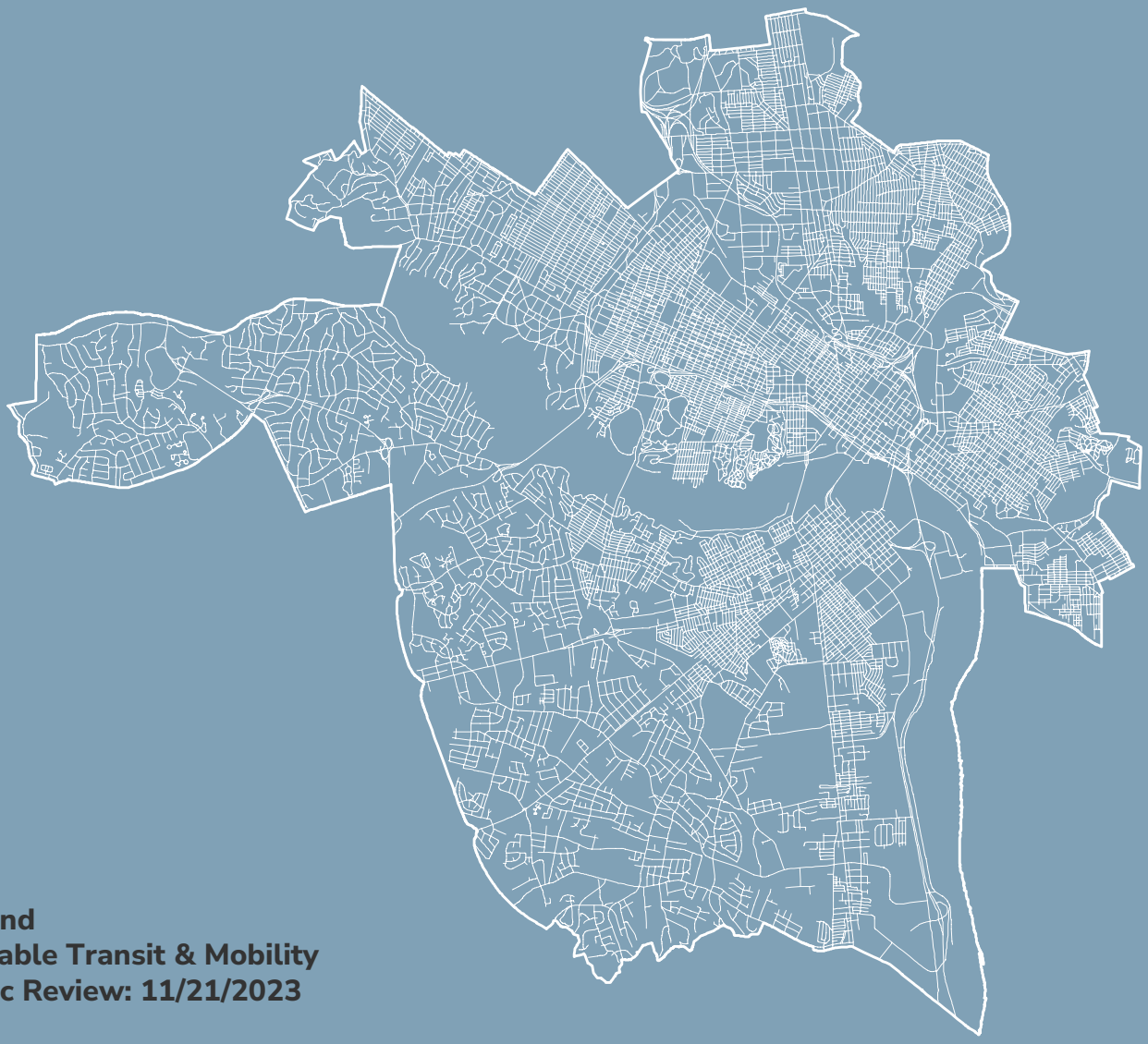
RICHMOND CONNECTS

STRATEGIC PLAN

A Strategic Plan for Improving Transportation Equity in Richmond



City of Richmond
Office of Equitable Transit & Mobility
Draft for Public Review: 11/21/2023

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City of Richmond

Office of Equitable Transit and Mobility

Draft for Public Review: November 21, 2023

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

Acknowledgements

This document reflects the contributions of thousands of Richmonders on how to make transportation more equitable. The content in this plan arose from the time, attention, expertise, and passion of thousands of people. The agencies listed here are stakeholders who participated in the Richmond Connects committees. Thank you. This plan could not have been done without you.

ADVOCATES, COMMUNITY GROUPS, AND OTHER NON-PROFITS

381 Movement

Bike Walk RVA

Black Lives Matter

Black Power Movement

BLK RVA

Disability Advocacy

Partnership for Smarter Growth

Richmond Area Bicycle Association

RVA Rapid Transit

Senior Connections

Southern Environmental Law Center

Virginians for High Speed Rail

BUSINESS, REAL ESTATE, AND ECONOMIC DEVELOPMENT ORGANIZATIONS

Hispanic Chamber of Commerce

Metropolitan Business League

Richmond Association of Realtors

Richmond Chamber of Commerce

Venture Richmond

Virginia Asian Chamber of Commerce

CITY OF RICHMOND DEPARTMENTS

The Mayor's Office

City Human Services Department

Department of Economic Development

Department of Housing and Community Development

Department of Planning and Development Review

Department of Public Works

Office of Sustainability

GOVERNMENTS, INSTITUTIONS, AND SERVICE PROVIDERS

Chesterfield County

Virginia Department of Rail and Public Transit

Greater Richmond Transit Company

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Port of Virginia

Richmond Marine Terminal

Richmond Metropolitan Transportation Authority

Richmond Redevelopment and Housing Authority

RideFinders

Virginia Commonwealth University

Virginia Department of Social Services

Virginia Department of Transportation

Virginia Health Department

Virginia Union University

University of Richmond

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EXECUTIVE SUMMARY

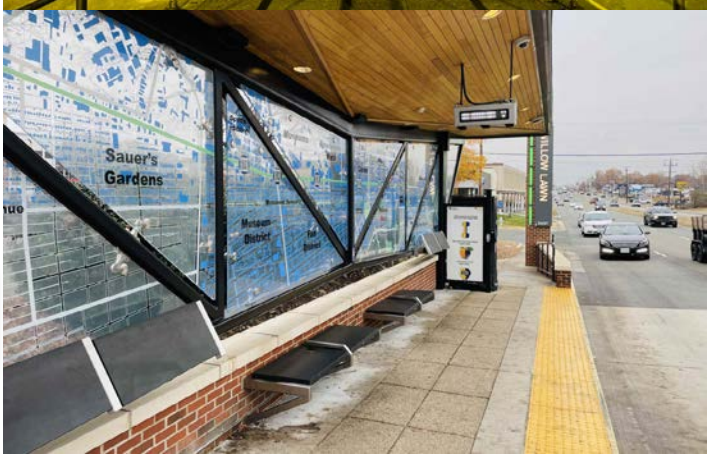
Transportation investments have the potential to transform Richmond into a more equitable city where all residents can thrive.

Past transportation decisions have created injustices that have 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.

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



Richmond Connects Equitable Transportation Vision
IMAGINE IF RICHMOND TRANSPORTATION WAS EQUITABLE
In 2037, 6-year-old Isabella lives in a home that is affordable to her single parent, Alex.
Isabella and her friends can safely walk to school on a network of well-maintained, safe sidewalks and trails. Richmonders stop for pedestrians, are educated on road safety, and care deeply about walkers and bikers.
Isabella's family can quickly and easily visit each other by taking a network of Bus Rapid Transit lines that connect North, South, East, and West corners of the city.
Isabella's Uncle can take a free ride to work in an electric van to the neighboring county where he has full-time salaried job. Her cousin Tim rides the same van to daycare for free.
Isabella's parent is later able to take a bus ride to her night shift at the local hospital. She can stop at a local grocery store on her way home and access healthy food options. She feels safe and secure and the bus is frequent and reliable and free.
Isabella's parent is able to navigate her Grandmother's wheelchair on accessible sidewalks to a multimodal hub, where she can easily and safely get her to a doctor's appointment. There is shade along her trip and landscaping helps her stay cool.
Isabella's family and friends can all easily get to parks, community gardens, shopping, and other activities on bikes and don't have to worry about their safety when riding in bike lanes.
RICHMOND CONNECTS
Isabella's family, friends, and neighbors can move throughout the city regardless of their income and race - everyone has the same opportunities and all can thrive.
rvaconnects.com

Richmond Connects Process

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, part of the City of Richmond's Department of Public Works. 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.

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).

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.

1,102
'What is Needed?' Surveys Filled Out

3,390
Previous Path-to-Equity & Richmond 300 Surveys Used

8,591
'Rank the Projects' Surveys Filled Out

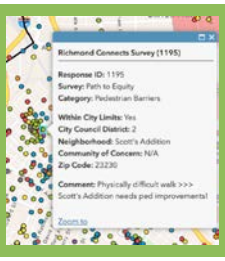
626
In-Person Surveys in Phase 4

ALL IN Multimedia, multi-prong approach

- Videos & Facebook Lives
- Paper & Online Surveys
- Website Updates
- Focus Groups
- Text Messages
- Advisory Committee
- Flyers & E-Blasts
- Paid Community Ambassadors
- Telephone Town Halls
- Gift Card Incentives

OVER 30 Community events and pop-ups in targeted locations

Richmonders Said What Was Needed



Richmonders Said Which Needs Were Most Important

Richmonders Ranked Their Top Projects

4% of Richmonders took the survey

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, and 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 of these are identified as an opportunity to implement the LQC program recommendation. 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 running Bus Rapid Transit and new bus service on Mechanicsville Turnpike will provide key access for the essentials of daily life.

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 aim to link land-use and transportation to ensure transportation connects to relevant places. It also offers recommendations on how to provide free or reduced fees, or increase access to, programs for our most vulnerable Richmonders.

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. 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.

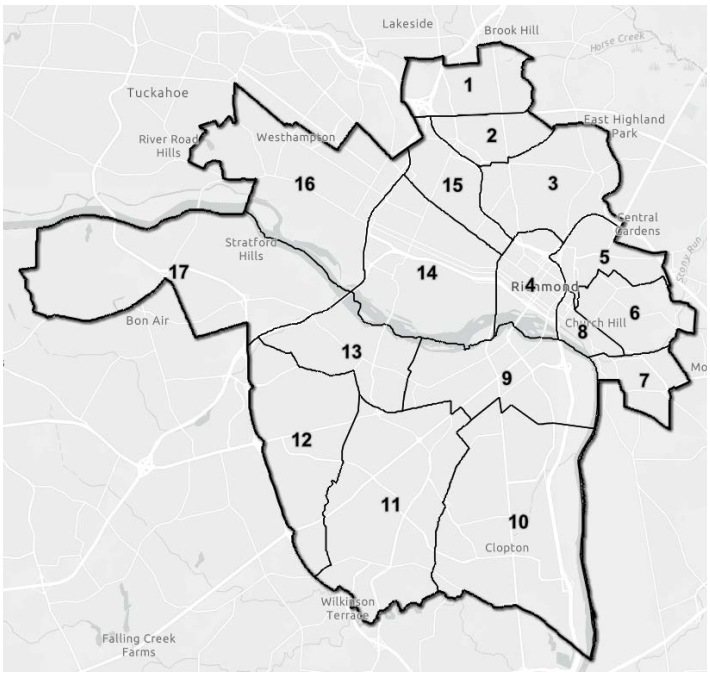
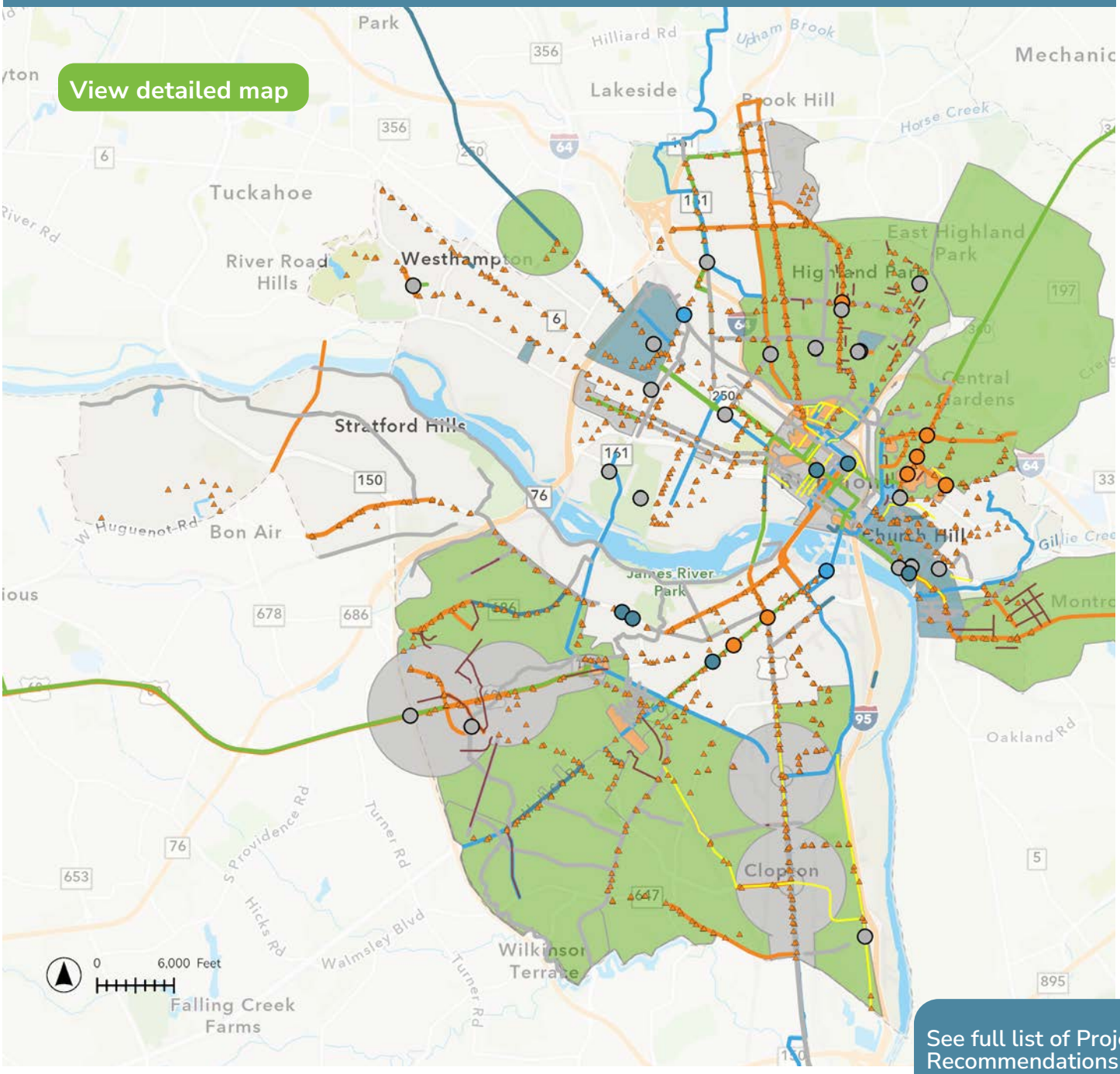


Figure 1. Map of Richmond Connects Needs Areas. The needs and project recommendations for each Needs Area are provided in Appendix E."

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)

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, policing, 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.

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

Figure 2. Focus group talking through INC8 (Economic Development) strategies.

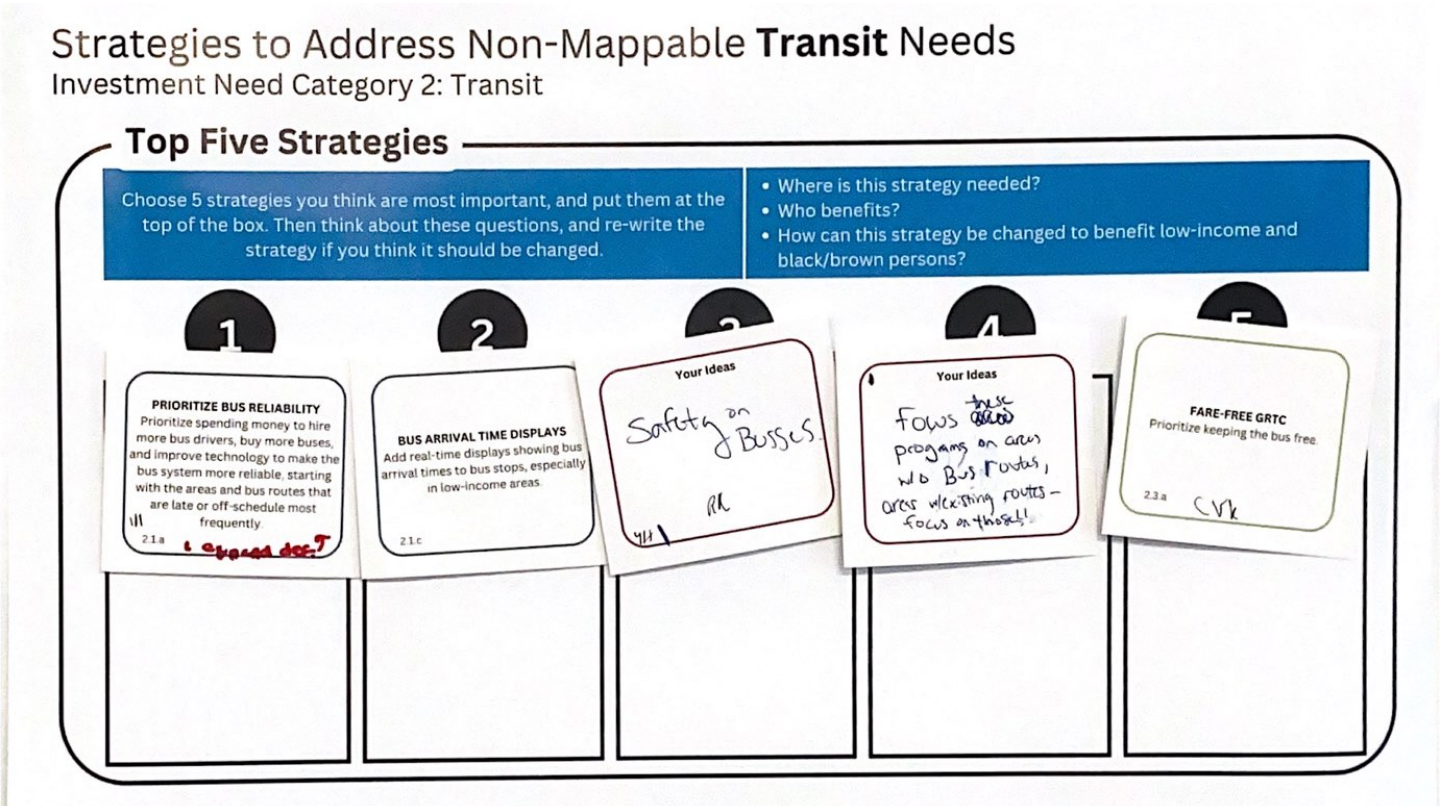


Figure 3. The Top Five strategies chosen by one of the focus groups for INC2 (Transit).

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.

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 top-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 Rilchmonders. It takes the following vision for equitable transportation and turns it into actionable steps.

Richmond 300 Master Plan Vision: **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.

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

Key Terms	
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: • 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
Richmond 300: A Guide for Growth	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.
Equity Agenda	The City's roadmap to a more inclusive and thriving City. Adopted in May 2021.
BIPOC	Black, Indigenous, People of Color. This is a commonly used term to designate non-white persons without centering on whiteness.
People of the Global Majority (PoGM)	This is an emerging term to encompass all BIPOC persons. It emerged as a way to empower BIPOC persons in a new narrative that acknowledges that non-white persons make up the global majority, and are in fact not a minority population.
Equity	The process of eliminating disparities among people to improve outcomes.
Equality	The concept of providing equal resources to all people
COR	City of Richmond

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

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. Meaning - 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, but 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.

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.

Most markedly, when comparing across council districts, these communities have significantly worse access to jobs (see Figure 5).

Certain council districts offer better access by walking, biking, and transit than others. This does not mean there are not 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. Some Richmonders have to reach much much deeper into their pockets every month to make ends meet, and transportation cost is one piece of that household budget that can make or break the bank. We can see that 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! We can also see, 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!

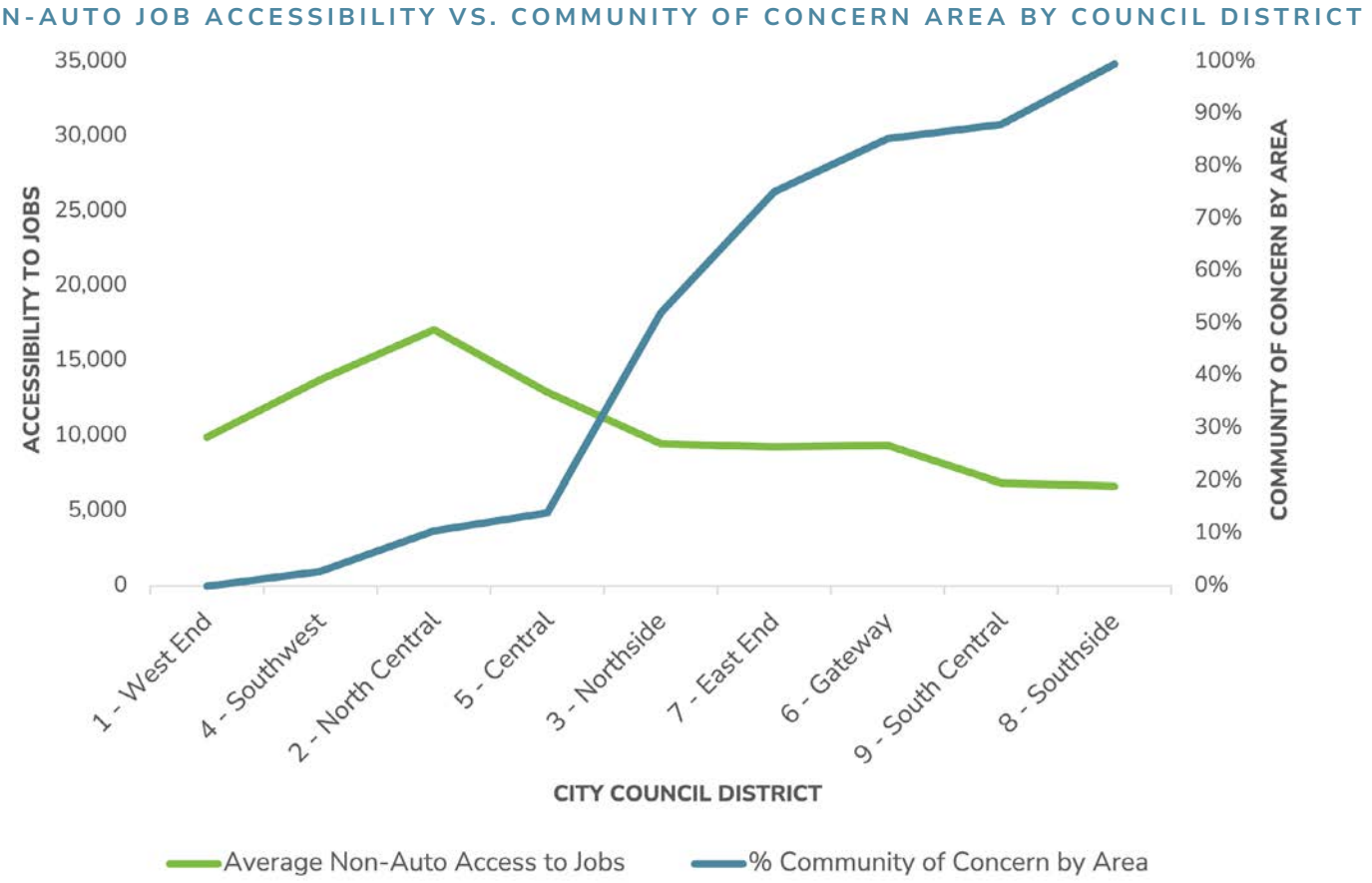


Figure 5. Accessibility to Jobs by Council District vs. Percent Community of Concern Area. Accessibility by non-auto modes is worse in Districts with high percentages of Communities of Concern, where non-auto access is most needed.

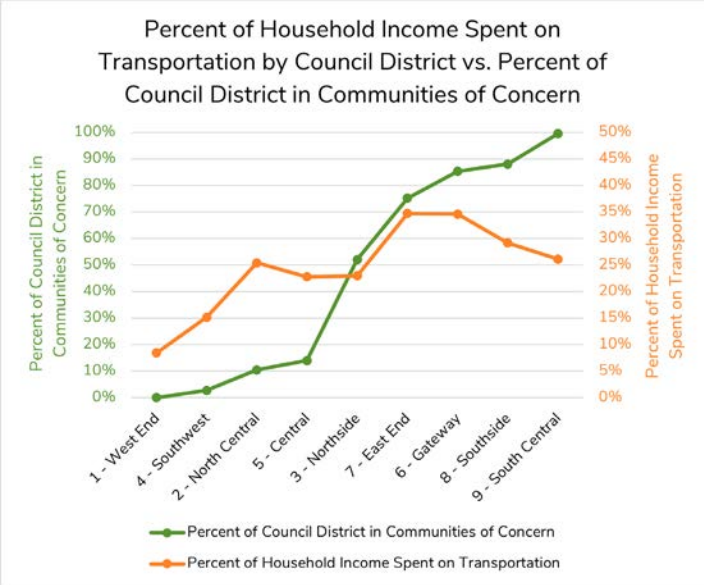


Figure 6. Residents living in the 1st District are spending less than 10% of their income while others, such as the 6th and 7th Districts, are spending almost 35 percent! We can also see, with the exception of District 2, areas with higher portions of communities of concern are spending a larger percentage of their household income on transportation!

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 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? It asks 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?

It 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 - 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 reimage 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 are facing the most barriers to opportunity, 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

NEEDS

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

> 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.

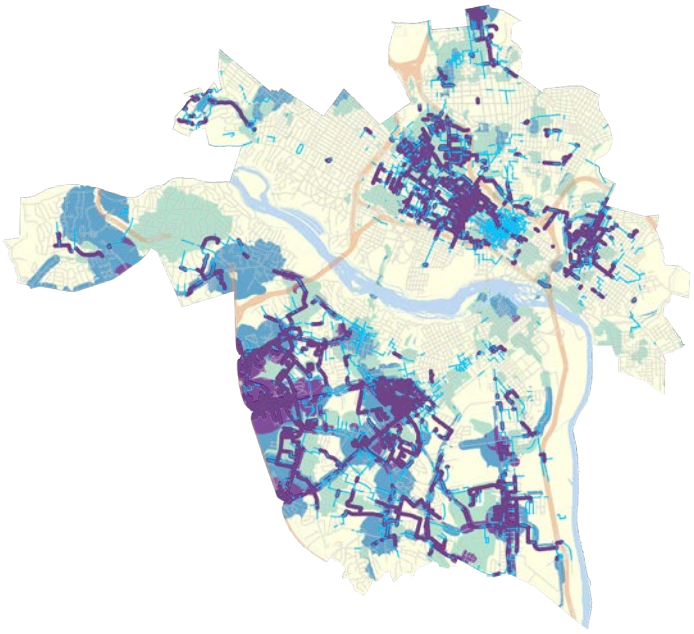


Figure 7. INC 1b Pedestrian Needs map

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 to 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.

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 topmost 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.

Listening to the People: Equity-Focused Community Engagement

LISTEN MORE THAN YOU TALK

One of the three guiding principles laid out in the Council-adopted Path to Equity is: "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." This was the guiding principle used throughout the process of developing Richmond Connects Strategic and Action Plans.

Robust, honest community engagement focused on capturing the voices of marginalized communities was a foundational part of every step in the Richmond Connects process. The people who experience the most transportation-related barriers to accessing opportunities are experts. They know best what's wrong with the system and where the most critical improvements are needed. Their voices were elevated in the identification of needs, and their feedback was weighted the most in the selection of recommendations.

Figure 8. 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. (North End, 1/19/2023)

While the analysis of data was a key part in the plan development, the public input, especially from Communities of Concern, was just as important. In fact, as described further in the Needs Identification, the issues Communities of Concern consistently voiced were elevated as Super Needs, even when the data analysis alone would have overlooked them.

The complete details of the outreach phases and outcomes can be found in Appendix D. Key approaches are outlined in the following sections, and the processes are discussed under each.

Figure 9. Phase 4 of engagement included bringing a list of top recommendations for areas and asking the public what their priorities were. (Gilpin Event, 7/15/2023)

GO TO THE COMMUNITY

A core element of the outreach was to meet people where they are. The Richmond Connects engagement team, led by OETM staff and supported by consultants, took the engagement to the streets. Pop-ups were held throughout the city to target folks who represent the real Richmonders, working and living in the city - not just those who have the time and resources to attend a public meeting held in a stuffy public office. Places included community centers, parks, libraries, and outside

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.

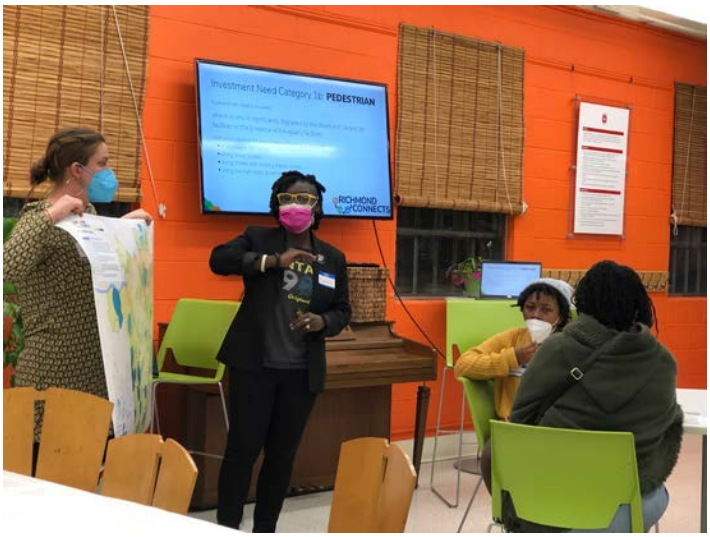


Figure 10. Phase 2 of engagement asked the public what the top transportation-related needs were. Along with a survey, two focus groups were hosted to get further insight into transportation needs in Communities of Concern. (East End, 1/19/2023)

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, 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 Accessiblity Analysis

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

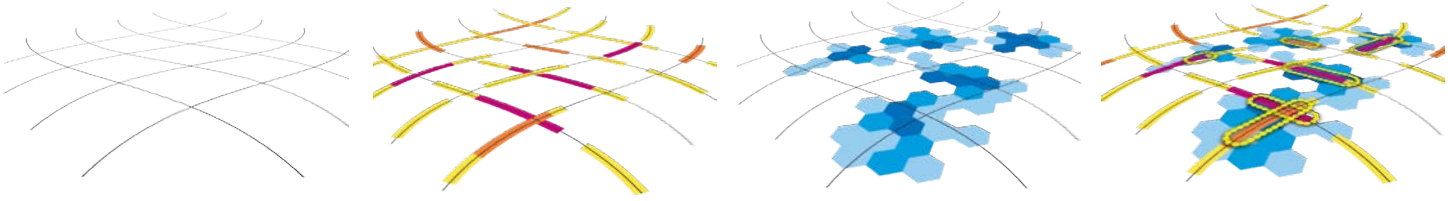
The data-driven analysis included:

- 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.

Accessibility relies on the notion that people need to get to actual places, not just travel quickly. It combines notions of mobility adn 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.



Transportation System: Existing Facilities and Services

System Needs: What transportation improvements are needed?

People Needs: Who needs improvements the most? Who was previously harmed and who is currently facing barriers?

Overlap "Smoosh" Maps

Figure 11. Equity-Centered Data Analysis Framework.

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.

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 also 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 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, was 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 10 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?

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.

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

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

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.

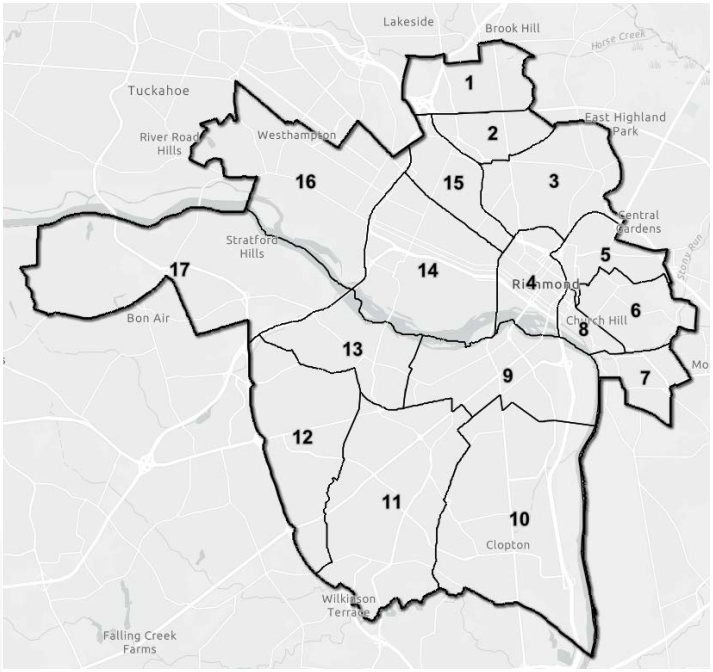


Figure 13. Needs Areas

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.

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.

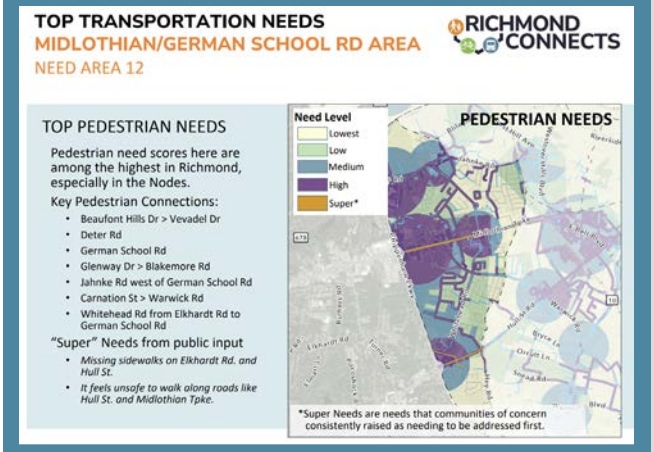
The needs are also presented by the 17 different Needs Areas in Appendix E.

NEEDS NARRATIVES

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.

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.

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 pubic 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,

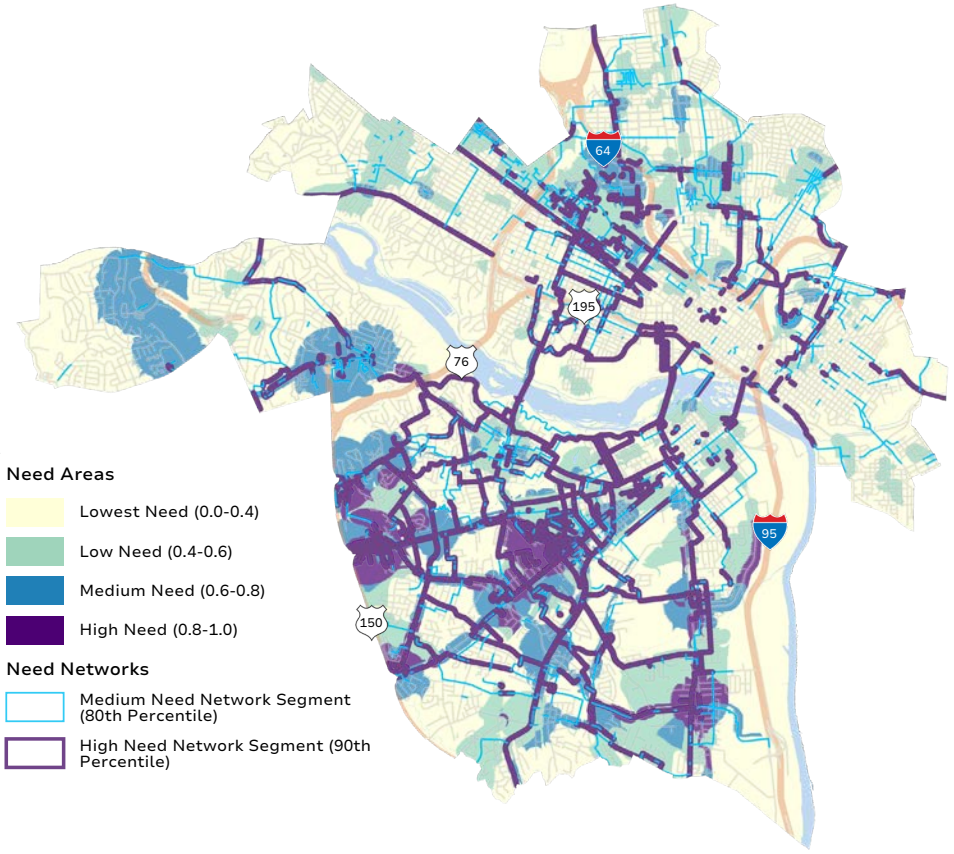


Figure 14. Investment Need Category 1A: Bicycle Needs

NON-MAPPABLE BICYCLE NEEDS

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

- 1a.1: Drivers don't share the road, aren't friendly with bicyclists, and park in bike lanes.
- 1a.2: Bike lanes have trash, debris, and weeds.
- 1a.3: There aren't bike racks or other places to park a bike.
- 1a.4: Some people can't afford to own a bike or have a physical disability and can't ride a bike.
- 1a.5: 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,

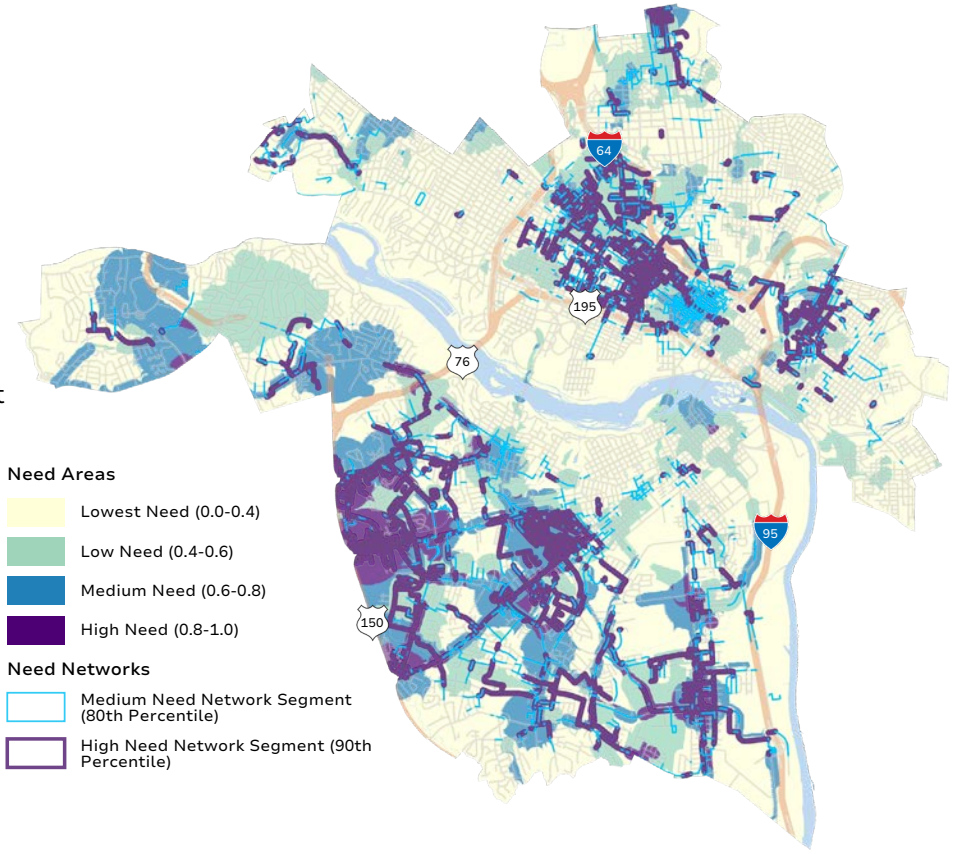


Figure 15. Investment Need Category 1B: Pedestrian Needs

NON-MAPPABLE PEDESTRIAN NEEDS

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

- 1B.1: Richmond's major intersections area generally designed for moving as many cars as fast as possible. They are not designed for pedestrians.
- 1B.2: Richmond's streets are too dark at night.
- 1B.3: 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.
- 1B.4: 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.

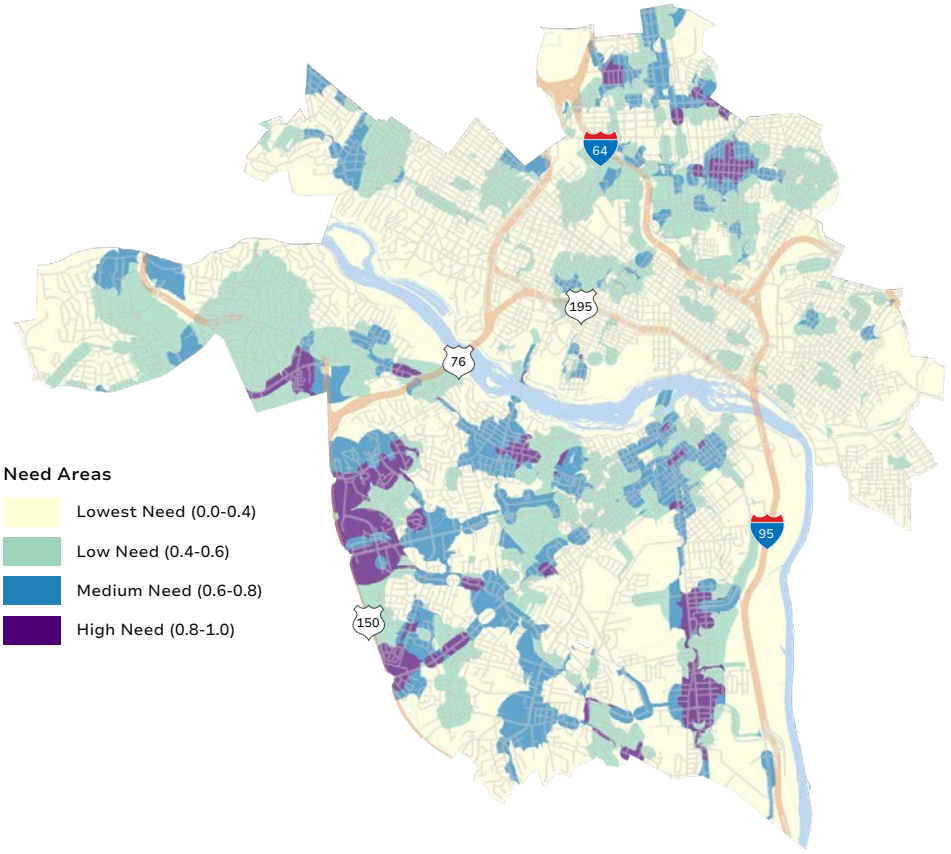


Figure 16. Investment Need Category 2: Transit

NON-MAPPABLE TRANSIT NEEDS

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

- 2.1: GRTC buses are not reliable.
- 2.2: GRTC buses don't run late at night and have limited weekend service.
- 2.3: Need to keep buses free
- 2.4: There is a nationwide shortage of qualified licensed bus drivers
- 2.5: 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.

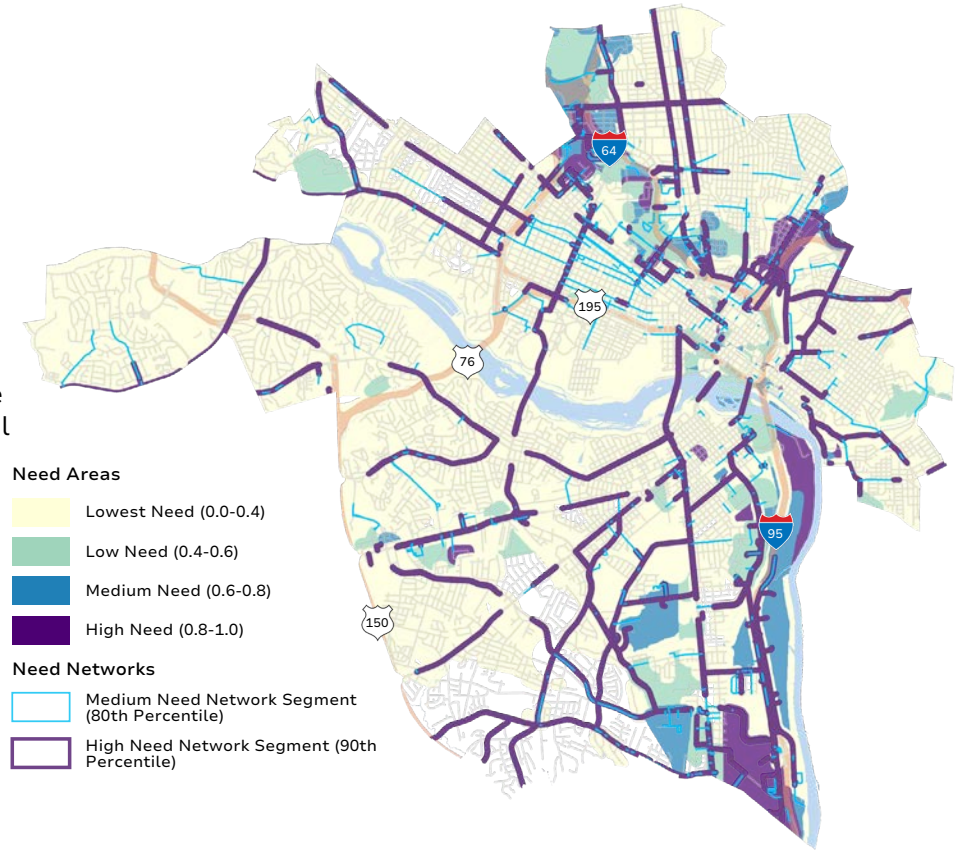


Figure 17. Investment Need Category 3: Freight

NON-MAPPABLE FREIGHT NEEDS

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

- 3.1: Some streets have too much truck traffic
- 3.2: Low-income residents are most vulnerable to negative effects of supply chain disruptions.
- 3.3: 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.

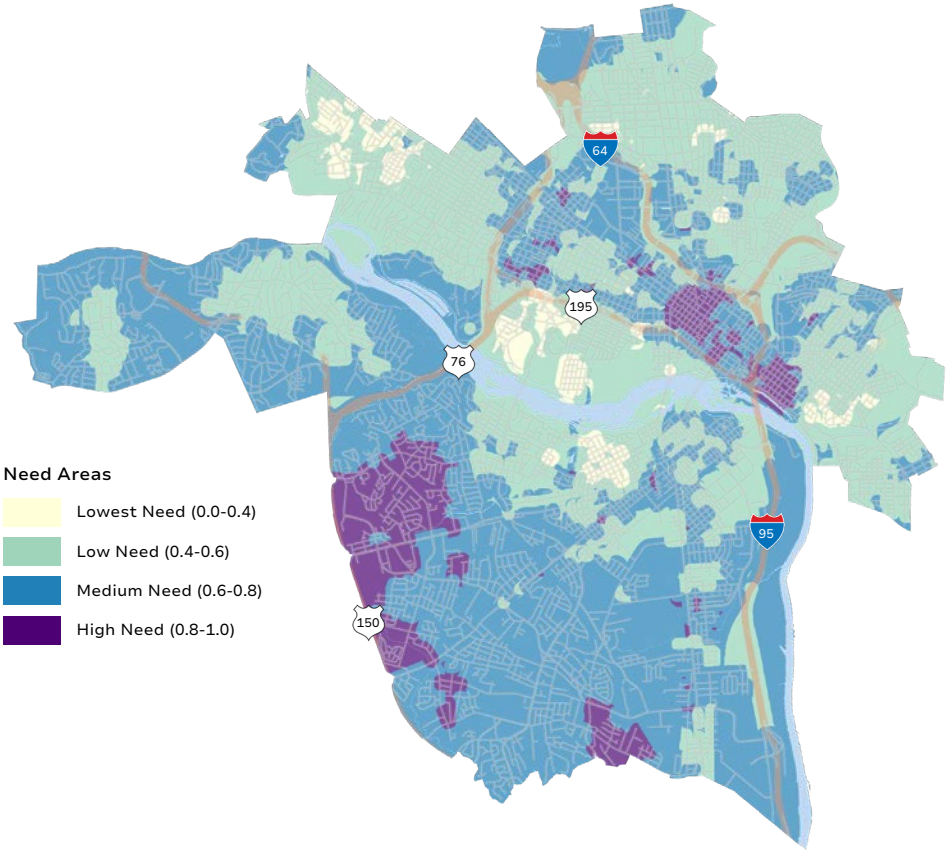


Figure 18. Investment Need Category 4: Land Use

NON-MAPPABLE LAND USE NEEDS

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

- 4.1: Provide the right amount of parking so there's enough, but not too much.
- 4.2: There isn't enough affordable housing near job centers and other major areas of activity, and near transit.
- 4.3 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 grovery 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.

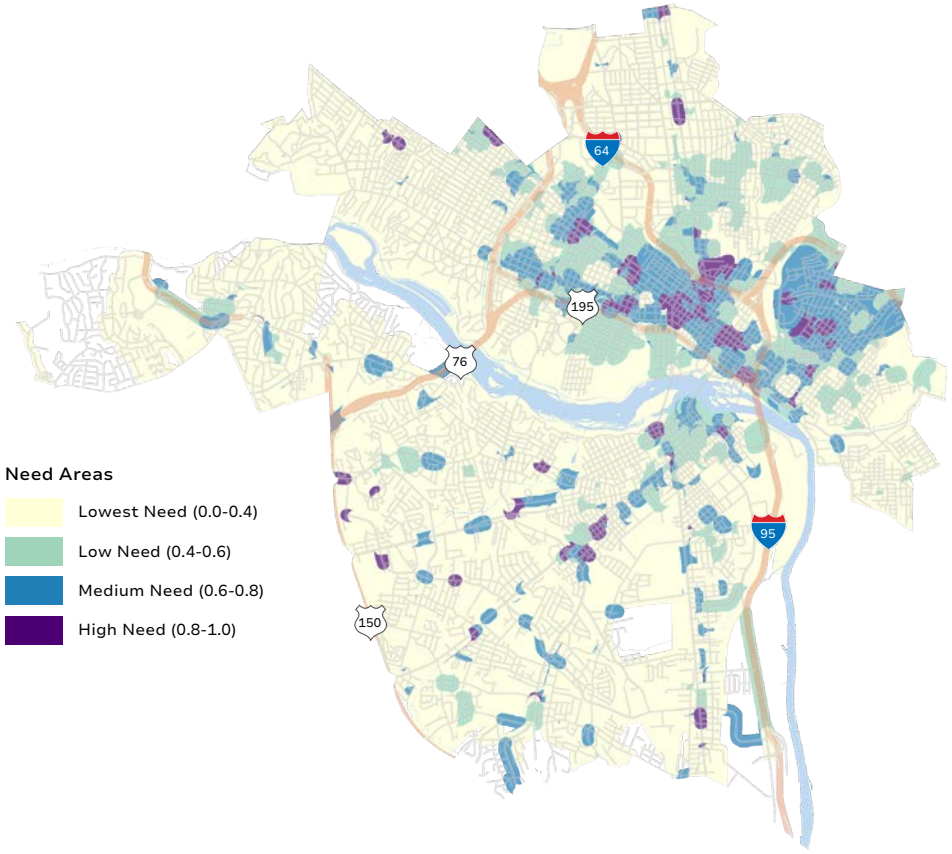


Figure 19. Investment Need Category 5: Safety/Security

NON-MAPPABLE SAFETY/SECURITY NEEDS

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

- 5.1 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.
- 5.2 There is little (if any) enforcement for unsafe driving behavior, including illegal parking and drivers not stopping for pedestrians.
- 5.3 Enforcing safety laws by writing tickets can inequitably harm minority and low-income communities. Not enforcing safety laws can also harm these communities.
- 5.4 Streets are designed for cars to go fast, and drivers often can't see pedestrians.
- 5.5 Safety programs like Safe Routes to School need more money
- 5.6 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 sotps or roundsabouts at cerain 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.

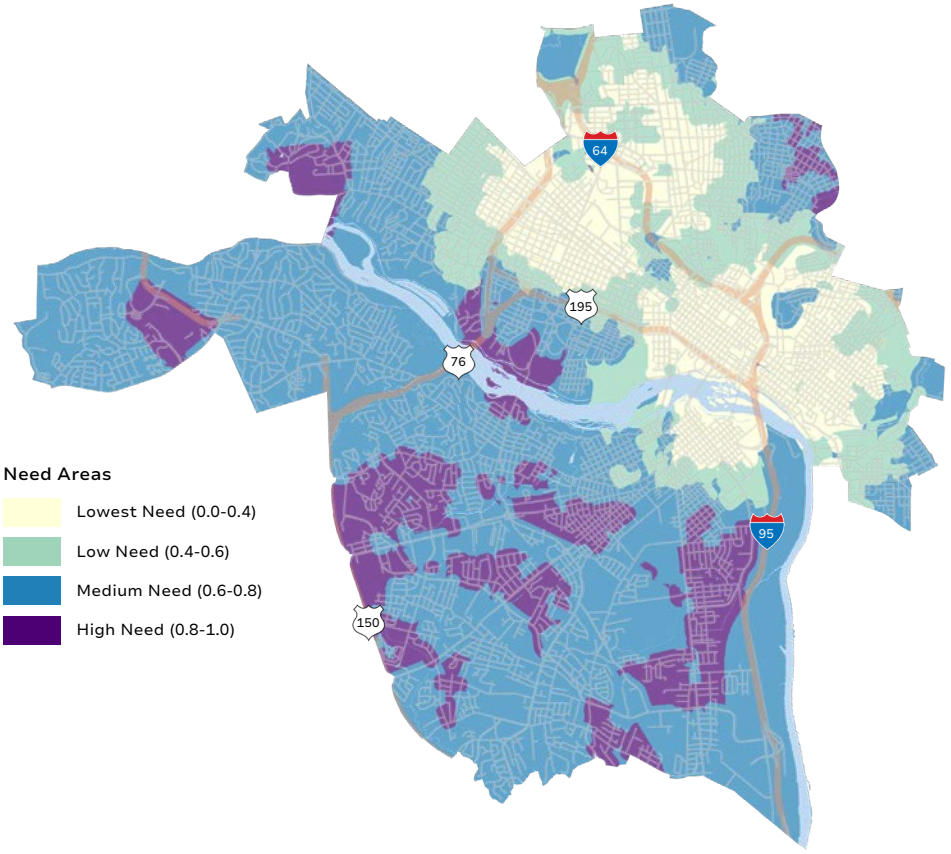


Figure 20. Investment Need Category 6: Connectivity

NON-MAPPABLE CONNECTIVITY NEEDS

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

- 6.1 Most resources for understanding options for getting around by bus, bike, or walking in Richmond are only in English.
- 6.2 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.'

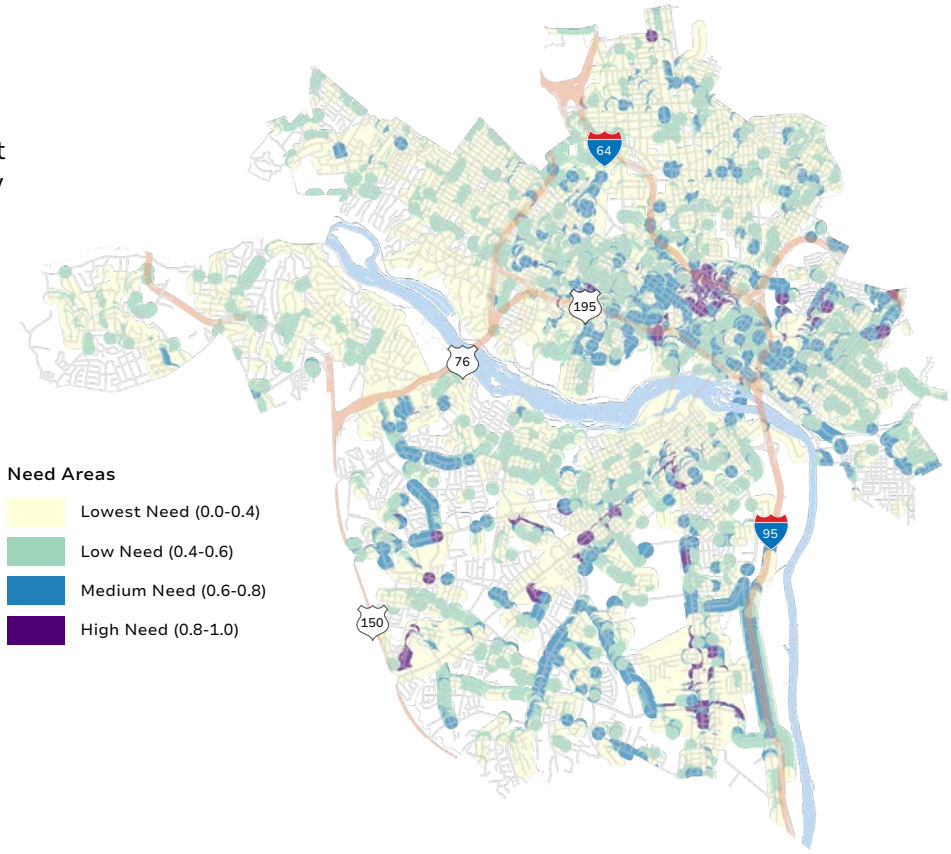


Figure 21. Investment Need Category 7: Maintenance

NON-MAPPABLE MAINTENANCE NEEDS

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

- 7.1 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.
- 7.2 Bike lanes have trash or weeds growing in them.

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

- General need for sidewalk maintenance (crakcs, 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).

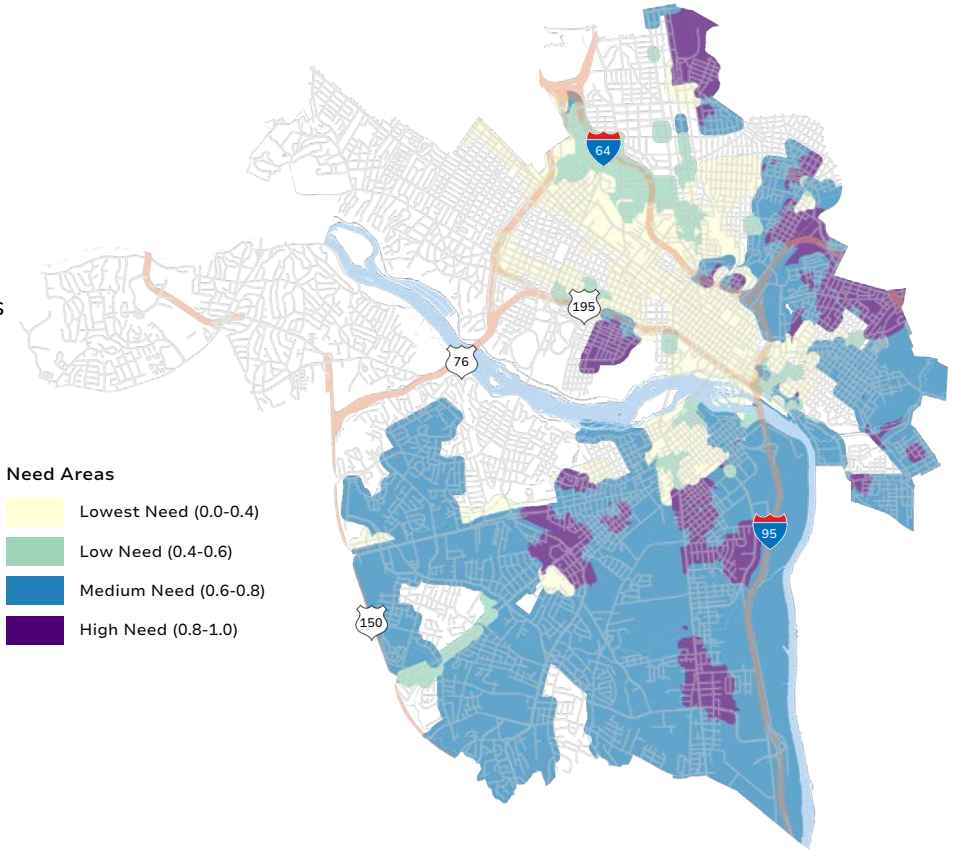


Figure 22. Investment Need Category 8: Economic Development

NON-MAPPABLE ECONOMIC DEVELOPMENT NEEDS

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

- 8.1 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.
- 8.2 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.
- 8.3 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.
- 8.4 Gentrification. Neighborhoods that used to be affordable are gentrifying, and investments in low-income neighborhoods can contribute to gentrification.
- 8.5 Lack of wealth building opportunities. Low-income and minority populations typically have lower rates of home ownership and fewer opportunities to build personal wealth.
- 8.6 Lack of access to high-speed internet. Some people don't have access to broadband, business level speeds, and office functions.
- 8.7 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 genral, and loack ogeneral 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).

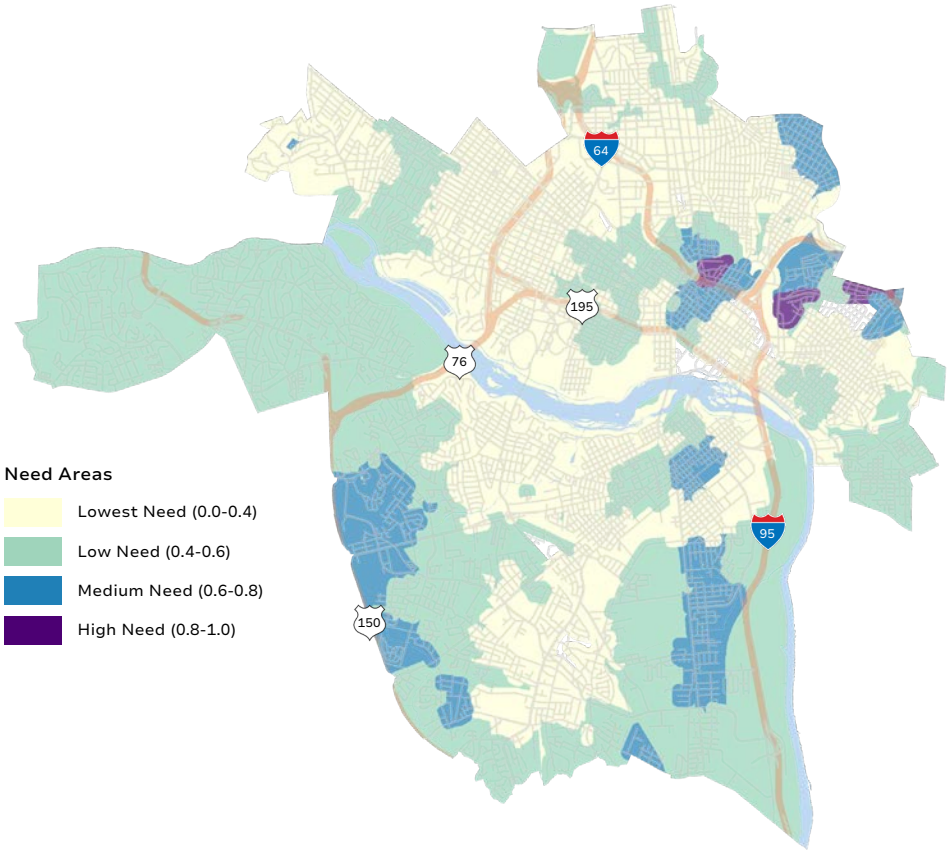


Figure 24. Investment Need Category 9: Technology

NON-MAPPABLE TECHNOLOGY NEEDS

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

- 9.1 E-scooters aren't available everywhere.
- 9.2 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.

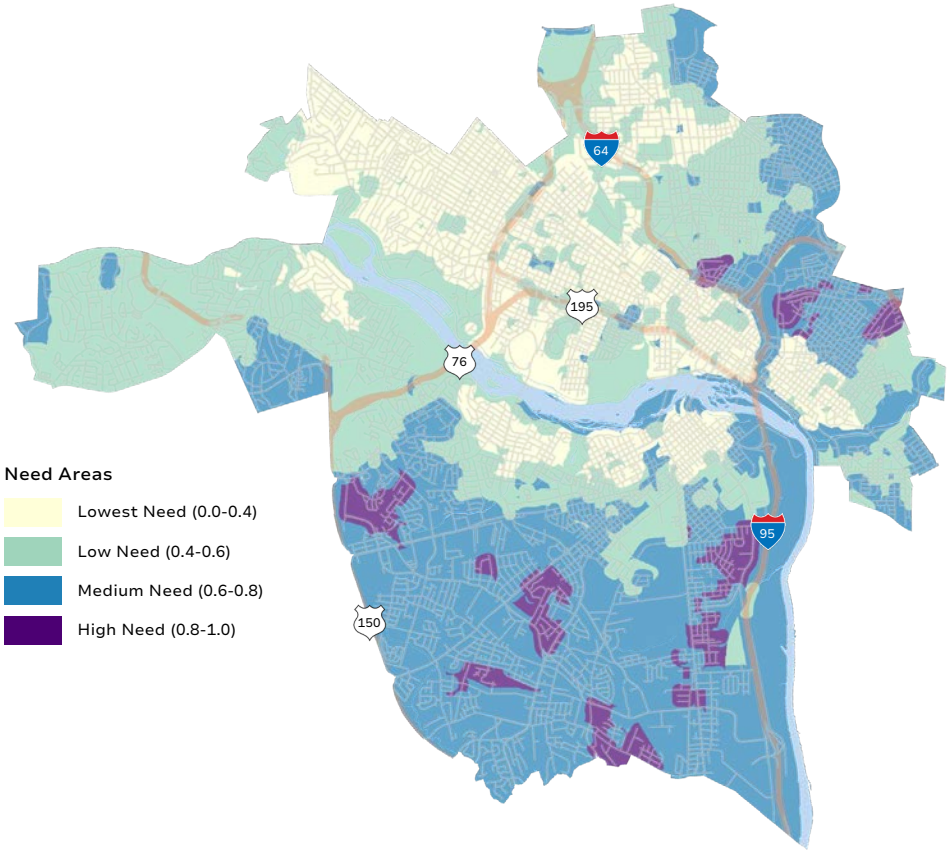


Figure 25. Investment Need Category 10: Sustainability

NON-MAPPABLE SUSTAINABILITY NEEDS

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

- 10. 1 City government transportation-related activities rely on fossil fuels, like gasoline, and produce greenhouse gas emissions and other air pollution.
- 10.2 There is currently no way to measure and monitor local/neighborhood air quality and transportation-related air pollution
- 10.3 Electric vehicles and e-bikes cost too much to own or rent.
- 10.4 Electric vehicle charging stations are only available in affluent white neighborhoods.
- 10.5 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

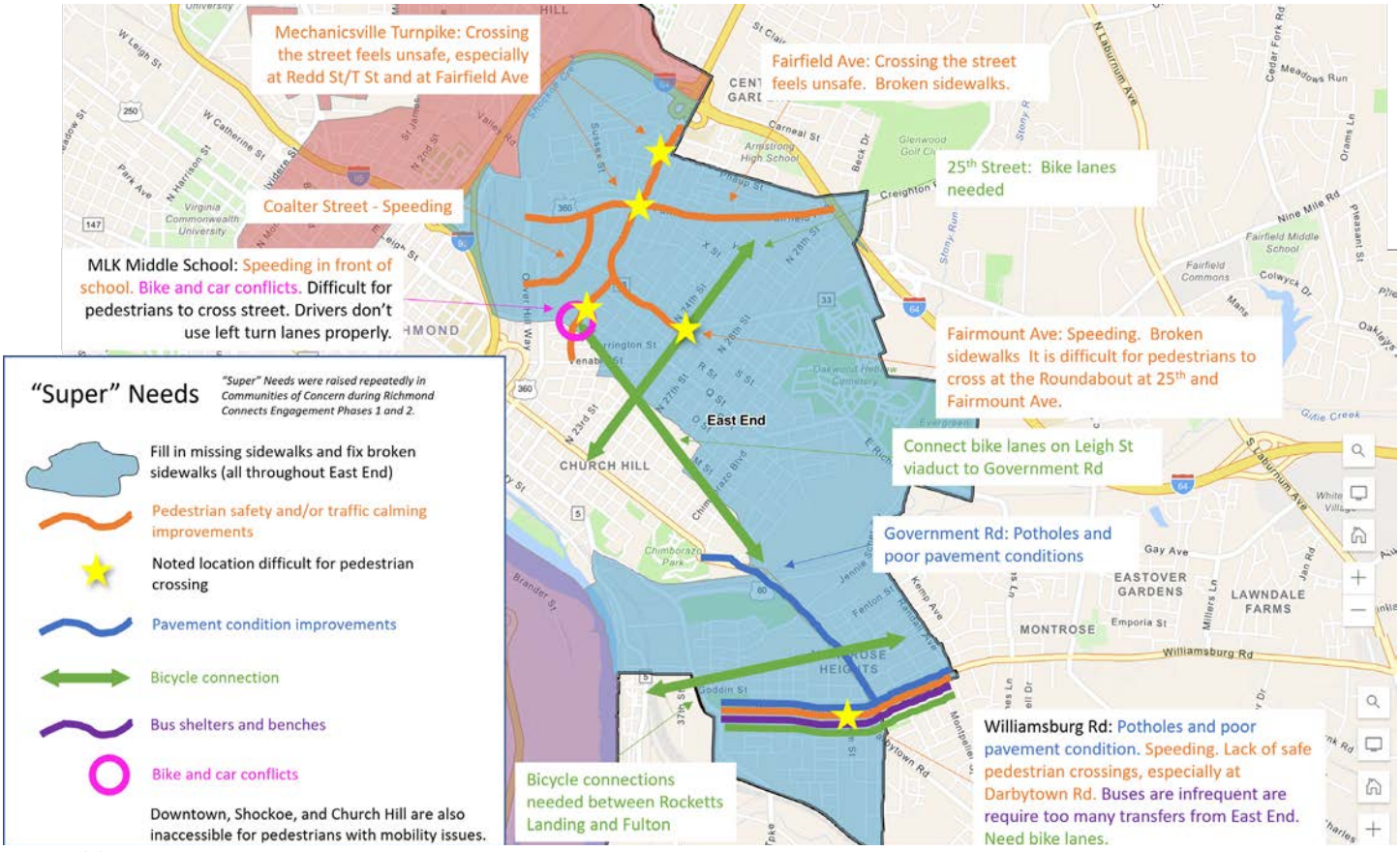


Figure 26. End End mapped super needs.

Northside Super Needs

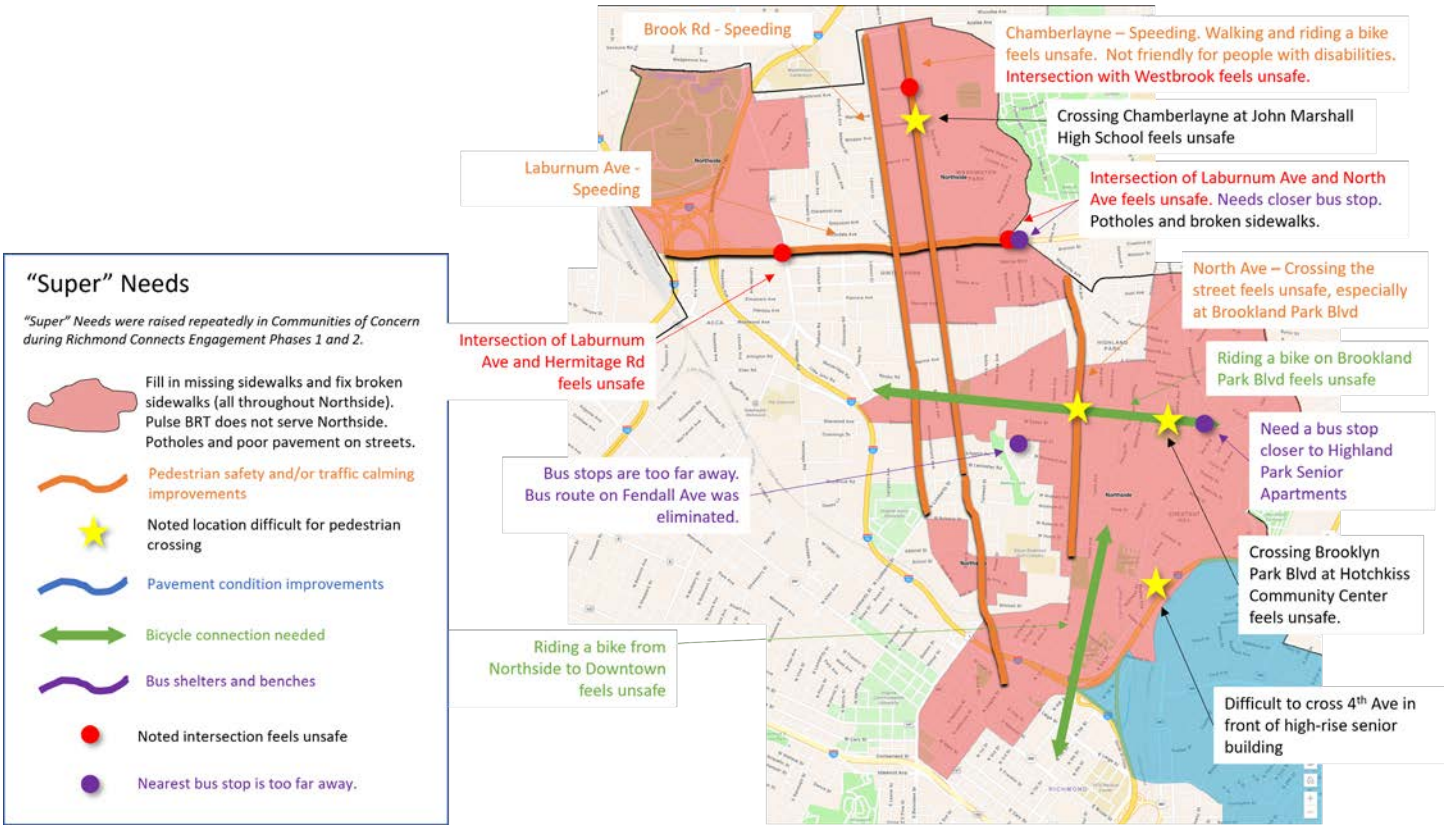


Figure 27. Northside Super Needs.

Southside Manchester Super Needs

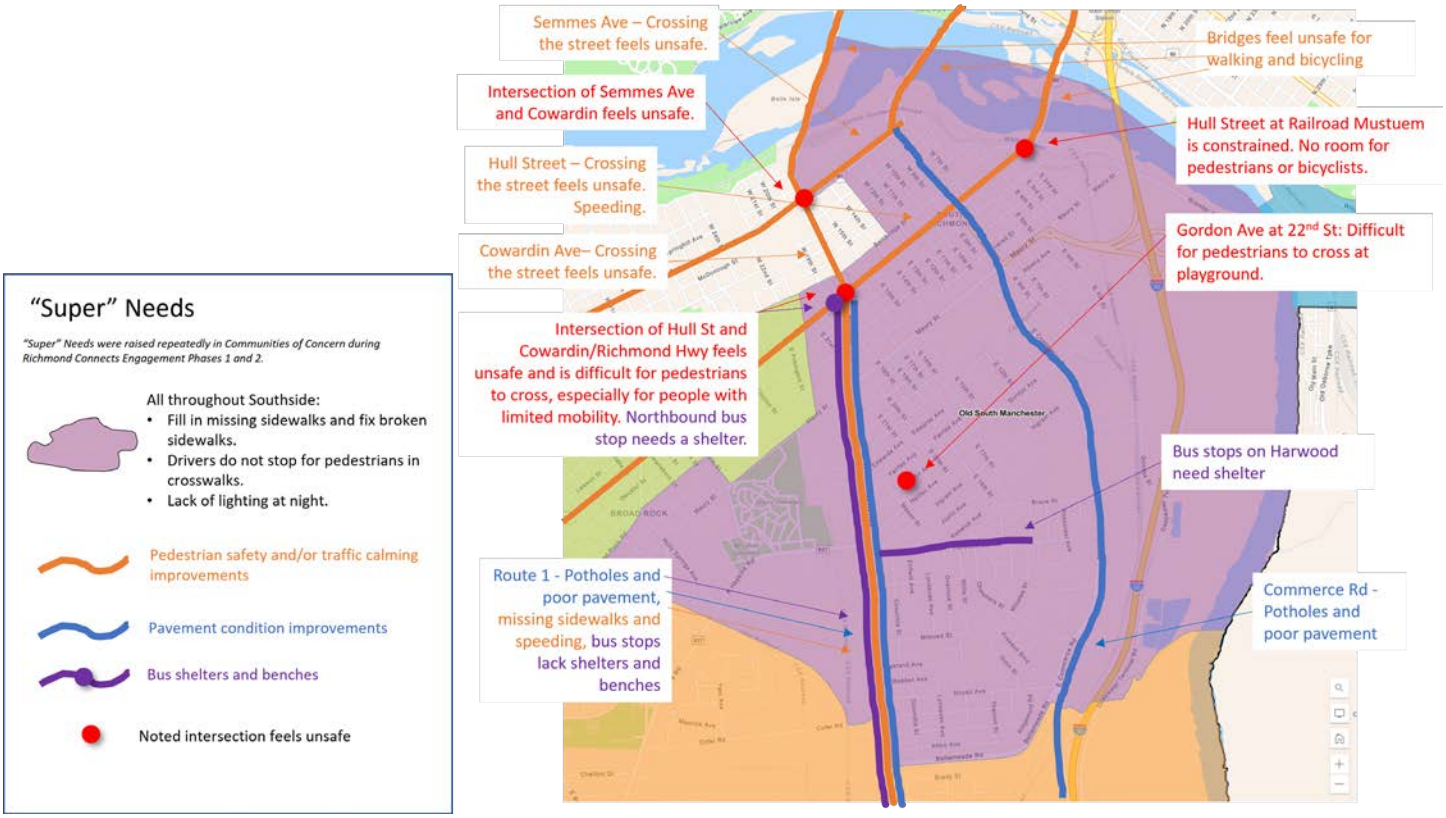


Figure 28. Southside Manchester Super Needs

Southside Midlothian Super Needs

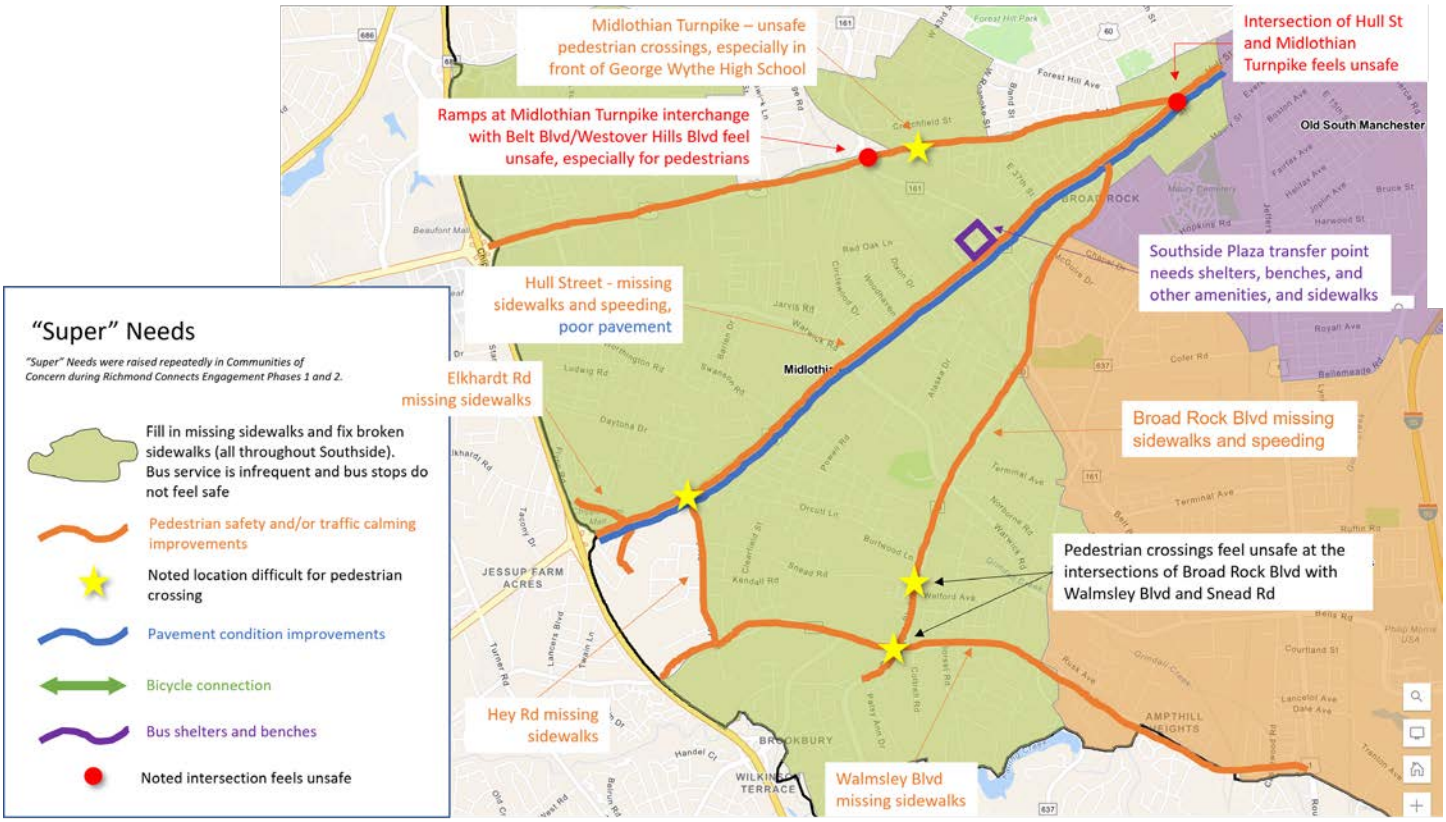


Figure 29. Southside Midlothian Super Needs

Southside Walmsley Super Needs

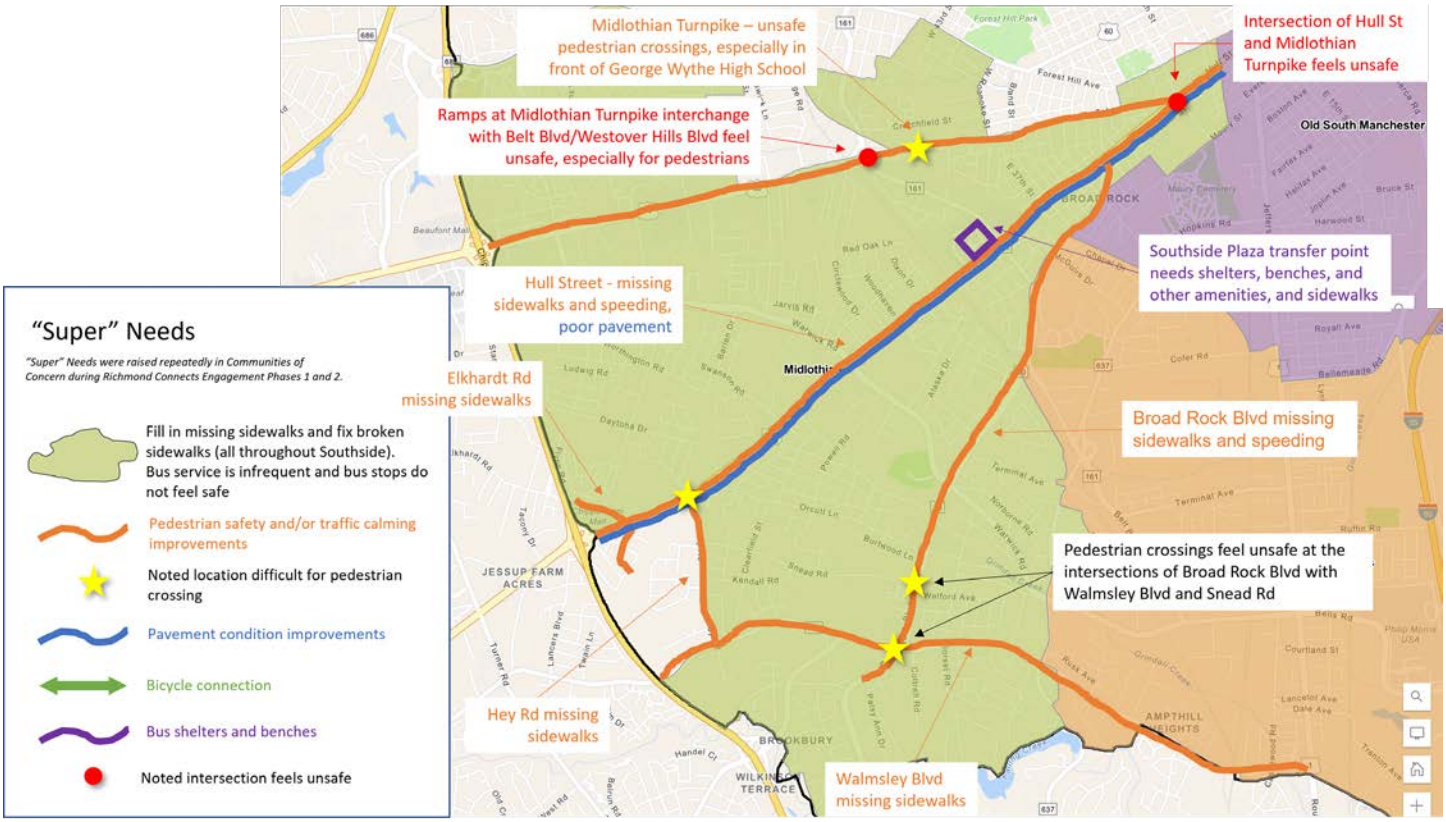


Figure 30. Southside Walmsley Super Needs

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 recommendations in this chapter are presented for the city as a whole and for each Investment Need Category. Recommendations are presented for each Needs Area in Appendix C. The strategy recommendations are presented by Investment Need Category.

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.

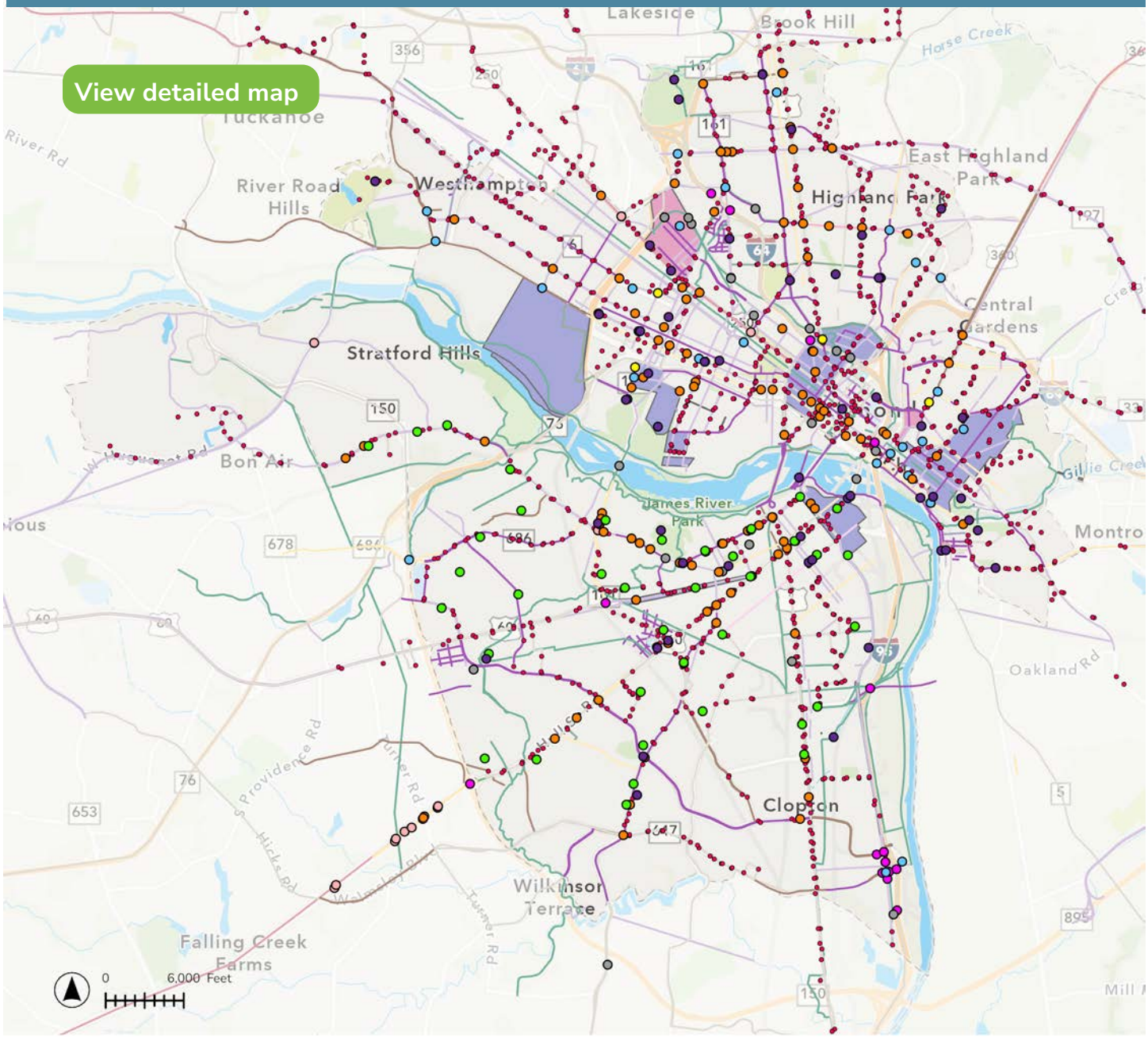
EVALUATING THE EXISTING RECOMMENDATIONS

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

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.

