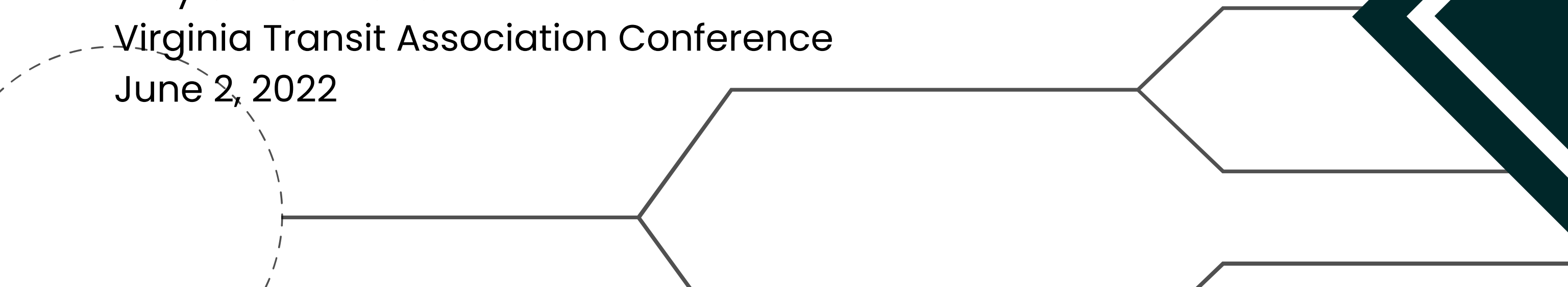




MEASURING AND MENDING TRANSPORTATION INJUSTICES AND INEQUITIES

POLICY, PLANNING AND PROGRAMMATIC APPROACHES FOR EQUITABLE ACCESSIBILITY.

Dironna Clarke, Brandon King, Kelli Rowan
Office of Equitable Transit & Mobility
City of Richmond
Virginia Transit Association Conference
June 2, 2022



Panelist Introduction



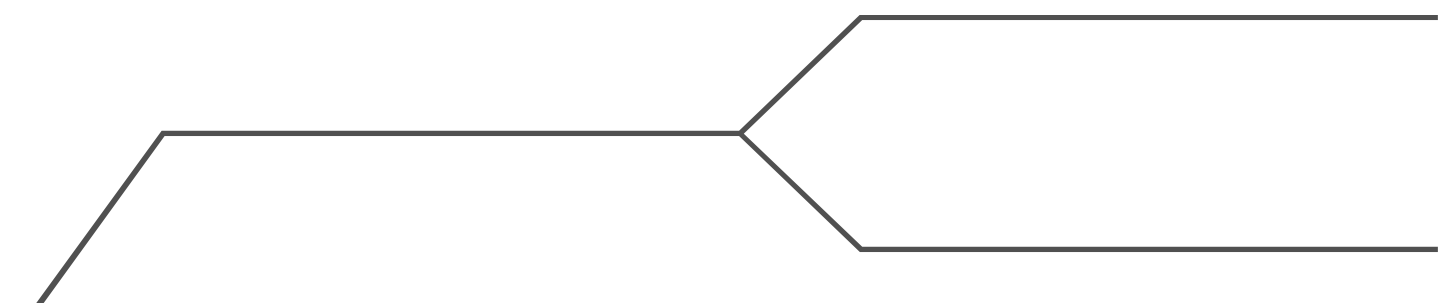
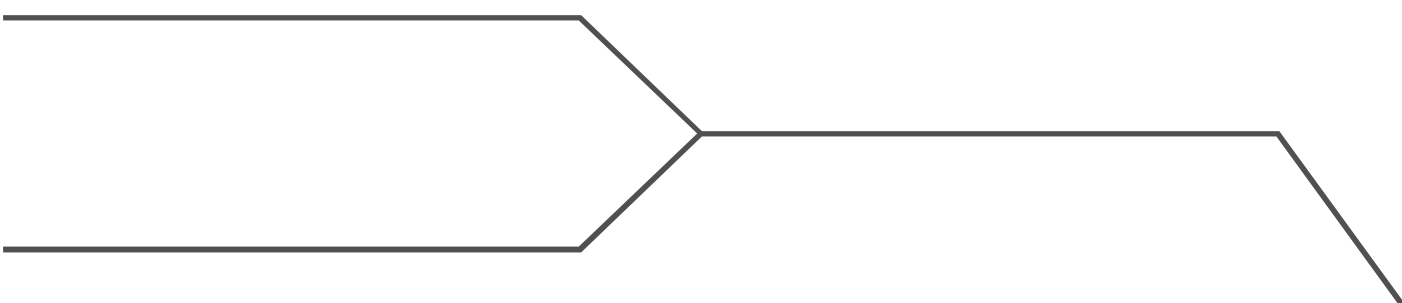
Kelli Rowan



