUMMARIES

12: Midlothian/German School Road Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects

- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

12: Midlothian/German School Road Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-------|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 12C | Priority Projects | Midlothian Turnpike Safety Improvements - German School Road to Carnation Street | Very High (\$\$\$\$) | 4.9 | 219 |
| 12A | Priority Projects | Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road | High (\$\$\$) | 4.7 | 229 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 12B.1 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road north of US Route 60 | Moderate (\$\$) | 4.2 | 251 |
| 12B.2 | Priority Projects | Southside Pedestrian Improvements - Old Warwick Road south of US Route 60 | Moderate (\$\$) | 4.2 | 253 |
| 12B.3 | Priority Projects | Southside Pedestrian Improvements - Carnation Street | Moderate (\$\$) | 4.2 | 255 |
| 12B.4 | Priority Projects | Southside Pedestrian Improvements - German School Road | Moderate (\$\$) | 4.2 | 257 |
| 12B.5 | Priority Projects | Southside Pedestrian Improvements - Whitehead Road | High (\$\$\$) | 4.2 | 259 |
| 12F | Priority Completion | Hull Street Improvements Phase II - Hey Road to Brookhaven Drive | n/a | 3.7 | 291 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | n/a | n/a | 300 |
| 12H | Shorter Term | GRTC Route 1A (Midlothian Turnpike) Improvements | Moderate (\$\$) | 3.5 | 303 |
| 2E | Shorter Term | Link: On-Demand Microtransit | Moderate (\$\$) | 3.1 | 305 |
| 12L | Longer Term | Midlothian Area Revitalization | n/a | 3.4 | 307 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | n/a | 2.5 | 309 |
| 12D | Longer Term | Route 60/Route 150 Interchange Improvements | n/a | 3.6 | 307 |
| 12K | Longer Term | Southside Community Center Bikeshare Station | Low (\$) | 2.5 | 309 |



NEEDS AREA SUMMARIES

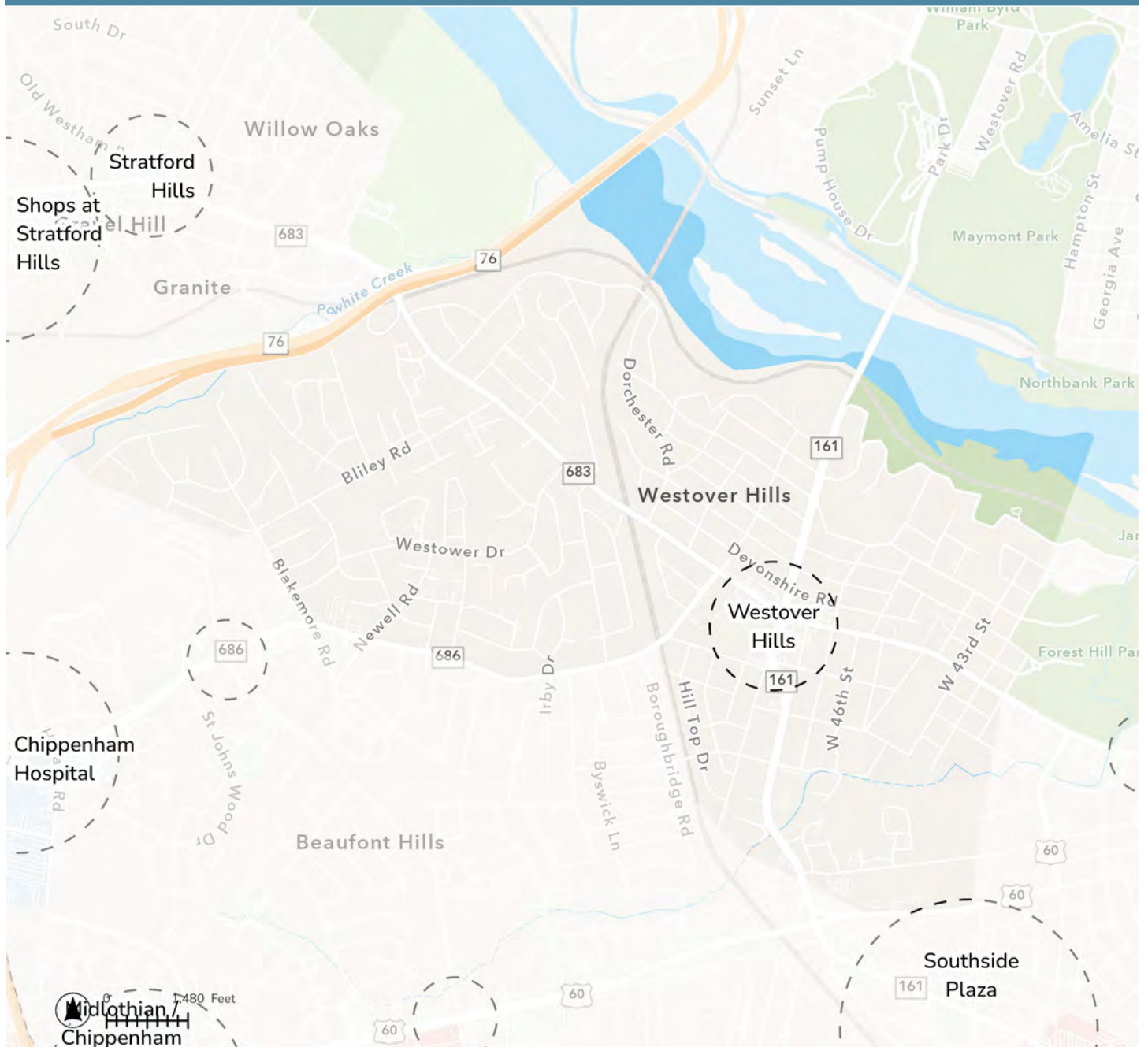
12: Midlothian/German School Road Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|-------------|------------------------|-----------------------------|---------------|------|
| 12J | Longer Term | Whitehead Road Bikeway | Moderate/High (\$\$/\$\$\$) | 2.3 | 310 |



NEEDS AREA SUMMARIES

13: Forest Hill/Westover



EQUITY CONTEXT

FOREST HILL/WESTOVER AREA

NEED AREA 13



Transportation investments will improve reliability of transit and other non-car services to increase access and remove barriers to opportunities for communities of concern.

- Path to Equity Policy Guide, Equity Factor 7

The population in this area has relatively lower densities of Communities of Concern, compared to other areas of Richmond. However, there are some Communities of Concern present here, such as **renters, old-age individuals, low-income households, and BIPOC renters.**

In this area, you are limited in how many things you can get to by walking, biking, and taking the bus. **Most neighborhoods are car-centric.**

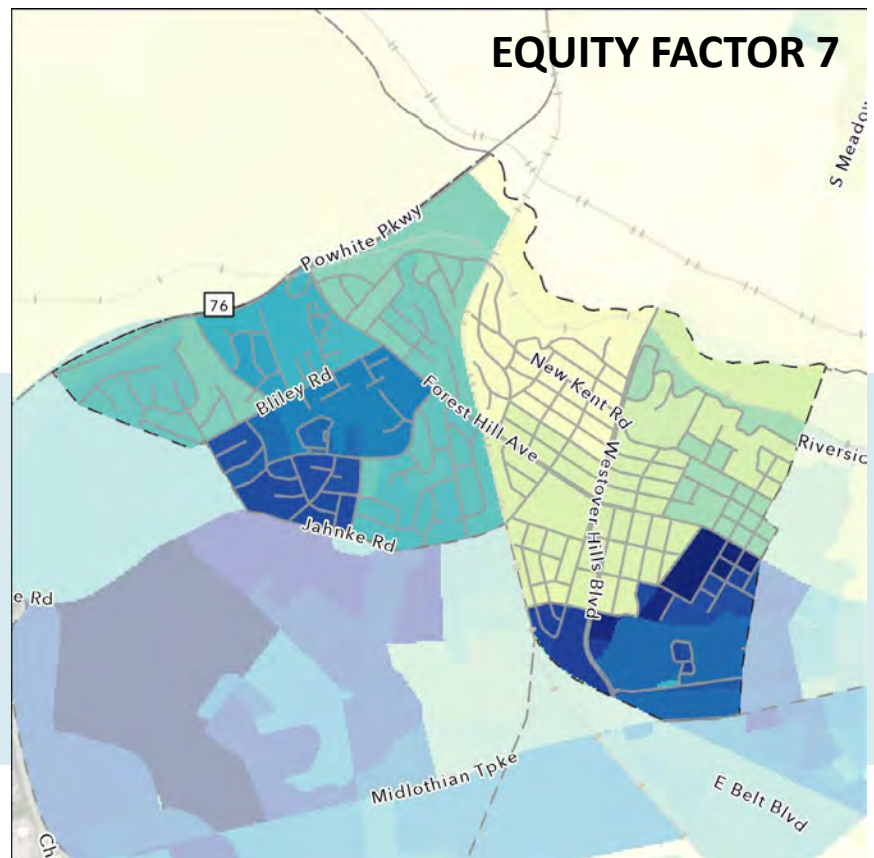
The western portions of this area are **inner-ring suburbs**, and some of these neighborhoods have poor walk, bike, or transit accessibility and relatively high percentages of low-income households.

Transit Reliability

It's hard to **get to** the places you most need to because **transit service** is either **infrequent** or **unreliable**, especially for Communities of Concern.

It's **hard to get around** by **walking** or **biking** because there aren't direct paths to get where you need to go, or it doesn't feel **safe**.

There are a few pockets where roads are in a **flood risk zone** and **vulnerable** to disruption due to **climate change**, and there is a high density of Communities of Concern.



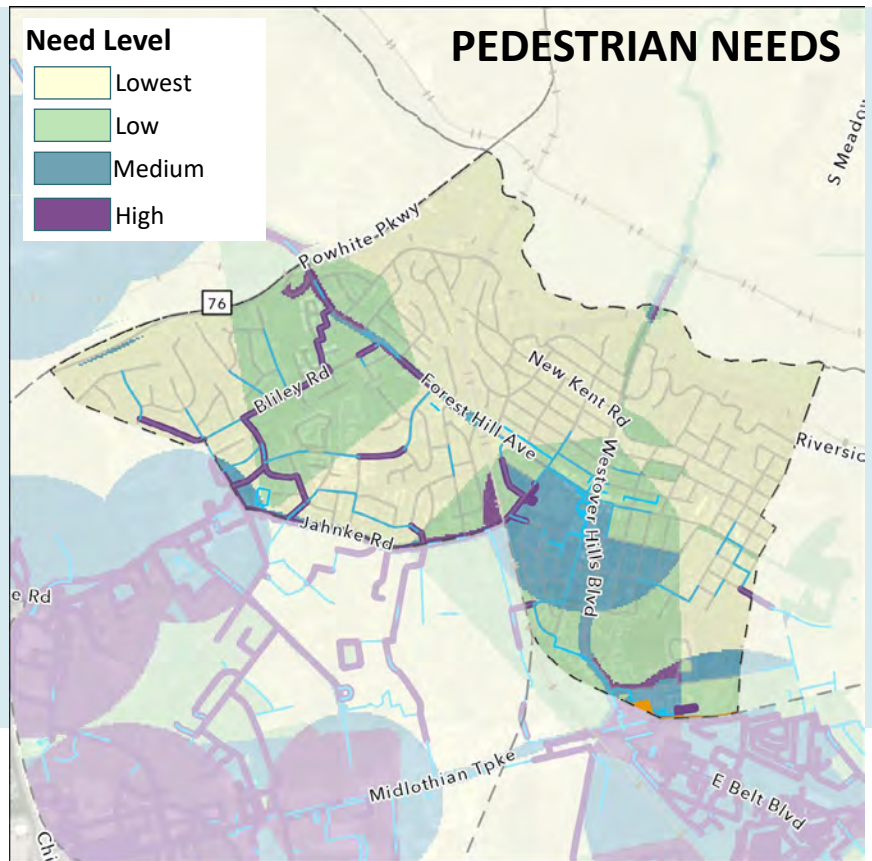
Areas shown in dark blue are where transit service frequency or reliability issues degrade access for destinations relevant to communities of concern.

TOP TRANSPORTATION NEEDS FOREST HILL/WESTOVER AREA

NEED AREA 13

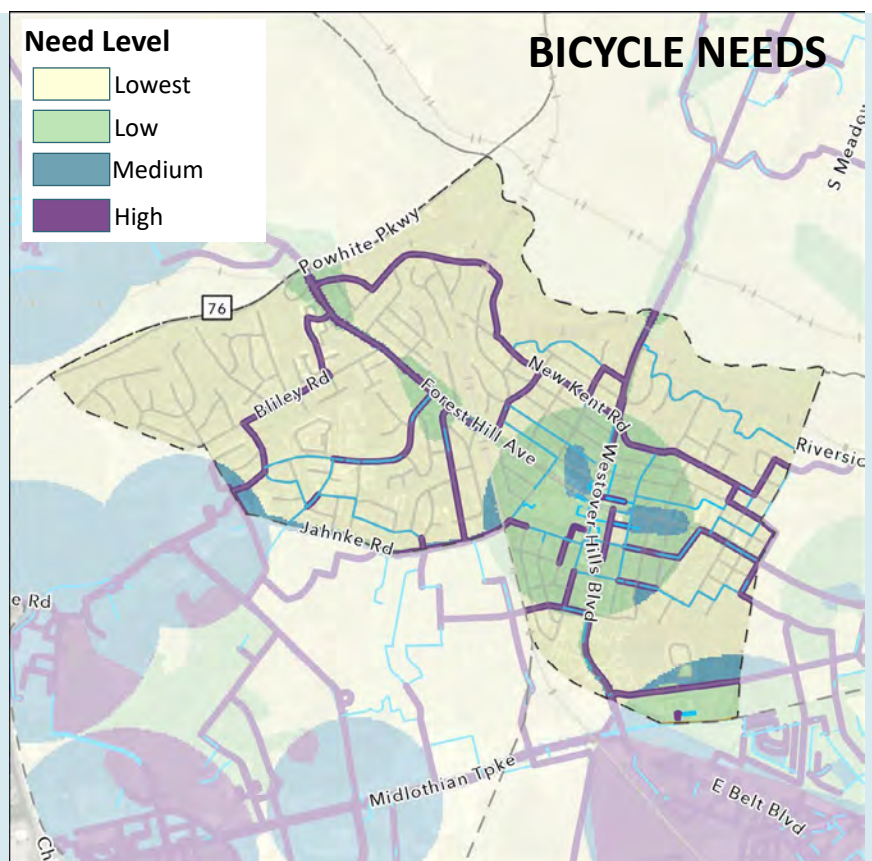
TOP PEDESTRIAN NEEDS

- In general, equity-weighted pedestrian needs are lower in this area than many other areas of Richmond.
- Pedestrian needs in this area are highest on:
 - Forest Hill Ave, especially near Powhite Pkwy
 - Janke Rd
 - Bliley Rd
- Bliley Road is a key pedestrian connection and lacks sidewalks entirely.



TOP BICYCLE NEEDS

- In general, equity-weighted bike needs in this area are lower than other areas in Richmond.
- There are several key routes that bicyclists in this area use:
 - Forest Hill Ave to Willow Oaks Dr to Bliley Rd to Whitlone Dr to Westover Dr to Blakemore Rd
 - Westover Hills Blvd (bridge over James River) to New Kent Rd to W 44th St to Stonewall Ave
- Many residential streets are disconnected from one another, so bike trips may have to occur on high-speed roads.



TOP TRANSPORTATION NEEDS

FOREST HILL/WESTOVER AREA

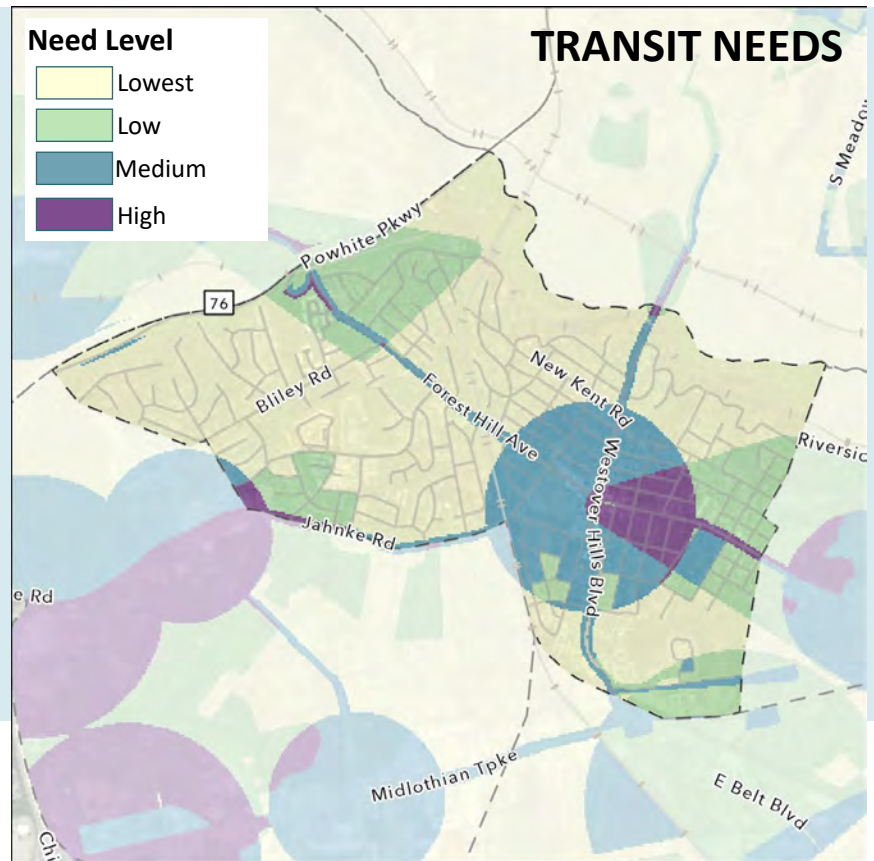
NEED AREA 13

TOP TRANSIT NEEDS

- Transit needs in this area are highest near the Westover Hills Node.
- Lack of shelters and benches at bus stops
- Buses are infrequent and often unreliable.