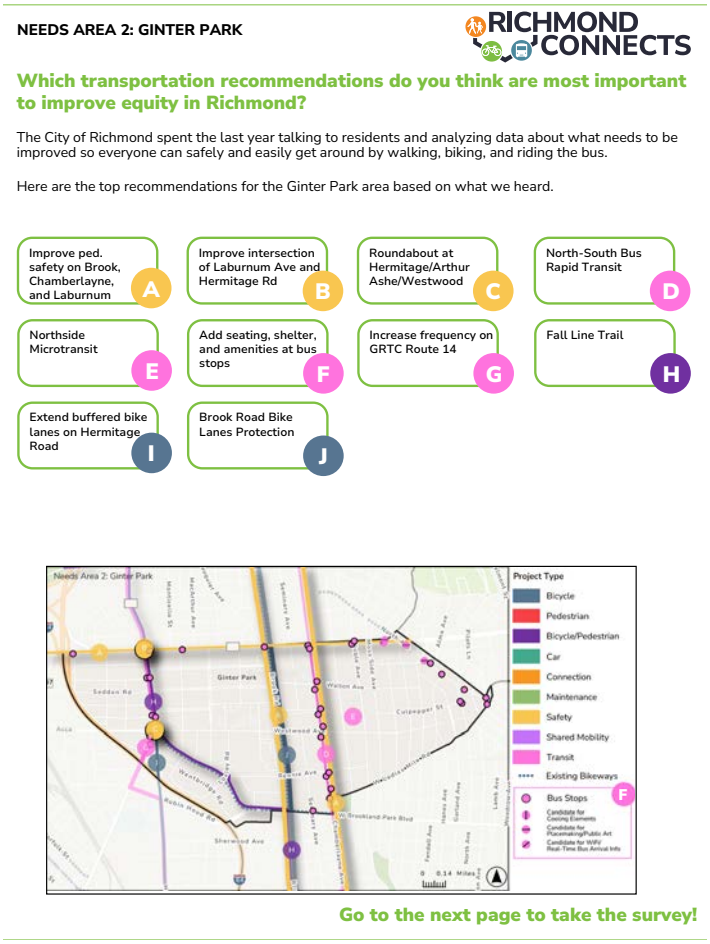
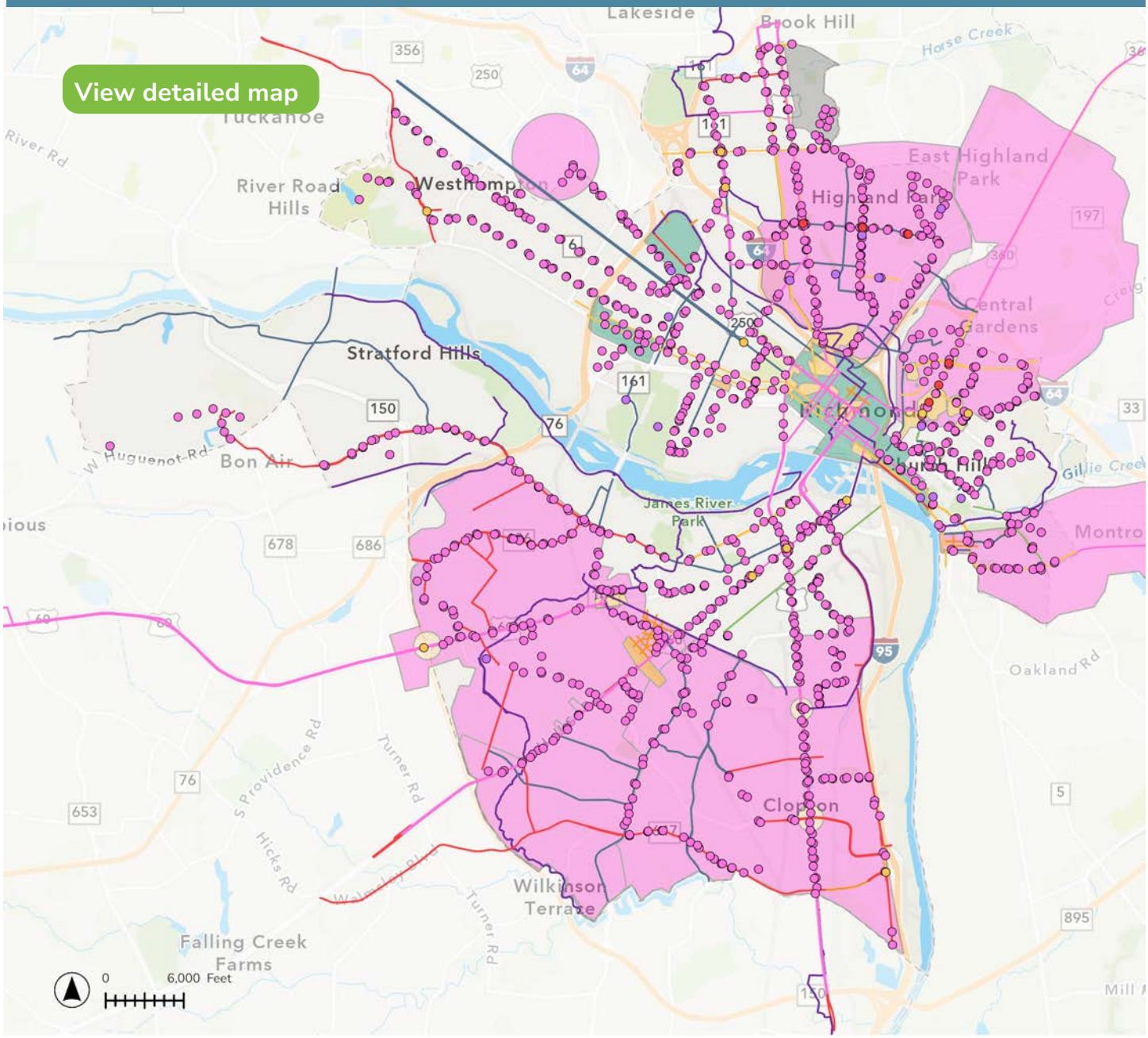


Figure 31. Phase 4 Survey Showing Draft Recommendations for Needs Area 2: Ginter Park

Richmond Connects Draft Recommendations



- Bicycle
- Pedestrian
- Bicycle/Pedestrian
- Car
- Connection
- Maintenance
- Safety
- Shared Mobility
- Transit
- Other

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 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."

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:

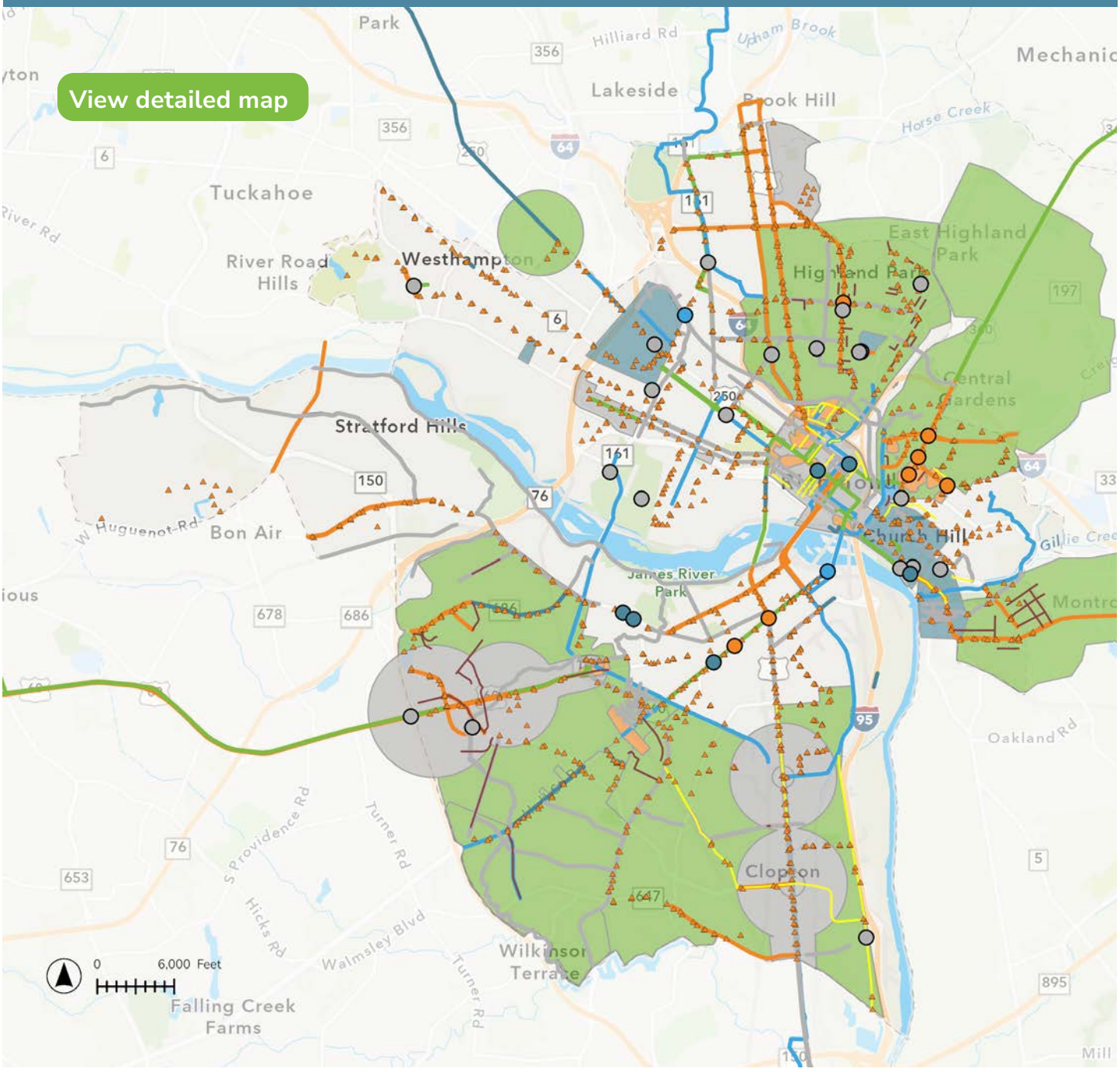
- Priority Completion Projects - These projects were included in the draft list of recommendations presented to the public in the Phase 4 survey, and meet a top equity need.
- Other Completion Projects - These are projects that were not included in the Phase 4 survey of draft recommendations. These are projects currently in the City's Capital Improvement Program and meet an equity need identified in the Richmond Connects needs analysis process.

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 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.

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)

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.

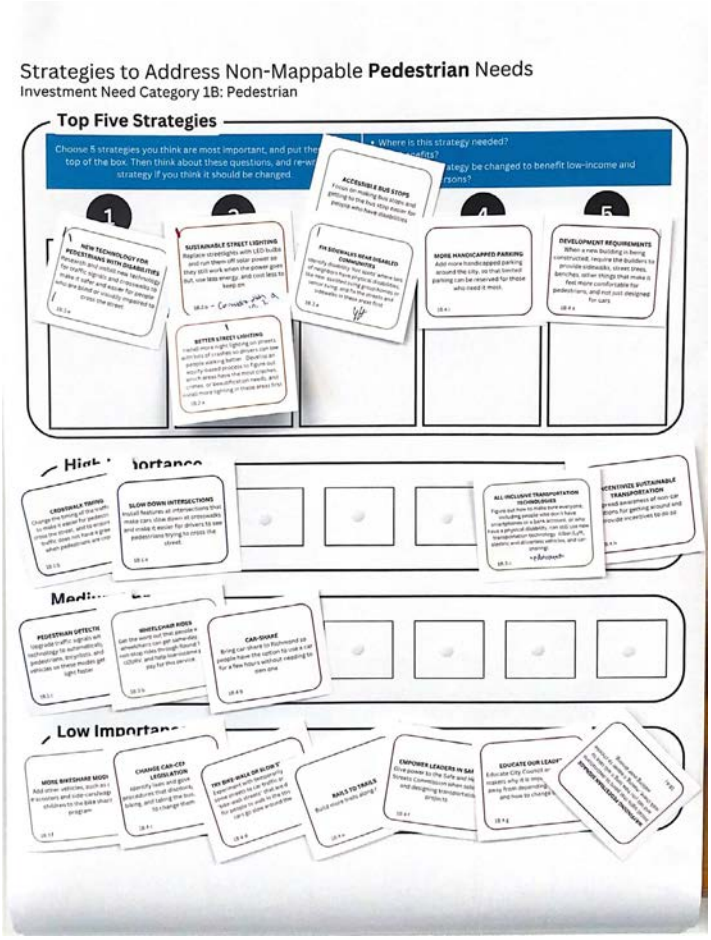


Figure 33. Ranked strategies of Investment Need Category 1B (Pedestrian) by one of the focus groups.

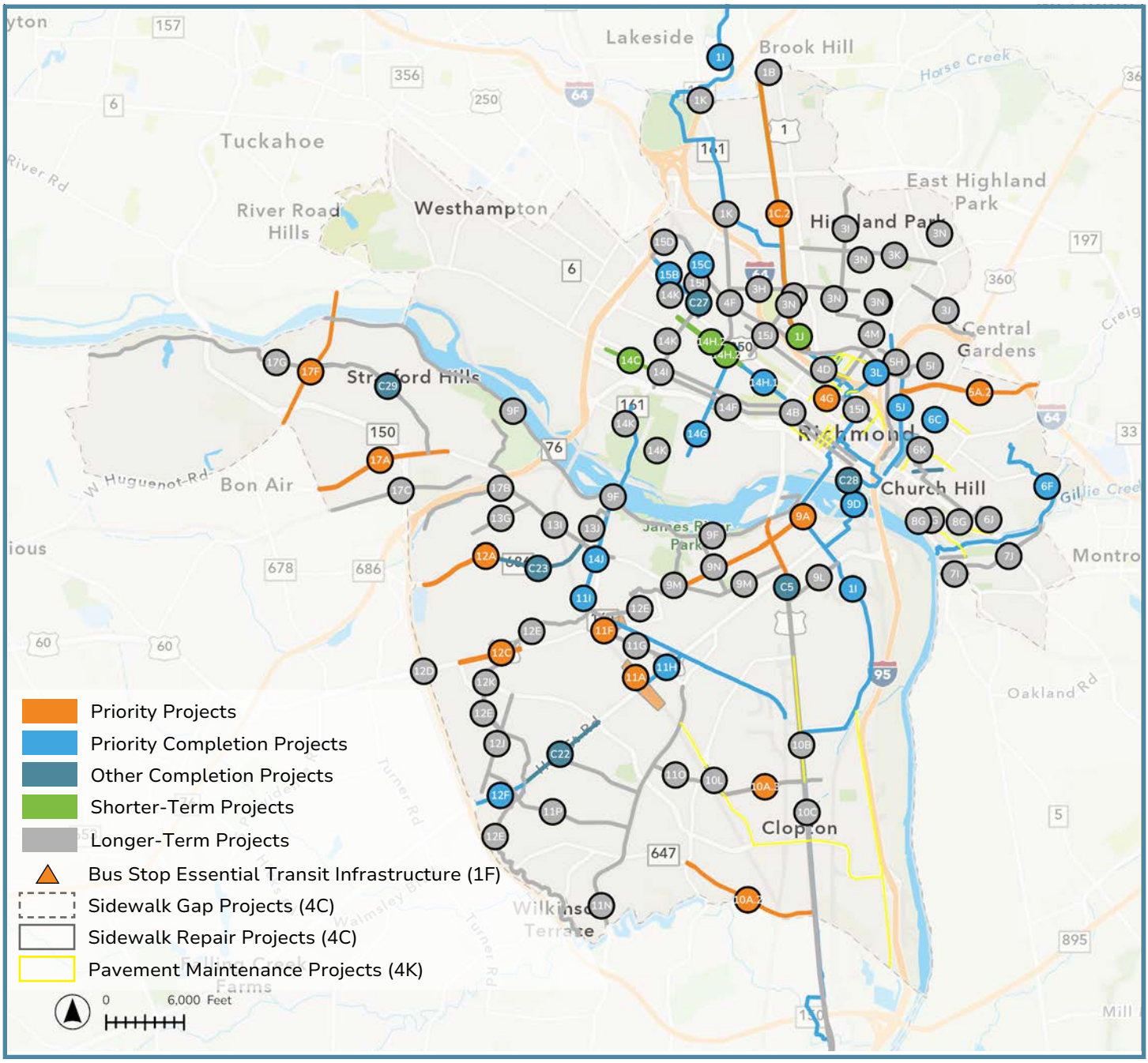
Many of these strategies are from existing plans, including:
- Richmond 300 Master Plan,
- RVAgreen 2050, or
- Vision Zero Action Plan.

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.



Project Recommendations for INC 1A: Bicycle

ID	Category	Title	Relevance	Page
17F	Priority Projects	Huguenot Road Bikeway	Primary	264
17A	Priority Projects	Forest Hill Avenue Streetscape	Primary	262
12F	Priority Completion	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	Primary	266
9D	Priority Completion	Mayo Bridge Pedestrian and Bicycle Facilities	Primary	
14H.1	Priority Completion	Franklin Street Cycle Track - Lombardy Street to Belvidere Street	Primary	268
15B	Priority Completion	Clay Street Streetscape Improvements	Primary	268
6F	Priority Completion	Gillies Creek Greenway	Primary	267
5J	Priority Completion	Oliver Hill Way Bike Lanes	Primary	266
1I	Priority Completion	Fall Line Trail	Primary	269
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Primary	269
3L	Priority Completion	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	Primary	269
11I	Priority Completion	James River Branch Trail	Primary	269
14G	Priority Completion	Allen Avenue Bike-Walk Street	Primary	268
14J	Priority Completion	State Route 161 Bicycle Infrastructure	Primary	269
C13	Other Completion	Jefferson Avenue Improvements	Primary	272
C22	Other Completion	Hull Street Improvements Phase I - Hey Road to Warwick Road	Primary	274
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	Primary	274
C27	Other Completion	Science Museum BRT Shared Use Path	Primary	274
C9	Other Completion	Scott's Addition Green Space	Primary	271
14H.2	Shorter Term	Monument Avenue Bike Lanes	Primary	279
1J	Shorter Term	Brook Road Bike Lanes Protection	Primary	278
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Primary	281
3K	Longer Term	Brookland Park Boulevard Bikeway	Primary	281
3N	Longer Term	Northside Bikeshare Stations	Primary	282
13G	Longer Term	Bliley Road Sidewalk and Bike Lanes	Primary	282
15J	Longer Term	Lombardy Street Protected Bike Lanes	Primary	282
15I	Longer Term	Leigh Street Bike Lanes - Dinneen St to 8th St	Primary	282
5I	Longer Term	Hospital Street/ Bowling Green Road/ Wood Street Bikeway	Primary	282
7I	Longer Term	Rockett's Landing to Fulton Bike Connection	Primary	282
9F	Longer Term	Riverside Shared-Use Path	Primary	283
1K	Longer Term	Hermitage Road Buffered Bike Lanes	Primary	283

Project Recommendations for INC 1A: Bicycle

ID	Category	Title	Relevance	Page
9M	Longer Term	Bainbridge Street/Forest Hill Avenue Bike Lanes	Primary	283
5H	Longer Term	Valley Road Shared Use Path	Primary	283
4M	Longer Term	1st Street Cycle Track	Primary	283
3J	Longer Term	Magnolia Street Bikeway	Primary	283
7J	Longer Term	Admiral Gravely Blvd/Jennie Scher Road Bikeway	Primary	283
6J	Longer Term	Church Hill Bikeway Connection	Primary	283
12K	Longer Term	Southside Community Center Bikeshare Station	Primary	283
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	Primary	283
15D	Longer Term	Scott's Addition/Boulevard Shared-Use Path	Primary	284
6K	Longer Term	Venable/Mosby Bikeshare Station	Primary	284
3H	Longer Term	Overbrook Road Bikeway	Primary	284
12J	Longer Term	Whitehead Road Bikeway	Primary	284
13I	Longer Term	Forest Hill Avenue Bikeway	Primary	284
11N	Longer Term	Broad Rock Boulevard/Iron Bridge Road Protected Bikeway	Primary	284
3M	Longer Term	Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd	Primary	284
8G	Longer Term	East End Bikeshare Stations	Primary	284
14K	Longer Term	Near West End Bikeshare Stations	Primary	284
3I	Longer Term	Fendall Ave/ N 1st St Bikeway	Primary	285
14I	Longer Term	Mulberry Street Bikeway	Primary	285
9L	Longer Term	Maury Street Bikeway	Primary	285
9N	Longer Term	West 29th Street Bikeway	Primary	285
17B	Longer Term	Powhite Greenway	Primary	285
17C	Longer Term	Norfolk Southern Shared Use Path	Primary	285
17G	Longer Term	Cherokee Road Bikeway	Primary	285
10L	Longer Term	Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	Primary	285
13J	Longer Term	Prince Arthur Road Bikeway Connection	Primary	285
11O	Longer Term	Terminal Avenue Bike Lanes - Broad Rock Blvd to Belt Blvd	Primary	285
11P	Longer Term	Bikeways on Bryce Lane and Snead Road	Primary	285
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	Secondary	194
12C	Priority Projects	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	Secondary	196
10A.3	Priority Projects	Terminal Boulevard Shared Use Path	Secondary	202
10A.2	Priority Projects	Walmsley Boulevard Shared Use Path	Secondary	200

Project Recommendations for INC 1A: Bicycle

ID	Category	Title	Relevance	Page
12A	Priority Projects	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	Secondary	207
9A	Priority Projects	Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements	Secondary	209
11F	Priority Projects	Richmond High School of the Arts Pedestrian Safety Improvements	Secondary	225
5A.2	Priority Projects	Fairfield Avenue/ Fairfield Way Traffic Calming	Secondary	239
4K	Priority Projects	Richmond Connects Equity-Centered Pavement Maintenance Prioritization	Secondary	245
4G	Priority Projects	Reconnect Jackson Ward	Secondary	253
11A	Priority Projects	Southside Plaza Pedestrian Connections Across Railroad Tracks	Secondary	257
6C	Priority Completion	Shockoe Valley Street Improvements	Secondary	266
15C	Priority Completion	Arthur Ashe Boulevard Bridge Replacement	Secondary	267
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Secondary	275
C29	Other Completion	Cherokee Road Roadside Safety Improvements	Secondary	275
C5	Other Completion	Richmond Highway Phase II Improvements	Secondary	270
14C	Shorter Term	Cyclovia Demonstrations	Secondary	277
1B	Longer Term	Azalea Avenue Streetscape Improvements	Secondary	281
12D	Longer Term	Route 60/Route 150 Interchange Improvements	Secondary	281
10B	Longer Term	Richmond Highway Great Street Transformation	Secondary	281
10C	Longer Term	Richmond Highway Pedestrian Safety Improvements	Secondary	282
4B	Longer Term	Main Street/Cary Street Two-Way Street Conversion	Secondary	283
14F	Longer Term	Randolph Connection Over I-195	Secondary	284
11G	Longer Term	East Belt Boulevard Improvements	Secondary	284
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Secondary	285

Strategy Recommendations for INC 1A: Bicycle

These bicycle strategies are designed to addresses barriers to opportunity that are faced by low-income and BIPOC Richmonders. In many instances, destinations are not reachable by bike and are out of range for walking, thus limiting the opportunities available. These strategies aim to provide access to bikes and make biking safer, ensuring Richmonders can use this mode comfortably. Many of the roads in Richmond were designed with cars in mind, and retrofitting them to accommodate bikes make progress towards redressing the named injustices of car-centric planning (EF5) and the suburbanization of poverty (EF4). Bike strategies also addresses climate equity (EF8) and resiliency (EF10) by reducing the dependence on pollution-creating fossil fuels and providing alternative modes during climate events.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
BIKE LANE BARRIERS: Install temporary barriers between bike lanes and car lanes for a brief test period.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that drivers don't share the road, aren't friendly with bicyclists, and park in bike lanes.	DPW	OETM	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 should advocate for these demos, provide support in acquiring funding, and support DPW project managers.	Yes; install temporary barriers (bollards, planters, etc.) between bike and car lanes to test which are best.
PUBLIC SAFETY CAMPAIGN: Conduct a campaign to remind bicyclists and drivers of their rights and responsibilities and how to safely share the road, including how to safely park and avoid bike lanes. Also promote health benefits of using the bike lanes.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that drivers don't share the road, aren't friendly with bicyclists, and park in bike lanes.	DPW Communications Team	OSC, RPD, Office of the Mayor. Community partners such as BikeWalk RVA, VA Community Voice, Safe-Routes-to-School, local universities, Strong Towns, etc.	Identify funding and community partnerships. Community partnerships should be utilized to help develop and spread messaging, and set and track campaign objectives. Implementation steps may also include partnerships with local news organization, and possible small grants to community partners to help disseminate collectively-defined messaging.	Yes; signage to post "no parking" in bike lanes, allow and incentivise community organizations to place 'notices' on cars in the bike lanes.

Strategy Recommendations for INC 1A: Bicycle

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
MORE BIKE RACKS: Install more bike racks and bike corrals, and provide free locks or locks on racks, focusing on Communities of Opportunity areas first.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified need for more bike racks.	DPW	PDR, OETM, Private Developers, Community Partners	Identify funding and community partnerships. Define parameters for eligibility for free bike locks. Define parameters for priority locations for bike racks working with community organizations and businesses.	Yes; install bike corrals in parking spaces.
MULTIMODAL BIKE LANES: Allow people who use wheelchairs to ride in the bike lanes.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified lack of access to bikes if low income, and the cost burden on owning and maintaining a bike or using bikeshare e-bikes.	DPW, OETM, City Council		Research precedents, complete risk and benefit analysis, and present ordinance to City Council.	-
ACCESS TO BIKES: 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. Make sure bike share is distributed equitably by adding 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 was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified lack of access to bikes if low income, and the cost burden on owning and maintaining a bike or using bikeshare e-bikes.	OETM	BikeWalk RVA, other community partners.	Assess funding availability for additional subsidies for low-income bike riders, as well as 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.	Yes; have bike cards available to check out at public libraries.

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

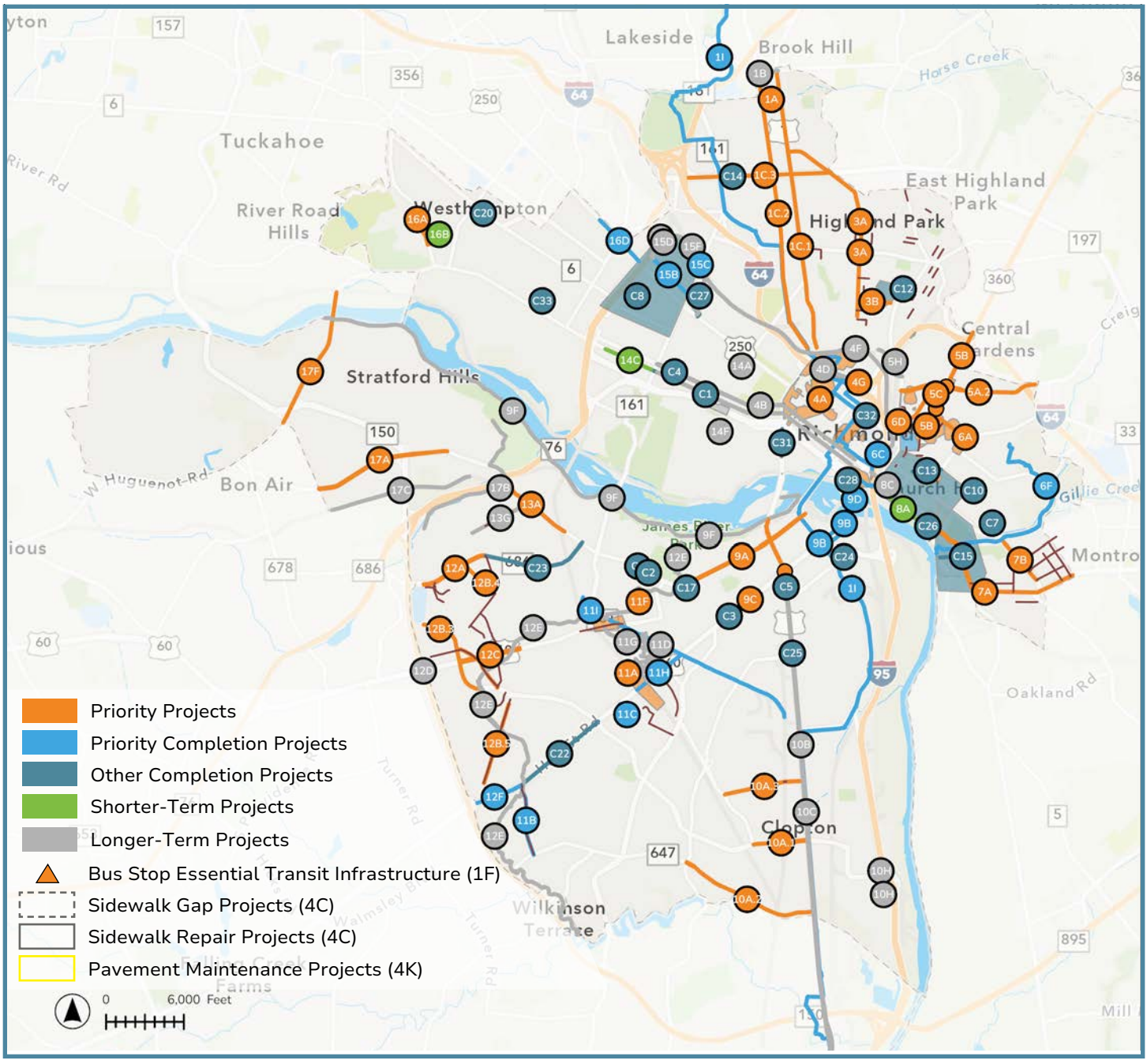
RELEVANT STRATEGIES FROM OTHER INVESTMENT NEED CATEGORIES

- **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.



Project Recommendations for INC 1B: Pedestrian

ID	Category	Title	Relevance	Page
5B	Priority Projects	Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements	Primary	188
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Primary	180
1C.3	Priority Projects	Laburnum Avenue Safety Improvements	Primary	190
1C.1	Priority Projects	Chamberlayne Avenue Pedestrian Safety Improvements	Primary	192
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	Primary	194
10A.3	Priority Projects	Terminal Boulevard Shared Use Path	Primary	202
10A.1	Priority Projects	Bells Road Sidewalks	Primary	198
10A.2	Priority Projects	Walmsley Boulevard Shared Use Path	Primary	200
3A	Priority Projects	North Avenue Pedestrian Safety Improvements	Primary	204
12A	Priority Projects	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	Primary	207
9A	Priority Projects	Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements	Primary	209
6A	Priority Projects	Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming	Primary	223
7B	Priority Projects	Government Road Streetscape Improvements	Primary	216
9C	Priority Projects	Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike	Primary	209
12B.5	Priority Projects	Southside Pedestrian Improvements - Whitehead Road	Primary	235
3B	Priority Projects	Dove Street Pedestrian Safety Improvements	Primary	221
12B.1	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road north of US Route 60	Primary	227
12B.2	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road south of US Route 60	Primary	229
12B.3	Priority Projects	Southside Pedestrian Improvements - Carnation Street	Primary	231
12B.4	Priority Projects	Southside Pedestrian Improvements - German School Road	Primary	233
11F	Priority Projects	Richmond High School of the Arts Pedestrian Safety Improvements	Primary	225
5A.1	Priority Projects	Coalter Street Traffic Calming	Primary	237
5A.2	Priority Projects	Fairfield Avenue/ Fairfield Way Traffic Calming	Primary	239
7A	Priority Projects	Williamsburg Road/ Williamsburg Avenue Traffic Calming	Primary	242
1A	Priority Projects	Westbrook Avenue Pedestrian Improvements	Primary	244

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	254
17A	Priority Projects	Forest Hill Avenue Streetscape	Primary	262
16A	Priority Projects	Three Chopt Road Sidewalks	Primary	259
9B	Priority Completion	Hull Street Streetscape - Mayo Bridge to 9th Street	Primary	266
11C	Priority Completion	Southwood Parkway Sidewalk	Primary	266
12F	Priority Completion	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	Primary	266
9D	Priority Completion	Mayo Bridge Pedestrian and Bicycle Facilities	Primary	
11B	Priority Completion	Hey Road Improvements	Primary	267
15B	Priority Completion	Clay Street Streetscape Improvements	Primary	268
6F	Priority Completion	Gillies Creek Greenway	Primary	267
16D	Priority Completion	Broad Street Streetscape with Pulse BRT Expansion	Primary	267
1I	Priority Completion	Fall Line Trail	Primary	269
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Primary	269
11I	Priority Completion	James River Branch Trail	Primary	269
C10	Other Completion	Shockoe Bottom BRT Streetscape Improvements	Primary	271
C13	Other Completion	Jefferson Avenue Improvements	Primary	272
C15	Other Completion	Nicholson Street Streetscape	Primary	272
C20	Other Completion	Westhampton Area Improvements - Phase III	Primary	273
C22	Other Completion	Hull Street Improvements Phase I - Hey Road to Warwick Road	Primary	274
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	Primary	274
C25	Other Completion	Richmond Highway Improvements	Primary	274
C26	Other Completion	Route 5 Relocation/Williamsburg Road Intersection Improvement	Primary	274
C27	Other Completion	Science Museum BRT Shared Use Path	Primary	274
C3	Other Completion	Hull Street at 29th Street Pedestrian Hybrid Beacon	Primary	270
C31	Other Completion	Belvidere Street Gateway - Phase IV	Primary	275
C32	Other Completion	Biotech Research Park Roadway Improvements	Primary	275
C33	Other Completion	Mary Munford Elementary School Pedestrian Safety Improvements	Primary	275
C4	Other Completion	Main Street Safety Curb Extensions	Primary	270
C5	Other Completion	Richmond Highway Phase II Improvements	Primary	270
C7	Other Completion	Riverfront/ Orleans BRT Streetscape Improvements	Primary	271

Project Recommendations for INC 1B: Pedestrian

ID	Category	Title	Relevance	Page
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	Primary	271
C9	Other Completion	Scott's Addition Green Space	Primary	271
16B	Shorter Term	York Road Sidewalks	Primary	280
8A	Shorter Term	Dock Street Pedestrian Improvements	Primary	277
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Primary	281
1B	Longer Term	Azalea Avenue Streetscape Improvements	Primary	281
13G	Longer Term	Bliley Road Sidewalk and Bike Lanes	Primary	282
4B	Longer Term	Main Street/Cary Street Two-Way Street Conversion	Primary	283
5H	Longer Term	Valley Road Shared Use Path	Primary	283
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	Primary	283
15D	Longer Term	Scott's Addition/Boulevard Shared-Use Path	Primary	284
11G	Longer Term	East Belt Boulevard Improvements	Primary	284
17B	Longer Term	Powhite Greenway	Primary	285
17C	Longer Term	Norfolk Southern Shared Use Path	Primary	285
12C	Priority Projects	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	Secondary	196
5C	Priority Projects	Fairfield Pedestrian Security and Shade Project	Secondary	214
6D	Priority Projects	Church Hill Street Lighting	Secondary	206
4A	Priority Projects	Downtown Safety Spot Improvements	Secondary	215
4G	Priority Projects	Reconnect Jackson Ward	Secondary	253
11A	Priority Projects	Southside Plaza Pedestrian Connections Across Railroad Tracks	Secondary	257
17F	Priority Projects	Huguenot Road Bikeway	Secondary	264
6C	Priority Completion	Shockoe Valley Street Improvements	Secondary	266
15C	Priority Completion	Arthur Ashe Boulevard Bridge Replacement	Secondary	267
C1	Other Completion	Cary Street Safety Curb Extensions	Secondary	270
C12	Other Completion	Highland Grove/ Dove Street Redevelopment	Secondary	272
C14	Other Completion	Laburnum Median Improvements	Secondary	272
C17	Other Completion	Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements	Secondary	273
C2	Other Completion	Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets	Secondary	270
C24	Other Completion	Maury Street Streetscape	Secondary	274
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Secondary	275

Project Recommendations for INC 1B: Pedestrian

ID	Category	Title	Relevance	Page
14C	Shorter Term	Cyclovia Demonstrations	Secondary	277
11D	Longer Term	Southside Plaza Street Grid	Secondary	281
12D	Longer Term	Route 60/Route 150 Interchange Improvements	Secondary	281
8C	Longer Term	East Main Street Streetscape Improvements	Secondary	281
10B	Longer Term	Richmond Highway Great Street Transformation	Secondary	281
10C	Longer Term	Richmond Highway Pedestrian Safety Improvements	Secondary	282
9F	Longer Term	Riverside Shared-Use Path	Secondary	283
14A	Longer Term	Stuart Circle Roundabout Improvement	Secondary	283
14F	Longer Term	Randolph Connection Over I-195	Secondary	284
10H	Longer Term	Commerce Road Improvements at Walmsley Boulevard	Secondary	284
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Secondary	285
15E	Longer Term	Norfolk Street Bridge	Secondary	285
15F	Longer Term	MacTavish Avenue Bridge	Secondary	285

Strategy Recommendations for INC 1B: Pedestrian

These strategies addresses the injustices created by car-centric planning (EF5) that historically overlooked the safety and security of pedestrians and favored higher speeds for cars. These strategies also address barriers to opportunity faced by communities with low pedestrian accessibility and poor safety outcomes today (EF6). Additionally, these programs promote walking and addresses climate equity (EF8) and resiliency (EF10) by reducing the dependency on pollution-creating fossil fuels and creating alternative routes during climate events. May of these strategies combined with the mapped improvements will begin to redress the connectivity and accessibility issues created by urban renewal projects (EF3), by redlining (EF1), and by the dissection of neighborhoods by the interstate system (EF2)

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
BETTER STREET LIGHTING: Install more night lighting on streets with lots of crashes so drivers can see people walking better, and 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.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified need for better lighting.	DPU, DPW	OETM, Mayor's Office & Council, Community Partners, RIchmond Police Department	Convene a community meeting to discuss 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. Revise internal processes to include equity, climate justice, and crime risks in street lighting priorities. Support PDR in developing public realm standards to include requirements for pedestrian-level lighting per the Master Plan objective 4.4.	Yes; demo with movable construction lights, solar powered lights.
FIX BUS STOPS AND SIDEWALKS NEAR DISABLED COMMUNITIES: Identify disability 'hotspots' where lots of neighbors have physical disabilities, like near assisted living group homes or senior living, and fix the streets and sidewalks in these areas first, and make upgrades to make bus stops in these areas 100% ADA compliant.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that a lack of access is exacerbated for disabled Richmonders.	DPW	Richmond's Office of Aging & Disabilities Services, Community Partners such as Senior Connections, Disability advocacy groups, OTHERS	Review and revise prioritization rubric used to determine maintenance and ADA upgrade priority, to include disability hotspots as a priority. Complete ADA audit for the entire city, or complete ADA audit for disability hotspots first (currently only complete for the downtown core and adjacent neighborhoods). Hire an ADA compliance position and allocate annual CIP funds dedicated to ADA compliance.	Yes, demo temporary/ movable ADA ramps made of rubber.

Strategy Recommendations for INC 1B: Pedestrian

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
NEW TECHNOLOGY FOR PEDESTRIANS WITH DISABILITIES: Research and install new technology for traffic signals and crosswalks to make it safer and easier for people who are blind or visually impaired to cross the street.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that a lack of access is exasperated for disabled Richmonders.	DPW, OETM	OIPI, VDOT	Hire an emerging technology coordinator. Research emerging technologies and test improvements via demonstration projects before large investments are made.	Yes, demo technologies in hotspots.
DEVELOPMENT REQUIREMENTS: When a new building is being constructed, require the builders to provide sidewalks, street trees, benches, other improvements that make it feel more comfortable for pedestrians, and not just designed for cars. Discourage the creation of new surface parking lots along pedestrian-oriented and transit accessible corridors.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that Richmond is too car-centric overall.	PDR	OETM, DPW, Private Developers, Community Advocates	Create a zoning overlay in Nodes and along Great Streets that specifies more complete and prescribed minimums for improvements to the transportation infrastructure. Consider zoning and taxation mechanism to discourage surface lots in favor of multi-story parking garages on less square feet, or multimodal improvements with a logical nexus to the development project.	-
PRIORITIZE HANDICAP PARKING: Preserve limited street parking for handicapped residents when parking is removed or moved elsewhere.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that Richmond is too car-centric overall, and access is exacerbated for disable Richmonders.	DPW Parking & Capital Projects, DPW Right-of-Way, PDR	OETM, Private Developers	Update COR parking assessment as part of overall curbside management plan, to include additional consideration for handicap parking as the priority parking for downtown.	Yes, signage.
SLOW DOWN INTERSECTIONS AND PRIORITIZE NON-CAR TRAVELERS: 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. Combine 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 was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified problem that Richmond is too car-centric overall.	DPW		Support current signal timing adjustments and advocate for continued improvements to prioritize non-car travelers at intersections. New paint and visibility improvements, curb extensions, vertical features, lighting improvements can all be installed at intersections to improve pedestrian safety.	Yes, movable planters, paint, flex posts, rubber pedestrian islands, raised pedestrian crosswalks, etc. can be installed in a LQC manner.

OTHER HIGH IMPORTANCE STRATEGIES

- **INCENTIVIZE SUSTAINABLE TRANSPORTATION:** Spread awareness of non-car options for getting around and pride 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

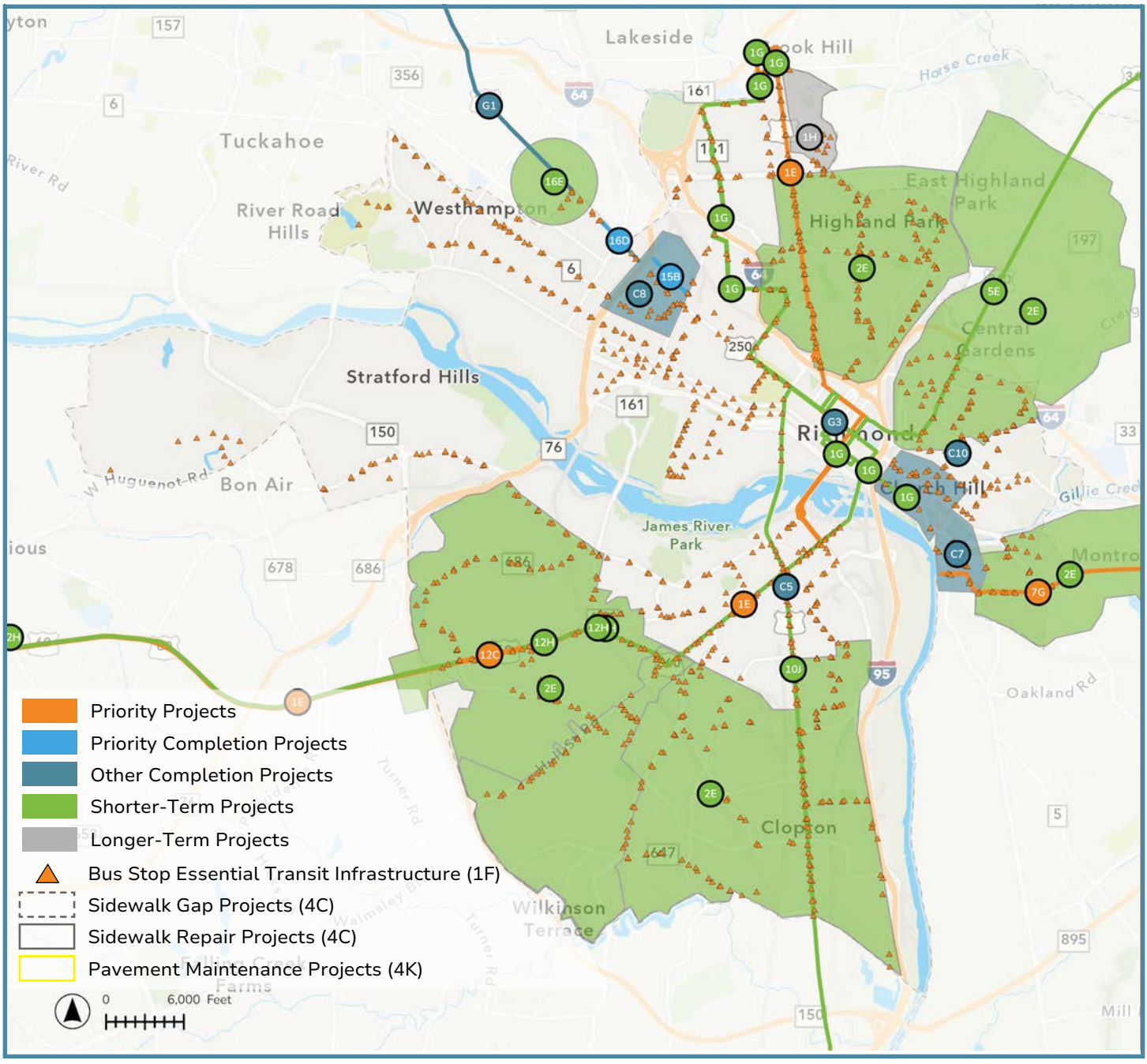
- **REVENUE FOR SAFETY PROJECTS:** Use the money from writing tickets to fund projects that improve pedestrian and bicycle safety. (INC 5 Safety)
- **INTERCONNECTED TRAILS:** Create an interconnected parks system that is connected by trails and greenways, so people can travel throughout the city without 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)

- **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 smart phones when someone is in an intersection, and ones that can stop distracted driving. (INC 5 Safety)
- **CROSSWALK VISIBILITY:** Improve intersections to make sure drivers can see people crossing the street and people waiting to cross, and implement drastically increased lighting at unsafe intersections. (INC 5 Safety)
- **SAFE ROUTES TO SCHOOL:** Continue to seek more money for Safe Routes to School safety projects like more school crossing guards, school bus monitors, and better school-zone speed enforcement. (INC 5 Safety)
- **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)
- **MAINTENANCE INFORMATION:** 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. (INC 7 Maintenance)

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.



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	212
7G	Priority Projects	Pulse Bus Rapid Transit Eastern Extension	Primary	218
1E	Priority Projects	North-South Bus Rapid Transit	Primary	256
16D	Priority Completion	Broad Street Streetscape with Pulse BRT Expansion	Primary	267
C11	Other Completion	Centralized Transit Signal Priority and Emergency Vehicle Preemption	Primary	272
G1	Other Completion	Western Pulse Extension	Primary	275
G2	Other Completion	GRTC Dedicated Lanes Study	Primary	276
G3	Other Completion	Downtown Transfer Center	Primary	276
16E	Shorter Term	Willow Lawn Park-and-Ride	Primary	279
12H	Shorter Term	GRTC Route 1A (Midlothian Turnpike) Improvements	Primary	278
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Primary	280
10J	Shorter Term	Richmond Highway Transit Improvements	Primary	278
1G	Shorter Term	GRTC Route 14 Increased Frequency	Primary	278
2E	Shorter Term	Link: On-Demand Microtransit	Primary	279
11J	Longer Term	Southside Plaza Transfer Center	Primary	281
1H	Longer Term	Ridesharing Vouchers	Primary	282
12C	Priority Projects	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	Secondary	196
15B	Priority Completion	Clay Street Streetscape Improvements	Secondary	268
C10	Other Completion	Shockoe Bottom BRT Streetscape Improvements	Secondary	271
C5	Other Completion	Richmond Highway Phase II Improvements	Secondary	270
C6	Other Completion	Richmond Signal System Phase IV	Secondary	271
C7	Other Completion	Riverfront/ Orleans BRT Streetscape Improvements	Secondary	271
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	Secondary	271

Strategy Recommendations for INC 2: Transit

These strategies are designed to make taking the bus and microtransit more convenient and will help increase transit accessibility. They work to address the reliability issues and barriers to opportunity that they create (EF 7). Increasing transit and shared mobility will address the accessibility challenges created by the injustice of car-centric planning (EF 5) and will connect low-income and BIPOC communities with opportunity. Additionally, these programs make taking the bus more appealing, and addresses climate equity (EF8) and resiliency (EF10) by reducing the dependency on pollution-creating fossil fuels and creating alternative routes during climate events.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
PRIORITIZE BUS RELIABILITY: Prioritize spending money to hire more bus drivers, buy more buses, and improve technology including signal technology to make the bus system more reliable, starting with the areas and bus routes that are late or off-schedule most frequently.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of unreliable bus service and the limitations to GRTC service hours.	GRTC, DPW	OETM, COR Representatives on GRTC board	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.	-
FARE-FREE GRTC: Prioritize keeping the bus free.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of unpredictability in how long fare-free will remain in place. It also addresses the publicly identified problem of Richmond being too car-centric overall.	GRTC	OETM, COR Representatives on GRTC board	OETM, working with GRTC, support and advocate for a 10 year commitment to fare-free.	-
TRAIN MORE BUS DRIVERS: Combine city agencies' abilities and make a program to bring in and train more bus drivers from low-income areas and high schools.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of unreliable bus service and the limitations to GRTC service hours and addresses the publicly identified driver shortage problem at the time of the survey.	GRTC, OCWB	DMV, RPS, Higher Education Institutions	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 busses. 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.	-

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
STRATEGIC INVESTMENT: Prioritize innovative micro-transit and other shared-mobility solutions in areas with not covered by current fixed-route service, and focus funding on improving fixed route where it exists rather than implementing new types of shared-ride services in these existing coverage areas.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for more transit in the edges of the City.	GRTC, OETM		Continue to support GRTC in providing micro-transit and other non-traditional transit to communities not currently served by reliable, frequent fixed route service.	Yes, pilot microtransit and other shared rides.

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

- **LIGHT RAIL TRANSIT:** Study light rail as a future means to connect quickly with the more rural areas in and at the edges of the City.
- **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)
- **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	274
C24	Other Completion	Maury Street Streetscape	Primary	274
10H	Longer Term	Commerce Road Improvements at Walmsley Boulevard	Primary	284
4G	Priority Projects	Reconnect Jackson Ward	Secondary	253
12D	Longer Term	Route 60/Route 150 Interchange Improvements	Secondary	281
7C	Longer Term	Old Fulton Street Grid	Secondary	281
2C	Longer Term	Roundabout at Hermitage Rd/ Arthur Ashe Blvd/ Westwood Ave/ Brookland Pkwy	Secondary	282
13I	Longer Term	Forest Hill Avenue Bikeway	Secondary	284
10F	Longer Term	Walmsley Boulevard Street Connection	Secondary	284
11N	Longer Term	Broad Rock Boulevard/Iron Bridge Road Protected Bikeway	Secondary	284
4H	Longer Term	Reconnect Clay and 6th Streets	Secondary	285

Strategy Recommendations for INC 3: Freight

There is a logical nexus between freight and poor health and wealth outcomes for vulnerable Richmonders. We saw disruptions to the supply chain during the pandemic, and understand that our low-income and BIPOC neighborhoods are most at risk to these disruptions. These strategies are designed to increase food access and add redundancy and resiliency to the supply chain (EF10) while balancing the needs of pedestrians, bicyclists, and busses in the same right-of-way. Improving access to food overall will help redress the inaccessibility to fresh food retailers in areas previously redlined (EF 1), in areas impacted by urban renewal (EF3), and in disconnected suburbs where families are pushed (EF4).

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
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.	This was in the top 5 strategies identified by the community of opportunity focus groups. This was designed to address the publicly identified problem of truck traffic circling city streets and the lack of truck restrictions on some roads.	OETM, DPW	DMV	Complete a curbside and ROW management plan to include assessment of delivery modalities and need for regulating ordinances. Hire an emerging technology coordinator to assess drone and robot delivery modes.	-
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. Support the Richmond Marine Terminal and freight rail as economic development engines for the City. Ensure truck access to the Richmond Marine Terminal is in alignment with Vision Zero objectives.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This was designed to address the publicly identified problem of truck traffic circling city streets and the lack of truck restrictions on some roads. The more freight that can be moved via the port and rail, the less truck traffic there will be.	Port of Richmond, DRPT	OETM, DPW, Economic Development	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.	-
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.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that the supply chain is vulnerable most prominently for low-income Richmonders.	OOS	OETM, Economic Development, PCRF, OCWB, Chamber of Commerce	Identify funding to support these programs and identify lead staff.	Yes, pop-up mobile community gardens, raised planters, and farm stands.
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.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that the supply chain is vulnerable most prominently for low-income Richmonders.	PCRF	OETM, OOS	Identify funding to support these programs and identify lead staff.	Yes, pop-up mobile community gardens, raised planters, and farm stands.

Strategy Recommendations for INC 3: Freight

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
FREE GROCERY DELIVERY: Provide money to cover grocery delivery service fees for low-income and elderly areas and neighborhoods in food deserts.	This was in the top 5 strategies identified by the community of opportunity focus groups. This was to address the publicly identified problem that grocery delivery services and fees continue to exacerbate inequities.	OETM	RRHA, OCWB, DSS, Office of Aging & Disability Services	Develop program parameters and seek grant funding.	Yes, pilot program.
FOOD RESILIENCY PLANNING & ZONING: 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.	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified problem that the supply chain is vulnerable most prominently for low-income Richmonders.	OOS	PDR, OETM, PlanRVA	Identify funding to support this planning effort and identify lead staff.	-

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	281
12L	Longer Term	Midlothian Area Revitalization	Primary	281
4L	Longer Term	Downtown/Shockoe Parking Recommendations	Primary	282
15H	Longer Term	Scott's Addition Parking Recommendations	Primary	282
10N	Longer Term	Greenspace/Park near Richmond Highway	Primary	283
14D	Longer Term	Carytown Parking Recommendations	Primary	283
7G	Priority Projects	Pulse Bus Rapid Transit Eastern Extension	Secondary	218
4G	Priority Projects	Reconnect Jackson Ward	Secondary	253
1E	Priority Projects	North-South Bus Rapid Transit	Secondary	256
11I	Priority Completion	James River Branch Trail	Secondary	269
G3	Other Completion	Downtown Transfer Center	Secondary	276
16E	Shorter Term	Willow Lawn Park-and-Ride	Secondary	279
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Secondary	280
14C	Shorter Term	Cyclovia Demonstrations	Secondary	277
2E	Shorter Term	Link: On-Demand Microtransit	Secondary	279
11D	Longer Term	Southside Plaza Street Grid	Secondary	281
7C	Longer Term	Old Fulton Street Grid	Secondary	281
10M	Longer Term	Richmond Highway Revitalization	Secondary	282
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Secondary	285
4H	Longer Term	Reconnect Clay and 6th Streets	Secondary	285

Strategy Recommendations for INC 4: Land Use

These strategies are designed to increase food access, increase access to affordable housing near transit, and increase access to wealth building opportunities. Overall, these strategies will help redress the inaccessibility and lack of investment in areas previously redlined (EF 1), in areas impacted by urban renewal (EF3), and in disconnected suburbs where families are pushed (EF4). Good coordination of land-use and transit planning with future development is also vital to supporting an expanded network of buses and shared mobility. This more connected transit and micro mobility network reduced barriers to opportunity for those who cannot afford a car and helps to provide redundancy in modes for climate events. These strategies combined with the mapped network improvements will help redress the reliability issues (EF7) and the climate resiliency issues (EF10) identified by RIchmonders.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
HOUSING VOUCHERS: Make sure landlords honor housing choice vouchers and don't use them as a way to discriminate in housing applications. Ensure transit oriented developments offer affordable units and those units are filled with voucher recipients. 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.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified need for affordable housing near transit oriented development. While this is not intrinsically a transportation recommendation, the Community of Concern focus groups felt it warranted inclusion as access to affordable housing near transit is key to equitable access to transit. If affordable housing is not promoted near transit stops, access will continue to be limited.	RRHA	HCD, OETM, PDR	Coordinate with RHHA and PDR on implementing all legally allowable affordable housing incentives to be used in transit oriented developments, and to track voucher use in these TOD areas to ensure access to TOD for low-income RIchmonders. Create a TOD task force within the City to research and deploy incentives and zoning strategies to require affordable housing in TOD zones. This task force could also be responsible for sharing information with TOD developers on the Virginia Fair Housing Law.	-
ACCESS TO FOOD: Bring more grocery stores and farmers markets to low-income areas, ensure they are served by frequent transit, and make sure they have affordable prices and good quality.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for more grocery retailers near transit.	DECD	PDR, GRTC, OETM, OOS	Complete a food access assessment and identify sites for grocery store and market to developers and provide incentives.	Yes, pop-up mobile community gardens, raised planters, and farm stands.

Strategy Recommendations for INC 4: Land Use

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
HELP RESIDENTS BECOME HOMEOWNERS: 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 was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for affordable housing near transit and in nodes.	OCWB	Community Partners like Maggie Walker Land Trust, Project Homes, Habitat for Humanity, Rebuild Together. Department of Housing and Community Development.	Help OCWB, DHCD, others to apply for grants and seek resources to establish and expand existing programs.	-
ZONING REWRITE: Ensure the zoning rewrite addresses building up the nodes, encourages housing density near transit, limits surface parking in nodes, works to supply diversity in housing, and addresses home ownership barriers. *	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. It addresses the publicly identified need for affordable housing near transit and in nodes, the publicly identified need for the 'right' amount of parking, and the publicly identified need to tie parking to affordable housing.	PDR	OETM, Community Partners	PDR and OETM to advocate for City Council to include zoning updates that address these transit oriented development needs and affordable, accessible housing needs.	-
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 or provide new bus service there. *	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified problem of limited bus service areas and the lack of access to greenspace and community space.	PCRF	OETM, GRTC, PDR	OETM to work with parks to share transportation accessibility modeling tools to highlight areas with the least parks access by walking and taking the bus. Assist PCRF with future planning to ensure coordination with transportation assets.	Yes, pop-up parklets and 'park'-ing days demonstrating parking lots and other sites as potential regreening/ park sites.

Strategy Recommendations for INC 4: Land Use

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
COORDINATE TRANSIT AND DEVELOPMENT: Ensure GRTC is included in conversations with Richmond's Office of Equitable Development, Planning and Development Review, Office of Equitable Transit and Mobility, and Department of Public works, to ensure new housing and new development is coordinated with transit planning. *	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified problem of limited affordable housing near transit.	PDR, GRTC	OETM	Establish a TOD task force that meets quarterly to collaborate on TOD.	-

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	188
1C.3	Priority Projects	Laburnum Avenue Safety Improvements	Primary	190
1C.1	Priority Projects	Chamberlayne Avenue Pedestrian Safety Improvements	Primary	192
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	Primary	194
12C	Priority Projects	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	Primary	196
9A	Priority Projects	Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements	Primary	209
5C	Priority Projects	Fairfield Pedestrian Security and Shade Project	Primary	214
6D	Priority Projects	Church Hill Street Lighting	Primary	206
4A	Priority Projects	Downtown Safety Spot Improvements	Primary	215
9C	Priority Projects	Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike	Primary	219
11F	Priority Projects	Richmond High School of the Arts Pedestrian Safety Improvements	Primary	225
5A.2	Priority Projects	Fairfield Avenue/ Fairfield Way Traffic Calming	Primary	239
7A	Priority Projects	Williamsburg Road/ Williamsburg Avenue Traffic Calming	Primary	242
9B	Priority Completion	Hull Street Streetscape - Mayo Bridge to 9th Street	Primary	266
6C	Priority Completion	Shockoe Valley Street Improvements	Primary	266
14G	Priority Completion	Allen Avenue Bike-Walk Street	Primary	268
C1	Other Completion	Cary Street Safety Curb Extensions	Primary	270
C17	Other Completion	Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements	Primary	273
C18	Other Completion	Street Lighting - General	Primary	273
C2	Other Completion	Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets	Primary	270

Project Recommendations for INC 5: Safety/Security

ID	Category	Title	Relevance	Page
C29	Other Completion	Cherokee Road Roadside Safety Improvements	Primary	275
C4	Other Completion	Main Street Safety Curb Extensions	Primary	270
8A	Shorter Term	Dock Street Pedestrian Improvements	Primary	277
12D	Longer Term	Route 60/Route 150 Interchange Improvements	Primary	281
8C	Longer Term	East Main Street Streetscape Improvements	Primary	281
10C	Longer Term	Richmond Highway Pedestrian Safety Improvements	Primary	282
2C	Longer Term	Roundabout at Hermitage Rd/ Arthur Ashe Blvd/ Westwood Ave/ Brookland Pkwy	Primary	282
4B	Longer Term	Main Street/Cary Street Two-Way Street Conversion	Primary	283
14A	Longer Term	Stuart Circle Roundabout Improvement	Primary	283
16C	Longer Term	Three Chopt Road/York Road/ Henri Road Roundabout	Primary	285
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Secondary	180
10A.3	Priority Projects	Terminal Boulevard Shared Use Path	Secondary	202
10A.1	Priority Projects	Bells Road Sidewalks	Secondary	198
10A.2	Priority Projects	Walmsley Boulevard Shared Use Path	Secondary	200
3A	Priority Projects	North Avenue Pedestrian Safety Improvements	Secondary	204
12A	Priority Projects	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	Secondary	207
6A	Priority Projects	Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming	Secondary	223
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Secondary	212
7B	Priority Projects	Government Road Streetscape Improvements	Secondary	216
12B.5	Priority Projects	Southside Pedestrian Improvements - Whitehead Road	Secondary	235
3B	Priority Projects	Dove Street Pedestrian Safety Improvements	Secondary	221
12B.1	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road north of US Route 60	Secondary	227
12B.2	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road south of US Route 60	Secondary	229
12B.3	Priority Projects	Southside Pedestrian Improvements - Carnation Street	Secondary	231
12B.4	Priority Projects	Southside Pedestrian Improvements - German School Road	Secondary	233
5A.1	Priority Projects	Coalter Street Traffic Calming	Secondary	237
1A	Priority Projects	Westbrook Avenue Pedestrian Improvements	Secondary	244
13A	Priority Projects	Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy	Secondary	254
17F	Priority Projects	Huguenot Road Bikeway	Secondary	264

Project Recommendations for INC 5: Safety/Security

ID	Category	Title	Relevance	Page
17A	Priority Projects	Forest Hill Avenue Streetscape	Secondary	262
16A	Priority Projects	Three Chopt Road Sidewalks	Secondary	259
11C	Priority Completion	Southwood Parkway Sidewalk	Secondary	266
12F	Priority Completion	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	Secondary	266
9D	Priority Completion	Mayo Bridge Pedestrian and Bicycle Facilities	Secondary	
11B	Priority Completion	Hey Road Improvements	Secondary	267
14H.1	Priority Completion	Franklin Street Cycle Track - Lombardy Street to Belvidere Street	Secondary	268
15B	Priority Completion	Clay Street Streetscape Improvements	Secondary	268
5J	Priority Completion	Oliver Hill Way Bike Lanes	Secondary	266
1I	Priority Completion	Fall Line Trail	Secondary	269
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Secondary	269
3L	Priority Completion	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	Secondary	269
15C	Priority Completion	Arthur Ashe Boulevard Bridge Replacement	Secondary	267
14J	Priority Completion	State Route 161 Bicycle Infrastructure	Secondary	269
C10	Other Completion	Shockoe Bottom BRT Streetscape Improvements	Secondary	271
C11	Other Completion	Centralized Transit Signal Priority and Emergency Vehicle Preemption	Secondary	272
C13	Other Completion	Jefferson Avenue Improvements	Secondary	272
C15	Other Completion	Nicholson Street Streetscape	Secondary	272
C19	Other Completion	Street Lighting - LED Conversion	Secondary	273
C20	Other Completion	Westhampton Area Improvements - Phase III	Secondary	273
C22	Other Completion	Hull Street Improvements Phase I - Hey Road to Warwick Road	Secondary	274
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	Secondary	274
C24	Other Completion	Maury Street Streetscape	Secondary	274
C25	Other Completion	Richmond Highway Improvements	Secondary	274
C26	Other Completion	Route 5 Relocation/Williamsburg Road Intersection Improvement	Secondary	274
C27	Other Completion	Science Museum BRT Shared Use Path	Secondary	274
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Secondary	275
C3	Other Completion	Hull Street at 29th Street Pedestrian Hybrid Beacon	Secondary	270
C31	Other Completion	Belvidere Street Gateway - Phase IV	Secondary	275
C32	Other Completion	Biotech Research Park Roadway Improvements	Secondary	275

Project Recommendations for INC 5: Safety/Security

ID	Category	Title	Relevance	Page
C33	Other Completion	Mary Munford Elementary School Pedestrian Safety Improvements	Secondary	275
C5	Other Completion	Richmond Highway Phase II Improvements	Secondary	270
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	Secondary	271
C9	Other Completion	Scott's Addition Green Space	Secondary	271
16B	Shorter Term	York Road Sidewalks	Secondary	280
14C	Shorter Term	Cyclovia Demonstrations	Secondary	277
1J	Shorter Term	Brook Road Bike Lanes Protection	Secondary	278
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Secondary	281
1B	Longer Term	Azalea Avenue Streetscape Improvements	Secondary	281
3K	Longer Term	Brookland Park Boulevard Bikeway	Secondary	281
13G	Longer Term	Bliley Road Sidewalk and Bike Lanes	Secondary	282
15J	Longer Term	Lombardy Street Protected Bike Lanes	Secondary	282
15I	Longer Term	Leigh Street Bike Lanes - Dinneen St to 8th St	Secondary	282
5I	Longer Term	Hospital Street/ Bowling Green Road/ Wood Street Bikeway	Secondary	282
7I	Longer Term	Rockett's Landing to Fulton Bike Connection	Secondary	282
1K	Longer Term	Hermitage Road Buffered Bike Lanes	Secondary	283
9M	Longer Term	Bainbridge Street/Forest Hill Avenue Bike Lanes	Secondary	283
5H	Longer Term	Valley Road Shared Use Path	Secondary	283
4M	Longer Term	1st Street Cycle Track	Secondary	283
3J	Longer Term	Magnolia Street Bikeway	Secondary	283
7J	Longer Term	Admiral Gravely Blvd/Jennie Scher Road Bikeway	Secondary	283
6J	Longer Term	Church Hill Bikeway Connection	Secondary	283
15D	Longer Term	Scott's Addition/Boulevard Shared-Use Path	Secondary	284
3H	Longer Term	Overbrook Road Bikeway	Secondary	284
12J	Longer Term	Whitehead Road Bikeway	Secondary	284
13I	Longer Term	Forest Hill Avenue Bikeway	Secondary	284
11N	Longer Term	Broad Rock Boulevard/Iron Bridge Road Protected Bikeway	Secondary	284
3M	Longer Term	Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd	Secondary	284
10H	Longer Term	Commerce Road Improvements at Walmsley Boulevard	Secondary	284
11G	Longer Term	East Belt Boulevard Improvements	Secondary	284
3I	Longer Term	Fendall Ave/ N 1st St Bikeway	Secondary	285

Project Recommendations for INC 5: Safety/Security

ID	Category	Title	Relevance	Page
14I	Longer Term	Mulberry Street Bikeway	Secondary	285
9L	Longer Term	Maury Street Bikeway	Secondary	285
9N	Longer Term	West 29th Street Bikeway	Secondary	285
17B	Longer Term	Powhite Greenway	Secondary	285
17C	Longer Term	Norfolk Southern Shared Use Path	Secondary	285
17G	Longer Term	Cherokee Road Bikeway	Secondary	285
10L	Longer Term	Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	Secondary	285
11O	Longer Term	Terminal Avenue Bike Lanes - Broad Rock Blvd to Belt Blvd	Secondary	285
11P	Longer Term	Bikeways on Bryce Lane and Snead Road	Secondary	285

Strategy Recommendations for INC 5: Safety/Security

Safety was frequently cited by Richmonders as the main reason they do not walk, bike, or ride the bus. These strategies work to redress the injustice of a legacy of car-centric planning (EF5) that overlooked the needs of walkers and bikers in favor of moving cars faster. They work to create safe connections to opportunity for low-income and BIPOC communities(EF 6) and improve access overall.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
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.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that safety 'culture' and awareness is lacking, and that drivers do not share the road. It also addresses the publicly identified problem of poor enforcement for drivers, including for illegal parking & not stopping for crosswalks.	RPD, DPW	OETM, OSC, Community Partners	Identify key staff and funding sources. Work with community organizations to designate key messages that are culturally appropriate.	Yes, pop-up events and education resources.
SAFE ROUTES TO SCHOOL: Continue to seek more money for Safe Routes to School safety projects like more school crossing guards, school bus monitors, and better school-zone speed enforcement.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that safety 'culture' and awareness is lacking, that drivers do not share the road, and that kids are unsafe in front of schools.	Safe-Routes-to-School, VDOT	RPS, OETM, Community Partners	OETM to advocate for City funds to be allocated to SRFS for them to leverage for additional funds.	-

Strategy Recommendations for INC 5: Safety/Security

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
CROSSWALK VISIBILITY: Improve intersections to make sure drivers can see people crossing the street and people waiting to cross, and implement drastically increased lighting at unsafe intersections.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that safety 'culture' and awareness is lacking, and that drivers do not share the road.	DPW		Assess street lighting improvement prioritization for pedestrian safety. Make a transparent and accessible process to ensure additional street lights are placed at safety needs areas,	Yes, potential improvements include temporary or movable pedestrian refuge islands, raised crosswalks, curb bump-outs, test "road diets", centerline hardening, and chicanes. Also includes intersection murals, and crosswalk murals (before crosswalk, not to imepded striping).
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.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that people walking and biking have nowhere to rest and use the restroom safely.	PDR, DPW	OETM, Community Partners	Identify key staff and funding sources. Work with community organizations to designate key areas of need.	Yes, temporary benches, parklets, and pop-up placemaking events.
PUBLIC INPUT IN POLICING: Facilitate grassroots efforts for community policing, and lead a public outreach process so Richmonders can define and communicate how they want the police to enforce traffic and safety laws, including consideration for increases in enforcement as well as creation of an enforcement reporting system to allow Richmonders to report both excessive and insufficient enforcement.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that enforcement (and lack of enforcement) can have unintended harm to BIPOC communities. It also addresses the publicly identified problem of poor enforcement for drivers, including for illegal parking & not stopping for crosswalks.	RPD	OETM, DPW, OSC	Identify key staff and funding sources. Work with community organizations to identify how and when to hold community meetings to develop a community policing strategy for each neighborhood.	-

Strategy Recommendations for INC 5: Safety/Security

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
COMPLETE STREETS: Revisit how projects are developed to ensure projects are developed with multiple modes, not piecemeal. Consider corridor planning along the Master Plan designated great streets to ensure improvements are inclusive of all modes safely.	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This is also a staff pick. It also addresses several publicly identified needs across many categories such as those relating to bike and ped safety, and the car-centric nature of Richmond overall.	DPW, OETM	VDOT	Complete a legislative agenda and educational materials for key city leaders to document what transportation funding processes need to be changed to accomplish this holistic programming of funds. Develop key talking points and bill amendments to advocate for from our state and national legislators. Develop an equity scorecard for reviewing all large transportation projects.	-

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	253
11A	Priority Projects	Southside Plaza Pedestrian Connections Across Railroad Tracks	Primary	257
6F	Priority Completion	Gillies Creek Greenway	Primary	267
1I	Priority Completion	Fall Line Trail	Primary	269
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Primary	275
2E	Shorter Term	Link: On-Demand Microtransit	Primary	279
11D	Longer Term	Southside Plaza Street Grid	Primary	281
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Primary	281
7C	Longer Term	Old Fulton Street Grid	Primary	281
9F	Longer Term	Riverside Shared-Use Path	Primary	283
5H	Longer Term	Valley Road Shared Use Path	Primary	283
6J	Longer Term	Church Hill Bikeway Connection	Primary	283
14F	Longer Term	Randolph Connection Over I-195	Primary	284
10F	Longer Term	Walmsley Boulevard Street Connection	Primary	284
4H	Longer Term	Reconnect Clay and 6th Streets	Primary	285
15E	Longer Term	Norfolk Street Bridge	Primary	285
15F	Longer Term	MacTavish Avenue Bridge	Primary	285
10A.3	Priority Projects	Terminal Boulevard Shared Use Path	Secondary	202
10A.1	Priority Projects	Bells Road Sidewalks	Secondary	198
10A.2	Priority Projects	Walmsley Boulevard Shared Use Path	Secondary	200
12A	Priority Projects	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	Secondary	207
7G	Priority Projects	Pulse Bus Rapid Transit Eastern Extension	Secondary	218
12B.5	Priority Projects	Southside Pedestrian Improvements - Whitehead Road	Secondary	235
12B.1	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road north of US Route 60	Secondary	227

Project Recommendations for INC 6: Connectivity

ID	Category	Title	Relevance	Page
12B.2	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road south of US Route 60	Secondary	229
12B.3	Priority Projects	Southside Pedestrian Improvements - Carnation Street	Secondary	231
12B.4	Priority Projects	Southside Pedestrian Improvements - German School Road	Secondary	233
1E	Priority Projects	North-South Bus Rapid Transit	Secondary	256
16A	Priority Projects	Three Chopt Road Sidewalks	Secondary	259
9D	Priority Completion	Mayo Bridge Pedestrian and Bicycle Facilities	Secondary	
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Secondary	269
3L	Priority Completion	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	Secondary	269
14G	Priority Completion	Allen Avenue Bike-Walk Street	Secondary	268
14J	Priority Completion	State Route 161 Bicycle Infrastructure	Secondary	269
C21	Other Completion	Deepwater Terminal Road Connector to Goodes Street	Secondary	274
C22	Other Completion	Hull Street Improvements Phase I - Hey Road to Warwick Road	Secondary	274
C27	Other Completion	Science Museum BRT Shared Use Path	Secondary	274
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	Secondary	271
C9	Other Completion	Scott's Addition Green Space	Secondary	271
G2	Other Completion	GRTC Dedicated Lanes Study	Secondary	276
G3	Other Completion	Downtown Transfer Center	Secondary	276
16B	Shorter Term	York Road Sidewalks	Secondary	280
14H.2	Shorter Term	Monument Avenue Bike Lanes	Secondary	279
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Secondary	280
10J	Shorter Term	Richmond Highway Transit Improvements	Secondary	278
10M	Longer Term	Richmond Highway Revitalization	Secondary	282
1H	Longer Term	Ridesharing Vouchers	Secondary	282
3N	Longer Term	Northside Bikeshare Stations	Secondary	282
15I	Longer Term	Leigh Street Bike Lanes - Dinneen St to 8th St	Secondary	282
5I	Longer Term	Hospital Street/ Bowling Green Road/ Wood Street Bikeway	Secondary	282
7I	Longer Term	Rockett's Landing to Fulton Bike Connection	Secondary	282
1K	Longer Term	Hermitage Road Buffered Bike Lanes	Secondary	283
10N	Longer Term	Greenspace/Park near Richmond Highway	Secondary	283
9M	Longer Term	Bainbridge Street/Forest Hill Avenue Bike Lanes	Secondary	283
4M	Longer Term	1st Street Cycle Track	Secondary	283
3J	Longer Term	Magnolia Street Bikeway	Secondary	283
12K	Longer Term	Southside Community Center Bikeshare Station	Secondary	283

Project Recommendations for INC 6: Connectivity

ID	Category	Title	Relevance	Page
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	Secondary	283
15D	Longer Term	Scott's Addition/Boulevard Shared-Use Path	Secondary	284
6K	Longer Term	Venable/Mosby Bikeshare Station	Secondary	284
3H	Longer Term	Overbrook Road Bikeway	Secondary	284
3M	Longer Term	Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd	Secondary	284
8G	Longer Term	East End Bikeshare Stations	Secondary	284
14K	Longer Term	Near West End Bikeshare Stations	Secondary	284
3I	Longer Term	Fendall Ave/ N 1st St Bikeway	Secondary	285
14I	Longer Term	Mulberry Street Bikeway	Secondary	285
17B	Longer Term	Powhite Greenway	Secondary	285
17C	Longer Term	Norfolk Southern Shared Use Path	Secondary	285
10L	Longer Term	Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	Secondary	285

Strategy Recommendations for INC 6: Connectivity

These strategies work to redress the disconnectivity created by redling (EF1), by the dissection of neighborhood by the highways (EF2), the disconnectivity created by urban renewal projects (EF3). Improving connectivity also helps improve access to opportunities for low-income and BIPOC richmoners, and addresses gaps in the multimodal network created by car-centric planning (EF5).

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
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 connecting to nodes and great streets. Also, consider railroad alignments as places to build more trails ('rails-to-trails'). *	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem that RIchmond is too car centric overall.	DPW, PCRF	OETM, PDR, VDOT, planRVA, DED	Create a parks and trails map to assess gaps. Seek alternative parks funding to accomplish trails. Work with VDOT's office of trails, Department of Conservation, and tourism groups to raise capital for such a network.	-
BILINGUAL TRANSPORTATION INFORMATION & SIGNAGE: 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.	This was in the top 5 strategies identified by the community of opportunity focus groups.	GRTC, Amtrak, Greyhound	OETM, The Office of Immigrant and Refugee Engagement	OETM and Office of Immigrant and Refugee Engagement to do a comprehensive review of signs for language accessibility.	Yes, signage.
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	This was in the top 5 strategies identified by the community of opportunity focus groups.	OETM, GRTC	Department of Aging & Disability Services, Community Partners like Senior Connections, planRVA	OETM to assist on-the-ground information dissemination about this existing program.	Yes, signage and awareness materials.
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	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee.	GRTC, PDR	OETM	Establish a TOD task force that meets quarterly to collaborate on TOD.	-

Strategy Recommendations for INC 6: Connectivity

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
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.*	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. It addresses the publicly identified problem that Richmond is too car-centric overall.	DPW, OETM	PDR, Community Partners	Incorporate into an OETM Lighter/Quicker/ Cheaper program to demo creative solutions to the most pressing transportation problems.	Yes, demo days possible.

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.

MEDIUM IMPORTANCE STRATEGIES

- None

LOW IMPORTANCE STRATEGIES

- **LIGHT RAIL TRANSIT:** Study light rail as a future means to connect quickly with the more rural areas in and at the edges of the City.

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)
- **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)
- **SCOOTER DISTRIBUTION:** Make sure e-scooters are distributed throughout the city, and low-income areas are included. (INC 9 Technology)

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	180
4K	Priority Projects	Richmond Connects Equity-Centered Pavement Maintenance Prioritization	Primary	245
15C	Priority Completion	Arthur Ashe Boulevard Bridge Replacement	Primary	267
9C	Priority Projects	Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike	Secondary	219
17A	Priority Projects	Forest Hill Avenue Streetscape	Secondary	262
6C	Priority Completion	Shockoe Valley Street Improvements	Secondary	266
12H	Shorter Term	GRTC Route 1A (Midlothian Turnpike) Improvements	Secondary	278
2E	Shorter Term	Link: On-Demand Microtransit	Secondary	279
8C	Longer Term	East Main Street Streetscape Improvements	Secondary	281

Strategy Recommendations for INC 7: Maintenance

Maintaining the system that is already on the ground was a high priority for Richmonders. Access is degraded by broken sidewalks, trash in the bike lanes, and Richmonders with disabilities face even more challenges because of maintenance issues. Addressing maintenance will help address the gaps in accessibility and improve access to opportunities. Focusing maintenance on those communities who need it most will address climate vulnerability (EF8), will u increase the safety and comfort of pedestrians (EF6), and will generally create a sense of place in areas impacted by past injustices such as redlining and urban renewal (EF 1, 3). Also, creating a more transparent maintenance process will help build trust and understanding between Communities of Opportunity and the City of Richmond, and be more inclusive of the needs of those typically left out of the decision making process.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
MAINTENANCE TRACKER: Create an online tracker for maintenance projects in the 311 app so residents can see what is being worked on and when it is expected to be completed, as well as what is up next.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for more maintenance and the perceived lack of maintenance.	OSC	DPW, VDOT, DIT	Office of Strategic Communication to coordinate with DPW and OETM on key messaging and need for upgrades to 311.	-
MAINTENANCE INFORMATION & TRANSPARENCY: 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 implementation transparent.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for more maintenance and the perceived lack of maintenance.	OSC	DPW, VDOT, DIT	Office of Strategic Communication to coordinate with DPW and OETM on key messaging and need for upgrades to 311.	-
MAINTENANCE PROGRESS SHARING: Host events every 6 months to share city maintenance progress and work with residents to determine what needs to happen next. Ensure City Council members and decision makers have a role in these meetings and that they are located in the community.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need for more maintenance and the perceived lack of maintenance.	OSC	DPW, VDOT, DIT, OETM	Work with city Councilors to determine time and places to host progress meetings.	-
BIKE LANE AND STREET CLEANING: Clean both the bike and regular travel lanes more frequently.	This was in the top 5 strategies identified by the community of opportunity focus groups. It also addresses the publicly identified problem of trash in the bike lane and in the gutter.	DPW	VDOT	DPW to publish bike and street cleaning schedule and make adjustments to do so more frequently. Ensure city trash cans are emptied frequently to discourage littering.	-

Strategy Recommendations for INC 7: Maintenance

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
FIX SIDEWALKS NEAR DISABLED COMMUNITIES: Identify disability 'hotspots' where lots of neighbors have physical disabilities, like near assisted living group homes or senior living, and fix the streets and sidewalks in these areas first.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified problem that a disability exacerbates an existing lack of pedestrian accessibility.	DPW	OETM, Office of Aging and DIsability Services	Develop mobility challenged hotspots map and incorporate into sidewalk maintenance prioritization.	-

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	216
C12	Other Completion	Highland Grove/ Dove Street Redevelopment	Primary	272
14C	Shorter Term	Cyclovia Demonstrations	Primary	277
10B	Longer Term	Richmond Highway Great Street Transformation	Primary	281
12L	Longer Term	Midlothian Area Revitalization	Primary	281
10M	Longer Term	Richmond Highway Revitalization	Primary	282
1H	Longer Term	Ridesharing Vouchers	Primary	282
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Primary	285
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Secondary	212
7G	Priority Projects	Pulse Bus Rapid Transit Eastern Extension	Secondary	218
4K	Priority Projects	Richmond Connects Equity-Centered Pavement Maintenance Prioritization	Secondary	245
4G	Priority Projects	Reconnect Jackson Ward	Secondary	253
1E	Priority Projects	North-South Bus Rapid Transit	Secondary	256
9B	Priority Completion	Hull Street Streetscape - Mayo Bridge to 9th Street	Secondary	266
15B	Priority Completion	Clay Street Streetscape Improvements	Secondary	268
16D	Priority Completion	Broad Street Streetscape with Pulse BRT Expansion	Secondary	267
1I	Priority Completion	Fall Line Trail	Secondary	269
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Secondary	269
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Secondary	275
C9	Other Completion	Scott's Addition Green Space	Secondary	271
G1	Other Completion	Western Pulse Extension	Secondary	275
G3	Other Completion	Downtown Transfer Center	Secondary	276
16E	Shorter Term	Willow Lawn Park-and-Ride	Secondary	279
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Secondary	280

Project Recommendations for INC 8: Economic Development

ID	Category	Title	Relevance	Page
2E	Shorter Term	Link: On-Demand Microtransit	Secondary	279
11J	Longer Term	Southside Plaza Transfer Center	Secondary	281
1B	Longer Term	Azalea Avenue Streetscape Improvements	Secondary	281
7C	Longer Term	Old Fulton Street Grid	Secondary	281
3K	Longer Term	Brookland Park Boulevard Bikeway	Secondary	281
3N	Longer Term	Northside Bikeshare Stations	Secondary	282
10N	Longer Term	Greenspace/Park near Richmond Highway	Secondary	283
5H	Longer Term	Valley Road Shared Use Path	Secondary	283
12K	Longer Term	Southside Community Center Bikeshare Station	Secondary	283
6K	Longer Term	Venable/Mosby Bikeshare Station	Secondary	284
8G	Longer Term	East End Bikeshare Stations	Secondary	284

Strategy Recommendations for INC 8: Economic Development

Barriers to accessing opportunity are addressed by these strategies by both removing those barriers, and by attracting jobs and retailers closer to these communities so that transportation barriers are minimized. Many areas that were previously redlined, disconnected by the highway or urban renewal project, and areas in non-urban land use patterns from car-centric planning (EF 1-4), have fewer employment centers and grocery stores nearby, and are disconnected from opportunities unless they can afford a car. Incentivizing development in these areas as well as providing new accessibility outside of these areas will improve access to opportunity.

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
FREE RIDES TO WORK AND DAY CARE: 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.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified need for more affordable options to get to work, as well as the barriers to accessing affordable child care.	OETM	OCWB, DSS	Secure additional funding and vendors to provide this service. Assign a dedicated manager to this program in OETM.	-
ASSESS GENTRIFICATION RISK: Before a new building is built or large transportation project implemented, evaluate the risks and benefits to equity and displacement, and figure out how to make sure existing residents don't get pushed out and have education on and access to abatement and displacement mitigation programs.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of gentrification and displacement of long time Richmonders and vulnerable residents.	OETM, PDR	Private developers, community partners	Require the use of an equity development scorecard as part of the development review process and part of the DPW transportation project implementation workflow.	-
NODE IDENTITY BRANDING: 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 was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of the limited service areas for busses, the lack of affordable housing near transit, the lack of access to jobs, and the lack of wealth building opportunities.	PDR, OSC, CAO Office	OETM	Continue the Node task force meetings in the CAO's office to develop priority nodes for branding work. Pursue small area planning grants, designate Nodes as UDAs to access state planning dollars.	Yes, pop-up placemaking and wayfinding.

Strategy Recommendations for INC 8: Economic Development

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
COMMUNITY VISION: 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 was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of the limited service areas for busses, the lack of affordable housing near transit, the lack of access to jobs, and the lack of wealth building opportunities.	PDR	Community Partners such as VA Community Voice, neighborhood associations, and local economically disadvantaged developers.	Pursue small area planning grants, designate Nodes as UDAs to access site planning dollars.	Yes, pop-up placemaking and wayfinding.
WEALTH-BUILDING & HOME OWNERSHIP RESOURCES: Create a central place where low-income and minority residents could go to get information on homeownership and household financial planning, including info 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 was in the top 5 strategies identified by the community of opportunity focus groups. This addresses a publicly identified need for more wealth building opportunities.	HCD, OCWB	OETM, PDR, Community Partners like Maggie Walker Land Trust, Project Homes, Habitat for Humanity, Rebuild Together.	Help OCWB, DHCD, others to apply for grants and seek resources to establish and expand existing programs.	-
FREE GROCERY TRIPS: Provide free Lyft/Uber rides to and from the grocery store for low-income residents and seniors, or consider providing free grocery delivery services.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of food deserts.	OETM	DSS, RRHA	Identify key staff and dedicated funding. Start with a small pilot.	Yes, pilot program.

Strategy Recommendations for INC 8: Economic Development

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
ATTRACT GROCERY STORES: Leverage transportation dollars to attract grocery developments in food deserts, in conjunction with PDR.*	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. This addresses the publicly identified problem of food deserts.	PDR	OETM, DPW	Do a tabletop assessment of food deserts or use existing food desert mapping to locate sites for improvement and promotion to grocery retailers.	-

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)
- **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	273
C19	Other Completion	Street Lighting - LED Conversion	Primary	273
C6	Other Completion	Richmond Signal System Phase IV	Primary	271
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Secondary	212
C18	Other Completion	Street Lighting - General	Secondary	273
2E	Shorter Term	Link: On-Demand Microtransit	Secondary	279
11J	Longer Term	Southside Plaza Transfer Center	Secondary	281
3N	Longer Term	Northside Bikeshare Stations	Secondary	282
6K	Longer Term	Venable/Mosby Bikeshare Station	Secondary	284
8G	Longer Term	East End Bikeshare Stations	Secondary	284
14K	Longer Term	Near West End Bikeshare Stations	Secondary	284

Strategy Recommendations for INC 9: Technology

Technology has the potential to both enhance connectivity as well as create additional barriers for vulnerable Richmonders. These strategies aim to circumvent the need for a smart phone in some instances, and also create more transparency through the available information sharing on such smartphones and via web-based platforms. A delicate balance is needed to ensure the benefits of technology are not lost on those in the fringes of Richmond society. These strategies aim to improve access to such connectivity creating technology and prioritize such improvements in areas who that need it most (EF9).

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
ALL-INCLUSIVE TRANSPORTATION TECHNOLOGIES AND MARKETING: Figure out how to make sure everyone, including non-English speakers, people who don't have smartphones or a bank account, or people who have a physical disability, can still fully benefit from using new transportation technology (Uber/Lyft, electric and driverless vehicles, and car-sharing). Help educate people on disability transportation services offered already (eg. CARES and USERV GRTC programs). *	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of accessing transportation technology if you do not have a bank card, a smart phone, are disabled, or are not an English speaker.	OETM	Office of Aging and Disability Services, RRHA, OCWB, Office of Immigrant & Refugee Engagement, OSC	Explore information kiosks and booking kiosks as an option for multimodal hubs. Explore internet connectivity at bus station 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 maintain accessibility to those technologies for vulnerable Richmonders.	Yes, kiosks can be done LQC.
BUS ARRIVAL TIME DISPLAYS: Add real-time displays showing bus arrival times to bus stops, especially in low-income areas.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of accessing transportation technology if you do not have a smartphone.	GRTC	OETM	OETM to collaborate with GRTC on applying for grants to accomplish this.	-
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.	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of limited GRTC service hours and the safety issues of taking the bus at night.	GRTC, OETM		OETM to collaborate with GRTC on applying for grants to accomplish this.	Yes, pilot possible.