**Dironna
Clarke**



Brandon King



Roundtable Components



Policy

Path to Equity: Policy Guide for Richmond Connects



Planning

Accessibility tool, Richmond Connects



Programming


Micro-mobility options for last mile transit connections; Bike share, VTA Fare Free Van Share, Red Lanes





I. POLICY

DEVELOPING PATH TO EQUITY: POLICY GUIDE FOR RICHMOND CONNECTS

- Understanding past injustices and barriers to accessing opportunity
 - Articulating desired future outcomes
- 
- The page features several decorative elements: a dark teal line with a dot at the top left; a large yellow diamond with a white border and a dark teal outline on the right side; and a series of dark teal lines and shapes at the bottom, including a dashed circle on the left and a series of connected lines forming a path towards the right.

Fundamental Shift



Richmond 300: A Guide for Growth

Kristen Asp, AICP, 2021 APA Awards Jury Chair: "This plan, combined with their laser focus on implementation, is an example for other communities around the country on how planning can and should address systemic racism."



Richmond Equity Agenda

The city's working definition of true equity is the empowerment of communities that have experienced past injustices by removing barriers to access and opportunity.



Path to Equity: Policy Guide for Richmond Connects

It is a statement of the fundamental ideology and set of guidelines, written and shaped by thousands of Richmonders, that will inspire and mediate programs and investments for the future.

Actualizing Policy

Policy Leads to Projects

**Richmond300 & Equity
Agenda**

**Bike Share Expansion
and Pilot**

**Van Share Program
Development**

GAP TA Work

The work before the work. Setting the stage for measuring accessibility and exploring outcome based metrics.

Path to Equity

Articulate policy to elevate City's Equity Agenda into transportation. Bedrock for assessing needs with equity lens.