Other themes identified in public comments:

- *More transit stops along Westover Hills Blvd, especially near Forest Hill Ave*

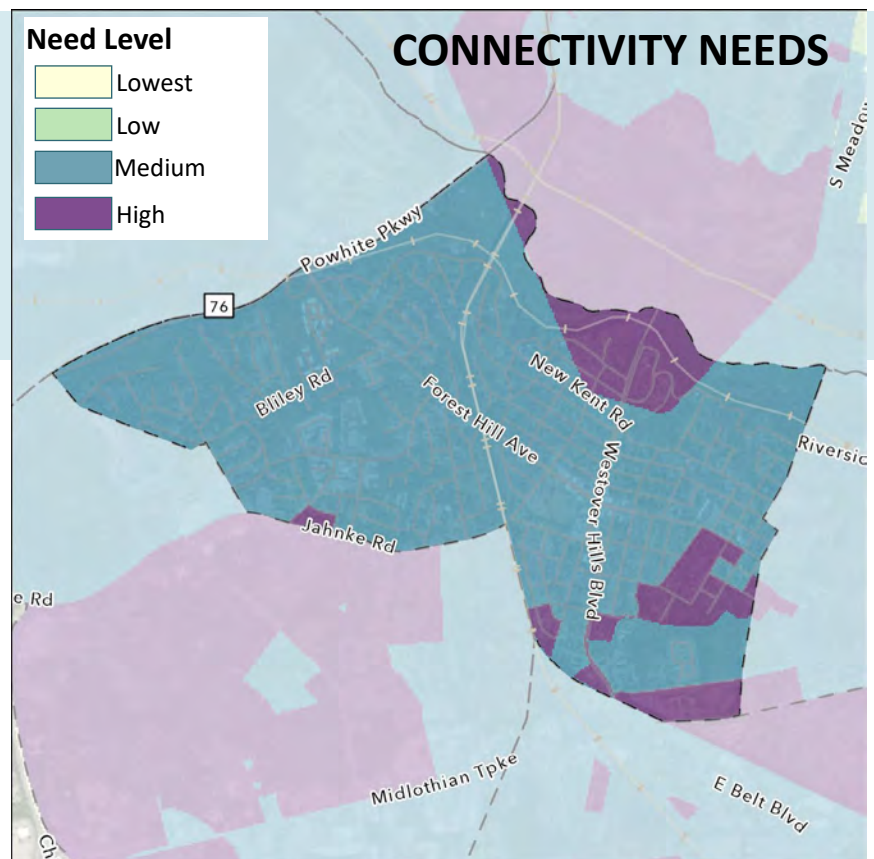


CONNECTIVITY NEEDS

Areas within Forest Hill and Westover are less connected to other parts of the City and are further away from regional bus and rail services.

Other high needs include:

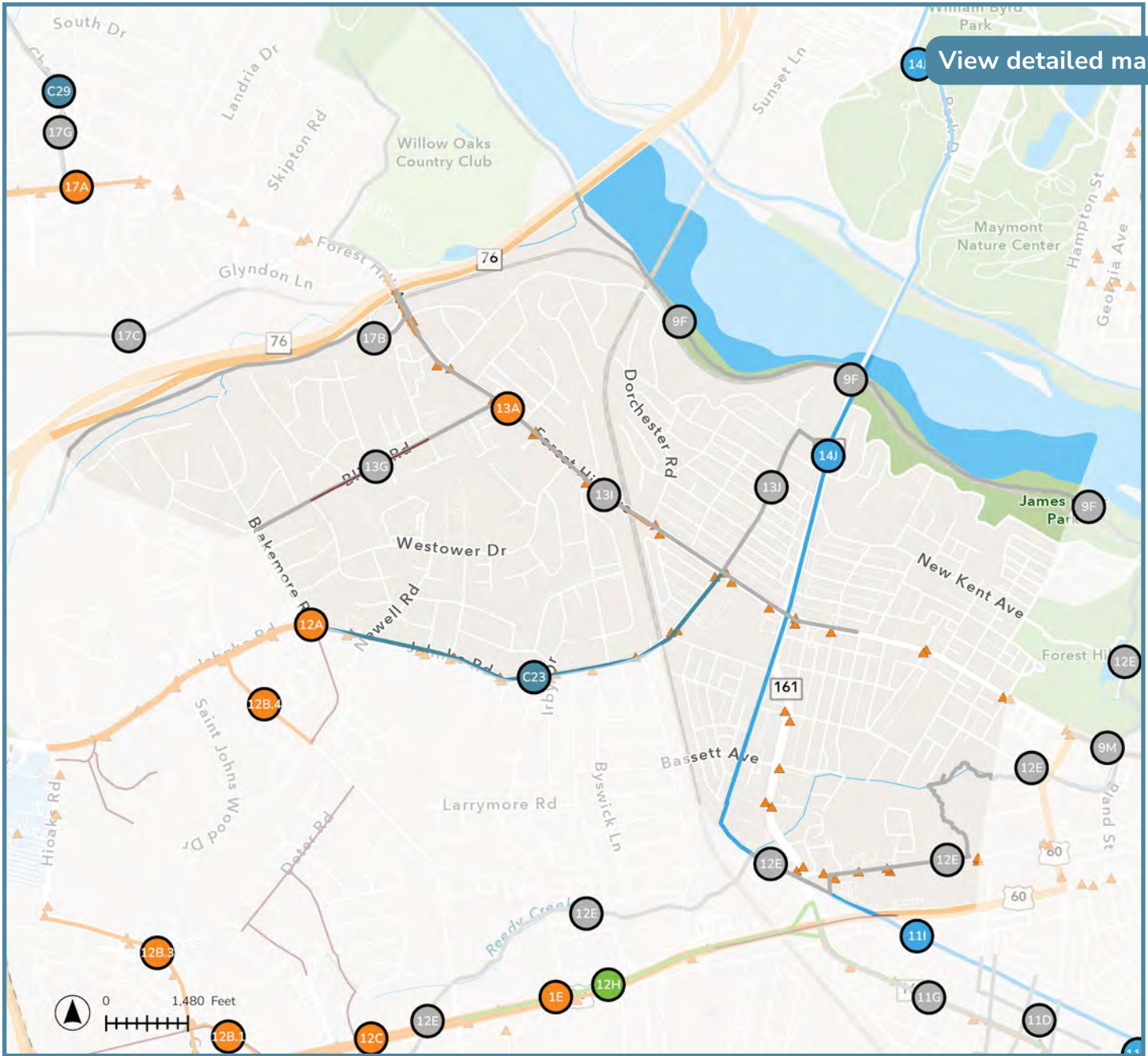
- Freight – Forest Hill Ave and Westover Hills Blvd are critical routes for freight movement.
- Land Use – Some areas lack nearby access to quality open space.





NEEDS AREA SUMMARIES

13: Forest Hill/Westover Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects

- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

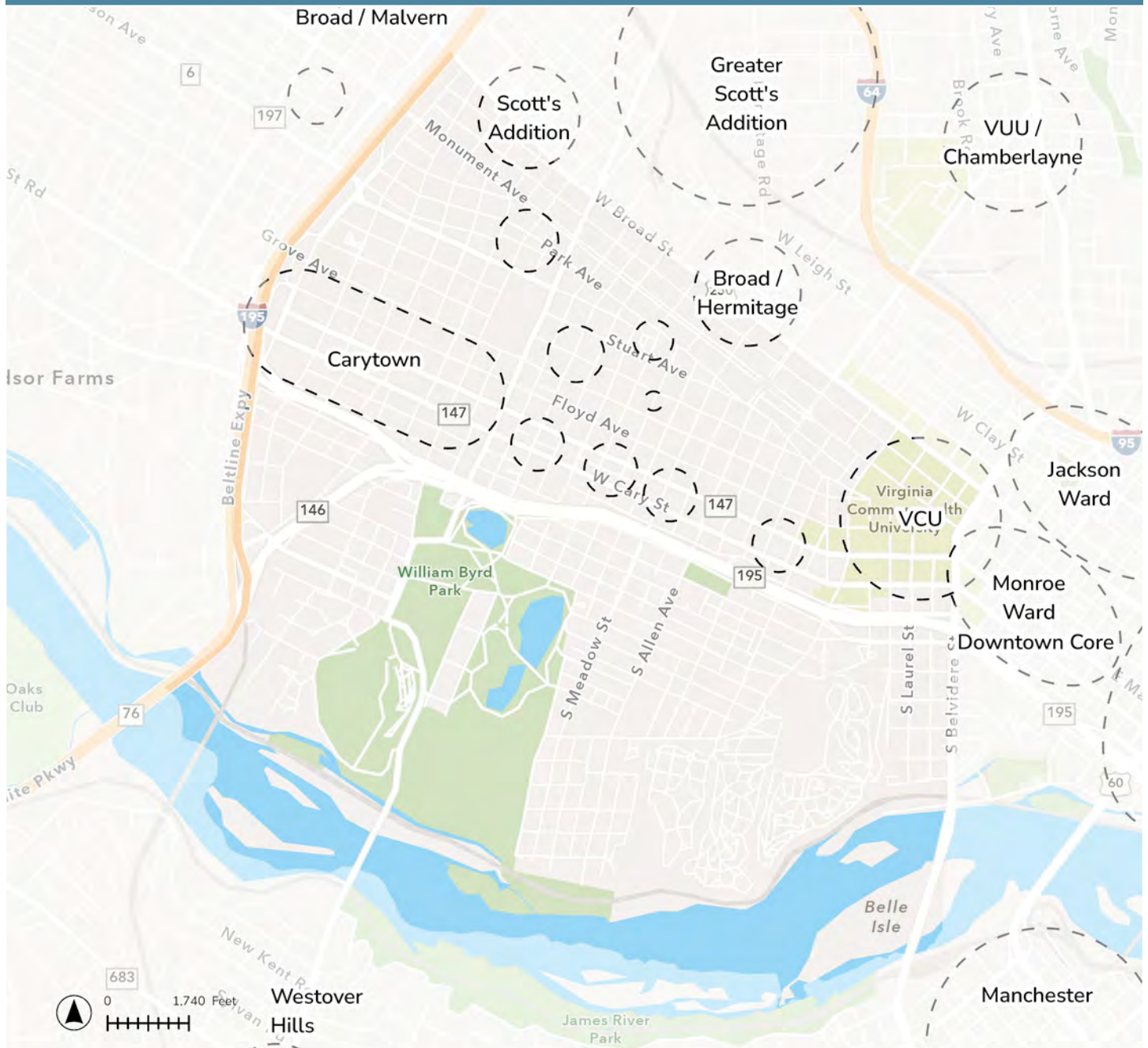
13: Forest Hill/Westover Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 4C | Priority Projects | Richmond Connects Equity-Driven Sidewalks Projects | Very High (\$\$\$\$) | 5.0 | 205 |
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 13A | Priority Projects | Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy | Very High (\$\$\$\$) | 3.9 | 278 |
| 14J | Priority Completion | State Route 161 Bicycle Infrastructure | n/a | 1.2 | 294 |
| 11I | Priority Completion | James River Branch Trail | n/a | 1.6 | 295 |
| C2 | Other Completion | Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets | n/a | n/a | 296 |
| C23 | Other Completion | Jahnke Road Improvements Blakemore Road to Forest Hill Avenue | n/a | n/a | 300 |
| 13G | Longer Term | Bliley Road Sidewalk and Bike Lanes | Moderate (\$\$) | 3.1 | 308 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | High (\$\$\$) | 2.2 | 310 |
| 13J | Longer Term | Prince Arthur Road Bikeway Connection | Low/Moderate (\$/\$\$) | 1.5 | 311 |
| 12E | Longer Term | Reedy Creek & Pocosham Creek Greenways | n/a | 2.5 | 309 |



NEEDS AREA SUMMARIES

14: Near West End



EQUITY CONTEXT

NEAR WEST END AREA

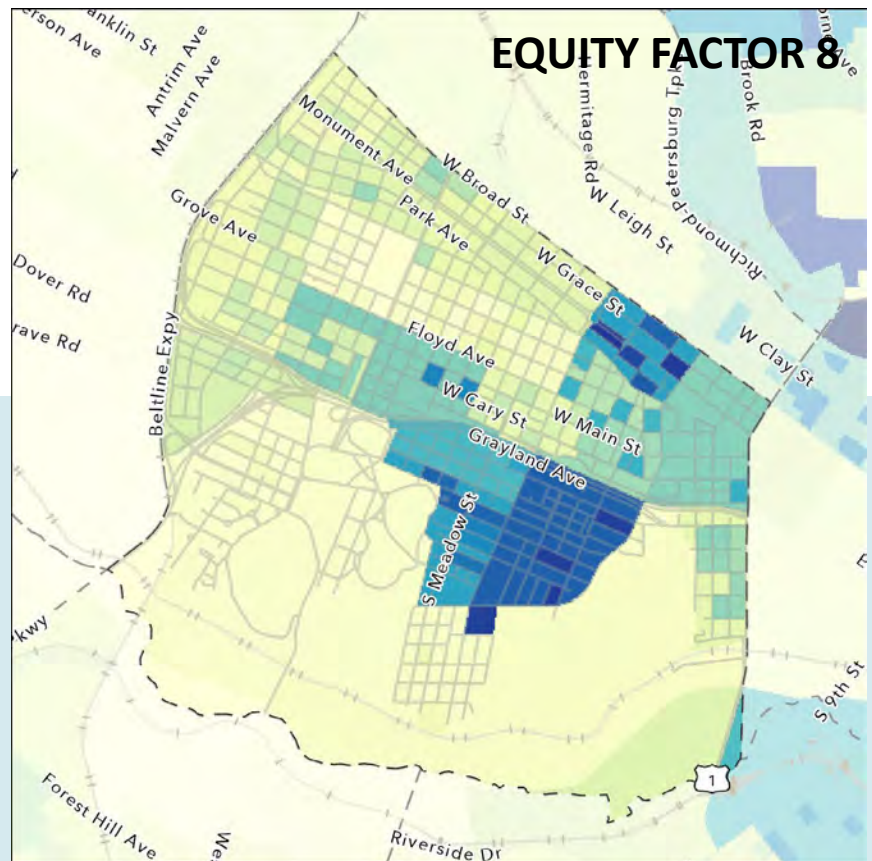
NEED AREA 14

Transportation inequities in this area are largely in the Randolph neighborhood, which was **redlined** in the 1930s, fueling a cycle of disinvestment.

In the 1960s, the construction of the **Downtown Expressway dissected the once vibrant black neighborhoods** of Randolph and Byrd Park. Most of the Randolph neighborhood was **demolished to make way for urban renewal**. It is now devoid of commercial uses and is cut off from areas to the north.

Most other neighborhoods in this area are relatively affluent or are experiencing gentrification, and current transportation inequities are relatively low compared to other areas in Richmond.

Some areas near VCU have high concentrations of Communities of Concern, including **low-income households, renters, and non-English primary populations**.



Areas shown in dark blue are more prone to flooding during intense precipitation events, have high heat vulnerability, experience urban heat island effect, and have a high density of Communities of Concern.

Social Vulnerability to Climate Change

Some neighborhoods in this area are more vulnerable to the effects of climate change, including **flood risk, high heat vulnerability, and urban heat island effect**.

Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVA Green 2050.