Strategy Recommendations for INC 9: Technology

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
MOBILITY AND PARKING APP: Create a user-friendly app to help RVA residents find street parking in real-time, and see prices and restrictions in advance. It should also include trip planning for alternative modes, serving as a multimodal guide to key destinations (health care, parks, shopping, etc.) and should describe the alternatives such as walk routes, bike routes, and bus routes, schedules, and transfers to minimize travel time.	This was in the top 5 strategies identified by the community of opportunity focus groups. It addresses the publicly identified need to provide the right amount of parking to encourage multimodal use but provide access when needed.	OSC, DPW	OETM, PDR, DPW, DIT	A full parking assessment, ADA compliant assessment, and curbside management plan need to be completed first before requirements of such an app would be possible.	-

OTHER HIGH IMPORTANCE STRATEGIES

- **DELIVERY MANAGEMENT:** Figure out how to manage delivery trucks, cans, drone sand 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	180
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	Secondary	194
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Secondary	212
5C	Priority Projects	Fairfield Pedestrian Security and Shade Project	Secondary	214
5A.2	Priority Projects	Fairfield Avenue/ Fairfield Way Traffic Calming	Secondary	239
7A	Priority Projects	Williamsburg Road/ Williamsburg Avenue Traffic Calming	Secondary	242
17A	Priority Projects	Forest Hill Avenue Streetscape	Secondary	262
12F	Priority Completion	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	Secondary	266
11B	Priority Completion	Hey Road Improvements	Secondary	267
16D	Priority Completion	Broad Street Streetscape with Pulse BRT Expansion	Secondary	267
C13	Other Completion	Jefferson Avenue Improvements	Secondary	272
C19	Other Completion	Street Lighting - LED Conversion	Secondary	273
C21	Other Completion	Deepwater Terminal Road Connector to Goodes Street	Secondary	274
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	Secondary	274
C26	Other Completion	Route 5 Relocation/Williamsburg Road Intersection Improvement	Secondary	274
C29	Other Completion	Cherokee Road Roadside Safety Improvements	Secondary	275
16E	Shorter Term	Willow Lawn Park-and-Ride	Secondary	279
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Secondary	280
1J	Shorter Term	Brook Road Bike Lanes Protection	Secondary	278
11J	Longer Term	Southside Plaza Transfer Center	Secondary	281
10B	Longer Term	Richmond Highway Great Street Transformation	Secondary	281
10N	Longer Term	Greenspace/Park near Richmond Highway	Secondary	283

Project Strategies for INC 10: Sustainability

ID	Category	Title	Relevance	Page
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Secondary	285
16C	Longer Term	Three Chopt Road/York Road/ Henri Road Roundabout	Secondary	285

Strategy Recommendations for INC 10: Sustainability

Technology has the potential to both enhance connectivity as well as create additional barriers for vulnerable Richmonders. These strategies aim to circumvent the need for a smart phone in some instances, and also create more transparency through the available information sharing on such smartphones and via web-based platforms. A delicate balance is needed to ensure the benefits of technology are not lost on those in the fringes of Richmond society. These strategies aim to improve access to such connectivity creating technology and prioritize such improvements in areas who that need it most (EF9).

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
USE COOLER MATERIALS: Use light color asphalt, light color roofs, and roofs with plants (green roofs) to cool the air and reduce heat.*	This was in the top 5 strategies identified by the community of opportunity focus groups.	DPW	OSC, OETM, PDR, VDOT, Private Developers	OSC to continue conversation to embed climate sensitive building practices into city policies. OSC to research and share best practices with DPW on new materials and risks and benefits of using them.	-
COOLING CENTERS: 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 was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of heat islands.	DPW, GRTC, OETM		Convene a heat island working group to collaborate across departments to find funding and staff to implement.	Yes, pop-up cooling stations on high heat days possible. Also, movable planters and shade structures are possible.
SUSTAINABLE BUILDING & CONTRACTING REQUIREMENTS: Change the requirements for new buildings so builders, including the City, are required to put in sidewalks and 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 green-certifications.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of heat islands, and the need for a reduction if GHG emissions.	OOS	PDR, OMBE, Procurement Office	Asses if green practices can be incorporated into COR contracting process. OSC to continue conversation to embed climate sensitive building practices into city policies. OSC, OETM to work with PDR and City Council to develop heat island overlays that have strict requirements for heat mitigation elements.	-

Strategy Recommendations for INC 10: Sustainability

Strategy Description	Need Addressed & Inclusion Justification	Who's Responsible - Primary	Who's Responsible - Support	First Next Steps	LQC
MORE PLANTS & EDIBLE LANDSCAPING: Plant more trees, plants, landscaping, and other green infrastructure along streets throughout the City to create more shade, absorb rainwater, provide food, and improve water quality. Plant fruit and vegetable producing landscaping along sidewalks and in green spaces where possible. Encourage neighbors to 'adopt' these gardens and tend to them.*	This was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of food deserts.	OOS, DPW, PCRF	Local universities, Community Partners	Identify staff, such a city arborist to tackle this. Starting with research on costs, benefits, and pecidents for this practice. With with local universities and community partner to test pilot plots.	Yes, pop-up mobile community gardens and movable raised planters.
COMMUNITY LOCATED FOOD & EDUCATION: 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 was in the top 5 strategies identified by the community of opportunity focus groups. This addresses the publicly identified problem of food deserts.	PCRF, Richmond Area Health District	Community Partners	Identify key staff and funding needed.	Yes, pilot possible.
EQUITABLE ELECTRIFICATION: Make sure EV charging is sited equitably and that electrified mobility like EVs and e-bikes are accessible and affordable. Implement the recommendations from the OETM and OOS Electric Vehicle Action Plan. *	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. It addresses the publicly identified problem of the cost barriers to electric mobility.	OOS, OETM		Adopt EV action plan and implement. Hire an emerging Technology Coordinator to research and promote collaboration with the City on deployment of these technologies in an equitable way.	-
ELECTRIFY TRANSIT & SHARED MOBILITY: Transition GRTC buses to electric buses. Increase the number of Uber/Lyft and other vehicles for hire and car-share vehicles that are electric vehicles. Assist with development and deployment of EV technology.	This was in the top 5 strategies identified by the Richmond Connects Advisory Committee. It addresses the publicly identified problem of the cost barriers to electric mobility.	GRTC, OOS, OETM		Hire an emerging Technology Coordinator to research and promote collaboration with the City on deployment of these technologies in an equitable way.	-

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, a 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)

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 needs categories, there are other existing priorities that are not replaced through this planning effort. These include:

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 - 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

Figure 34. Freight Network

are Richmond's freight corridors are below:

The policy considerations for freight movement are reiterated in the 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."

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 specfic 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.

NEXT STEPS

Each project and program listed in the Recommendations sections will need to be carried forward by various offices and partners. They represent actions that are in various stages of completion. Each will need a champion, and each will need a timeline for implementation.

For each recommendation, the team has identified 'first next steps', which vary from project to project. The programmatic 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 organized by type of 'first next steps' contained in the project table are discussed below.

Planning & Engineering

This plan contains immediate action items for city staff and partner organizations to tackle first. Many of these contain a first next 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.

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 municipalitymaintained 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 (HOT/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).

Air, Bike/Ped, Bridge, Maritim, Pipeline, Railway, Roadway, Transit

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.

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 pased 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.

IIJA

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 dixed guideway investmetns, 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.

APPENDICES

A. Documentation of Needs Analysis
B. Documentation of Recommendations Development
C. Citywide Recommendations
D. Public Engagement Documentation
E. Summaries for Each Needs Area

APPENDIX A: DOCUMENTATION OF 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:

4. Score EFs at the census block level.
5. Score INCs at the census block level.
6. Weight investment needs categories by equity factors.
7. Where relevant, push weighted investment needs to network facilities.
8. 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" though "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 study[1] 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

TRIP PRODUCTIONS AND ATTRACTIONS

Source: Replica simulated daily trips

Date: Represents 2021 Q2

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”).

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

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

as the gap between the access provided by the current system and the potential accessibility under a hypothetical ideal 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 to due 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
Transit	Walkability factors*	Walk quality of service can affect transit access/egress	(see above)
	Stop amenities	Transit stops without shelter, pad, or bench for transit service to offer transit times	GRTC on-time performance by route
	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 not 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 circuity 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 circuity, 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 distance[3] between the origin and destination block group centroids and summarize total expected PMT under ideal network conditions. Calculate the trip circuity index as the ratio of total PMT to the total expected PMT. This metric is specifically used in INC 6.

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.

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,

3 https://en.wikipedia.org/wiki/Minkowski_distance

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 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.

Equity Factor 3: Improve neighborhood connectivity and revitalize the fabric of the communities negatively impacted by urban renewal.

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.

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.

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.

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.

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.

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.

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.

Scoring investment needs 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 circuity (see the "Trip circuity" 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: DOCUMENTATION OF RECOMMENDATION 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 XX 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 35. Webmap of all mapped projects

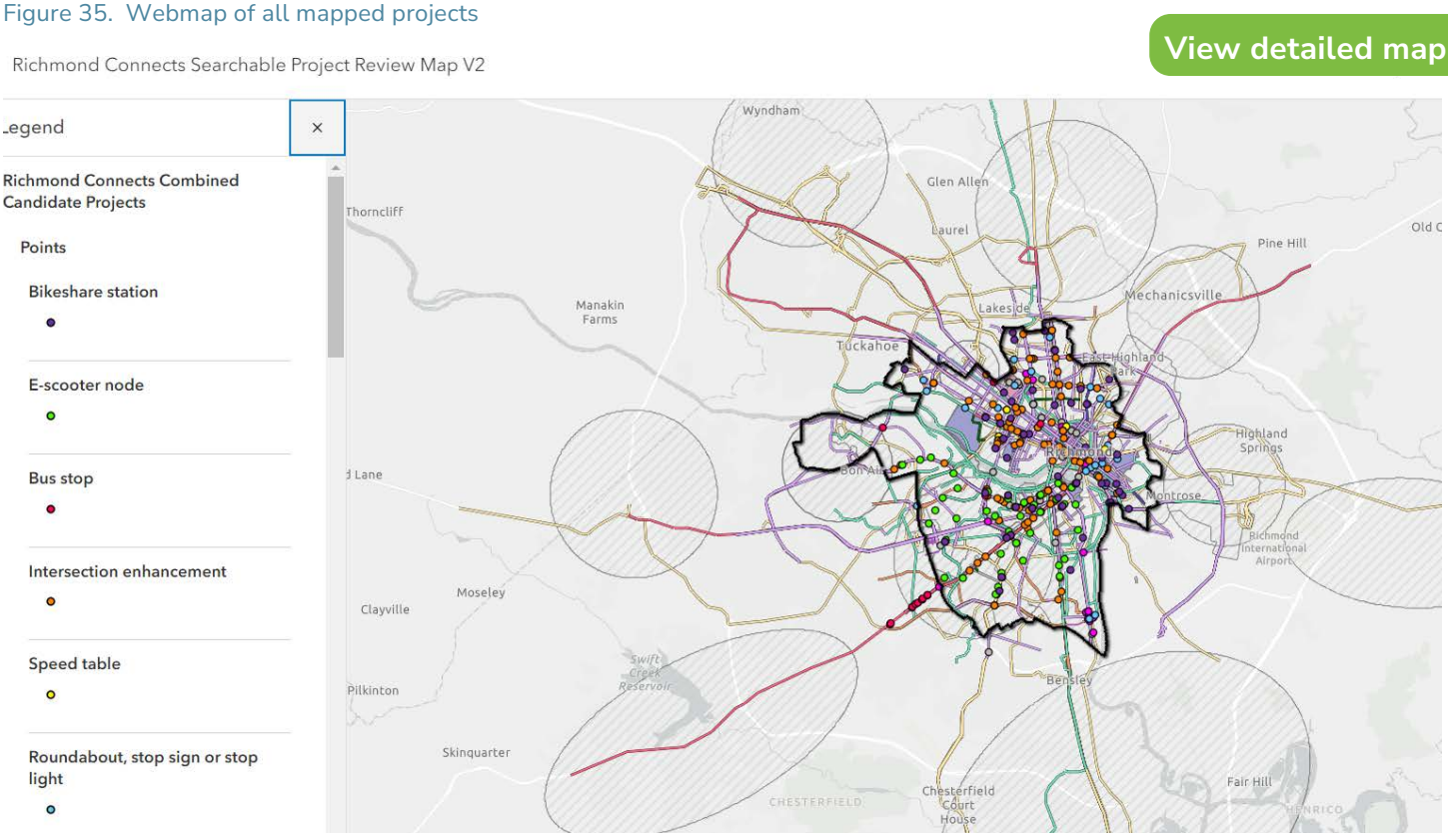


Table 2. List of all plans reviewed by Richmond Connects team to develop existing plan recommendations.

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/Chamberlay Ne Neighborhood P Lan	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
Richmond300	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
CIP	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
Virginia Surface Transportation Plan 2035	VDOT	2010
I-95/I-64 Overlap Study	VDOT	2013
Strategic Highway Safety Plan	VDOT	2017

Plan	Organization	Year
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 xx 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 rehabiliation 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 xx 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 infastructure. 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 xx 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 x projects, whereas Near West End (NA 14) had few Communities of Concern but some high Tier 1 modal needs, so it was given x 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: CITYWIDE RECOMMENDATIONS TABLES

ID	Rank	Project Name	Category	Cost	Support Score	Page
4C	1.01	Richmond Connects Equity-Driven Sidewalks Projects	High Priority Projects	Very High ($$$$)	5.00	180
5B	1.02	Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements	High Priority Projects	Moderate ($$)	5.00	188
1C.3	1.03	Laburnum Avenue Safety Improvements	High Priority Projects	High ($$$)	4.97	190
1C.1	1.04	Chamberlayne Avenue Pedestrian Safety Improvements	High Priority Projects	High ($$$)	4.91	192
1C.2	1.05	Brook Road Traffic Calming and Pedestrian Safety Improvements	High Priority Projects	High ($$$)	4.91	194
12C	1.06	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	High Priority Projects	Very High ($$$$)	4.87	196
10A.2	1.07	Walmsley Boulevard Shared Use Path	High Priority Projects	Very High ($$$$)	4.87	200
10A.3	1.08	Terminal Boulevard Shared Use Path	High Priority Projects	High ($$$)	4.87	202
10A.1	1.09	Bells Road Sidewalks	High Priority Projects	High ($$$)	4.87	198
3A	1.10	North Avenue Pedestrian Safety Improvements	High Priority Projects	Moderate ($$)	4.80	204
12A	1.11	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	High Priority Projects	High ($$$)	4.67	207
6A	1.12	Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming	High Priority Projects	Moderate ($$)	4.60	223
9A	1.13	Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements	High Priority Projects	High ($$$)	4.60	209
1F	1.14	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	High Priority Projects	Individual Stop = Low ($) Overall = Very High ($$$$)	4.56	212
5C	1.15	Fairfield Pedestrian Security and Shade Project	High Priority Projects	Low ($)	4.53	214
6D	1.16	Church Hill Street Lighting	High Priority Projects	Moderate ($$)	4.53	206
4A	1.17	Downtown Safety Spot Improvements	High Priority Projects	Low ($)	4.47	215
7B	1.18	Government Road Streetscape Improvements	High Priority Projects	Very High ($$$$)	4.47	216
7G	1.19	Pulse Bus Rapid Transit Eastern Extension	High Priority Projects	High ($$$)	4.33	218

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 ($$$)	4.27	219
3B	1.21	Dove Street Pedestrian Safety Improvements	High Priority Projects	Moderate ($$)	4.20	221
11F	1.22	Richmond High School of the Arts Pedestrian Safety Improvements	High Priority Projects	Very High ($$$$)	4.20	225
12B.1	1.23	Southside Pedestrian Improvements - Old Warwick Road north of US Route 60	High Priority Projects	Moderate ($$)	4.20	227
12B.2	1.24	Southside Pedestrian Improvements - Old Warwick Road south of US Route 60	High Priority Projects	Moderate ($$)	4.20	229
12B.3	1.25	Southside Pedestrian Improvements - Carnation Street	High Priority Projects	Moderate ($$)	4.20	231
12B.4	1.26	Southside Pedestrian Improvements - German School Road	High Priority Projects	Moderate ($$)	4.20	233
12B.5	1.27	Southside Pedestrian Improvements - Whitehead Road	High Priority Projects	High ($$$)	4.20	235
5A.1	1.28	Coalter Street Traffic Calming	High Priority Projects	Low ($)	4.13	237
7A	1.29	Williamsburg Road/ Williamsburg Avenue Traffic Calming	High Priority Projects	Moderate ($$)	4.13	242
5A.2	1.30	Fairfield Avenue/ Fairfield Way Traffic Calming	High Priority Projects	Low ($)	4.13	239
1A	1.31	Westbrook Avenue Pedestrian Improvements	High Priority Projects	Low ($)	4.07	244
4K	1.32	Richmond Connects Equity-Centered Pavement Maintenance Prioritization	High Priority Projects	Very High ($$$$)	4.07	245
4G	1.33	Reconnect Jackson Ward	High Priority Projects	Very High ($$$$)	4.00	253
13A	1.34	Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy	High Priority Projects	Very High ($$$$)	3.93	254
1E	1.35	North-South Bus Rapid Transit	High Priority Projects	Very High ($$$$)	3.87	256
11A	1.36	Southside Plaza Pedestrian Connections Across Railroad Tracks	High Priority Projects	Very High ($$$$)	3.87	257
17F	1.37	Huguenot Road Bikeway	High Priority Projects	Moderate ($$)	3.30	264
17A	1.38	Forest Hill Avenue Streetscape	High Priority Projects	Moderate ($$)	2.50	262
16A	1.39	Three Chopt Road Sidewalks	High Priority Projects	High ($$$)	2.40	259

ID	Rank	Project Name	Category	Cost	Support Score	Page
9B	2.01	Hull Street Streetscape - Mayo Bridge to 9th Street	Priority Completion Projects	n/a	4.80	266
11C	2.02	Southwood Parkway Sidewalk	Priority Completion Projects	n/a	4.20	266
12F	2.03	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	Priority Completion Projects	n/a	3.73	266
6C	2.04	Shockoe Valley Street Improvements	Priority Completion Projects	n/a	3.73	266
9D	2.05	Mayo Bridge Pedestrian and Bicycle Facilities	Priority Completion Projects	n/a	3.67	
11B	2.06	Hey Road Improvements	Priority Completion Projects	n/a	3.60	267
14H.1	2.07	Franklin Street Cycle Track - Lombardy Street to Belvidere Street	Priority Completion Projects	n/a	3.60	268
15B	2.08	Clay Street Streetscape Improvements	Priority Completion Projects	n/a	3.40	268
6F	2.09	Gillies Creek Greenway	Priority Completion Projects	n/a	3.23	267
5J	2.10	Oliver Hill Way Bike Lanes	Priority Completion Projects	n/a	3.20	266
16D	2.11	Broad Street Streetscape with Pulse BRT Expansion	Priority Completion Projects	n/a	2.80	267
1I	2.12	Fall Line Trail	Priority Completion Projects	n/a	2.64	269
11H	2.13	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	Priority Completion Projects	n/a	2.60	269
3L	2.14	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	Priority Completion Projects	n/a	2.53	269
11I	2.15	James River Branch Trail	Priority Completion Projects	n/a	1.60	269
15C	2.16	Arthur Ashe Boulevard Bridge Replacement	Priority Completion Projects	n/a	1.60	267

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
14G	2.17	Allen Avenue Bike-Walk Street	Priority Completion Projects	n/a	1.20	268
14J	2.18	State Route 161 Bicycle Infrastructure	Priority Completion Projects	n/a	1.20	269
C1	3.01	Cary Street Safety Curb Extensions	Other Completion Projects	n/a	n/a	270
C2	3.02	Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets	Other Completion Projects	n/a	n/a	270
C3	3.03	Hull Street at 29th Street Pedestrian Hybrid Beacon	Other Completion Projects	n/a	n/a	270
C4	3.04	Main Street Safety Curb Extensions	Other Completion Projects	n/a	n/a	270
C5	3.05	Richmond Highway Phase II Improvements	Other Completion Projects	n/a	n/a	270
C6	3.06	Richmond Signal System Phase IV	Other Completion Projects	n/a	n/a	271
C7	3.07	Riverfront/ Orleans BRT Streetscape Improvements	Other Completion Projects	n/a	n/a	271
C8	3.08	Scott's Addition BRT Streetscape Improvements	Other Completion Projects	n/a	n/a	271
C9	3.09	Scott's Addition Green Space	Other Completion Projects	n/a	n/a	271
C10	3.10	Shockoe Bottom BRT Streetscape Improvements	Other Completion Projects	n/a	n/a	271
C11	3.11	Centralized Transit Signal Priority and Emergency Vehicle Preemption	Other Completion Projects	n/a	n/a	272
C12	3.12	Highland Grove/ Dove Street Redevelopment	Other Completion Projects	n/a	n/a	272
C13	3.13	Jefferson Avenue Improvements	Other Completion Projects	n/a	n/a	272
C14	3.14	Laburnum Median Improvements	Other Completion Projects	n/a	n/a	272
C15	3.15	Nicholson Street Streetscape	Other Completion Projects	n/a	n/a	272
C16	3.16	Richmond Fiber Optic Network System	Other Completion Projects	n/a	n/a	273
C17	3.17	Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements	Other Completion Projects	n/a	n/a	273
C18	3.18	Street Lighting - General	Other Completion Projects	n/a	n/a	273
C19	3.19	Street Lighting - LED Conversion	Other Completion Projects	n/a	n/a	273

ID	Rank	Project Name	Category	Cost	Support Score	Page
C20	3.20	Westhampton Area Improvements - Phase III	Other Completion Projects	n/a	n/a	273
C21	3.21	Deepwater Terminal Road Connector to Goodes Street	Other Completion Projects	n/a	n/a	274
C22	3.22	Hull Street Improvements Phase I - Hey Road to Warwick Road	Other Completion Projects	n/a	n/a	274
C23	3.23	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	Other Completion Projects	n/a	n/a	274
C24	3.24	Maury Street Streetscape	Other Completion Projects	n/a	n/a	274
C25	3.25	Richmond Highway Improvements	Other Completion Projects	n/a	n/a	274
C26	3.26	Route 5 Relocation/Williamsburg Road Intersection Improvement	Other Completion Projects	n/a	n/a	274
C27	3.27	Science Museum BRT Shared Use Path	Other Completion Projects	n/a	n/a	274
C28	3.28	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	Other Completion Projects	n/a	n/a	275
C29	3.29	Cherokee Road Roadside Safety Improvements	Other Completion Projects	n/a	n/a	275
C31	3.30	Belvidere Street Gateway - Phase IV	Other Completion Projects	n/a	n/a	275
C32	3.31	Biotech Research Park Roadway Improvements	Other Completion Projects	n/a	n/a	275
C33	3.32	Mary Munford Elementary School Pedestrian Safety Improvements	Other Completion Projects	n/a	n/a	275
G1	3.33	Western Pulse Extension	Other Completion Projects	n/a	n/a	275
G2	3.34	GRTC Dedicated Lanes Study	Other Completion Projects	n/a	n/a	276
G3	3.35	Downtown Transfer Center	Other Completion Projects	n/a	n/a	276
8A	4.01	Dock Street Pedestrian Improvements	Shorter Term/ First Steps	Moderate ($$)	3.60	277
14H.2	4.02	Monument Avenue Bike Lanes	Shorter Term/ First Steps	Moderate ($$)	3.60	279
16B	4.03	York Road Sidewalks	Shorter Term/ First Steps	Low ($)	3.60	280
16E	4.04	Willow Lawn Park-and-Ride	Shorter Term/ First Steps	Moderate ($$)	3.60	279
12H	4.05	GRTC Route 1A (Midlothian Turnpike) Improvements	Shorter Term/ First Steps	Moderate ($$)	3.53	278
5E	4.06	Mechanicsville Turnpike Bus Route	Shorter Term/ First Steps	Moderate ($$)	3.40	280

ID	Rank	Project Name	Category	Cost	Support Score	Page
10J	4.07	Richmond Highway Transit Improvements	Shorter Term/ First Steps	Moderate ($$)	3.40	278
14C	4.08	Study and Demo Car-Free Shopping Corridors	Shorter Term/ First Steps	Low ($)	3.40	277
1J	4.09	Brook Road Bike Lanes Protection	Shorter Term/ First Steps	Low ($)	3.40	278
1G	4.10	GRTC Route 14 Increased Frequency	Shorter Term/ First Steps	Moderate ($$)	3.37	278
2E	4.11	Link: On-Demand Microtransit	Shorter Term/ First Steps	Moderate ($$)	3.08	279
11D	5.01	Southside Plaza Street Grid	Longer Term	Very High ($$$$)	3.73	281
4F	5.02	Scott's Addition to Shockoe Shared Use Path	Longer Term	Low/Moderate ($/$$)	3.67	281
11J	5.03	Southside Plaza Transfer Center	Longer Term	Moderate ($$)	3.67	281
1B	5.04	Azalea Avenue Streetscape Improvements	Longer Term	Low/Moderate ($/$$)	3.60	281
12D	5.05	Route 60/Route 150 Interchange Improvements	Longer Term	n/a	3.60	281
8C	5.06	East Main Street Streetscape Improvements	Longer Term	Moderate ($$)	3.47	281
7C	5.07	Old Fulton Street Grid	Longer Term	Very High ($$$$)	3.40	281
10B	5.08	Richmond Highway Great Street Transformation	Longer Term	High ($$$)	3.40	281
12L	5.09	Midlothian Area Revitalization	Longer Term	n/a	3.40	281
3K	5.10	Brookland Park Boulevard Bikeway	Longer Term	Low/Moderate ($/$$)	3.33	281
10C	5.11	Richmond Highway Pedestrian Safety Improvements	Longer Term	High ($$$)	3.33	282
10M	5.12	Richmond Highway Revitalization	Longer Term	n/a	3.33	282
1H	5.13	Ridesharing Vouchers	Longer Term	n/a	3.20	282
3N	5.14	Northside Bikeshare Stations	Longer Term	Low ($)	3.13	282
13G	5.15	Bliley Road Sidewalk and Bike Lanes	Longer Term	Moderate ($$)	3.13	282
2C	5.16	Roundabout at Hermitage Rd/ Arthur Ashe Blvd/ Westwood Ave/ Brookland Pkwy	Longer Term	High ($$$)	3.07	282
4L	5.17	Downtown/Shockoe Parking Recommendations	Longer Term	Moderate ($$)	3.00	282
15H	5.18	Scott's Addition Parking Recommendations	Longer Term	Moderate ($$)	3.00	282
15I	5.19	Leigh Street Bike Lanes - Dinneen St to 8th St	Longer Term	Moderate ($$)	3.00	282

ID	Rank	Project Name	Category	Cost	Support Score	Page
15J	5.20	Lombardy Street Protected Bike Lanes	Longer Term	Low ($)	3.00	282
5I	5.21	Hospital Street/ Bowling Green Road/ Wood Street Bikeway	Longer Term	High ($$$)	2.93	282
7I	5.22	Rockett's Landing to Fulton Bike Connection	Longer Term	Moderate ($$)	2.93	282
9F	5.23	Riverside Shared-Use Path	Longer Term	Very High ($$$$)	2.90	283
1K	5.24	Hermitage Road Buffered Bike Lanes	Longer Term	Low ($)	2.87	283
10N	5.25	Greenspace/Park near Richmond Highway	Longer Term	n/a	2.87	283
14D	5.26	Carytown Parking Recommendations	Longer Term	Moderate ($$)	2.80	283
4B	5.27	Main Street/Cary Street Two-Way Street Conversion	Longer Term	High ($$$)	2.77	283
4M	5.28	1st Street Cycle Track	Longer Term	n/a	2.73	283
5H	5.29	Valley Road Shared Use Path	Longer Term	Moderate/High ($$/$$$)	2.73	283
9M	5.30	Bainbridge Street/Forest Hill Avenue Bike Lanes	Longer Term	Low/Moderate ($/$$)	2.73	283
3J	5.31	Magnolia Street Bikeway	Longer Term	Low/Moderate ($/$$)	2.67	283
7J	5.32	Admiral Gravely Blvd/Jennie Scher Road Bikeway	Longer Term	Moderate/High ($$/$$$)	2.60	283
14A	5.33	Stuart Circle Roundabout Improvement	Longer Term	Moderate ($$)	2.60	283
6J	5.34	Church Hill Bikeway Connection	Longer Term	Low/Moderate ($/$$)	2.53	283
12E	5.35	Reedy Creek & Pocosham Creek Greenways	Longer Term	n/a	2.47	283
12K	5.36	Southside Community Center Bikeshare Station	Longer Term	Low ($)	2.47	283
6K	5.37	Venable/Mosby Bikeshare Station	Longer Term	Low ($)	2.40	284
15D	5.38	Scott's Addition/Boulevard Shared-Use Path	Longer Term	High ($$$)	2.40	284
3H	5.39	Overbrook Road Bikeway	Longer Term	Moderate ($$)	2.33	284
12J	5.40	Whitehead Road Bikeway	Longer Term	Moderate/High ($$/$$$)	2.33	284
13I	5.41	Forest Hill Avenue Bikeway	Longer Term	High ($$$)	2.20	284
14F	5.42	Randolph Connection Over I-195	Longer Term	Low ($) to Very High ($$$$)	2.20	284
3M	5.43	Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd	Longer Term	Low ($)	2.13	284
8G	5.44	East End Bikeshare Stations	Longer Term	Low ($)	2.13	284
10F	5.45	Walmsley Boulevard Street Connection	Longer Term	High ($$$)	2.13	284

ID	Rank	Project Name	Category	Cost	Support Score	Page
11N	5.46	Broad Rock Boulevard/Iron Bridge Road Protected Bikeway	Longer Term	High ($$$)	2.13	284
10H	5.47	Commerce Road Improvements at Walmsley Boulevard	Longer Term	High ($$$)	2.07	284
11G	5.48	East Belt Boulevard Improvements	Longer Term	Moderate/High ($$/$$$)	2.00	284
14K	5.49	Near West End Bikeshare Stations	Longer Term	Low ($)	2.00	284
3I	5.50	Fendall Ave/ N 1st St Bikeway	Longer Term	Low/Moderate ($/$$)	1.80	285
4D	5.51	Baker Street Pedestrian/Bike Only Street	Longer Term	Moderate ($$)	1.80	285
4H	5.52	Reconnect Clay and 6th Streets	Longer Term	Very High ($$$$)	1.80	285
9L	5.53	Maury Street Bikeway	Longer Term	Very High ($$$$)	1.80	285
14I	5.54	Mulberry Street Bikeway	Longer Term	Moderate ($$)	1.80	285
16C	5.55	Three Chopt Road/York Road/ Henri Road Roundabout	Longer Term	Moderate/High ($$/$$$)	1.70	285
9N	5.56	West 29th Street Bikeway	Longer Term	Moderate ($$)	1.67	285
17B	5.57	Powhite Greenway	Longer Term	High ($$$)	1.60	285
17C	5.58	Norfolk Southern Shared Use Path	Longer Term	High ($$$)	1.60	285
17G	5.59	Cherokee Road Bikeway	Longer Term	Very High ($$$$)	1.60	285
10L	5.60	Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	Longer Term	Moderate ($$)	1.53	285
13J	5.61	Prince Arthur Road Bikeway Connection	Longer Term	Low/Moderate ($/$$)	1.50	285
11O	5.62	Terminal Avenue Bike Lanes - Broad Rock Blvd to Belt Blvd	Longer Term	High ($$$)	1.40	285
11P	5.63	Bikeways on Bryce Lane and Snead Road	Longer Term	High ($$$)	1.00	285
15E	5.64	Norfolk Street Bridge	Longer Term	Very High ($$$$)	1.00	285
15F	5.65	MacTavish Avenue Bridge	Longer Term	Very High ($$$$)	0.80	285

PRIORITIZE WHAT THE PEOPLE NEED - PRIORITY PROJECTS

4C: Richmond Connects Equity-Driven Sidewalks Projects

Support Score: 5.0 Cost: Very High ($$$$)

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?
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. 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. 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).	"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 heat-reflective/light colored materials in high heat areas, and permeable materials in high flood areas. Projects for pursuing first include: - 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 These projects are listed separately in the Priority Sidewalk Gap Projects and Priority Sdiewalk Repair Projects tables, but they are not a comprehensive list of all sidewalk projects within Tier 1 equity-weighted need areas. "	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 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. This could be accomplished by: - 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 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 and Extents	Approximate length of sidewalk	Right-of-Way Considerations	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

4C: Priority Sidewalk Gap Projects

Figure 36. Map of Fulton Sidewalk Gap Projects

4C: Priority Sidewalk Gap Projects

Map ID	Project Locations and Extents	Approximate length of sidewalk	Right-of-Way Considerations	Ballpark Cost
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	See notes	$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 Blvd	3,300	Major	$4,986,000
27	Bliley Rd from Whitlone Dr to Old Willow Ct	2,416	Minimal	

4C: Priority Sidewalk Gap Projects

Figure 37. Map of Southside Sidewalk Gap Projects

4C: Priority Sidewalk Repair Projects

Map ID	Project Locations and Extents	Approximate length of sidewalk	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 Blvd 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 Blvd	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 Blvd	1,000	13-15	$109,000
22	Brookland Park Blvd from Hawthorne Ave to Moss Side Ave	1,200	8-16	$118,000

4C: Priority Sidewalk Repair Projects

Map ID	Project Locations and Extents	Approximate length of sidewalk	Sidewalk Condition Score(s)	Ballpark Cost
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

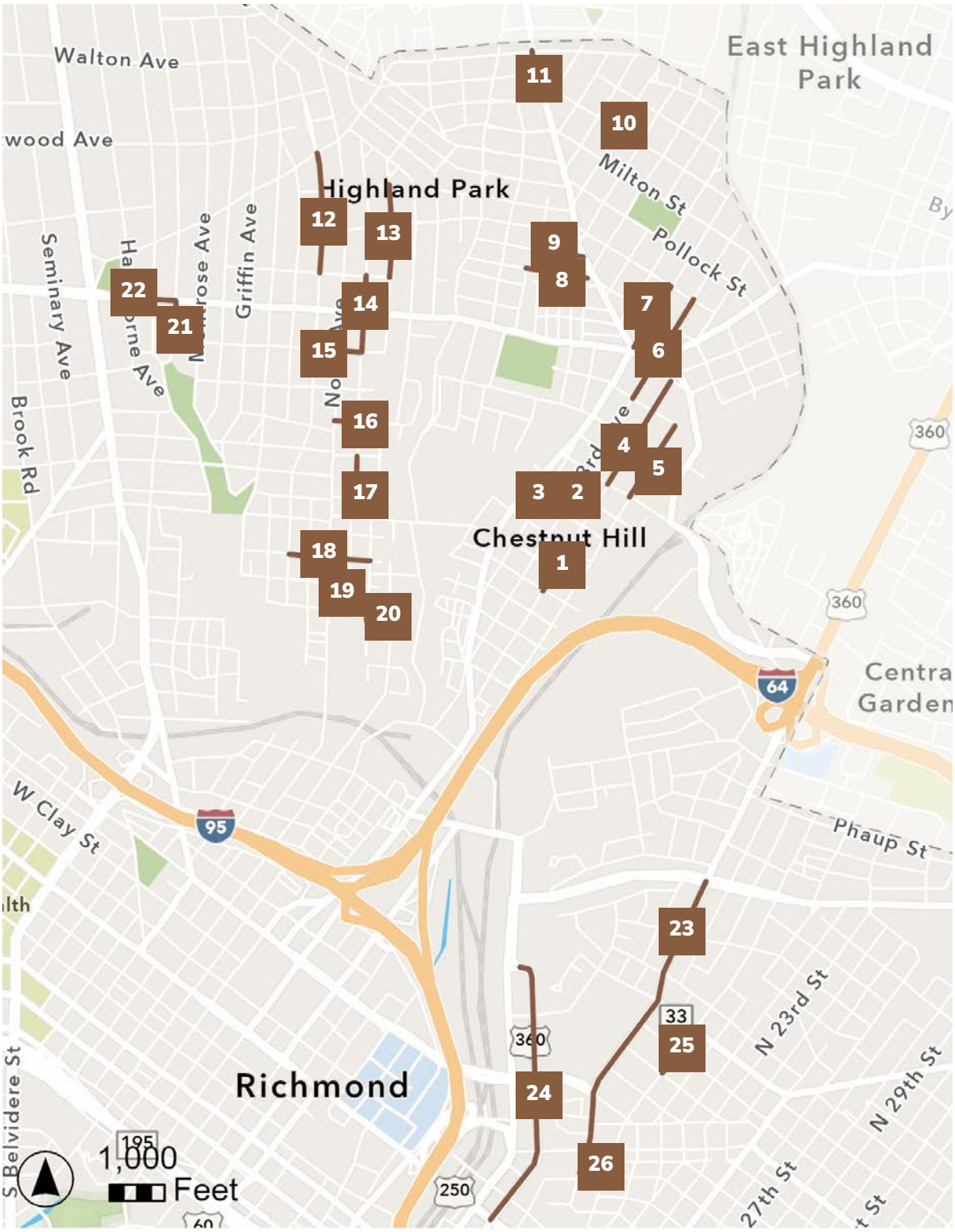


Figure 38. Map of East End & Highland Park Sidewalk Repair Projects

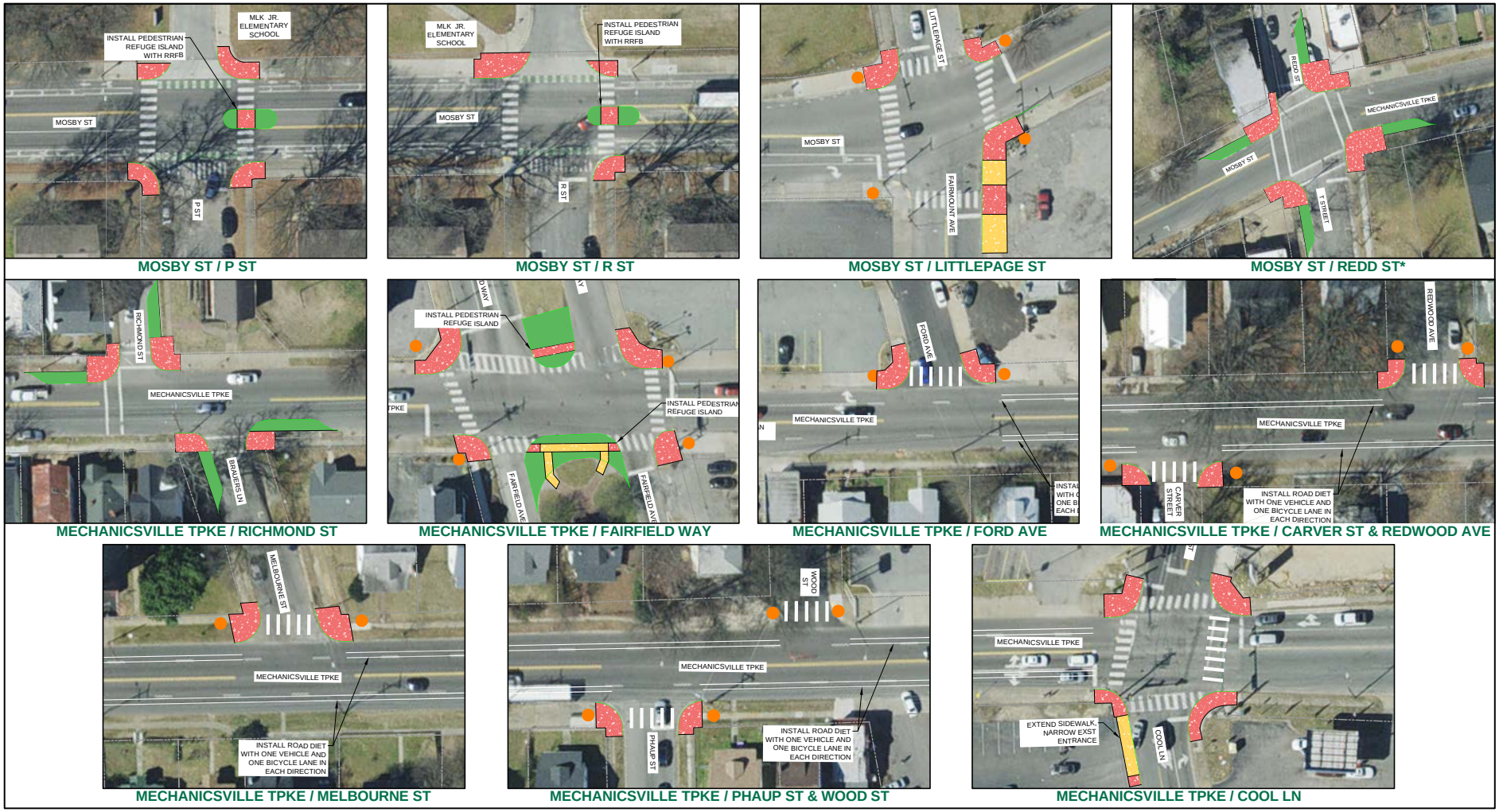
5B: Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements

Support Score: 5 Cost: Moderate ($$)

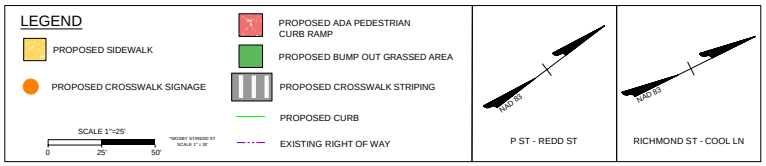
What is the Need? Why is this Project a Priority to make transportation more equitable?	What should be done?	What are the first Action Steps?
Communities of Concern consistently said **crossing the street feels unsafe on Mosby Street and Mechanicsville Turnpike**. This was a top public comment in the East End. 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. This recommendation will improve infrastructure in **previously redlined areas** (EF1), slow traffic in areas with **equity needs related to bike/pedestrian safety** (EF5), 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).	Various potential improvements may be considered at 11 intersections on Mosby Street/ Mechanicsville Turnpike, including: - 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. Not all improvements will be installed at all 11 intersections. Improvements could also include: - 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 These improvements will be vetted with the community to determine which improvements get implemented.	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. *LQC option: Crosswalk improvement*

5B: Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements

Support Score: 5 Cost: Moderate ($$)



MOSBY ST / MECHANICSVILLE TPKE (P ST TO COOL LN)



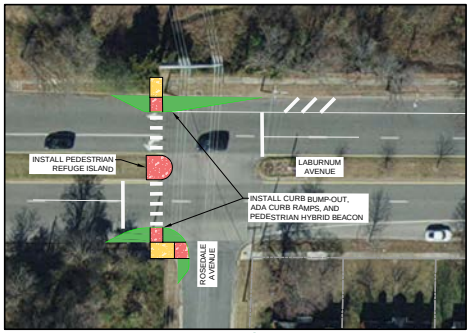
1C.3: Laburnum Avenue Safety Improvements

Support Score: 4.9 Cost: High ($$$)

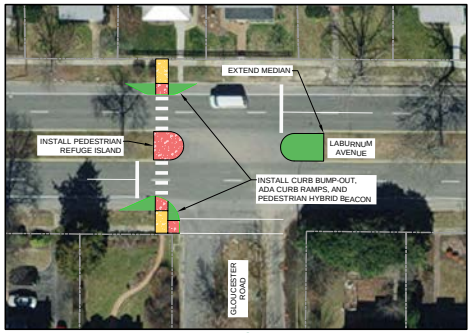
What is the Need? Why is this Project a Priority to make transportation more equitable?	What should be done?	What are the first Action Steps?
Communities of Concern consistently said **speeding on Laburnum Avenue is a problem**, and **the intersection of Laburnum Avenue and Hermitage Road feels unsafe**. These were identified as Super Needs. The data-driven needs analysis identified **Tier 1 equity-based Pedestrian and Safety/Security 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. This recommendation would improve infrastructure in **previously redlined areas** (EF1) and improve walkability in areas with equity needs related to **car-centric planning** (EF4), **bike/ pedestrian safety** (EF5), and **disparate climate impacts** (EF8).	Improvements to slow vehicle speeds and improve pedestrian safety crossings could include installing pedestrian hybrid beacons and curb extensions at several intersections along Laburnum Avenue. These intersections could include: - Laburnum Avenue at Montrose Avenue - Laburnum Avenue at Noble Avenue - Laburnum Avenue at Seminary Avenue - Laburnum Avenue at Rosedale Avenue *A pedestrian hybrid beacon already exists at the intersection of Laburnum Avenue and Monticello Street.* Pedestrian median refuge islands could also be installed at the intersections of Laburnum Avenue at Montrose Avenue, and Laburnum Avenue at Noble Avenue. 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: - Laburnum Avenue at Brook Road - Laburnum Avenue at Chamberlayne Avenue - Laburnum Avenue at North Avenue. *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.* These improvements will be vetted with the community to determine which improvements get implemented.	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. *LQC options: Crosswalk improvements, traffic calming*

1C.3: Laburnum Avenue Safety Improvements

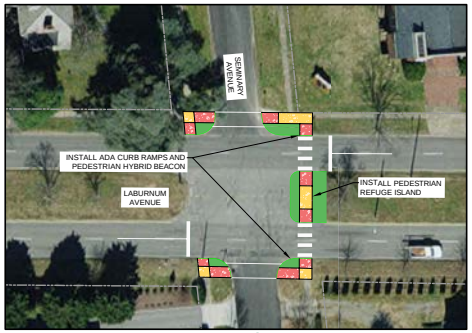
Support Score: 4.9 Cost: High ($$$)



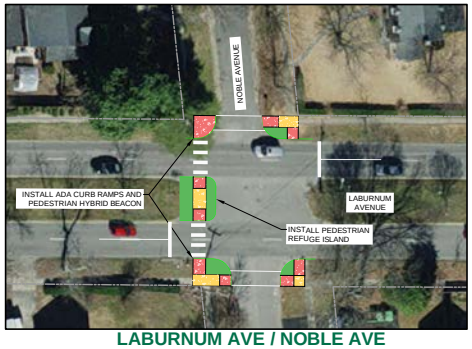
LABURNUM AVE / ROSEDALE AVE



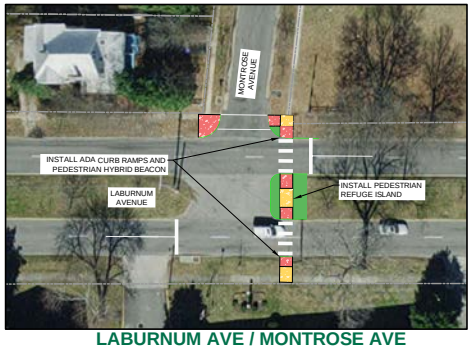
LABURNUM AVE / GLOUCESTER RD



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

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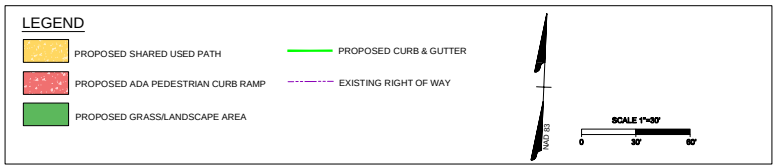
RICHMOND CONNECTS



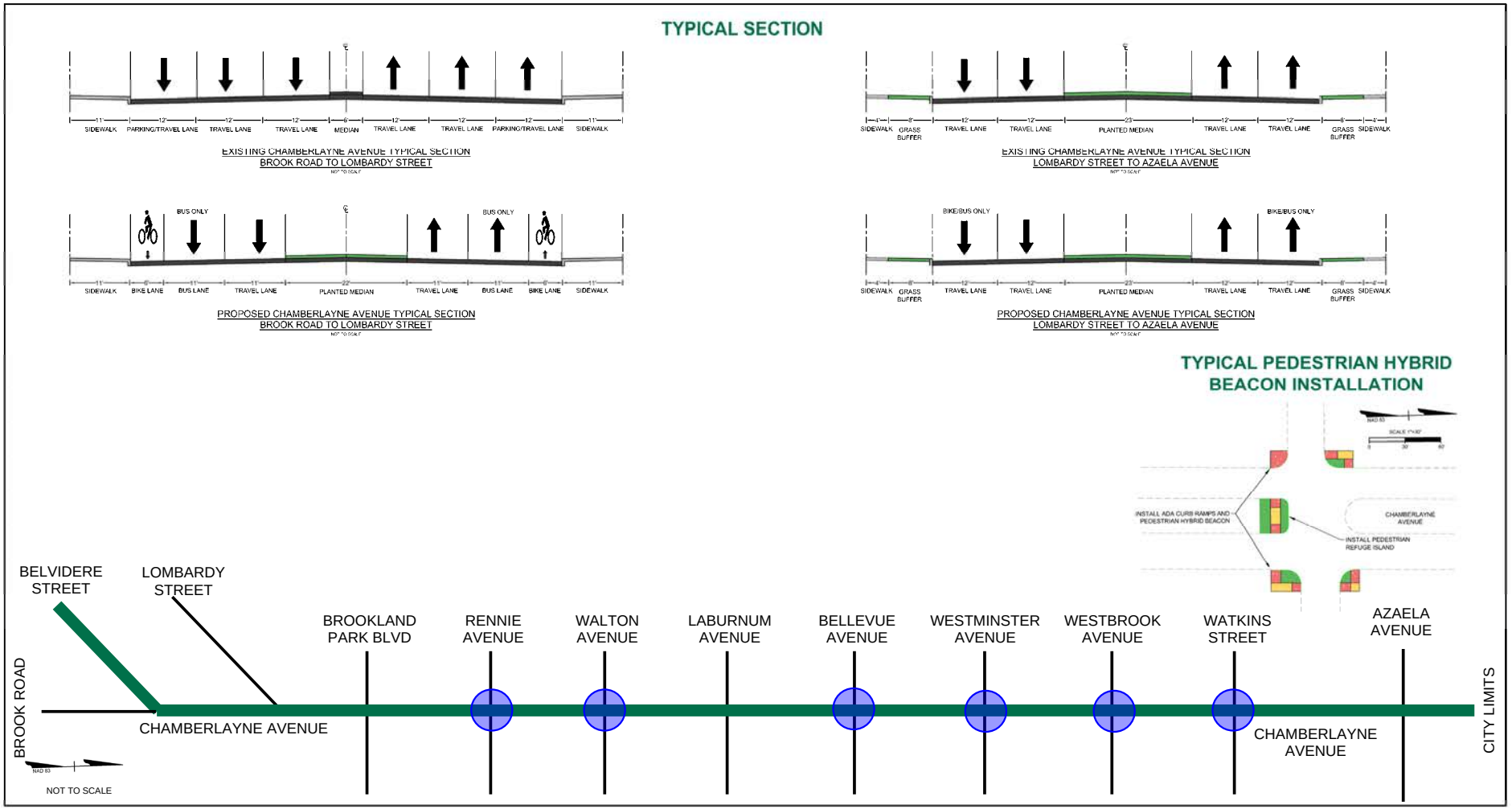
1C.1: Chamberlayne Avenue Pedestrian Safety Improvements

Support Score: 4.9 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 Action Steps?
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. 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. This recommendation will improve infrastructure in **previously redlined areas** (EF1) and improve walkability in areas with equity needs related to **car-centric planning** (EF4), **bike/pedestrian safety** (EF5), and **disparate climate impacts** (EF8).	Improvements are already in various phases of implementation at many intersections along Chamberlayne Avenue. These include: - 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 Blvd - Streetlight LED conversions south of Brookland Park Blvd Consider seeking an additional pedestrian hybrid beacons at Westbrook Avenue for access to Henderson Middle School and at North Avenue. 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. Implementation of these improvements should involve conversations with the community to make sure they are adequately addressing the identified needs. 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.	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. *LQC options: Crosswalk improvements, traffic calming, roadway conversion demonstration*

1C.1: Chamberlayne Avenue Pedestrian Safety Improvements

Support Score: 4.9 Cost: High ($$$)



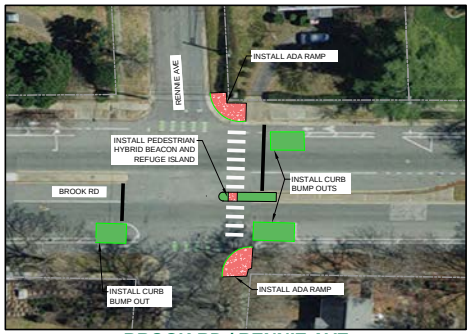
1C.2: Brook Road Traffic Calming and Pedestrian Safety Improvements

Support Score: 4.9 Cost: High ($$$)

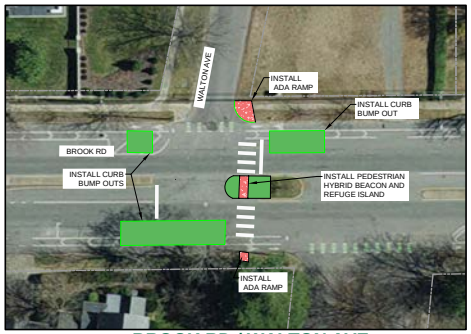
What is the Need? Why is this Project a Priority to make transportation more equitable?	What should be done?	What are the first Action Steps?
Communities of Concern consistently said **speeding along Brook Road is an issue**. This was identified as a Super Need. This recommendation will improve infrastructure in **previously redlined areas** (EF1) and improve walkability in areas with equity needs related to **car-centric planning** (EF4), **bike/ pedestrian safety** (EF5), and **disparate climate impacts** (EF8).	Potential improvements may include: - 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 These improvements will need to be studied for feasibility, and will be vetted with the community to determine which improvements get implemented. 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.	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. *LQC options: Crosswalk improvements, traffic calming*

1C.2: Brook Road Traffic Calming and Pedestrian Safety Improvements

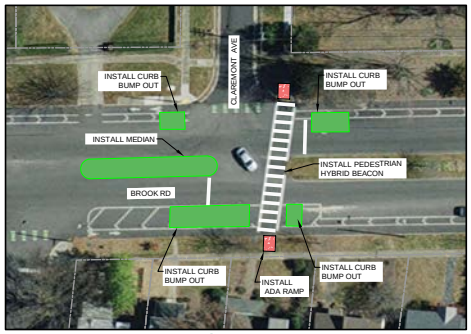
Support Score: 4.9 Cost: High ($$$)



BROOK RD / RENNIE AVE

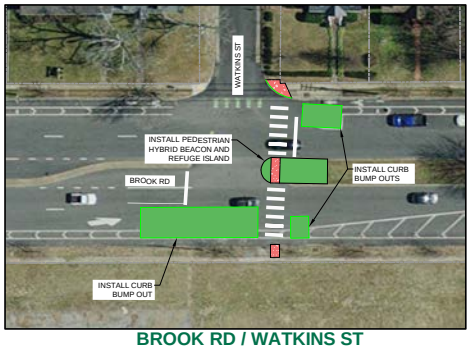


BROOK RD / WALTON AVE



BROOK RD / CLAREMONT AVE

BROOK RD / WESTMINSTER AVE



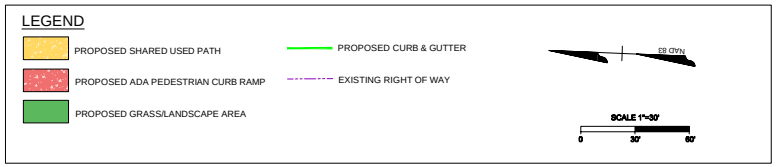
BROOK RD / WATKINS ST

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



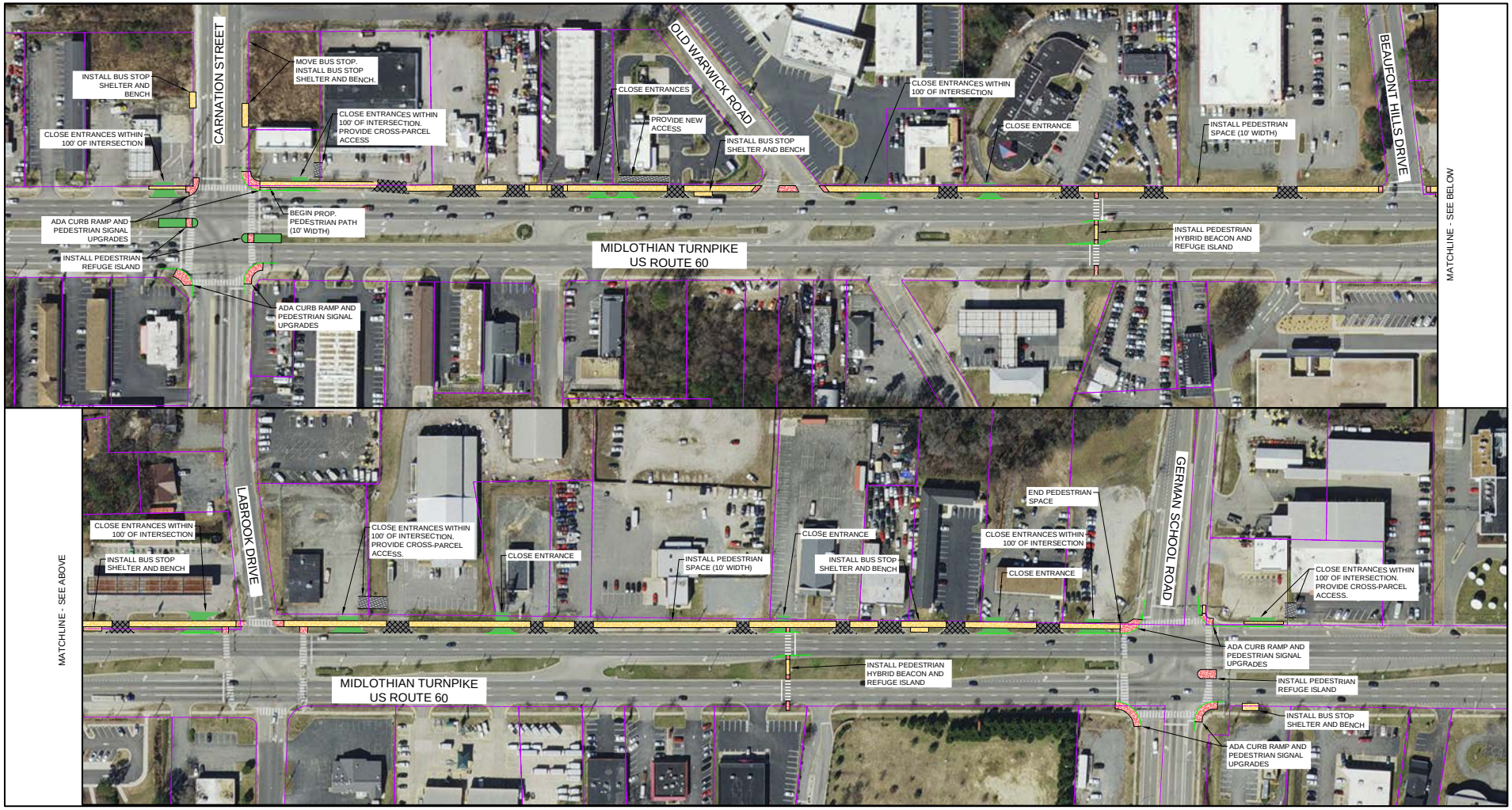
12C: Midlothian Turnpike Safety Improvements - German School Road to Carnation Street

Support Score: 4.8 Cost: Very High ($$$$)

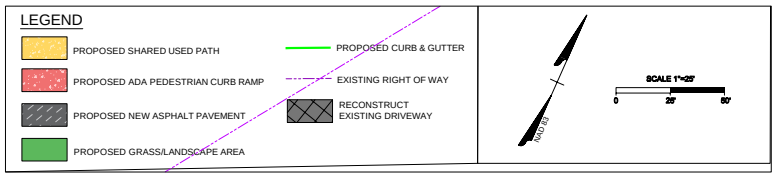
What is the Need? Why is this Project a Priority to make transportation more equitable?	What should be done?	What are the first Action Steps?
Although sidewalks and crosswalks at signalized intersections were installed along Midlothian Turnpike in 2011, Communities of Concern consistently said **pedestrian crossings on Midlothian Turnpike feel unsafe**. 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. This recommendation will add infrastructure and connect previously redlined communities/ separated communities (EF1, EF4, EF9). Improves pedestrian safety and reduces need for car ownernship (EF5, EF6).	Potential improvements for pedestrian crossings on Midlothian Turnpike may include: - 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. 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. 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.	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. *LQC option: Roadway conversion demonstration*

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



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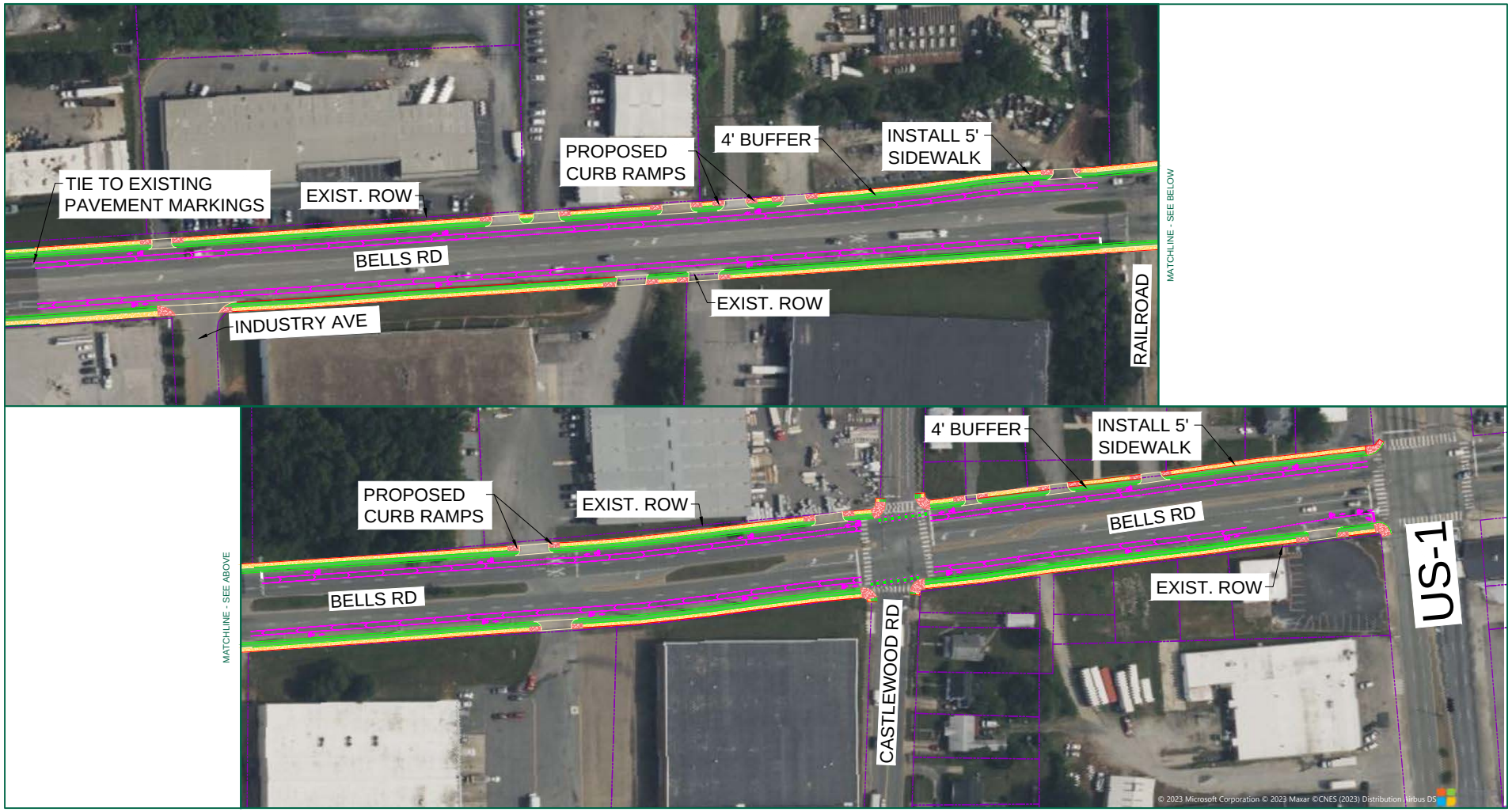
10A.1: Bells Road Sidewalks

Support Score: 4.8 Cost: High ($$$)

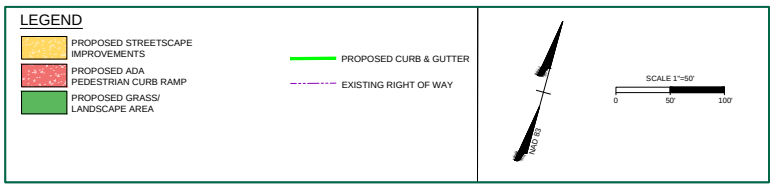
What is the Need? Why is this Project a Priority to make transportation more equitable?	What should be done?	What are the first Action Steps?
Communities of concern consistently said **missing sidewalks and speeding on Bells Road** are important issues that need to be addressed. These were identified as Super Needs. 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 Rd, Walmsley Blvd, and Terminal Ave was a **highly supported recommendation** in the survey on draft recommendations among Communities of Concern and the general public. 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).	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. Potential improvements include: - 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 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.	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



10A.2: Walmsley Boulevard Shared Use Path

Support Score: 4.8 Cost: Very High ($$$$)

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?
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. The data-based analysis revealed **Tier 1 equity-based pedestrian and bicycle needs** on Walmsley Boulevard. Pedestrian improvements on Bells Rd, Walmsley Blvd, and Terminal Ave was a **highly supported recommendation** in the survey on draft recommendations among Communities of Concern and the general public. 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).	Potential improvements to Walmsley Boulevard from Richmond Highway to Hopkins Road include: - constructing a shared use path for pedestrians and bicyclists on the north side of Walmsley Blvd - installing marked crosswalks aross Walmsley Blvd, potentially with rectangular rapid flashing beacons at bus stop locations 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.	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

CITY OF RICHMOND ESTABLISHED 1737

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10A.3: Terminal Boulevard Shared Use Path

Support Score: 4.8 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 Action Steps?
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. Pedestrian improvements on Bells Rd, Walmsley Blvd, and Terminal Ave was a highly supported recommendation in the survey on draft recommendations among Communities of Concern and the general public. 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).	Sidewalk was recently installed on the south side of Terminal Avenue. There is a ~200-ft gap in the sidewalk across the railroad track. This recommendation includes: - 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 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.	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

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LEGEND
PROPOSED STREETSCAPE IMPROVEMENTS
PROPOSED ADA PEDESTRIAN CURB RAMP
PROPOSED GRASS/ LANDSCAPE AREA
PROPOSED CURB & GUTTER
EXISTING RIGHT OF WAY
SCALE 1"=50'

3A: North Avenue Pedestrian Safety Improvements

Support Score: 4.8 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 Action Steps?
Communities of Concern consistently said **crossing North Avenue feels unsafe**, especially at Brookland Park Boulevard. This was identified as a Super Need. The data analysis revealed a Tier 1 **equity-based pedestrian need** on North Avenue between Laburnum Avenue and Chamberlayne Avenue. 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. 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).	Potential improvements along North Avenue include: - 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 Blvd 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. 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.	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. *LQC Options: Traffic calming, introduce pedestrian scramble signal phase which would allow all pedstrians to cross at once without any conflicting car traffic and without lane modifications, demostration test of turn lane closures*

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'

6D: Church Hill Street Lighting

Support Score: 4.6 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 Action Steps?
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. This recommendation invests in infrastructure in a **previously redlined area** (EF1), with **bike/ pedestrian safety equity needs** (EF6).	Install pedestrian-scaled aesthetically-pleasing lighting in areas with high equity-based transportation safety/security needs.	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.

12A: Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road

Support Score: 4.6 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 Action Steps?
The data analysis revealed Tier 1 **equity-based Pedestrian needs along Jahnke Rd**. 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**. 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. This recommendation will add connections for **inner ring suburbs** (EF4), improve **pedestrian safety**, and **reduce need for car ownership** (EF5, EF6).	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. 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. Potential improvements include: - 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 Rd and German School Rd to provide direct pedestrian crossing. - Installing a new crosswalk with pedestrian hybrid beacon at bus stop between Westover Gardens Blvd and Hioaks Rd to provide direct pedestrian crossing. - Improved crossing facilities with ADA curb ramps and pedestrian push-buttons at Westover Gardens Blvd. 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.	1. Examine feasibility and identify benefits and drawbacks of the potential improvements. 2. Share drawings of the potential improvemaents and study findings with the community. Work with the community to finalize the improvements. 3. Prepare the engineering design plans. Identify and allocate funding. *LQC Option: Crosswalk improvements*

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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

LEGEND
- PROPOSED SIDEWALK
- PROPOSED ADA PEDESTRIAN CURB RAMP
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED INTERSECTION IMPROVEMENTS
- EXISTING RIGHT OF WAY
- EXISTING BUS STOP

SCALE 1"=75'

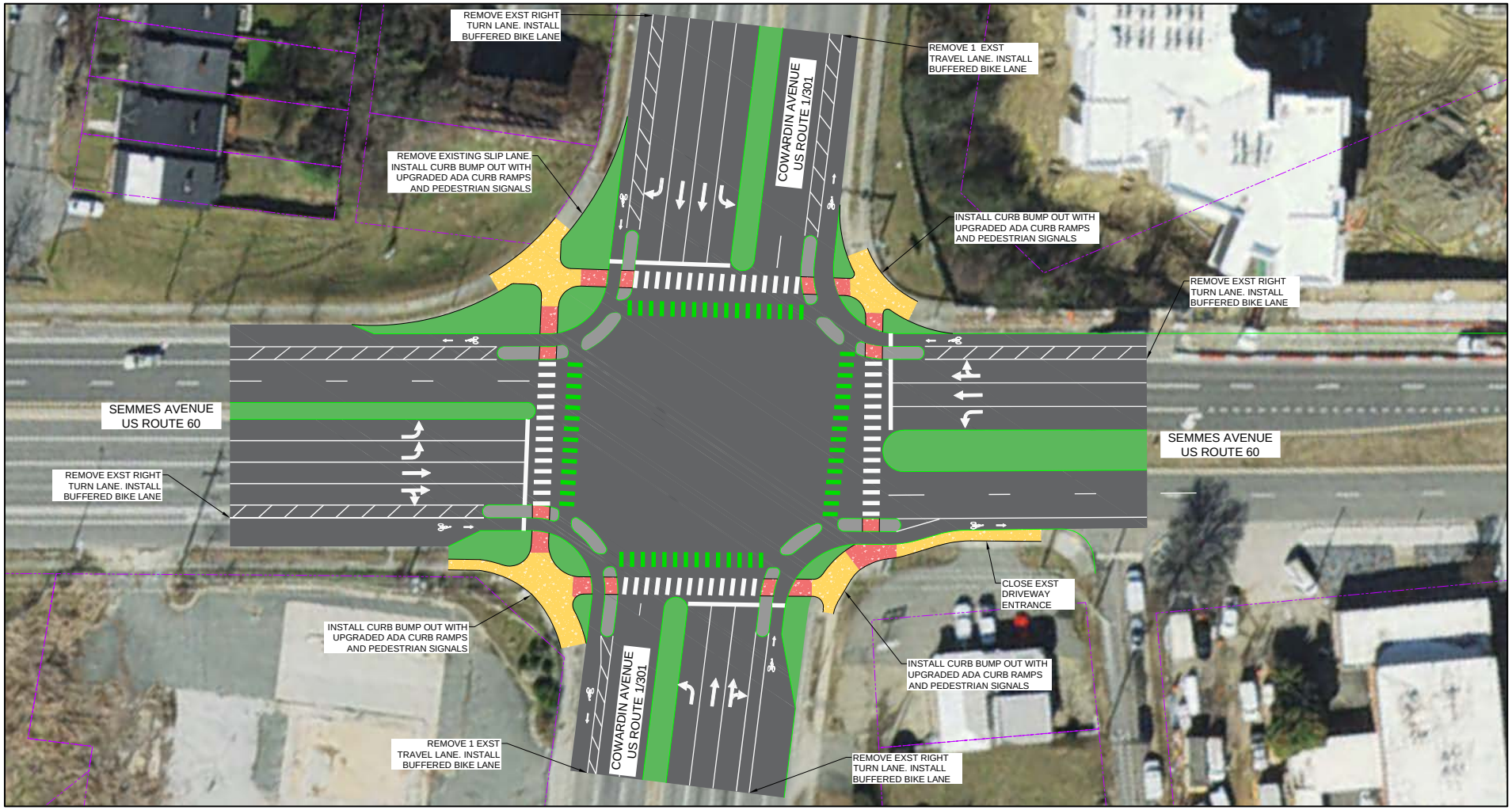
9A: Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements

Support Score: 4.6 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 Action Steps?
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. 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. This recommendation will **improve walkability** in an area with high equity needs related to pedestrian safety (EF6).	Potential improvements could include: - 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. 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.	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. *LQC Options: Crosswalk improvements, traffic calming*

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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

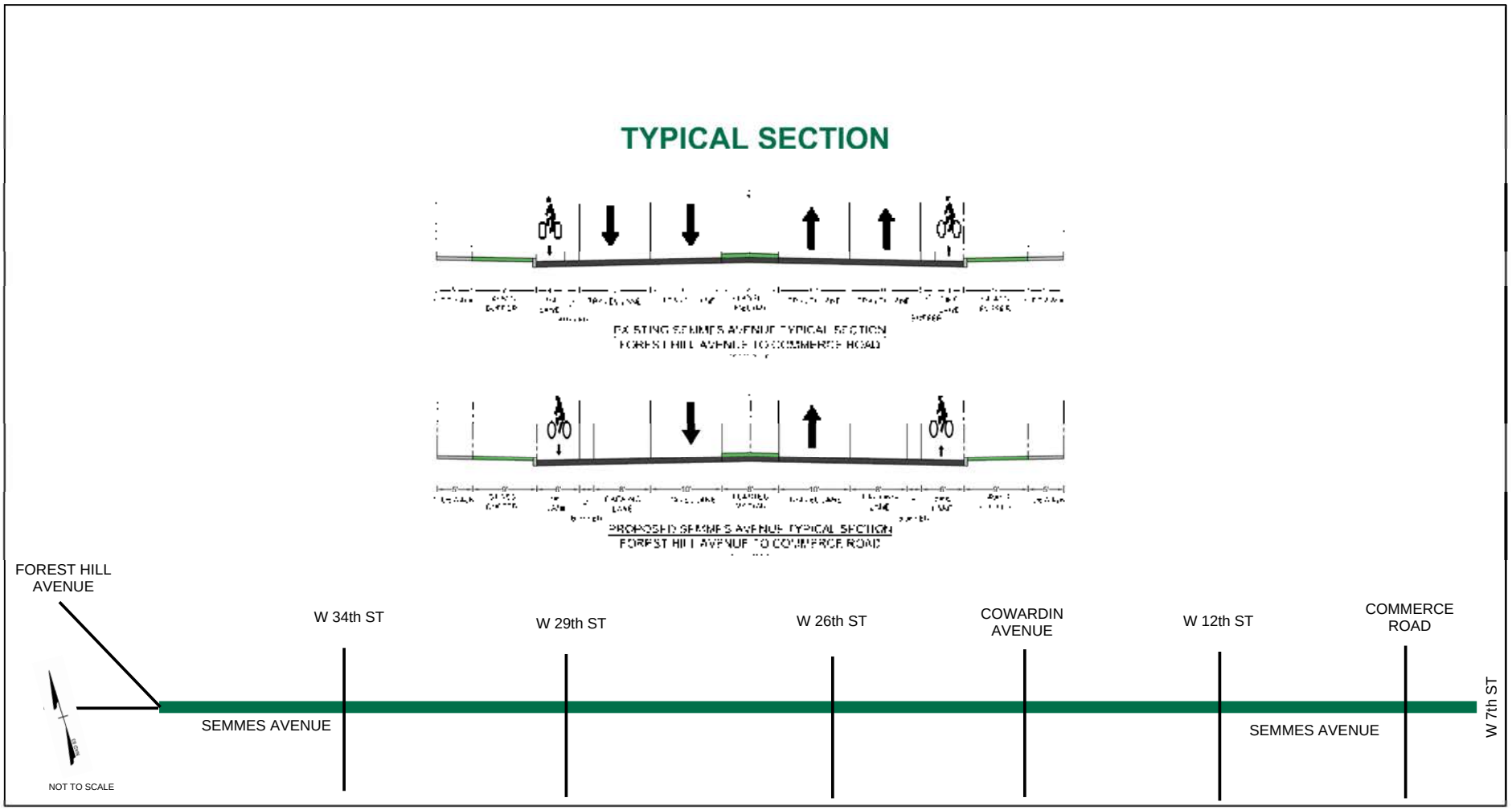
RICHMOND CONNECTS

LEGEND
- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=20'
0 20' 40'

9A: Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements

Support Score: 4.6 Cost: High ($$$)



1F: Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops

Support Score: 4.5 Cost: Very High ($$$$)

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?
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.	Work with GRTC to install shelters, seating, trash cans, and other items at bus stops, prioritizing bus stops with high equity-based needs first. 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.	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, inlcuding 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.

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.

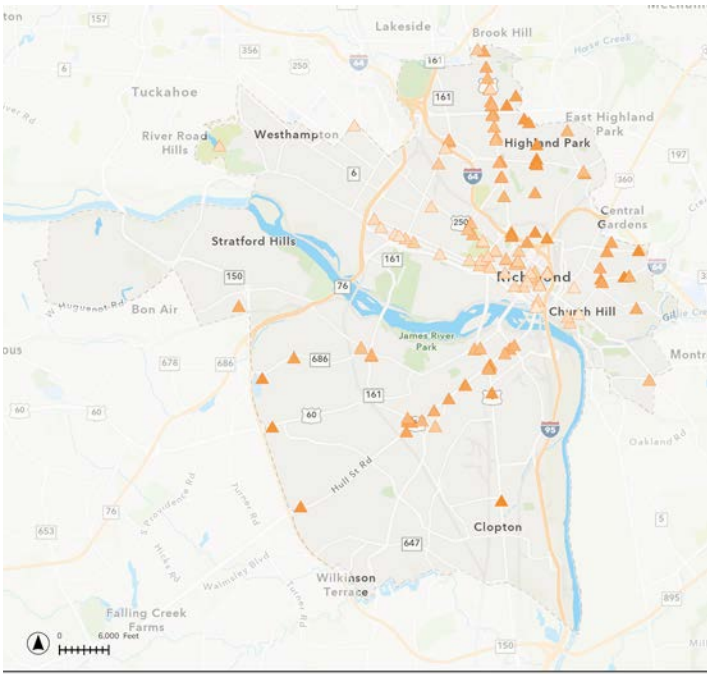


Figure 39. Shelter-eligible bus stops in the City of Richmond that do not already have a shelter, symbolized by Richmond Connects Bus Stop Equity Need Index.

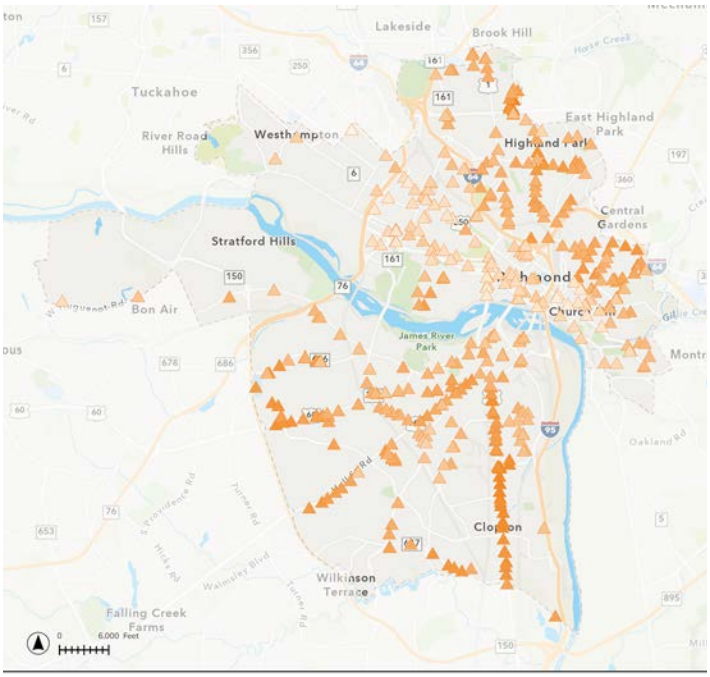


Figure 40. Bench-eligible bus stops in the City of Richmond that do not already have a bench, symbolized by Richmond Connects Bus Stop Equity Need Index.

5C: Fairfield Pedestrian Security and Shade Project

Support Score: 4.5 Cost: Low ($)

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?
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. This recommendation addresses safety concerns in areas with **densely populated Communities of Concern** (EF9) and **high equity needs for bike/pedestrian safety** (EF6).	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.	Conduct a study to examine the urban design of high security need areas and identify opportunities for applying CPTED principles in these areas.

4A: Downtown Safety Spot Improvements

Support Score: 4.4 Cost: Low ($)

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?
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**. This recommendation is located in an area with densely populated communities of concern (EF9).	Add more street lamps, pedestrian crossings, and traffic calming, and convert existing street lamps to LEDs in specified areas of high safety/security need.	Conduct a study to examine the urban design of high security need areas and identify opportunities for applying CPTED principles in these areas.