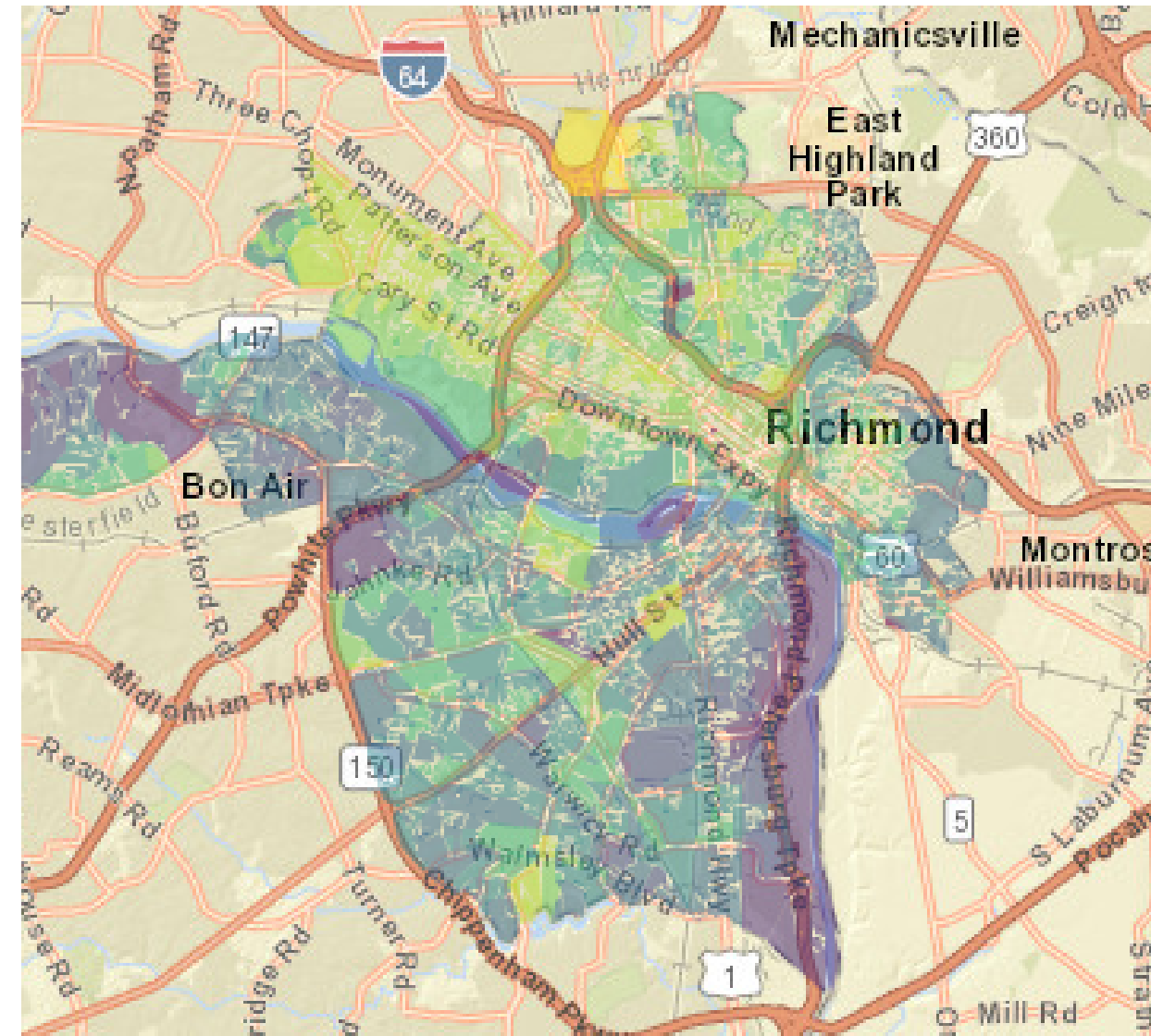
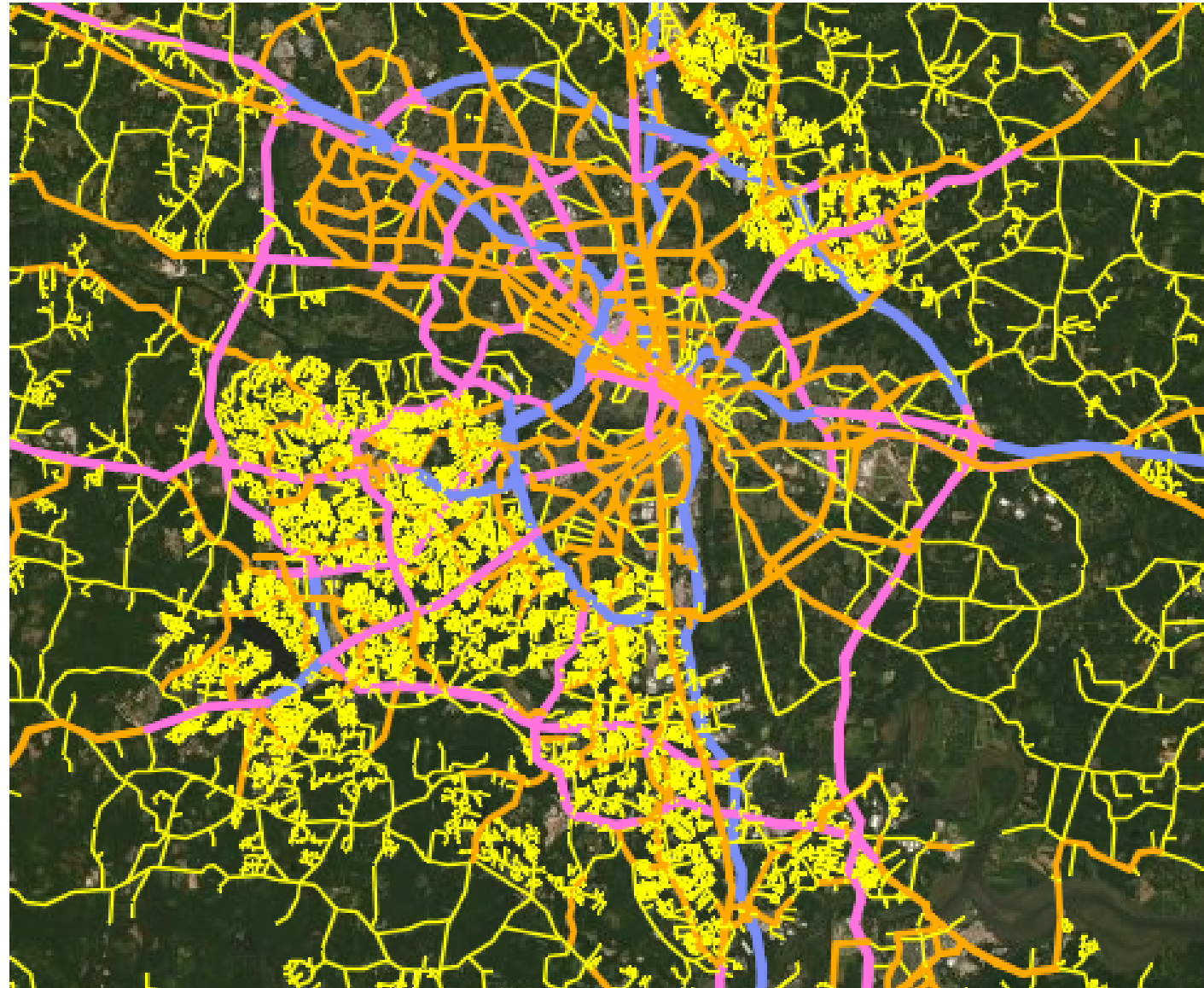
**Richmond Connects
Needs Assessment**