- Path to Equity Policy Guide, Equity Factor 8

TOP TRANSPORTATION NEEDS

NEAR WEST END AREA

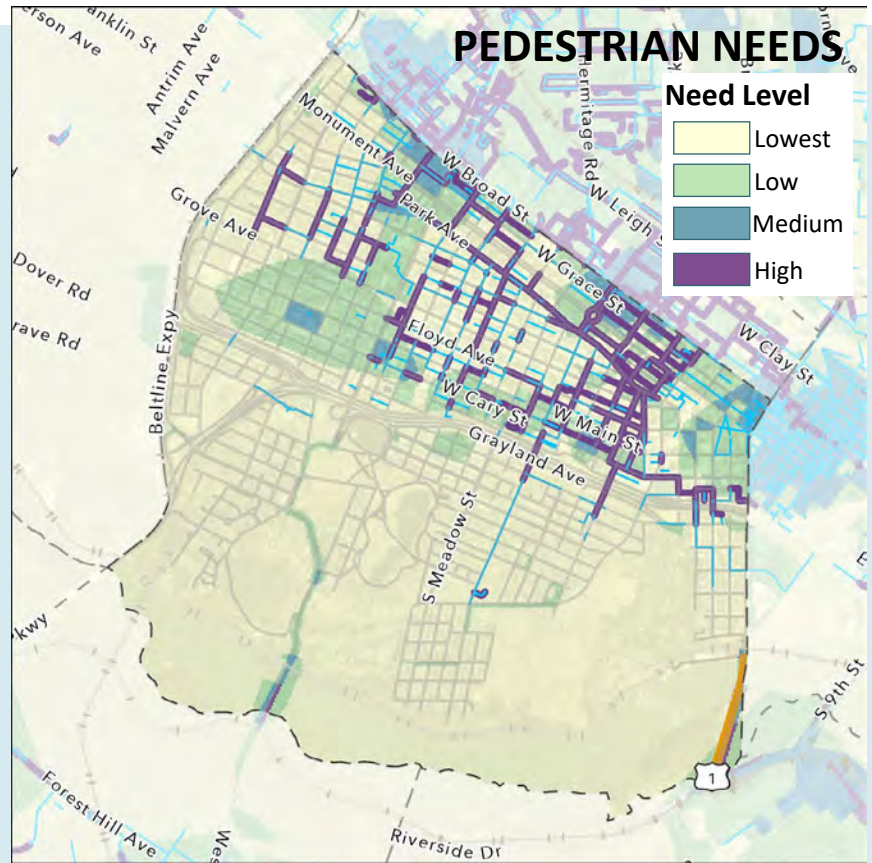
NEED AREA 14



TOP PEDESTRIAN NEEDS

In general, equity-weighted pedestrian needs in this area are lower than most other areas of Richmond.

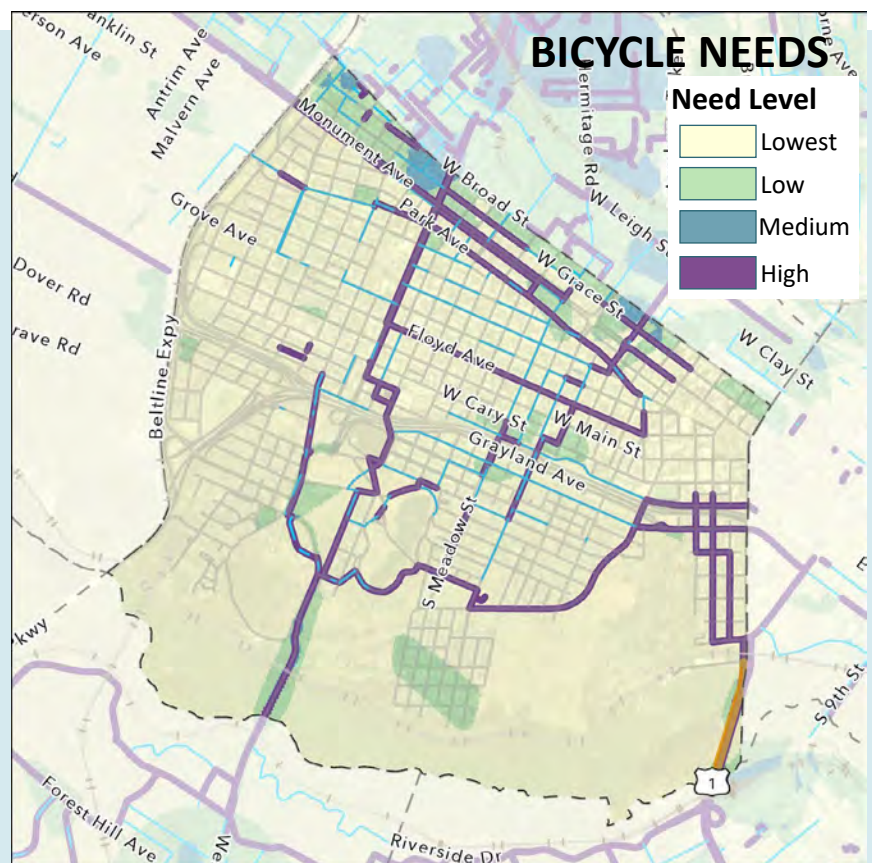
- Many of the high need segments have scored high because of high pedestrian volumes.
- Walk access is great. A variety of destinations are within walking distance.
- Sidewalks exist on almost all streets, with varying degrees of maintenance, though there is a lack of sidewalks around Byrd Park.
- There are many instances of serious pedestrian injuries on streets like W Cary St, W Main St, Arthur Ashe Blvd, and Broad St.



TOP BICYCLE NEEDS

In general, equity-weighted bicycle needs in this area are lower than most other areas of Richmond.

- Bike access is good. There are lots of destinations within biking distance.
- Some dedicated bicycle infrastructure exists here, but many destinations require biking along streets without bike infrastructure.
- Bike trips from high need areas use these streets the most:
 - Arthur Ashe Blvd
 - Park Drive to Shirley Ln to Shields Lake Dr
- Bike crashes here are among the highest in the City because there are many bikers, but not much dedicated infrastructure.



TOP TRANSPORTATION NEEDS

NEAR WEST END AREA

NEED AREA 14

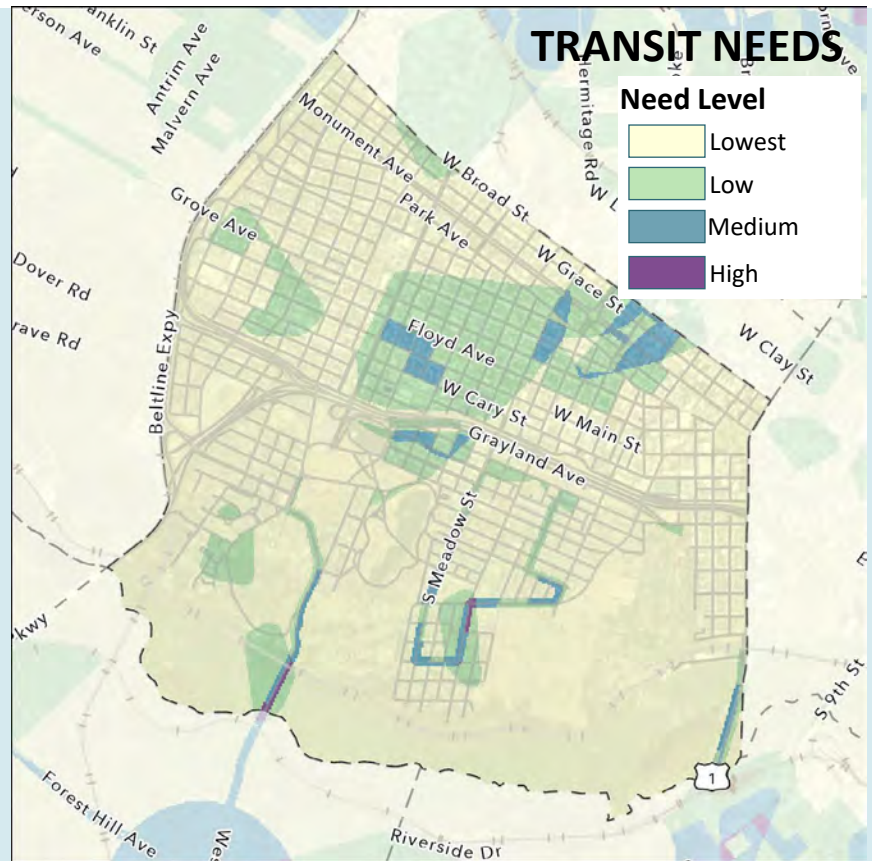


TOP TRANSIT NEEDS

- Transit needs are relatively low here, especially near the Pulse service on Broad Street.
- The highest transit needs in this area are along GRTC Route 78 serving Randolph and Maymont.

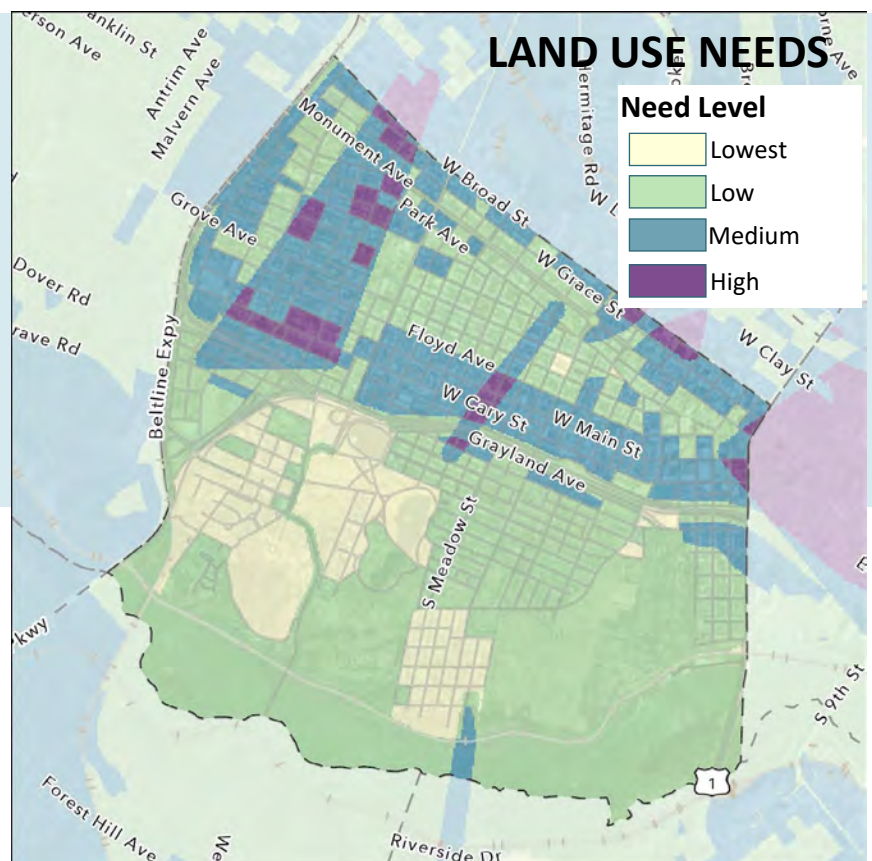
Other themes from public inputs:

- Bus service in Randolph and Maymont takes too long, requires too many transfers, and is unreliable.
- Need better transit service to parks, including Byrd Park and Maymont Park.
- Bus service in Carillon was discontinued.
- Add BRT in Fan and Museum Districts along Main St or Cary St



LAND USE NEEDS

- There is an abundance of surface parking lots around key commercial areas like Carytown.
- Some areas close to Broad Street lack nearby access to quality open space.
- Some areas lack access to relevant destinations for daily trips.



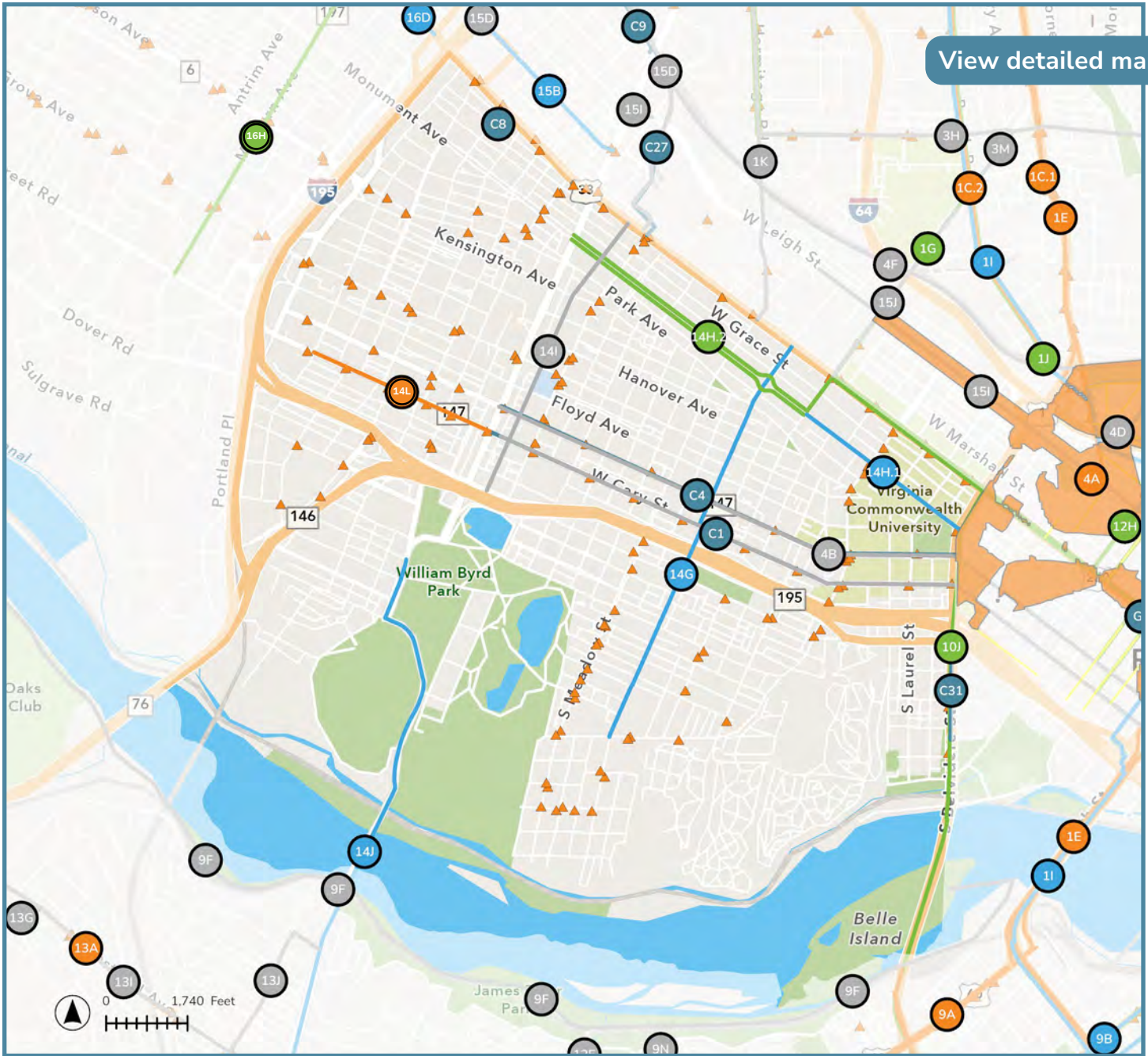
Other high needs include:

- Connectivity – Areas south of I-195 are not as easy to get to from other parts of the City.
- Safety/Security – High crashes and high crime in walkable areas.
- Maintenance – Poor pavement and sidewalk condition in some areas.