7B: Government Road Streetscape Improvements

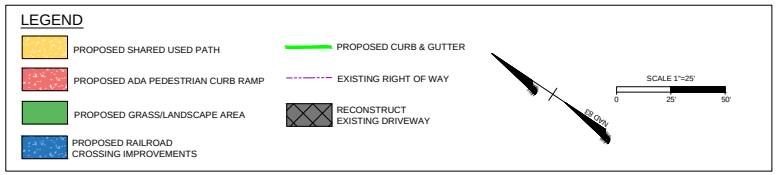
Support Score: 4.4 Cost: Very High ($$$$)

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?
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. 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).	The City is seeking funding to complete the stabilization of the Chimborazo Park slope failure, which includes Government Road. In addition to the slope repair, potential improvements on Government Road to help address the Economic Development needs could include: - constructing new sidewalk to fill in sidewalk gaps - constructing ADA-compliant curb ramps - pedestrian-scaled ornamental lighting 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.	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. *LQC Options: Crosswalk improvements, traffic calming*

7B: Government Road Streetscape Improvements

Support Score: 4.4 Cost: Very High ($$$$)

GOVERNMENT RD SIDEWALK IMPROVEMENTS
STONY RUN RD TO CARLISLE AVE



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 Action Steps?
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. 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. 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 Concer**n (EF9).Q20	Extend Pulse Bus Rapid Transit (BRT) to the Richmond Airport via Williamsburg Rd.	1. Conduct a study to identify desired densities for near-term bus and long-term BRT service, as well as barriers for implenting 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

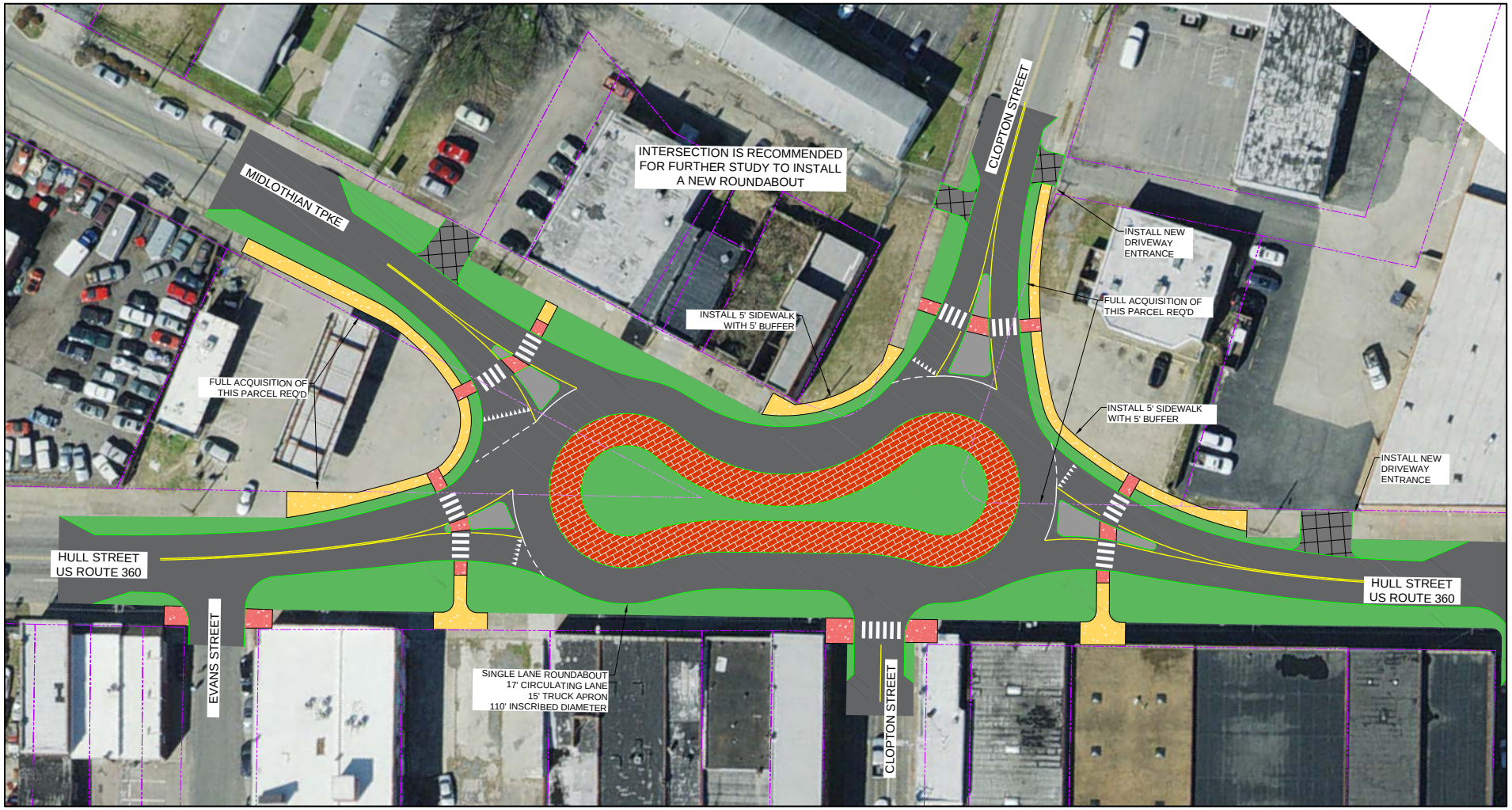
9C: Hull Street Intersection Pedestrian Improvements - at US Route 1 and at Midlothian Turnpike

Support Score: 4.2 Cost: High ($$$)

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?
Communities of Concern consistently said these two intersections **(Hull St at US Route 1 and Hull St at Midlothian Tpk) 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**. 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. Improves walkability in areas with **high equity needs for pedestrian safety** (EF6), **transit reliability** (EF7), and **disparate climate impacts** (EF8).	Potential improvements at the intersection of Hull Street and US Route 1 could include: - improvements to the bus stop at the southwest corner Potential improvements at the intersection of Hull Street and Midlothian Turnpike could include: - Marked crosswalks closer to the bus stops, possibly relocating the bus stop locations - Reconfiguring lanes on intersection approaches to shorten pedestrian crossing distances - Considering 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 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.	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. *LQC Option: Temporary demo test of lane configuration changes*

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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

LEGEND
- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- PROPOSED GRASS/LANDSCAPE AREA
- RECONSTRUCT EXISTING DRIVEWAY
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=20'
0 20' 40'

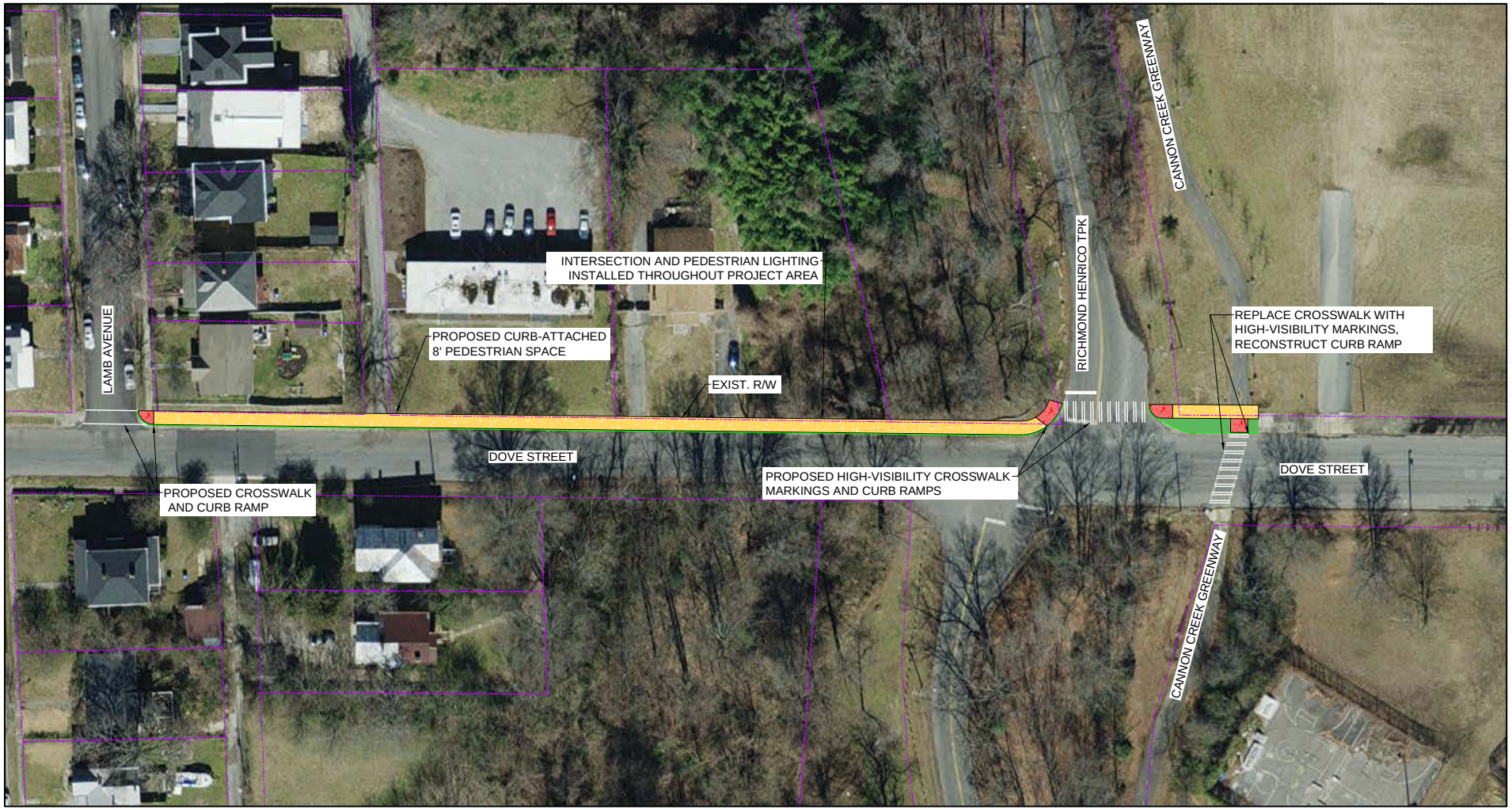
3B: Dove Street Pedestrian Safety Improvements

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 Action Steps?
The data analysis revealed a **Tier 1 Pedestrian equity need** on Dove Street from Lamb Ave 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. This recommendation will **improve walkability** in an area with equity needs related to **pedestrian safety** (EF6), **transit** (EF7) and **disparate climate impacts** (EF8).	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 drainiange improvements near Richmond-Henrico Turnpike.	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. *LQC Option: Crosswalk improvement*

3B: Dove Street Pedestrian Safety Improvements

Support Score: 4.2 Cost: Moderate ($$)



DOVE STREET - SHARED USE PATH IMPROVEMENTS
LAMB AVENUE TO ALTHEA STREET

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

LEGEND
- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=25'
0 25' 50'

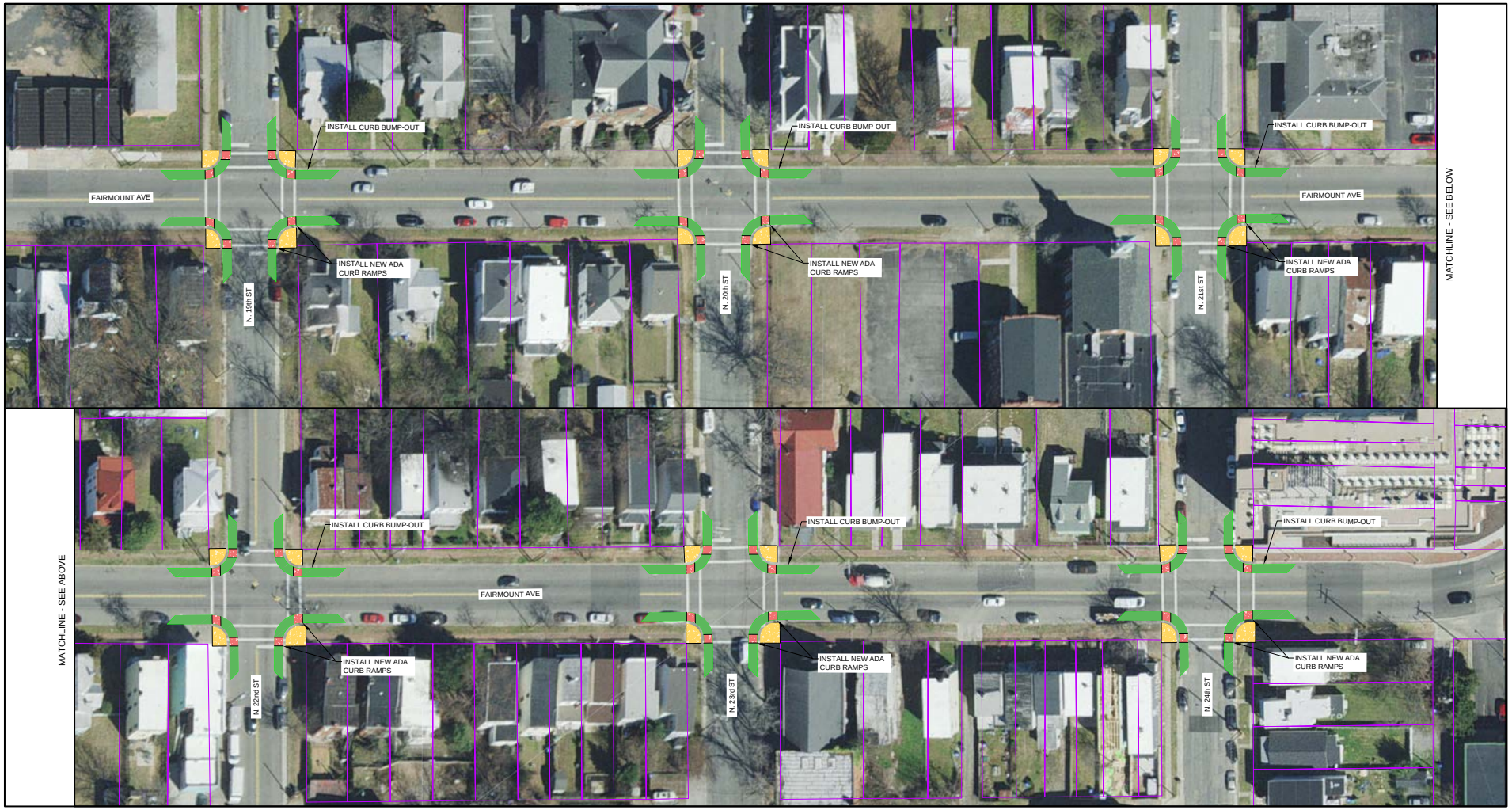
6A: Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming

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 Action Steps?
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**. This recommendation will **improve pedestrian safety** (EF6) and invest in infrastructure in a **previously redlined area** (EF1).	Potential improvements on Fairmount Avenue may include: - 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. 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.	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. *LQC Options: Temporary speed table/ traffic circle/ in-roadway signs for pedestrians, and high visibility crosswalk markings; Paint and post daylighting of intersections.*

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"=30'
0 30' 60'

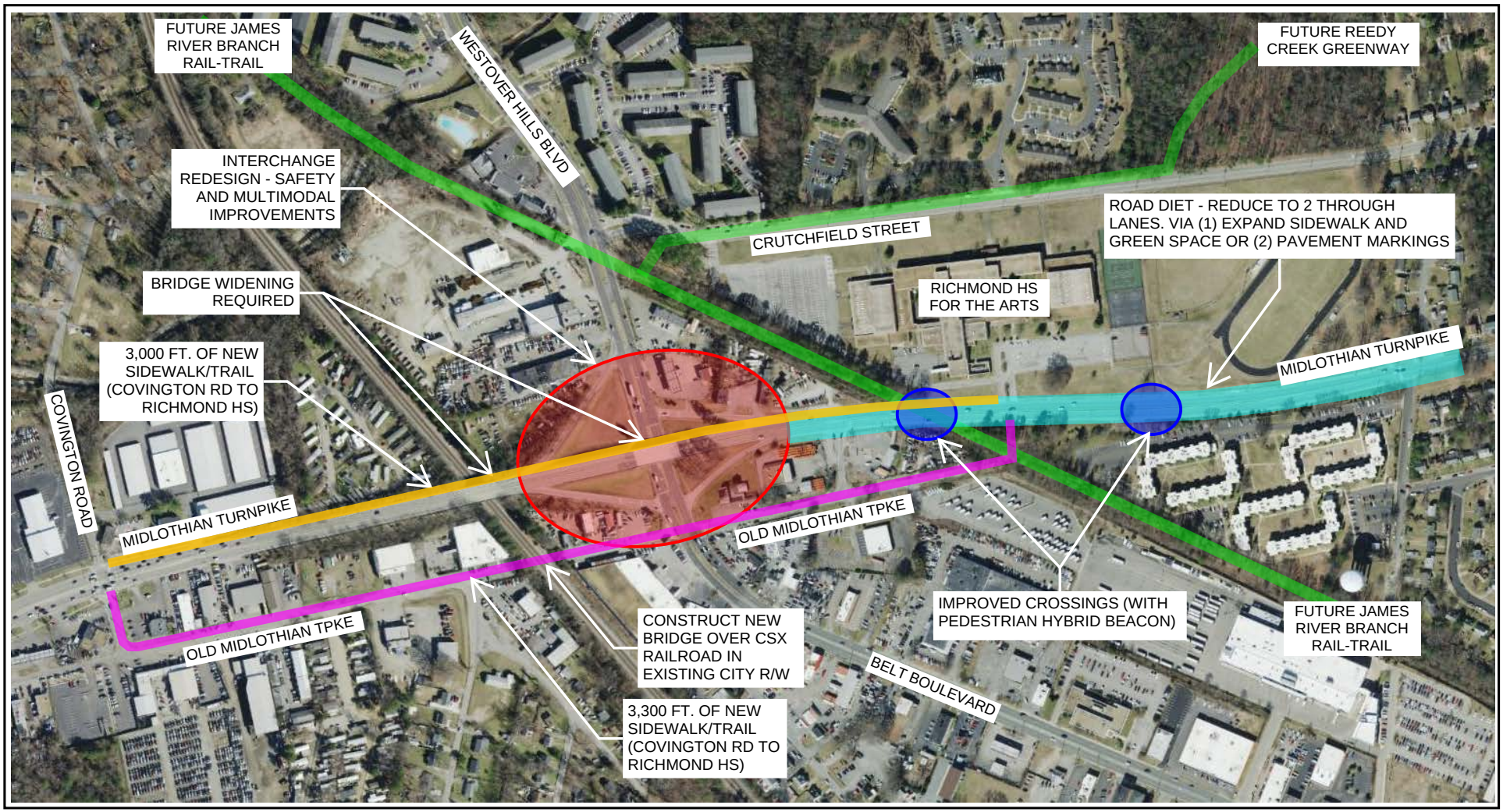
11F: Richmond High School of the Arts Pedestrian Safety Improvements

Support Score: 4.2 Cost: Very High ($$$$)

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?
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 Blvd. 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**. This recommendation will connect suburban students to their school (EF4), improve pedestrian safety and reduce the need for car ownership/use especially forlow-income students (EF5, EF6, EF9).	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. Potential improvements could include: - Pedestrian crossing with pedestrian hybrid beacon across Midlothian Turnpike at high school entrance - Shared-use path along Old Midlothian Turnpike with crossing at Belt Blvd 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 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.	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 Action Steps?
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. Thisis a **key sidewalk gap** in an area with a **high density of Community of Concern populations** where **many people rely on walkin**g 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. This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).	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. This improvement may be combined with 12B.2 into one larger project. 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.	Prepare the engineering design plans. Identify and allocate funding.

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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

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"=40'
0 40' 80'

12B.2: Southside Pedestrian Improvements - Old Warwick Road south 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 Action Steps?
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. This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).	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. This improvement may be combined with 12B.1 into one larger project. 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.	Prepare the engineering design plans. Identify and allocate funding.

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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

LEGEND
- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

SCALE 1"=40'

12B.3: Southside Pedestrian Improvements - Carnation Street

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 Action Steps?
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 poo**r 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. This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).	The proposed improvements on Carnation Street are: - Fill in sidewalk gaps from Warwick Road to Hioaks Road - Add marked pedestrian crossings at: - Old Warwick Road/Atmore Drive - Sugar Maple Drive/Warwick Road - Tim Price Way	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. 2. 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

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"=60'

TIMMONS GROUP
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12B.4: Southside Pedestrian Improvements - German School Road

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 Action Steps?
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. This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).	The proposed improvements on German School Road are: - Fill in sidewalk gaps from Glenway Drive to Jahnke Road - Add marked pedestrian crossings at: - Glenway Drive - Alexander Apartments/ Renaissance Apartments entrances - Food Lion entrance	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. 2. 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

TIMMONS GROUP
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RICHMOND CONNECTS

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"=30'
0 30' 60'

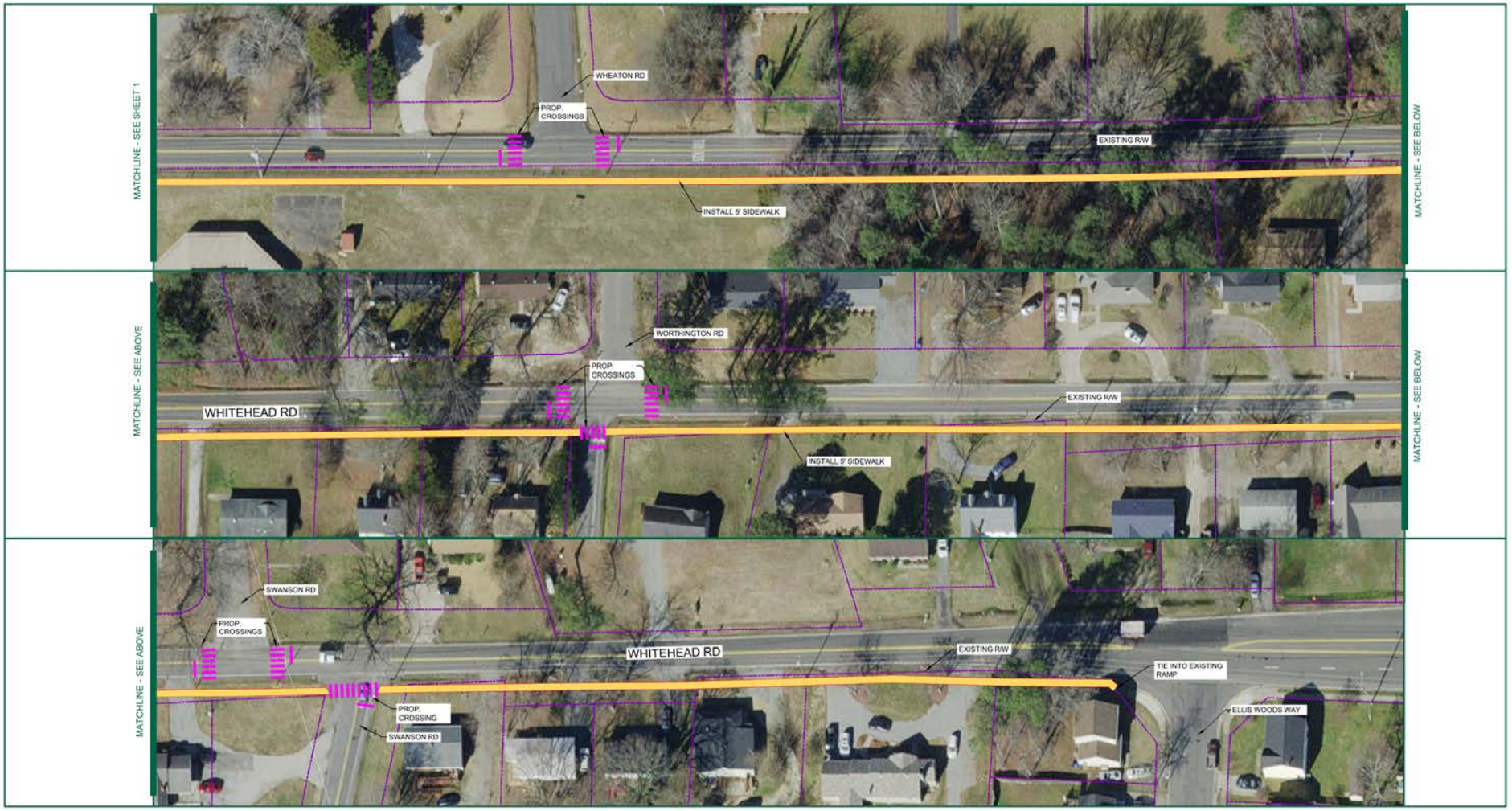
12B.5: Southside Pedestrian Improvements - Whitehead Road

Support Score: 4.2 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 Action Steps?
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. This recommendation will improve pedestrian safety (EF6), connect communities (EF2, EF4), and increase access for those with limited mobility (EF9).	The proposed improvements on Whitehead Road are: - Fill in sidewalk gaps from Elmbridge Road to Ellis Woods Way - Add marked pedestrian crossings at: - Daytona Drive - Wheaton Road - Worthington Road - Swanson Road	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. 2. 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"=50'
0 50' 100'
NAD 83

CITY OF RICHMOND ESTABLISHED 1737

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5A.1: Coalter Street Traffic Calming

Support Score: 4.1 Cost: Low ($)

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?
Communities of Concern consistently said **speeding along Coalter Street** is an issue. This was identified as a Super Need. 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. This recommendation will improve infrastructure in a **previously redlined area** (EF1), slow traffic in an area with equity needs related to **bike/pedestrian safety** (EF5), 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).	Potential improvements on Coalter Street may include: - 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 bringint the curb further into the street to slow vehicle speeds and plant vegetation and trees to reduce urban heat island effect 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.	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. *LQC Option: Temporary speed bumps*

5A.1: Coalter Street Traffic Calming

Support Score: 4.1 Cost: Low ($)

COALTER STREET

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LEGEND

PROPOSED SPEED TABLES

EXISTING RIGHT OF WAY

SCALE 1"=50'

0 50' 100'

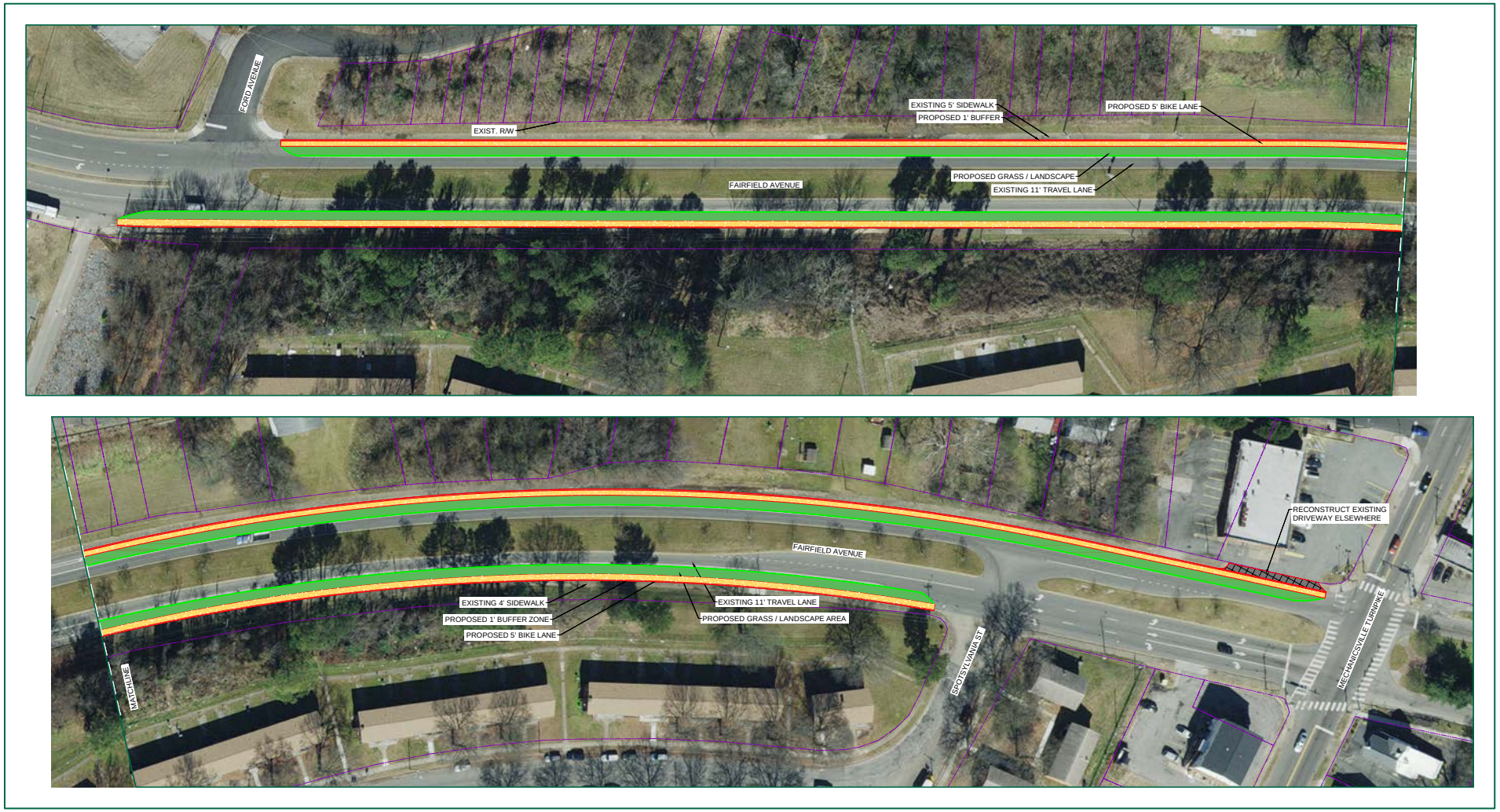
5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low ($)

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?
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. This recommendation will improve infrastructure in a previously redlined area (EF1), slow traffic in an area with equity needs related to bike/pedestrian safety (EF5), 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).	Potential improvements on Fairfield Avenue east of 20th St could include: - 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 Potential improvements on Fairfield Avenue between 20th St and Mechanicsville Turnpike could include: - modifying the crosswalks to provide refuge in the median Potential improvements on Fairfield Way west of Mechanicsville Turnpike could include: - hardening the buffer between the vehicle lane and bicycle lane, potentially with vegetation - widenin the median to remove asphalt and add more trees 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.	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. *LQC Option: Crosswalk improvements?*

5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low ($)

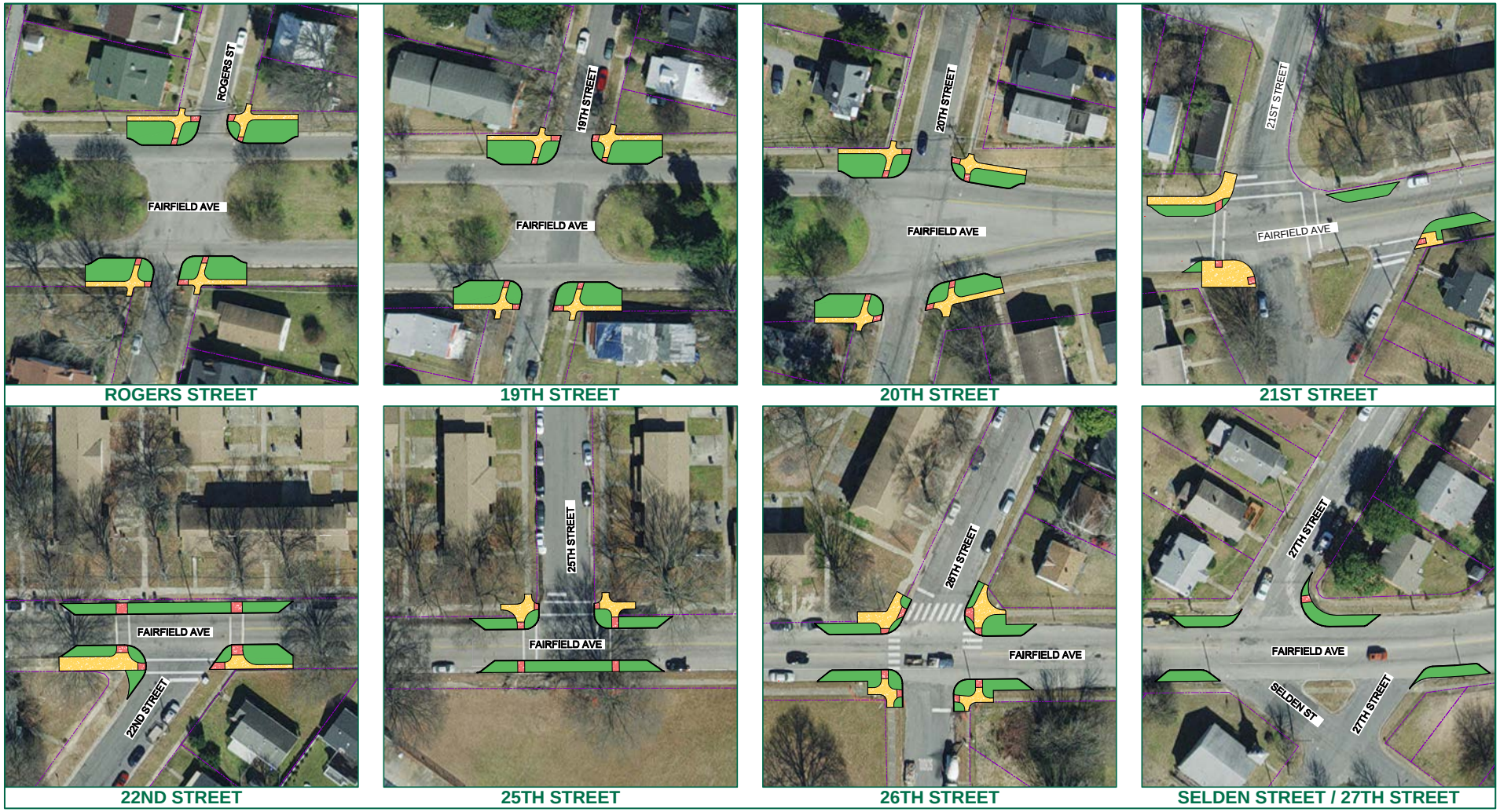


FAIRFIELD WAY ROAD DIET
FORD AVENUE TO MECHANICSVILLE TURNPIKE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

5A.2: Fairfield Avenue/ Fairfield Way Traffic Calming

Support Score: 4.1 Cost: Low ($)



FAIRFIELD AVENUE CURB EXTENSIONS
ROGERS STREET TO 21ST STREET

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LEGEND

PROPOSED GRASS/LANDSCAPE AREA

PROPOSED SIDEWALK

PROPOSED ADA PEDESTRIAN CURB RAMP

EXISTING RIGHT OF WAY

SCALE 1"=30'

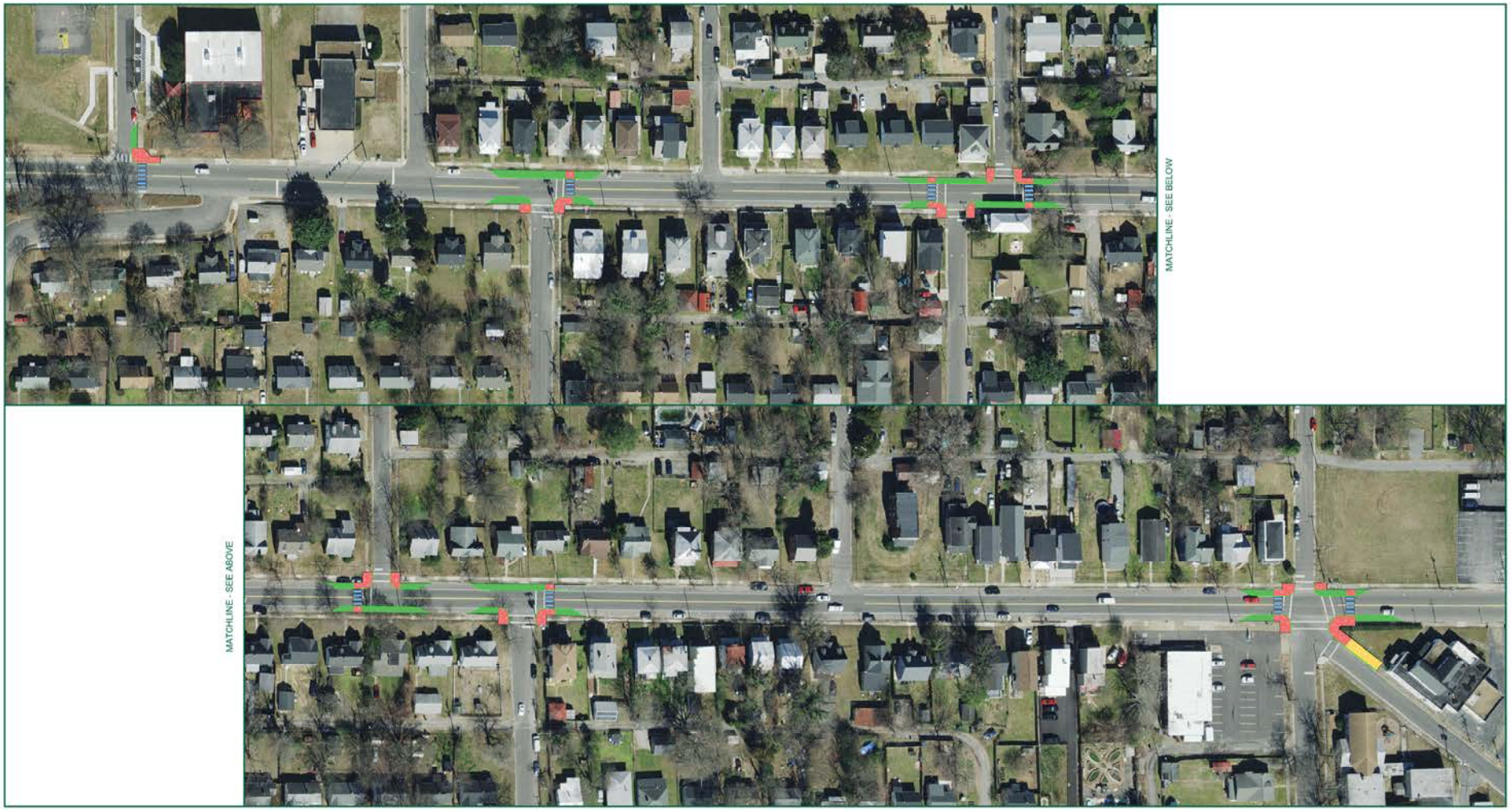
7A: Williamsburg Road/ Williamsburg Avenue Traffic Calming

Support Score: 4.1 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 Action Steps?
Communities of Concern consistently said **speeding and lack of safe pedestrian crossings** on Williamsburg Road are imporant issues. These were identified as a Super Needs. 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**.	Potential improvements on Williamsburg Avenue/ Williamsburg Road east/north of Hatcher Street include: - 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: - Stony Run Road - Admiral Gravely Blvd - Orleans Street - Goddin Street - Plant trees or other vegetation along the road to visually enclose the space. Potential improvements on Williamsburg Road west of Hatcher Street include: - Curb extensions at unsigalized intersections to slow vehicle speeds and make pedestrians more visible to drivers - Raised crosswalks - Rectangular rapid flashing beacons at select intersections 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.	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. *LQC Option: Crosswalk improvements, Traffic calming*

7A: Williamsburg Road/ Williamsburg Avenue Traffic Calming

Support Score: 4.1 Cost: Moderate ($$)



1A: Westbrook Avenue Pedestrian Improvements

Support Score: 4.0 Cost: Low ($)

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?
The data analysis revealed a **Tier 1 equity-based Pedestrian need** on Westbrook Avenue from Henderson Middle School to W Seminary Avenue. **Sidewalks are missing** on Westbrook Avenue between Chamberlayne Ave and Brook Rd. This recommendation will **increase pedestrian safety** and **reduce the need for car ownership** (EF5, EF6). It will **improve connectivity for Communities of Concern** (EF7).	Add sidewalks along Westbrook Avenue from Brook Road to Chamberlayne Avenue. Add marked crosswalks, if needed. 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.	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. *LQC Option: Crosswalk improvements*

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

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?
Communities of Concern consistently identified **poor pavement condition** as an issue needing to be addressed along several roads including Williamsburg Rd and Government Rd 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. This recommendation will prioritize pavement maintenance requests from Communities of Concern (EF9).	The Priorirty 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.	Move the paving projects identified in 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.

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

Map ID	Project Locations and Extents	Project Length (ft)	Pavement Condtion 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

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

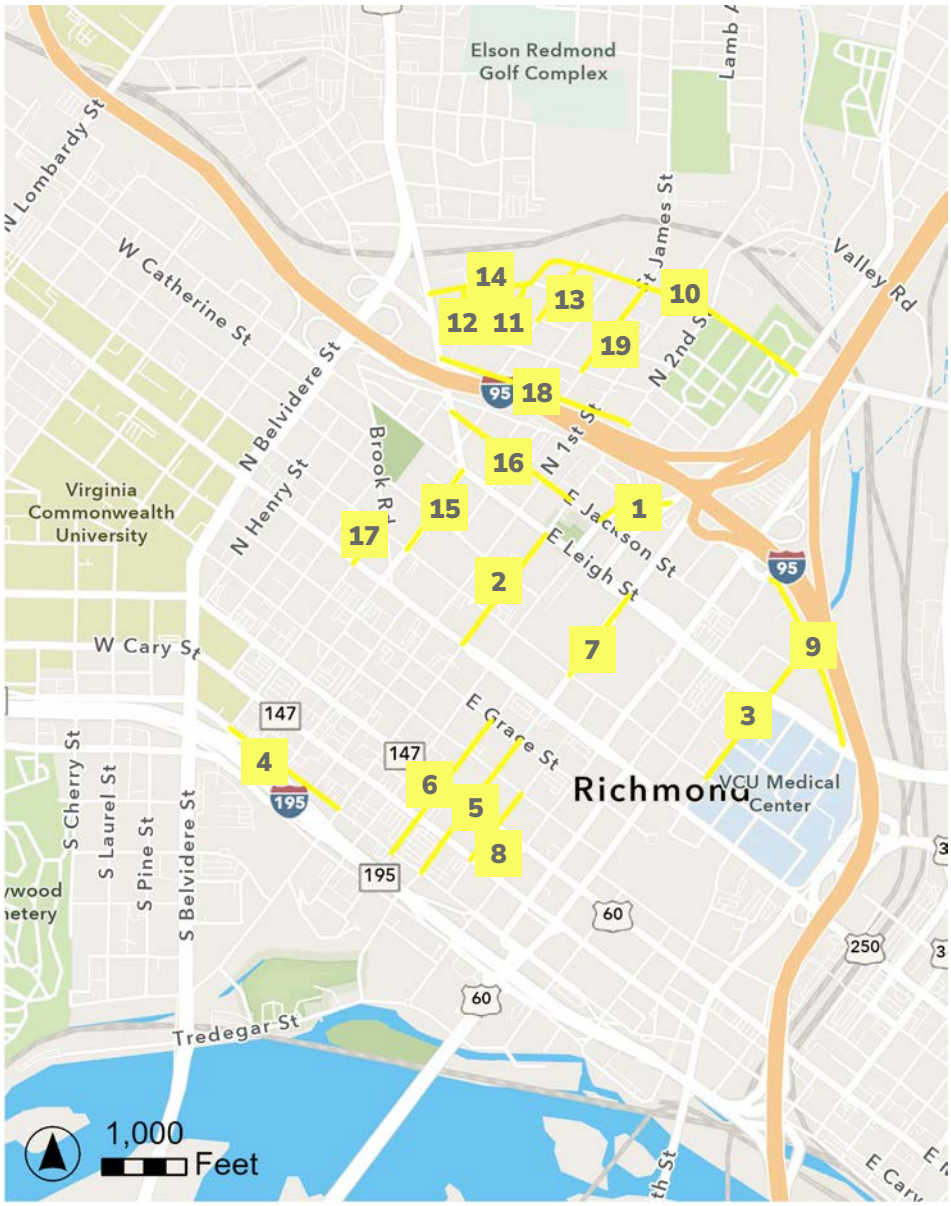


Figure 41. Map of Downtown/Gilpin Pavement Maintenance Projects

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

Map ID	Project Locations and Extents	Project Length (ft)	Pavement Condtion Score(s)	Ballpark Cost
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

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

Map ID	Project Locations and Extents	Project Length (ft)	Pavement Condtion Score(s)	Ballpark Cost
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
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 Blvd from Broad Rock Blvd to Bells Rd/Warwick Rd	8,900	Satisfactory-Serious (73.11-15.32)	$1,063,000

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

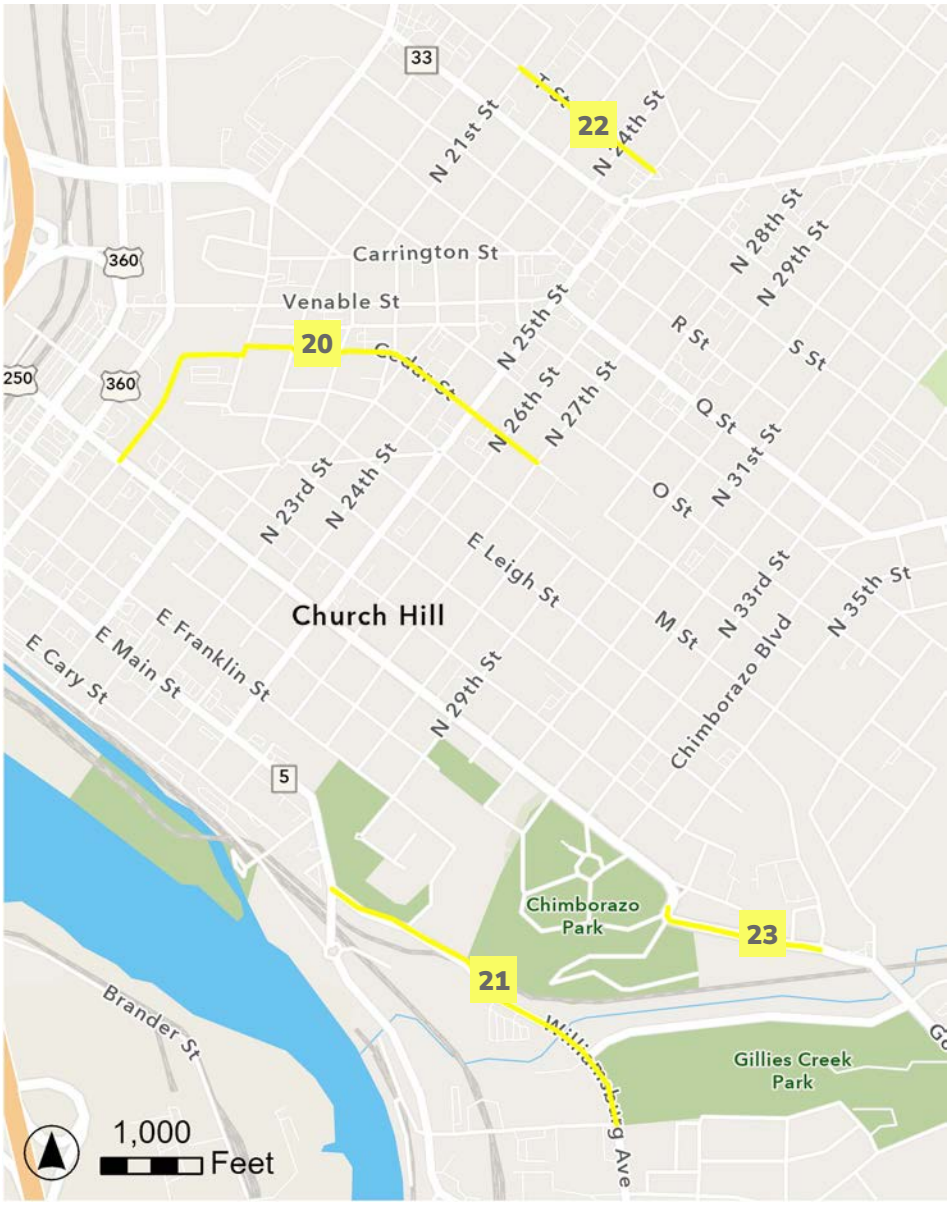


Figure 42. Map of East End Pavement Maintenance Projects

4K: Richmond Connects Equity-Centered Pavement Maintenance Prioritization

Support Score: 4.0 Cost: Very High ($$$$)

Map ID	Project Locations and Extents	Project Length (ft)	Pavement Condtion Score(s)	Ballpark Cost
26	Bells Road from Belt Blvd 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 ($$$$)

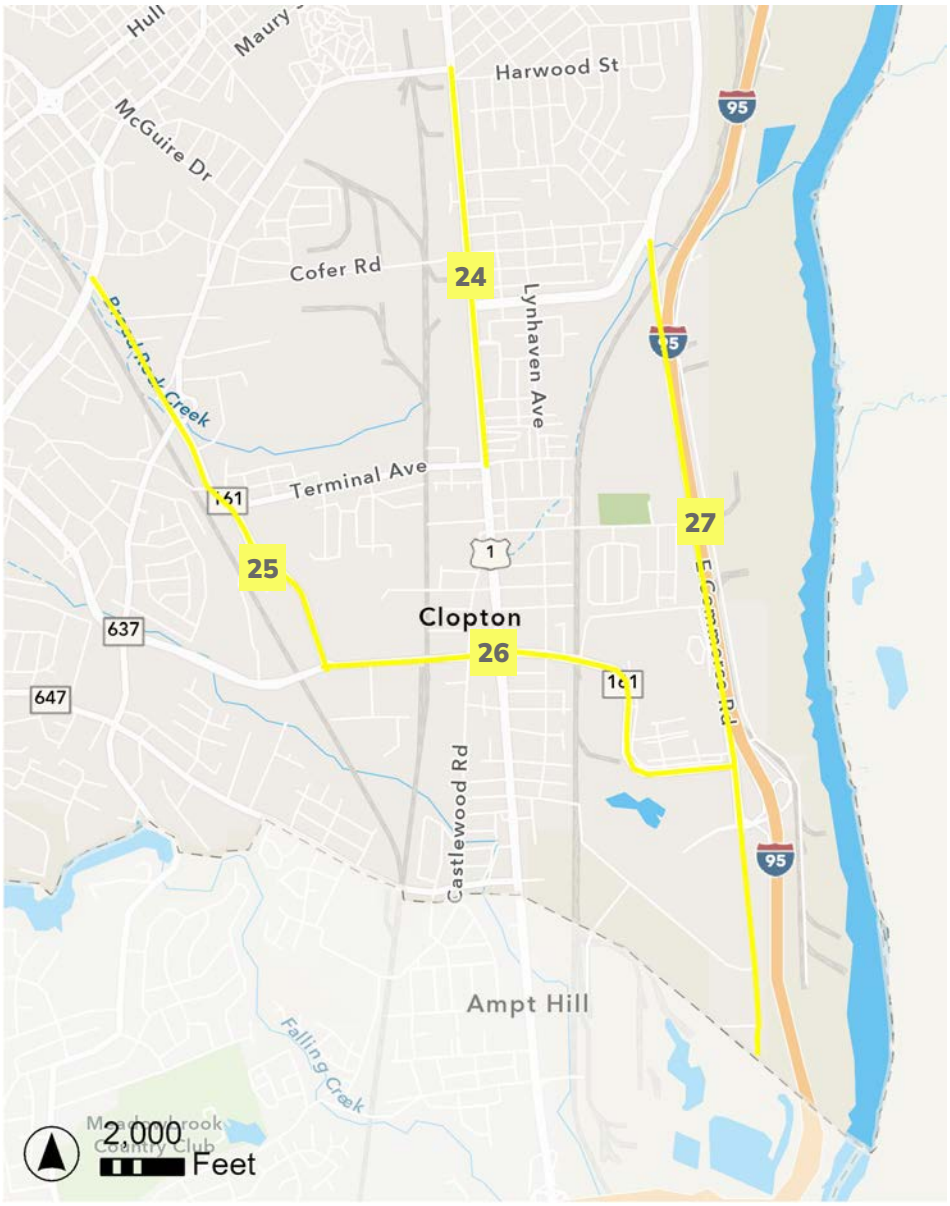


Figure 43. Map of Southside Pavement Maintenance Projects

4G: Reconnect Jackson Ward

Support Score: 4 Cost: Very High ($$$$)

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?
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. This recommendation will improve connectivity in an **area affected by neighborhood dissection** (EF2) and with **bike/pedestrian safety needs** (EF6).	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.	Continue to work with residents to design, seek funding for, and implement connection over I-95 to reconnect Jackson Ward and Gilpin neighborhoods.

13A: Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy

Support Score: 3.9 Cost: Very High ($$$$)

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?
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 Rd and the Powhite Parkway interchange. Public comments mentioned the **lack of sidewalks and need for safer pedestrian facilities** on Forest Hill Avenue. 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).	Potential improvements on Forest Hill Avenue from Dorchester Road to Powhite Parkway include: - 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.	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 Powhite Pkwy

Support Score: 3.9 Cost: Very High ($$$$)

FOREST HILL AVENUE PEDESTRIAN IMPROVEMENTS
POWHITE PARKWAY TO CSX RAILROAD

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'
0 70' 140'
NAD 83

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

1E: North-South Bus Rapid Transit

Support Score: 3.8 Cost: Very High ($$$$)

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?
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 Ave have **high Economic Development needs**, which this would also help to address. 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** (EF6).	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.	Support GRTC to determine the specific alignment through downtown and conduct the NEPA study. Support efforts to seek funding for design and implementation. 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.

11A: Southside Plaza Pedestrian Connections Across Railroad Tracks

Support Score: 3.8 Cost: Very High ($$$$)

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?
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. The Richmond 300 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. This recommendation will improve pedestrian safety (EF6) and connect separated areas of the city (EF2).	Potential options for making these connections could include: - 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 Richmond 300 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.	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

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

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 ($$$)

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?
The data analysis revealed a **Tier 1 equity-based Pedestrian need** along Three Chopt Road from Grove Avenue to Towana Rd, then continuing along Towana Rd 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. This recommendation will improve **pedestrian safety and access** (EF6) and **reduce need for car ownership** (EF5).	Potential improvements could include: - Installing sidewalk with curb and gutter along Three Chopt Road from Towana Rd 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	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

NAD 83

SCALE 1"=40'

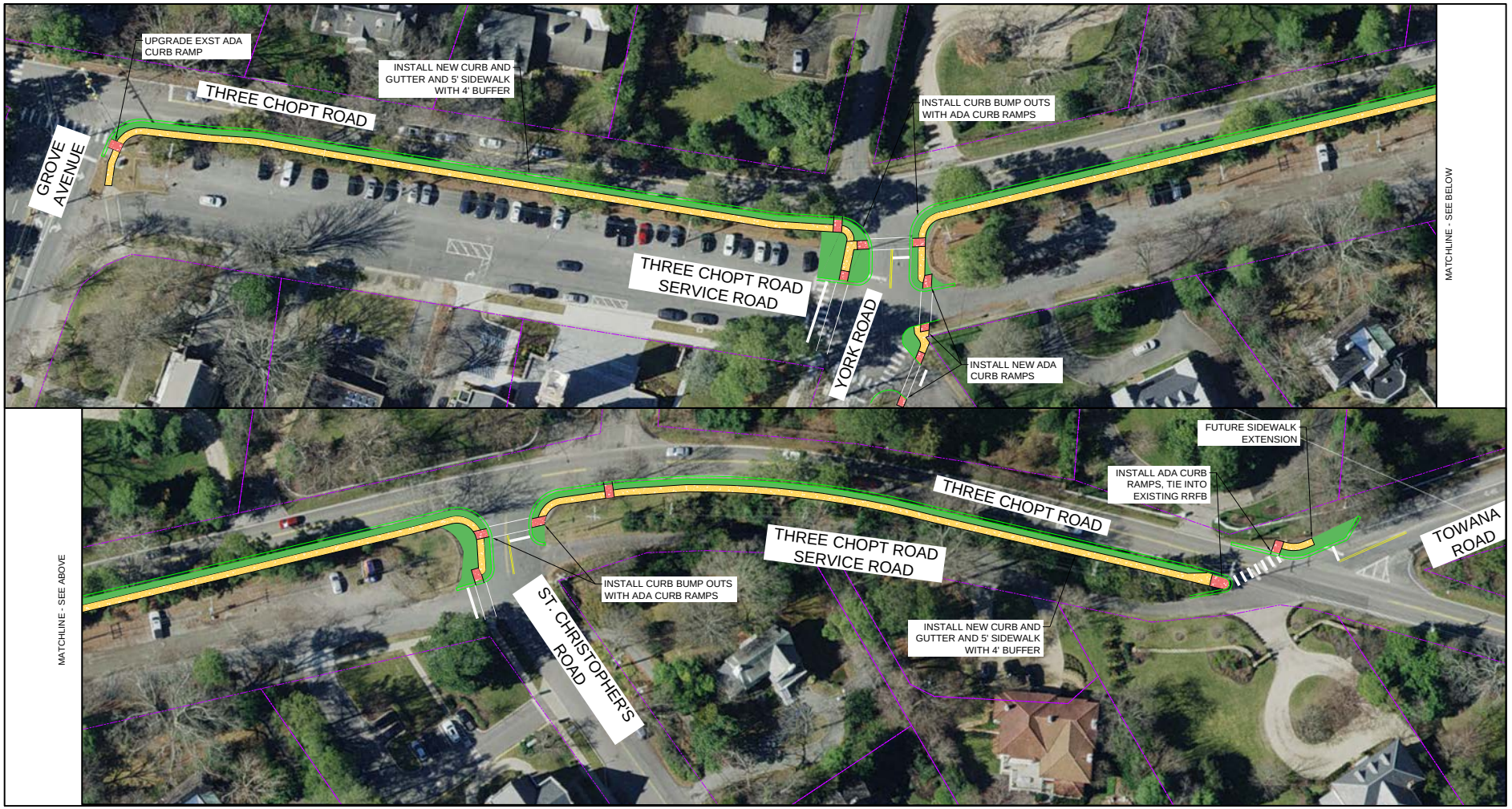
0 40' 80'

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

16A: Three Chopt Road Sidewalks

Support Score: 3.8 Cost: High ($$$)



THREE CHOPT ROAD - PEDESTRIAN IMPROVEMENTS
GROVE AVENUE TO TOWANA ROAD

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS

LEGEND

- PROPOSED SHARED USED PATH
- PROPOSED ADA PEDESTRIAN CURB RAMP
- RECONSTRUCT EXISTING DRIVEWAY
- PROPOSED GRASS/LANDSCAPE AREA
- PROPOSED CURB & GUTTER
- EXISTING RIGHT OF WAY

NAD 83

SCALE 1"=40'
0 40' 80'

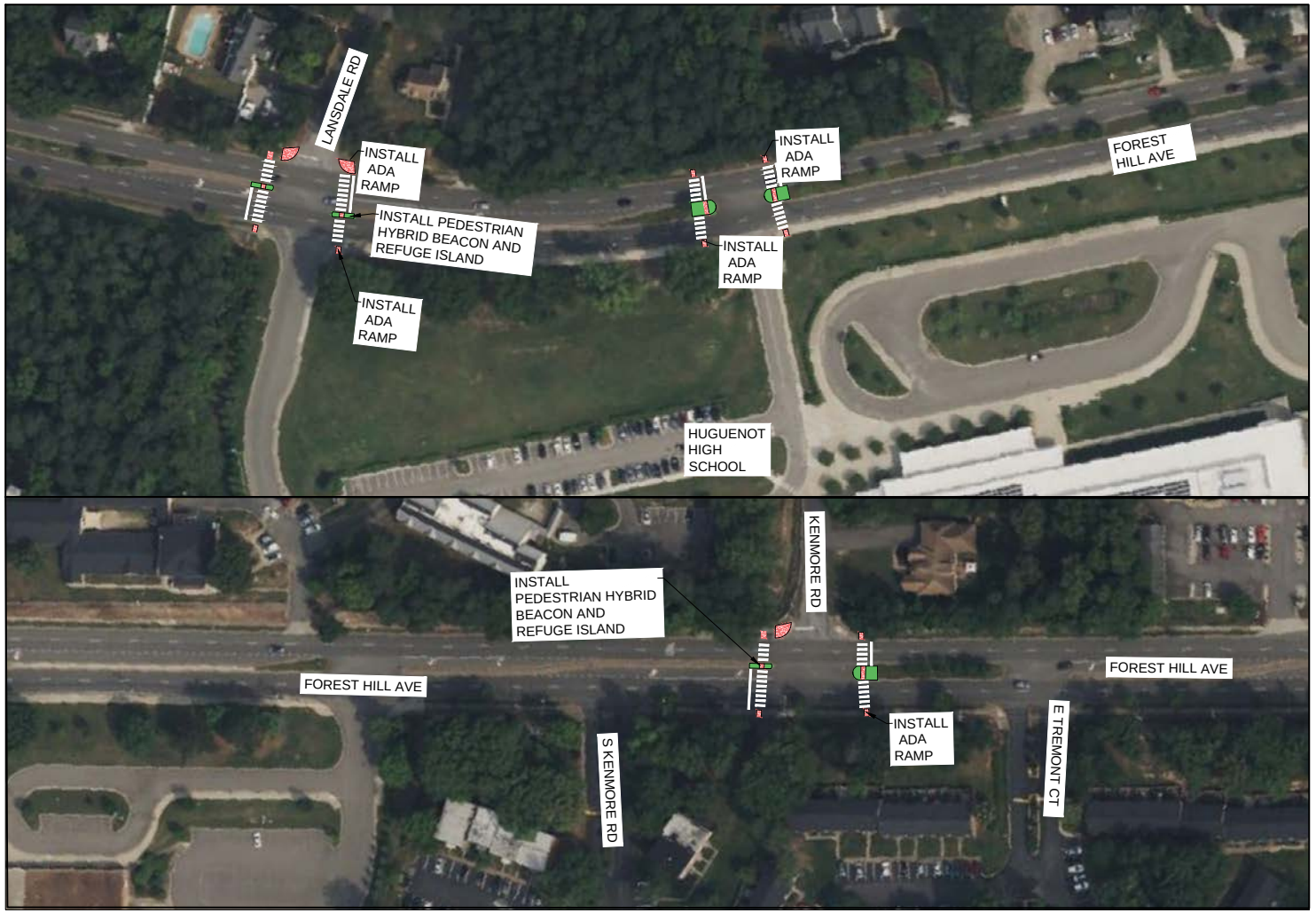
17A: Forest Hill Avenue Streetscape

Support Score: 3.8 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 Action Steps?
The data analysis revealed **Tier 1 equity-based Pedestrian and Bicycle needs** along Forest Hill Avenue. This was also reflected in public comments. This recommendation will improve safety in an area affected by car-centric planning (EF5) which has high equity needs for bike/ pedestrian safety (EF6).	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. 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. 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.	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

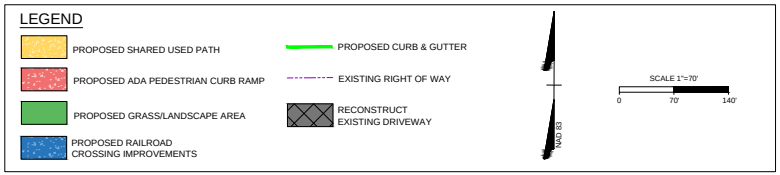
Support Score: 3.8 Cost: Moderate ($$)



FOREST HILL AVENUE TRAFFIC CALMING
LANSDALE RD TO KENMORE RD

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

RICHMOND CONNECTS



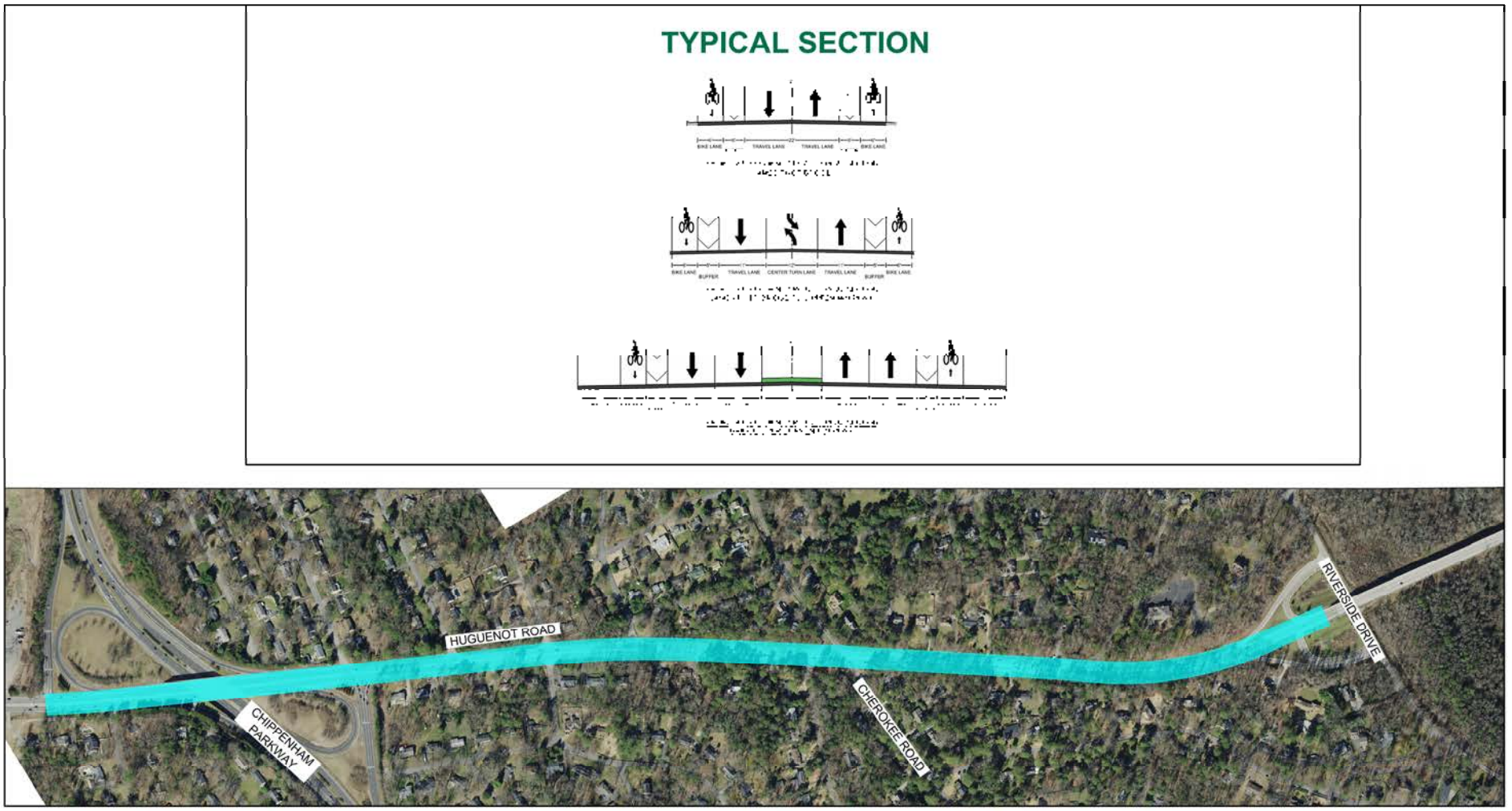
17F: Huguenot Road Bikeway

Support Score: 3.8 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 Action Steps?
The data analysis revealed a **Tier 1 equity-based Bicycle need** on Huguenot Road. This need was echoed in public comments.	Potential improvements on Huguenot Road could include: - 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. 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.	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 ($$)



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).	Complete the Hull Street Streetscape project from Mayo Bridge to 9th Street	n/a	4.8
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
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	Complete the Shockoe Valley Street Improvements project	Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion.	4.5
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 communties of concern live (EF4, EF9). Increases pedestrian safety and reduces need for car ownership (EF5, EF6).	Complete construction of the approved sidewalk design project.	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 infrasture to previosuly 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
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. In the design of this project, include native landscaping that retains water and provides food and shade, and/or consider pavement types that are permeable and/or light colored.	Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion.	3.6
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
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 with funds already allocated.	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
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
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.	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.	Implement project with identified and allocated funds. Fill remaining project funding gaps to bring the project to 100% completion.	3.0

FINISH WHAT WE STARTED - PRIORITY COMPLETION PROJECTS

ID	Project Name	Equity Need	Description	Immediate Next Steps	Support Score
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).	Ceate 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
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.	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 using the already allocated funding.	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 using the already allocated funding.	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 of a Pedestrian Hybrid Beacon (PHB) 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 (VCU) 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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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.
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. No Tier 1 INC 5 need north of Main Street. No significant Tier 1 INC 1a (Bicycle) or INC 1b (Pedestrian) needs	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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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.
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. Narrowing the median to provide parking lanes that people feel more comfortable parking in could be a traffic calming measure.	Paving and infrastructure improvements to Laburnum Avenue focused on narrowing the median on Laburnum between Brook Road and Heritage to allow for the expansion of parking lanes.	Continue to implement and fund this project with allocated funding. Fill funding gaps to ensure 100% project completion.
C15	Nicholson Street Streetscape	"Fill in missing sidewalks and fix broken sidewalks all throughout East End" is a Super Need. Not a Tier 1 need for INC 1b (Pedestrian), INC 5 (Safety/Security), or INC 6 (Connectivity)	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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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. 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. Fill funding gaps to ensure 100% project completion.
C20	Westhampton Area Improvements - Phase III	There is a Tier 1 INC 5 (Safety/Security) need on Patterson between Westview Ave and Seneca Rd. 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. This request is for Phase III 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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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. Location: Deepwater Terminal Road to Goodes Street	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	Improve 2 lanes with sidewalk, bike trail, signal upgrade, landscape, and closed drainage system.	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 Rd 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.
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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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 Rd. 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 various intersections. Location: Belvidere Street from Idlewood Avenue to Rowe 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.
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.

FINISH WHAT WE STARTED - OTHER COMPLETION PROJECTS

ID	Project Title	Equity Need	Description	Immediate Next Steps
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 was a 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
14C: Study and Demo Car-Free Shopping Corridors	3.7	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. 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 Blvd and Thompson St. In general, closing streets to car traffic promotes walking and bicycling, and is a good strategy for achieving the vision of equitable transportation in the Richmond 300 Master Plan. This recommendation would improve walkability in areas with high bike/pedestrian safety needs (EF6).	Identify opportunities for using Richmond's streets to create great places for people through temporary or permanent street closures, such as weekend closures of Cary Street in Carytown for bicycle, pedestrian, and retail use.	Identify potential locations with resident and business support for Cyclovia (weekend street closure) demonstrations, which could include Cary Street in Carytown or other locations. 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	Low ($)
8A: Dock Street Pedestrian Improvements	3.6	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. 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).	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 ($$)

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
12H: GRTC Route 1A (Midlothian Turnpike) Improvements	3.5	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).	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 ($$)
10J: Richmond Highway Transit Improvements	3.4	The data analysis revealed Tier 1 equity-based transit needs along Richmond Highway, especially south of Cofer Road, including in the Route 1/Bellemeade and Route 1/ Bells Road Nodes. Public comments indicated buses do not run frequently enough along US Route 1 in these areas. Infrequent bus service along Richmond Highway was identified as a Super Need among Communities of Concern. This will improve transportation access (EF7), increase chances for economic growth/personal financial mobility (EF1, EF9), connect suburbs, and mitigate necessity of owning a car (EF4, EF5).	Increase bus frequencies along US Route 1 (Richmond Hwy) (GRTC Bus Route 3B/3C) to from every 30 minutes to every 15-20 minutes.	Implement Microtransit service in the Broad Rock/ Cherry Gardens/ Richmond Highway zone to improve transit accessibility along US Route 1. Work with GRTC to increase GRTC Route 3B frequency from 30 minutes to 15-20 minutes.	Moderate ($$)
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 (EF4), with high equity needs related to bike/pedestrian safety (EF5), and with disparate climate impacts (EF8).	Install fixed bollards and concrete median between bike lanes and parking lanes. Median could include green infrastructure with stormwater management features.	Prepare engineering design plans. Identify and allocate funding.	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 60 to 30 minutes, and eventually to 15 minutes.	Support GRTC's increasing frequency on Route 14 from 60 to 30 minutes by 2028. Advocate for increased frequency 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 on Monument Avenue from Lombardy Street/Stuart Circle to Arthur Ashe Boulevard, and eventually to Henrico County line.	Present potential design to community for input and feedback. Finalize design. Identify and allocate funding and/or implement with repaving if possible.	Moderate ($$)
16E: Willow Lawn Park-and-Ride	3.1	Having a park-and-ride near the Willow Lawn BRT station was a top public comment. This recommendation will help reduce car dependency in an area affected by car-centric planning (EF5).	Identify a location for a park-and-ride near the Willow Lawn Pulse Bus Rapid Transit terminus. This recommendation may also be relevant to the Rocketts Landing end of line BRT station too.	Support Henrico County in efforts to identify and implement park-and-ride at Willow Lawn. City of Richmond Dept. of Planning & Development Review to conduct a study of potential opportunities, risks, and benefits of acquiring land within City limits for park-and-ride to serve Willow Lawn BRT station.	Moderate ($$)
2E: Link: On-Demand Microtransit	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 ($$)

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
5E: Mechanicsville Turnpike Bus Route	2.7	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).	Create a Bus Rapid Transit (BRT) route along Mechanicsville Turnpike from the Pulse downtown to Mechanicsville and beyond I-295 (vicinity of Walnut Grove).	Support GRTC to begin new bus route along Mechanicsville Turnpike to Laburnum Ave by 2028. PDR and Office of Community Wealthbuilding to begin an economic development initiative in Fairfield to address Tier 1 Economic Development needs.	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 ($)

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 St. to 25th St.	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 Richmond 300 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 ($/$$)

LONGER-TERM PROJECTS

Project ID/Name	Support Score	What's needed?	Cost
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 ($$$)
10M: Richmond Highway Revitalization	3.333	Work with residents to determine the best way to revitalize the US Route 1 (Richmond Highway) corridor area, encourage redevelopment, and limit involuntary displacement of residents, especially in the Route 1/Bellemeade and Route 1/Bells Nodes. Transportation investments here will not be effective until there are more job & shopping destinations with which to connect.	n/a
1H: Ridesharing Vouchers	3.2	Provide vouchers or subsidies for ridesharing or other transit alternatives to improve job access in areas with high Economic Development needs.	n/a
3N: Northside Bikeshare Stations	3.133	New bikeshare stations at VUU, at Battery Park, at Ann Hardy Plaza, at the North Ave. Library, and on the Cannon Creek Greenway.	Low ($)
13G: Bliley Road Sidewalk and Bike Lanes	3.133	Install sidewalk, curb at gutter, storm drainage, and bike lanes on Bliley Road.	Moderate ($$)
2C: Roundabout at Hermitage Rd/ Arthur Ashe Blvd/ Westwood Ave/ Brookland Pkwy	3.067	Replace the existing intersection configuration at Hermitage Rd, Arthur Ashe Blvd, 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 St.	High ($$$)
7I: Rockett's Landing to Fulton Bike Connection	2.933	Add bike connection from Rockett's Landing to Fulton via Nicholson St or Orleans St (facility type TBD).	Moderate ($$)

LONGER-TERM PROJECTS

Project ID/Name	Support Score	What's needed?	Cost
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 ($$$$)
1K: Hermitage Road Buffered Bike Lanes	2.867	Extend the buffered bike lanes on Hermitage Rd from Westbrook Ave north to Henrico County line and south to I-95 and work with Henrico County to extend the bike lanes further north. South of I-95, identify the appropriate bike infrastructure to implement.	Low ($)
10N: Greenspace/Park near Richmond Highway	2.867	Develop a new park within 10 minutes of the Route 1/ Bellemeade Node or Route 1/Bells Node, working with residents to design the park. Transportation investments here will not be effective until there are more greenspace destinations with which to connect.	n/a
14D: Carytown Parking Recommendations	2.8	Implement the following recommendations to reduce reliance on surface parking in Carytown: promote shared parking; create a parking benefit district; execute fee-for-use parking pilots; and assess curbside parking time limits.	Moderate ($$)
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 ($$$)
4M: 1st Street Cycle Track	2.733	Extend the 2-way cycle track on 1st Street north from where it currently terminates at Duval Street over I-95 and into Gilpin and Highland Park.	n/a
5H: Valley Road Shared Use Path	2.733	Add a shared-use path on Valley Rd from Richmond-Henrico Tpke to Hospital St.	Moderate/High ($$/$$$)
9M: Bainbridge Street/ Forest Hill Avenue Bike Lanes	2.733	Add separated bike lanes on Bainbridge Ave/Forest Hill Ave from Roanoke St to Fall Line Trail.	Low/Moderate ($/$$)
3J: Magnolia Street Bikeway	2.667	Add a bikeway on Magnolia St from 1st Ave to Mechanicsville Turnpike.	Low/Moderate ($/$$)
7J: Admiral Gravely Blvd/Jennie Scher Road Bikeway	2.6	Add bikeway (facility type TBD) on Admiral Gravely Blvd/Jennie Scher Rd from Williamsburg Rd to Gillies Creek Greenway	Moderate/High ($$/$$$)
14A: Stuart Circle Roundabout Improvement	2.6	Construct a new roundabout at the intersection of Monument Avenue, Lombardy Street, Stuart Circle, and W Franklin Street with landscaped splitters, sidewalks, and crosswalks.	Moderate ($$)
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 continous 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 ($)

LONGER-TERM PROJECTS

Project ID/Name	Support Score	What's needed?	Cost
6K: Venable/Mosby Bikeshare Station	2.4	New bikeshare station near the intersection of Venable St and Mosby St.	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 Blvd, including a grade-separated crossing at Arthur Ashe Blvd.	High ($$$)
3H: Overbrook Road Bikeway	2.333	Add a bikeway (facility type TBD) on or along Overbook Road, which is a key bicycle connection between neighborhoods in the east, new growth in the west, and Battery Park. A potential first segment could be from North Avenue to Chamberlayne Avenue.	Moderate ($$)
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 Blvd/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 Blvd and Belt Blvd.	High ($$$)
10H: Commerce Road Improvements at Walmsley Boulevard	2.067	Convert the intersection of Commerce Rd and Walmsley Blvd into a multi-lane roundabout. Provide new sidewalk on Commerce Rd between Bells Access Road and Walmsley Blvd, new dedicated turn lanes, pedestrian crossing improvements, and improvements to the I-95 ramps at exit 69. This project will improve freight access to the Richmond Marine Terminal and the Commerce Road industrial area, while also slowing vehicle speeds and improving pedestrian safety.	High ($$$)
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 ($)

LONGER-TERM PROJECTS

Project ID/Name	Support Score	What's needed?	Cost
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 ($/$$)
4D: Baker Street Pedestrian/Bike Only Street	1.8	Close Baker Street from N 1st St to Brook Rd to car traffic and add street trees, creating a shaded pedestrian- and bike-only street. Include native landscaping that retains water, and provides food and shade.	Moderate ($$)
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 ($$$$)
9L: Maury Street Bikeway	1.8	Add a bikeway (facility type TBD) on Maury St from Route 1 to Commerce Rd/Fall Line Trail.	Very High ($$$$)
14I: Mulberry Street Bikeway	1.8	New two-way bikeway (facility type TBD) on Mulberry Street or other parallel street. This new bikeway would provide a north-south connection in the vicinity of Arthur Ashe Blvd from the bikeway in Byrd Park to the proposed shared-use path in Scott's Addition.	Moderate ($$)
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 St.	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 ($$$)
17G: Cherokee Road Bikeway	1.6	Reconstruct Cherokee Rd to include a bikeway (facility type TBD).	Very High ($$$$)
10L: Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	1.533	Reconstruct Terminal Ave from Belt Blvd to Lynhaven Ave to add bike lanes, and add a bike lane on Belt Blvd from Terminal Ave to connect to the buffered bike lanes that are in the DPW pipeline on Hopkins Rd from Holly Springs to Walmsley Blvd.	Moderate ($$)
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 ($/$$)
11O: Terminal Avenue Bike Lanes - Broad Rock Blvd to Belt Blvd	1.4	Reconstruct Terminal Ave from Broad Rock Blvd to Belt Blvd to add bike lanes.	High ($$$)
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 Blvd and on Snead Rd from Whitehead Rd to Broad Rock Blvd.	High ($$$)
15E: Norfolk Street Bridge	1	Add a new bridge over CSX, connecting Norfolk Street from N Hamilton St to Belleville St.	Very High ($$$$)
15F: MacTavish Avenue Bridge	0.8	Add a new bridge over CSX, connecting MacTavish Ave or another parallel street.	Very High ($$$$)

APPENDIX D: PUBLIC ENGAGEMENT DOCUMENTATION

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.

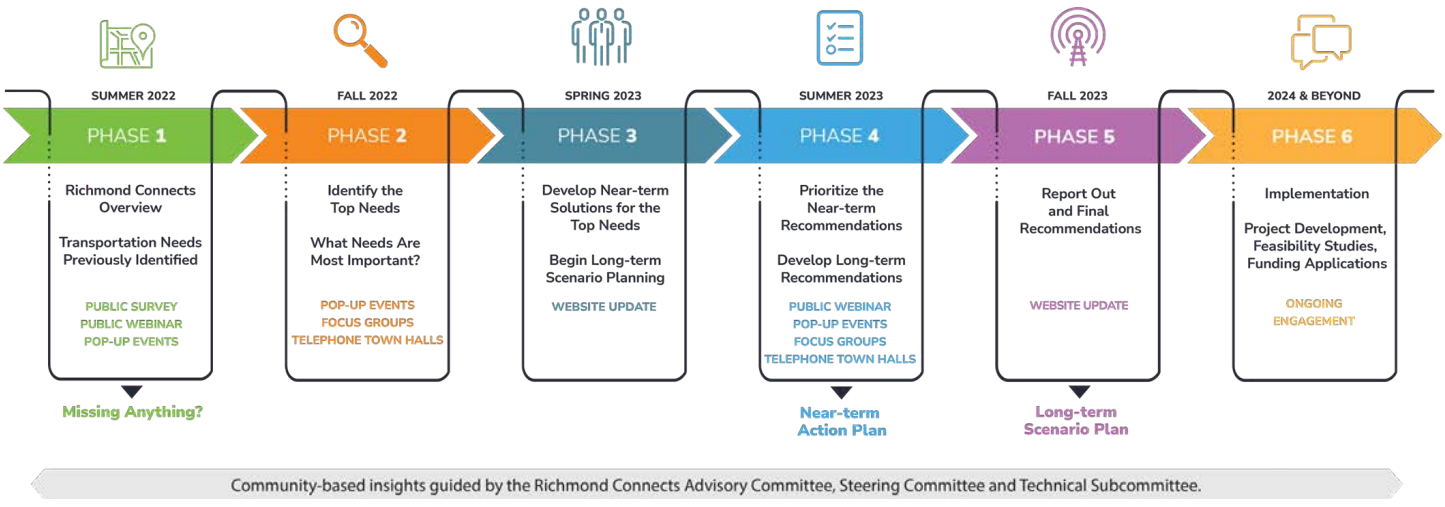


Figure 44. Public engagement timeline

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

Mapped Public Comments

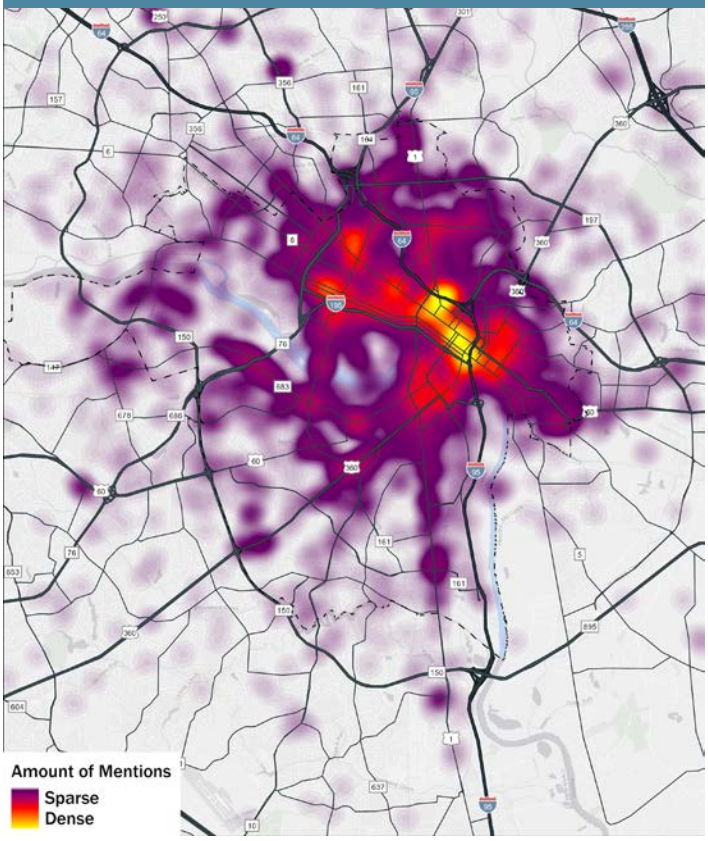


Figure 45. Heat map of locations where people put their public comments on the online map for the Phase 1 survey

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

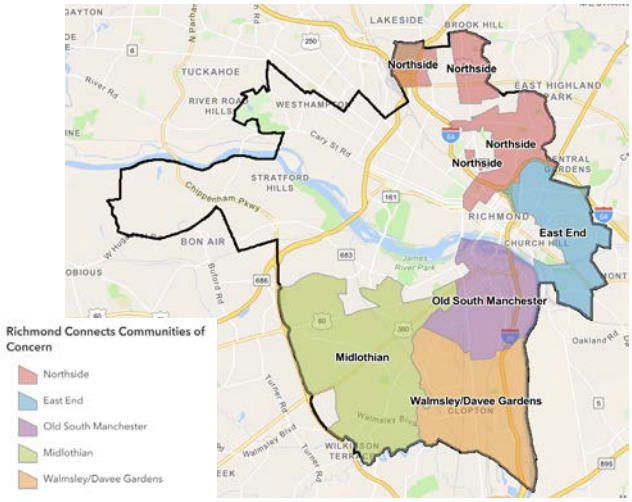


Figure 46. Communities of Concern in City of Richmond. These areas were identified as areas whose residents are most likely to be experiencing transportation injustices, based on demographic data including income, renter status, race, mobility, age, and other factors.

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 47. 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.

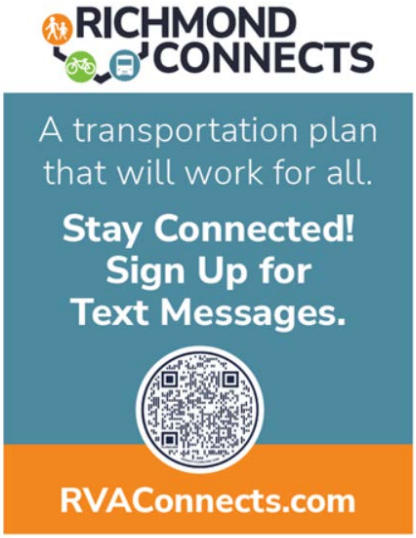
Social Media Posts:

- 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 Rd and Government Rd	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 Rd	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 Blvd 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 48. 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 Blvd	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 49. 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)

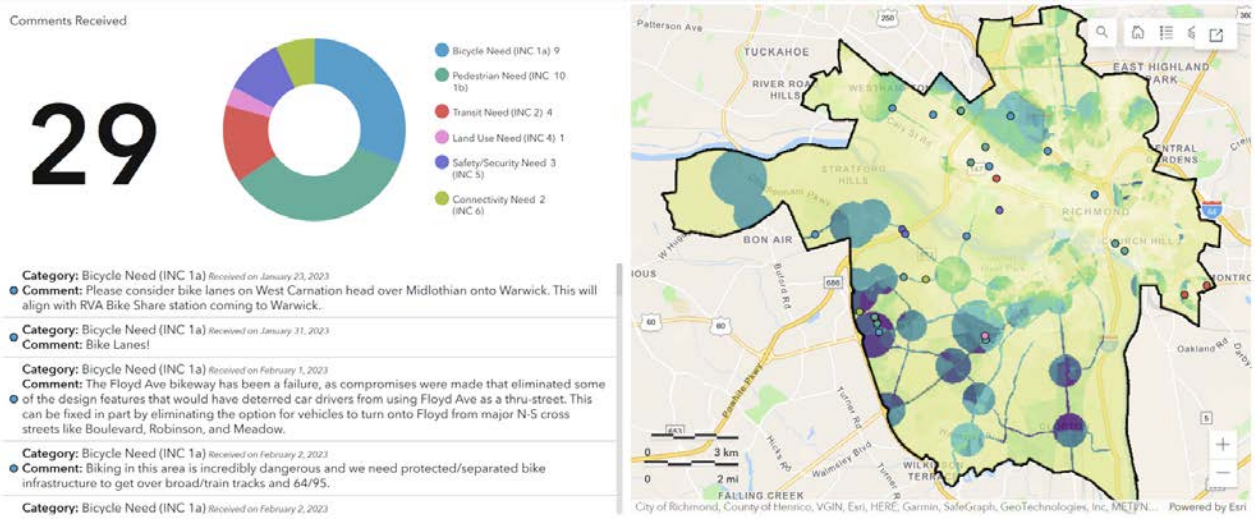


Figure 50. Dashboard of Comments Received on Initial Weighted Needs Maps

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.

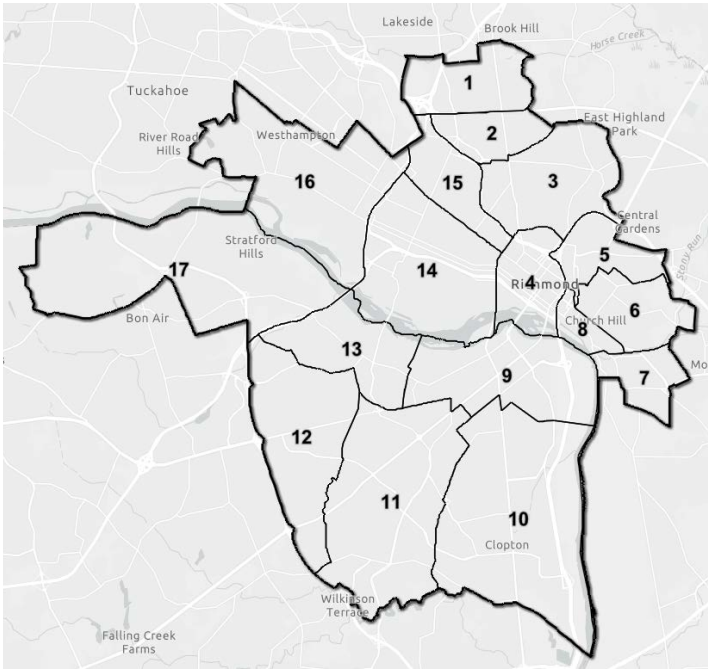
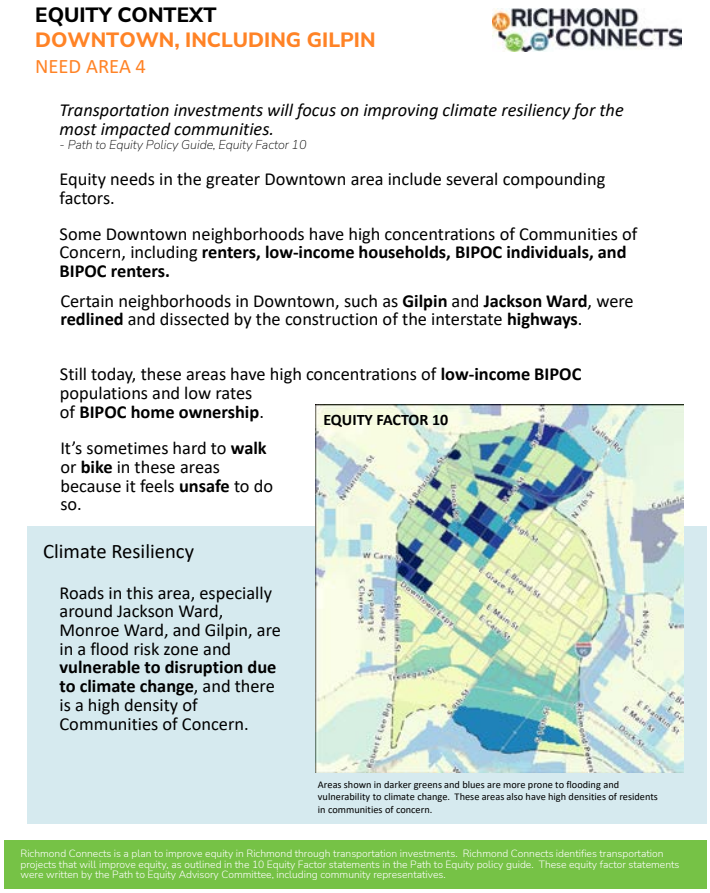


Figure 51. Map of the 17 Needs Areas in the City of Richmond. The Richmond Connects process defined 17 different areas of Richmond according to each area's equity-based transportation needs.

Webpage sharing the needs identification results



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.

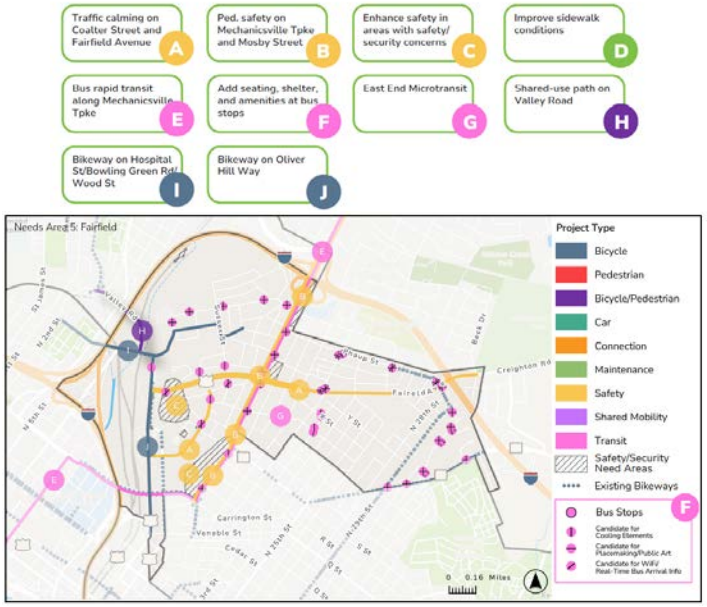
The surveys presented each recommendation in the Needs Area individually and asked, “Do you think this recommendation is a high priority?” Respondents could select either Yes or No. There was no limit on how many recommendations they could say yes to.

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.



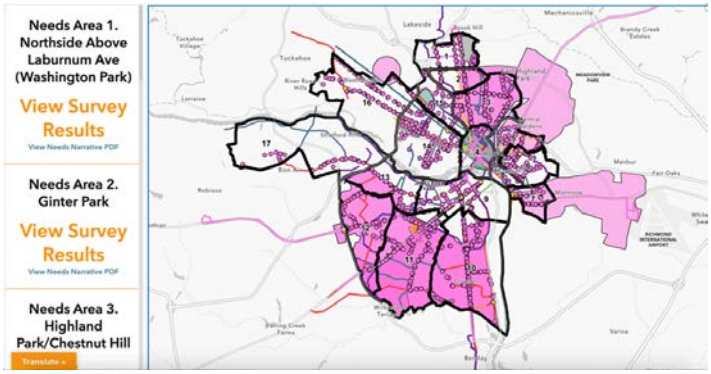
Example of the draft recommendations for Needs Area 5: Fairfield

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 Tnpk
- #3819-German School and Midlothian
- #1776-Midlothian Tnpk
- #2307-Midlothian Tnpk

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

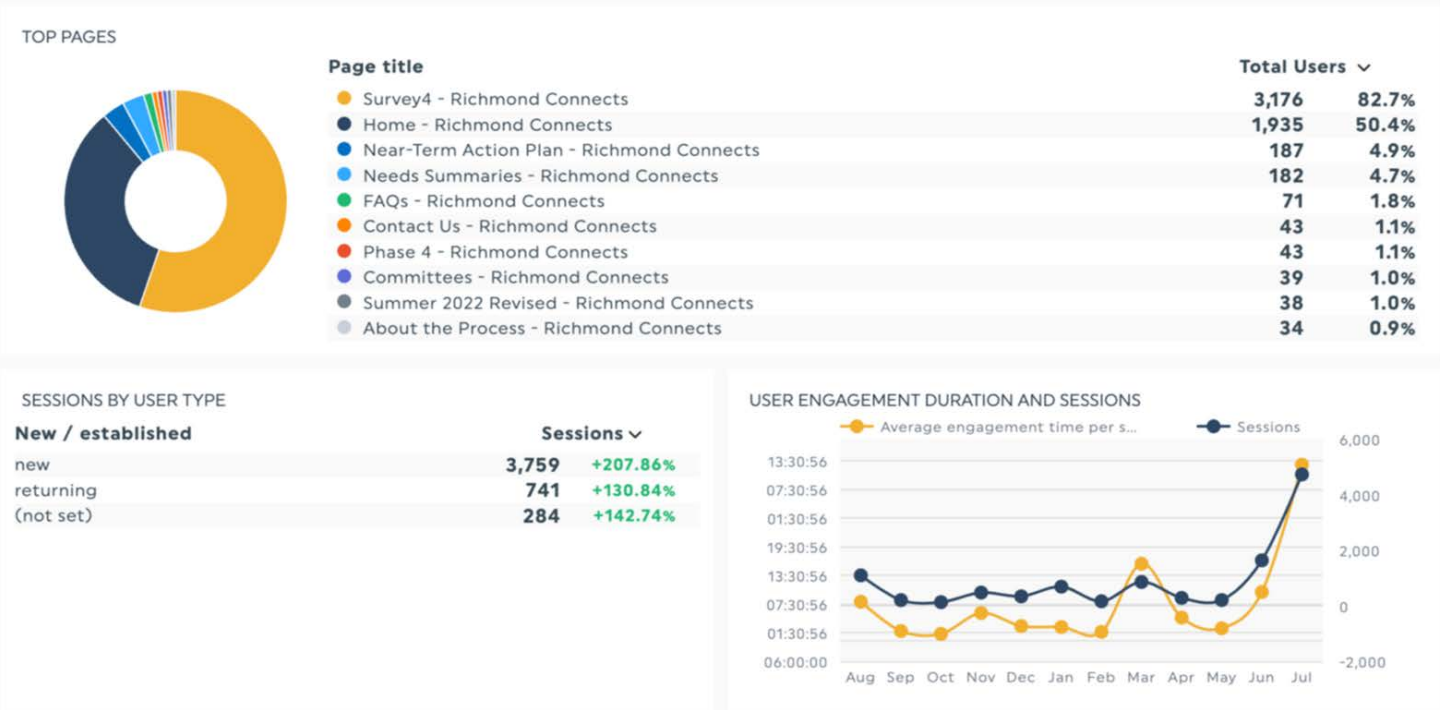
Richmond Connects has identified projects and recommendations for improving transportation equity in all areas of #RVA! This has been a year-long process to analyze data and gather public input. Check out where you live, work or visit! Take our survey and tell us if you agree with these recommendations! 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

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 Blvd. (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 Blvd.
- Chicken Box-3000 3rd Ave-23222
- Sunoco Gas Station-1401 E. Brookland Park Blvd.
- New York Fried Chicken-3000 Meadowbridge Rd.-23222
- Battery Park-598 Overbrook Rd.-23222
- Brooklyn Park Blvd-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.