Rethinking how we assess transportation needs.

**Richmond Connects
Projects**

Implement solutions to most pressing needs

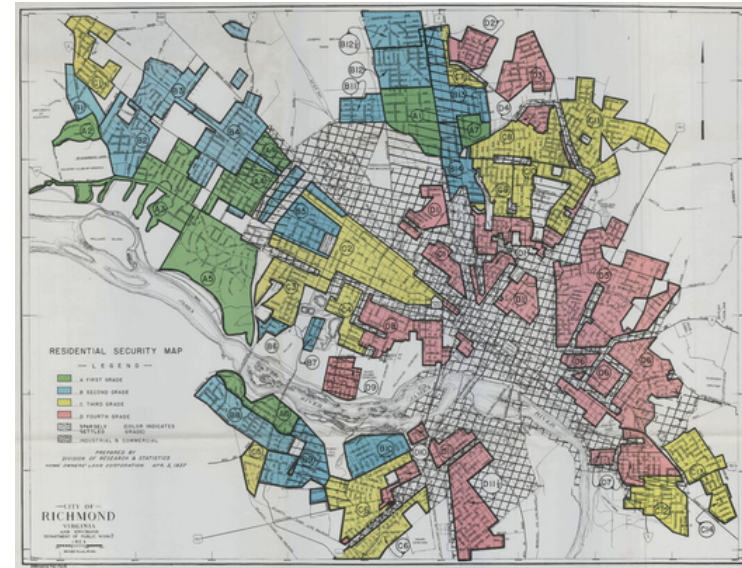
Fundamental Shift



Fundamental Shift



Fundamental Shift



Developing Policy

Equitable Outreach

OUTreach

Engagement TO the community, not community to us



Targeted, Accessible

Multiple formats, meeting people where they are



Compensation

Time commitments = money



Develop Equity Centered Policy Statements



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.