NEEDS AREA SUMMARIES

14: Near West End





NEEDS AREA SUMMARIES

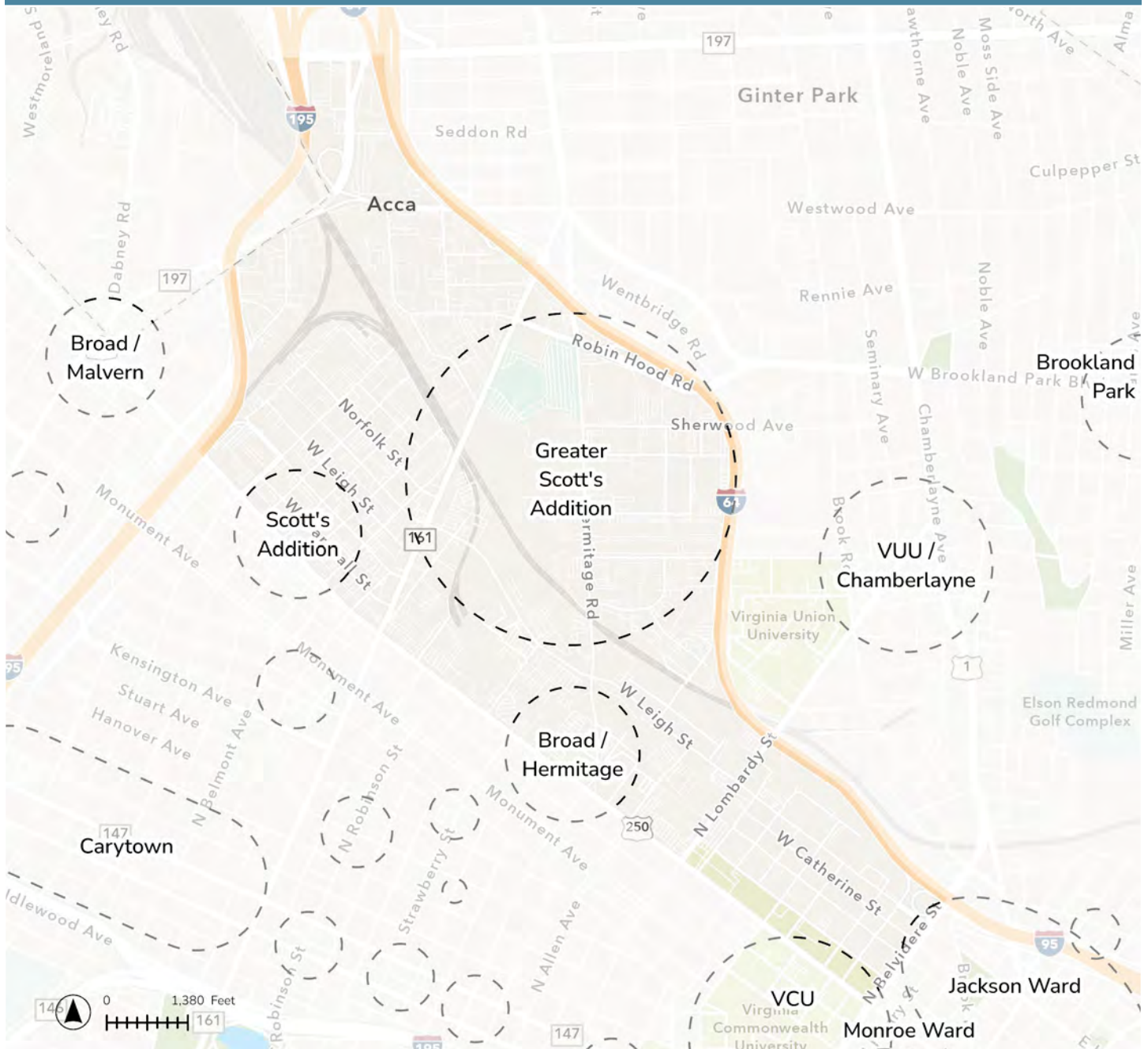
14: Near West End

| ID | Category | Title | Cost | Support Score | Page |
|-------|---------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 14L | Priority Projects | Carytown Pedestrian Safety Improvements | n/a | n/a | 290 |
| 14H.1 | Priority Completion | Franklin Street Cycle Track - Lombardy Street to Belvidere Street | n/a | 3.6 | 294 |
| 14G | Priority Completion | Allen Avenue Bike-Walk Street | n/a | 1.2 | 294 |
| 14J | Priority Completion | State Route 161 Bicycle Infrastructure | n/a | 1.2 | 294 |
| C31 | Other Completion | Belvidere Street Gateway - Phase IV | n/a | n/a | 301 |
| C1 | Other Completion | Cary Street Safety Curb Extensions | n/a | n/a | 296 |
| C4 | Other Completion | Main Street Safety Curb Extensions | n/a | n/a | 296 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | n/a | n/a | 297 |
| 14H.2 | Shorter Term | Monument Avenue Bike Lanes | Moderate (\$\$) | 3.6 | 305 |
| 14D | Longer Term | Carytown Parking Recommendations | Moderate (\$\$) | 2.8 | 309 |
| 4B | Longer Term | Main Street/Cary Street Two-Way Street Conversion | High (\$\$\$) | 2.8 | 309 |
| 14I | Longer Term | Mulberry Street Bikeway | Moderate (\$\$) | 1.8 | 311 |
| 14K | Longer Term | Near West End Bikeshare Stations | Low (\$) | 2.0 | 310 |
| 14F | Longer Term | Randolph Connection Over I-195 | Low (\$) to Very High (\$\$\$\$) | 2.2 | 310 |
| 14A | Longer Term | Stuart Circle Roundabout Improvement | Moderate (\$\$) | 2.6 | 309 |



NEEDS AREA SUMMARIES

15: Greater Scott's Addition/Carver



EQUITY CONTEXT

GREATER SCOTT'S ADDITION AREA

NEED AREA 15



Equity needs in the Greater Scott's Addition area are generally low, compared to other areas in Richmond.

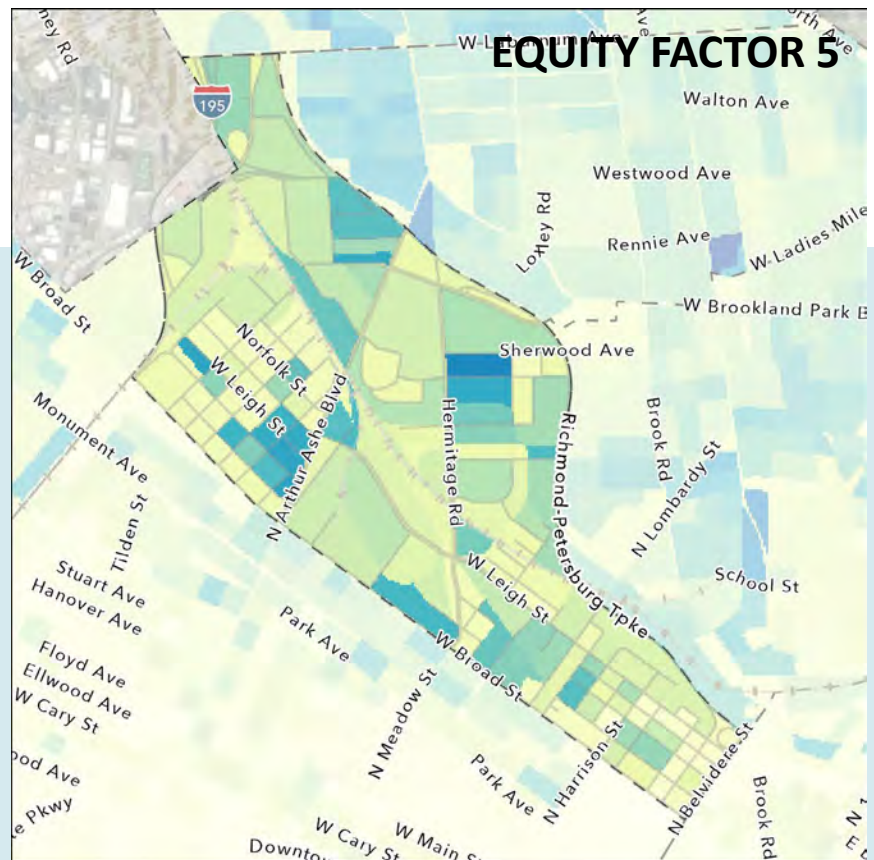
Carver and Newtowne West were once densely-populated, Black working-class neighborhoods. As these neighborhoods aged, they became **targeted for redevelopment** as part of RRHA's Carver Plan. This plan **demolished 400 homes** to make way for I-95/64 and to open land to private developers north of Leigh Street. Today, properties in Carver and Newtowne West are **rapidly increasing in value**, and the neighborhoods have become popular for VCU students.

The population in this area has relatively lower densities of Communities of Concern, compared to other areas of Richmond. However, there are some Communities of Concern present here, such as **renters, BIPOC renters, and non-English primary populations**.

Some areas are not well served by public transit, and **bus service** may be **infrequent or unreliable**.

Multimodal Network

Many of these areas were built for industrial uses. As a result, in some parts of this area, you are limited in how many things you can get to by walking, biking, and taking the bus. To get places by walking or biking, you have to walk along high-speed multi-lane facilities.



Areas in darker blue represent places where biking, walking, or taking transit are more difficult.

Transportation investments will address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.

-Path to Equity Policy Guide, Equity Factor 5

TOP TRANSPORTATION NEEDS

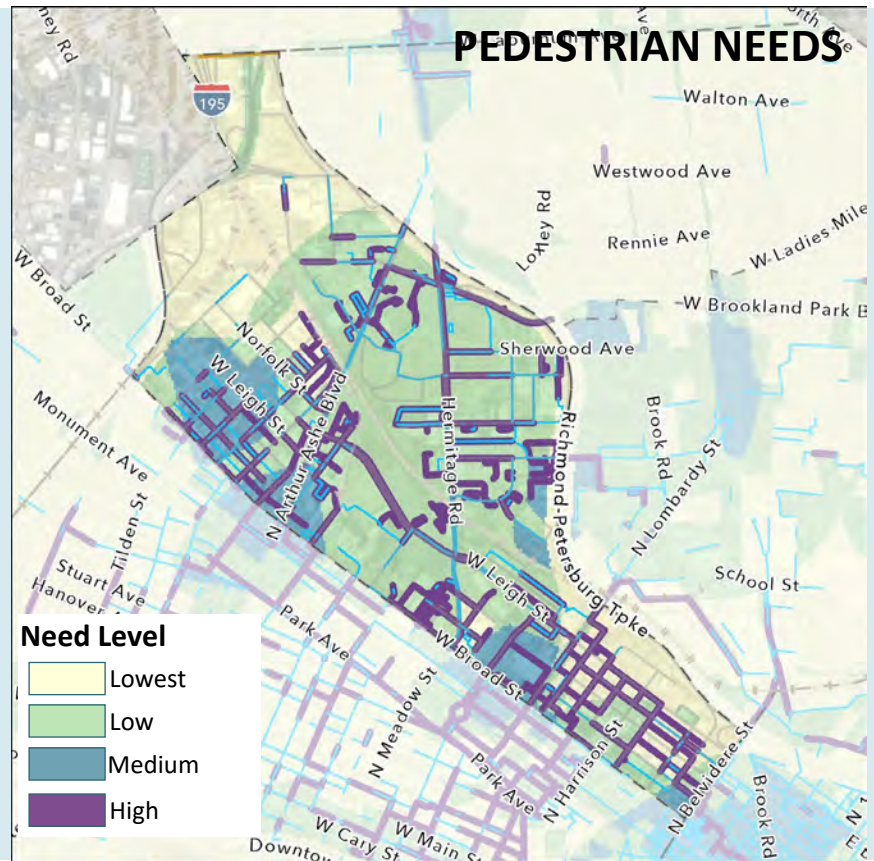
GREATER SCOTT'S ADDITION AREA

NEED AREA 15



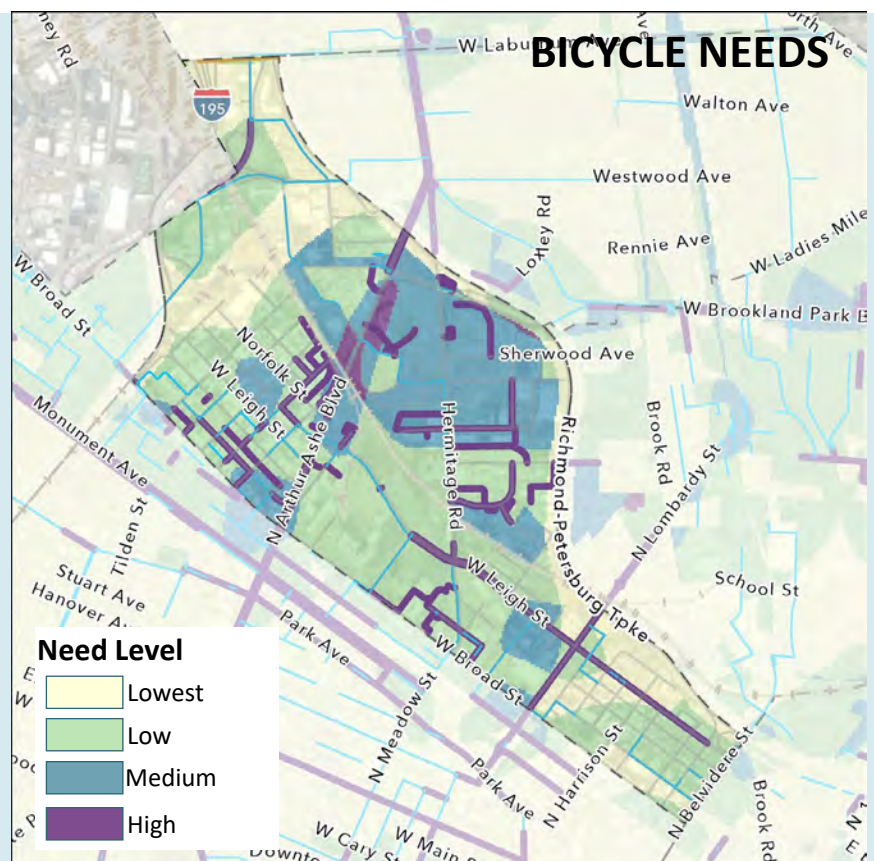
TOP PEDESTRIAN NEEDS

- There are issues of pedestrian connectivity here. There are few connection points across CSX tracks and/or I-95/64, and those existing connections may require walking along high-speed streets.
- Besides Carver, most other neighborhoods in this area are lacking sidewalks or have major sidewalk maintenance issues.
- It feels unsafe to be a pedestrian along streets like Broad St, Arthur Ashe Blvd, and Hermitage Rd.



TOP BICYCLE NEEDS

- There are issues of bicycle connectivity here. There are few connection points across CSX tracks and/or I-95/64, and those connections may require biking along high-speed streets that have no bike infrastructure.
- Some dedicated bicycle infrastructure exists here, but many destinations require biking along streets without bike infrastructure.



TOP TRANSPORTATION NEEDS

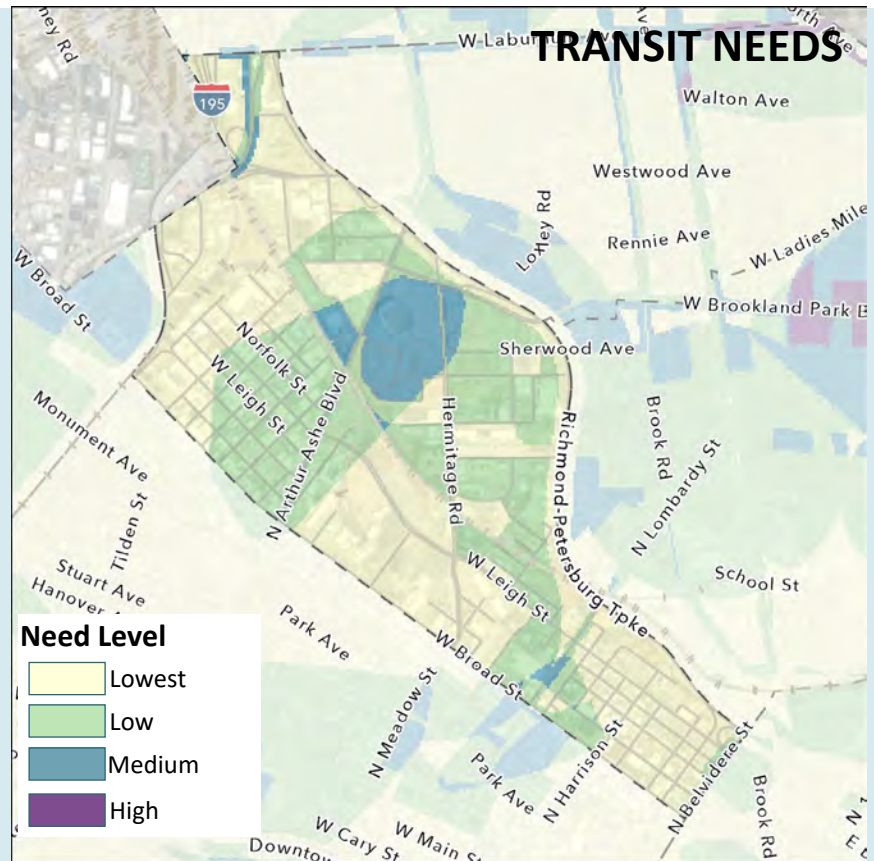
GREATER SCOTT'S ADDITION AREA

NEED AREA 15



TOP TRANSIT NEEDS

- Compared to other areas in Richmond, transit needs are relatively low here, especially near the Pulse BRT corridor.
- Transit needs are highest in this area near the Diamond.
- Other themes identified in public comments:
 - Add transit routes that have stops inside Scott's Addition.
 - Add transit route directly connecting Scott's Addition with Carytown.
 - Bring BRT to Diamond District via Arthur Ashe Blvd or Hermitage Rd.