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.-232321
- 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.
- 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.

Pop-up at Richmond Outlet of Goodwill of Central and Coastal Virginia in Needs Area 12

Area 9- Manchester/Swansboro

- George Wythe High School-4314 Crutchfield St.-23235
- S.S Community Center Department Social Services-4100 Hull St.
- Goodwill of Central and VA Outlet-6301 Midlothian Tnpk
- Pep Boys-6300 Midlothian Tnpk
- Hull St Citgo-2605 Hull St.
- Big Apple Super Market-2916 Richmond Hwy,
- Rite Aid-1801 Hull St.
- Dollar General-2128 Hull St.
- G-leaf Manchester-2804 Decatur St.
- 301 express-2012 Maury St.
- Caritias furniture-222- Stockton St.
- Burger king-430 East Belt Blvd.

Area 10 – Southside Route 1 Area

- S.S Community Center Department Social Services-4100 Hull St.
- Hillside Community Day Backpack-1501 Harwood St.
- Sam's Crab House-4100 Jefferson Davis
- Satellite National Night Out-4000 Jeff Davis Highway
- 7-11 Hopkins and Jeff Davis-9113 Jeff Davis Highway
- Mr. Submarine-3205 Jeff Davis Hwy.
- Big Apple Supermarket-2916 Jeff Davis Highway

Area 11- Broad Rock/Walmsley

- Broad Rock Library-4820 Old Warwick Rd
- Family Dollar-2845 Broad Rock Blvd.
- 711-2525 Broad Rock Blvd,
- CVS-4715 Walmsley Blvd.
- Hopkins Store-1437 Hopkins Rd.
- Village South apartments-801 Holly Springs Ave.
- James Food Store-1808 Broad Rock Blvd.
- Laundry Land – 3818 Hull Street Rd.
- Super Suds – 5130 Hull Street North
- Wash House – 66332 Midlothian Tpke

Area 12- Midlothian/German School Road

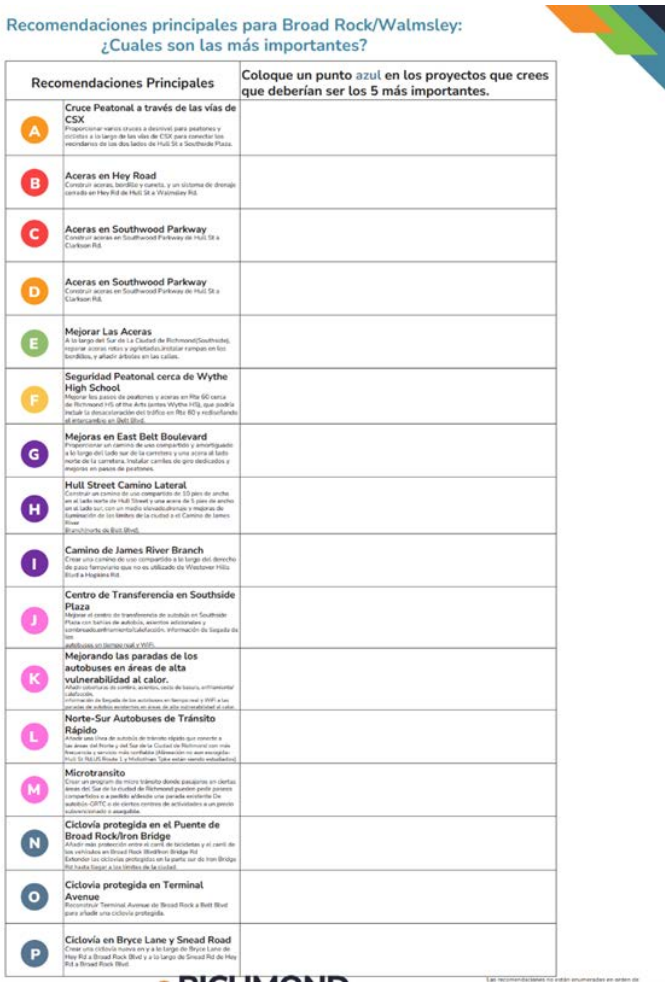
- Richmond High School of the Arts (formerly George Wythe)-4314 Midlothian Tnpk.
- Bell Atlantic Apartments-4000 Midlothian Tnpk
- Marcos Pizza-5917 Midlothian/Germain School
- Sub Shop-5599 Midlothian Tnpk
- Pep Boys-6300 Midlothian Tnpk
- Richmond Outlet of Goodwill of Central and Coastal Virginia (photo to the right)

Area 17- Huguenot

- Huguenot High School Football team
- WAWA Shelia Lane.

Dot-Voting Engagement at Gilpin and Southwood Community Days

Before releasing the survey, the team went to Gilpin and Southwood Community Days on July 14 and 15, 2023 with large posters showing each of the recommendations for Needs Area 4 and Needs Area 11 respectively. For Southwood Community Day, the projects were also presented in Spanish. The respondents used dots to 'vote' for their priorities and most important recommendations.


Recomendaciones principales para Broad Rock/Walmsley:
¿Cuales son las más importantes?

Recomendaciones Principales		Coloque un punto azul en los proyectos que crees que deberían ser los 5 más importantes.
A	Cruce Peatonal a través de las vías de CSX	
B	Aceras en Hey Road	
C	Aceras en Southwood Parkway	
D	Aceras en Southwood Parkway	
E	Mejorar Las Aceras	
F	Seguridad Peatonal cerca de Wythe High School	
G	Mejoras en East Belt Boulevard	
H	Hull Street Camino Lateral	
I	Camino de James River Branch	
J	Centro de Transferencia en Southside Plaza	
K	Mejorando las paradas de los autobuses en áreas de alta vulnerabilidad al calor.	
L	Norte-Sur Autobuses de Tránsito Rápido	
M	Microtransito	
N	Ciclovía protegida en el Puente de Broad Rock/Iron Bridge	
O	Ciclovía protegida en Terminal Avenue	
P	Ciclovía en Bryce Lane y Snead Road	

Spanish version of Needs Area 11 recommendations poster and dot voting poster asking which recommendations are in a respondents' top 5 most important projects

National Night Out

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

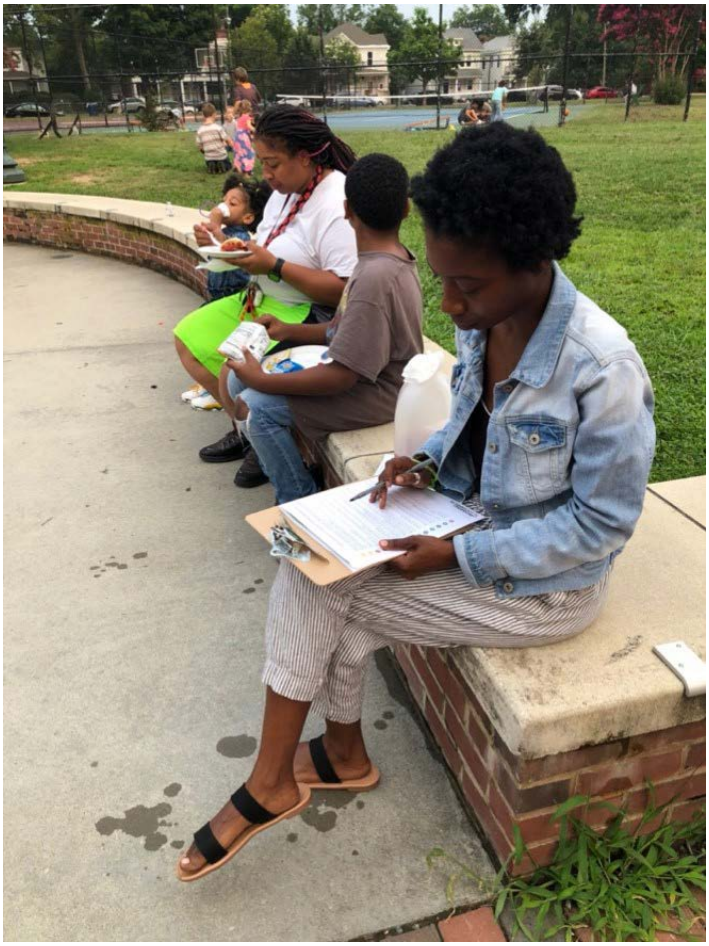
The Richmond Connects team held two Telephone Town Hall Meetings in August 2023:

- 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.



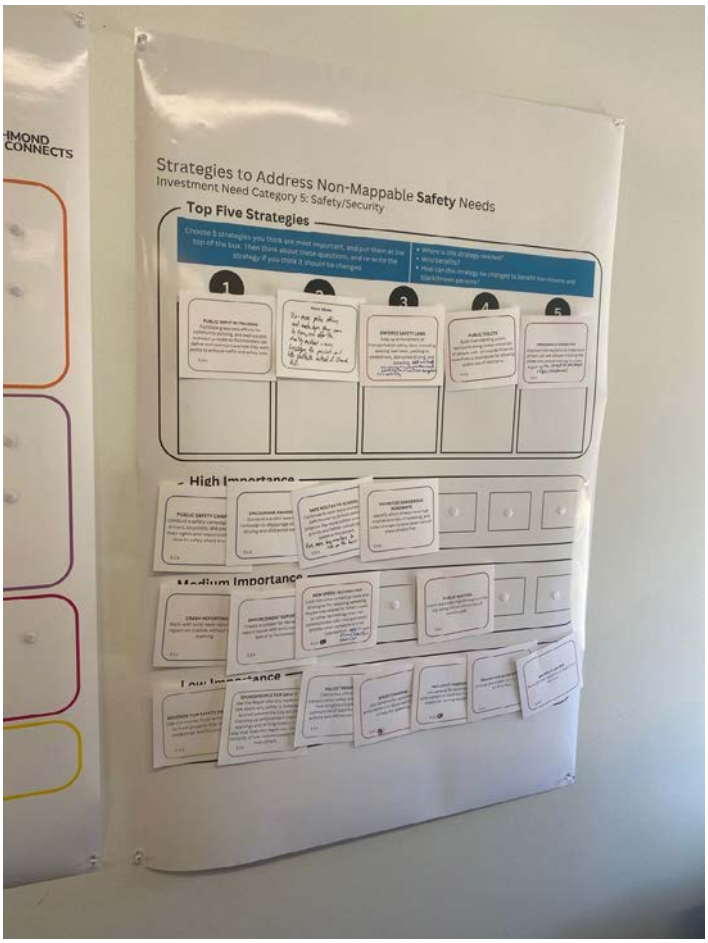
People filling out surveys at the Northside National Night Out

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

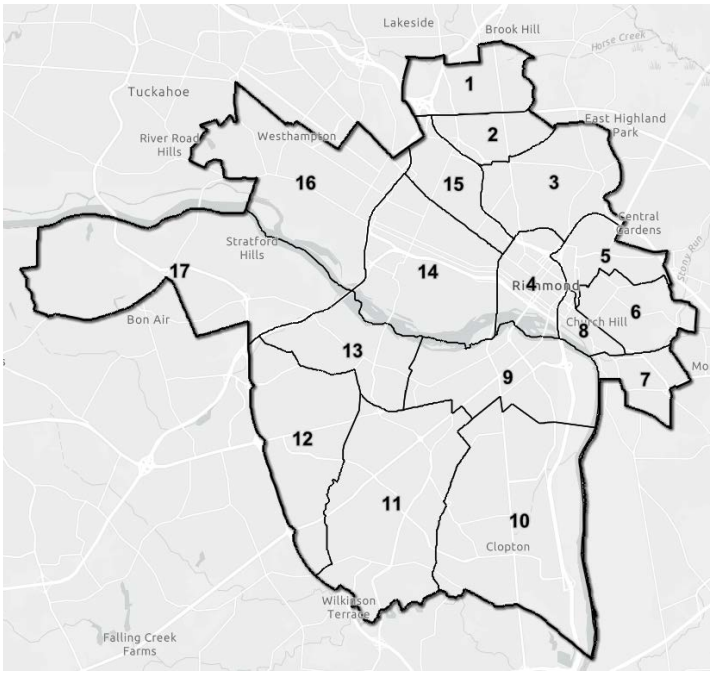
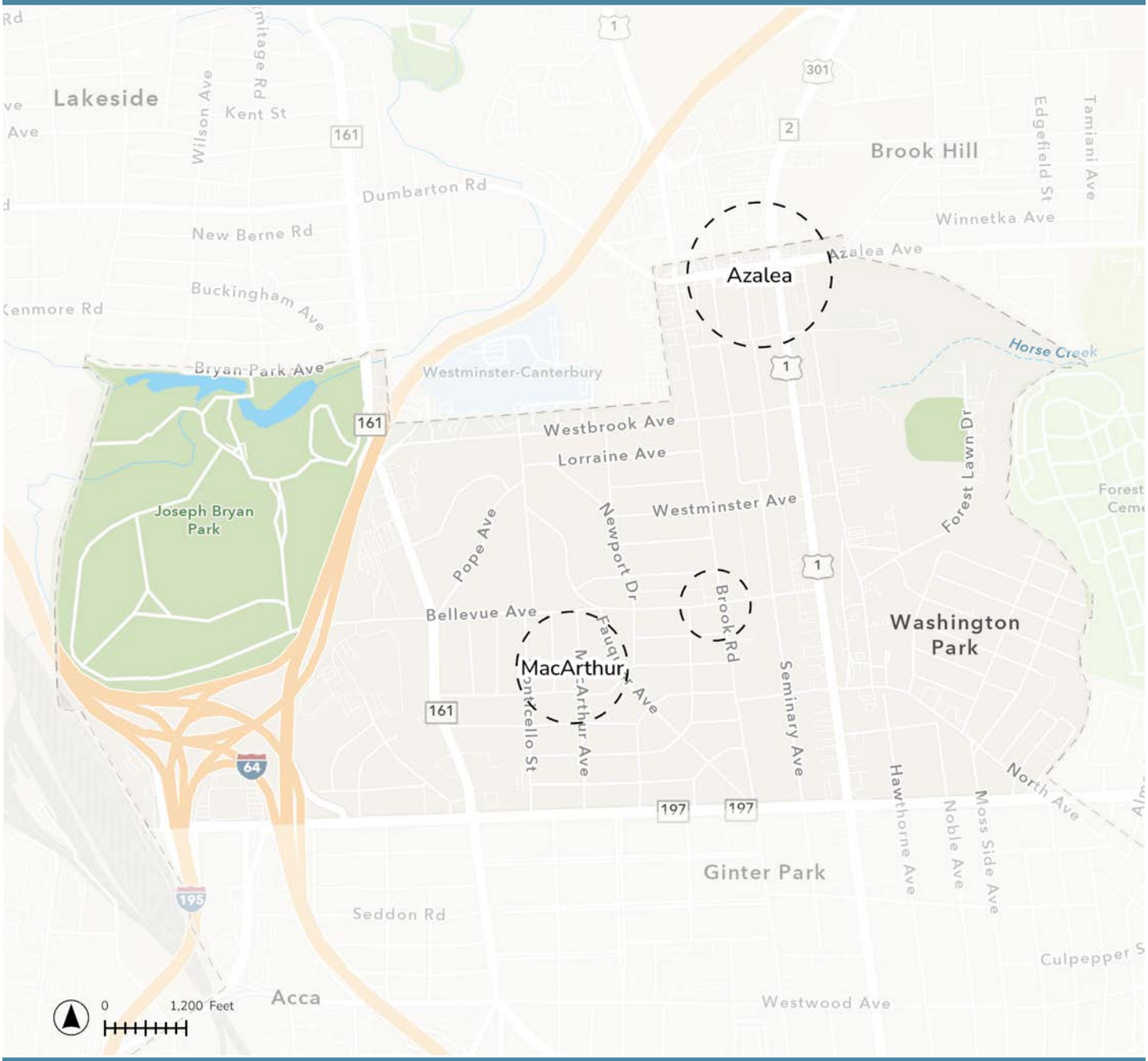


Figure 52. Needs Areas

NEEDS AREA SUMMARIES

1: Northside Above Laburnum



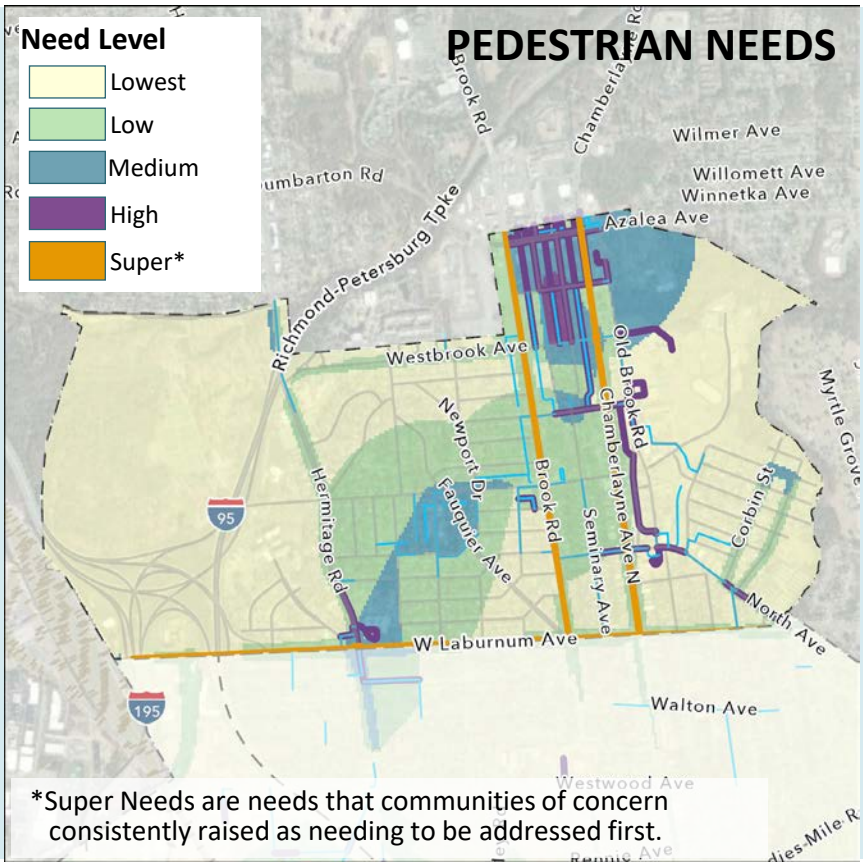
TOP TRANSPORTATION NEEDS
NORTHSIDE ABOVE LABURNUM AVE
NEED AREA 1

RICHMOND CONNECTS

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

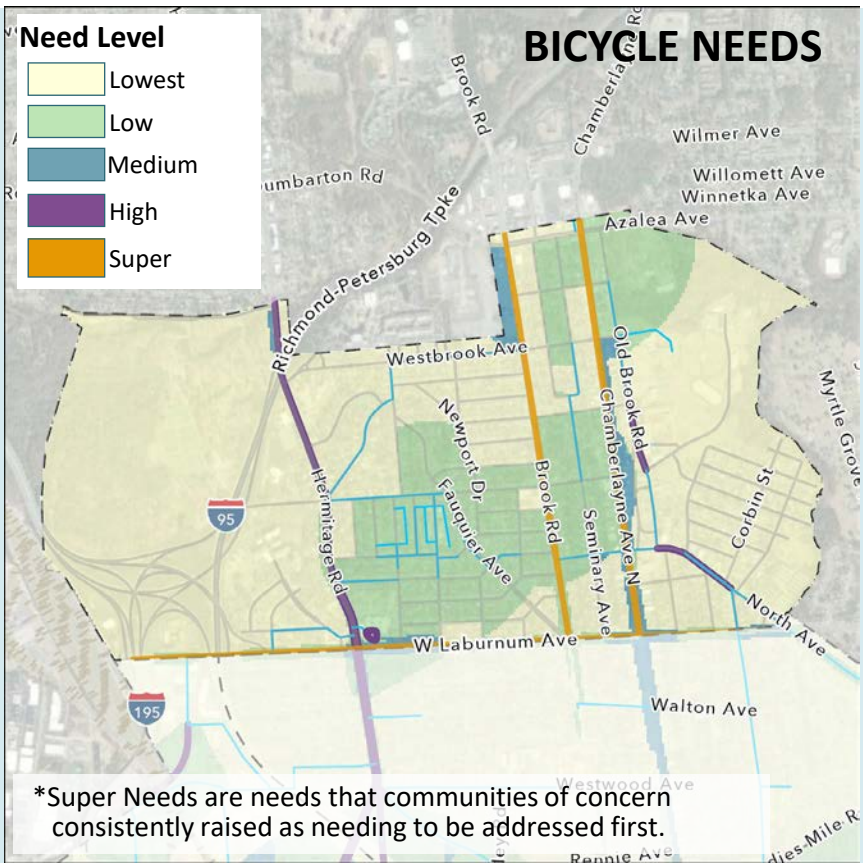
Bike trips from Communities of Concern use these streets the most:

- 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

RICHMOND CONNECTS

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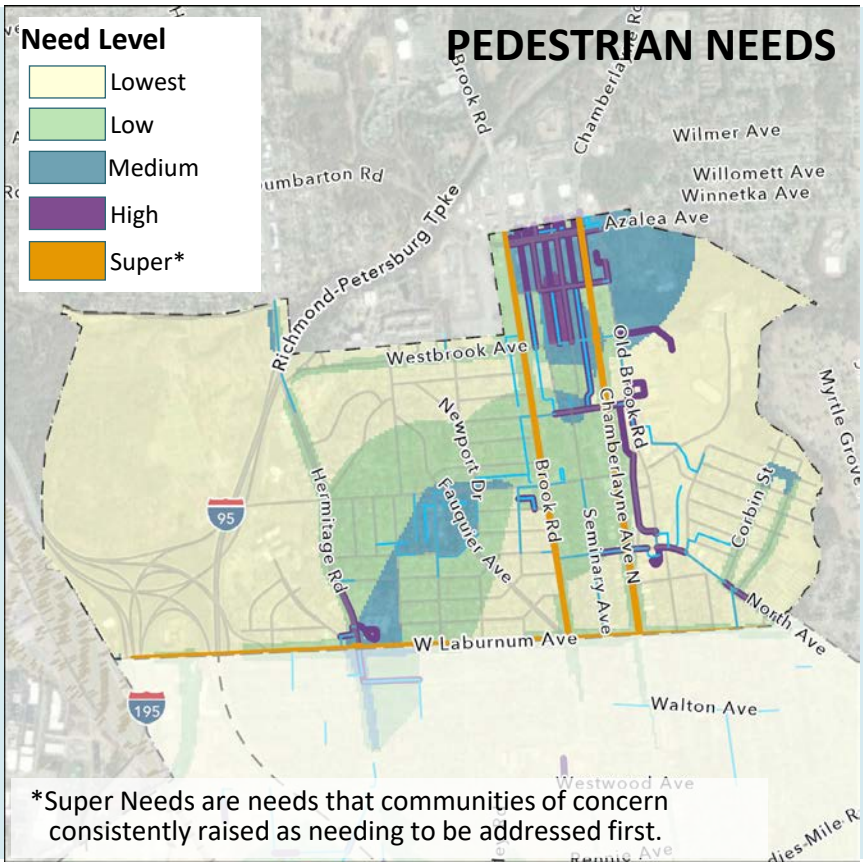

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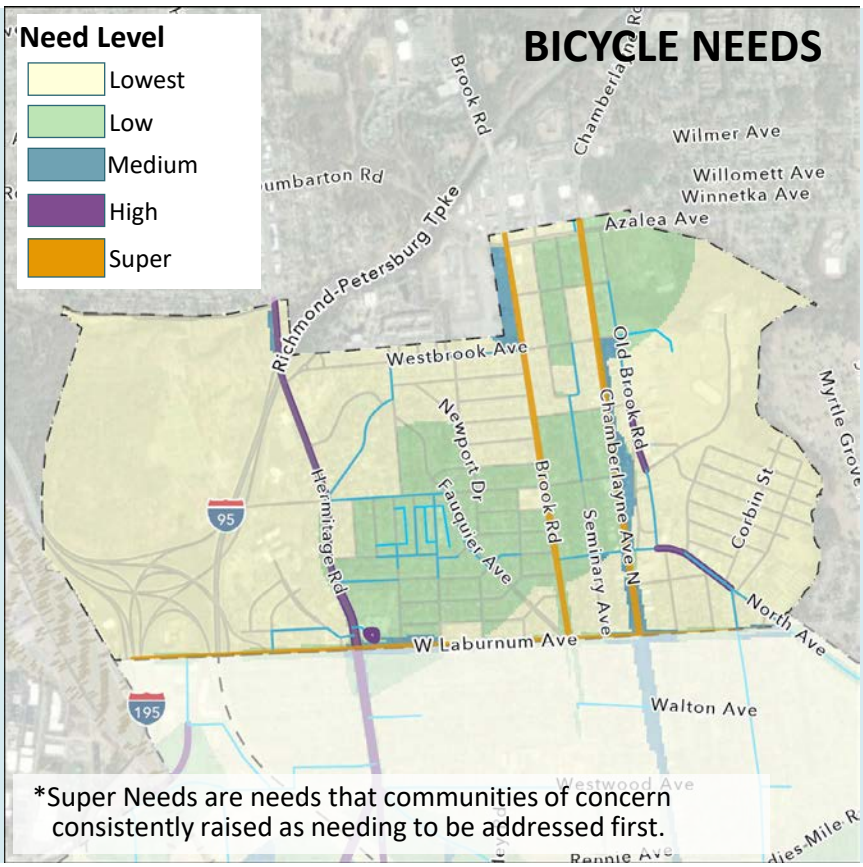
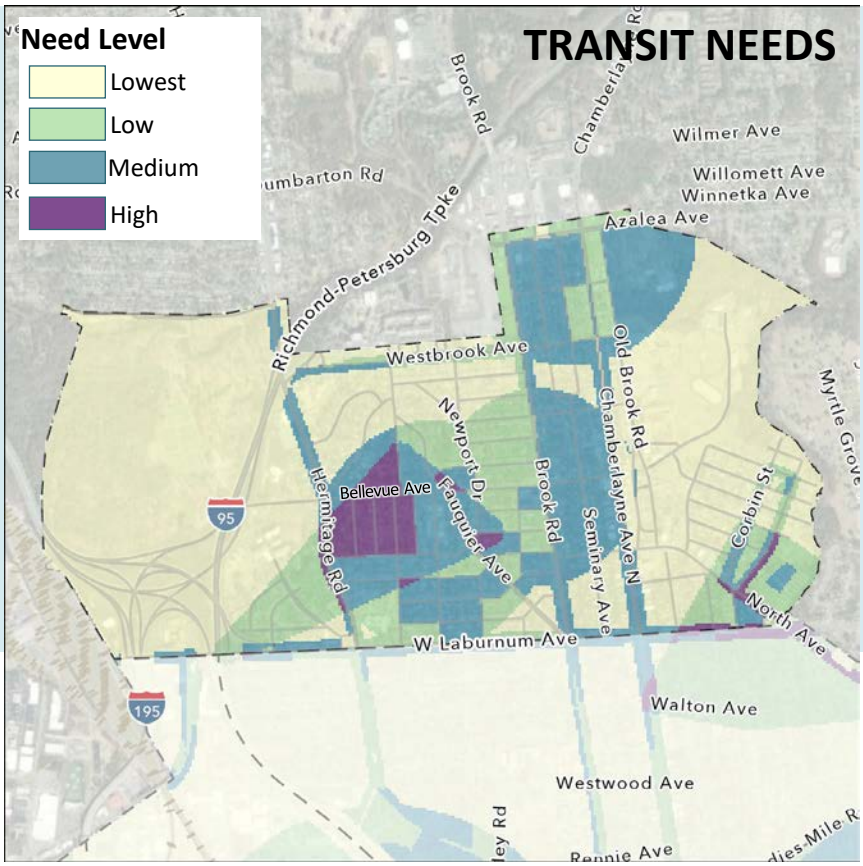


TOP TRANSPORTATION NEEDS
NORTHSIDE ABOVE LABURNUM AVE
NEED AREA 1

RICHMOND CONNECTS

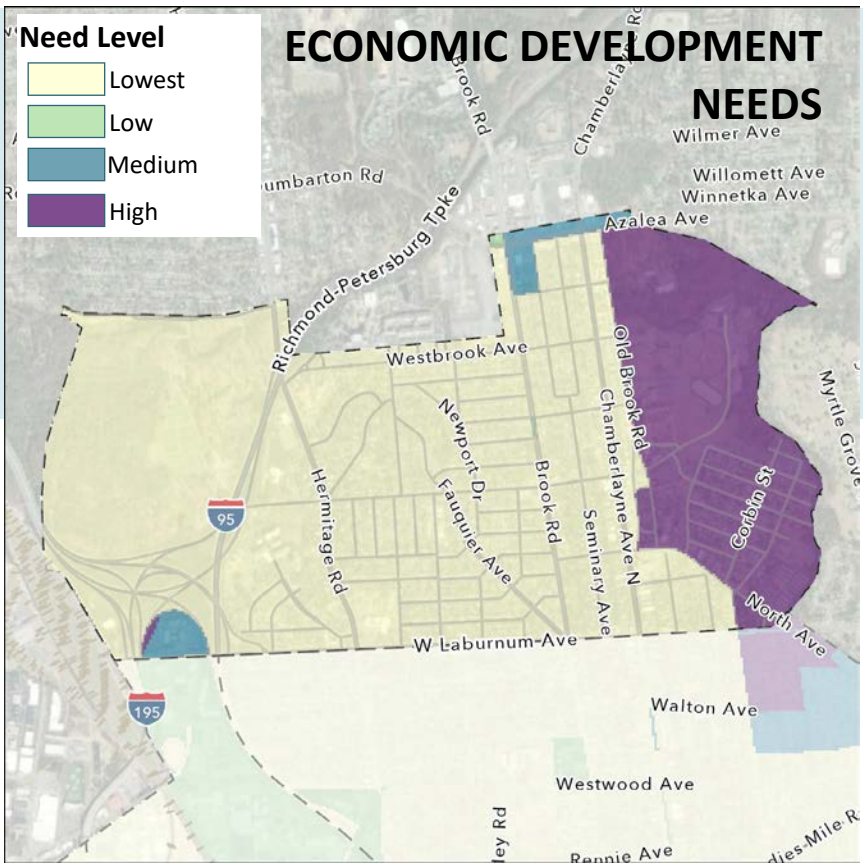
TOP TRANSIT NEEDS

- 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.

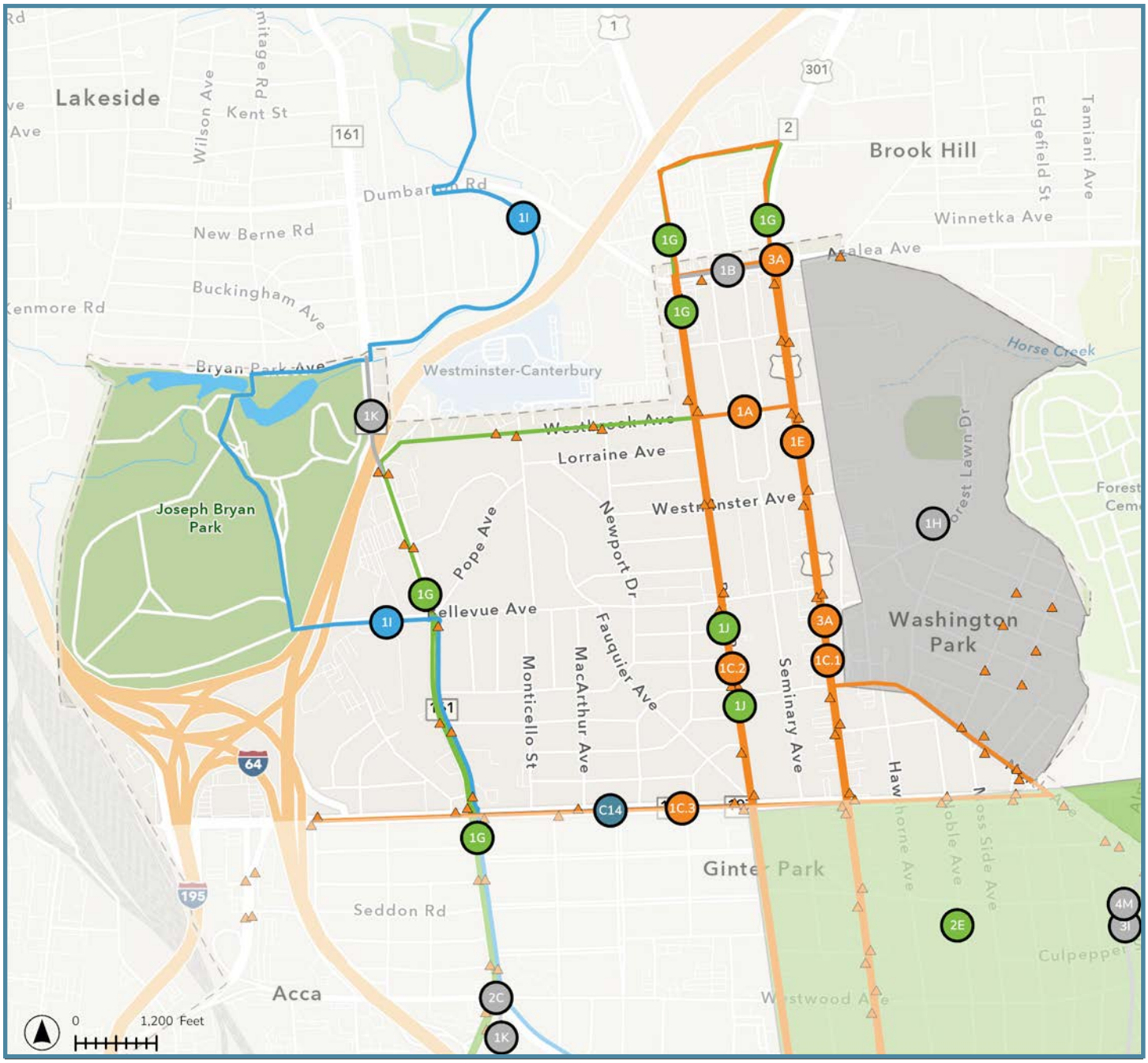


Other high needs include:

- 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



- 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)

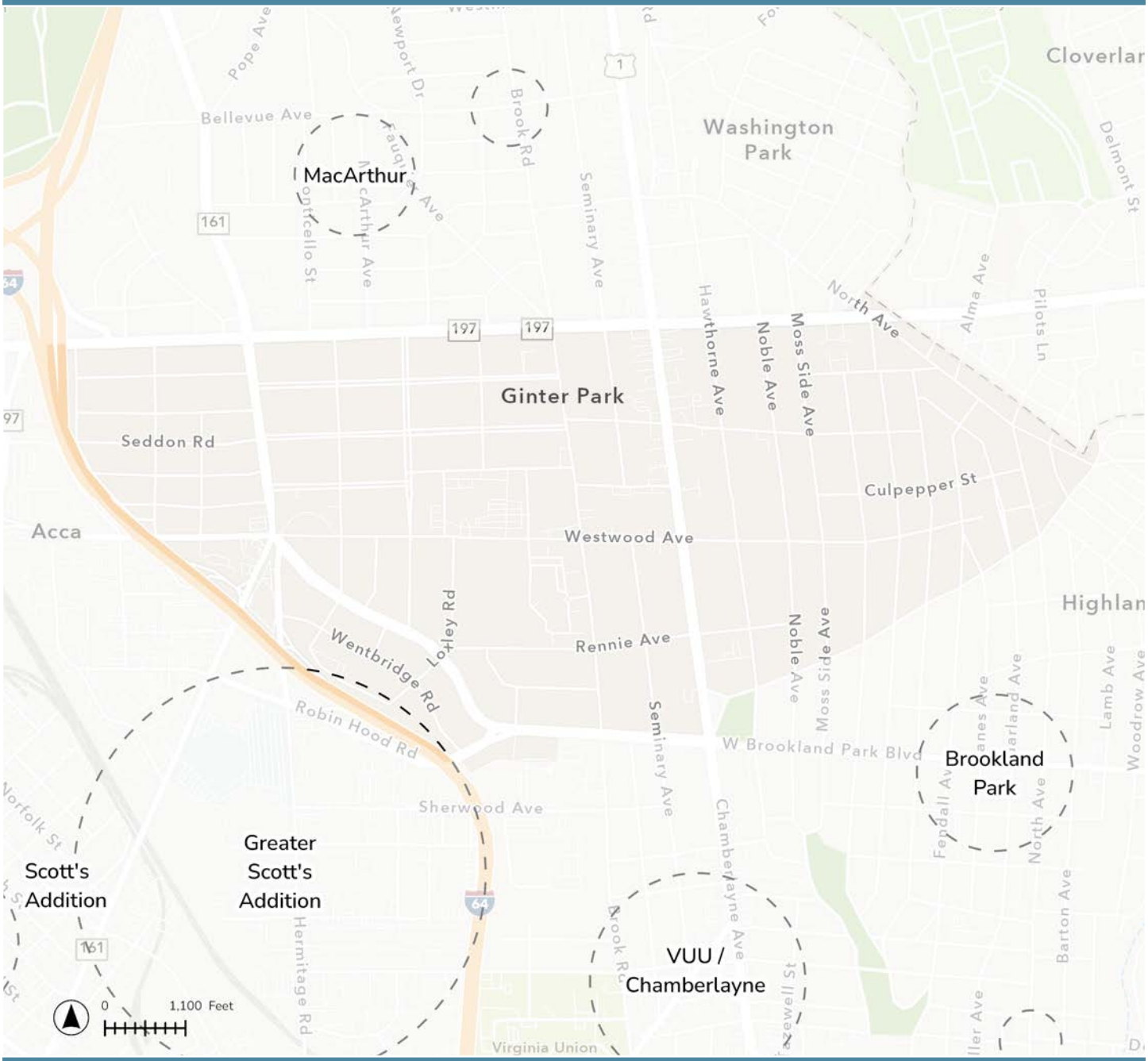
NEEDS AREA SUMMARIES

1: Northside Above Laburnum Project Recommendations

ID	Category	Title	Cost	Support Score	Page
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	High ($$$)	4.9	194
1C.1	Priority Projects	Chamberlayne Avenue Pedestrian Safety Improvements	High ($$$)	4.9	192
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
1C.3	Priority Projects	Laburnum Avenue Safety Improvements	High ($$$)	5.0	190
3A	Priority Projects	North Avenue Pedestrian Safety Improvements	Moderate ($$)	4.8	204
1E	Priority Projects	North-South Bus Rapid Transit	Very High ($$$$)	3.9	256
1A	Priority Projects	Westbrook Avenue Pedestrian Improvements	Low ($)	4.1	244
1I	Priority Completion	Fall Line Trail	n/a	2.6	269
C14	Other Completion	Laburnum Median Improvements	n/a	0.0	272
1J	Shorter Term	Brook Road Bike Lanes Protection	Low ($)	3.4	278
1G	Shorter Term	GRTC Route 14 Increased Frequency	Moderate ($$)	3.4	278
1B	Longer Term	Azalea Avenue Streetscape Improvements	Low/Moderate ($/$$)	3.6	281
1K	Longer Term	Hermitage Road Buffered Bike Lanes	Low ($)	2.9	283
1H	Longer Term	Ridesharing Vouchers	n/a	3.2	282

NEEDS AREA SUMMARIES

2: Ginter Park



EQUITY CONTEXT
GINTER PARK
NEED AREA 2

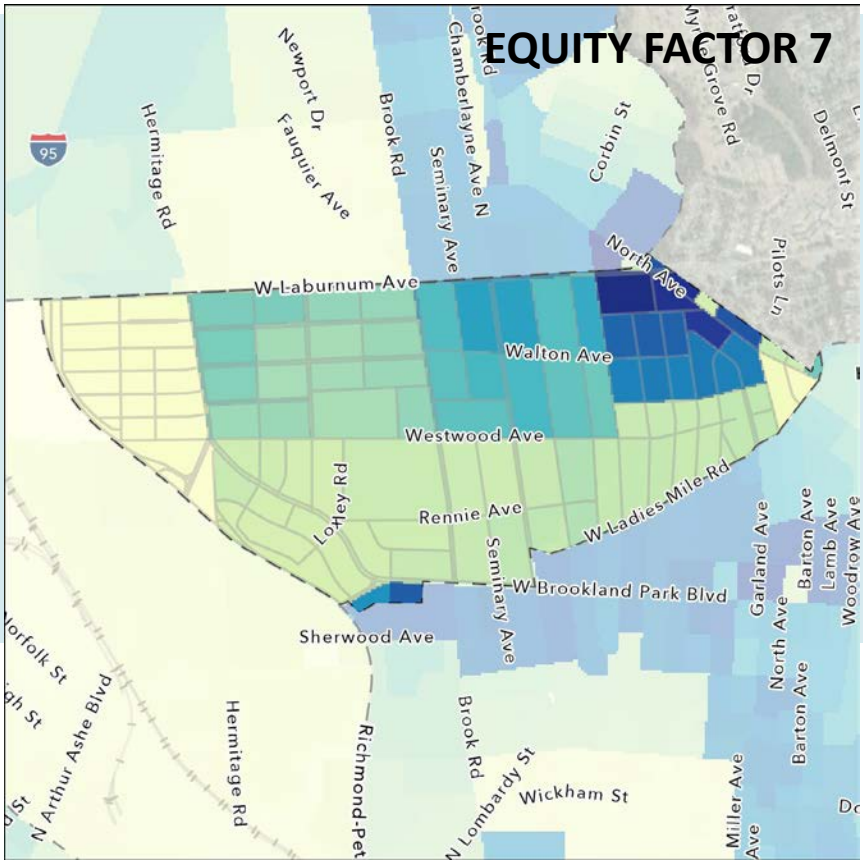
Compared to other areas in Richmond, there are fewer transportation inequities in Ginter Park.

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

RICHMOND CONNECTS

TOP PEDESTRIAN NEEDS

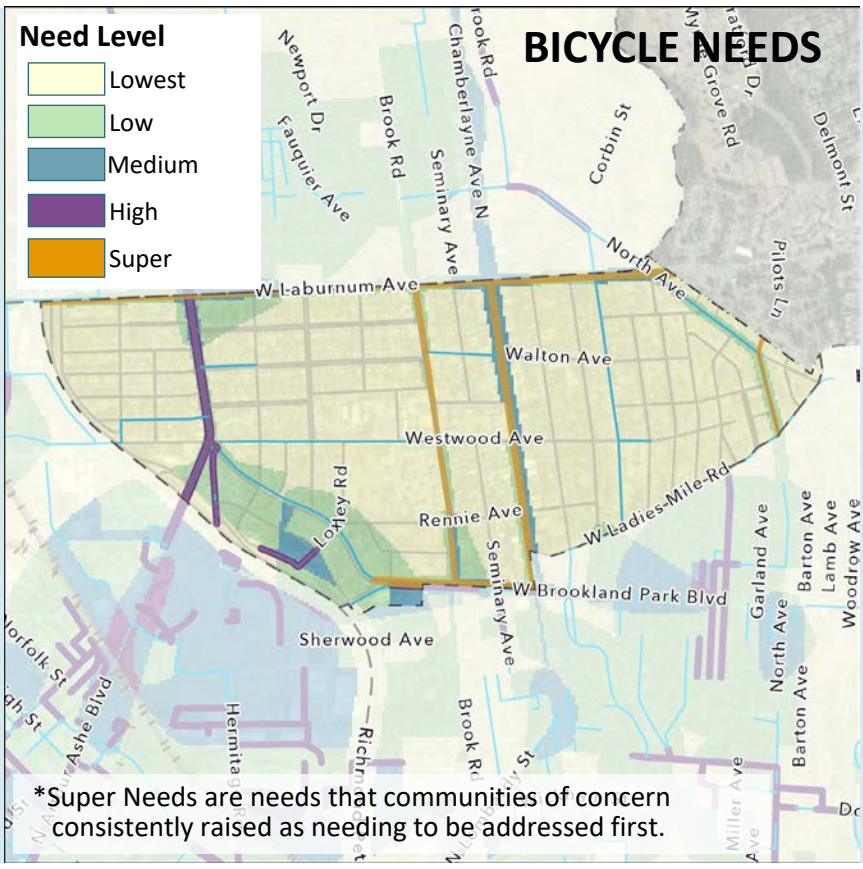
- Chamberlayne, North Ave, Laburnum Ave, and Brook Rd feel unsafe. High-speed traffic and hard to cross the street
- The intersection at Laburnum Ave and Hermitage Rd feels unsafe
- "Super" needs from public input:
    - *Traffic calming needed on streets like Chamberlayne Ave, Laburnum Ave, and Brook Rd*

Pedestrian needs here are generally lower than several other areas of Richmond.

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.



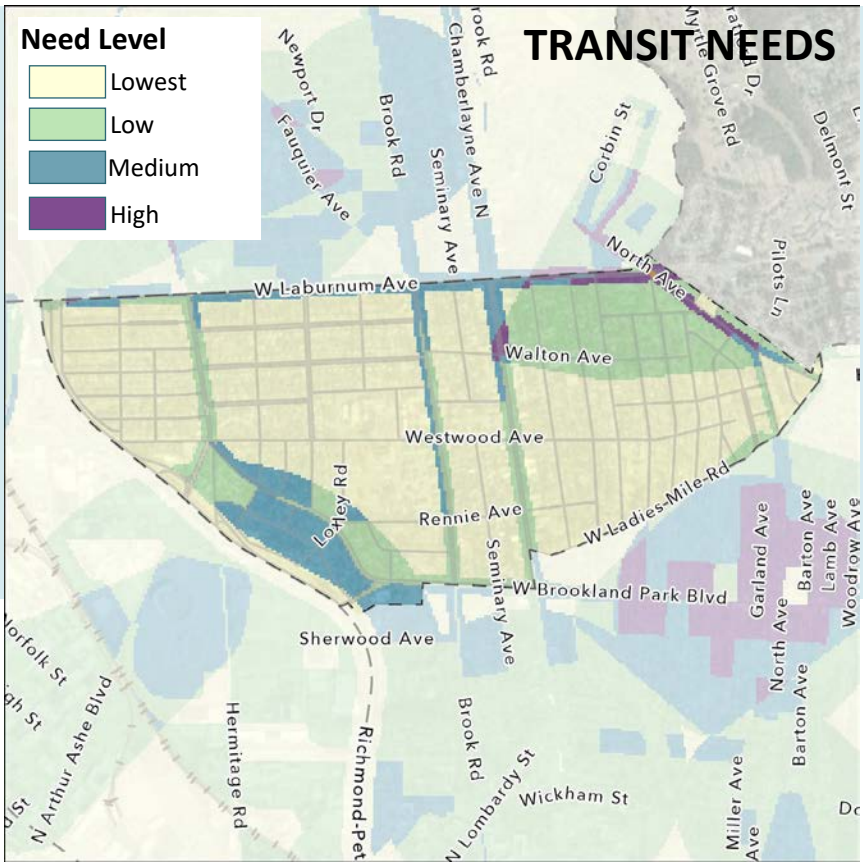
TOP TRANSPORTATION NEEDS
GINTER PARK
NEED AREA 2

RICHMOND CONNECTS

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.

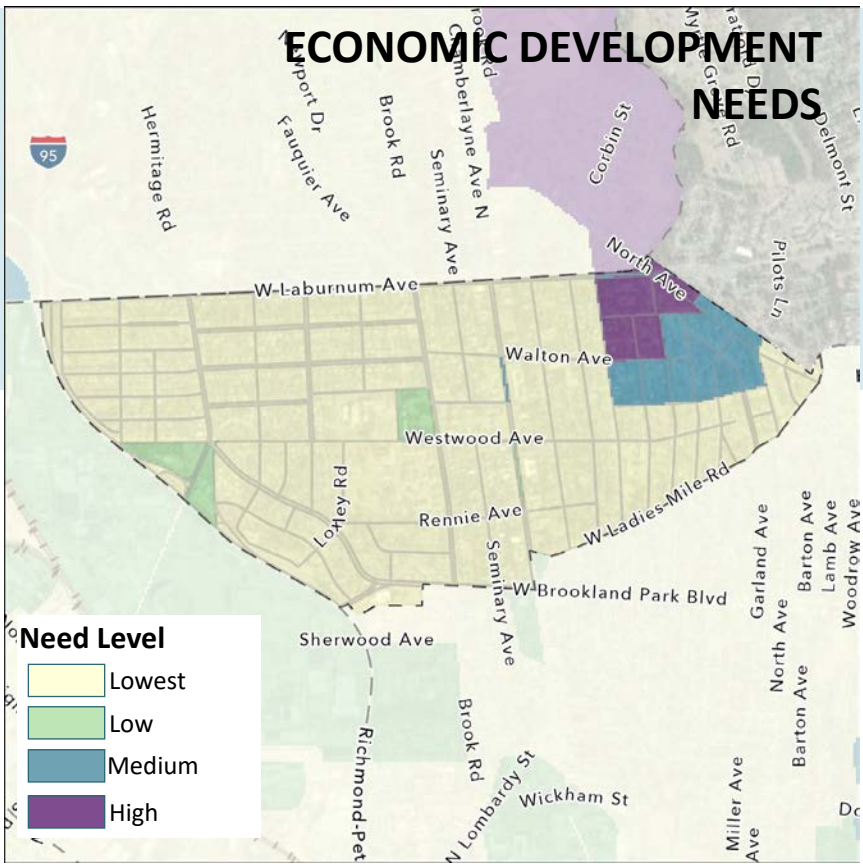


ECONOMIC DEVELOPMENT

High economic development needs east of Moss Side Ave and north of Culpeper St are mostly due to low market value of homes.

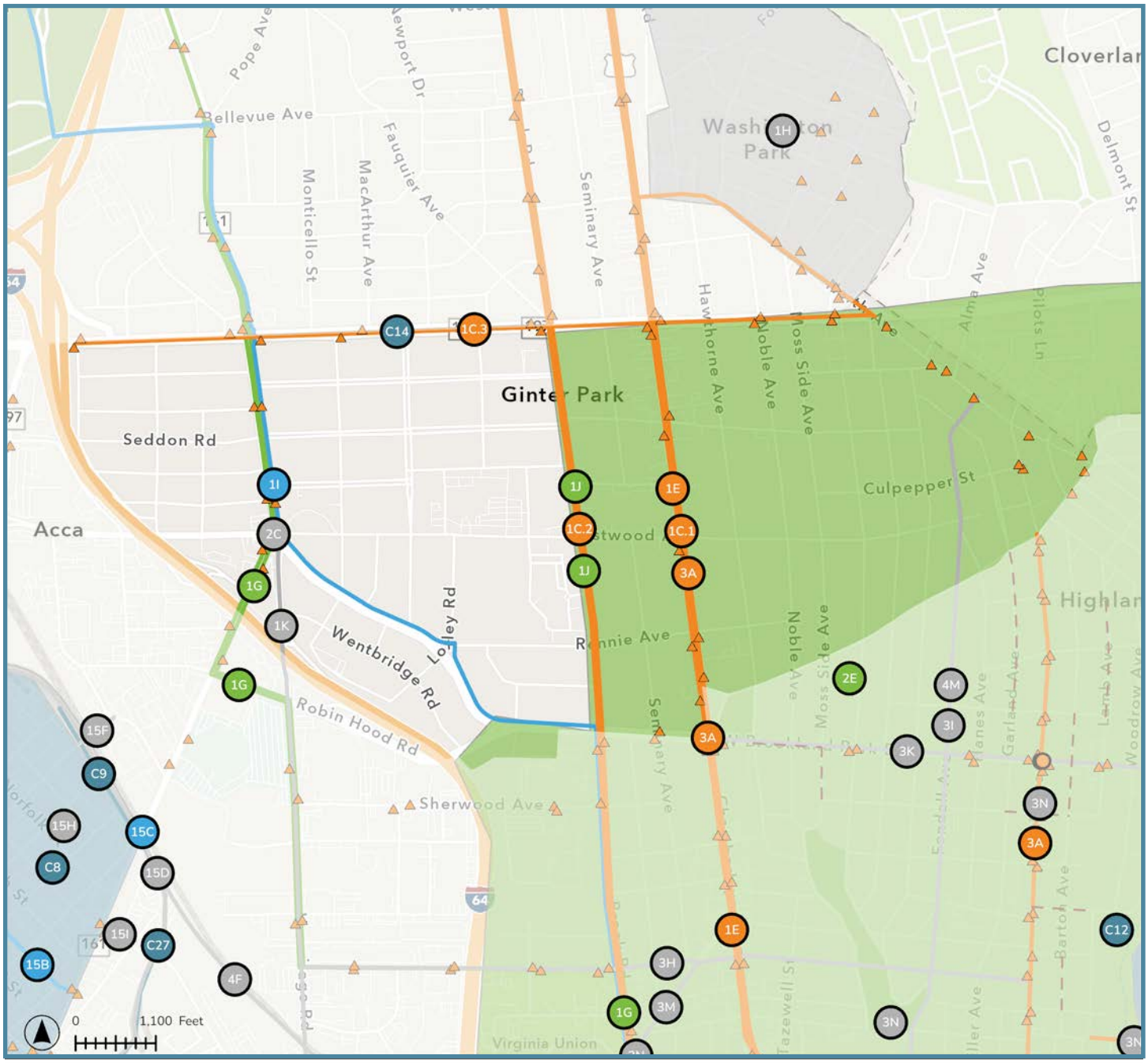
Other high needs for this area include:

- 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



- 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)

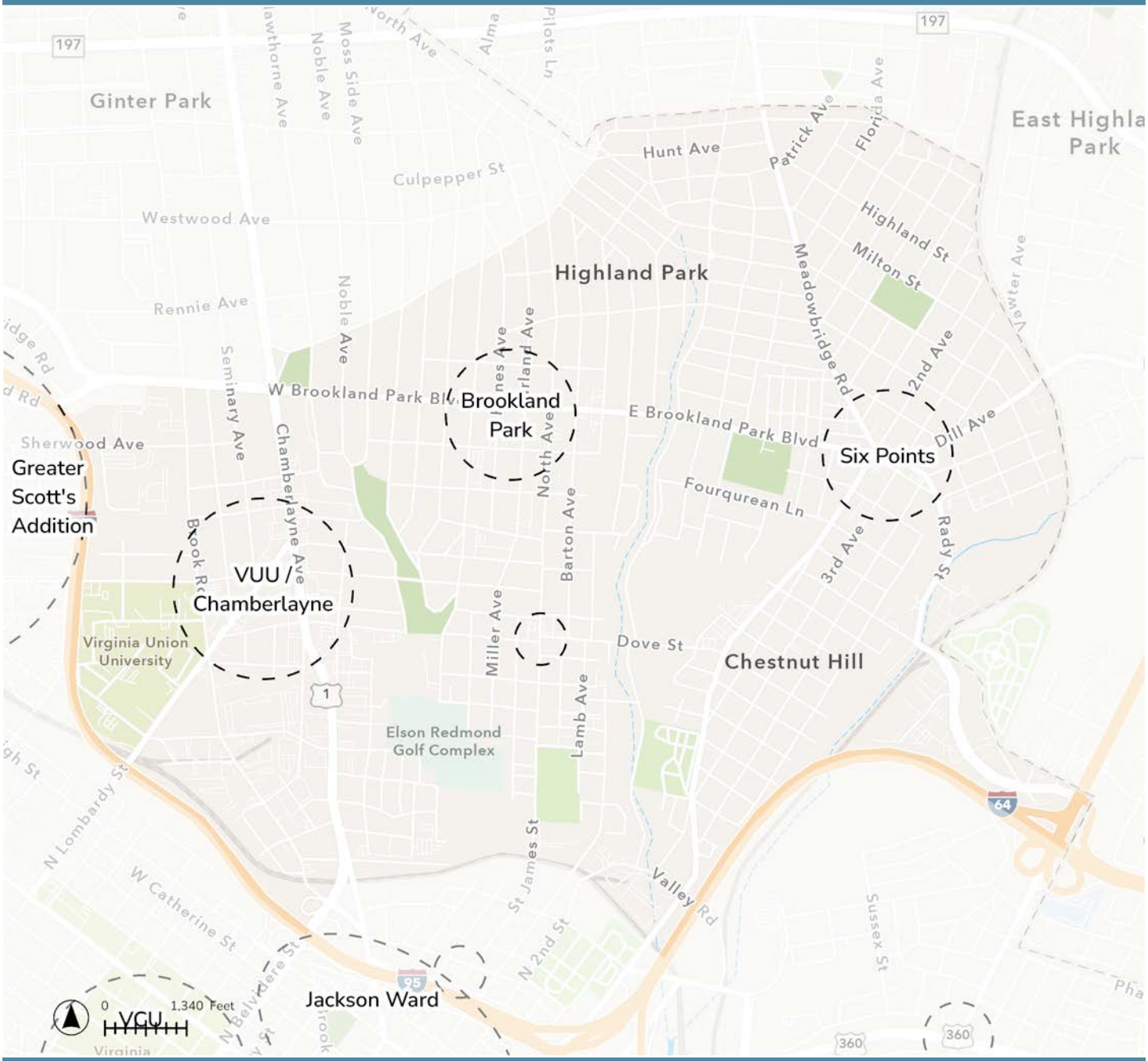
NEEDS AREA SUMMARIES

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 ($$$$)	4.6	212
17A	Priority Projects	Forest Hill Avenue Streetscape	Moderate ($$)	2.5	262
17F	Priority Projects	Huguenot Road Bikeway	Moderate ($$)	3.3	264
C29	Other Completion	Cherokee Road Roadside Safety Improvements	n/a	0.0	275
17G	Longer Term	Cherokee Road Bikeway	Very High ($$$$)	1.6	285
13I	Longer Term	Forest Hill Avenue Bikeway	High ($$$)	2.2	284
17C	Longer Term	Norfolk Southern Shared Use Path	High ($$$)	1.6	285
17B	Longer Term	Powhite Greenway	High ($$$)	1.6	285

NEEDS AREA SUMMARIES

3: Highland Park/Chestnut Hill



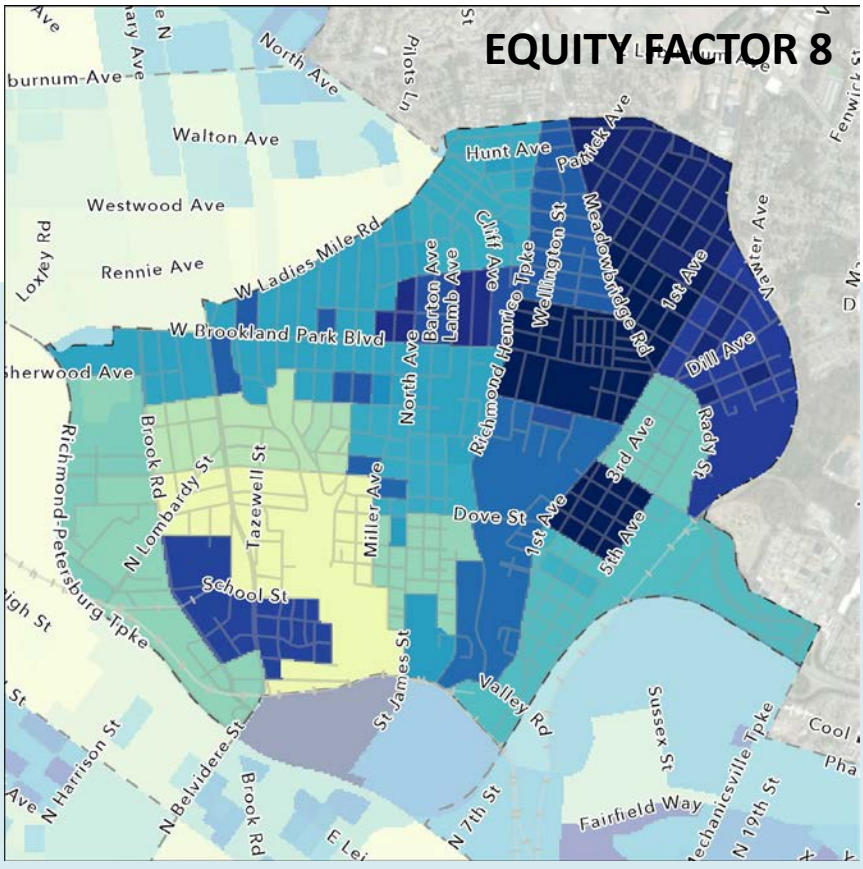
EQUITY CONTEXT
HIGHLAND PARK/ CHESTNUT HILL
NEED AREA 3

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.



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 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.

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.

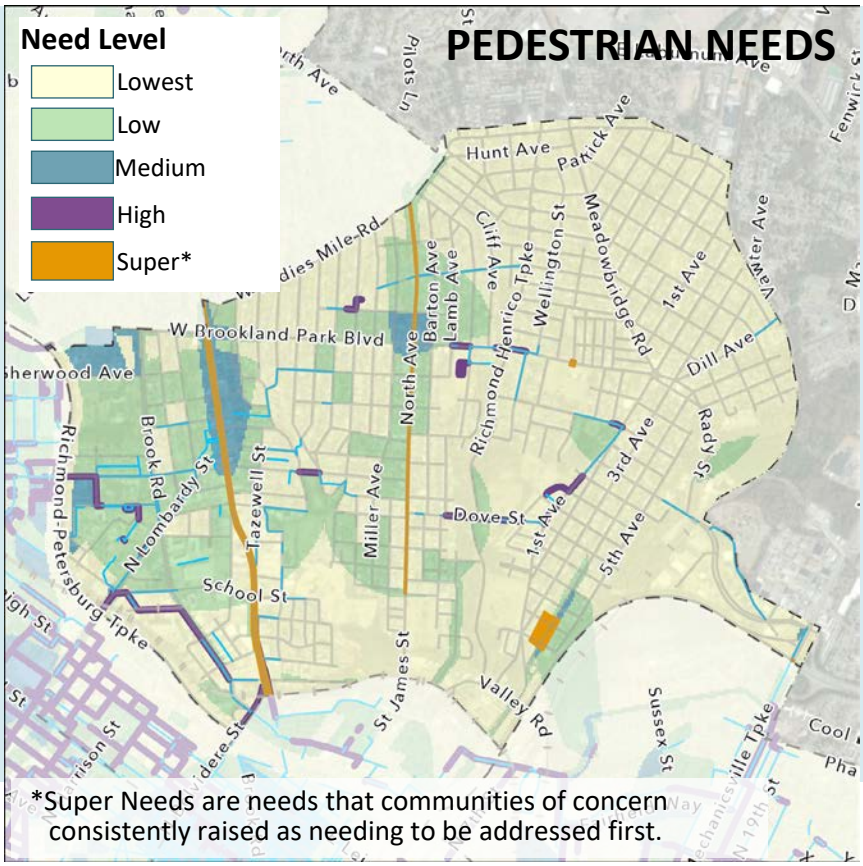
TOP TRANSPORTATION NEEDS
HIGHLAND PARK/ CHESTNUT HILL
NEED AREA 3

RICHMOND CONNECTS

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.



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP BICYCLE NEEDS

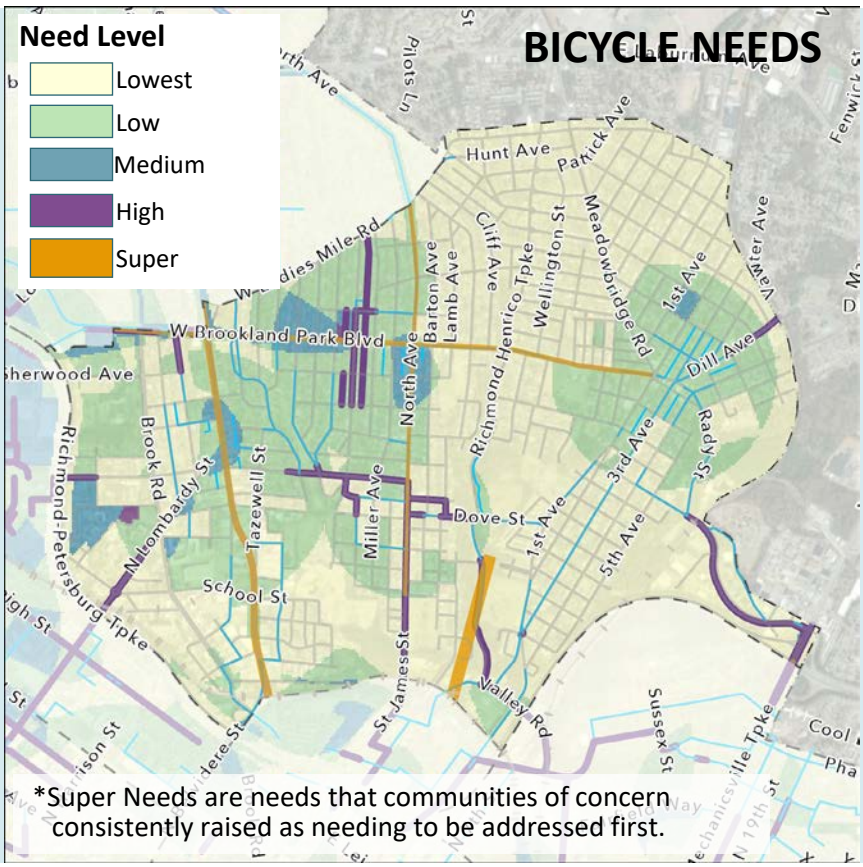
Bike trips from Communities of Concern use these streets the most:

- 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.



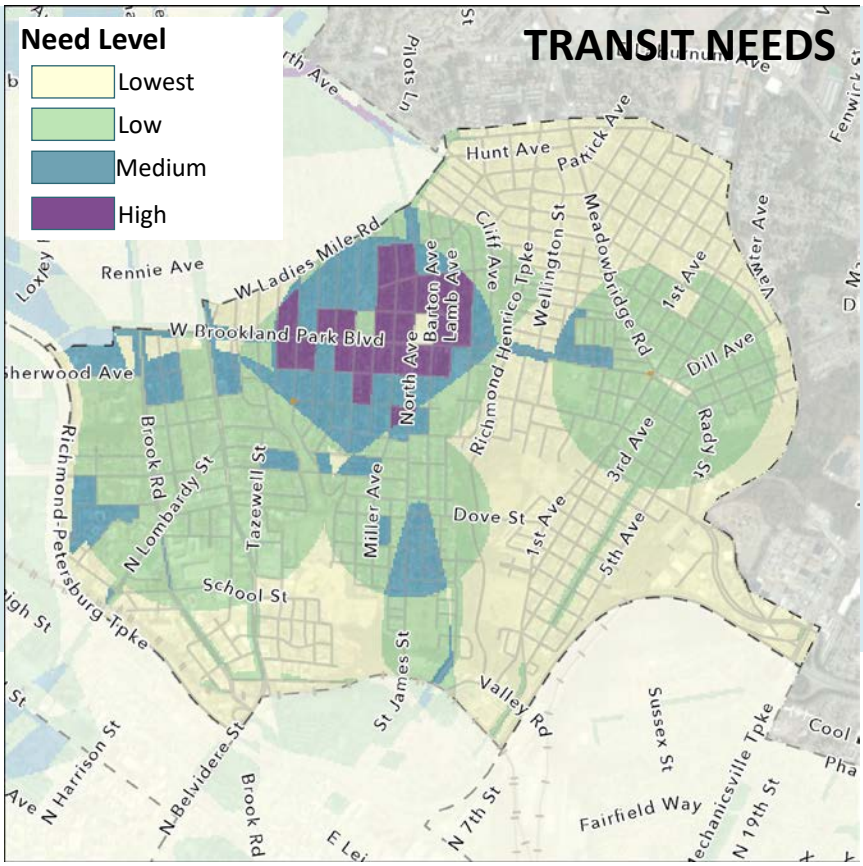
*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS
HIGHLAND PARK/ CHESTNUT HILL
NEED AREA 3

RICHMOND CONNECTS

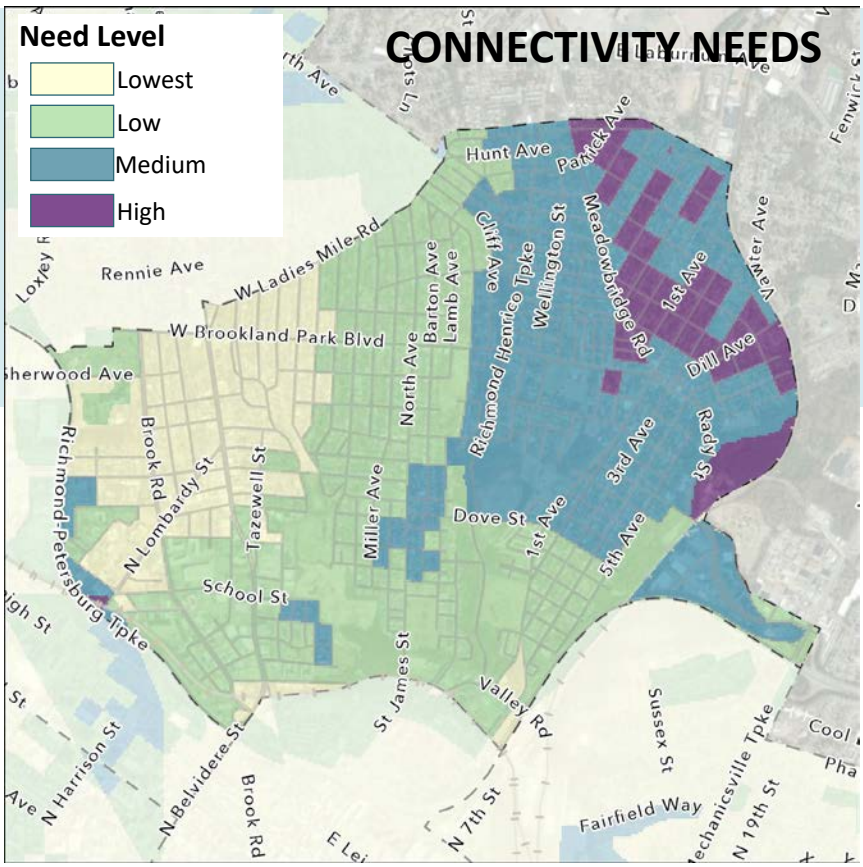
TOP TRANSIT NEEDS

- 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

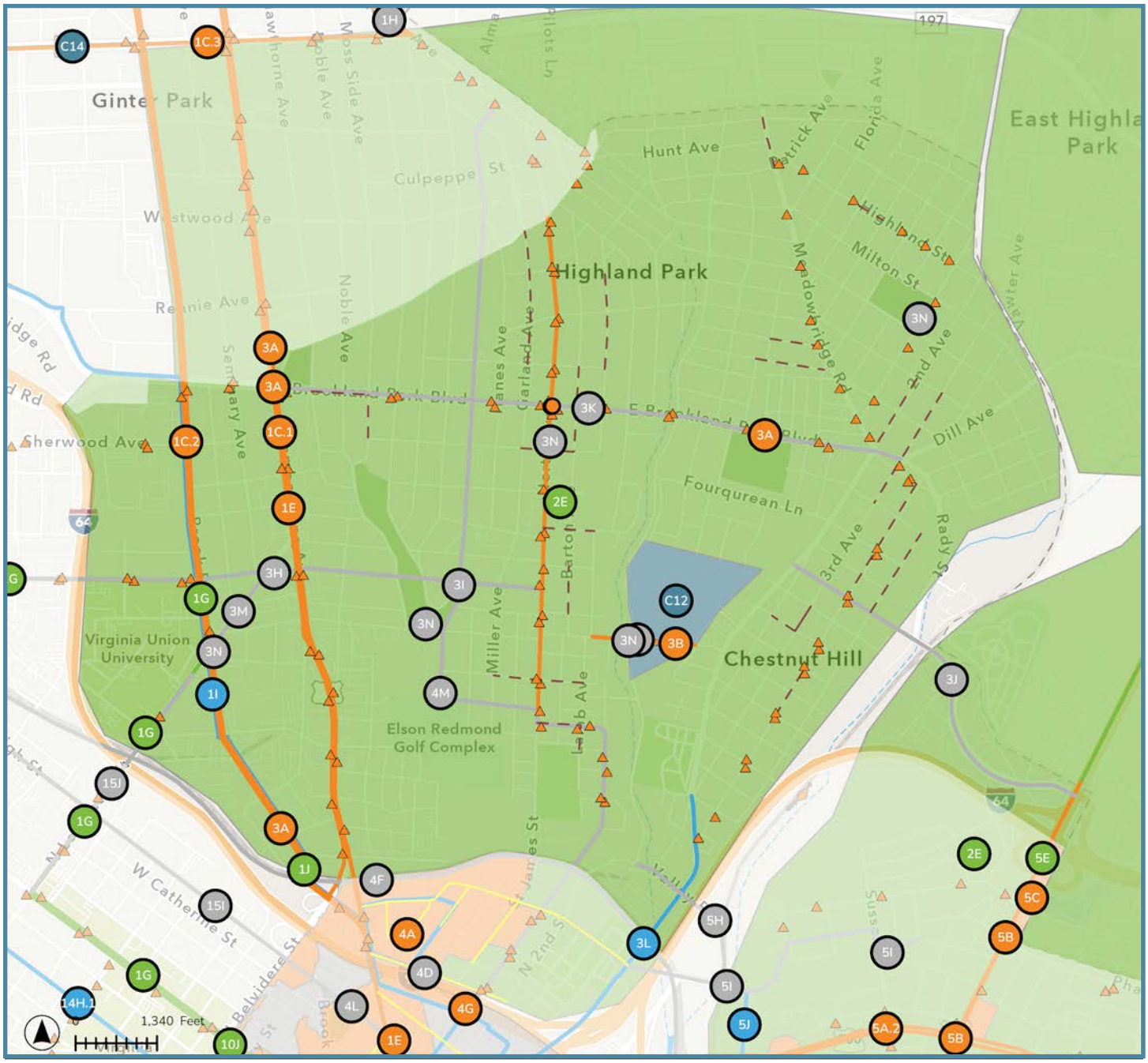


Other high needs include:

- 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

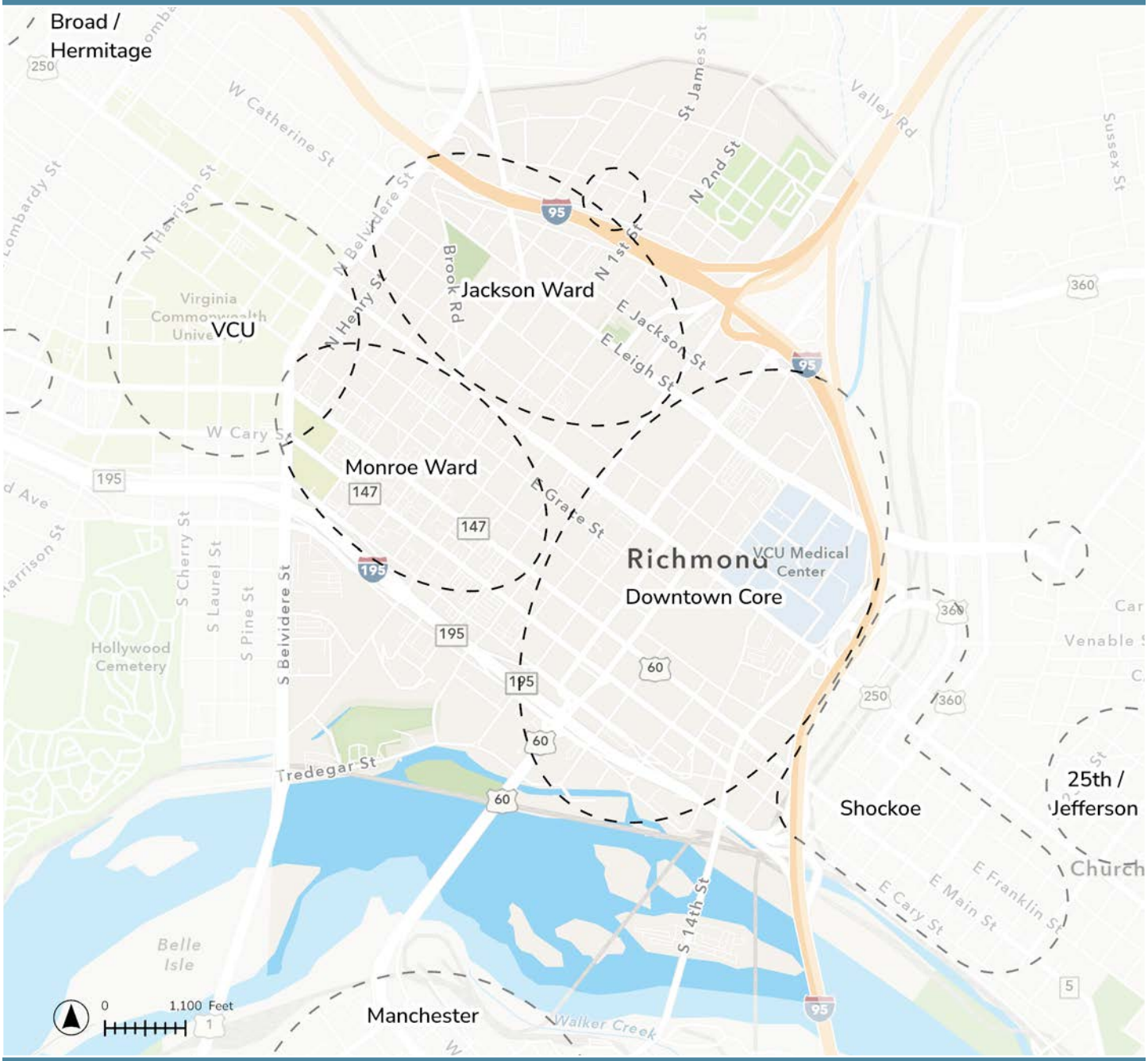
ID	Category	Title	Cost	Support Score	Page
1C.2	Priority Projects	Brook Road Traffic Calming and Pedestrian Safety Improvements	High ($$$)	4.9	194
1C.1	Priority Projects	Chamberlayne Avenue Pedestrian Safety Improvements	High ($$$)	4.9	192
3B	Priority Projects	Dove Street Pedestrian Safety Improvements	Moderate ($$)	4.2	221
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
3A	Priority Projects	North Avenue Pedestrian Safety Improvements	Moderate ($$)	4.8	204
1E	Priority Projects	North-South Bus Rapid Transit	Very High ($$$$)	3.9	256
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
1I	Priority Completion	Fall Line Trail	n/a	2.6	269
3L	Priority Completion	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	n/a	2.5	269
C12	Other Completion	Highland Grove/ Dove Street Redevelopment	n/a	0.0	272
1J	Shorter Term	Brook Road Bike Lanes Protection	Low ($)	3.4	278
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.1	279
4M	Longer Term	1st Street Cycle Track	n/a	2.7	283
3K	Longer Term	Brookland Park Boulevard Bikeway	Low/Moderate ($/$$)	3.3	281
3I	Longer Term	Fendall Ave/ N 1st St Bikeway	Low/Moderate ($/$$)	1.8	285
3M	Longer Term	Lombardy Street Bike Lanes - Overbrook Rd to Brook Rd	Low ($)	2.1	284
15J	Longer Term	Lombardy Street Protected Bike Lanes	Low ($)	3.0	282
3J	Longer Term	Magnolia Street Bikeway	Low/Moderate ($/$$)	2.7	283
3N	Longer Term	Northside Bikeshare Stations	Low ($)	3.1	282
3H	Longer Term	Overbrook Road Bikeway	Moderate ($$)	2.3	284
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Low/Moderate ($/$$)	3.7	281

NEEDS AREA SUMMARIES

3: Highland Park/Chestnut Hill Project Recommendations

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

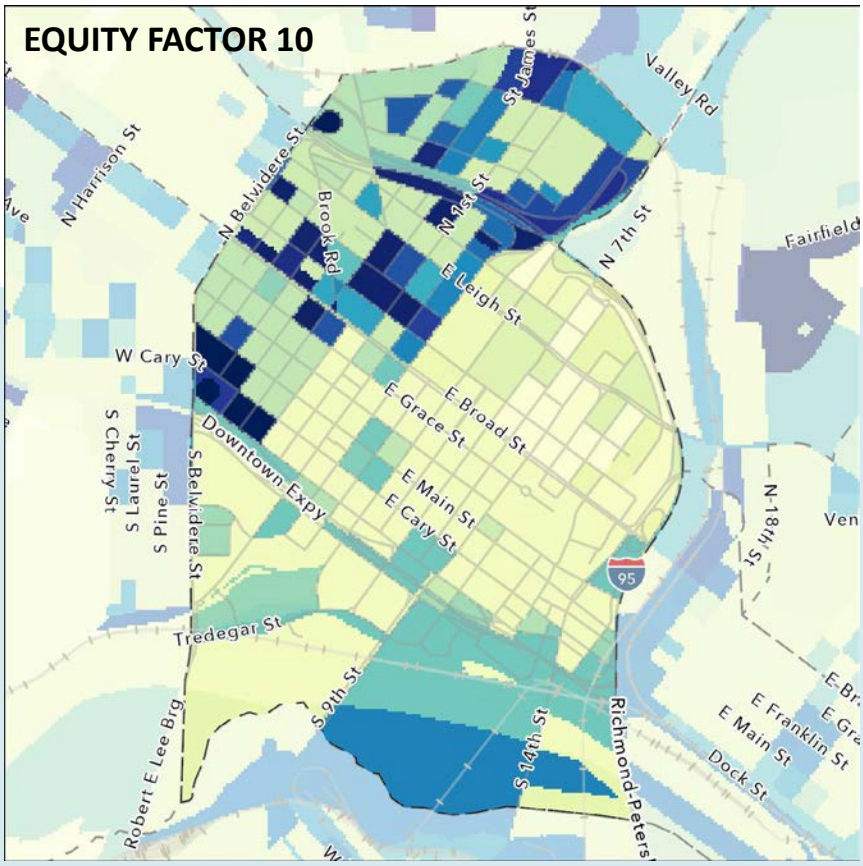
Equity needs in the greater Downtown area include several compounding factors.

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.



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.

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.

TOP TRANSPORTATION NEEDS
DOWNTOWN, INCLUDING GILPIN
NEED AREA 4

RICHMOND CONNECTS

TOP PEDESTRIAN NEEDS

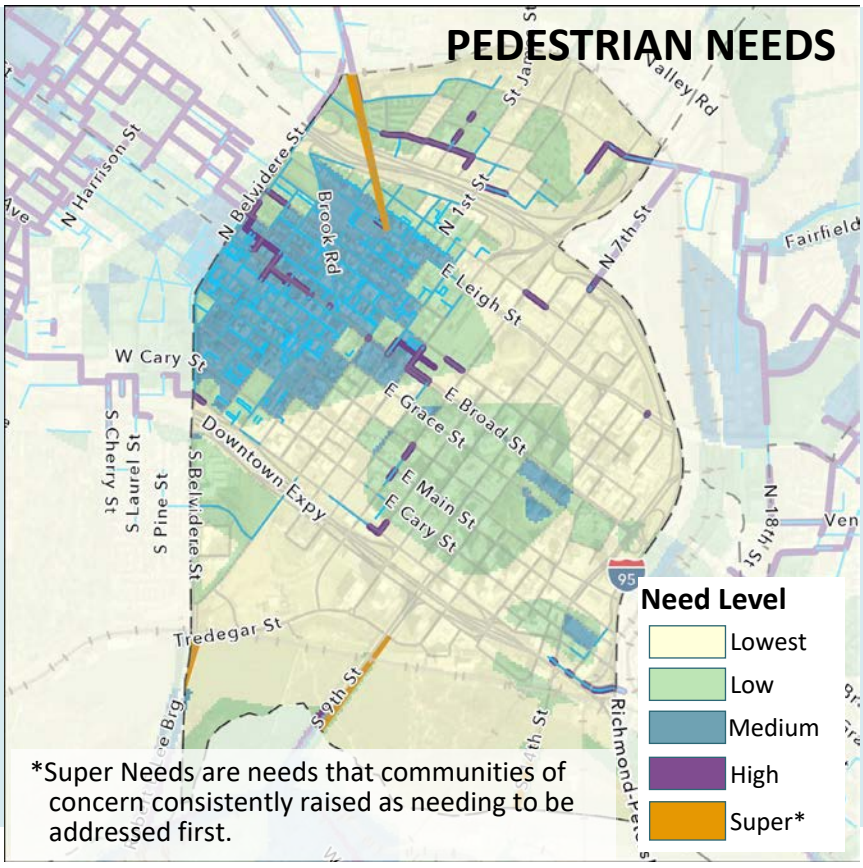
Walk trips from Communities of Concern use these streets the most:

- 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.



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

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.

*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS
DOWNTOWN, INCLUDING GILPIN
NEED AREA 4

RICHMOND CONNECTS

TOP TRANSIT NEEDS

Transit needs in this area are the lowest in the entire City.

Themes from public input:

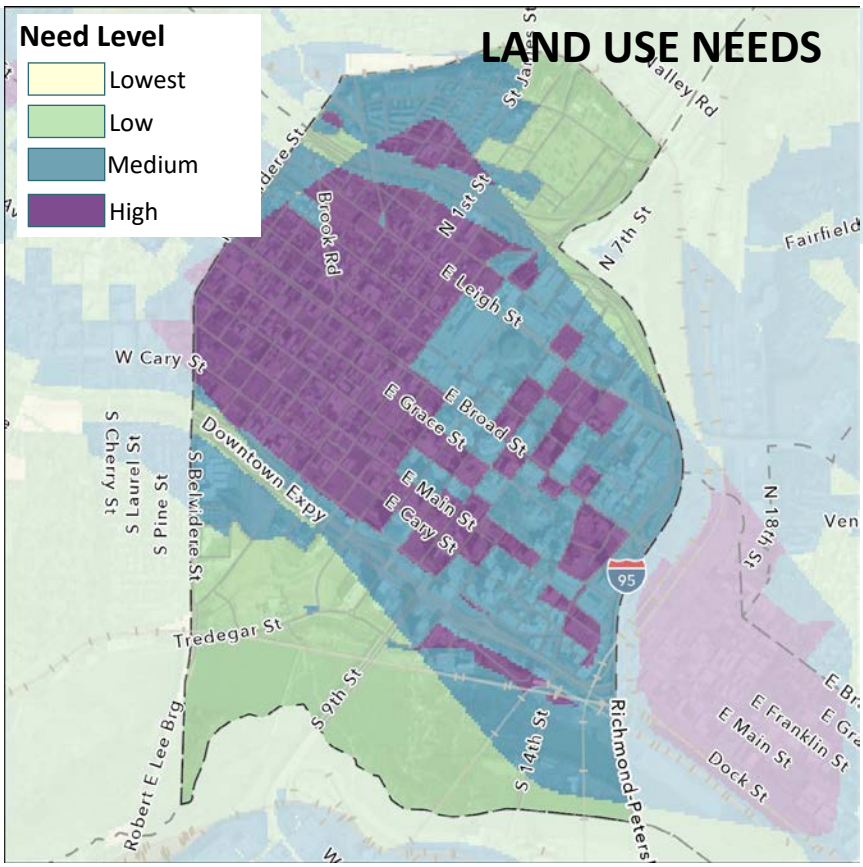
- It's difficult to transfer from Pulse to local bus service, sometimes required to cross busy Broad Street. Why can't all buses use the Pulse stations?
- Bus stops feel unsafe, too exposed to sun/weather
- Bus ride takes too long, does not run on time

LAND USE NEEDS

- Many areas in Downtown have an abundance of surface parking lots.