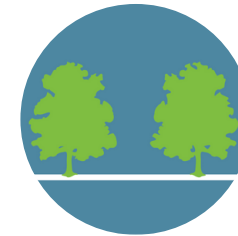
EQUITY FACTOR 6:

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.



Develop Equity Centered Policy Statements

WALK THE WALK, NOT JUST TALK THE TALK

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

PUT YOUR MONEY WHERE YOUR MOUTH IS

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

LISTEN MORE THAN YOU TALK

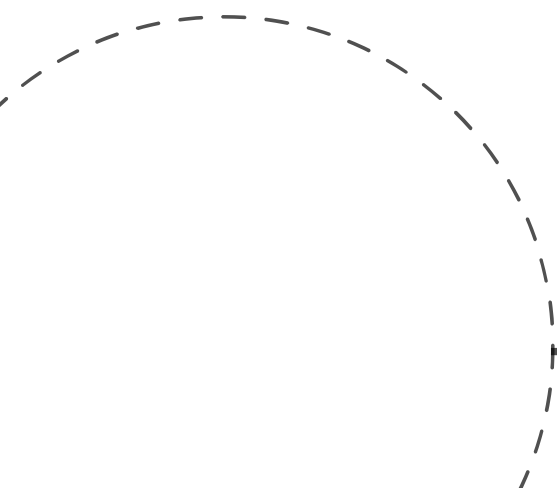
Ensure outreach is equitable, community-based, accessible to all, begins early in the process, and that communities are given decision-making power.



II. PLANNING

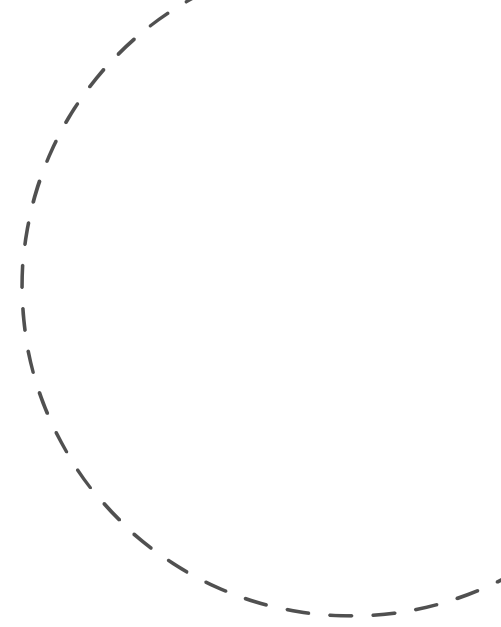
RICHMOND CONNECTS & ACCESSIBILITY MEASUREMENT

- Measuring transportation needs in City's multimodal plan
- Methodological space to explore key data questions through GAP TA grant



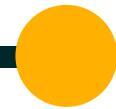
Actualizing Policy

Policy Leads to Projects



GAP TA Work

The work before the work. Setting the stage for measuring accessibility and exploring outcome based metrics.



Path to Equity

Articulate policy to elevate City's Equity Agenda into transportation. Bedrock for assessing needs with equity lens.



Richmond Connects Needs Assessment

Rethinking how we assess transportation needs.



Richmond Connects Projects

Implement solutions to most pressing needs



How are we *measuring* transportation equity?

Needs scoring – showing areas that will register high equity needs scores



The overlap – showing where transportation inequities overlap with demographic inequities