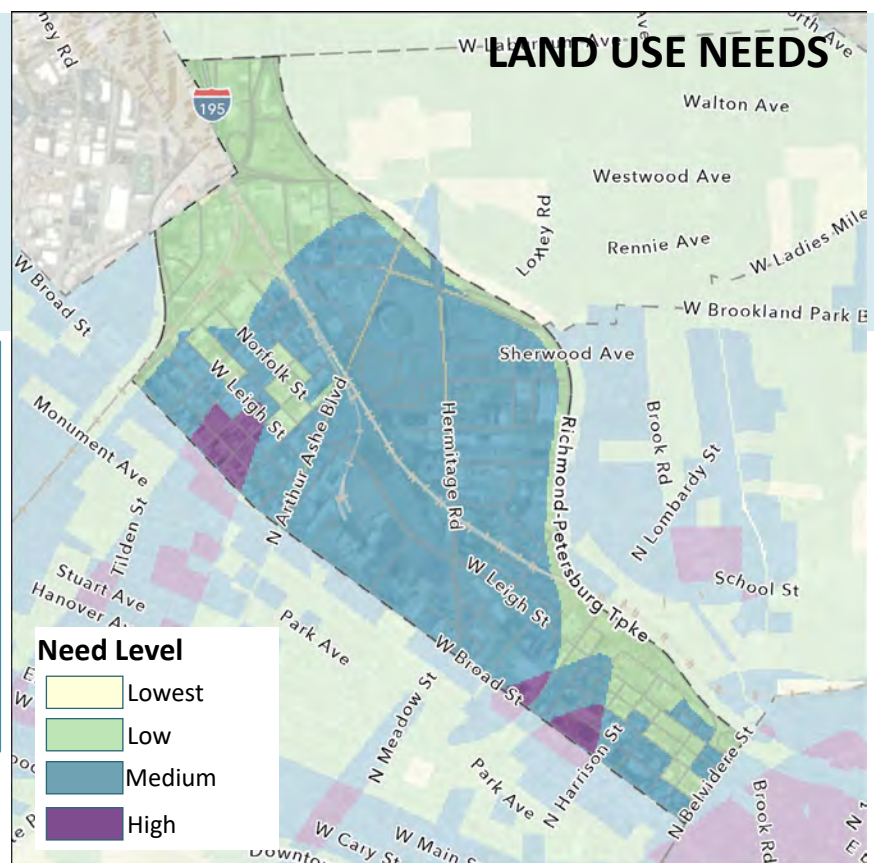


LAND USE NEEDS

- There is an abundance of surface parking lots, and some areas are far away from greenspace.

Other high needs include:

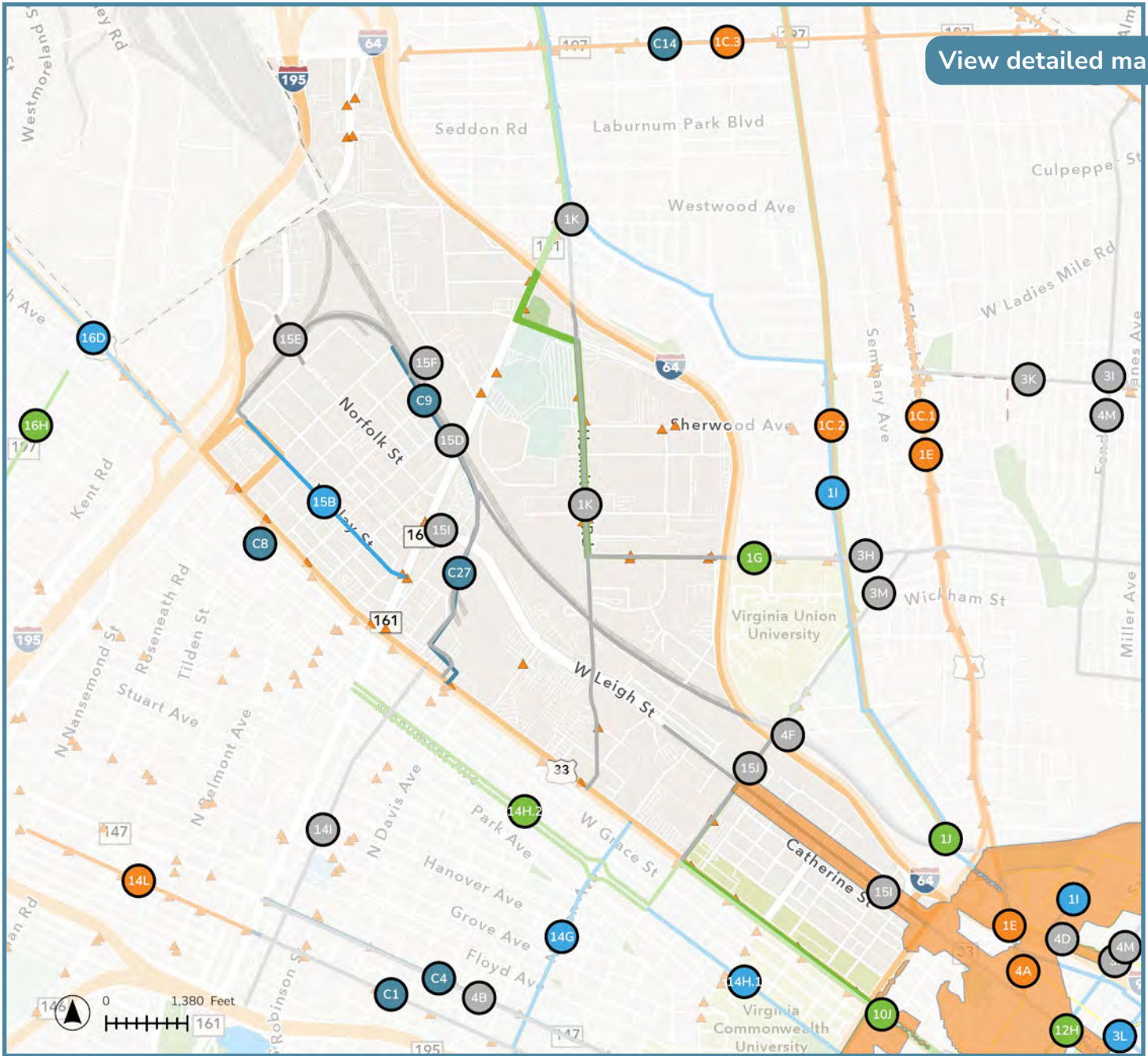
- Safety/Security – Even though areas are walkable, there are high crashes on streets like Broad St, Arthur Ashe Blvd, and Lombardy St.
- Freight – Several roads in this area are frequently used for freight trips, including Arthur Ashe Blvd, Broad St, Lombardy St, and Roseneath Rd.





NEEDS AREA SUMMARIES

15: Greater Scott's Addition/Carver Project Recommendations



[View detailed map](#)

- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



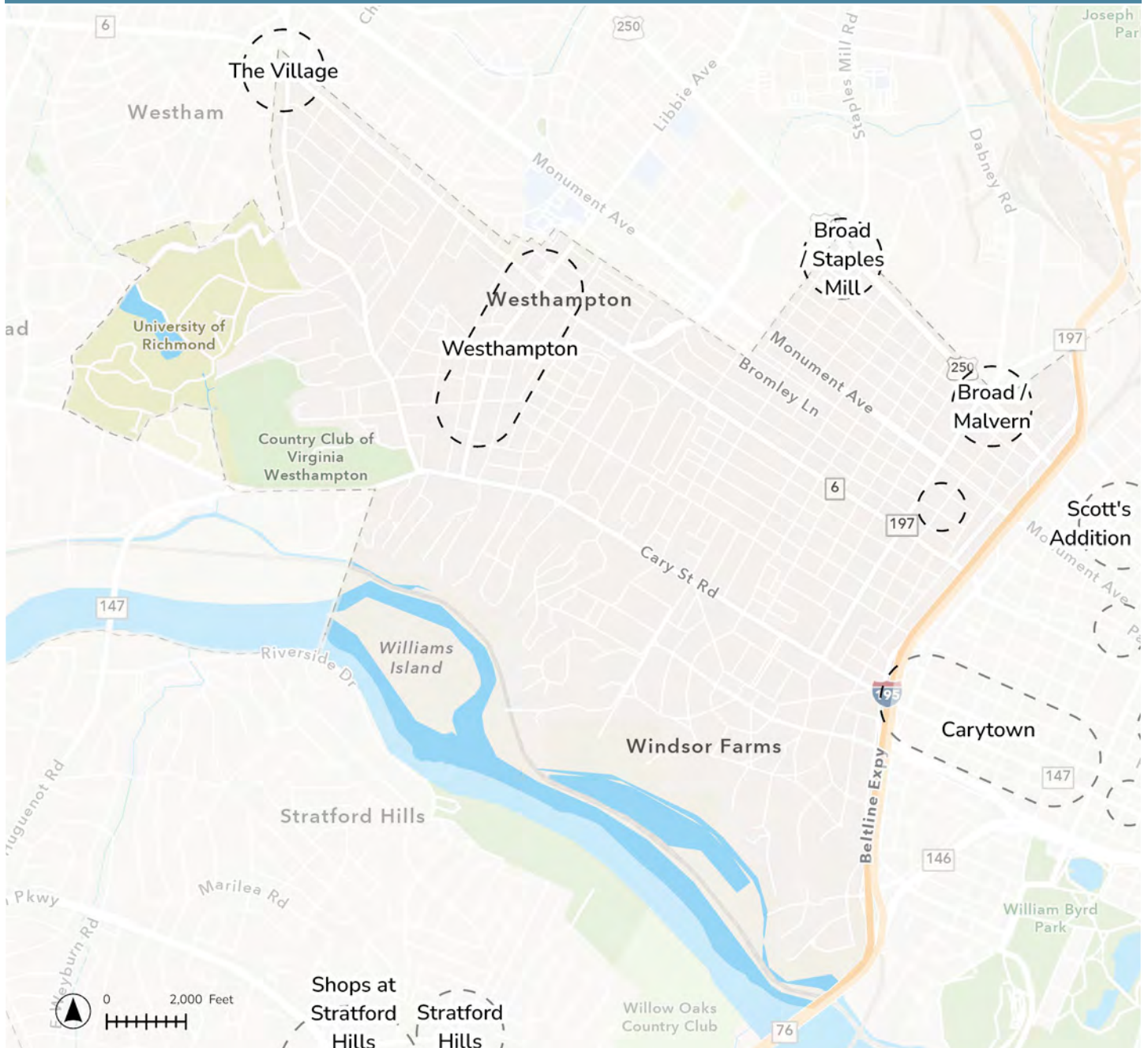
NEEDS AREA SUMMARIES

15: Greater Scott's Addition/Carver Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 15C | Priority Completion | Arthur Ashe Boulevard Bridge Replacement | n/a | 1.6 | 292 |
| 15B | Priority Completion | Clay Street Streetscape Improvements | n/a | 3.4 | 293 |
| C27 | Other Completion | Science Museum BRT Shared Use Path | n/a | n/a | 301 |
| C8 | Other Completion | Scott's Addition BRT Streetscape Improvements | n/a | n/a | 297 |
| C9 | Other Completion | Scott's Addition Green Space | n/a | n/a | 297 |
| 1K | Longer Term | Hermitage Road Buffered Bike Lanes | Low (\$) | 2.9 | 309 |
| 15J | Longer Term | Lombardy Street Protected Bike Lanes | Low (\$) | 3.0 | 308 |
| 15F | Longer Term | MacTavish Avenue Bridge | Very High (\$\$\$\$) | 0.8 | 311 |
| 15E | Longer Term | Norfolk Street Bridge | Very High (\$\$\$\$) | 1.0 | 311 |
| 3H | Longer Term | Overbrook Road Bikeway | Moderate (\$\$) | 2.3 | 310 |
| 15H | Longer Term | Scott's Addition Parking Recommendations | Moderate (\$\$) | 3.0 | 308 |
| 4F | Longer Term | Scott's Addition to Shockoe Shared Use Path | Low/Moderate (\$/\$\$) | 3.7 | 307 |
| 15D | Longer Term | Scott's Addition/Boulevard Shared-Use Path | High (\$\$\$) | 2.4 | 309 |

NEEDS AREA SUMMARIES

16: Far West End



EQUITY CONTEXT

FAR WEST END

NEED AREA 16



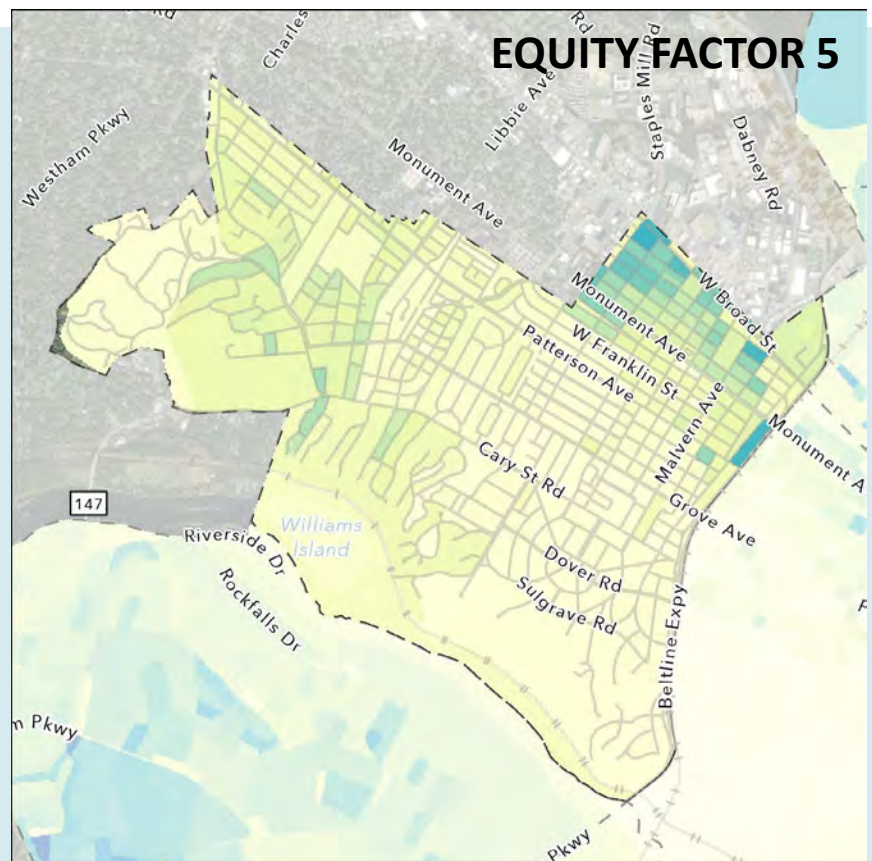
Equity needs in the Far West End are generally low, compared to other areas in Richmond. Neighborhoods in this area were not redlined or subject to other historical transportation and land use injustices. Steady investments in these neighborhoods have made them much more livable than other parts of Richmond where disinvestment occurred.

The population in this area has relatively lower densities of Communities of Concern, compared to other areas of Richmond. Communities of Concern in this area are highest in the University of Richmond area and include **BIPOC and low-income populations**.

The Far West End area scored very low in all equity factors, indicating very low equity needs here.

The equity factor for **Car-Centric Development Patterns** scored the highest in this area, but it is still low in comparison to other areas of Richmond.

In the map on the right, darker blue areas are those where you are limited in how many things you can get to by walking, biking, and taking the bus. These areas make up a small proportion of the Far West End area.



Areas shown in the darker greens and blues represent areas that are harder to get around in by bike, walking, or transit because there are gaps in the multimodal network, poor quality of service, and non-auto travelers must use high-speed multi-lane facilities.

Transportation investments will address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.

Path to Equity Policy Guide, Equity Factor 5

TOP TRANSPORTATION NEEDS

FAR WEST END

NEED AREA 16



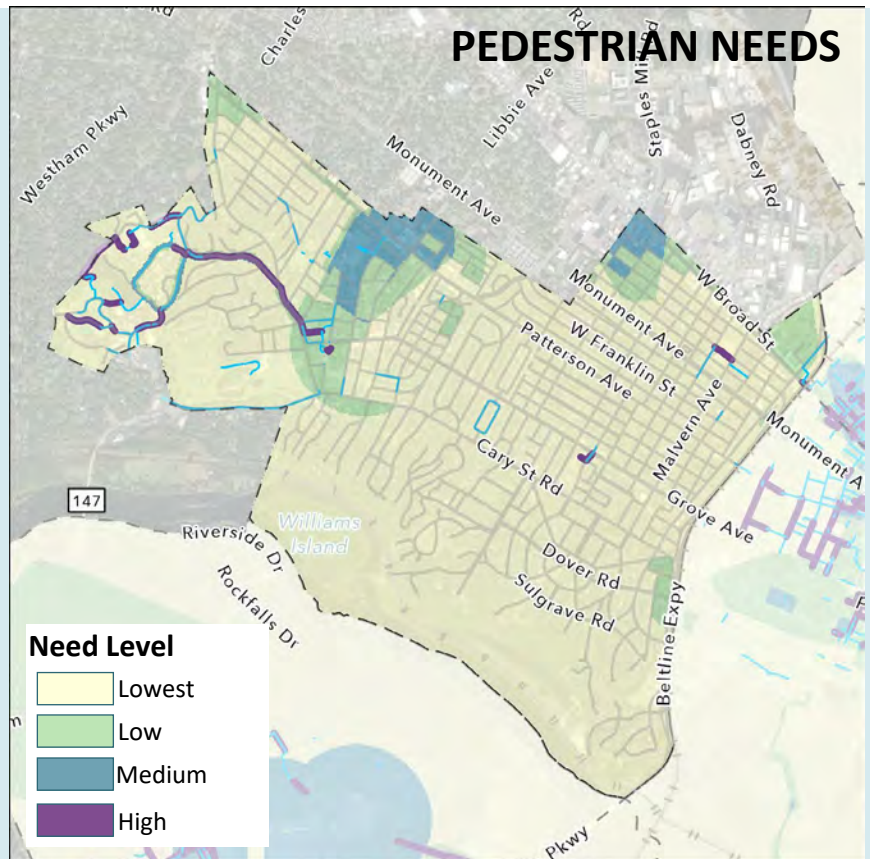
TOP PEDESTRIAN NEEDS

In general, equity-weighted pedestrian needs are low in this area.