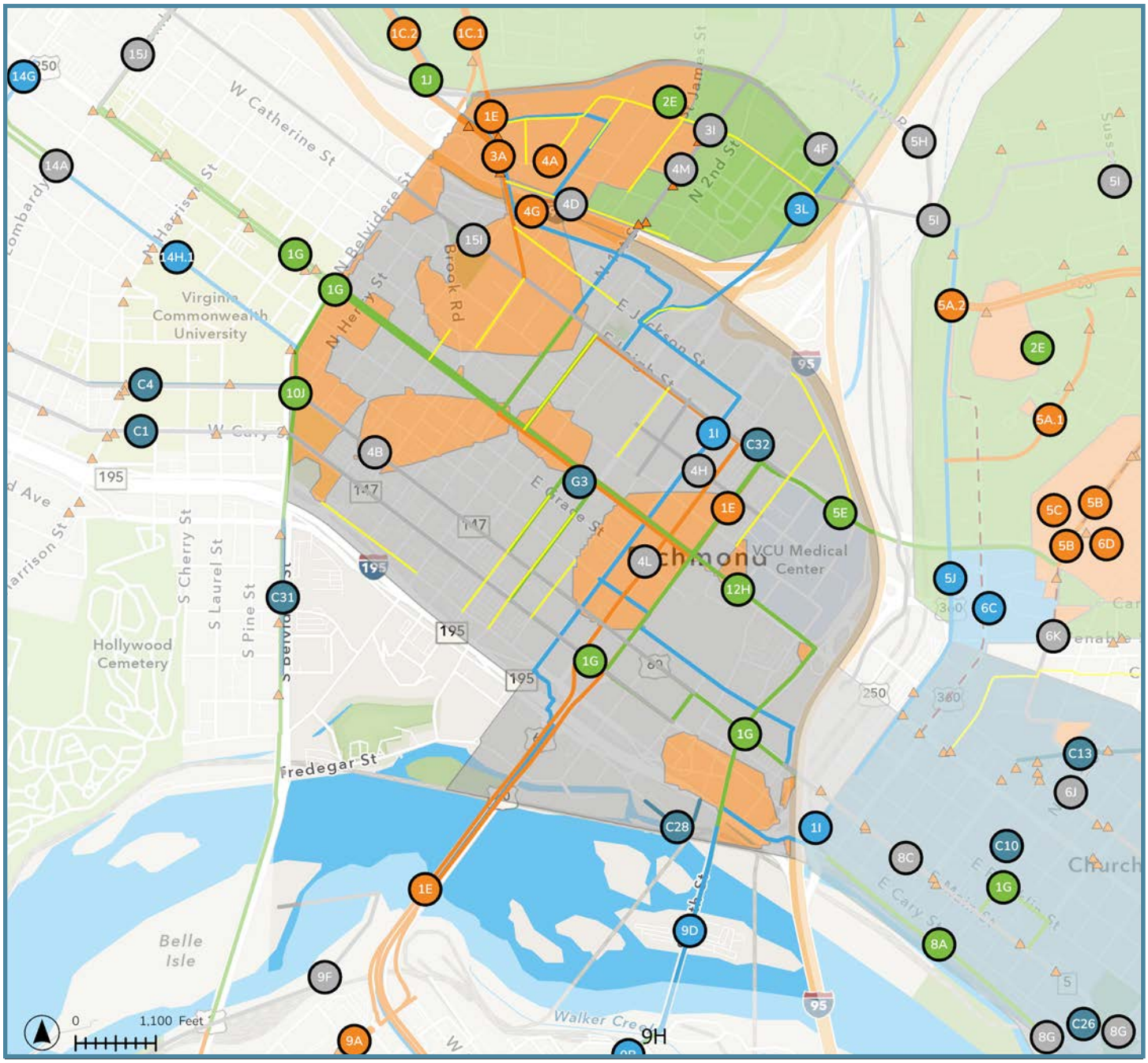
Other high needs include:

- 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)

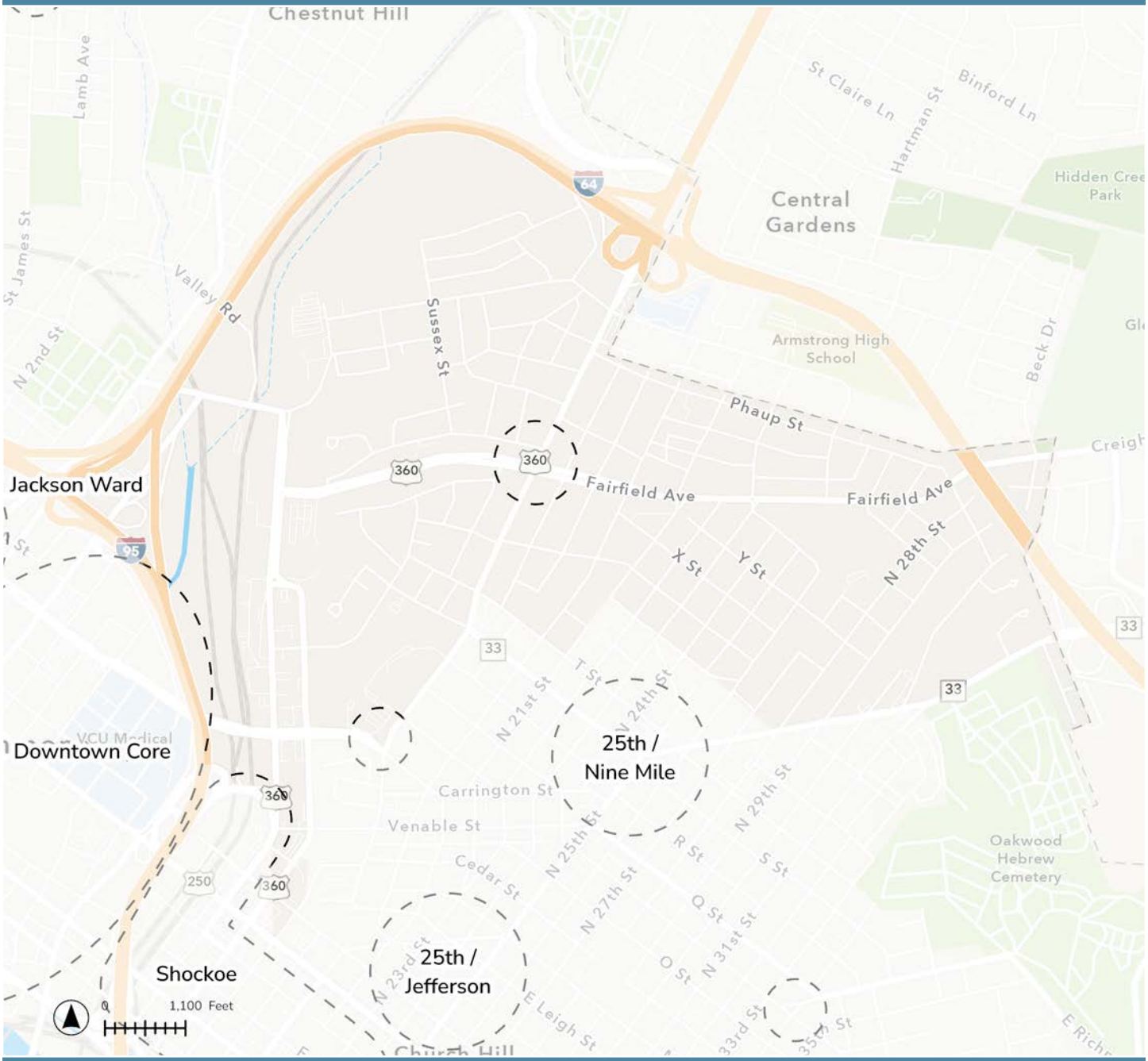
NEEDS AREA SUMMARIES

4: Downtown Project Recommendations

ID	Category	Title	Cost	Support Score	Page
4A	Priority Projects	Downtown Safety Spot Improvements	Low ($)	4.5	215
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
1E	Priority Projects	North-South Bus Rapid Transit	Very High ($$$$)	3.9	256
4G	Priority Projects	Reconnect Jackson Ward	Very High ($$$$)	4.0	253
4K	Priority Projects	Richmond Connects Equity-Centered Pavement Maintenance Prioritization	Very High ($$$$)	4.1	245
1I	Priority Completion	Fall Line Trail	n/a	2.6	269
3L	Priority Completion	Rowen Avenue/ N 5th Street/ N 3rd Street Bike Lanes	n/a	2.5	269
C31	Other Completion	Belvidere Street Gateway - Phase IV	n/a	0.0	275
C32	Other Completion	Biotech Research Park Roadway Improvements	n/a	0.0	275
C28	Other Completion	Capital Trail/Canal Walk Connector to Brown's Island - Phase 1	n/a	0.0	275
G3	Other Completion	Downtown Transfer Center	n/a	0.0	276
4M	Longer Term	1st Street Cycle Track	n/a	2.7	283
4D	Longer Term	Baker Street Pedestrian/Bike Only Street	Moderate ($$)	1.8	285
4L	Longer Term	Downtown/Shockoe Parking Recommendations	Moderate ($$)	3.0	282
3I	Longer Term	Fendall Ave/ N 1st St Bikeway	Low/Moderate ($/$$)	1.8	285
15I	Longer Term	Leigh Street Bike Lanes - Dinneen St to 8th St	Moderate ($$)	3.0	282
4B	Longer Term	Main Street/Cary Street Two-Way Street Conversion	High ($$$)	2.8	283
4H	Longer Term	Reconnect Clay and 6th Streets	Very High ($$$$)	1.8	285
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Low/Moderate ($/$$)	3.7	281

NEEDS AREA SUMMARIES

5: Fairfield



EQUITY CONTEXT
FAIRFIELD AREA
NEED AREA 5

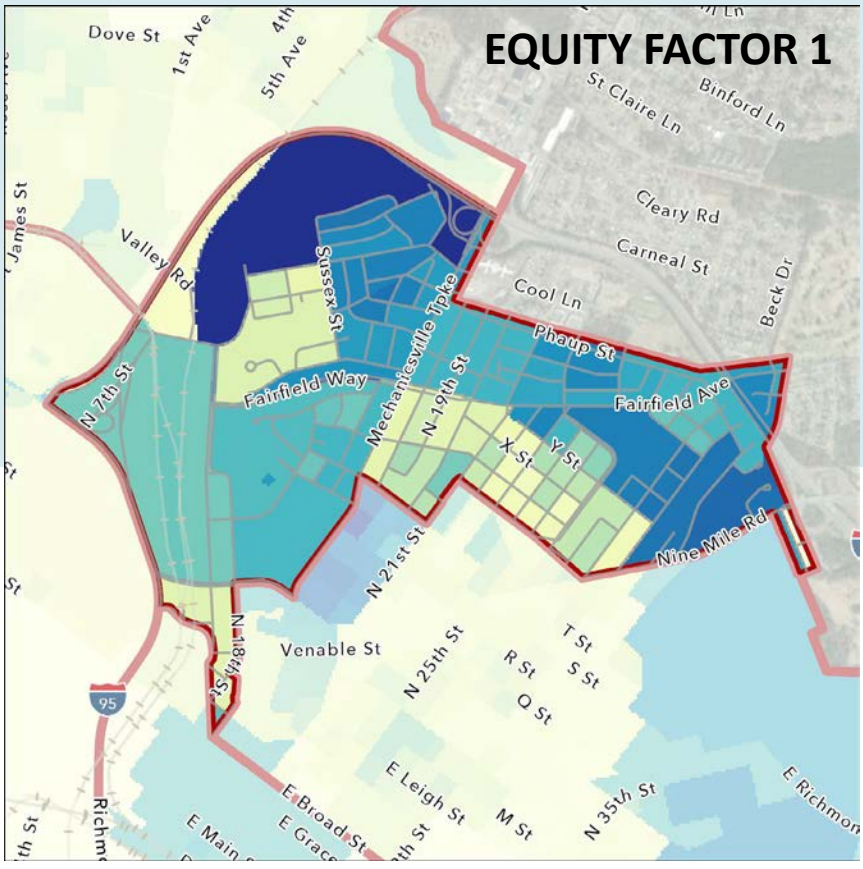
Transportation investments will improve access to housing, jobs, services, recreation, and education, addressing remaining inequities created by redlining.
- Path to Equity Policy Guide, Equity Factor 1

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**.



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.

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.

TOP TRANSPORTATION NEEDS
FAIRFIELD AREA
NEED AREA 5

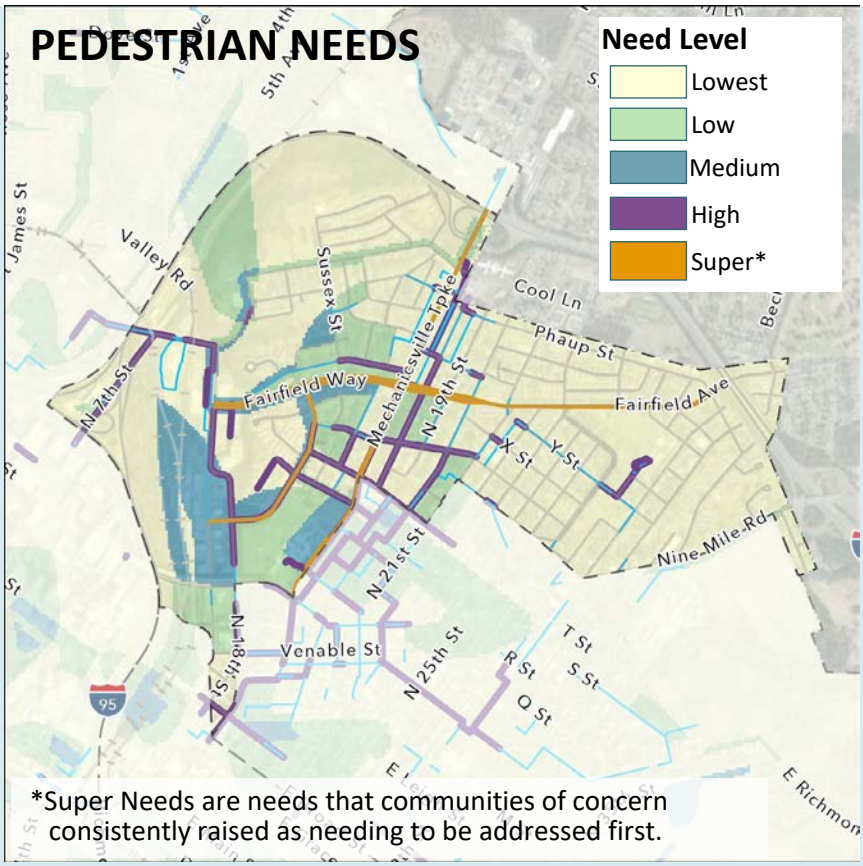
TOP PEDESTRIAN NEEDS

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*



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP BICYCLE NEEDS

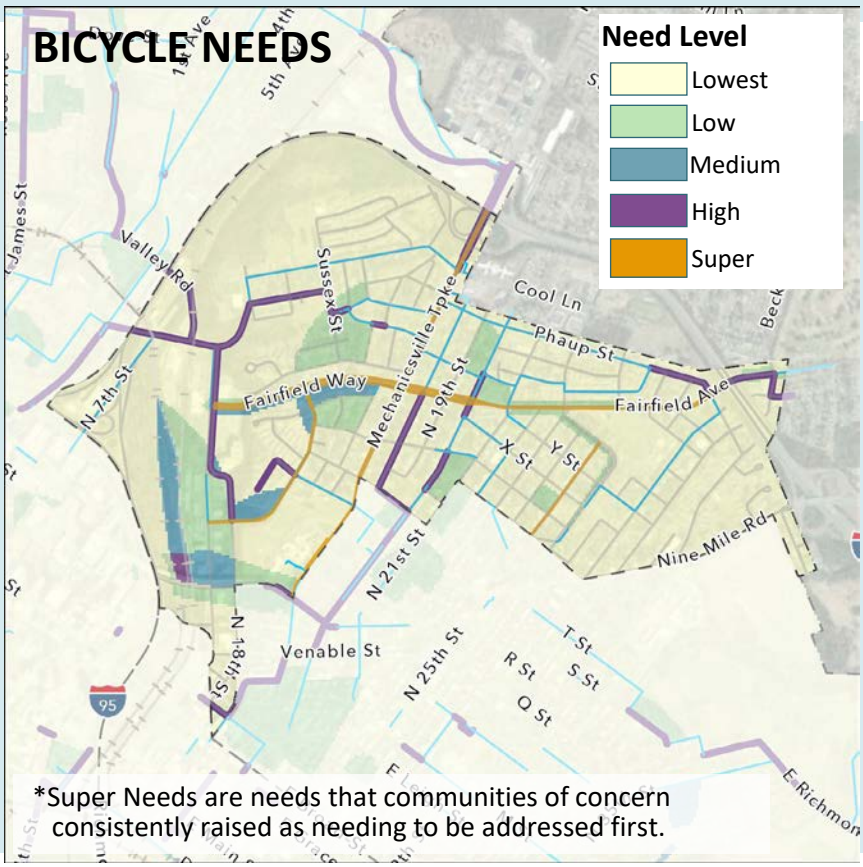
Bike trips from Communities of Concern use these streets the most:

- 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.



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS
FAIRFIELD AREA
NEED AREA 5

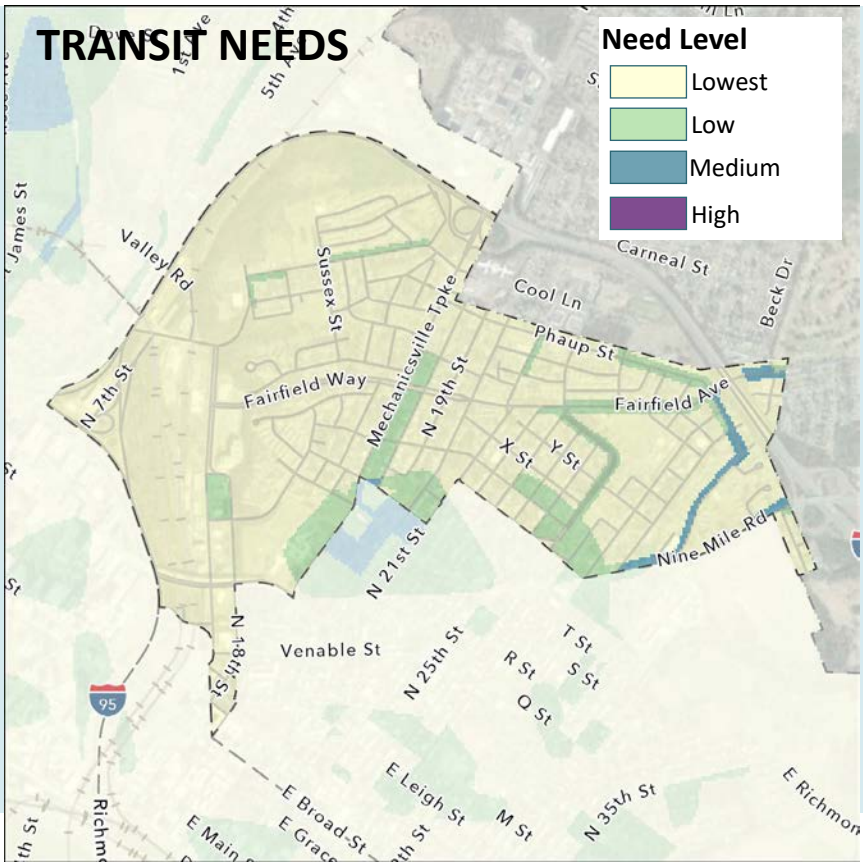
RICHMOND CONNECTS

TOP TRANSIT NEEDS

Transit needs are generally low throughout this area.

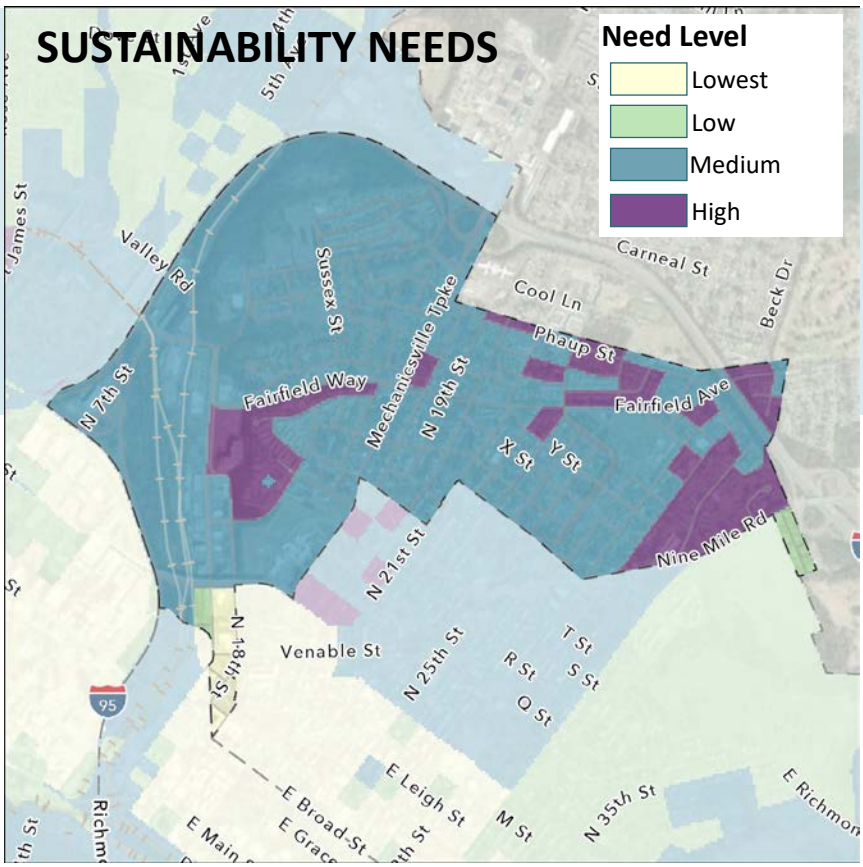
Themes from public input:

- *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.

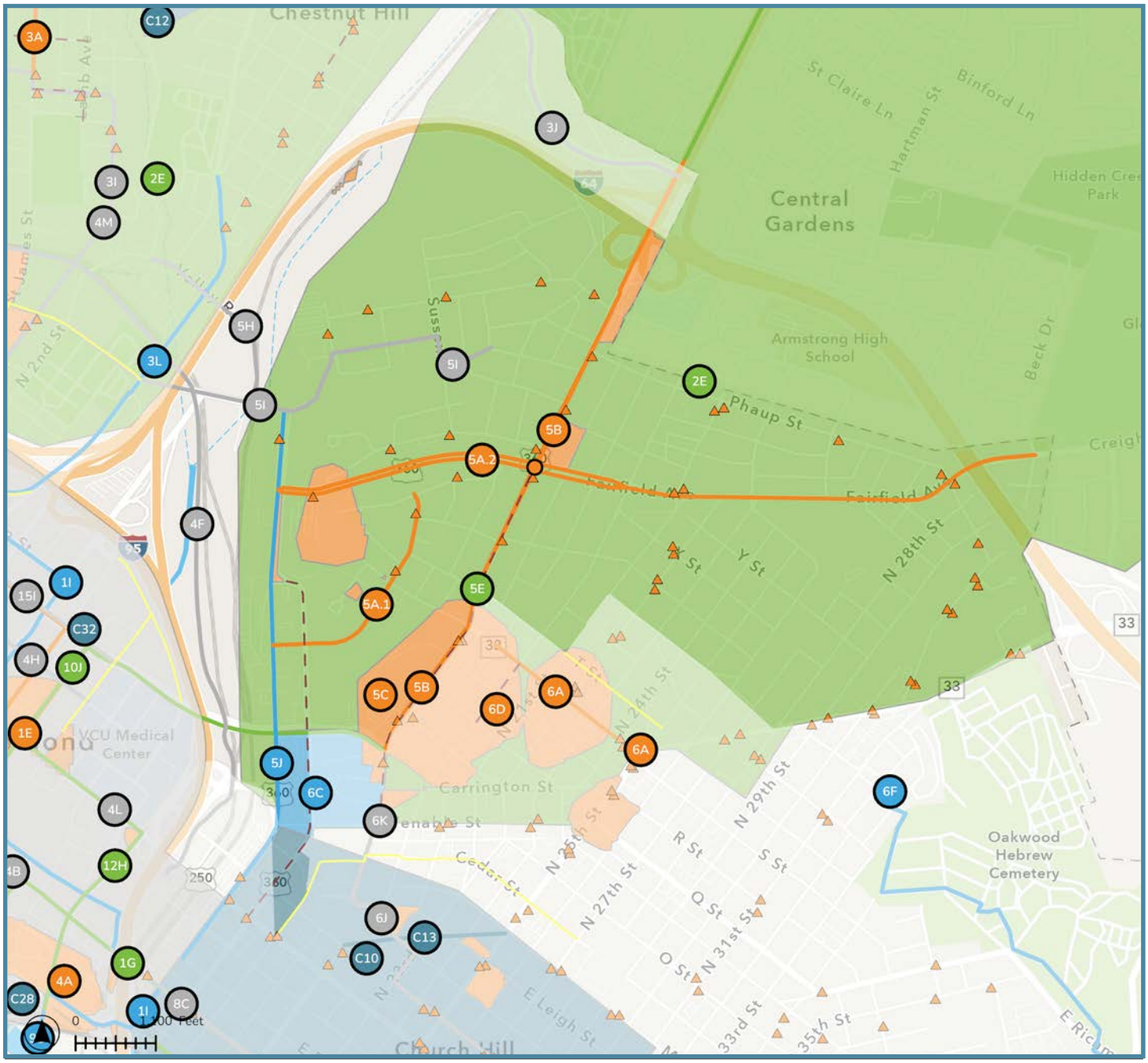


Other high needs include:

- 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



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

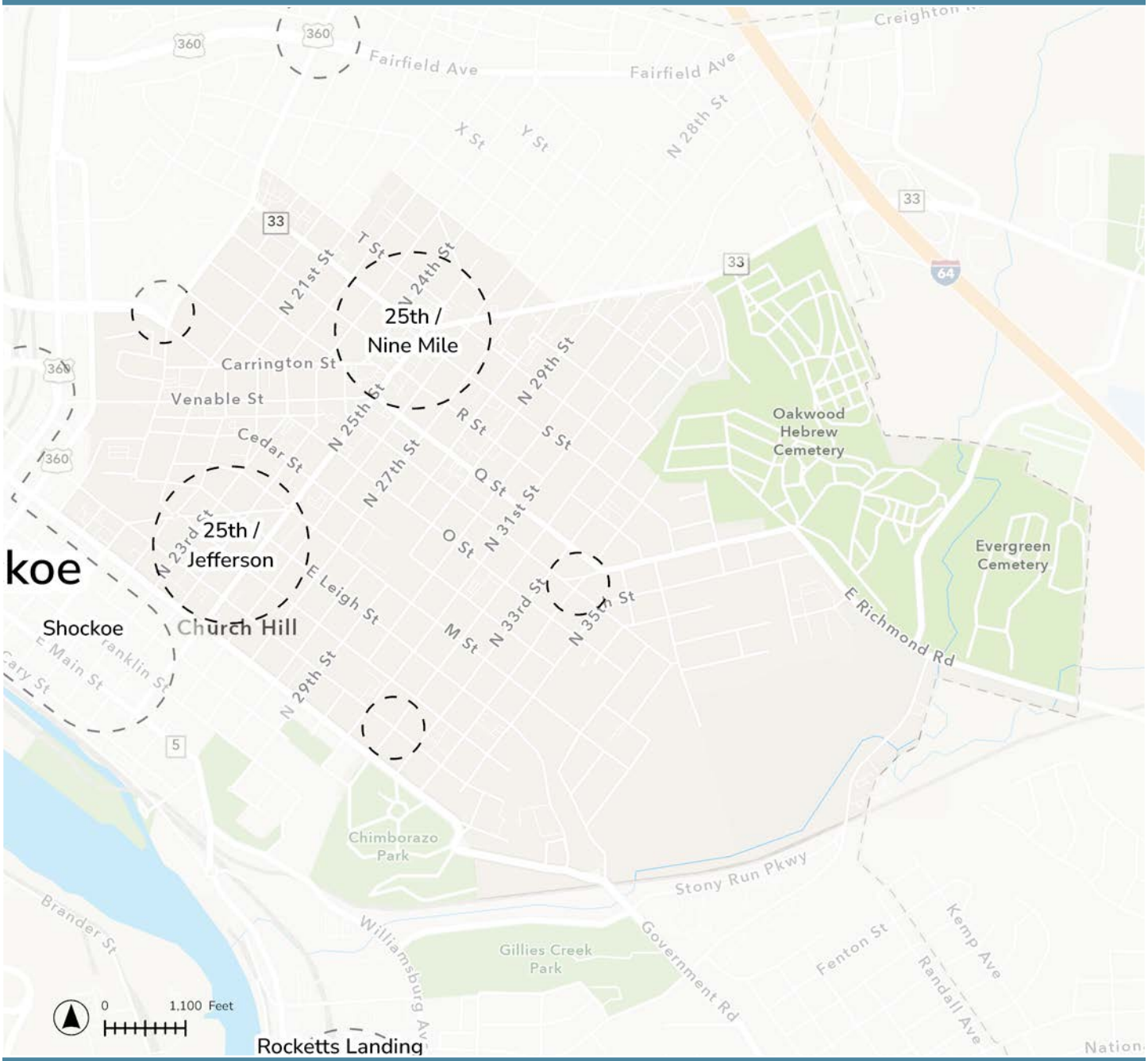
NEEDS AREA SUMMARIES

5: Fairfield Project Recommendations

ID	Category	Title	Cost	Support Score	Page
5A.1	Priority Projects	Coalter Street Traffic Calming	Low ($)	4.13	237
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.56	212
5A.2	Priority Projects	Fairfield Avenue/ Fairfield Way Traffic Calming	Low ($)	4.13	239
5C	Priority Projects	Fairfield Pedestrian Security and Shade Project	Low ($)	4.53	214
5B	Priority Projects	Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements	Moderate ($$)	5.00	188
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.00	180
5J	Priority Completion	Oliver Hill Way Bike Lanes	n/a	3.20	266
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.08	279
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Moderate ($$)	3.40	280
5I	Longer Term	Hospital Street/ Bowling Green Road/ Wood Street Bikeway	High ($$$)	2.93	282
5H	Longer Term	Valley Road Shared Use Path	Moderate/ High ($$/$$$)	2.73	283

NEEDS AREA SUMMARIES

6: Church Hill/Nine Mile



EQUITY CONTEXT

CHURCH HILL/NINE MILE ROAD AREA

NEED AREA 6

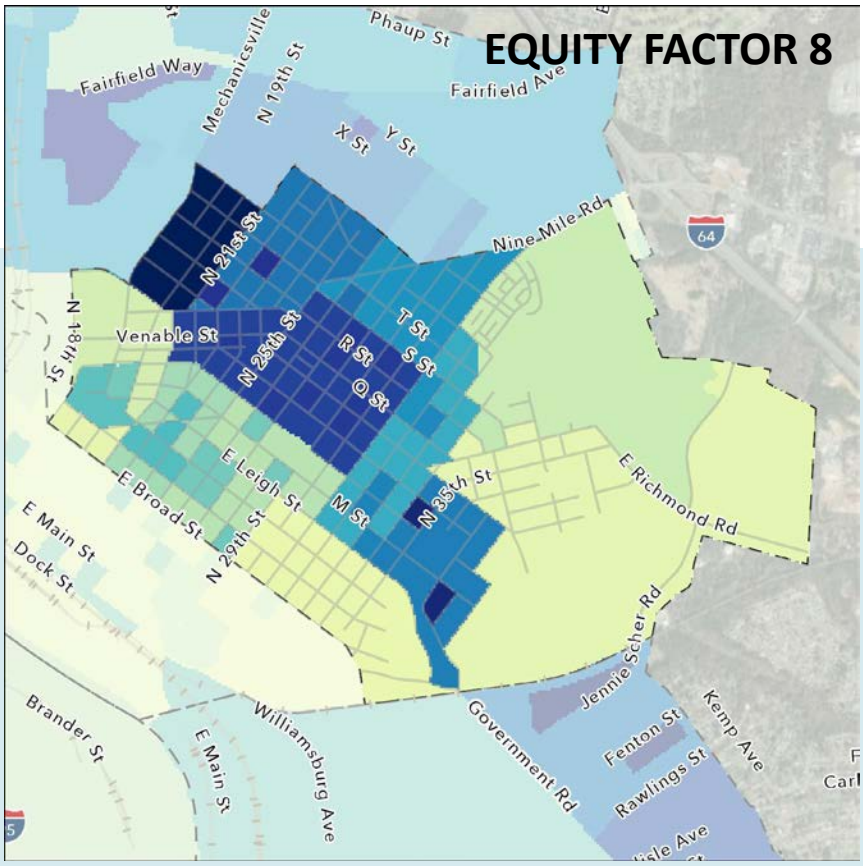
Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVAGreen 2050.
- Path to Equity Policy Guide, Equity Factor 8

Equity needs in the Church Hill/Nine Mile Road area include several compounding factors.

Portions of this area have high concentrations of Communities of Concern, including **BIPOC renters & BIPOC households, low-income households, and at-risk youth.**

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 around** by **walking** or **biking** because there aren't direct paths to get where you need to go, or it doesn't feel **safe**.



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.

Climate Resiliency

Roads in this area, especially around North Church Hill and Chimborazo, are in a **flood risk zone** and **vulnerable to disruption due to climate change**.

These areas are more prone to flooding during intense precipitation events, have **high heat vulnerability**, and experience **urban heat island** effect.

TOP TRANSPORTATION NEEDS
CHURCH HILL/NINE MILE ROAD AREA
NEED AREA 6

RICHMOND CONNECTS

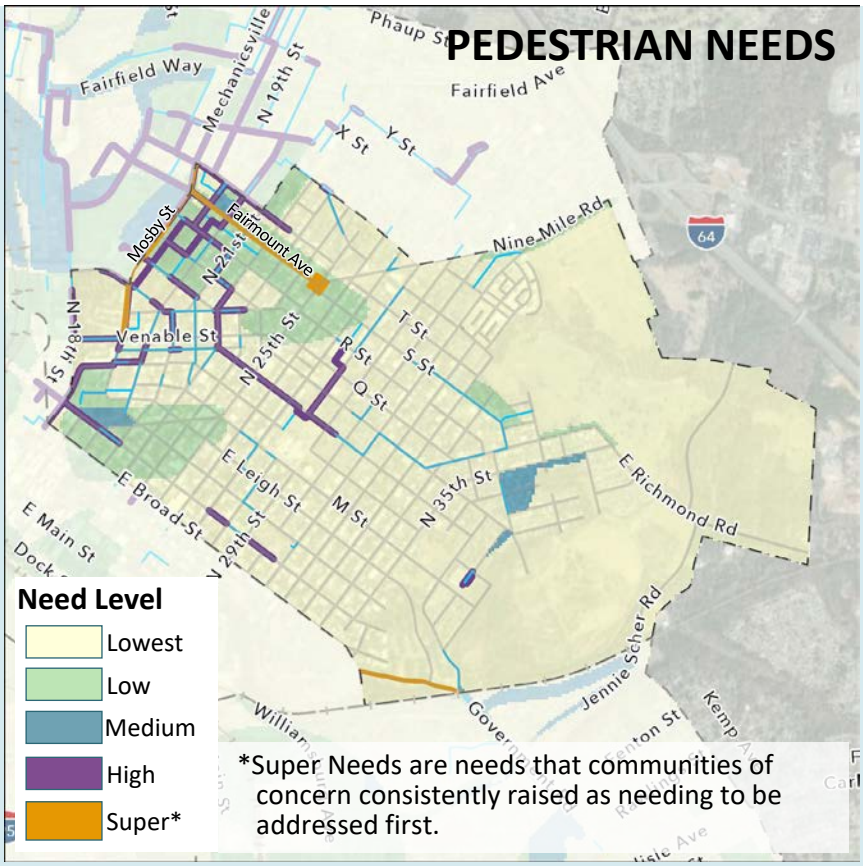
TOP PEDESTRIAN NEEDS

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

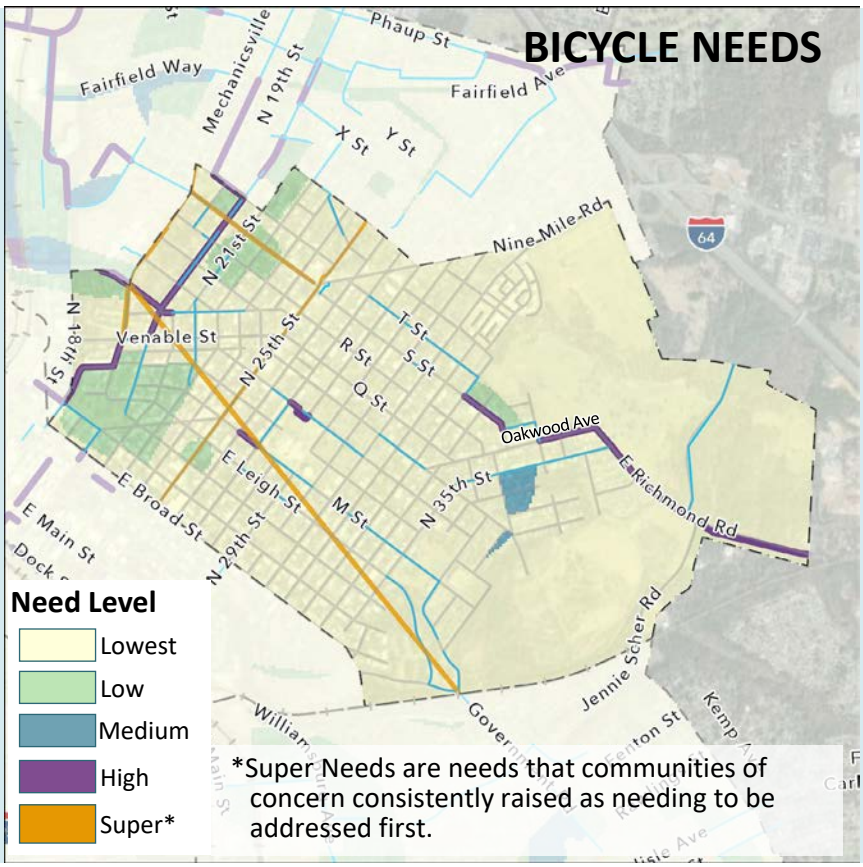
Bike trips from Communities of Concern use these streets the most:

- 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

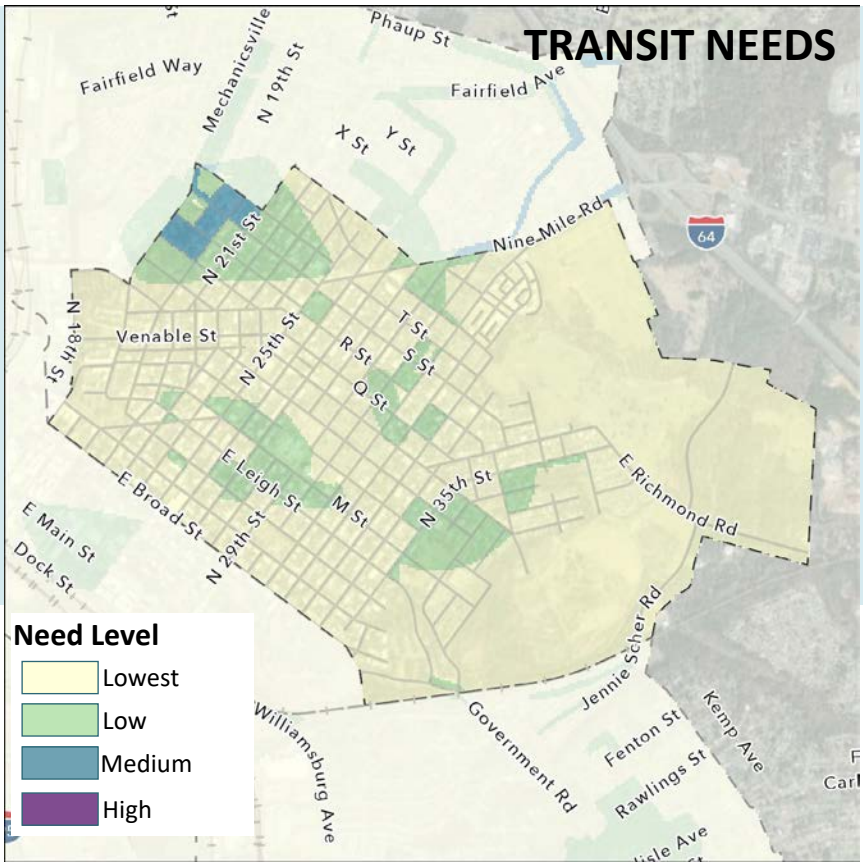
RICHMOND CONNECTS

TOP TRANSIT NEEDS

Transit needs are generally low throughout this area.

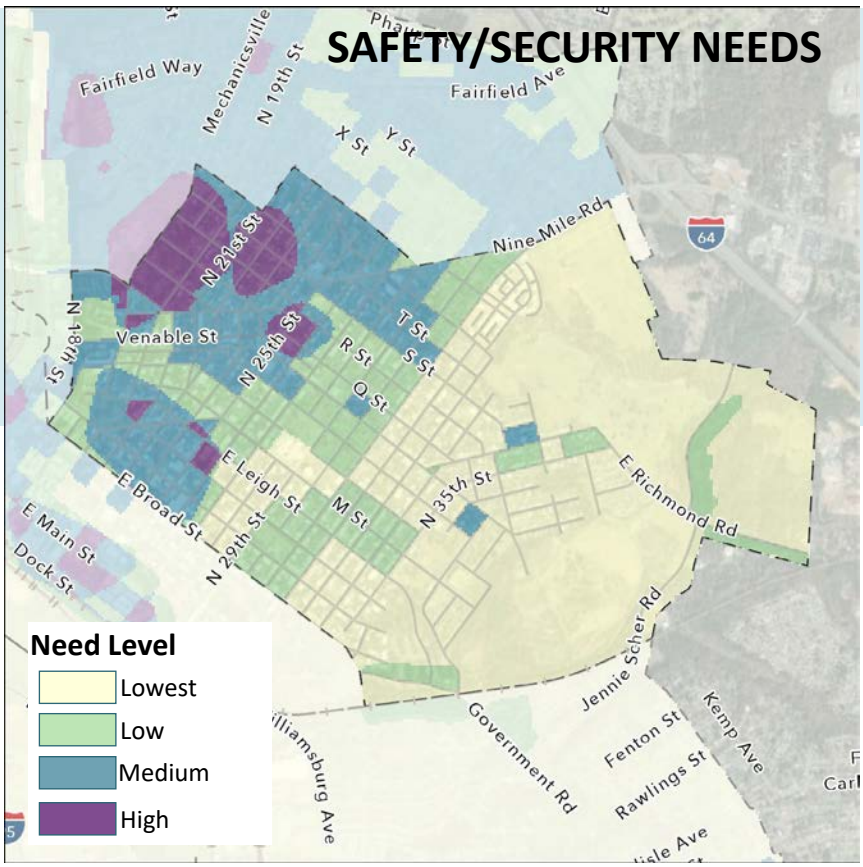
Themes from public input:

- *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.

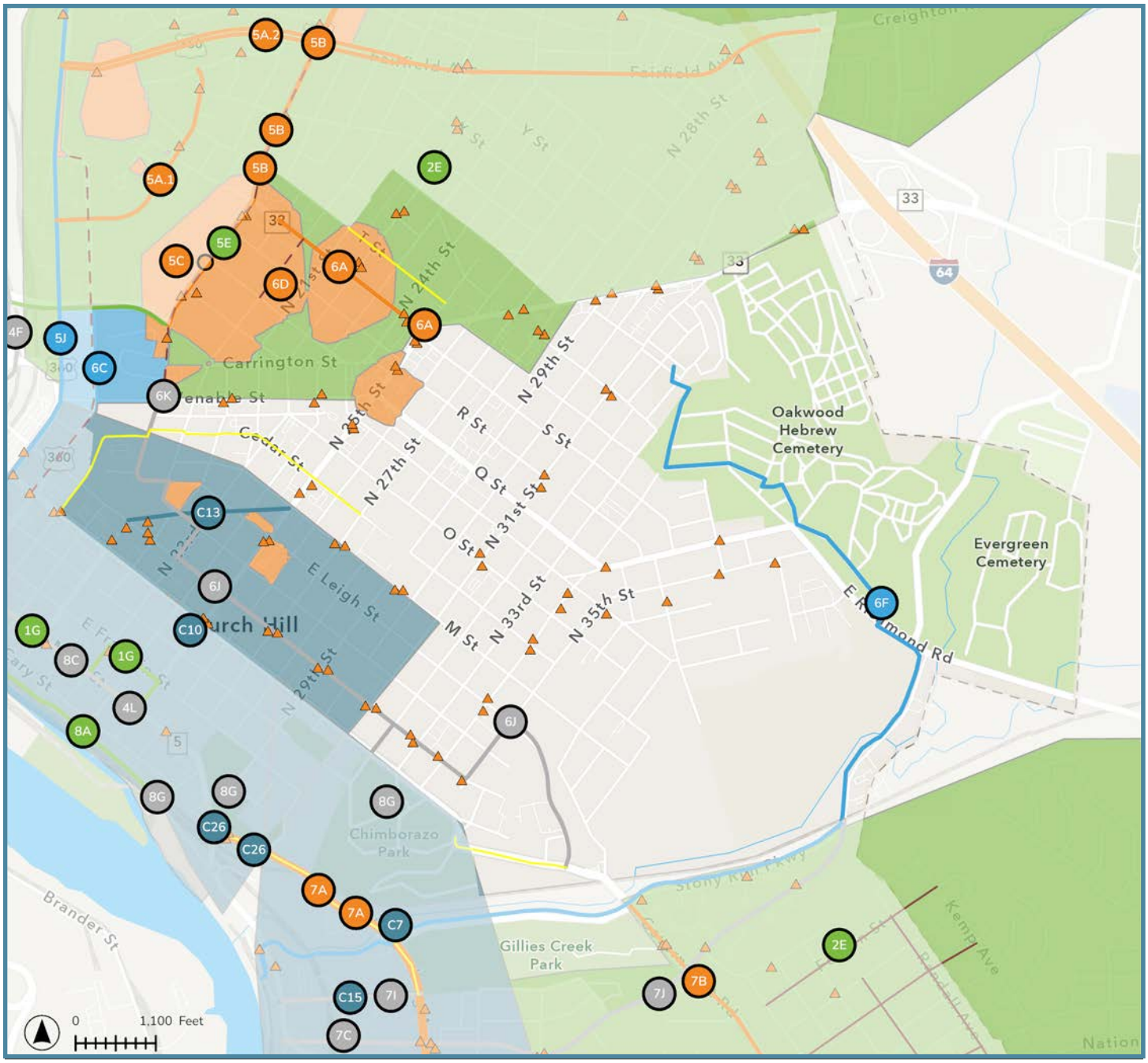


Other high needs:

- 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



- 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
6D	Priority Projects	Church Hill Street Lighting	Moderate ($$)	4.5	206
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
6A	Priority Projects	Fairmount Avenue Pedestrian Safety Improvements and Traffic Calming	Moderate ($$)	4.6	223
5B	Priority Projects	Mosby Street/ Mechanicsville Turnpike Pedestrian Safety Improvements	Moderate ($$)	5.0	188
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
6F	Priority Completion	Gillies Creek Greenway	n/a	3.2	267
6C	Priority Completion	Shockoe Valley Street Improvements	n/a	3.7	266
C13	Other Completion	Jefferson Avenue Improvements	n/a	0.0	272
C10	Other Completion	Shockoe Bottom BRT Streetscape Improvements	n/a	0.0	271
5E	Shorter Term	Mechanicsville Turnpike Bus Route	Moderate ($$)	3.4	280
6J	Longer Term	Church Hill Bikeway Connection	Low/ Moderate ($/$$)	2.5	283
6K	Longer Term	Venable/Mosby Bikeshare Station	Low ($)	2.4	284

NEEDS AREA SUMMARIES

7: Fulton

EQUITY CONTEXT
FULTON AREA
NEED AREA 7

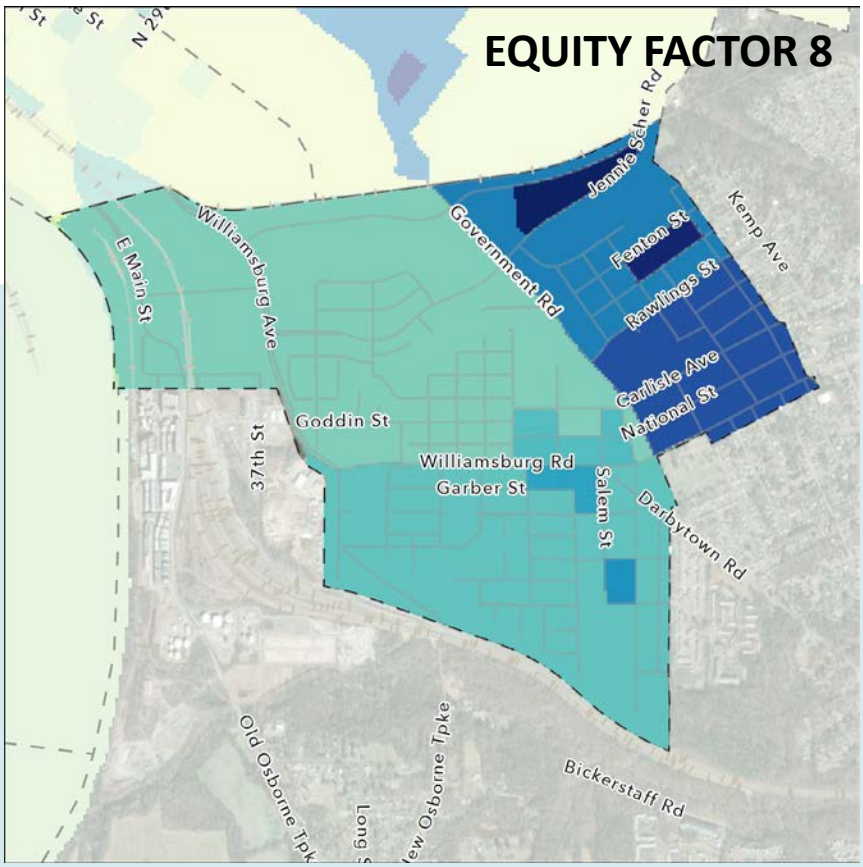
Transportation investments will prioritize the needs of socially vulnerable users and address climate and environmental equity (heat island effect, air-quality, water-quality) as identified in RVAGreen 2050.
- Path to Equity Policy Guide, Equity Factor 8

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**.



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 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**.

TOP TRANSPORTATION NEEDS
FULTON AREA
NEED AREA 7

RICHMOND CONNECTS

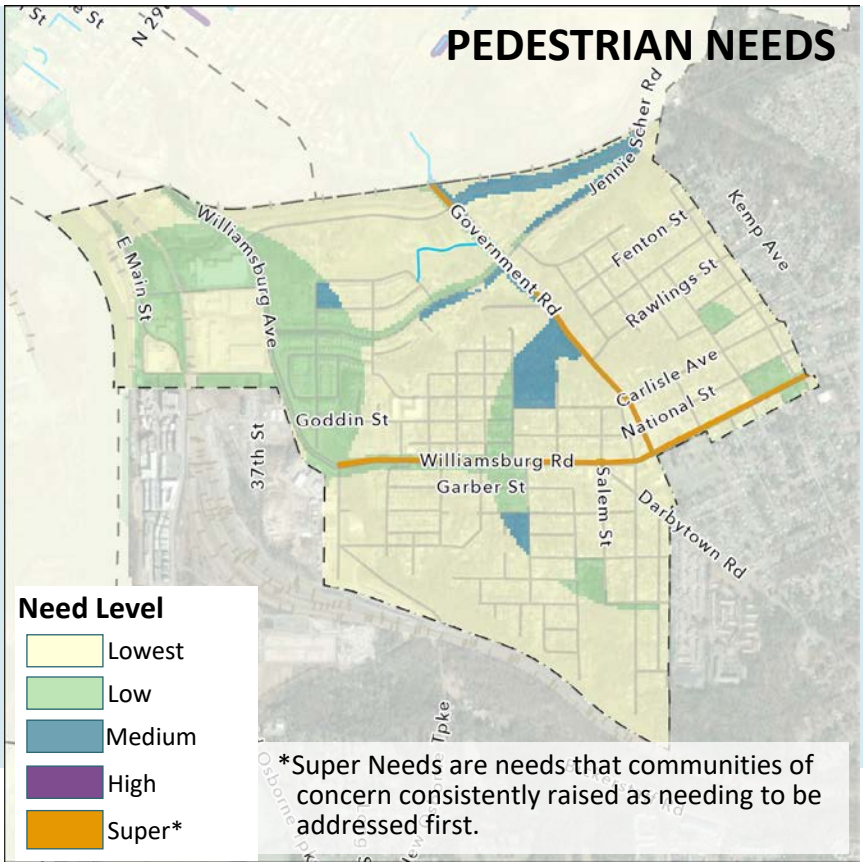
TOP PEDESTRIAN NEEDS

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*



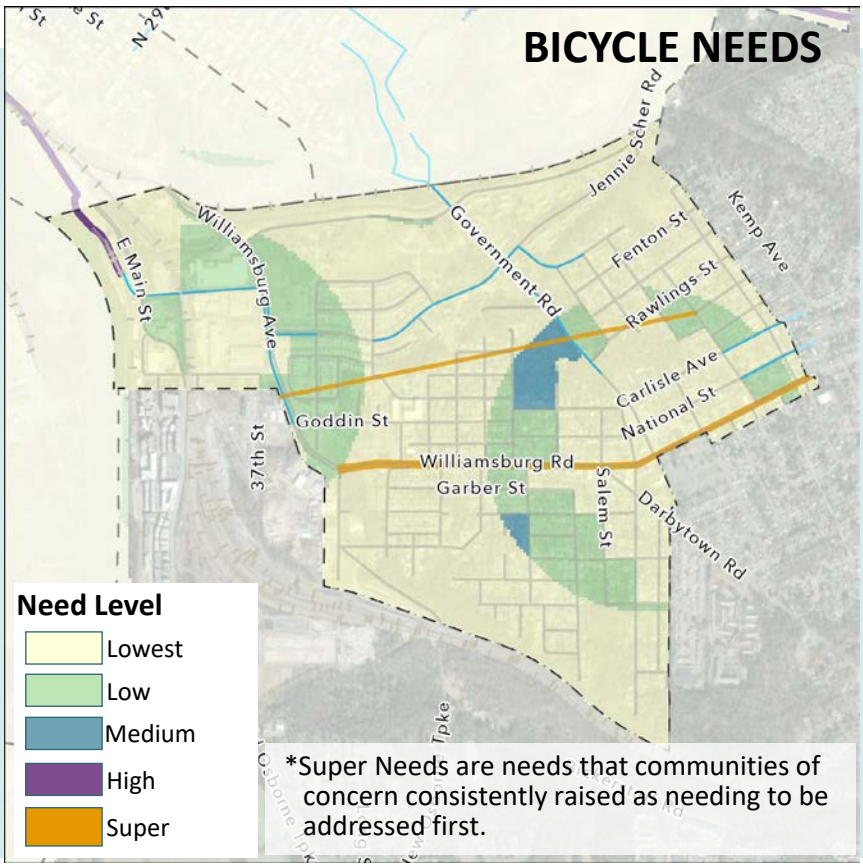
TOP BICYCLE NEEDS

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

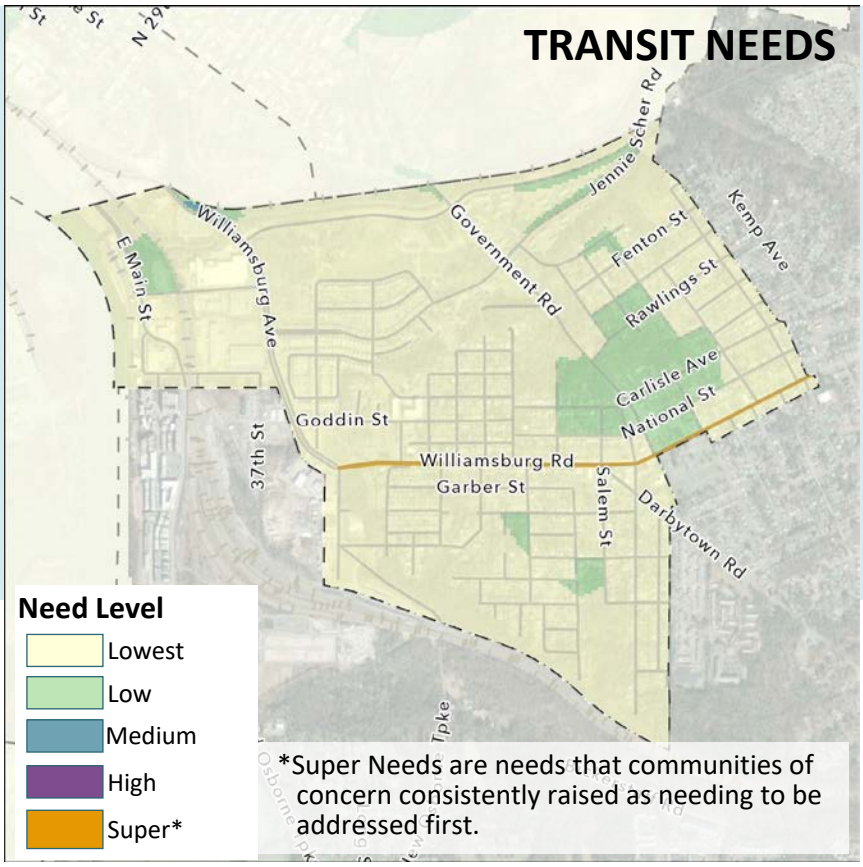
RICHMOND CONNECTS

TOP TRANSIT NEEDS

Transit needs are generally low here compared to other areas in the city.

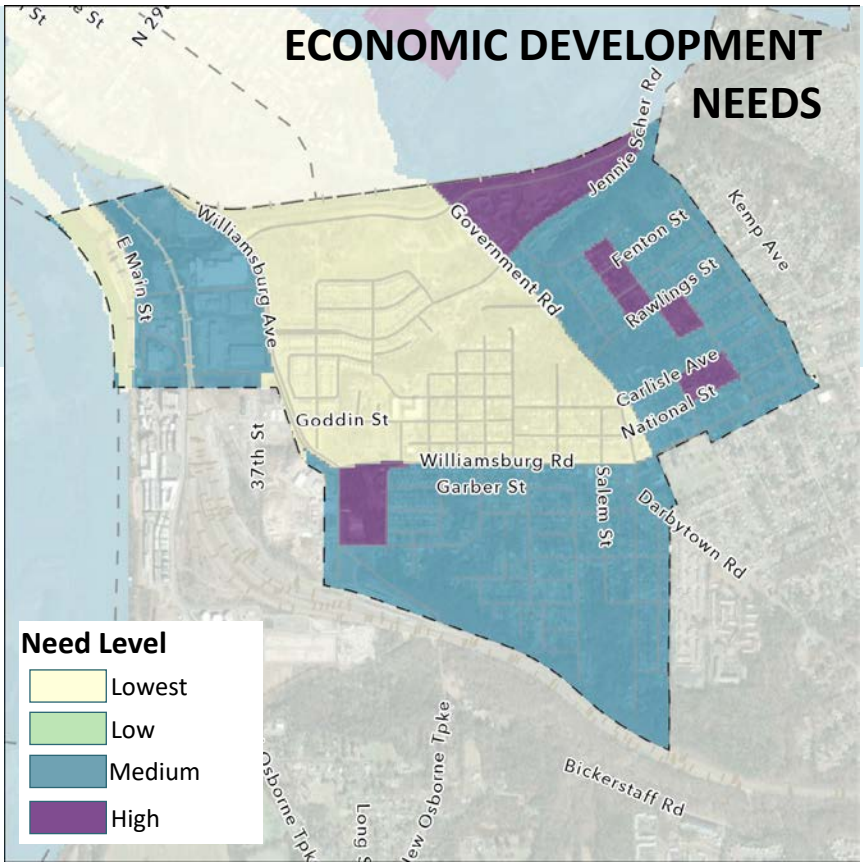
"Super" needs from public input:

- *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.

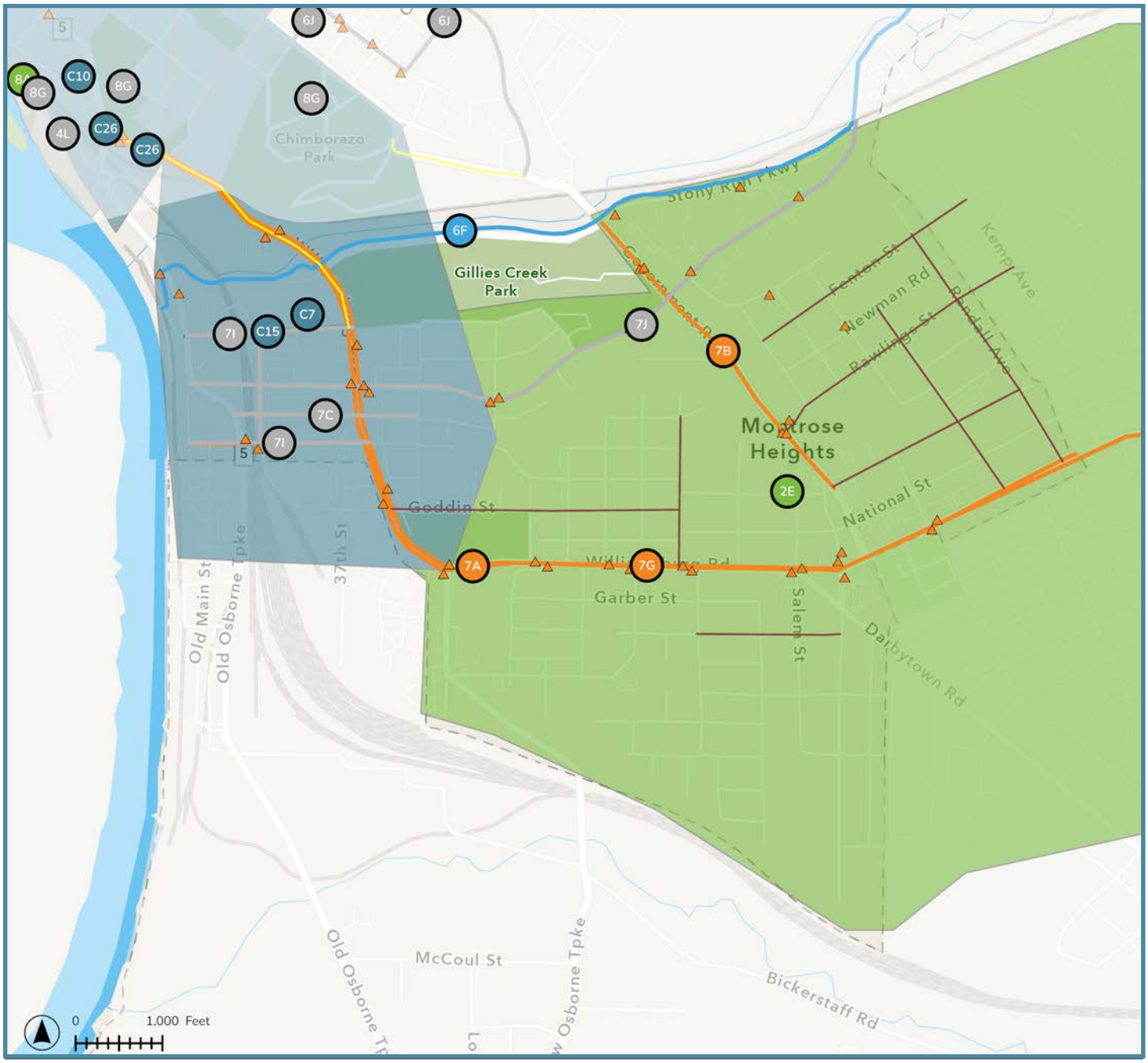


Other high needs include:

- 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



- Priority Projects
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- Pavement Maintenance Projects (4K)

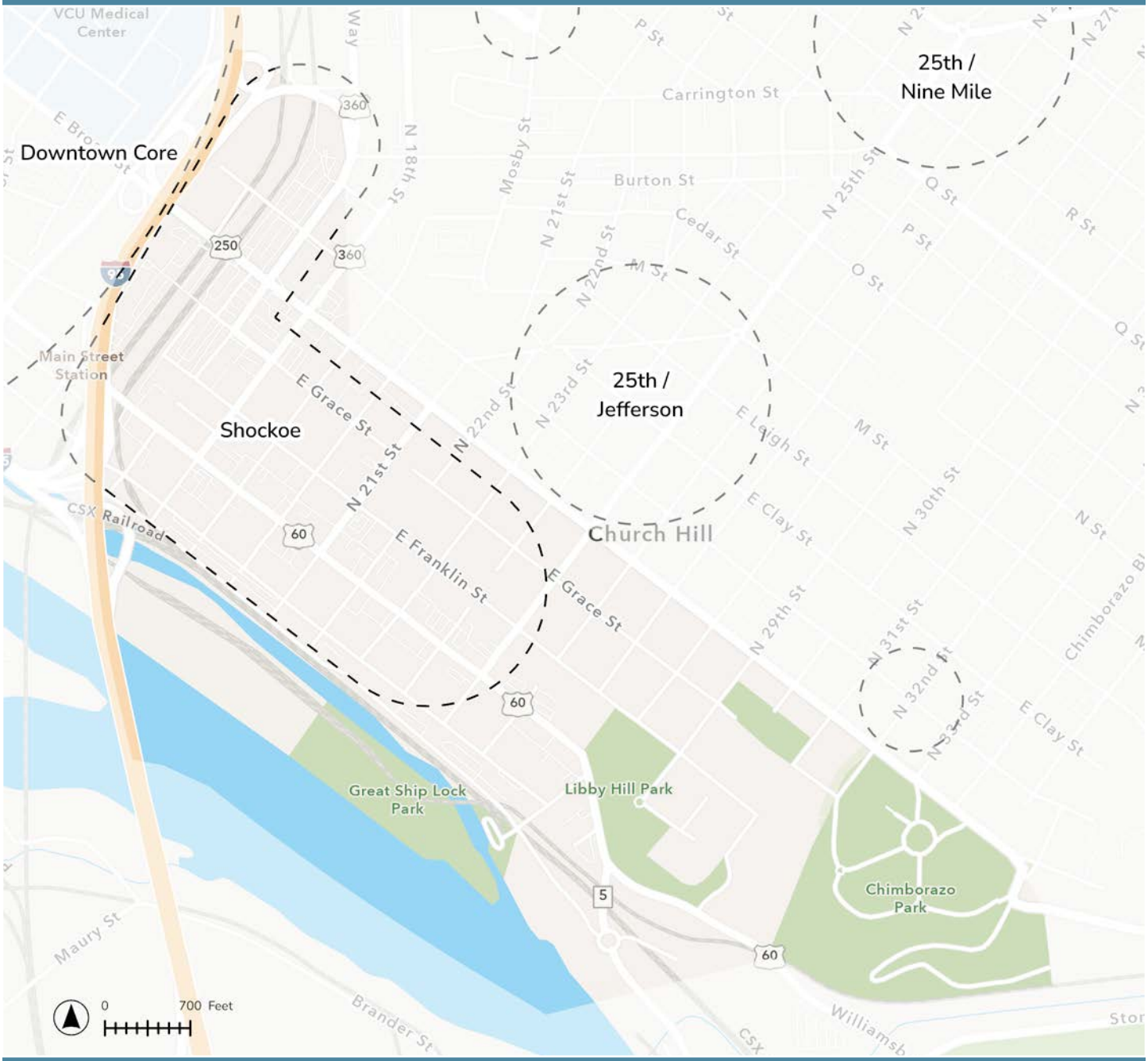
NEEDS AREA SUMMARIES

7: Fulton 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 ($$$$)	4.6	212
7B	Priority Projects	Government Road Streetscape Improvements	Very High ($$$$)	4.5	216
7G	Priority Projects	Pulse Bus Rapid Transit Eastern Extension	High ($$$)	4.3	218
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
7A	Priority Projects	Williamsburg Road/ Williamsburg Avenue Traffic Calming	Moderate ($$)	4.1	242
6F	Priority Completion	Gillies Creek Greenway	n/a	3.2	267
C15	Other Completion	Nicholson Street Streetscape	n/a	0.0	272
C7	Other Completion	Riverfront/ Orleans BRT Streetscape Improvements	n/a	0.0	271
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.1	279
7J	Longer Term	Admiral Gravely Blvd/Jennie Scher Road Bikeway	Moderate/ High ($$/$$$)	2.6	283
7C	Longer Term	Old Fulton Street Grid	Very High ($$$$)	3.4	281
7I	Longer Term	Rockett's Landing to Fulton Bike Connection	Moderate ($$)	2.9	282

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.

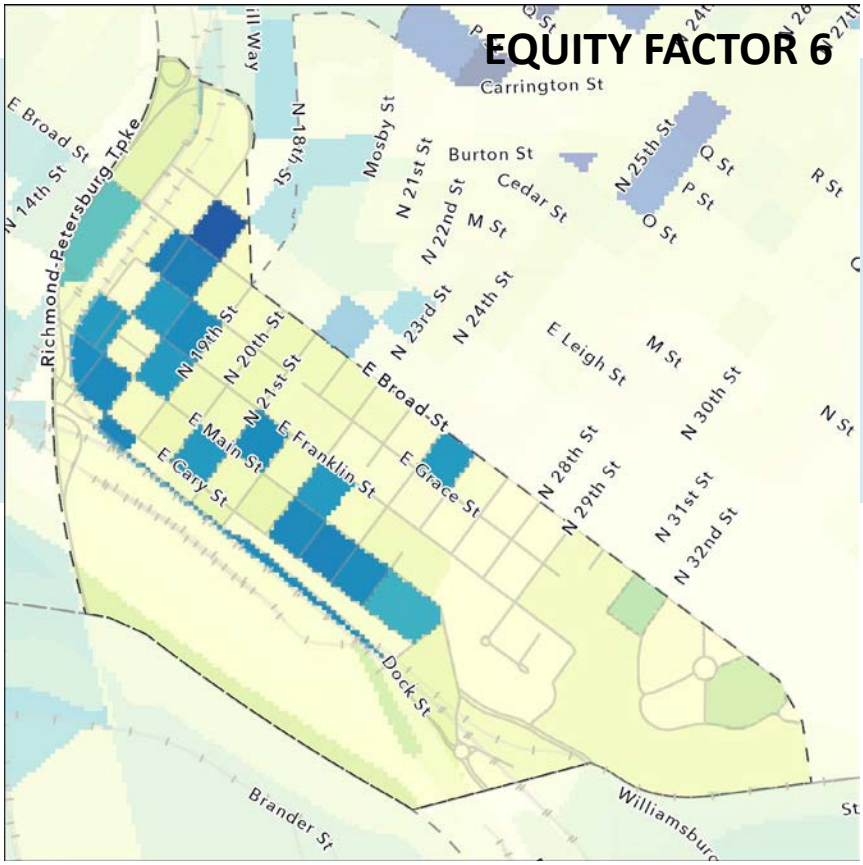
In the 1930s, some portions of this area overlapping with Church Hill to the northeast were **redlined**. In the 1950s, the **construction of the Richmond-Petersburg Turnpike** took Black-owned land and partially covered the Lumpkins Slave Jail site, including slave burial sites.

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

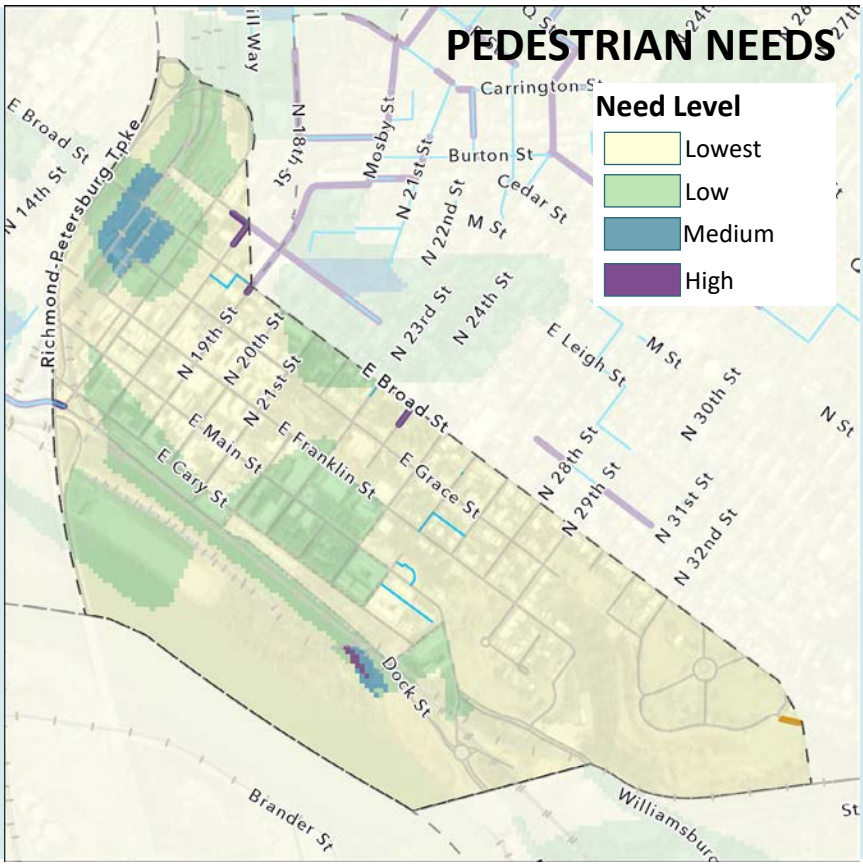
TOP TRANSPORTATION NEEDS
SHOCKOE AREA
NEED AREA 8

RICHMOND CONNECTS

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.



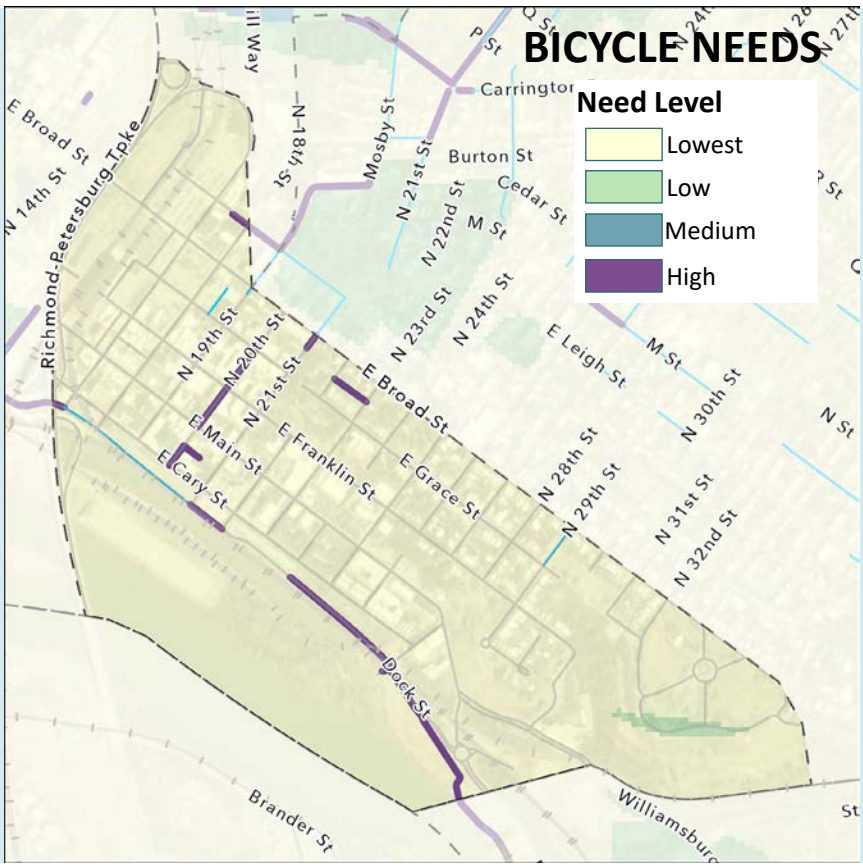
TOP BICYCLE NEEDS

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

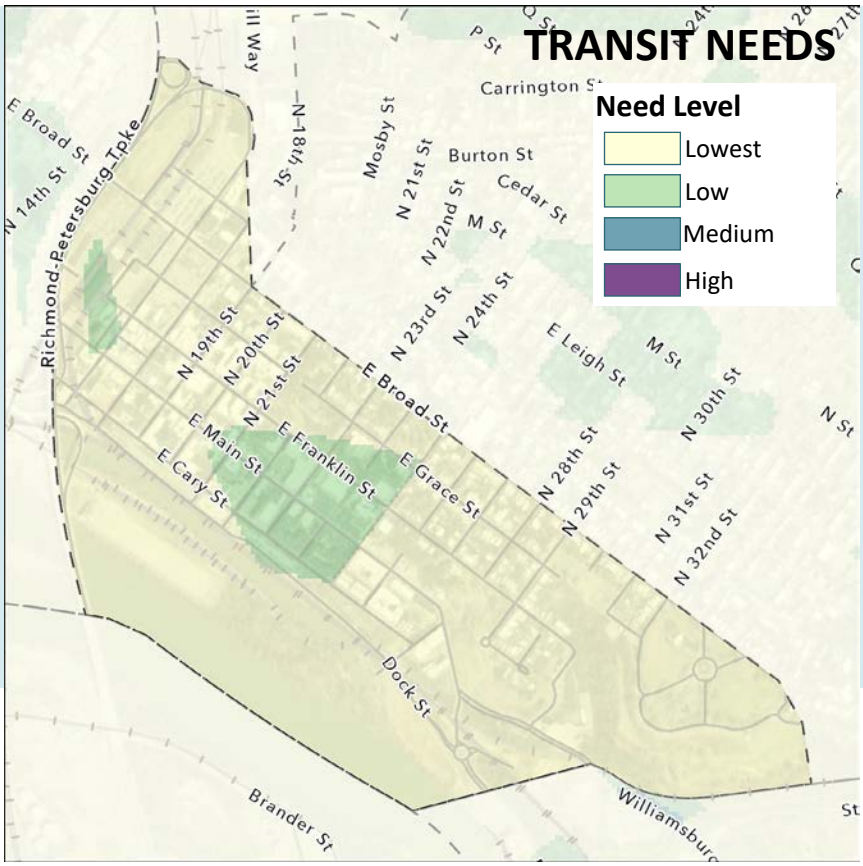
RICHMOND CONNECTS

TOP TRANSIT NEEDS

Transit needs are relatively low here compared to other areas.

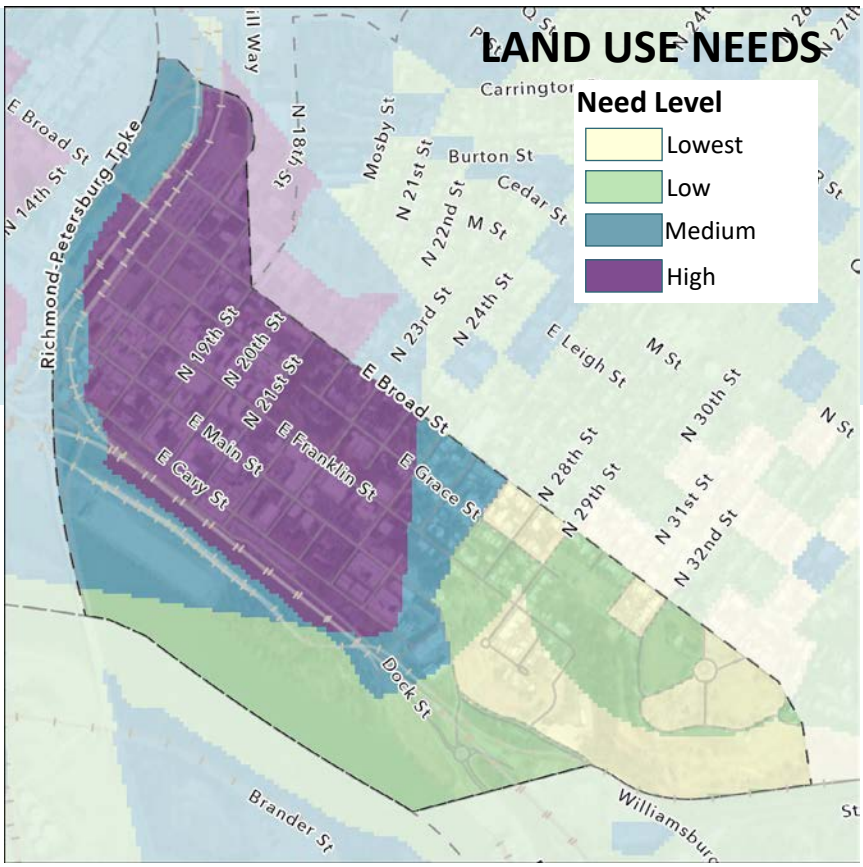
Needs identified by public comments:

- *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.

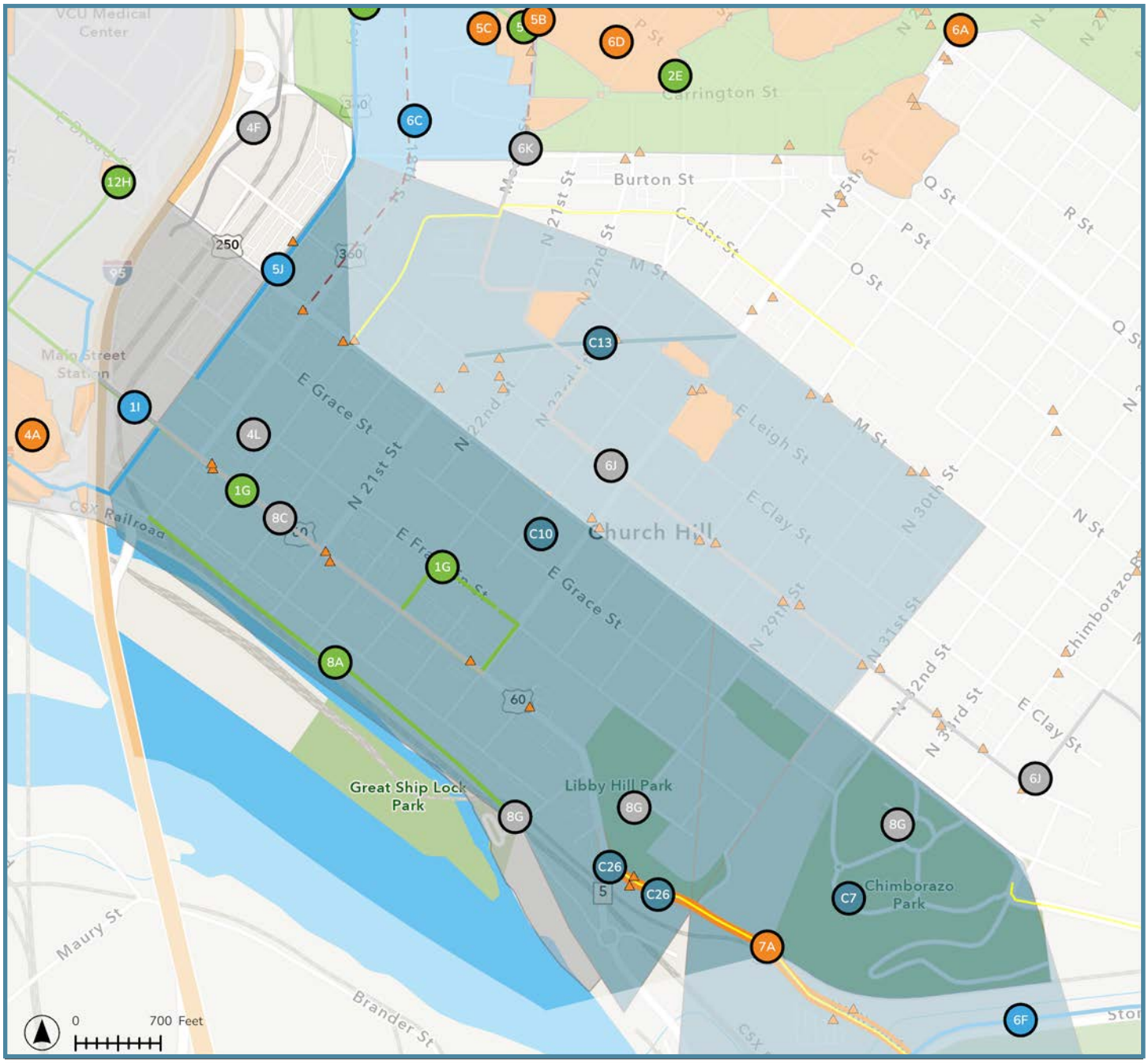


Other high needs include:

- 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



- 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)

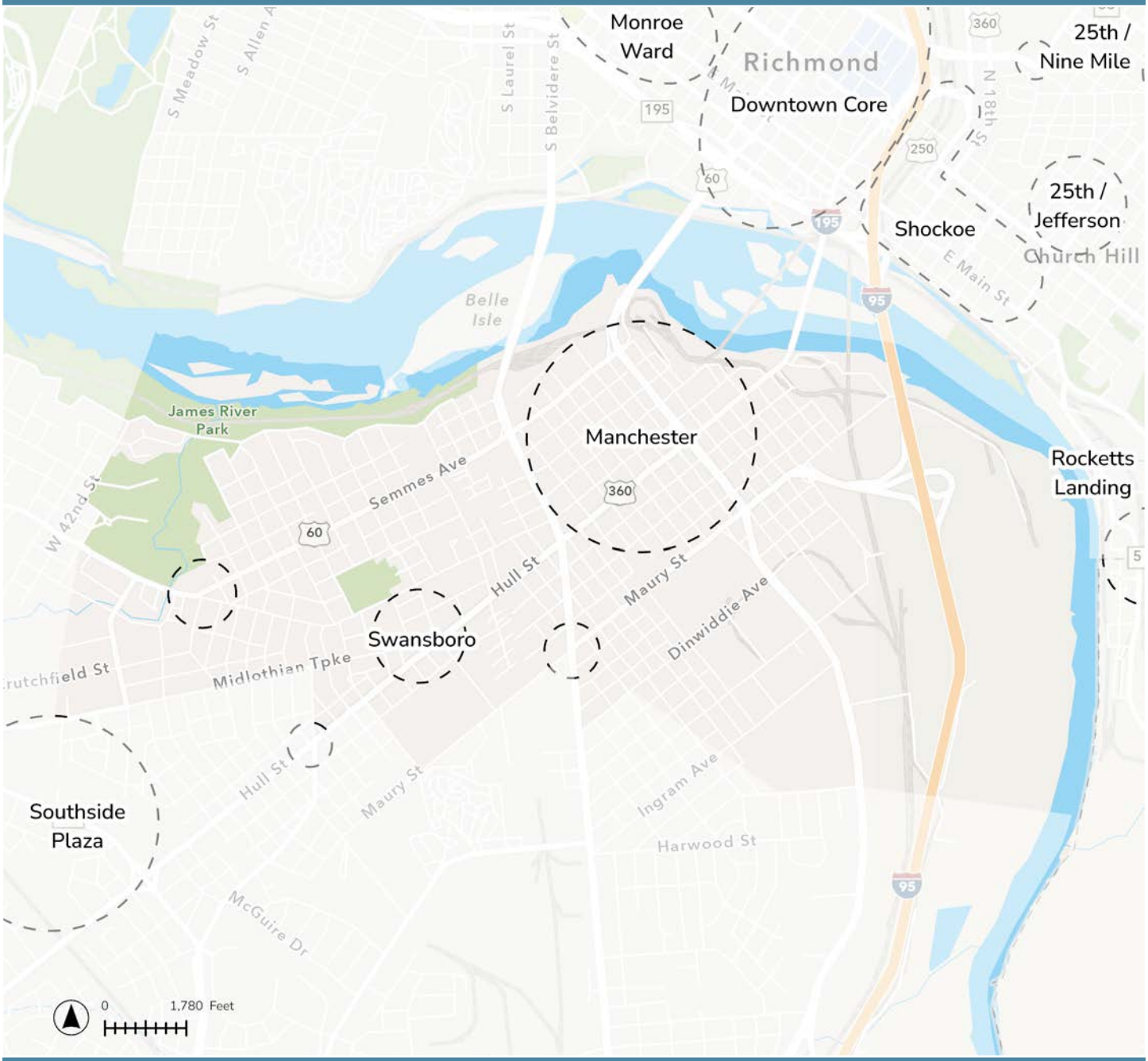
NEEDS AREA SUMMARIES

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 ($$$$)	4.6	212
5J	Priority Completion	Oliver Hill Way Bike Lanes	n/a	3.2	266
C7	Other Completion	Riverfront/ Orleans BRT Streetscape Improvements	n/a	0.0	271
C26	Other Completion	Route 5 Relocation/Williamsburg Road Intersection Improvement	n/a	0.0	274
C10	Other Completion	Shockoe Bottom BRT Streetscape Improvements	n/a	0.0	271
8A	Shorter Term	Dock Street Pedestrian Improvements	Moderate ($$)	3.6	277
4L	Longer Term	Downtown/Shockoe Parking Recommendations	Moderate ($$)	3.0	282
8G	Longer Term	East End Bikeshare Stations	Low ($)	2.1	284
8C	Longer Term	East Main Street Streetscape Improvements	Moderate ($$)	3.5	281
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Low/Moderate ($/$$)	3.7	281

NEEDS AREA SUMMARIES

9: Manchester/Swansboro



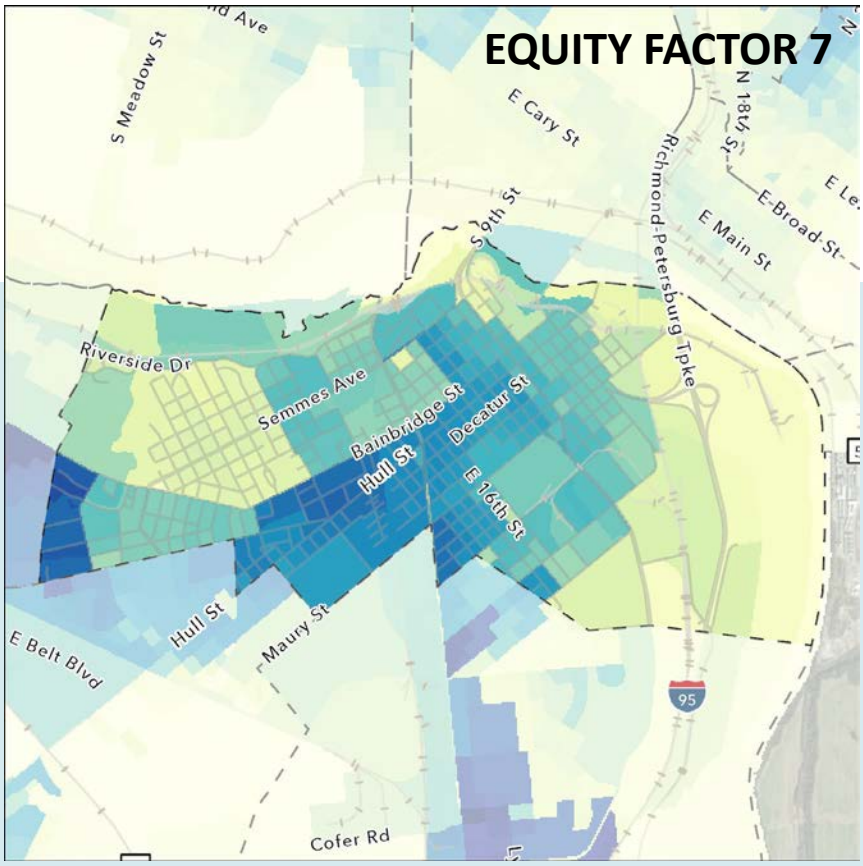
EQUITY CONTEXT
MANCHESTER/SWANSBORO AREA
NEED AREA 9

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**.