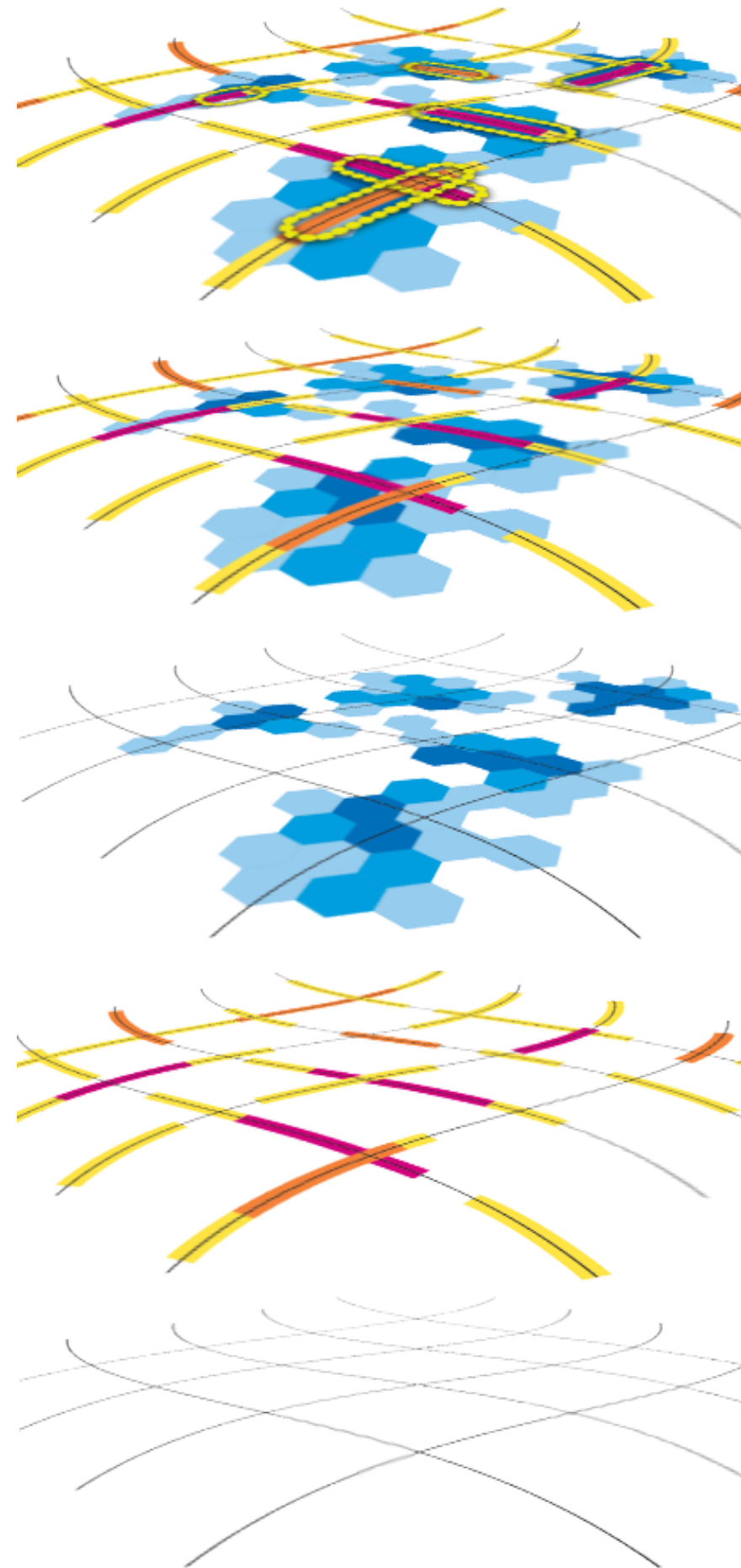
Demographic inequities by location – the geography of prior inequitable practices (People Measures, Verticle Equity, Equity Factors)



Transportation inequities by mode – gaps or problems in the transportation network (Infrastructure Needs, Investment Needs Categories, Horizontal Equity)