- Walk access is good. There are a lot of destinations within walking distance.
- Sidewalks exist, with varying degrees of maintenance condition.
- Connectivity is good. You don't have to walk along high-speed roads.

The highest equity-weighted pedestrian needs in this area are:

- Campus Drive, Towana Rd connecting University of Richmond to Three Chopt Rd and the Westhampton neighborhood node
- Other roads in and around U of R



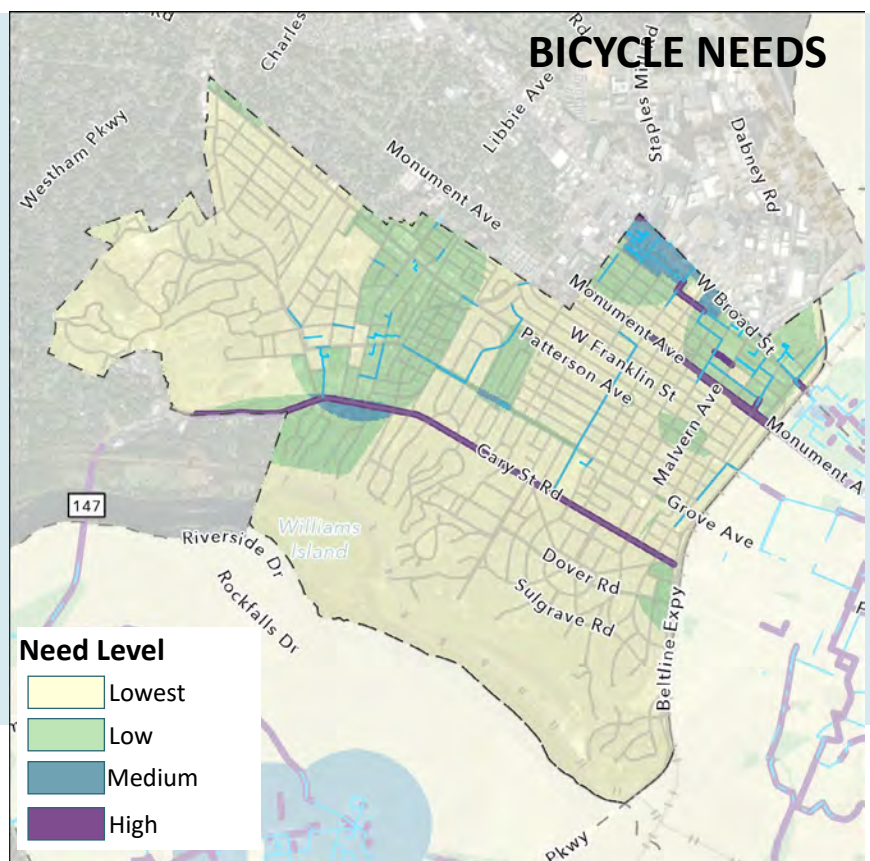
TOP BICYCLE NEEDS

In general, equity-weighted bicycle needs are low in this area.

- Bike access is good. There are a lot of destinations within biking distance.
- Streets are connected in a grid pattern, and traffic speeds are generally low.

The highest equity-weighted bicycle needs in this area are:

- Cary Street Rd
- Monument Ave



TOP TRANSPORTATION NEEDS

FAR WEST END

NEED AREA 16

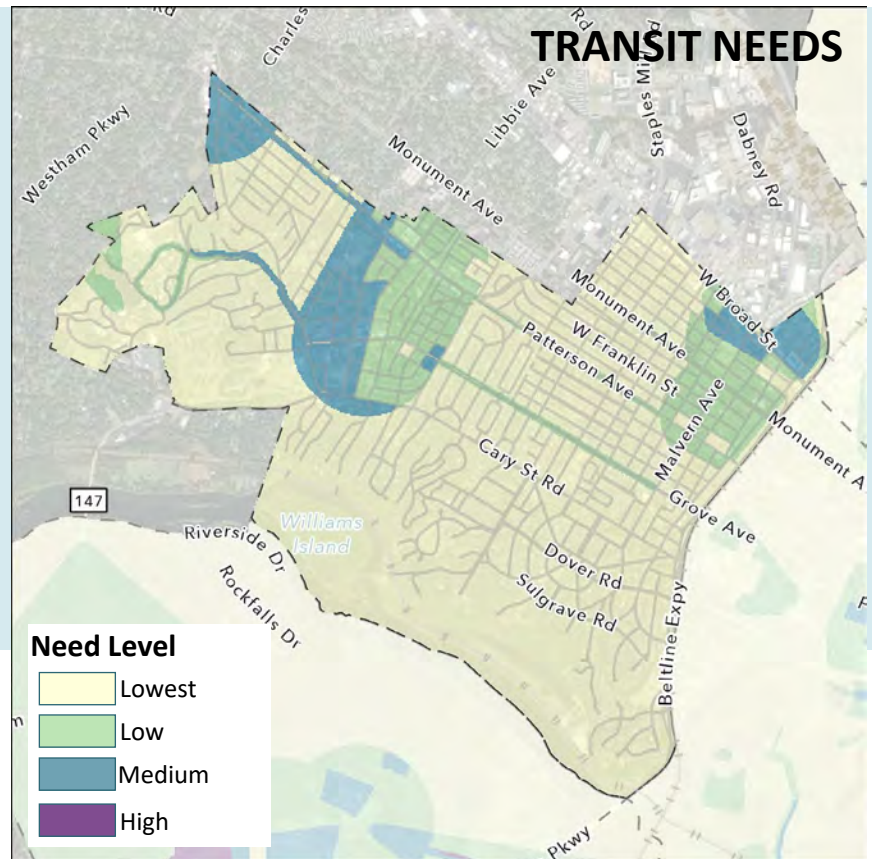


TOP TRANSIT NEEDS

Transit needs are generally low throughout this area.

Public comments:

- A Pulse BRT station is needed near Malvern Ave
- Park and ride needed at Willow Lawn, near Pulse BRT station
- Too many bus transfers needed to get to and from the Far West End

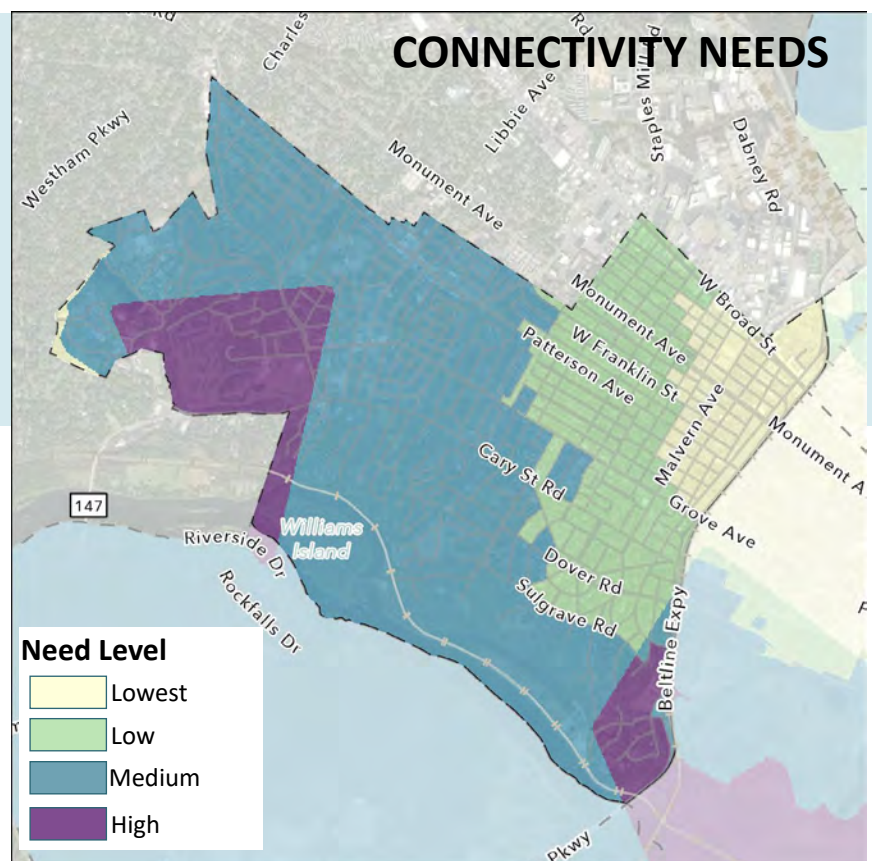


CONNECTIVITY NEEDS

Trips to and from the more western parts of the area take a longer amount of time due to the disconnected nature of travel modes.

Other high needs include:

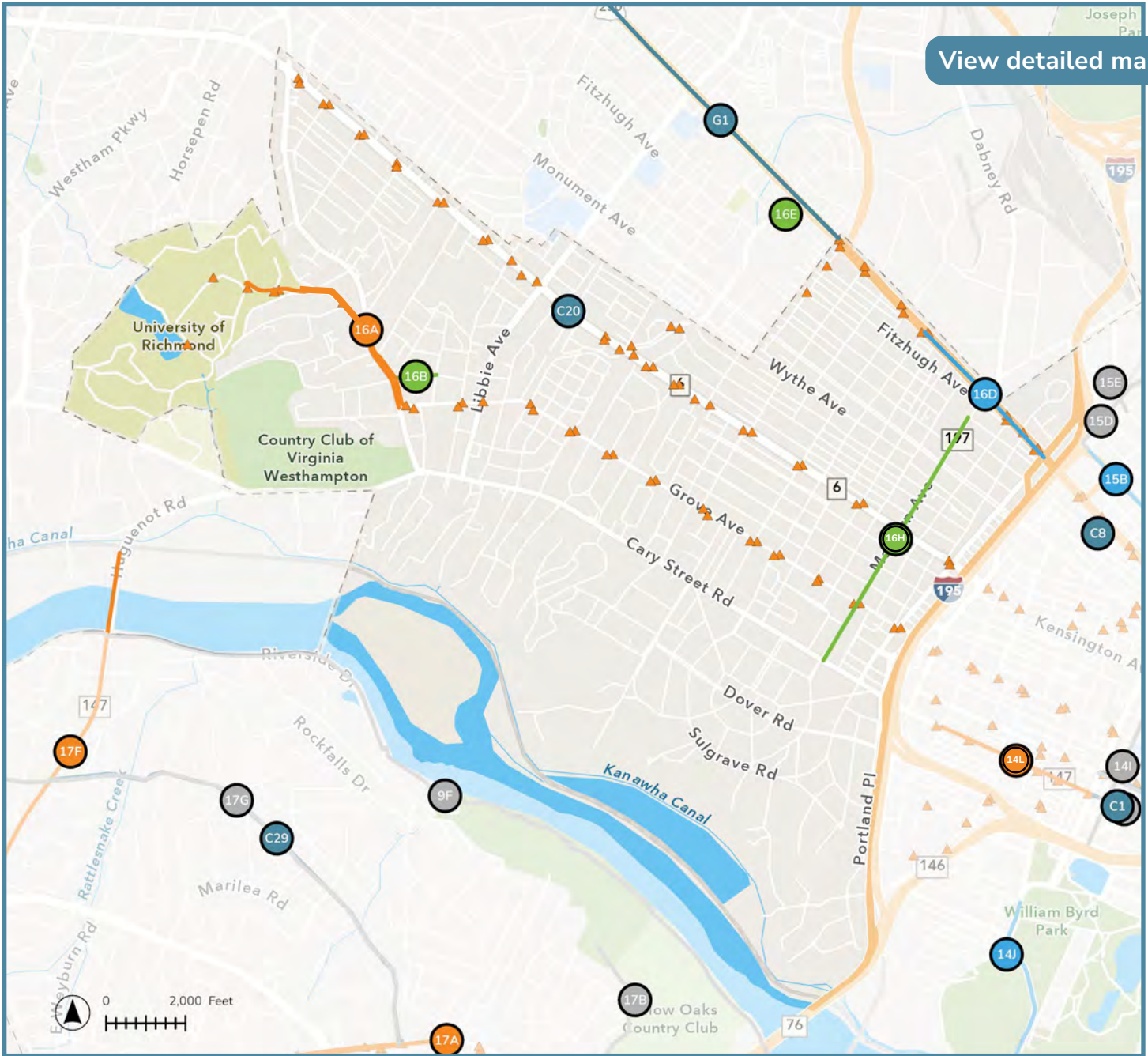
- Safety/Security – High number of crashes on Broad Street near Willow Lawn





NEEDS AREA SUMMARIES

16: Far West End Project Recommendations



- Priority Projects
- Priority Completion Projects
- Other Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)



NEEDS AREA SUMMARIES

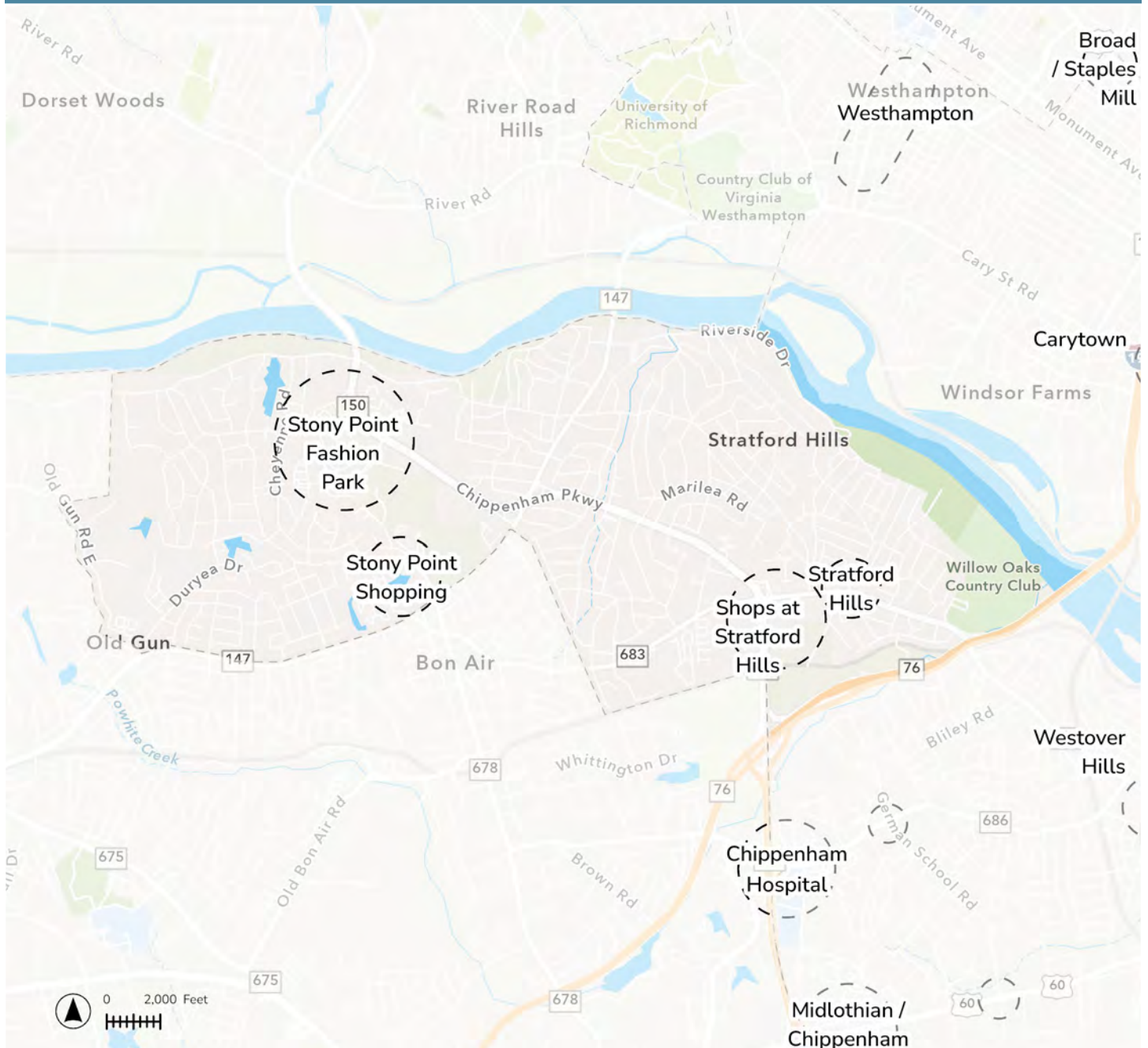
16: Far West End Project Recommendations

| ID | Category | Title | Cost | Support Score | Page |
|-----|---------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 16A | Priority Projects | Three Chopt Road Sidewalks | High (\$\$\$) | 2.4 | 283 |
| 16D | Priority Completion | Broad Street Streetscape with Pulse BRT Expansion | n/a | 2.8 | 293 |
| C33 | Other Completion | Mary Munford Elementary School Pedestrian Safety Improvements | n/a | n/a | 301 |
| G1 | Other Completion | Western Pulse Extension | n/a | n/a | 302 |
| C20 | Other Completion | Westhampton Area Improvements - Phase III | n/a | n/a | 300 |
| 16E | Shorter Term | Willow Lawn Park-and-Ride | Moderate (\$\$) | 3.6 | 306 |
| 16B | Shorter Term | York Road Sidewalks | Low (\$) | 3.6 | 306 |
| 16H | Shorter Term | Malvern Avenue Sight Distance Evaluation | Moderate (\$\$) | n/a | 306 |
| 15I | Longer Term | Leigh Street Bike Lanes - Dinneen St to 8th St | Moderate (\$\$) | 3.0 | 308 |
| 16C | Longer Term | Three Chopt Road/York Road/ Henri Road Roundabout | Moderate/High (\$\$/\$\$\$) | 1.7 | 311 |



NEEDS AREA SUMMARIES

17: Huguenot



EQUITY CONTEXT

HUGUENOT AREA

NEED AREA 17



Equity needs in the Huguenot area are generally low, compared to other areas in Richmond. The Huguenot area is in Richmond's **inner ring suburbs**.