Areas shown in dark blue are where transit service frequency or reliability issues degrade access for destinations relevant to communities of concern.

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 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

RICHMOND CONNECTS

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 Tpke.*
- *Sidewalks are missing along Route 1.*

*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP BICYCLE NEEDS

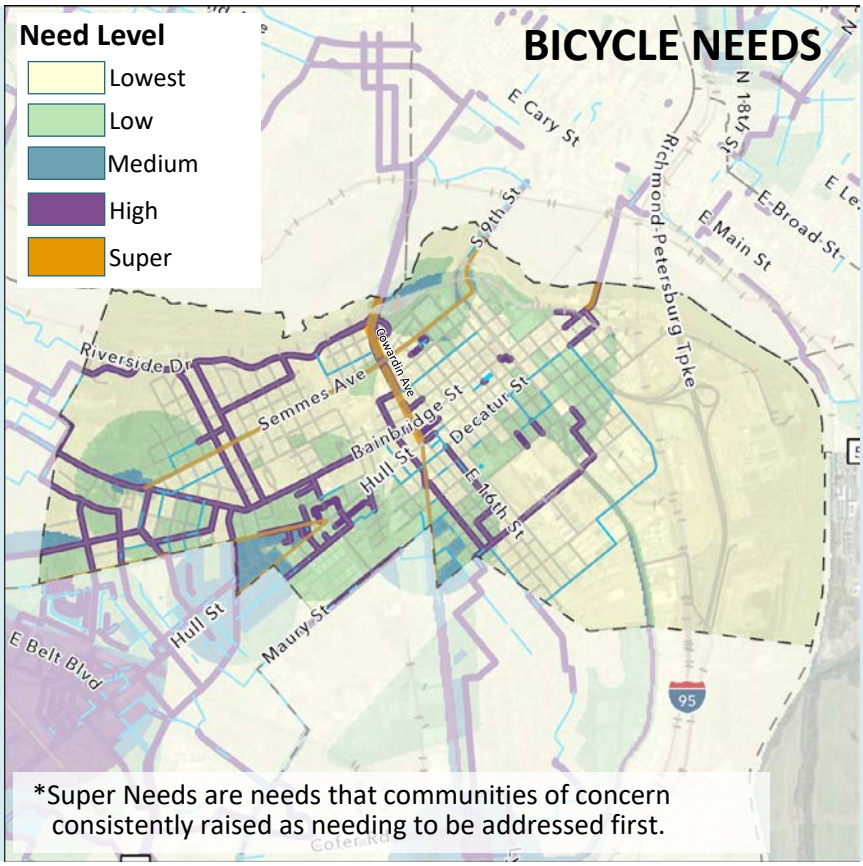
Bike trips from Communities of Concern use these streets the most:

- 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 Tpke because of driving speeds.*

Bicycle needs here are generally lower than several other areas of Richmond.



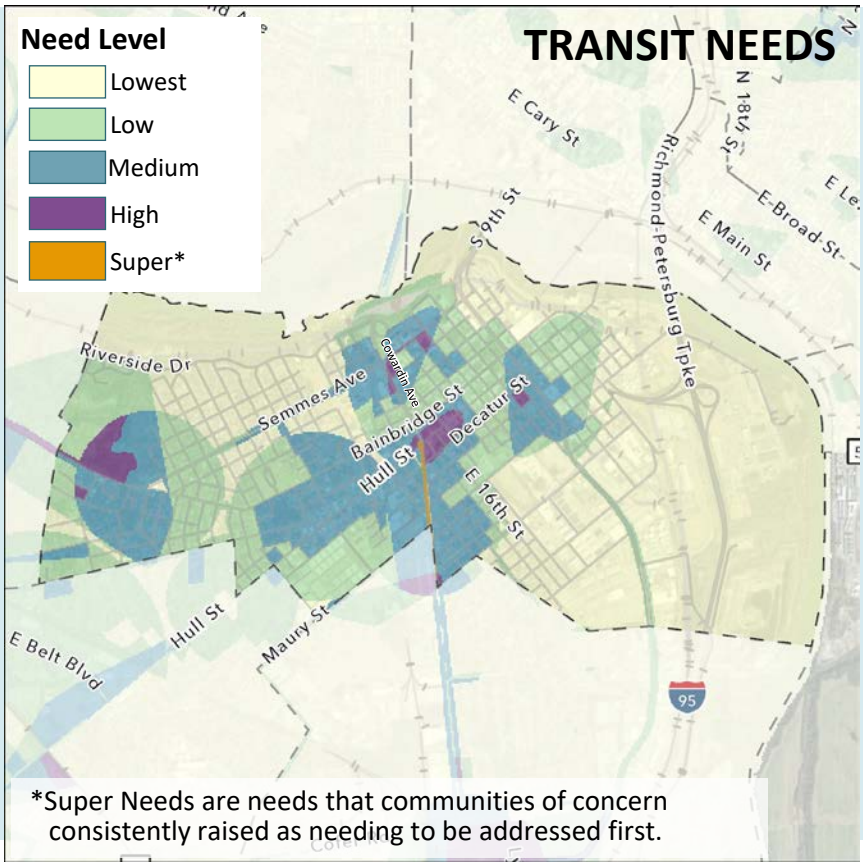
*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS
MANCHESTER/SWANSBORO AREA
NEED AREA 9

RICHMOND CONNECTS

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

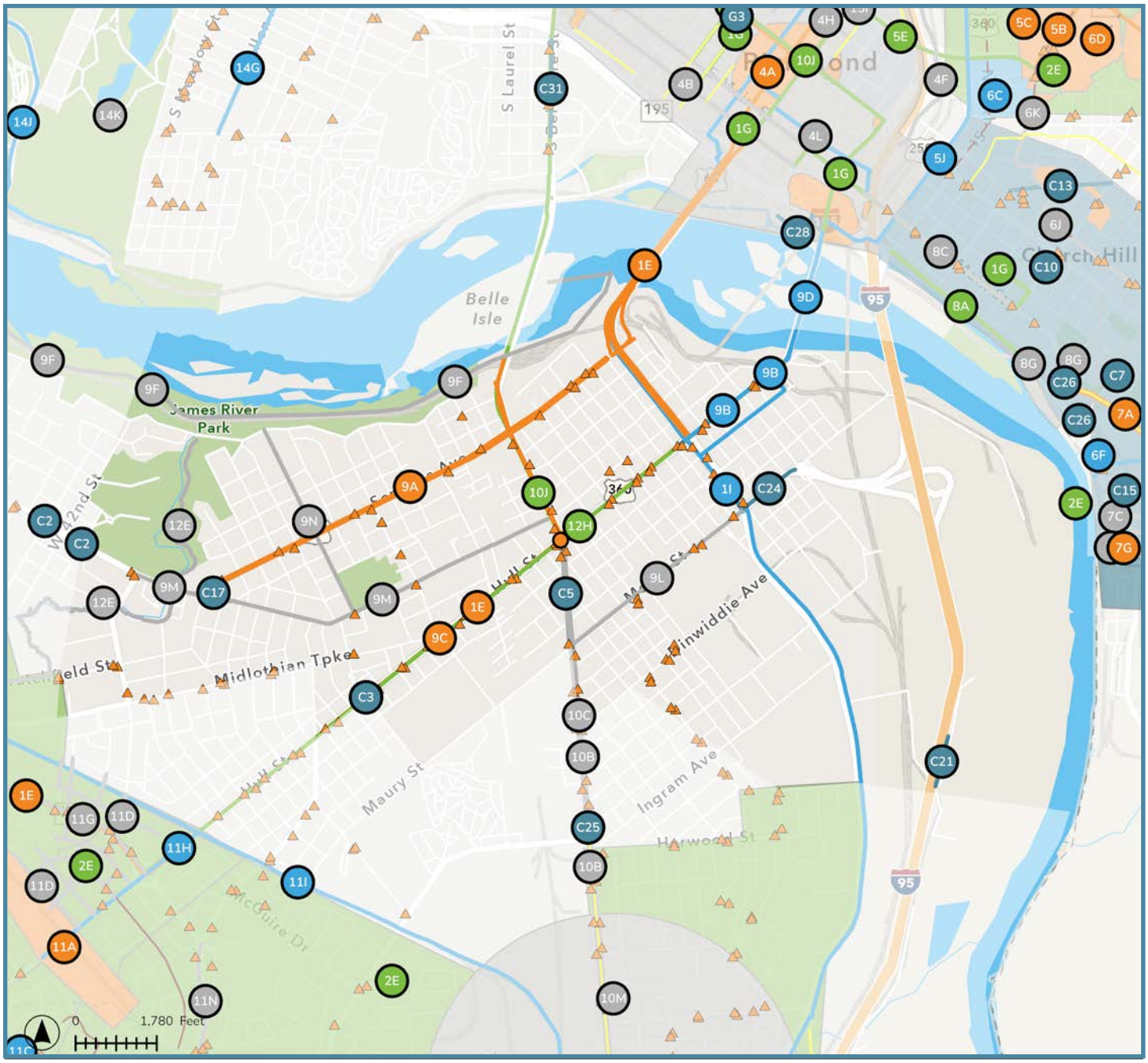
- Along roads like Hull St, Semmes Ave, Maury St, and Cowardin Ave, there have been severe pedestrian crashes.

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



- 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)

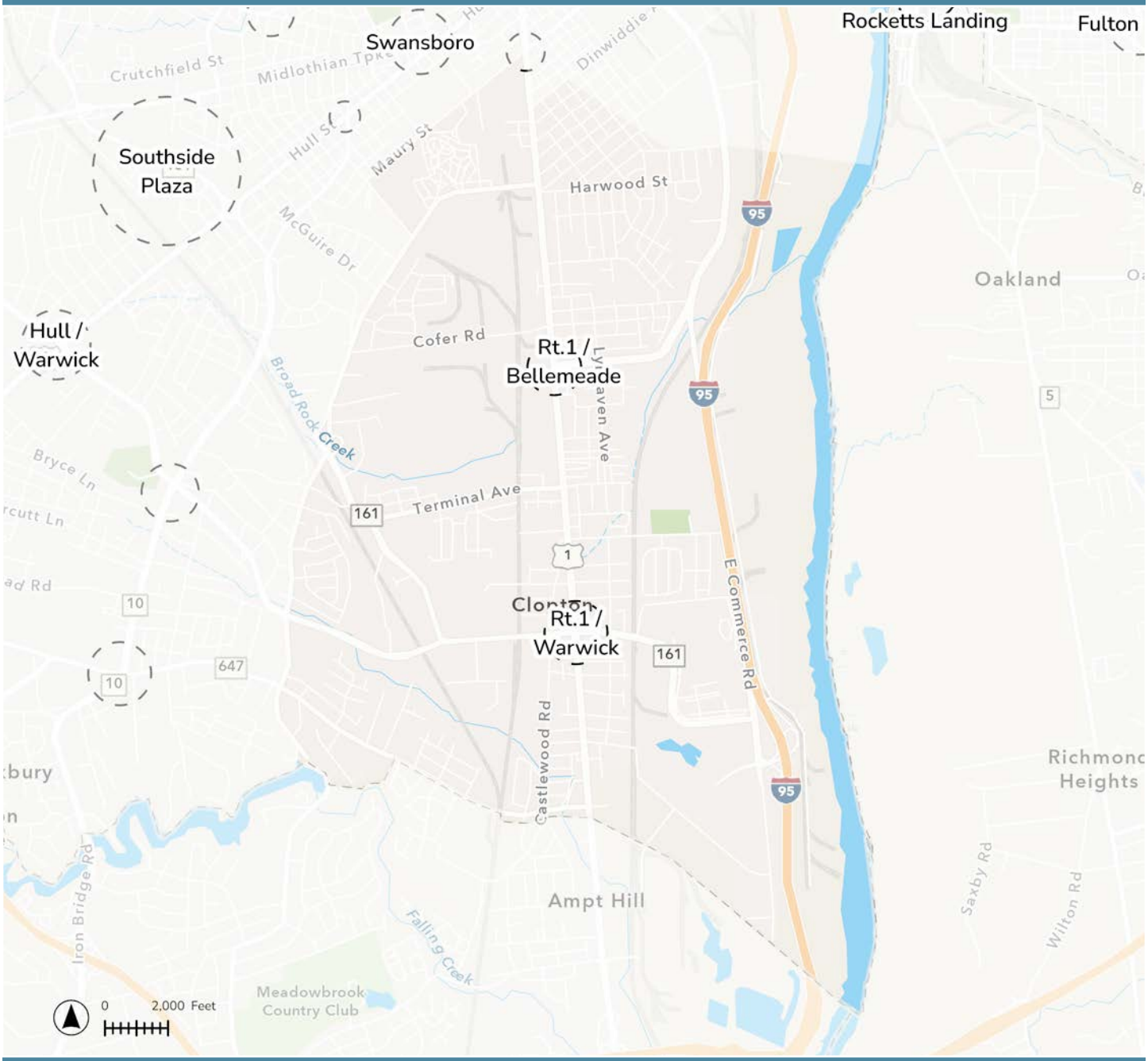
NEEDS AREA SUMMARIES

9: Manchester/Swansboro 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 ($$$$)	4.6	212
9C	Priority Projects	Hull Street Intersection Pedestrian Improvements - Hull Street at US Route 1, Hull Street at Midlothian Turnpike	High ($$$)	4.3	219
1E	Priority Projects	North-South Bus Rapid Transit	Very High ($$$$)	3.9	256
9A	Priority Projects	Semmes Avenue and Cowardin Avenue Traffic Calming and Safety Improvements	High ($$$)	4.6	209
1I	Priority Completion	Fall Line Trail	n/a	2.6	269
9B	Priority Completion	Hull Street Streetscape - Mayo Bridge to 9th Street	n/a	4.8	266
9D	Priority Completion	Mayo Bridge Pedestrian and Bicycle Facilities	n/a	3.7	
C21	Other Completion	Deepwater Terminal Road Connector to Goodes Street	n/a	0.0	274
C3	Other Completion	Hull Street at 29th Street Pedestrian Hybrid Beacon	n/a	0.0	270
C5	Other Completion	Richmond Highway Phase II Improvements	n/a	0.0	270
C17	Other Completion	Semmes Avenue, Forest Hill Avenue and Dundee Avenue Pedestrian Safety and Operational Enhancements	n/a	0.0	273
9M	Longer Term	Bainbridge Street/Forest Hill Avenue Bike Lanes	Low/Moderate ($/$$)	2.7	283
9L	Longer Term	Maury Street Bikeway	Very High ($$$$)	1.8	285
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	n/a	2.5	283
9F	Longer Term	Riverside Shared-Use Path	Very High ($$$$)	2.9	283
9N	Longer Term	West 29th Street Bikeway	Moderate ($$)	1.7	285

NEEDS AREA SUMMARIES

10: Southside Route 1 Corridor



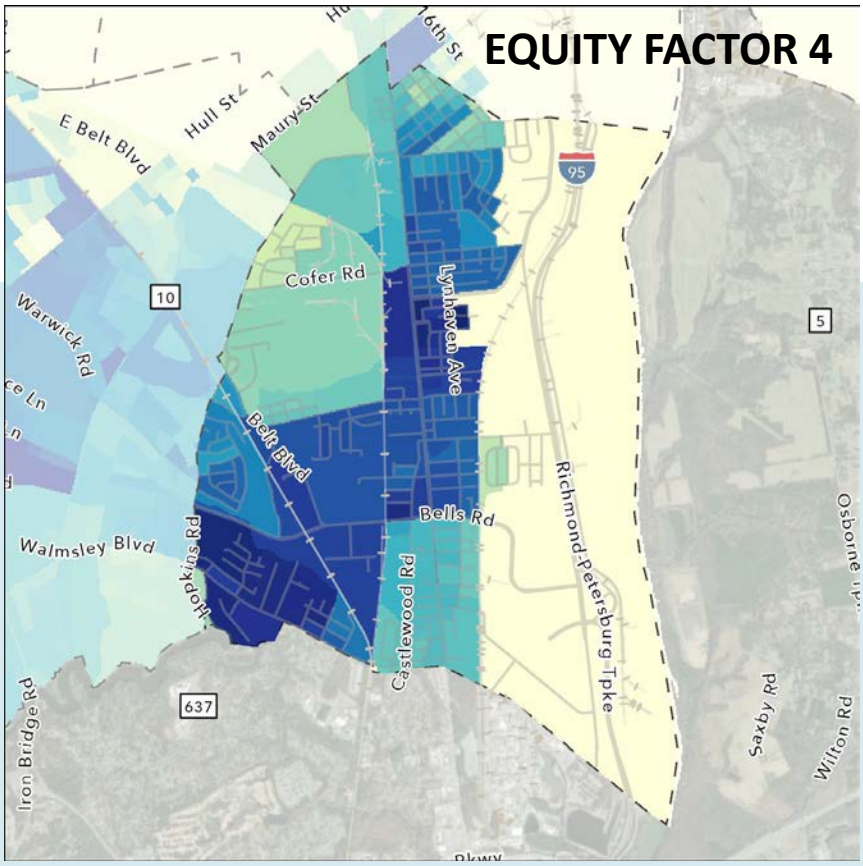
EQUITY CONTEXT
RT 1 CORRIDOR AREA
NEED AREA 10

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**.



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.

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.

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

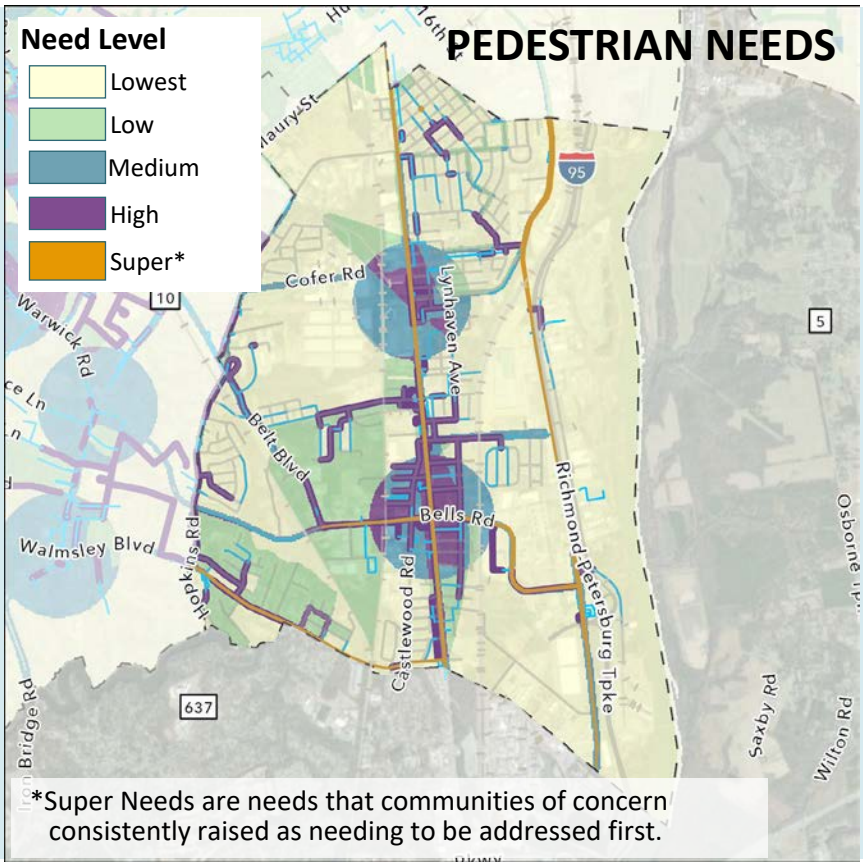
RICHMOND CONNECTS

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.*



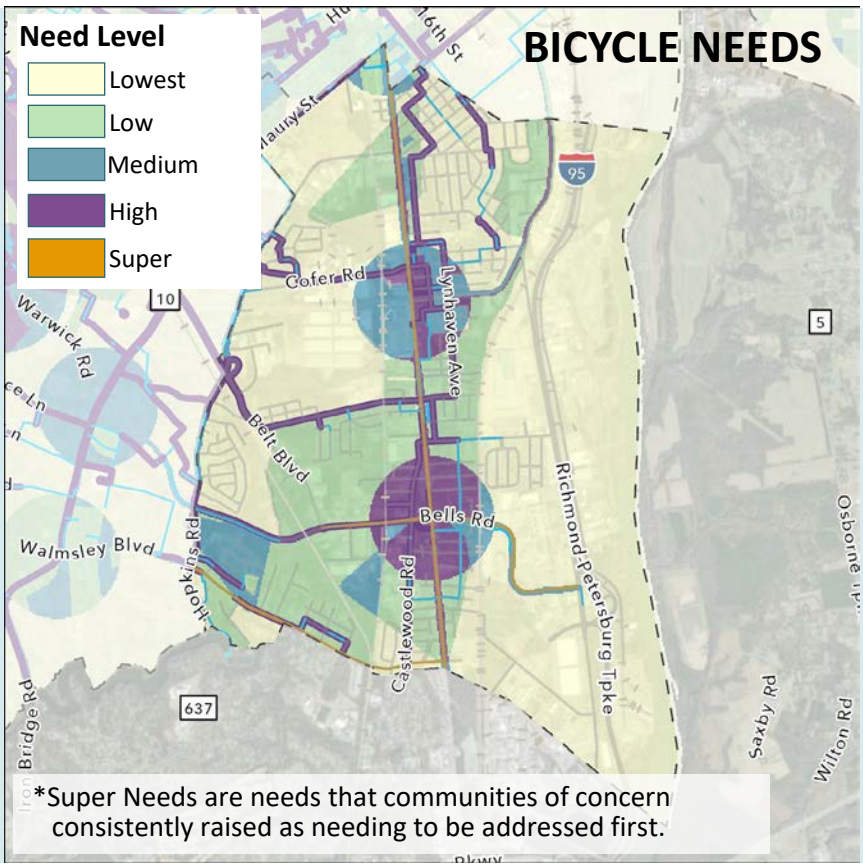
*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

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.*



*Super Needs are needs that communities of concern consistently raised as needing to be addressed first.

TOP TRANSPORTATION NEEDS
RT 1 CORRIDOR AREA
NEED AREA 10

RICHMOND CONNECTS

TOP TRANSIT NEEDS

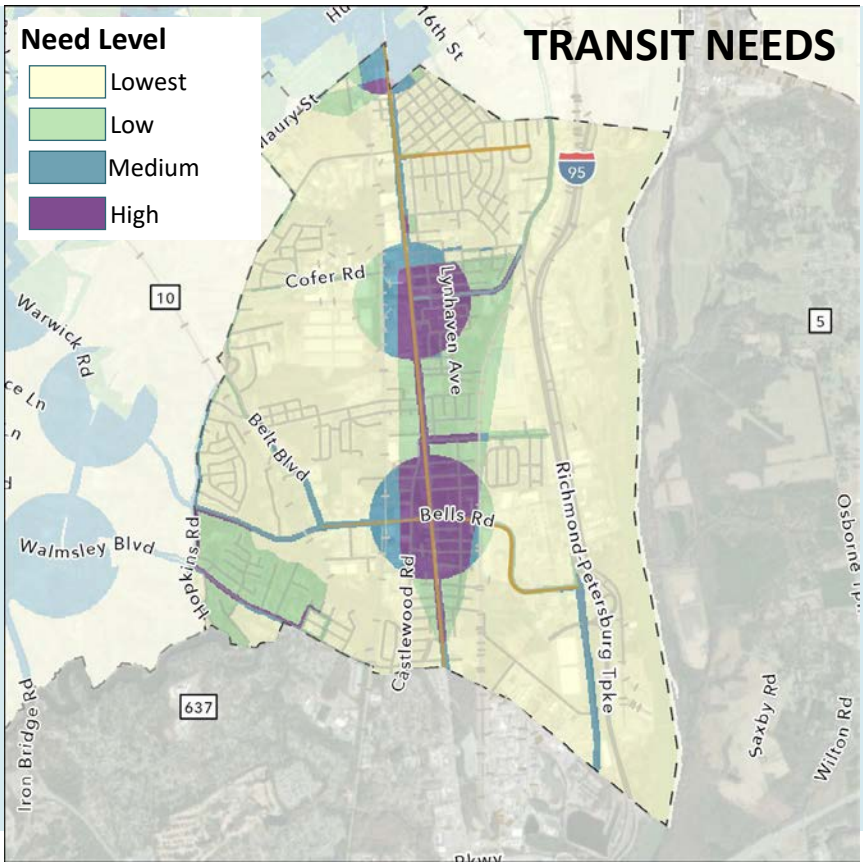
Transit needs are highest in the Nodes along Route 1.

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

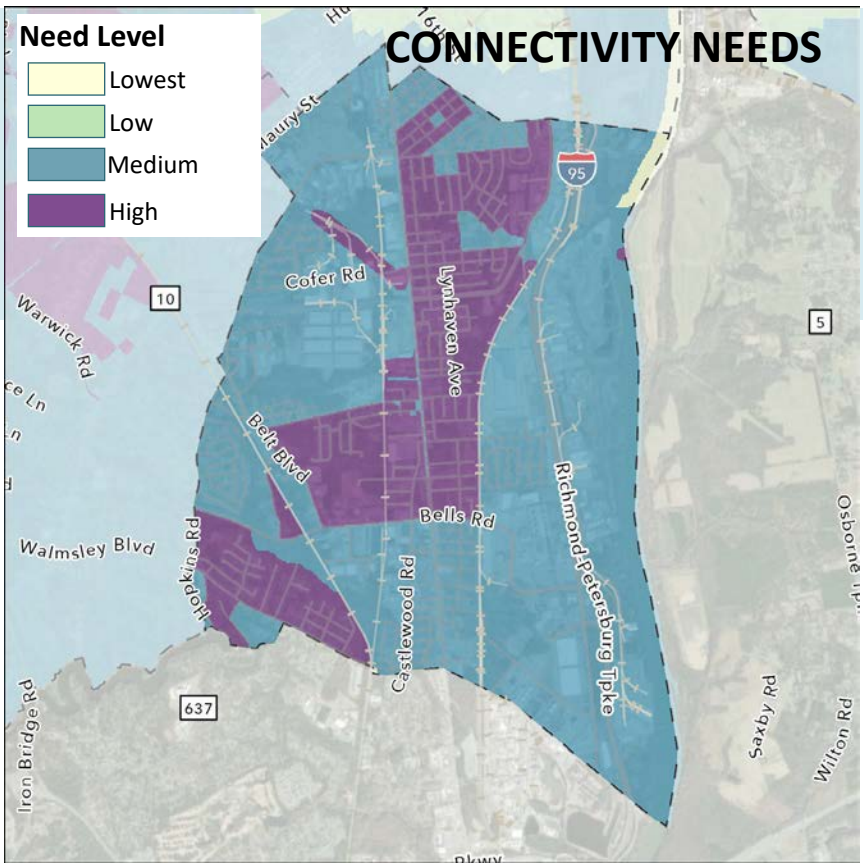
"Super" Needs from public input:

- *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.

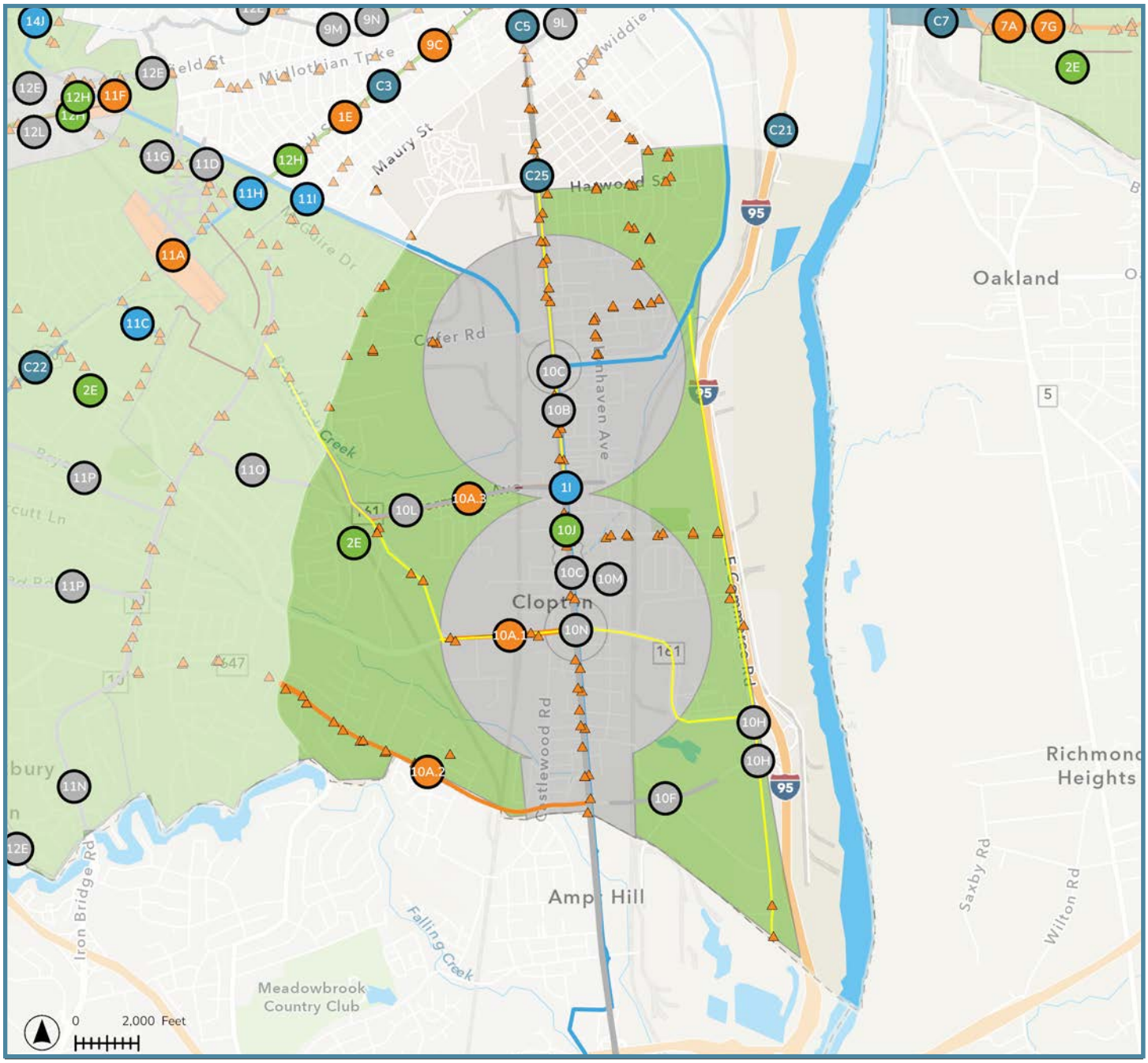


Other high needs include:

- 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)

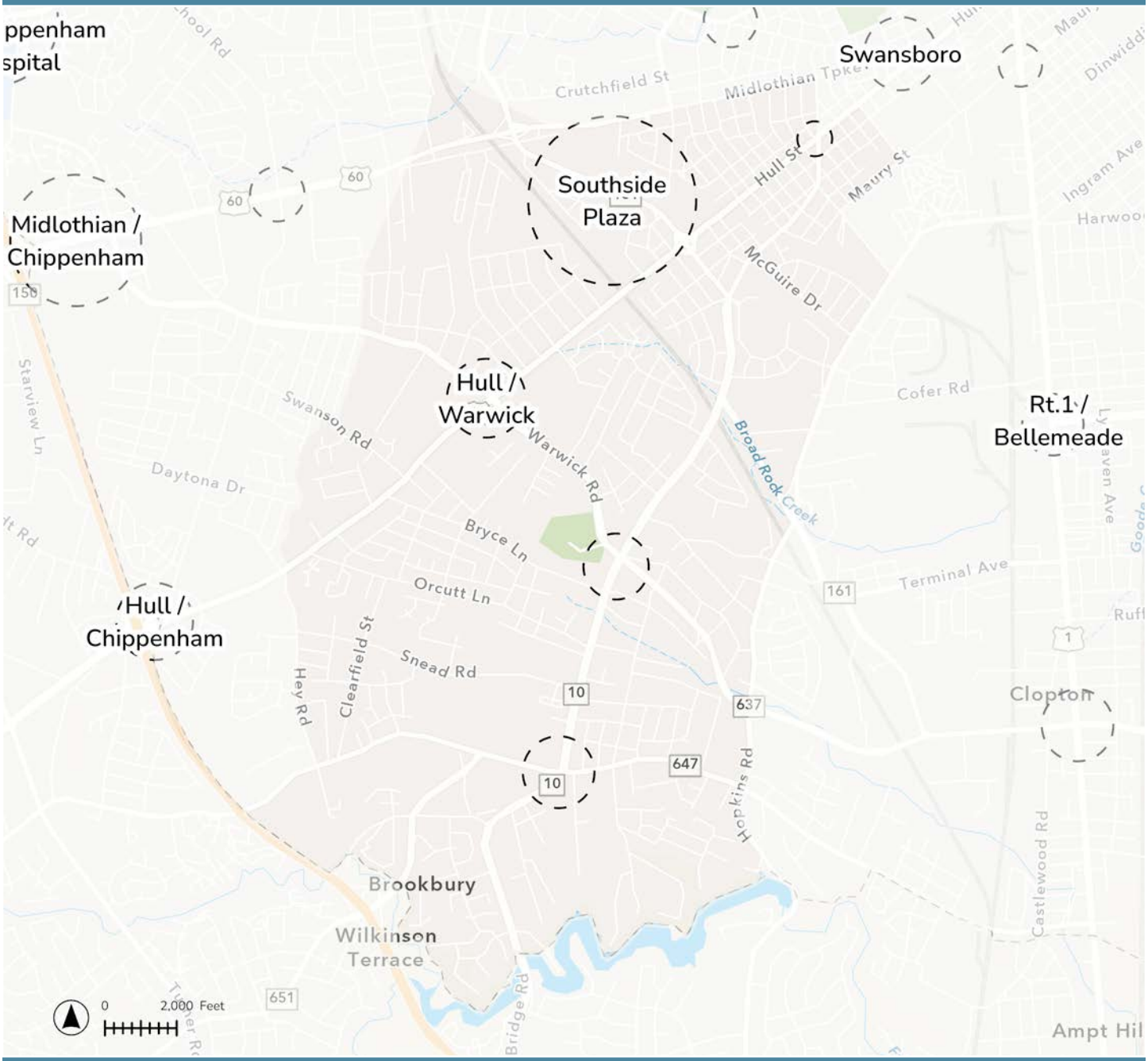
NEEDS AREA SUMMARIES

10: Southside Route 1 Corridor

ID	Category	Title	Cost	Support Score	Page
10A.1	Priority Projects	Bells Road Sidewalks	High ($$$)	4.9	198
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
10A.3	Priority Projects	Terminal Boulevard Shared Use Path	High ($$$)	4.9	202
10A.2	Priority Projects	Walmsley Boulevard Shared Use Path	Very High ($$$$)	4.9	200
1I	Priority Completion	Fall Line Trail	n/a	2.6	269
11I	Priority Completion	James River Branch Trail	n/a	1.6	269
C24	Other Completion	Maury Street Streetscape	n/a	0.0	274
C25	Other Completion	Richmond Highway Improvements	n/a	0.0	274
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.1	279
10J	Shorter Term	Richmond Highway Transit Improvements	Moderate ($$)	3.4	278
10H	Longer Term	Commerce Road Improvements at Walmsley Boulevard	High ($$$)	2.1	284
10N	Longer Term	Greenspace/Park near Richmond Highway	n/a	2.9	283
10B	Longer Term	Richmond Highway Great Street Transformation	High ($$$)	3.4	281
10C	Longer Term	Richmond Highway Pedestrian Safety Improvements	High ($$$)	3.3	282
10M	Longer Term	Richmond Highway Revitalization	n/a	3.3	282
10L	Longer Term	Terminal Avenue/Belt Boulevard Bike Lanes - Lynhaven Ave to Hopkins Rd	Moderate ($$)	1.5	285
10F	Longer Term	Walmsley Boulevard Street Connection	High ($$$)	2.1	284

NEEDS AREA SUMMARIES

11: Broad Rock/Walmsley



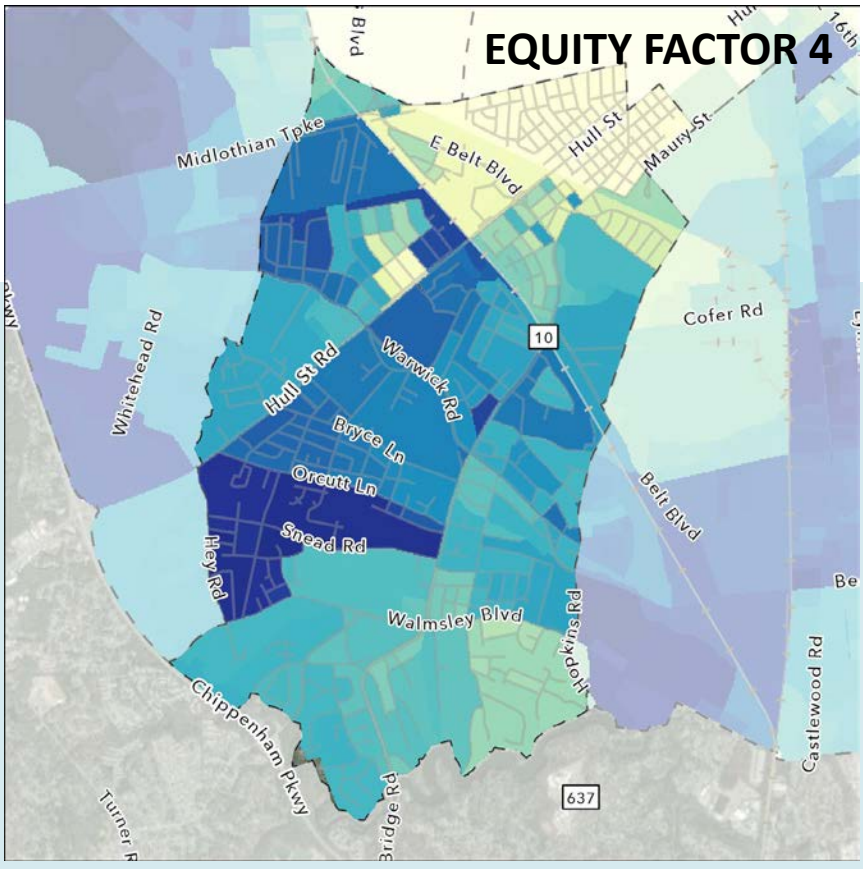
EQUITY CONTEXT
BROAD ROCK/WALMSLEY AREA
NEED AREA 11

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**.



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.

Inner-Ring Suburbs

Portions of this area are considered to be inner-ring suburbs – they have poor accessibility and are largely low-income.

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

RICHMOND CONNECTS

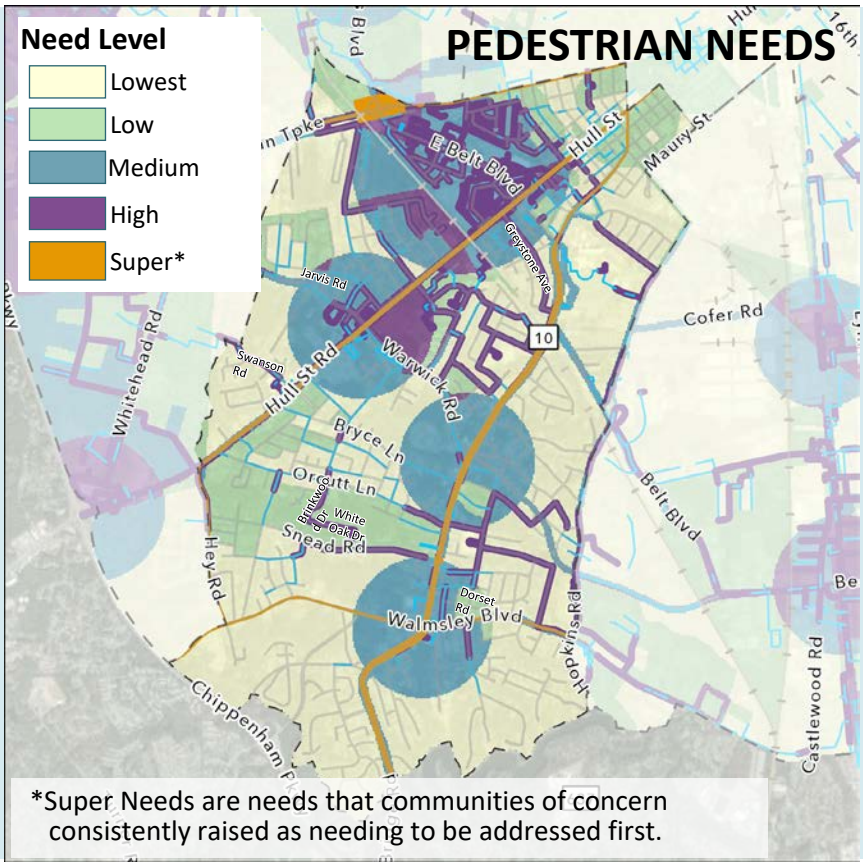
TOP PEDESTRIAN NEEDS

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*



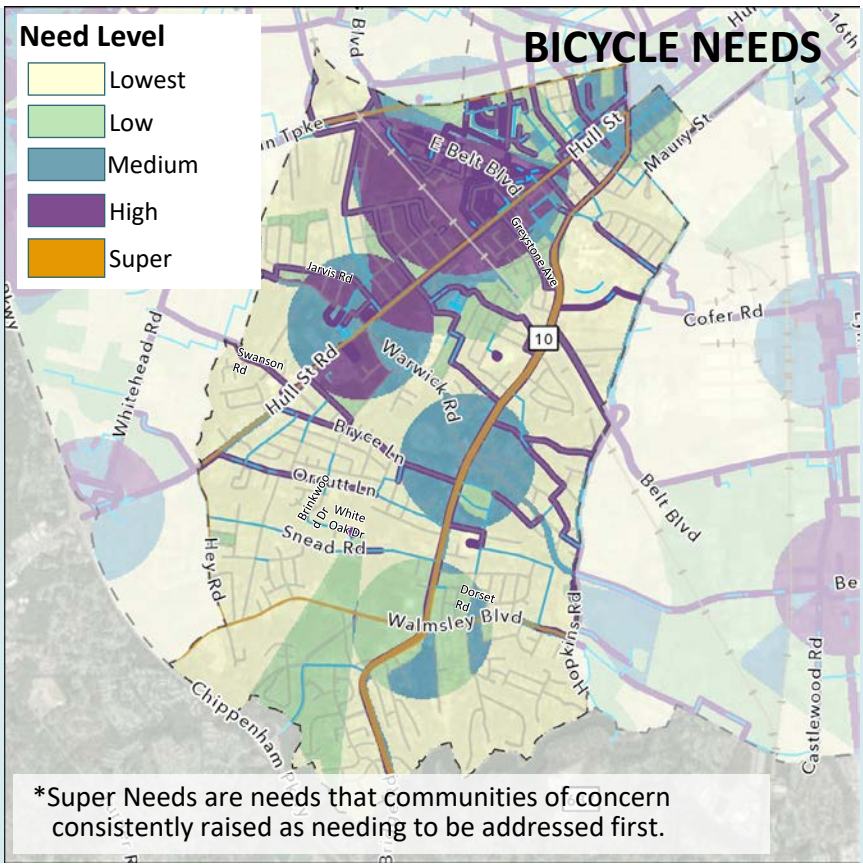
TOP BICYCLE NEEDS

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*

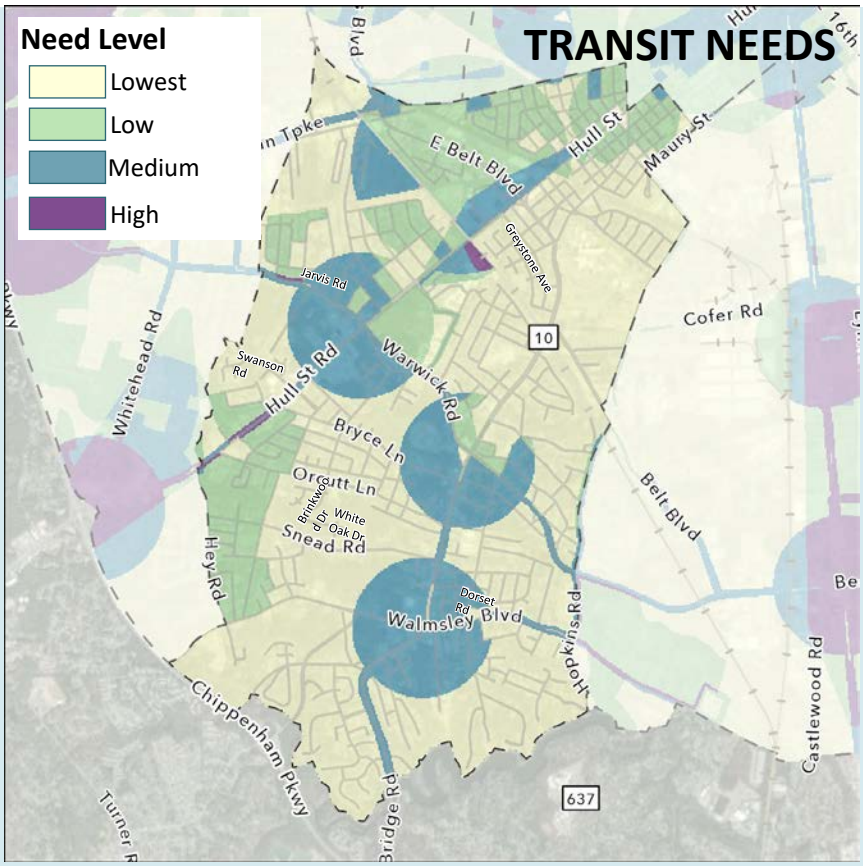


TOP TRANSPORTATION NEEDS
BROAD ROCK/WALMSLEY AREA
NEED AREA 11

RICHMOND CONNECTS

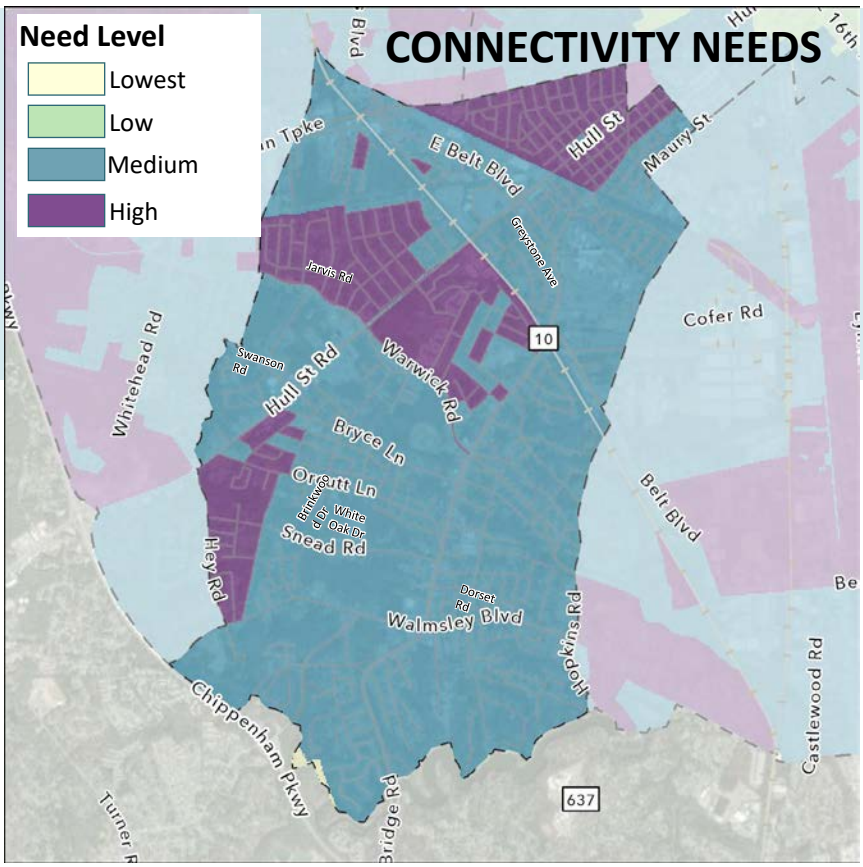
TOP TRANSIT NEEDS

- 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.

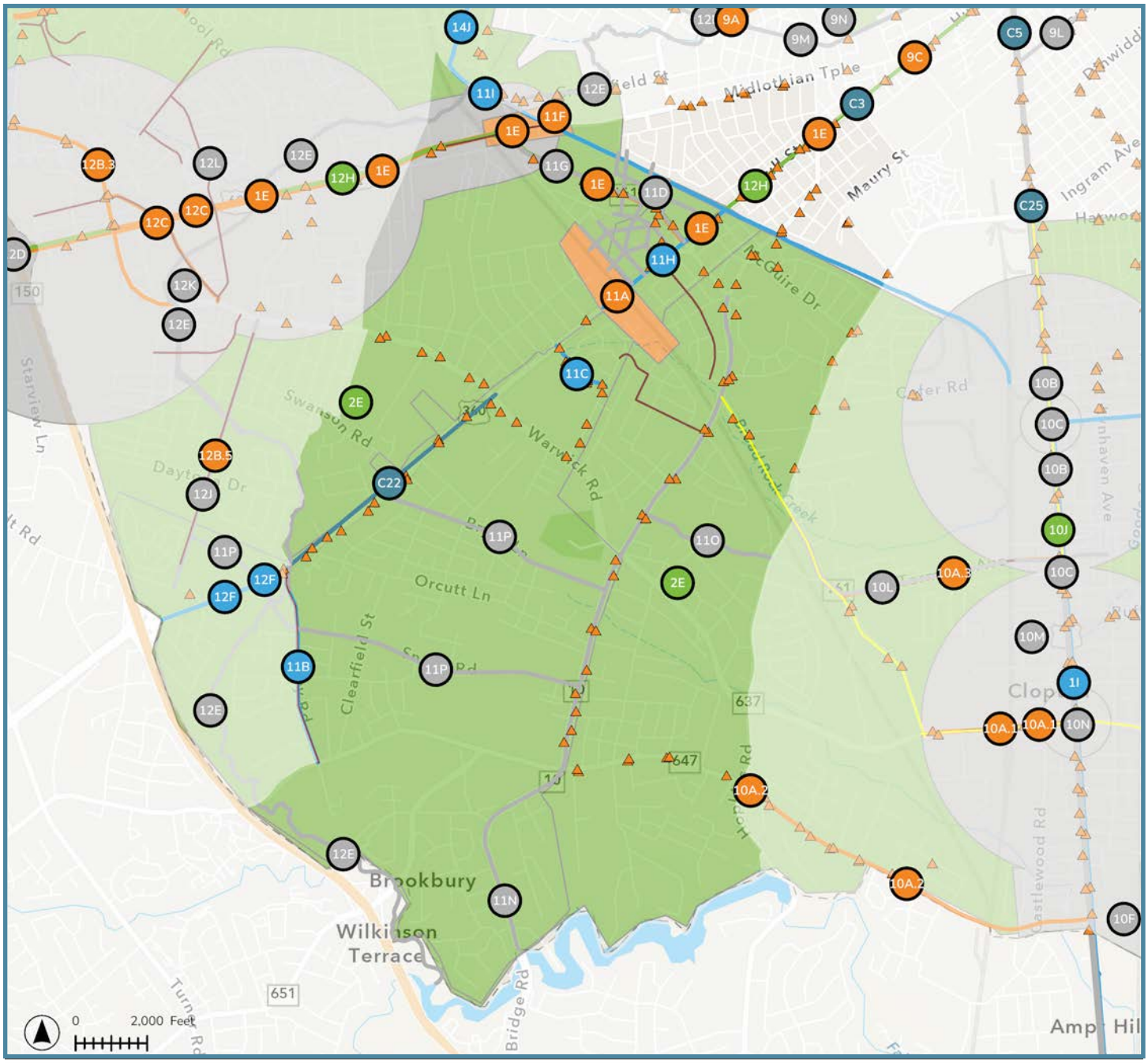


Other high needs include:

- 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



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

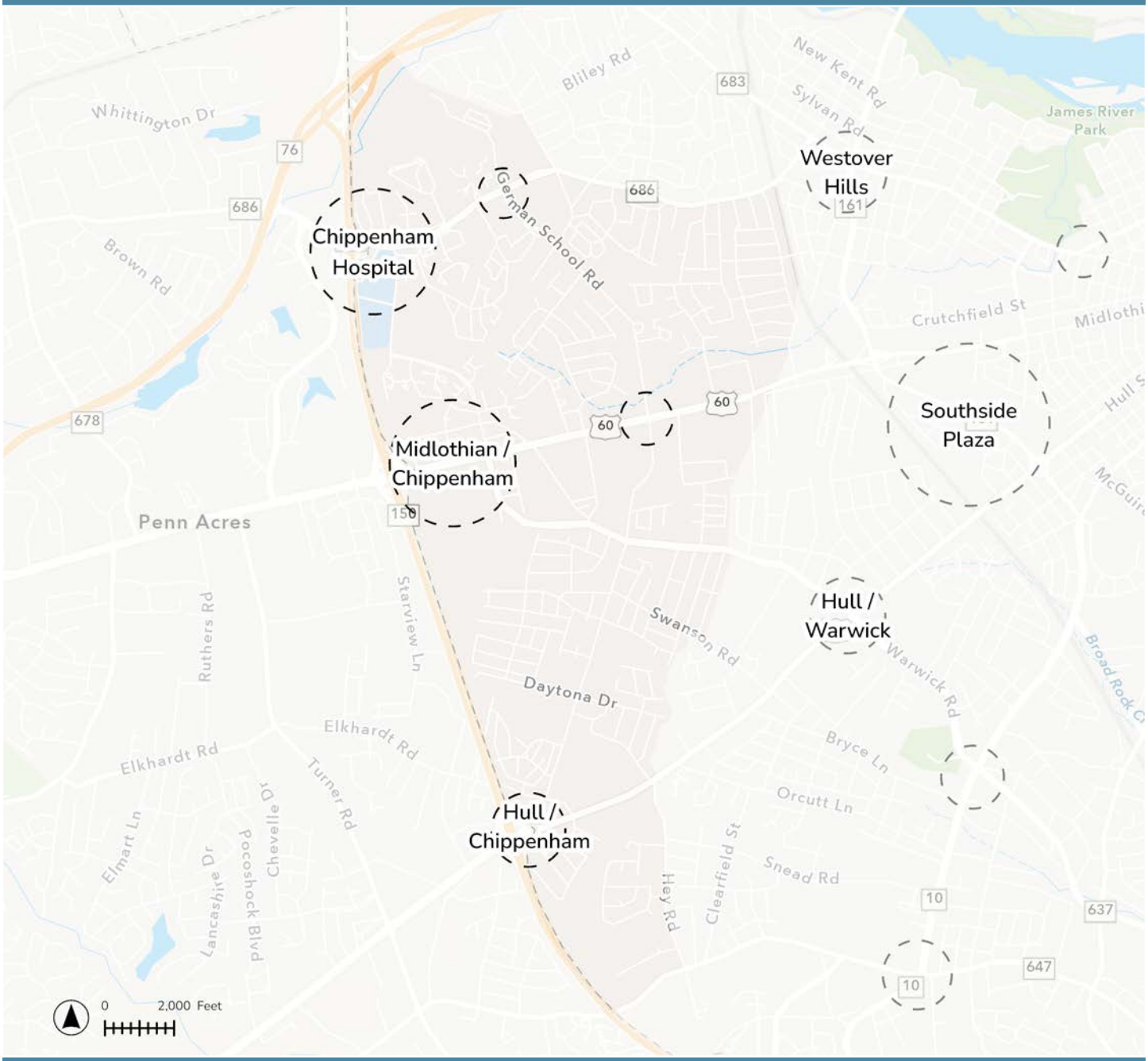
NEEDS AREA SUMMARIES

11: Broad Rock/Walmsley Project Recommendations

ID	Category	Title	Cost	Support Score	Page
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	212
1E	Priority Projects	North-South Bus Rapid Transit	Very High ($$$$)	3.9	256
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
11F	Priority Projects	Richmond High School of the Arts Pedestrian Safety Improvements	Very High ($$$$)	4.2	225
11A	Priority Projects	Southside Plaza Pedestrian Connections Across Railroad Tracks	Very High ($$$$)	3.9	257
11B	Priority Completion	Hey Road Improvements	n/a	3.6	267
11H	Priority Completion	Hull Street Shared Use Path - Arizona Drive to James River Branch Trail	n/a	2.6	269
11I	Priority Completion	James River Branch Trail	n/a	1.6	269
11C	Priority Completion	Southwood Parkway Sidewalk	n/a	4.2	266
C3	Other Completion	Hull Street at 29th Street Pedestrian Hybrid Beacon	n/a	0.0	270
C22	Other Completion	Hull Street Improvements Phase I - Hey Road to Warwick Road	n/a	0.0	274
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.1	279
11P	Longer Term	Bikeways on Bryce Lane and Snead Road	High ($$$)	1.0	285
11N	Longer Term	Broad Rock Boulevard/Iron Bridge Road Protected Bikeway	High ($$$)	2.1	284
11G	Longer Term	East Belt Boulevard Improvements	Moderate/High ($$/$$$)	2.0	284
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	n/a	2.5	283
11D	Longer Term	Southside Plaza Street Grid	Very High ($$$$)	3.7	281
11J	Longer Term	Southside Plaza Transfer Center	Moderate ($$)	3.7	281
11O	Longer Term	Terminal Avenue Bike Lanes - Broad Rock Blvd to Belt Blvd	High ($$$)	1.4	285

NEEDS AREA SUMMARIES

12: Midlothian/German School Road



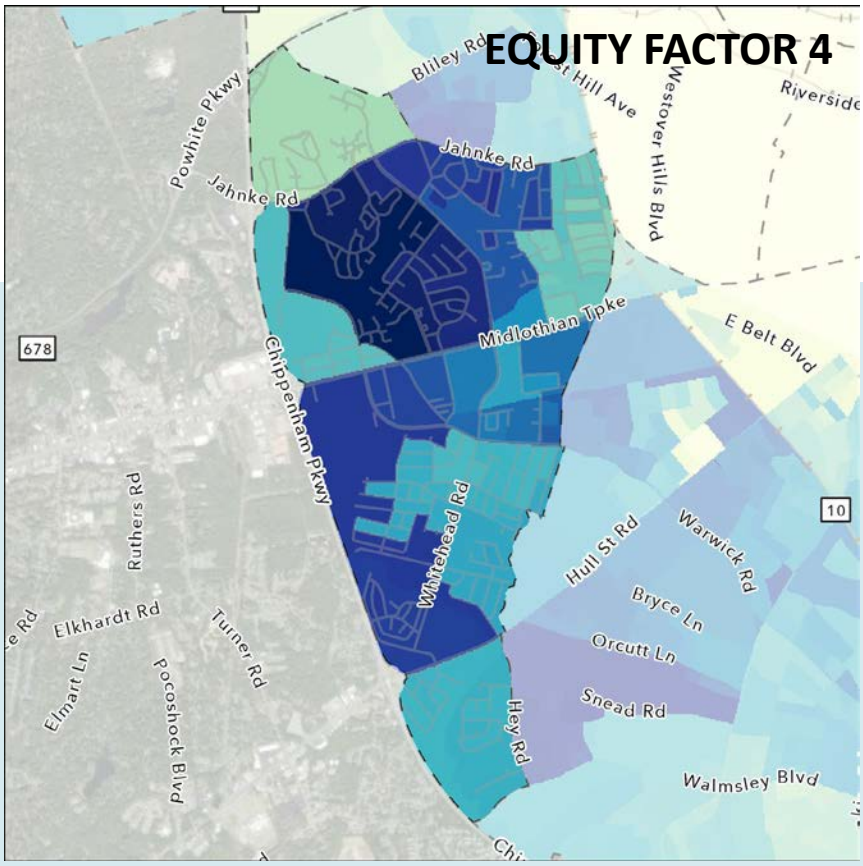
EQUITY CONTEXT
MIDLOTHIAN/GERMAN SCHOOL RD AREA
NEED AREA 12

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.



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.

Inner-Ring Suburbs

Portions of this area are considered to be inner-ring suburbs – they have poor accessibility and are largely low-income.

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

RICHMOND CONNECTS

TOP PEDESTRIAN NEEDS

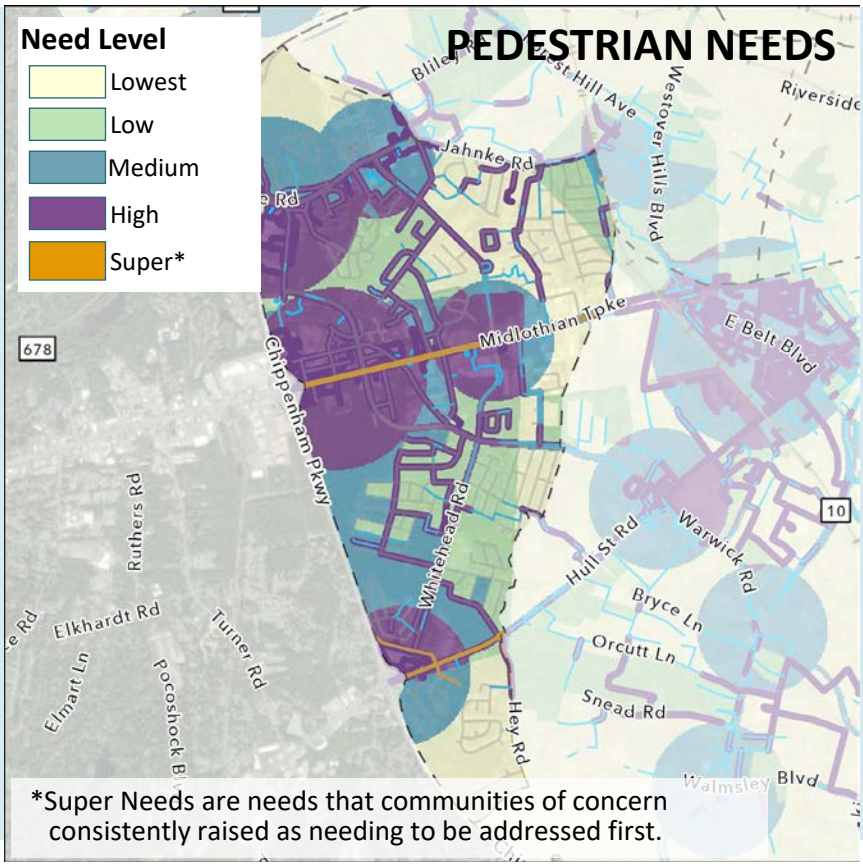
Pedestrian need scores here are among the highest in Richmond, especially in the Nodes.

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

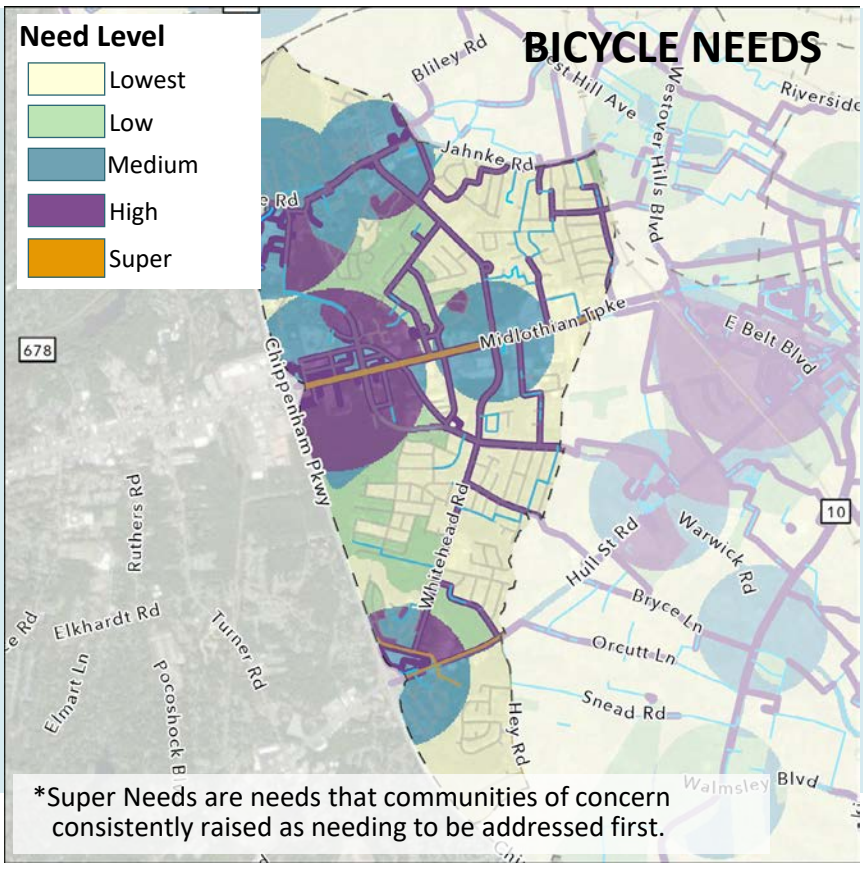
Key Bike Connections:

- 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

RICHMOND CONNECTS

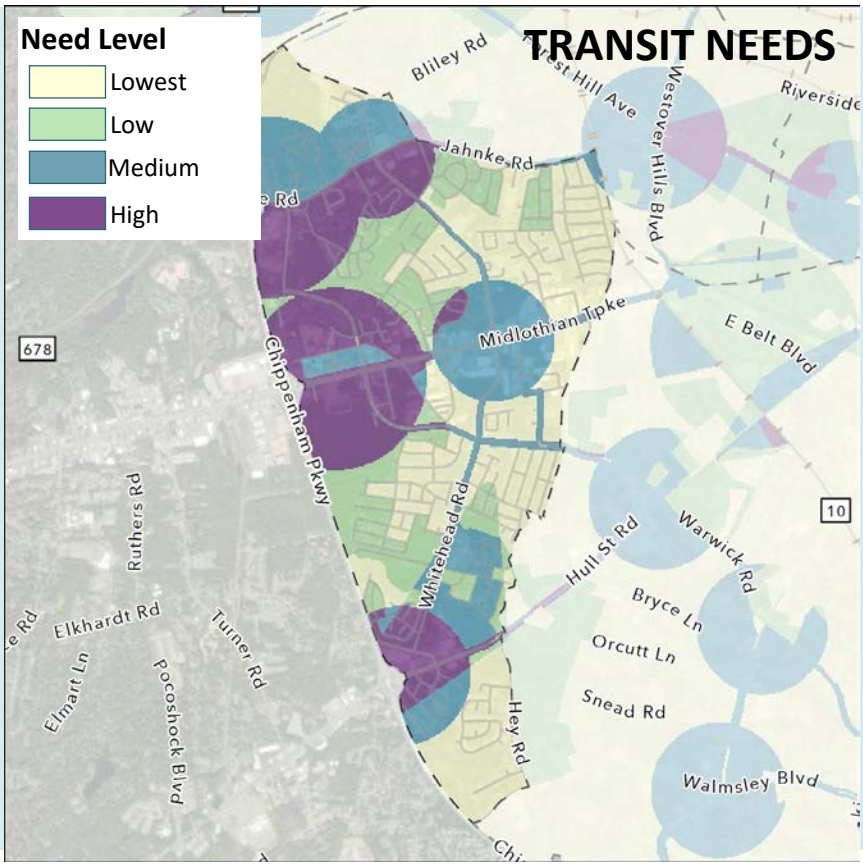
TOP TRANSIT NEEDS

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

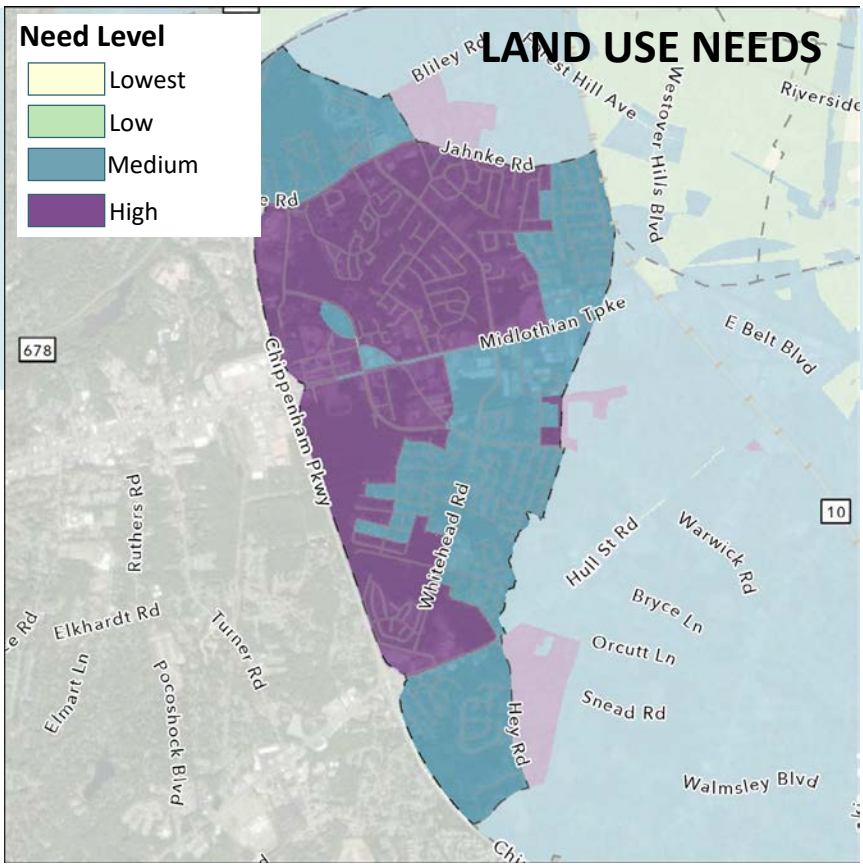


LAND USE NEEDS

- Land use needs in this areas relate to both a lack of quality greenspace within walking distance and an abundance of surface parking lots.

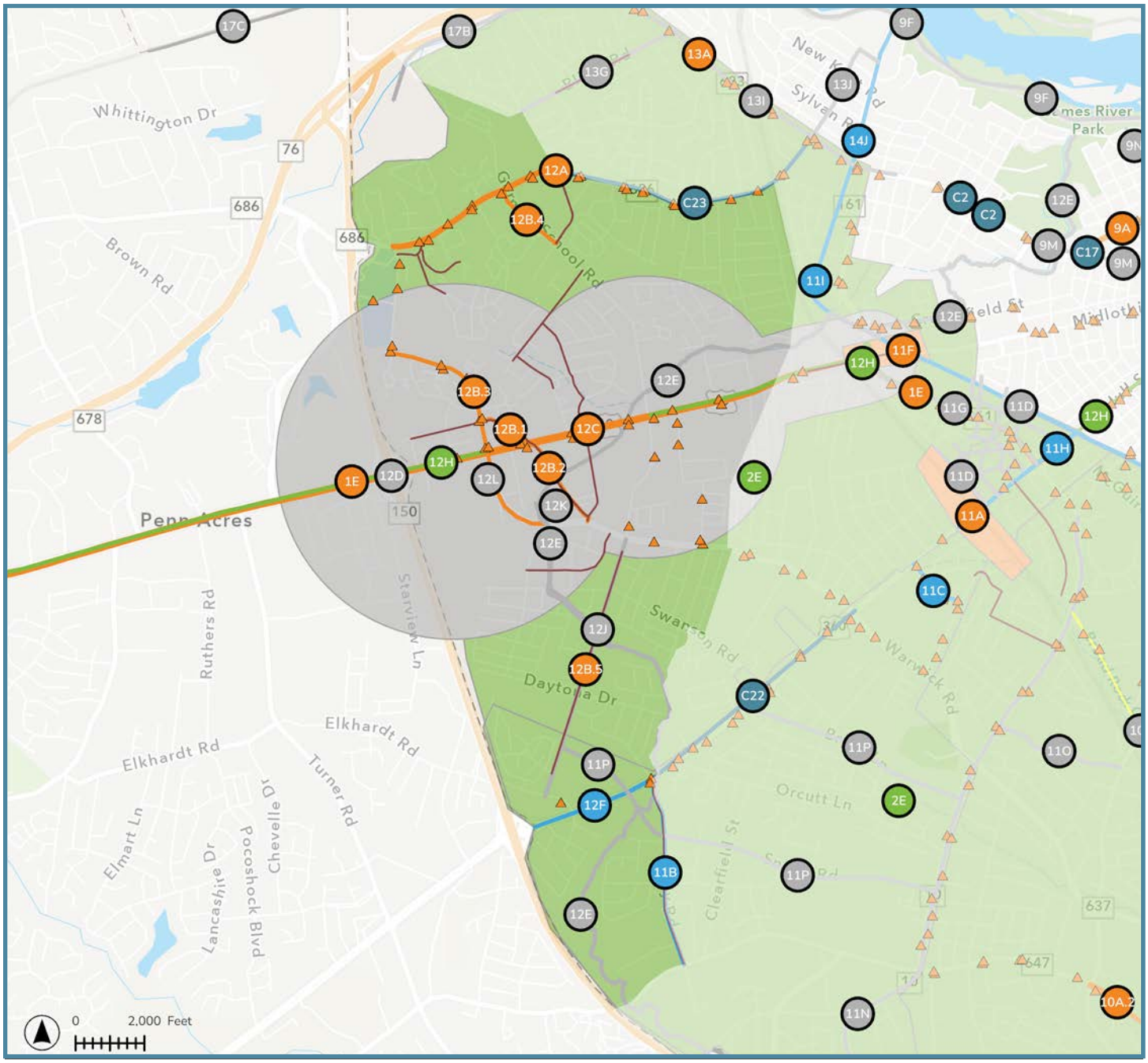
Other high needs include:

- 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
1F	Priority Projects	Essential Transit Infrastructure (Shelters, seating, and trash cans) at Bus Stops	Individual Stop = Low ($) Overall = Very High ($$$$)	4.6	
12A	Priority Projects	Jahnke Road Pedestrian Improvements - Blakemore Road to Hioaks Road	High ($$$)	4.7	207
12C	Priority Projects	Midlothian Turnpike Safety Improvements - German School Road to Carnation Street	Very High ($$$$)	4.9	196
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
12B.3	Priority Projects	Southside Pedestrian Improvements - Carnation Street	Moderate ($$)	4.2	231
12B.4	Priority Projects	Southside Pedestrian Improvements - German School Road	Moderate ($$)	4.2	233
12B.1	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road north of US Route 60	Moderate ($$)	4.2	227
12B.2	Priority Projects	Southside Pedestrian Improvements - Old Warwick Road south of US Route 60	Moderate ($$)	4.2	229
12B.5	Priority Projects	Southside Pedestrian Improvements - Whitehead Road	High ($$$)	4.2	235
12F	Priority Completion	Hull Street Improvements Phase II - Hey Road to Brookhaven Drive	n/a	3.7	266
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	n/a	0.0	274
12H	Shorter Term	GRTC Route 1A (Midlothian Turnpike) Improvements	Moderate ($$)	3.5	278
2E	Shorter Term	Link: On-Demand Microtransit	Moderate ($$)	3.1	279
12L	Longer Term	Midlothian Area Revitalization	n/a	3.4	281
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	n/a	2.5	283
12D	Longer Term	Route 60/Route 150 Interchange Improvements	n/a	3.6	281
12K	Longer Term	Southside Community Center Bikeshare Station	Low ($)	2.5	283

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	284

NEEDS AREA SUMMARIES

13: Forest Hill/Westover

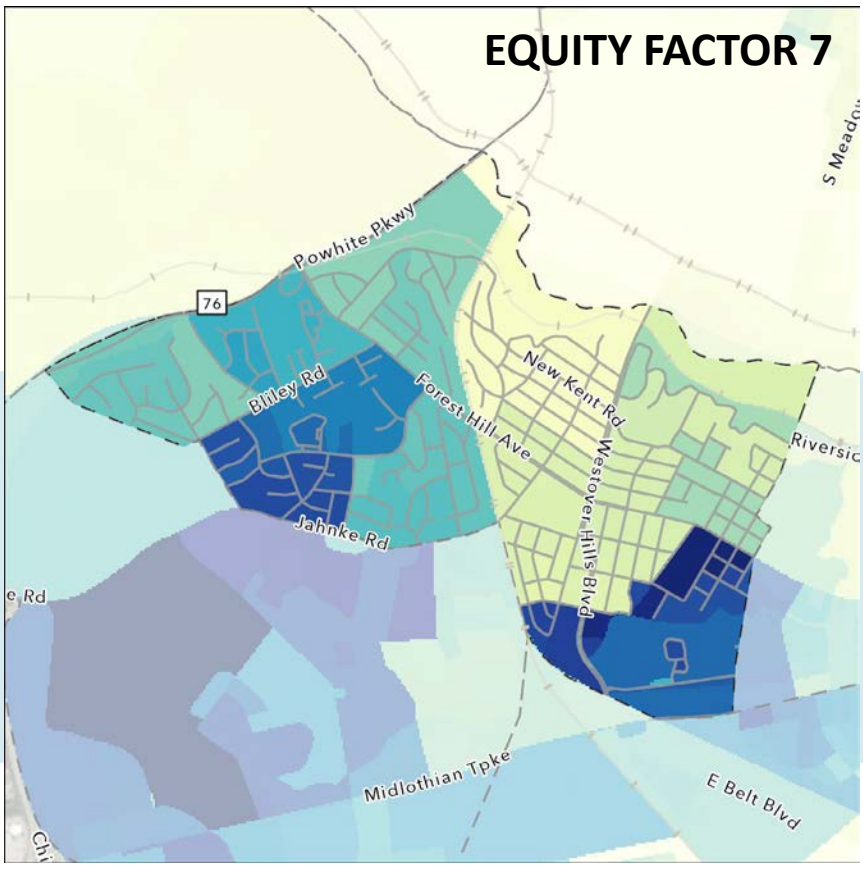
EQUITY CONTEXT
FOREST HILL/WESTOVER AREA
NEED AREA 13

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.



Areas shown in dark blue are where transit service frequency or reliability issues degrade access for destinations relevant to communities of concern.

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**.

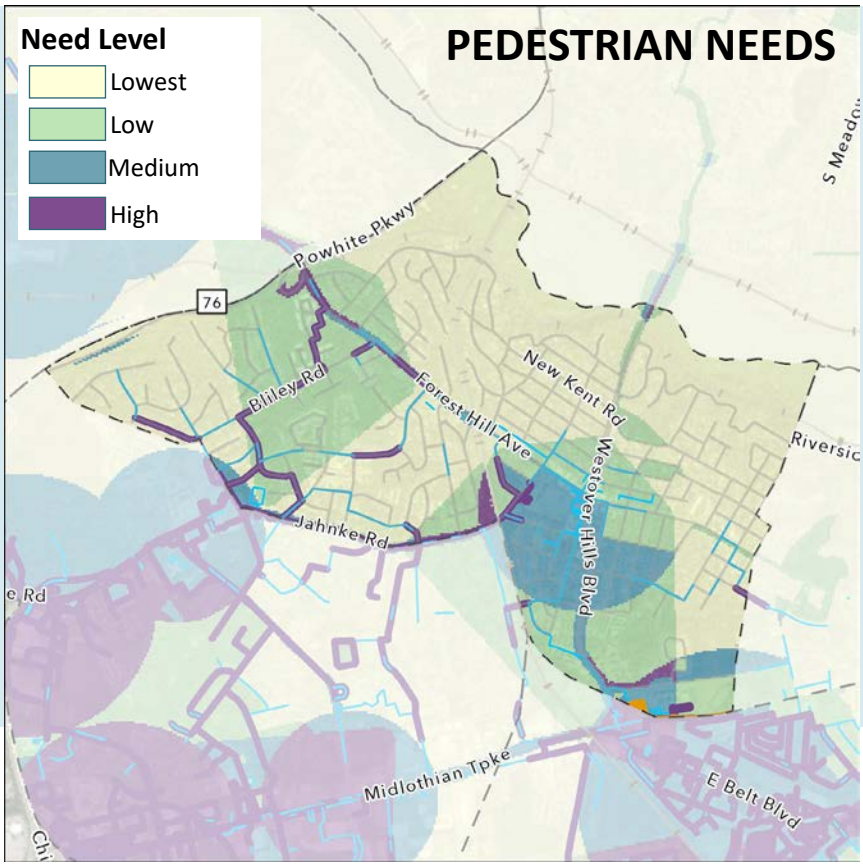
There are a few pockets where roads are in a **flood risk zone** and **vulnerable** to disruption due to **climate change**, and there is a high density of Communities of Concern.

TOP TRANSPORTATION NEEDS
FOREST HILL/WESTOVER AREA
NEED AREA 13

RICHMOND CONNECTS

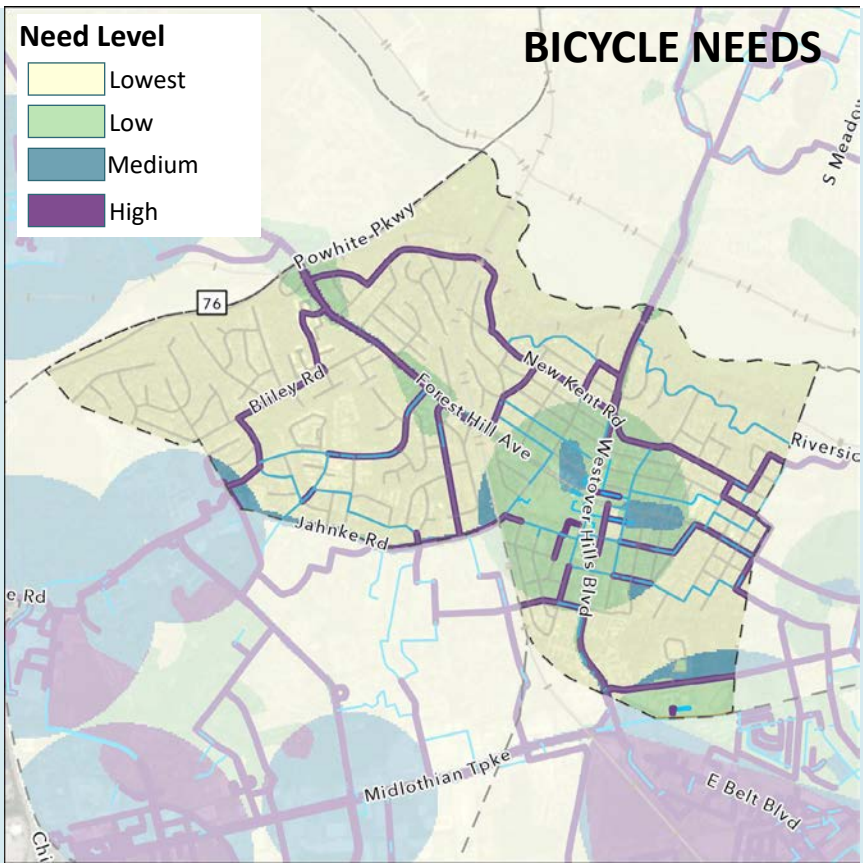
TOP PEDESTRIAN NEEDS

- 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 Westower 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

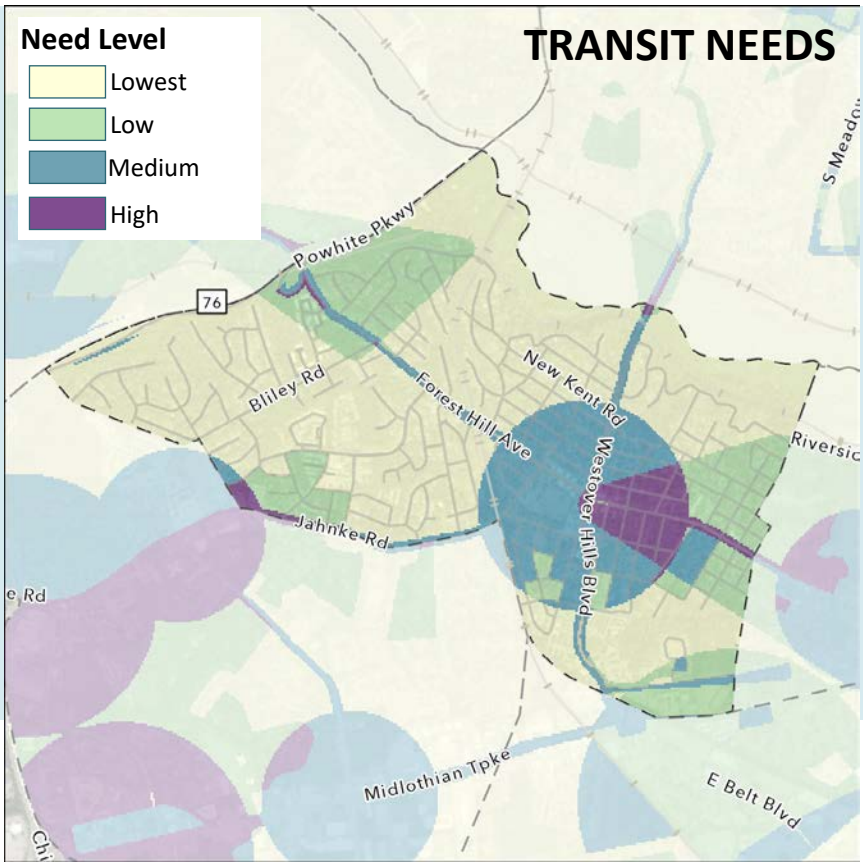
RICHMOND CONNECTS

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.

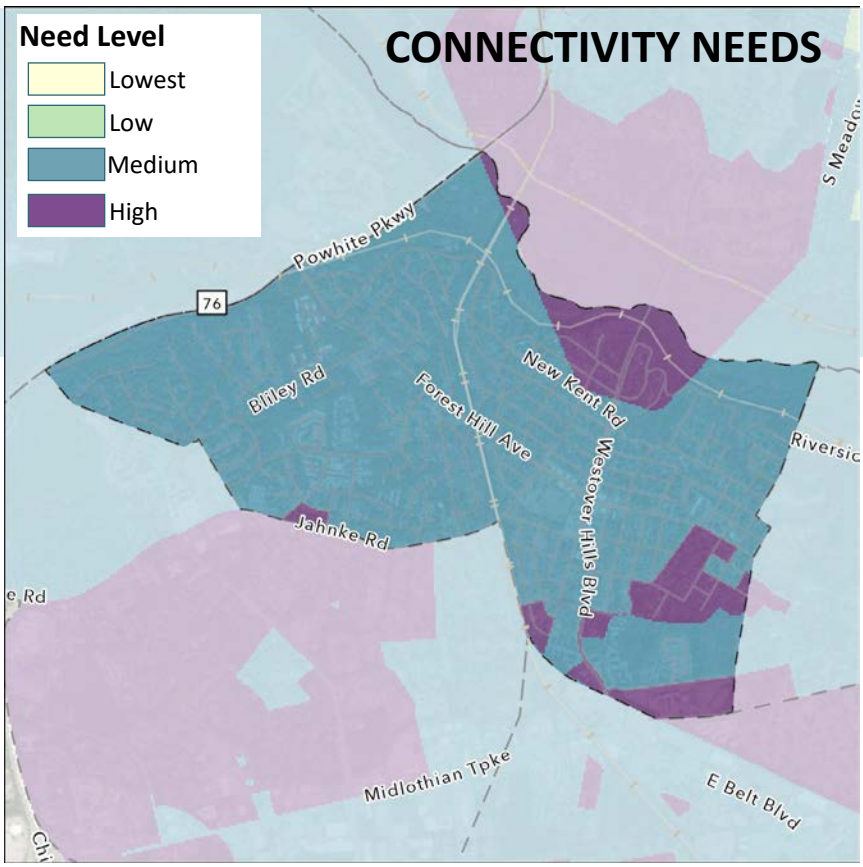
Other themes identified in public comments:

- *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.