The current transportation **network**

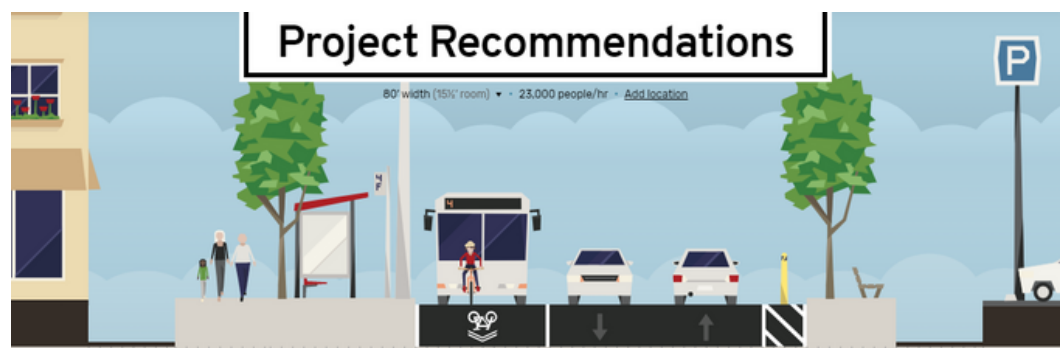
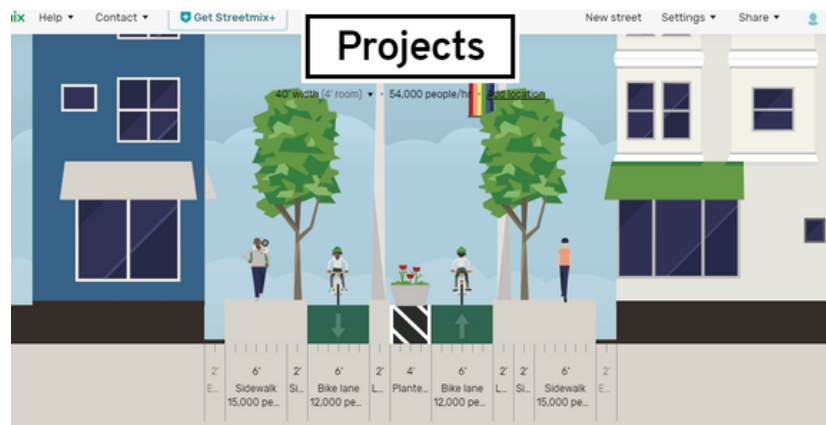
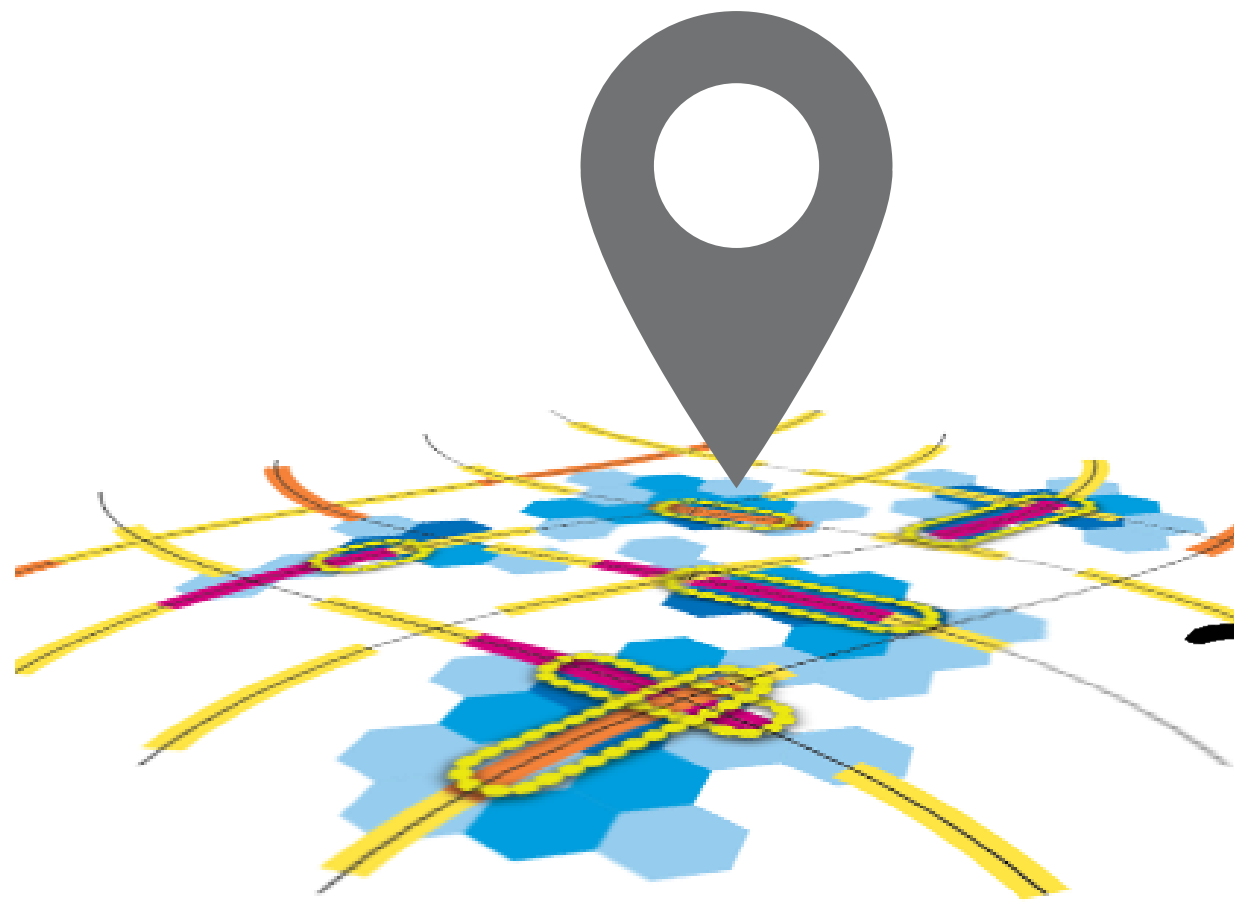