Compared to other areas of Richmond, there are fewer inequities here. However, there are some Communities of Concern present here, especially in the Chippenham Village area along Forest Hill Avenue near Huguenot High School, including individuals with **limited mobility, low-income households, BIPOC renters, and at-risk youth**.

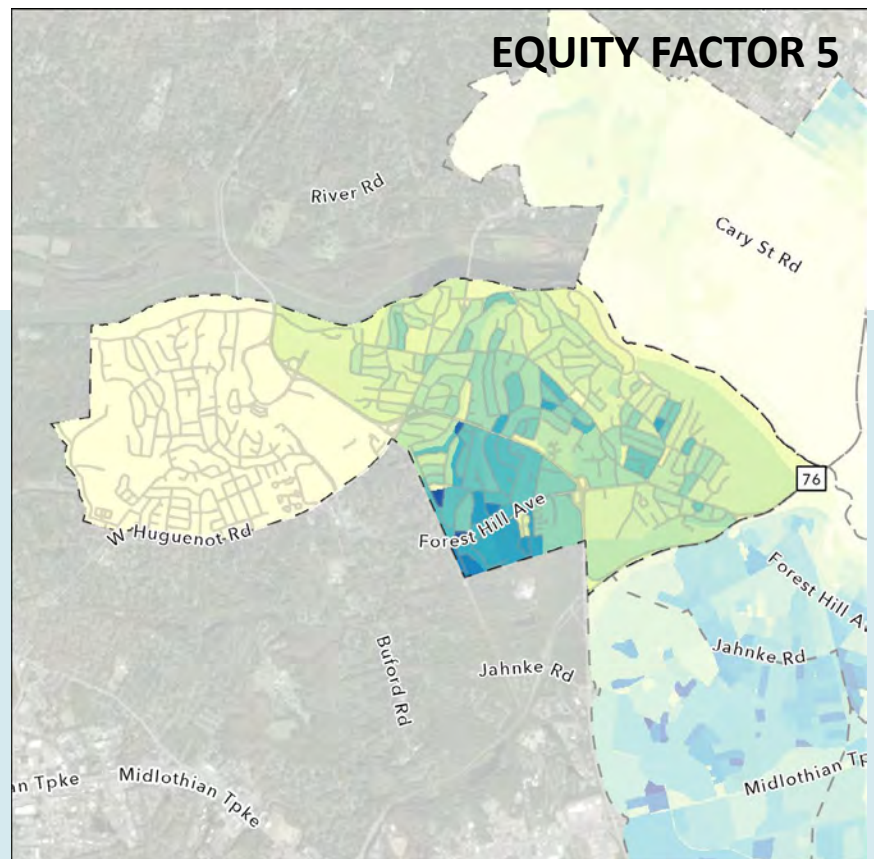
It's hard to get around by **walking or biking** because there aren't direct paths to get where you need to go, or it doesn't feel **safe**.

This area has relatively poor walk, bike, and transit accessibility.

Multimodal Network Gaps

In this area, you are limited in how many things you can get to by walking, biking, and taking the bus. Most neighborhoods in this area are car-centric.

If you need to get places without a car, you have to walk or bike along high-speed, multi-lane roads.



Areas shown in the darker greens and blues represent areas that are harder to get around in by bike, walking, or transit because there are gaps in the multimodal network, poor quality of service, and non-auto travelers must use high-speed multi-lane facilities.

Transportation investments will address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.

- Path to Equity Policy Guide, Equity Factor 5

TOP TRANSPORTATION NEEDS

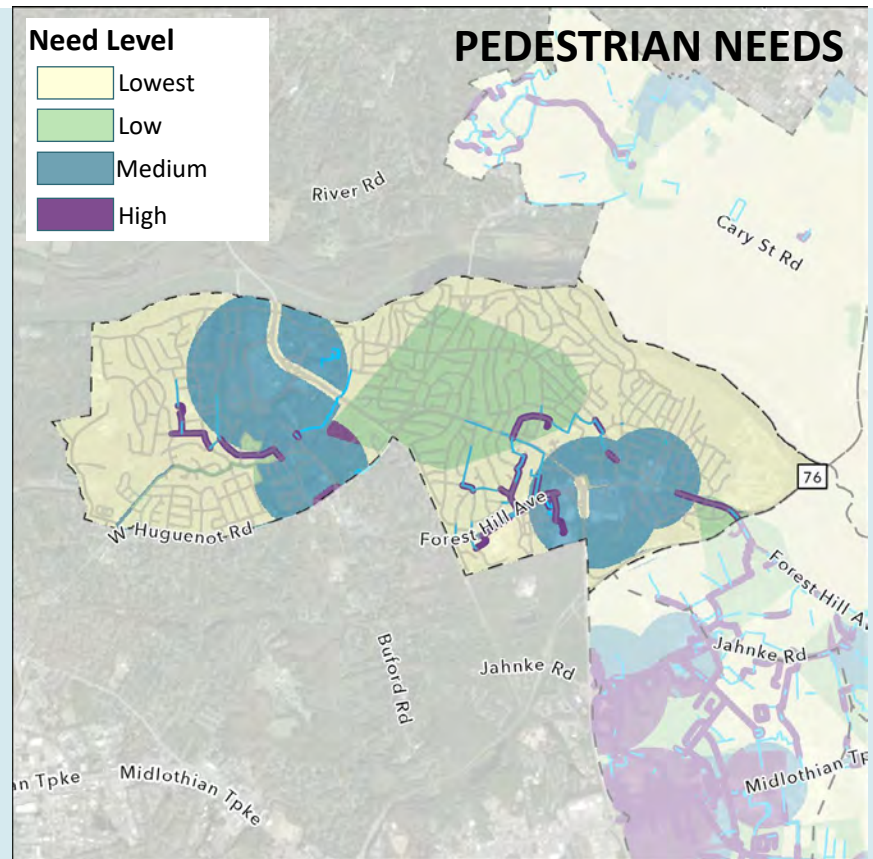
HUGUENOT AREA

NEED AREA 17

TOP PEDESTRIAN NEEDS

In generally, equity-weighted pedestrian needs in this area are lower than many other areas in Richmond.

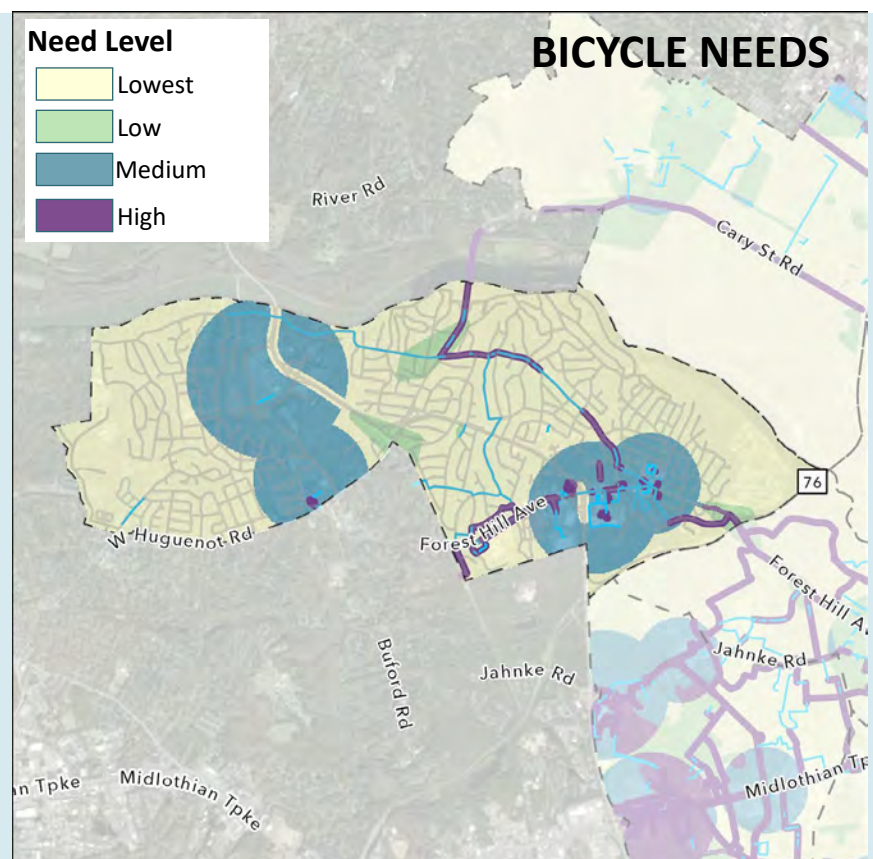
- As a primarily car-centric area, there are few sidewalks.
- Many residential streets are not connected, so getting to destinations often requires walking along high-speed roads.
- Nodes like Stony Point and Shops at Stratford Hills are hard to get to/from by walking.



TOP BICYCLE NEEDS

- Nodes like Stony Point and Shops at Stratford Hills are hard to get to/from by biking.
- Not much bicycling takes place in this area, but there is a need for bike infrastructure along Huguenot Rd and Cherokee Road.
- Bike trips in this area use these streets the most:
 - Forest Hill Ave
 - Various streets around the Shops at Stratford Hills
 - Huguenot Rd
 - Cherokee Rd

Bicycle needs here are generally lower than several other areas of Richmond.



TOP TRANSPORTATION NEEDS

HUGUENOT AREA

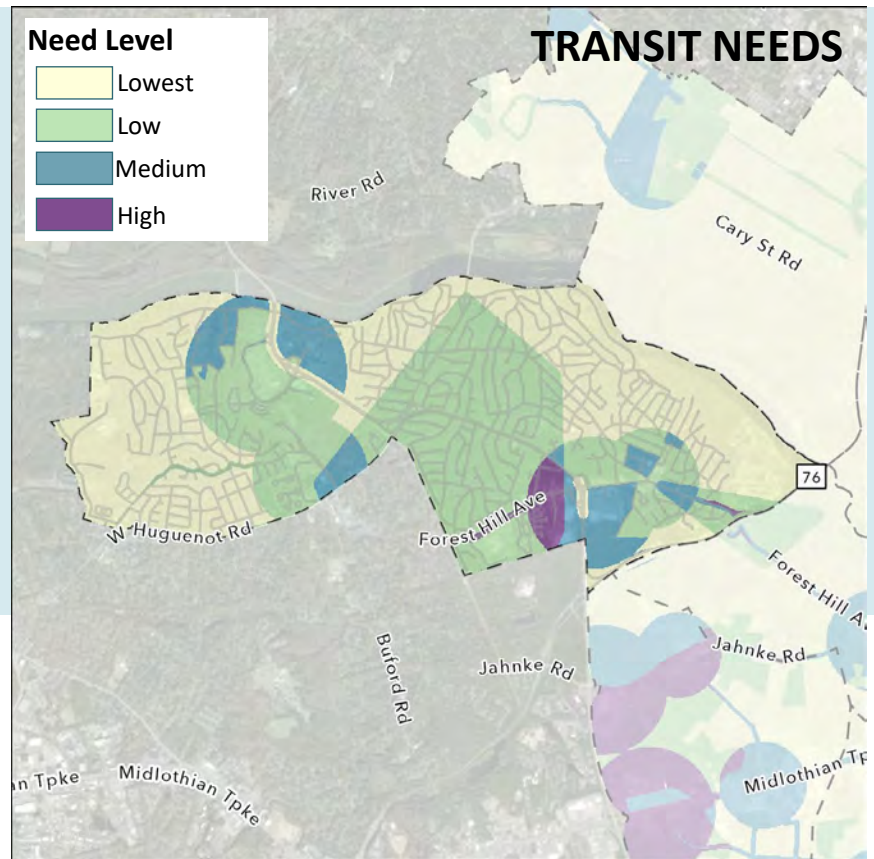
NEED AREA 17



TOP TRANSIT NEEDS

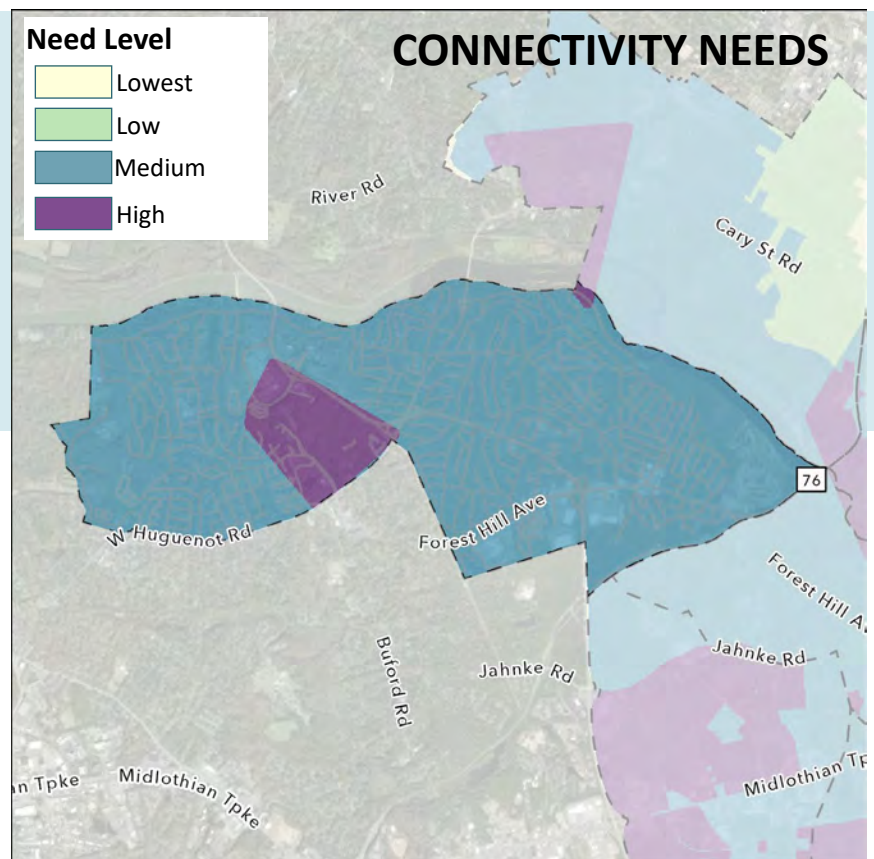
- Transit needs in this area are highest near Shops at Stratford Hills and around Stony Point
- Lack of shelters and benches at bus stops
- Buses are infrequent and often unreliable

Transit needs here are generally lower than several other areas of Richmond.



CONNECTIVITY NEEDS

Areas within Huguenot, especially near Stony Point, are less connected to other parts of the City and are further away from regional bus and rail services.