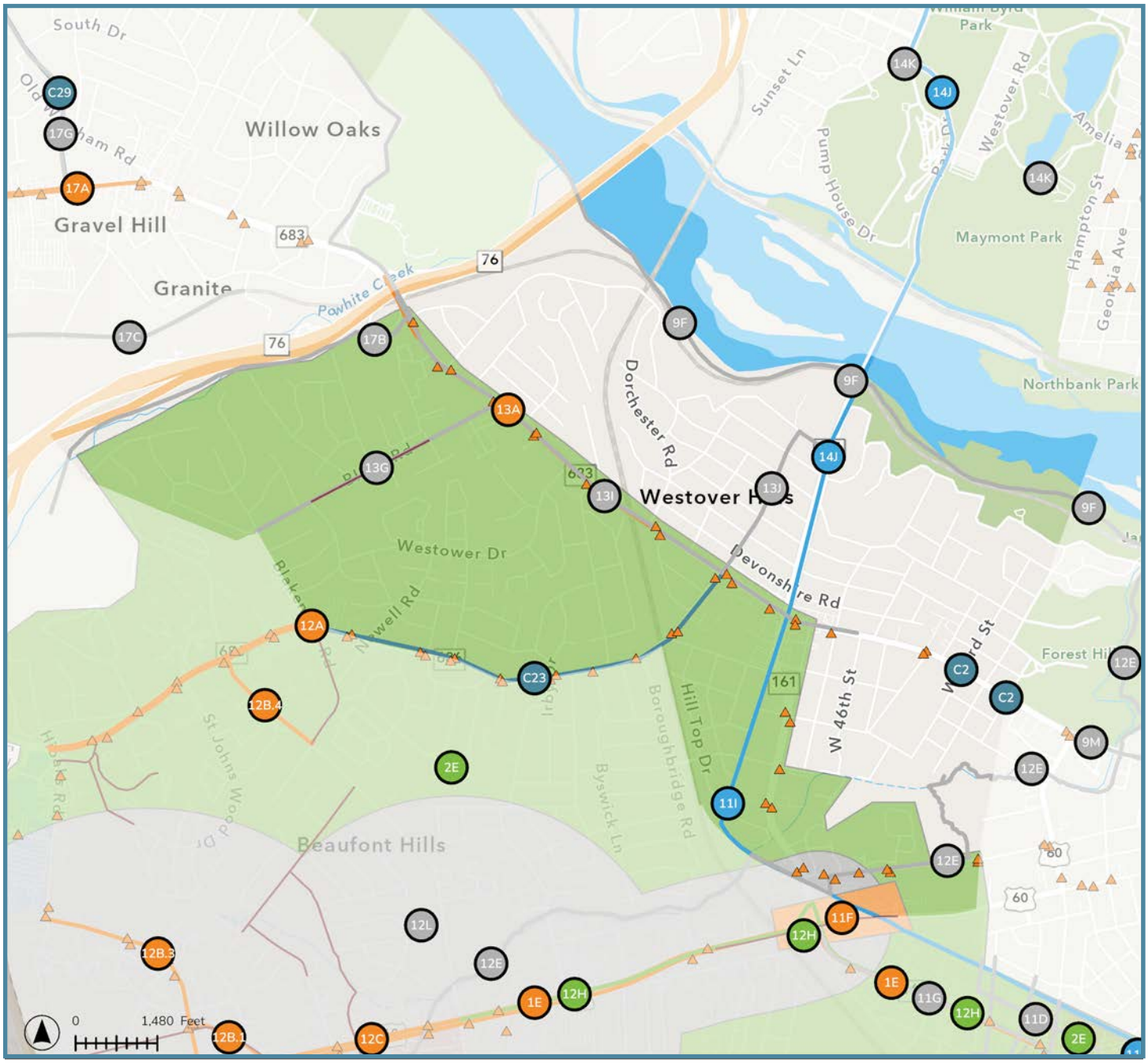


Other high needs include:

- 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
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- Bus Stop Essential Transit Infrastructure (1F)
- Sidewalk Gap Projects (4C)
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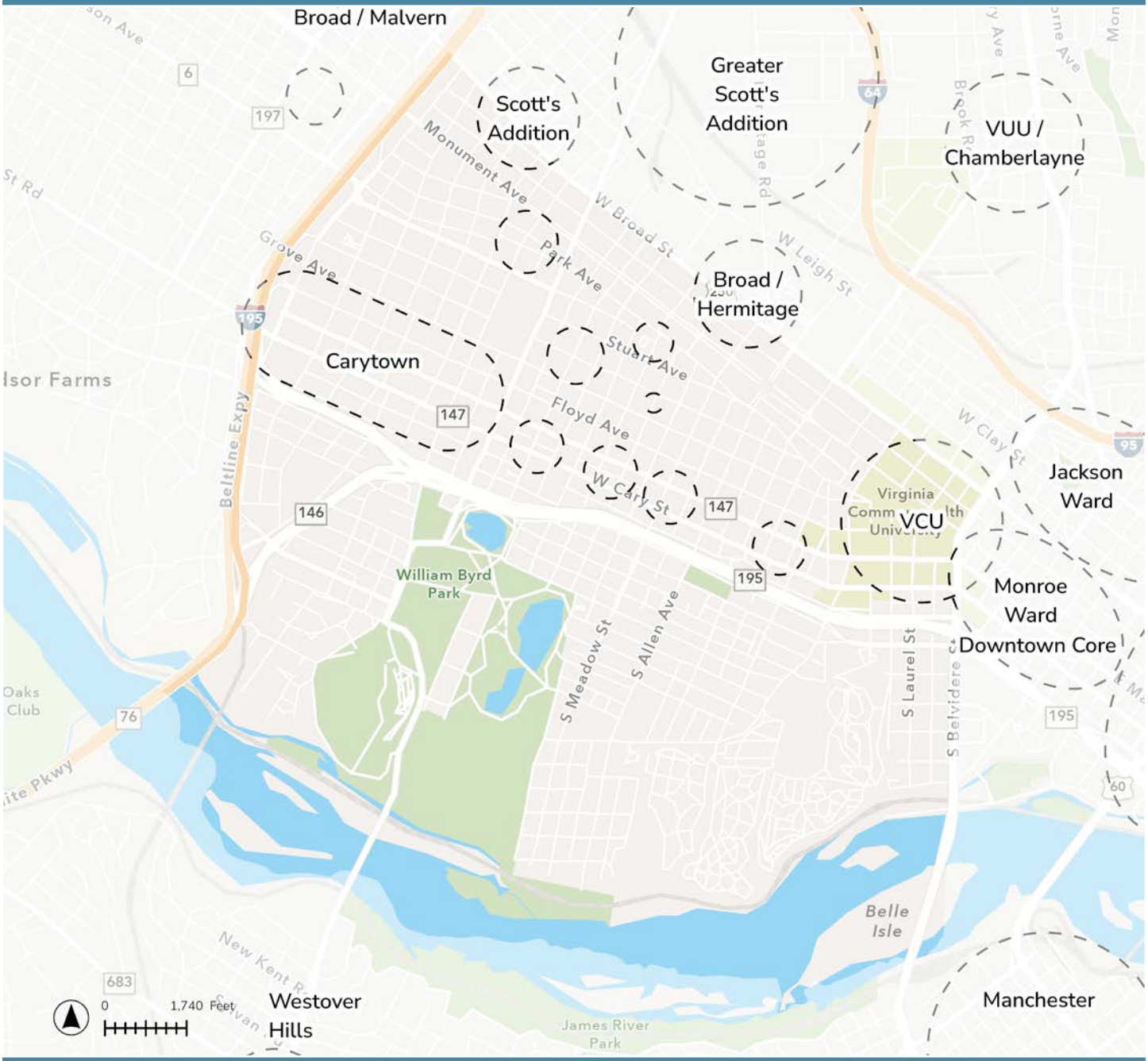
NEEDS AREA SUMMARIES

13: Forest Hill/Westover 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 ($$$$)	4.6	
13A	Priority Projects	Forest Hill Avenue Pedestrian Safety Improvements - Dorchester Rd to Powhite Pkwy	Very High ($$$$)	3.9	254
4C	Priority Projects	Richmond Connects Equity-Driven Sidewalks Projects	Very High ($$$$)	5.0	180
11I	Priority Completion	James River Branch Trail	n/a	1.6	269
14J	Priority Completion	State Route 161 Bicycle Infrastructure	n/a	1.2	269
C2	Other Completion	Forest Hill Avenue Pedestrian Safety Improvements - 41st & 43rd Streets	n/a	0.0	270
C23	Other Completion	Jahnke Road Improvements Blakemore Road to Forest Hill Avenue	n/a	0.0	274
13G	Longer Term	Bliley Road Sidewalk and Bike Lanes	Moderate ($$)	3.1	282
13I	Longer Term	Forest Hill Avenue Bikeway	High ($$$)	2.2	284
13J	Longer Term	Prince Arthur Road Bikeway Connection	Low/Moderate ($/$$)	1.5	285
12E	Longer Term	Reedy Creek & Pocosham Creek Greenways	n/a	2.5	283

NEEDS AREA SUMMARIES

14: Near West End



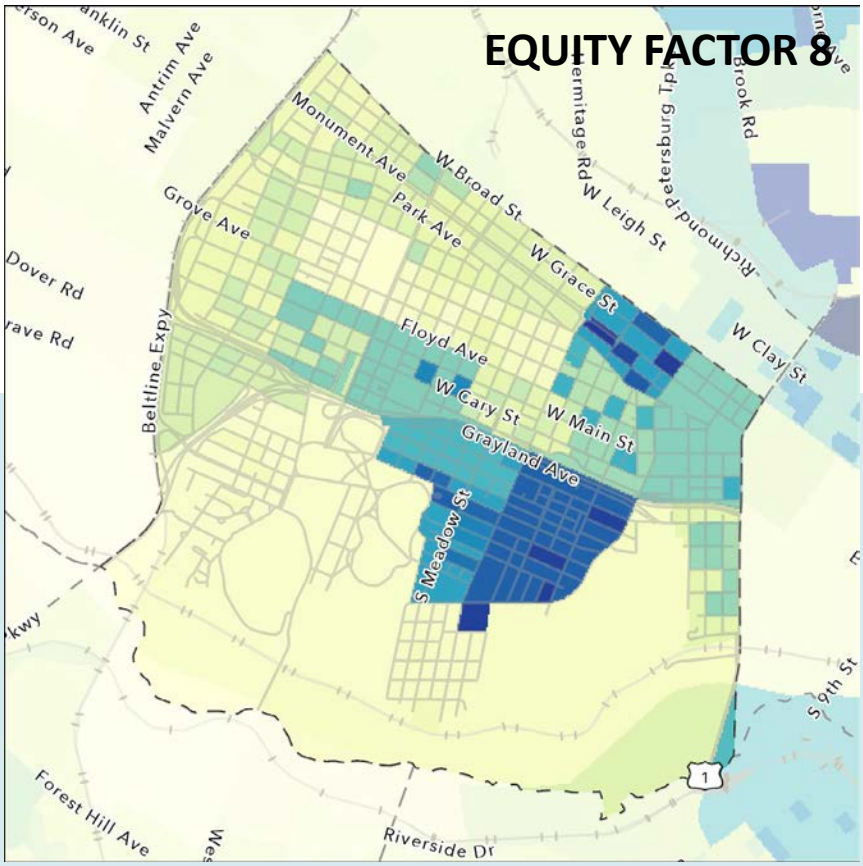
EQUITY CONTEXT
NEAR WEST END AREA
NEED AREA 14

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 RVAGreen 2050.
- Path to Equity Policy Guide, Equity Factor 8

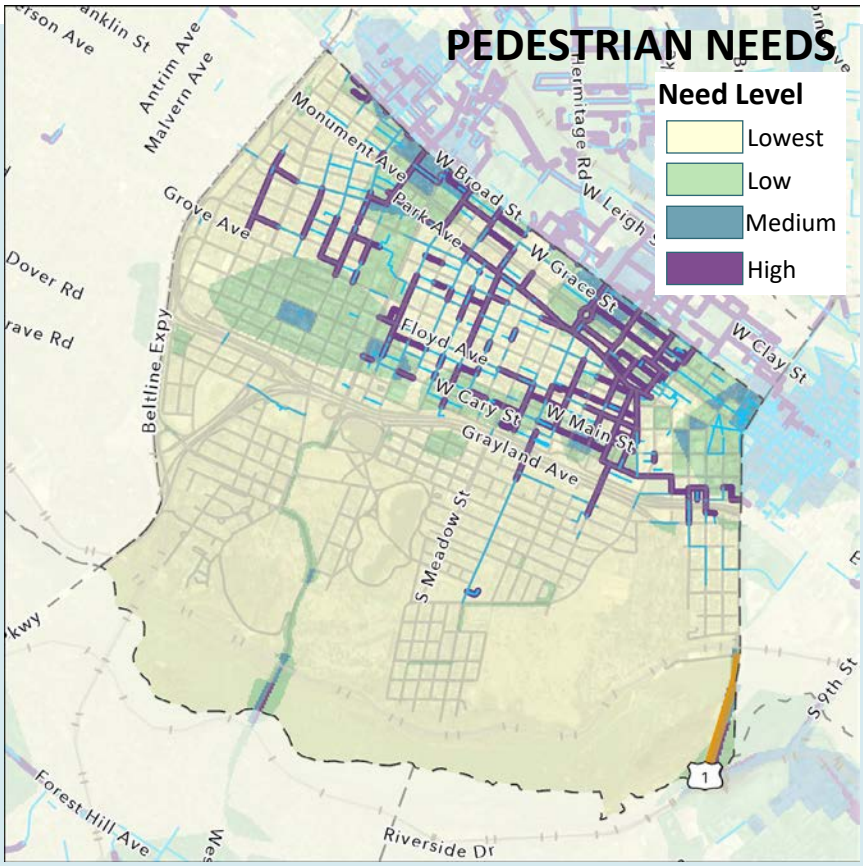
TOP TRANSPORTATION NEEDS
NEAR WEST END AREA
NEED AREA 14

RICHMOND CONNECTS

TOP PEDESTRIAN NEEDS

In general, equity-weighted pedestrian needs in this area are lower than most other areas of Richmond.

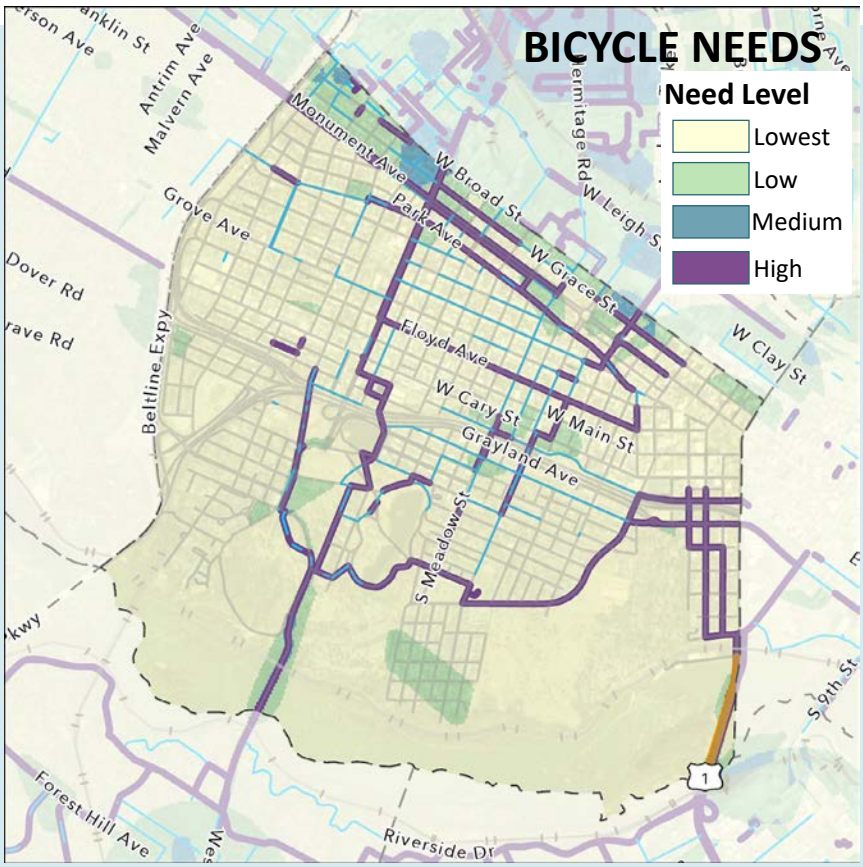
- Many of the high need segments have scored high because of high pedestrian volumes.
- Walk access is great. A variety of destinations are within walking distance.
- Sidewalks exist on almost all streets, with varying degrees of maintenance, though there is a lack of sidewalks around Byrd Park.
- There 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

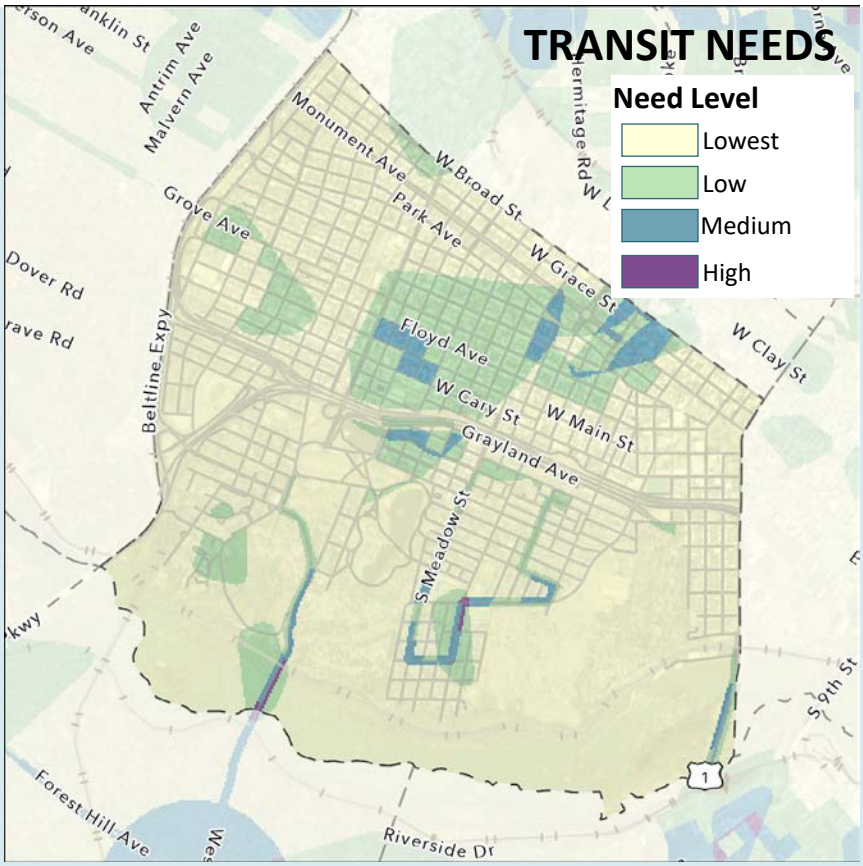
RICHMOND CONNECTS

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.

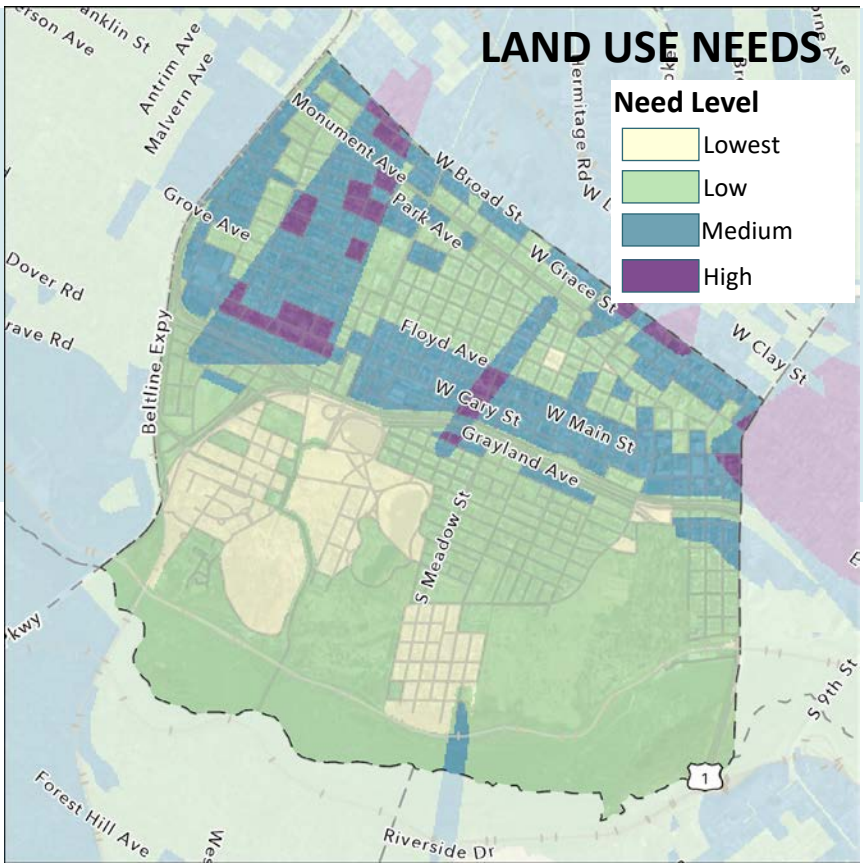
Other themes from public inputs:

- 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.

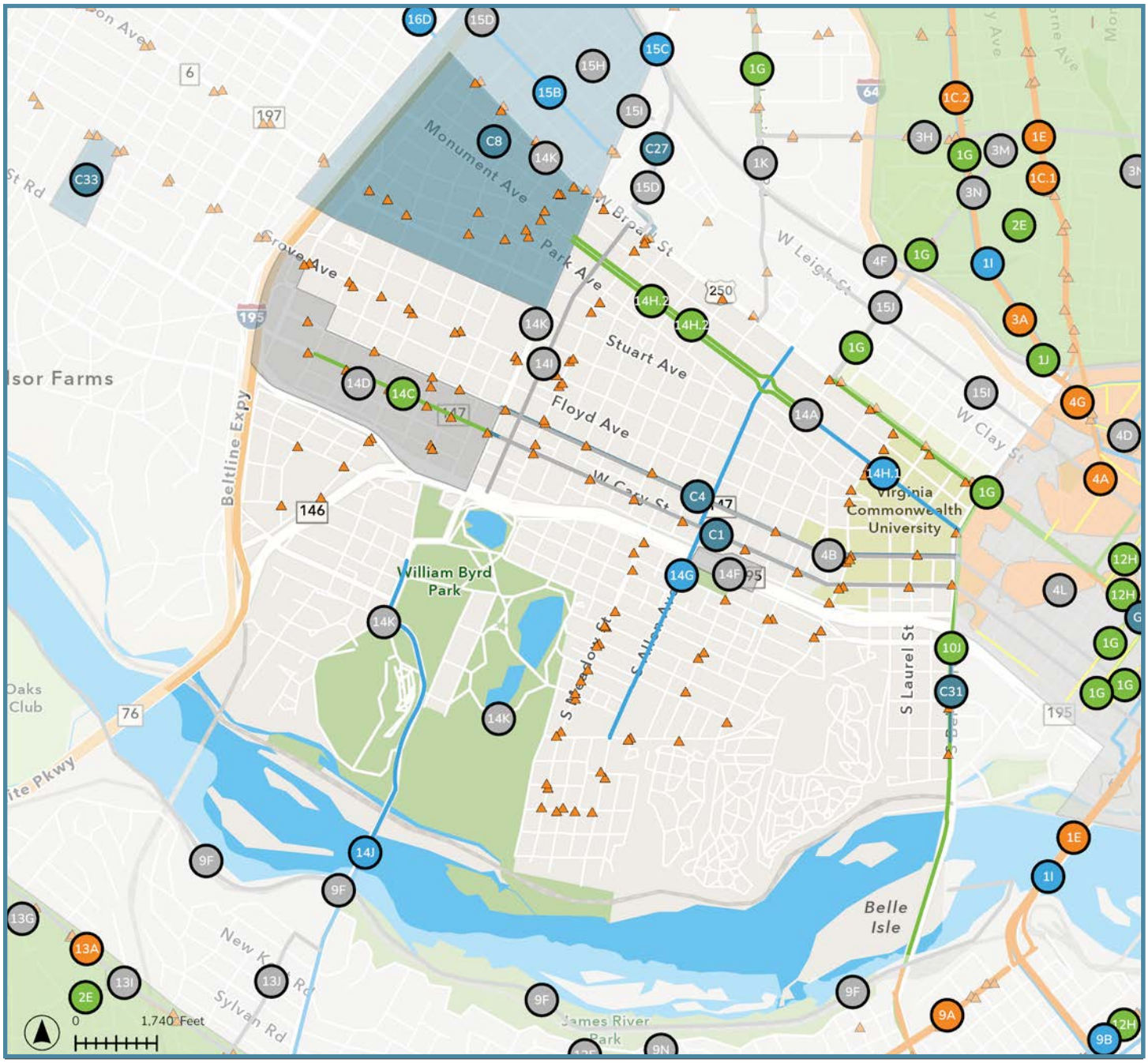


Other high needs include:

- 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



- 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)

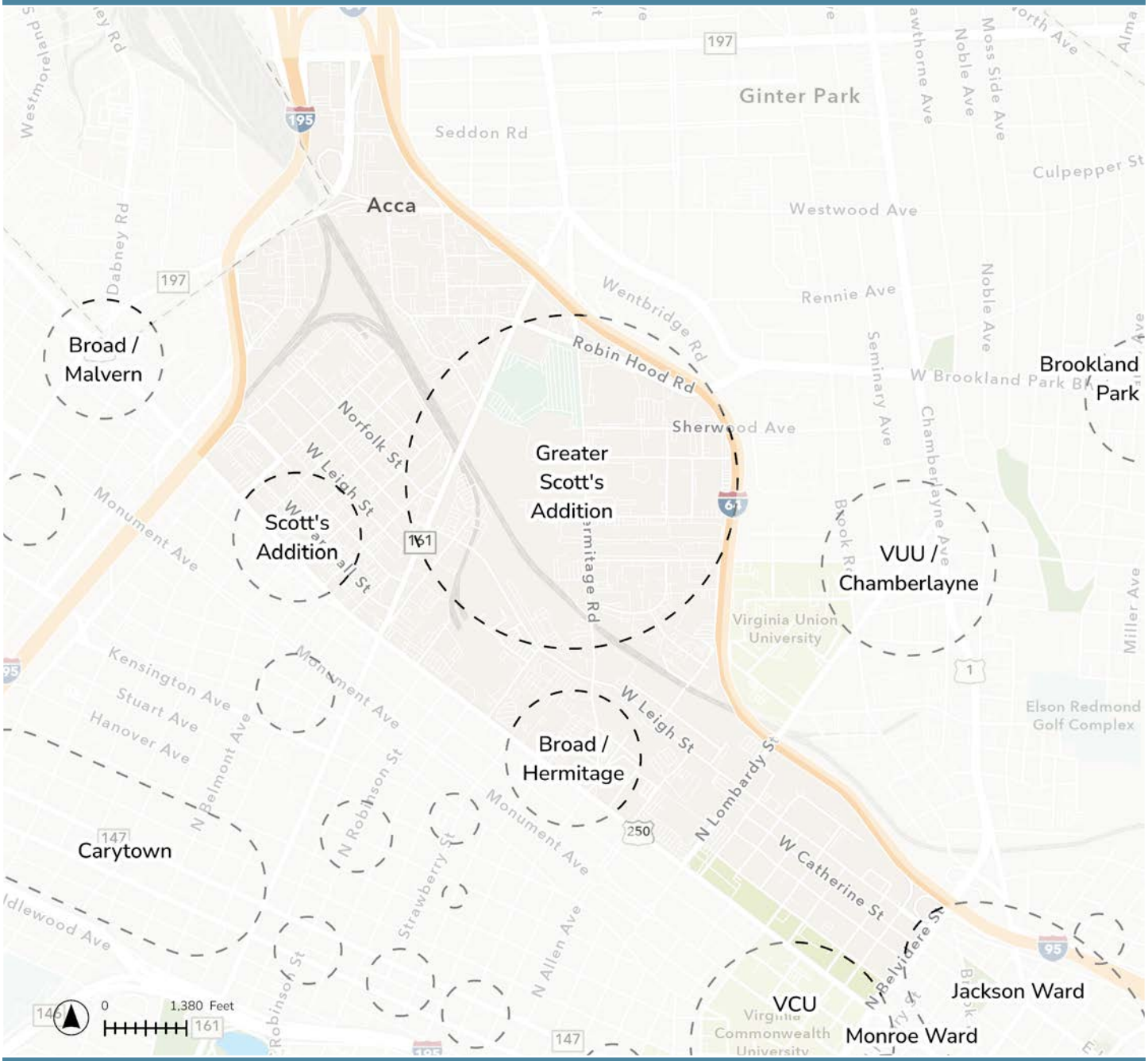
NEEDS AREA SUMMARIES

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 ($$$$)	4.6	
14G	Priority Completion	Allen Avenue Bike-Walk Street	n/a	1.2	268
14H.1	Priority Completion	Franklin Street Cycle Track - Lombardy Street to Belvidere Street	n/a	3.6	268
14J	Priority Completion	State Route 161 Bicycle Infrastructure	n/a	1.2	269
C31	Other Completion	Belvidere Street Gateway - Phase IV	n/a	0.0	275
C1	Other Completion	Cary Street Safety Curb Extensions	n/a	0.0	270
C4	Other Completion	Main Street Safety Curb Extensions	n/a	0.0	270
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	n/a	0.0	271
14C	Shorter Term	Study and Demo Car-Free Shopping Corridors	Low ($)	3.4	277
14H.2	Shorter Term	Monument Avenue Bike Lanes	Moderate ($$)	3.6	279
14D	Longer Term	Carytown Parking Recommendations	Moderate ($$)	2.8	283
4B	Longer Term	Main Street/Cary Street Two-Way Street Conversion	High ($$$)	2.8	283
14I	Longer Term	Mulberry Street Bikeway	Moderate ($$)	1.8	285
14K	Longer Term	Near West End Bikeshare Stations	Low ($)	2.0	284
14F	Longer Term	Randolph Connection Over I-195	Low ($) to Very High ($$$$)	2.2	284
14A	Longer Term	Stuart Circle Roundabout Improvement	Moderate ($$)	2.6	283

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.

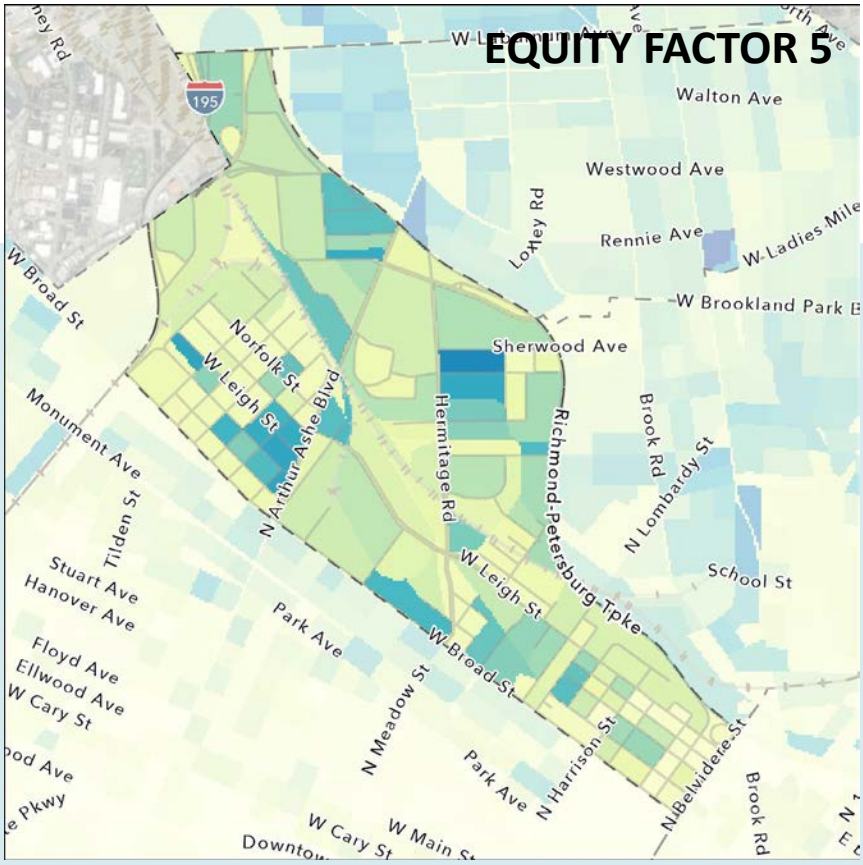
Carver and Newtowne West were once densely-populated, Black working-class neighborhoods. As these neighborhoods aged, they became **targeted for redevelopment** as part of RRHA's Carver Plan. This plan **demolished 400 homes** to make way for I-95/64 and to open land to private developers north of Leigh 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.

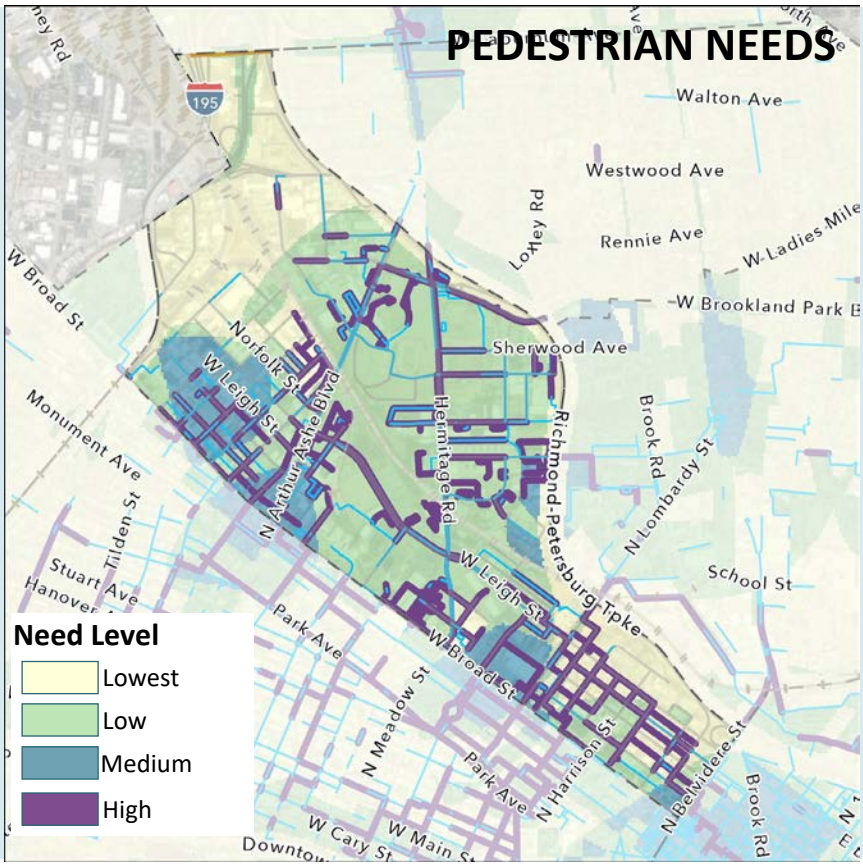
Transportation investments will address gaps in the multimodal network and utilize new planning tools to improve safety and accessibility deficiencies stemming from traditional car-centric planning.
-Path to Equity Policy Guide, Equity Factor 5

TOP TRANSPORTATION NEEDS
GREATER SCOTT'S ADDITION AREA
NEED AREA 15

RICHMOND CONNECTS

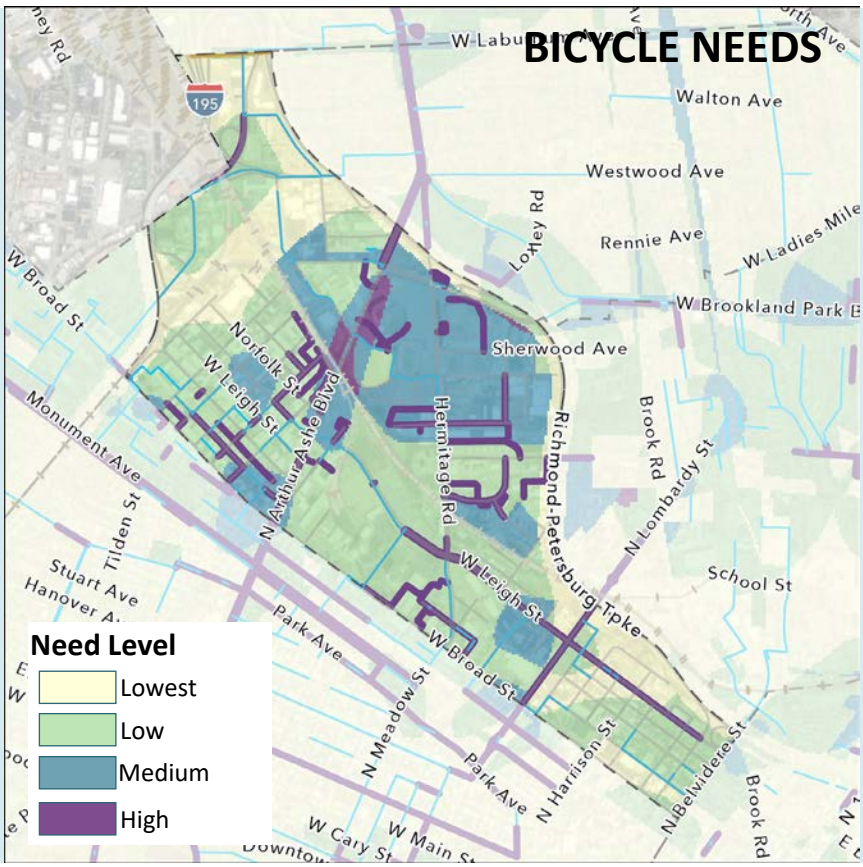
TOP PEDESTRIAN NEEDS

- 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.

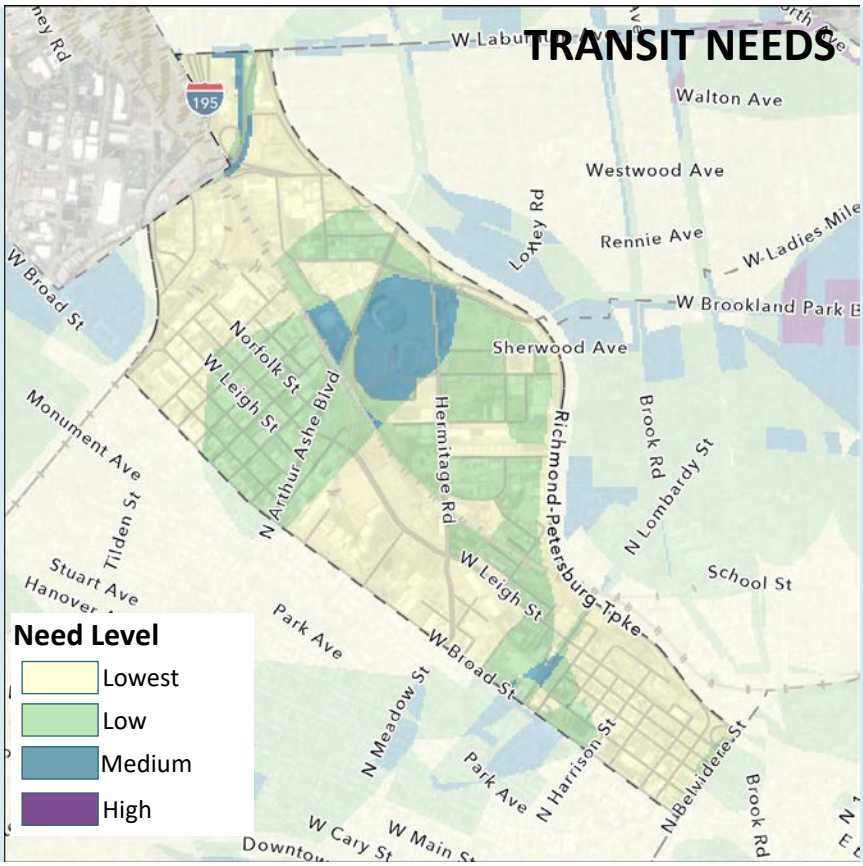


TOP TRANSPORTATION NEEDS
GREATER SCOTT'S ADDITION AREA
NEED AREA 15

RICHMOND CONNECTS

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.

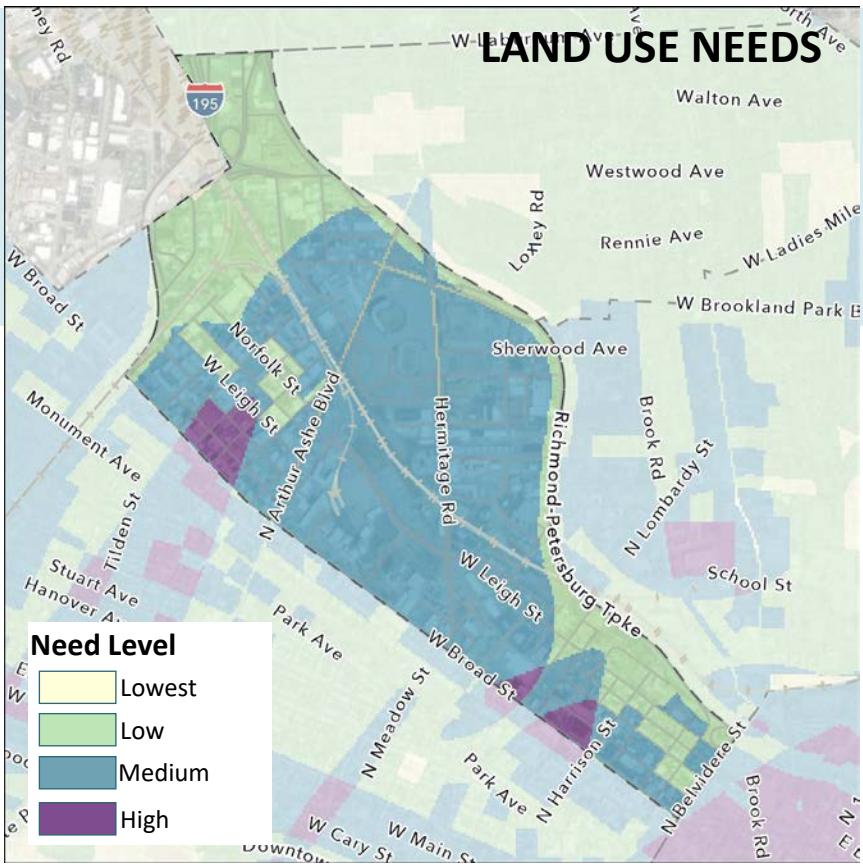


LAND USE NEEDS

- There is an abundance of surface parking lots, and some areas are far away from greenspace.

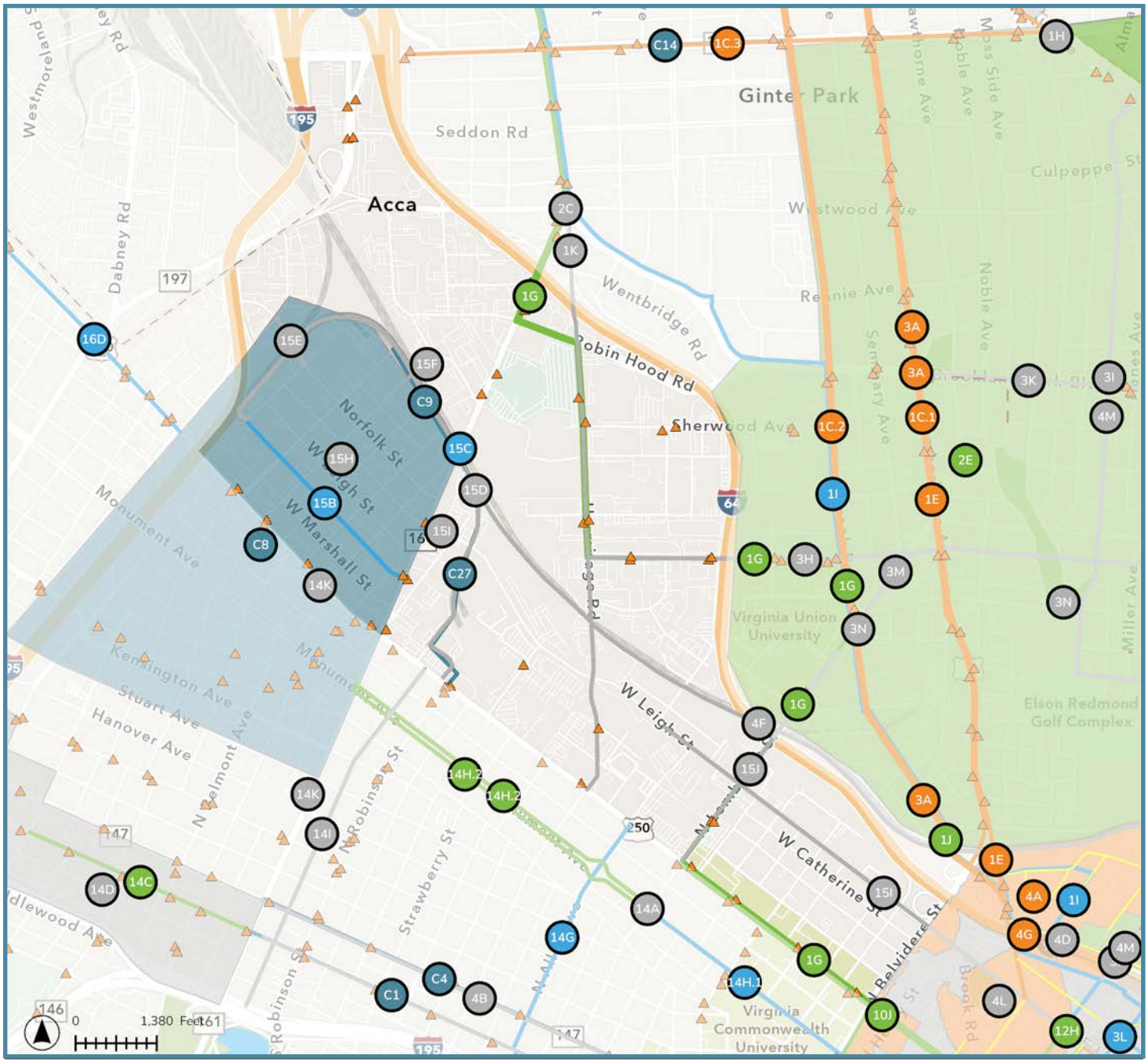
Other high needs include:

- 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



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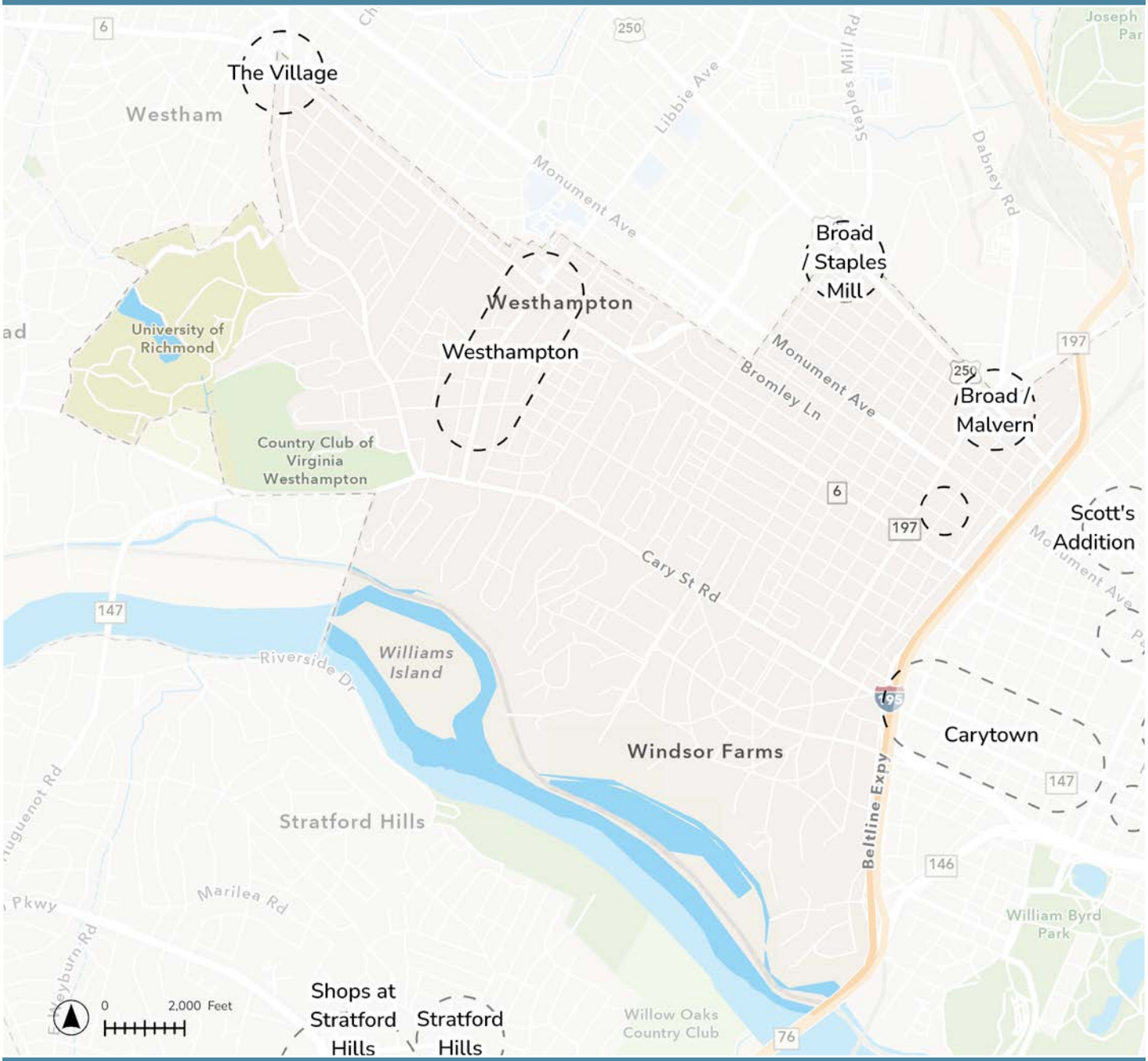
NEEDS AREA SUMMARIES

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 ($$$$)	4.6	
15C	Priority Completion	Arthur Ashe Boulevard Bridge Replacement	n/a	1.6	267
15B	Priority Completion	Clay Street Streetscape Improvements	n/a	3.4	268
C27	Other Completion	Science Museum BRT Shared Use Path	n/a	0.0	274
C8	Other Completion	Scott's Addition BRT Streetscape Improvements	n/a	0.0	271
C9	Other Completion	Scott's Addition Green Space	n/a	0.0	271
1K	Longer Term	Hermitage Road Buffered Bike Lanes	Low ($)	2.9	283
15J	Longer Term	Lombardy Street Protected Bike Lanes	Low ($)	3.0	282
15F	Longer Term	MacTavish Avenue Bridge	Very High ($$$$)	0.8	285
15E	Longer Term	Norfolk Street Bridge	Very High ($$$$)	1.0	285
3H	Longer Term	Overbrook Road Bikeway	Moderate ($$)	2.3	284
15H	Longer Term	Scott's Addition Parking Recommendations	Moderate ($$)	3.0	282
4F	Longer Term	Scott's Addition to Shockoe Shared Use Path	Low/Moderate ($/$$)	3.7	281
15D	Longer Term	Scott's Addition/Boulevard Shared-Use Path	High ($$$)	2.4	284

NEEDS AREA SUMMARIES

16: Far West End



EQUITY CONTEXT
FAR WEST END
NEED AREA 16

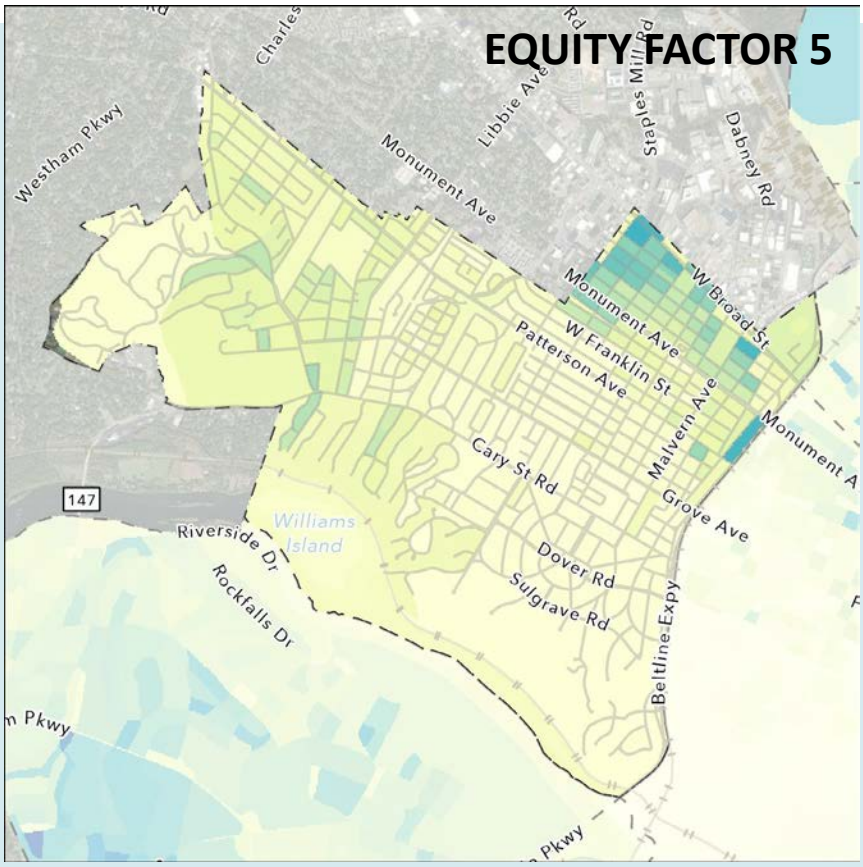
Equity needs in the Far West End are generally low, compared to other areas in Richmond. Neighborhoods in this area were not redlined or subject to other historical transportation and land use injustices. Steady investments in these neighborhoods have made them much more livable than other parts of Richmond 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

RICHMOND CONNECTS

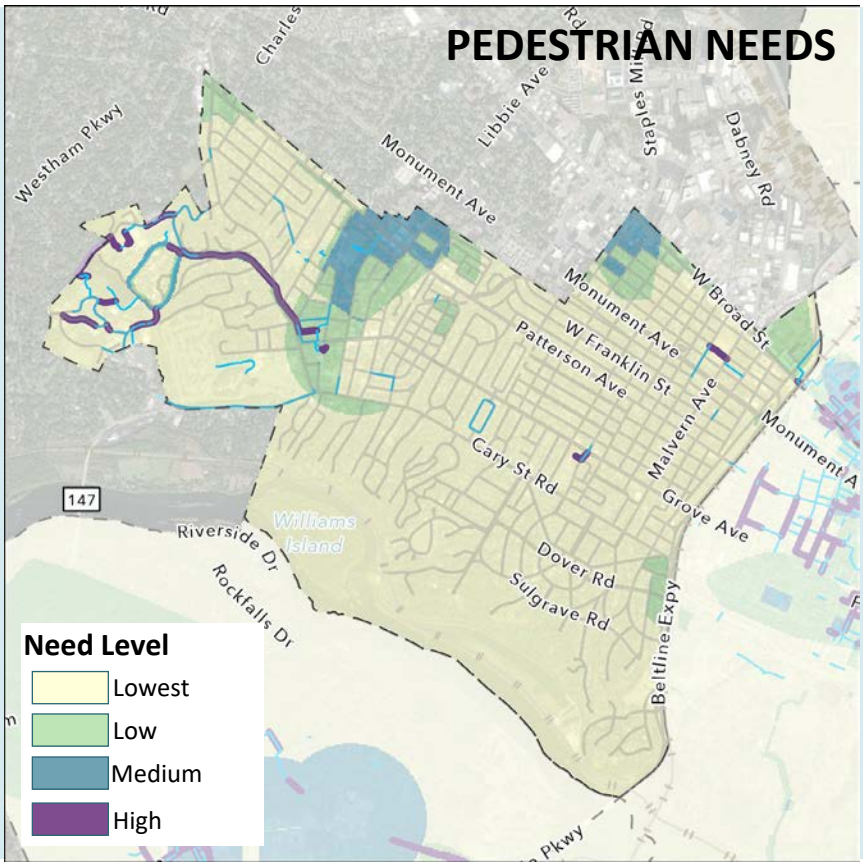
TOP PEDESTRIAN NEEDS

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



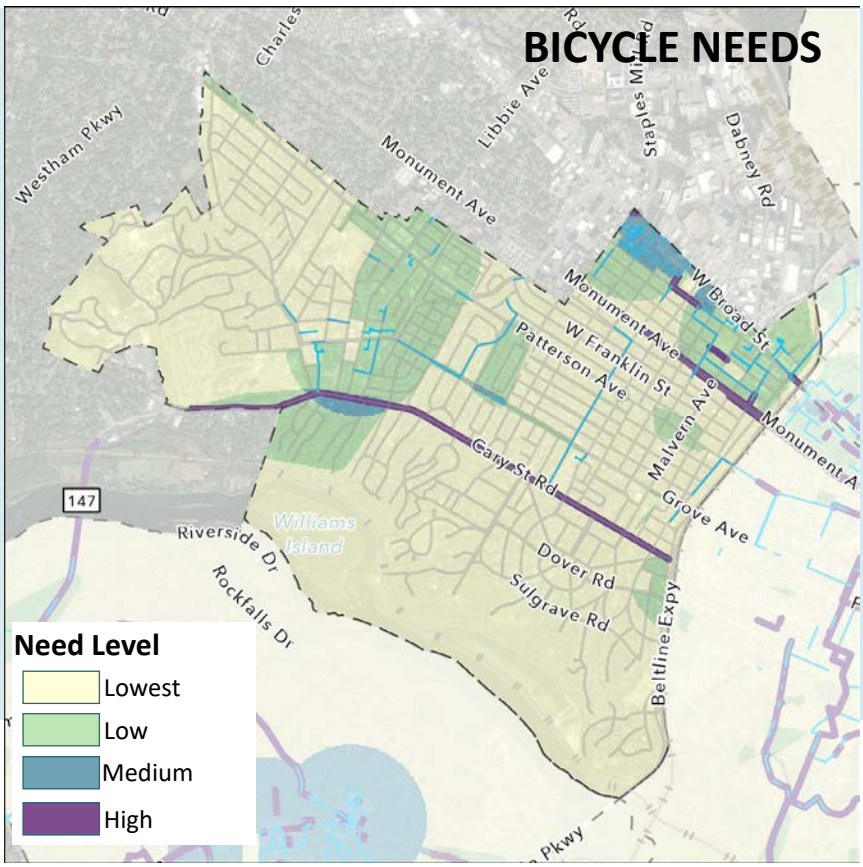
TOP BICYCLE NEEDS

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

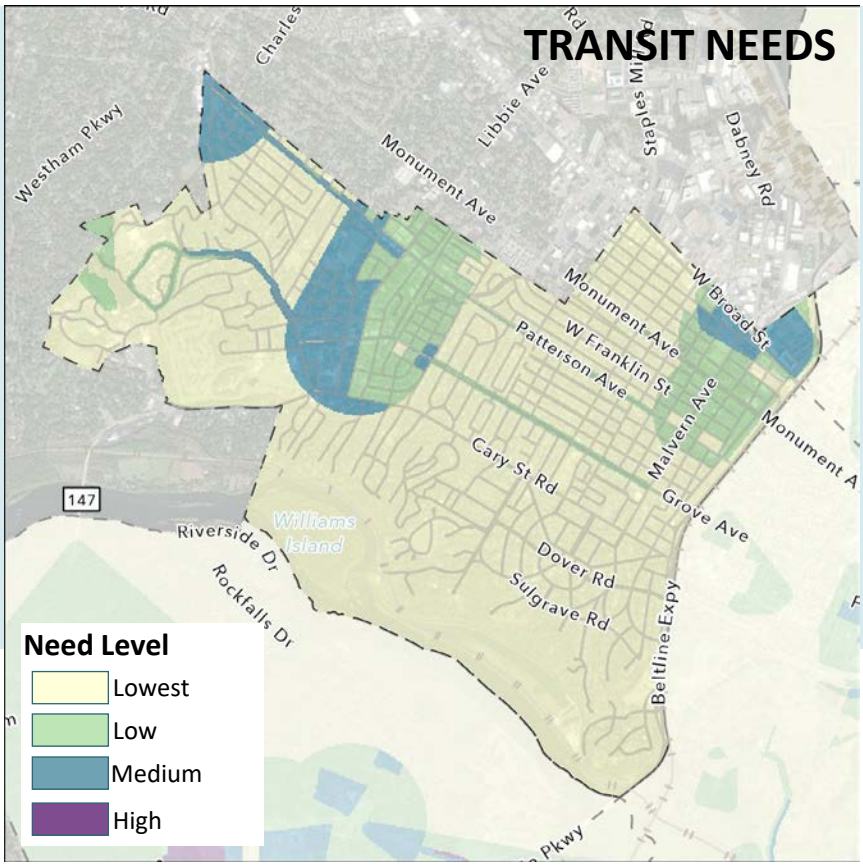
RICHMOND CONNECTS

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

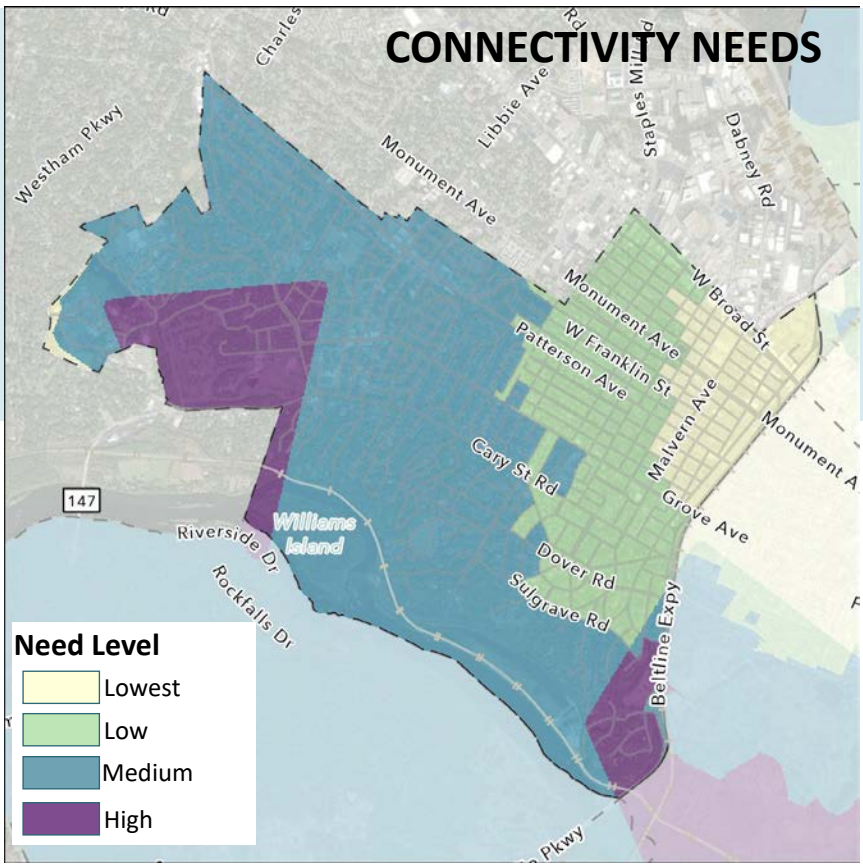


CONNECTIVITY NEEDS

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.

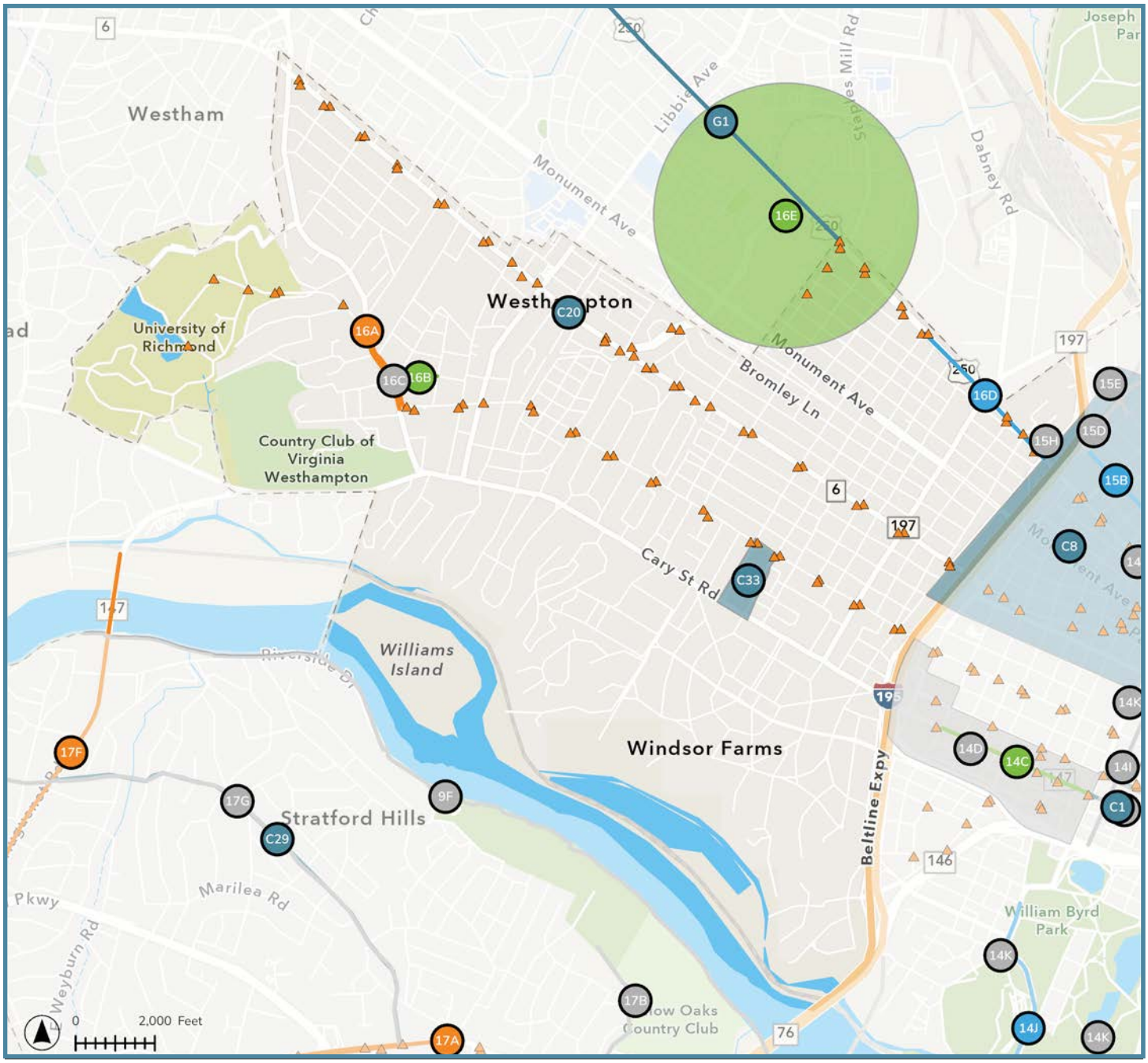
Other high needs include:

- 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)

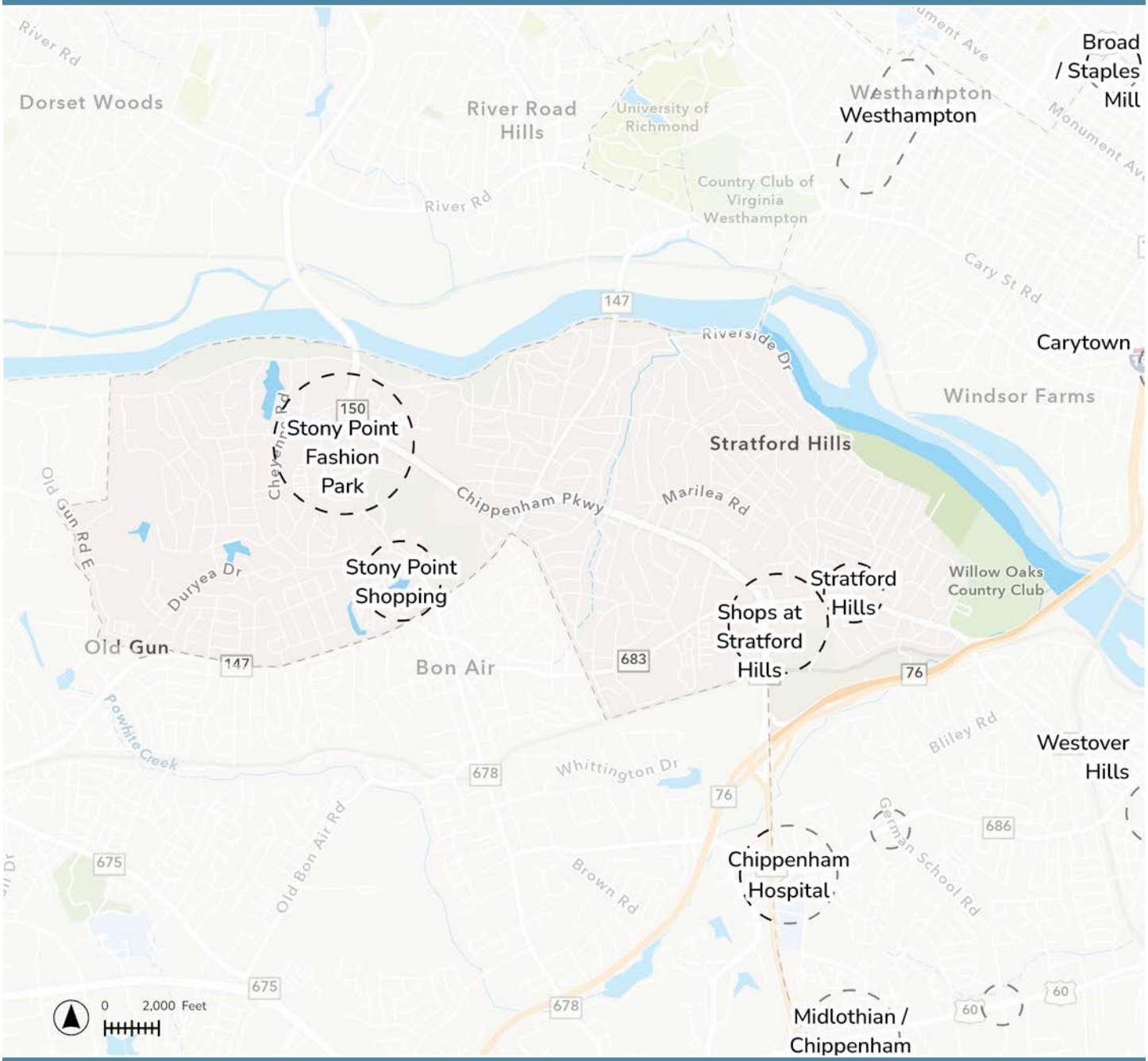
NEEDS AREA SUMMARIES

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 ($$$$)	4.6	
16A	Priority Projects	Three Chopt Road Sidewalks	High ($$$)	2.4	259
16D	Priority Completion	Broad Street Streetscape with Pulse BRT Expansion	n/a	2.8	267
C33	Other Completion	Mary Munford Elementary School Pedestrian Safety Improvements	n/a	0.0	275
G1	Other Completion	Western Pulse Extension	n/a	0.0	275
C20	Other Completion	Westhampton Area Improvements - Phase III	n/a	0.0	273
16E	Shorter Term	Willow Lawn Park-and-Ride	Moderate ($$)	3.6	279
16B	Shorter Term	York Road Sidewalks	Low ($)	3.6	280
15I	Longer Term	Leigh Street Bike Lanes - Dinneen St to 8th St	Moderate ($$)	3.0	282
16C	Longer Term	Three Chopt Road/York Road/ Henri Road Roundabout	Moderate/High ($$/$$$)	1.7	285

NEEDS AREA SUMMARIES

17: Huguenot



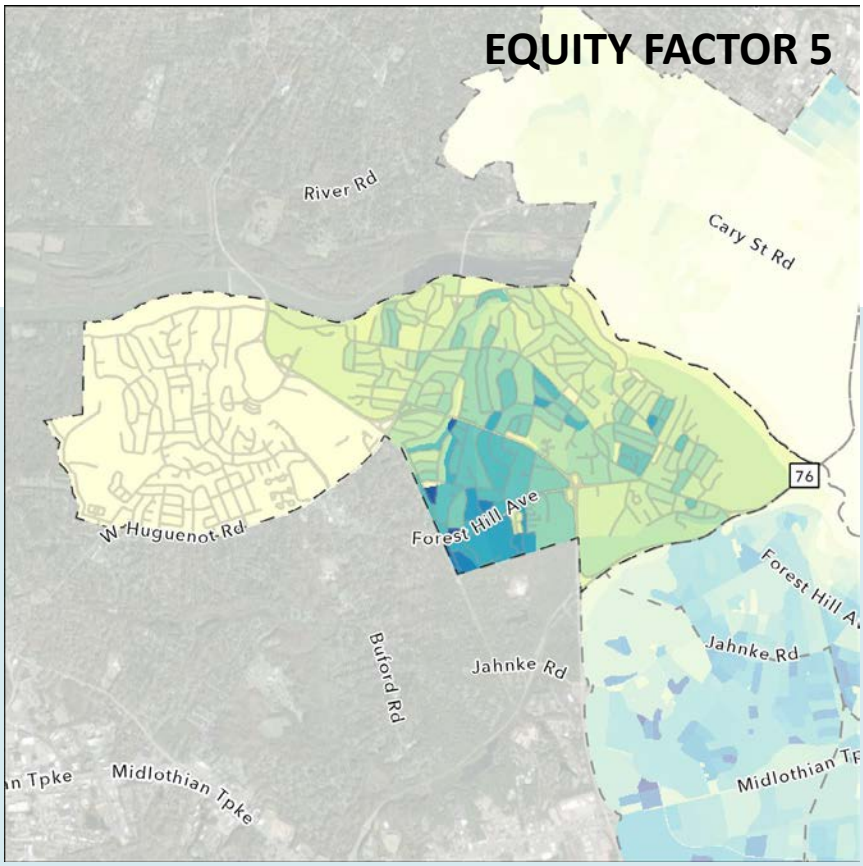
EQUITY CONTEXT
HUGUENOT AREA
NEED AREA 17

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.



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.

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.

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

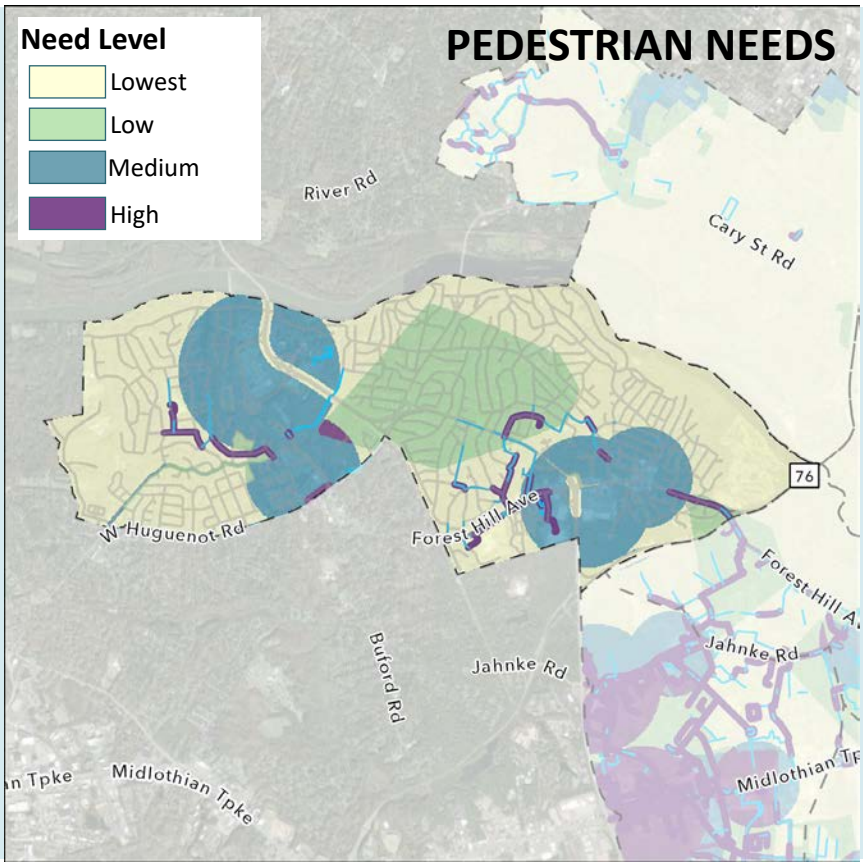
TOP TRANSPORTATION NEEDS
HUGUENOT AREA
NEED AREA 17

RICHMOND CONNECTS

TOP PEDESTRIAN NEEDS

In generally, equity-weighted pedestrian needs in this area are lower than many other areas in Richmond.

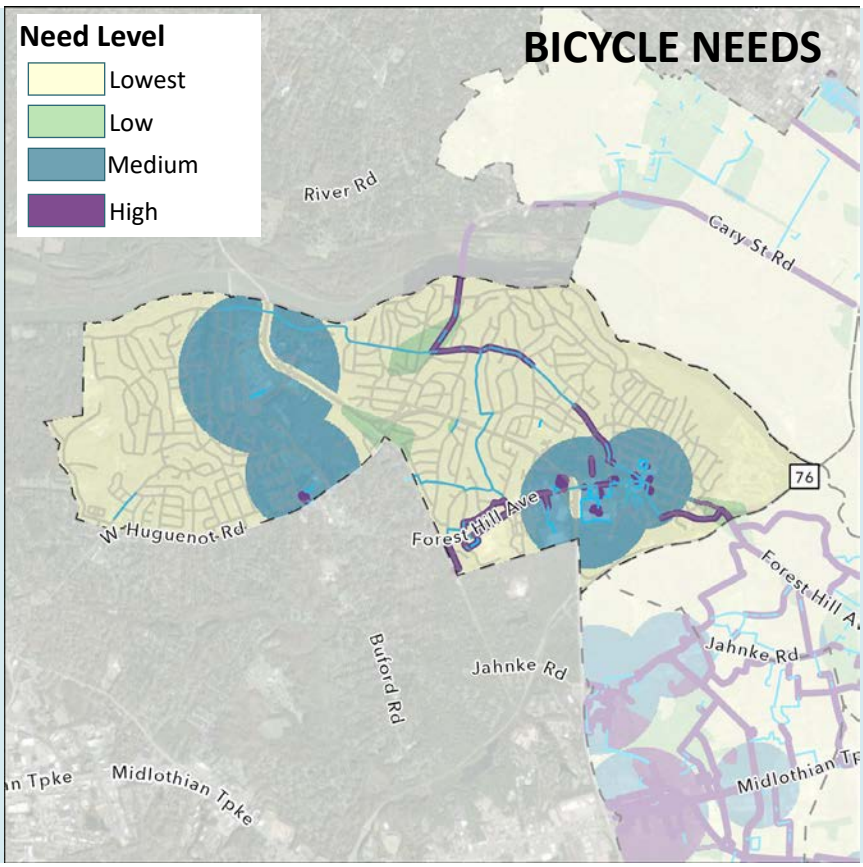
- As a primarily car-centric area, there are few sidewalks.
- Many residential streets are not connected, so getting to destinations often requires walking along high-speed roads.
- Nodes like Stony Point and Shops at Stratford Hills are hard to get to/from by walking.



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.



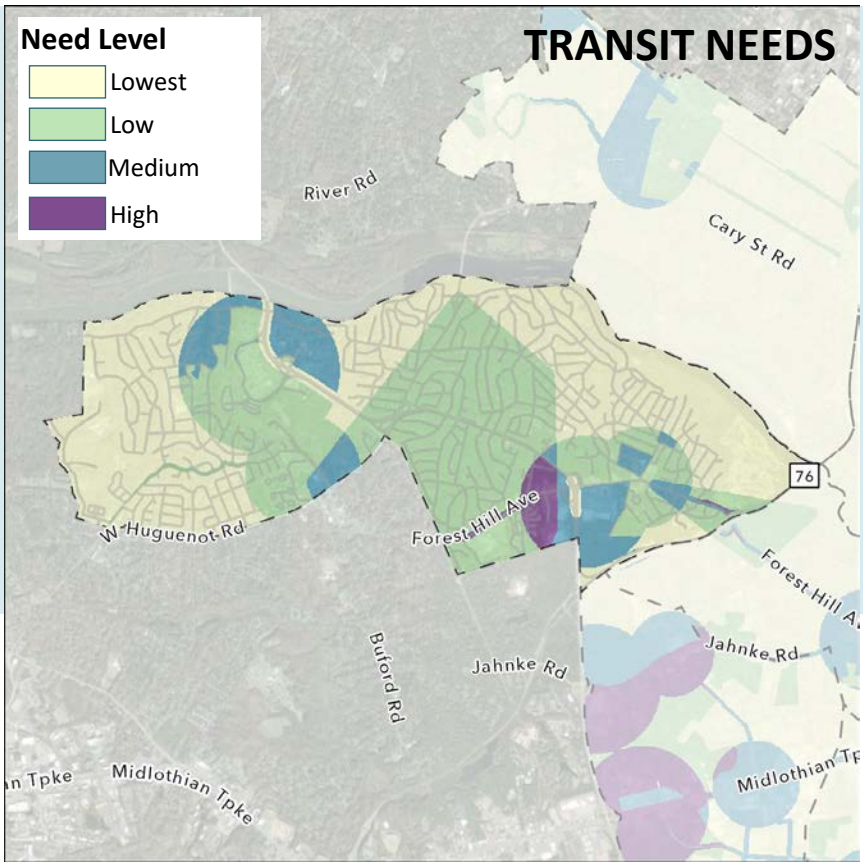
TOP TRANSPORTATION NEEDS
HUGUENOT AREA
NEED AREA 17

RICHMOND CONNECTS

TOP TRANSIT NEEDS

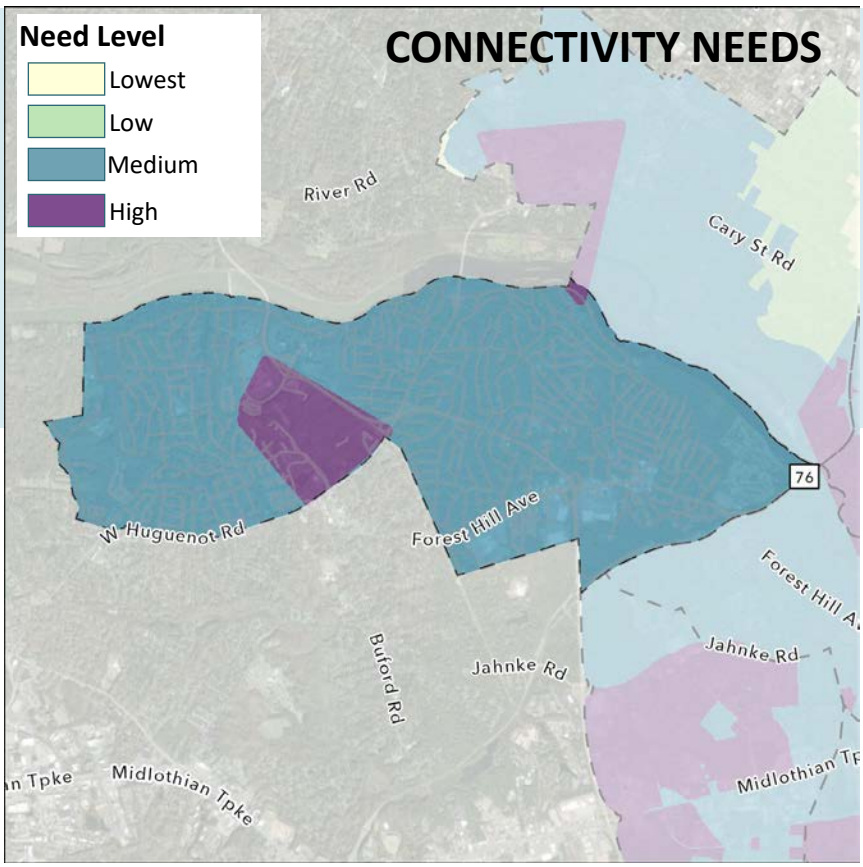
- Transit needs in this area are highest near Shops at Stratford Hills and around Stony Point
- Lack of shelters and benches at bus stops
- Buses are infrequent and often unreliable

Transit needs here are generally lower than several other areas of Richmond.



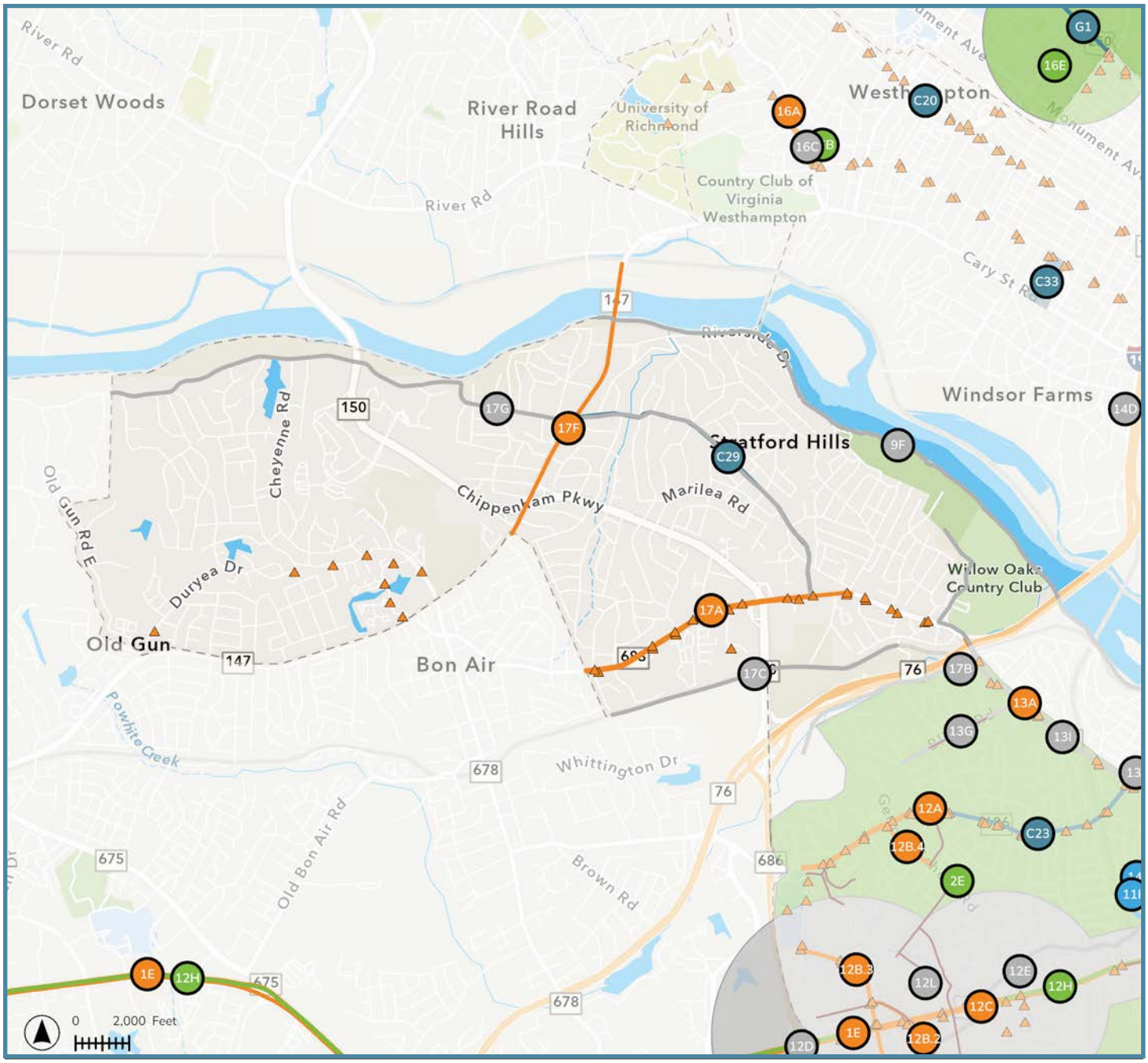
CONNECTIVITY NEEDS

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



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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 ($$$$)	4.6	
17A	Priority Projects	Forest Hill Avenue Streetscape	Moderate ($$)	2.5	262
17F	Priority Projects	Huguenot Road Bikeway	Moderate ($$)	3.3	264
C29	Other Completion	Cherokee Road Roadside Safety Improvements	n/a	0.0	275
17G	Longer Term	Cherokee Road Bikeway	Very High ($$$$)	1.6	285
13I	Longer Term	Forest Hill Avenue Bikeway	High ($$$)	2.2	284
17C	Longer Term	Norfolk Southern Shared Use Path	High ($$$)	1.6	285
17B	Longer Term	Powhite Greenway	High ($$$)	1.6	285