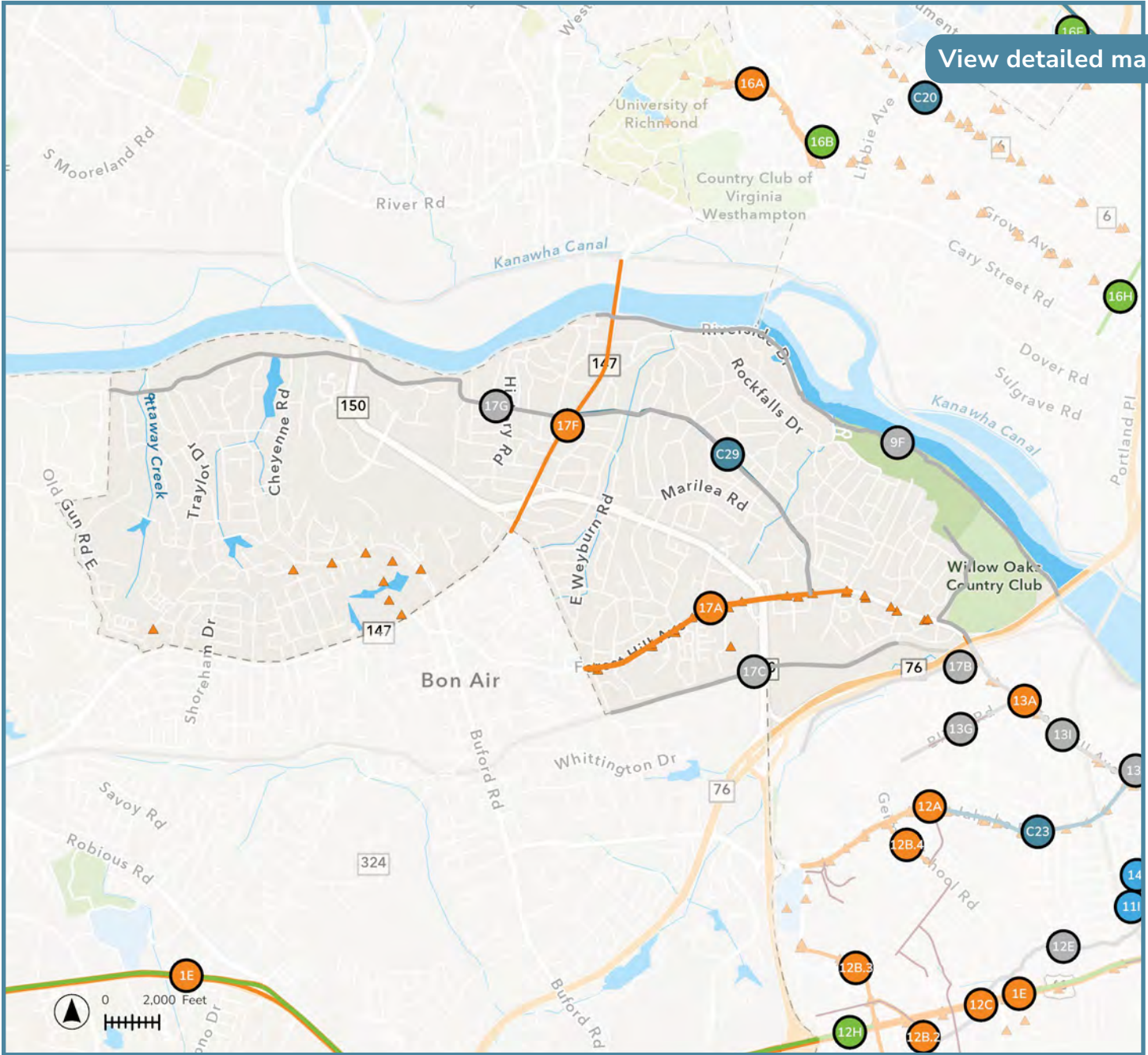




NEEDS AREA SUMMARIES

17: Huguenot Project Recommendations

[View detailed map](#)



- Priority Projects
- Priority Completion Projects
- Shorter-Term Projects
- Longer-Term Projects
- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
- Sidewalk Repair Projects (4C)
- Pavement Maintenance Projects (4K)

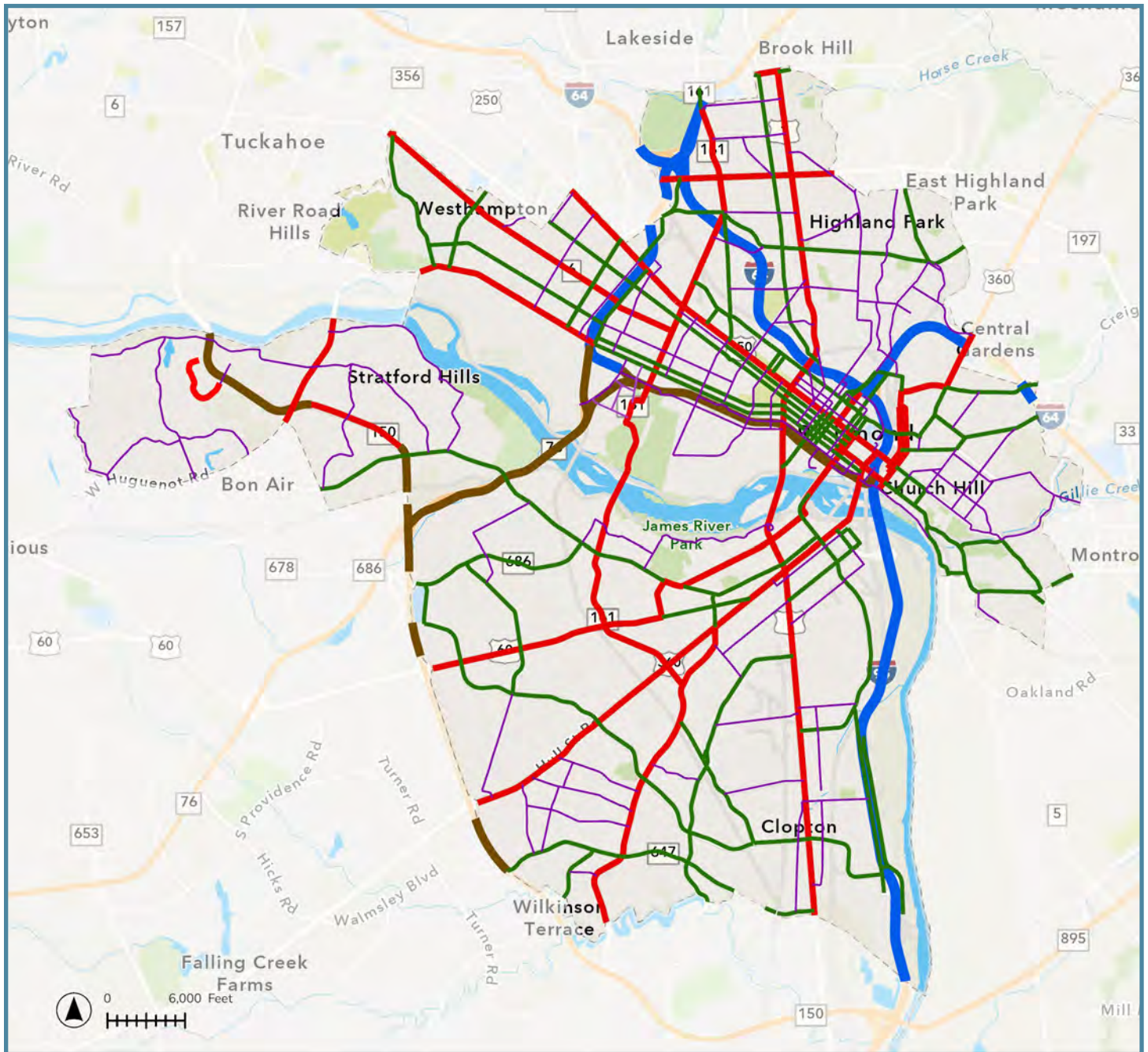







NEEDS AREA SUMMARIES

17: Huguenot Project Recommendations

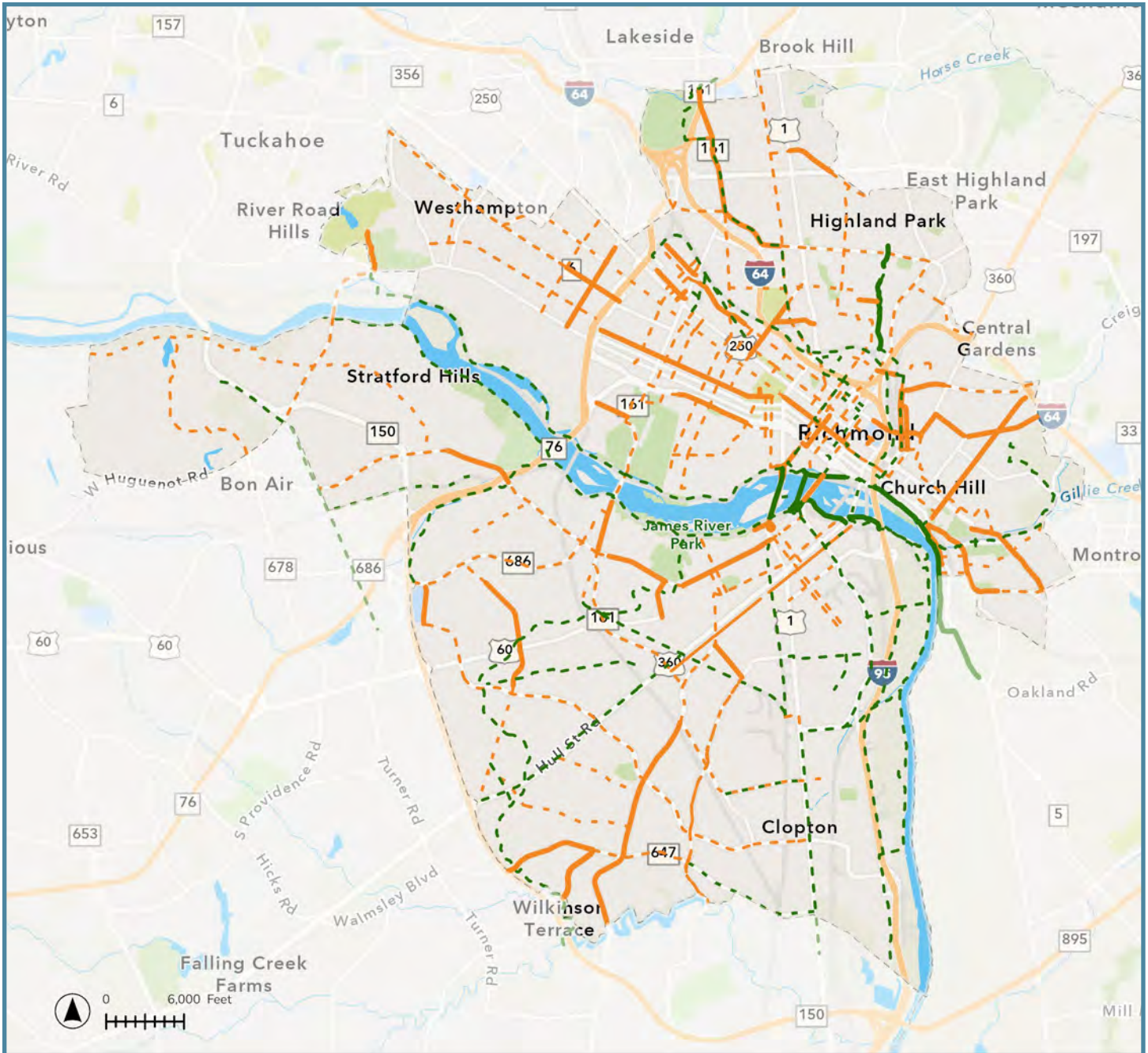
| ID | Category | Title | Cost | Support Score | Page |
|-----|-------------------|---|--|---------------|------|
| 1F | Priority Projects | Essential Transit Infrastructure (Shelters, Seating, and Trash Cans) at Bus Stops | Individual Stop = Low (\$) Overall = Very High (\$\$\$\$) | 4.6 | 236 |
| 17A | Priority Projects | Forest Hill Avenue Streetscape | Moderate (\$\$) | 2.5 | 286 |
| 17F | Priority Projects | Huguenot Road Bikeway | Moderate (\$\$) | 3.3 | 288 |
| C29 | Other Completion | Cherokee Road Roadside Safety Improvements | n/a | n/a | 301 |
| 17G | Longer Term | Cherokee Road Bikeway | Very High (\$\$\$\$) | 1.6 | 311 |
| 13I | Longer Term | Forest Hill Avenue Bikeway | High (\$\$\$) | 2.2 | 310 |
| 17C | Longer Term | Norfolk Southern Shared Use Path | High (\$\$\$) | 1.6 | 311 |
| 17B | Longer Term | Powwhite Greenway | High (\$\$\$) | 1.6 | 311 |

APPENDIX F: FUNCTIONAL CLASSIFICATIONS MAP



-  Interstate
-  Expressway/Freeway
-  Principal Arterial
-  Minor Arterial
-  Collector

APPENDIX G: BIKE FACILITIES MAP



Bike Facilities

- Existing
- - - Proposed

Shared-Use Paths

- Existing
- - - Proposed

APPENDIX H: LIST OF ACRONYMS

| | |
|--|--|
| ADA: Americans With Disabilities Act | EV: Electric Vehicle |
| AoPP: Areas of Persistent Poverty | FHWA: Federal Highway Administration |
| ATIIP: Active Transportation Infrastructure Investment Program | FMCSA: Federal Motor Carrier Safety Administration |
| BIL: Bipartisan Infrastructure Law | FRA: Federal Railroad Administration |
| BIPOC: Black, Indigenous, or Person of Color | FTA: Federal Transit Administration |
| BRT: Bus Rapid Transit | GAP: OIPI Growth and Accessibility Planning |
| CAO: City of Richmond Chief Administrative Officer | GRTC: Greater Richmond Transit Company |
| CCI: Critical Condition Index | HCD: City of Richmond Housing & Community Development |
| CDL: Commercial Drivers License | HOV: High-Occupancy Vehicle |
| CIG: Capital Investment Grants | HSIP: Highway Safety Improvement Program |
| CMAQ: Congestion Mitigation and Air Quality | IJJA: Infrastructure Investment and Jobs Act |
| COR: City of Richmond | ITS: Intelligent Transportation System |
| CRISI: Consolidated Railroad Infrastructure Safety Improvements | LQC: Lighter, Quicker, Cheaper |
| CTB: Commonwealth Transportation Board | MERIT: DRPT Making Efficient and Responsible Investments in Transit |
| CVTA: Central Virginia Transportation Authority | NAAQS: National Ambient Air Quality Standards |
| DED: City of Richmond Department of Economic Development | NBI: National Bridge Inventory |
| DHR: City of Richmond Department of Human Resources | PHB: Pedestrian Hybrid Beacon |
| DIT: City of Richmond Department of Information Technology | PROTECT: Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program |
| DMV: Department of Motor Vehicles | PROWAG: Public Right-of-Way Accessibility Guidelines |
| DPU: City of Richmond Department of Public Utilities | OETM: City of Richmond Office of Equitable Transportation & Mobility |
| DPW: City of Richmond Department of Public Works | OCWB: City of Richmond Office of Community Wealth Building |
| DRPT: Virginia Department of Rail and Public Transportation | OSC: City of Richmond Office of Strategic Communications |
| DSS: City of Richmond Department of Social Services | |

OST: Office of the Secretary of Transportation

OOS: City of Richmond Office of Sustainability

PCRF: City of Richmond Parks, Recreation, and Community Facilities

PDR: City of Richmond Planning and Development Review

PlanRVA: Richmond Region's Metropolitan Planning Organization

RAISE: Rebuilding American Infrastructure with Sustainability and Equity

RCP: Reconnecting Communities Pilot

RPD: Richmond Police Department

RPS: Richmond Public Schools

RRIF: Railroad Improvement Financing

RRHA: Richmond Redevelopment and Housing Authority

RSTBG: Regional Surface Transportation Block Grants

SGR: State of Good Repair

SMART: Strengthening Mobility and Revolutionizing Transportation

SPEED: City of Richmond's Strategic Plan for Equitable Economic Development

SRTS: Safe Routes to School

SS4A: Safe Streets and Roads for All

TA: Transportation Alternatives

TCP: Thriving Communities Program

TIFIA: Transportation Infrastructure Finance and Innovation Act

TDM: Travel Demand Management

TOD: Transit-Oriented Development

UDA: Urban Development Area

VCU: Virginia Commonwealth University

VDOH: Virginia Department of Health

VDOT: Virginia Department of Transportation

VDSS: Virginia Department of Social Services



**CITY OF
RICHMOND**