Actualizing Equity Policy

Equity embedded into complex identification of needs, presented as final transportation needs

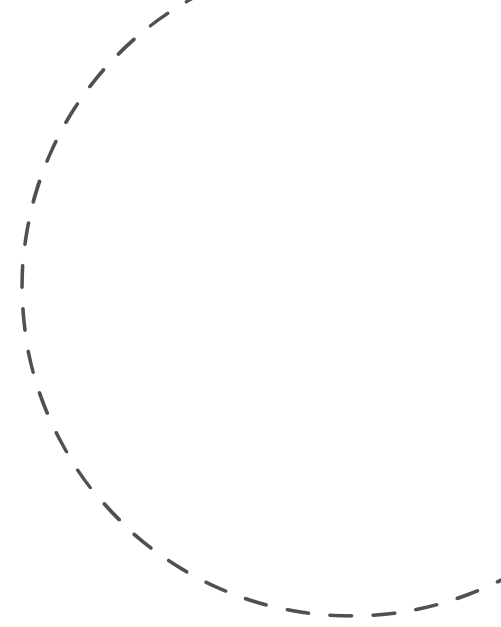


Actualizing Equity Policy



Actualizing Policy

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Rethinking how we assess transportation needs.

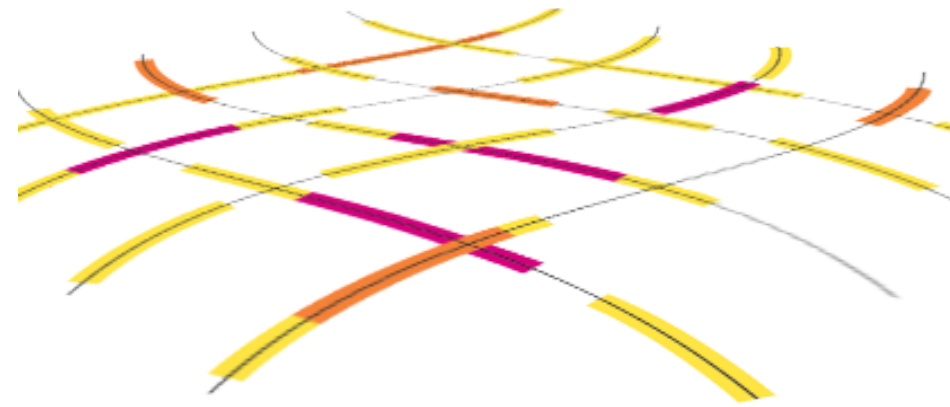
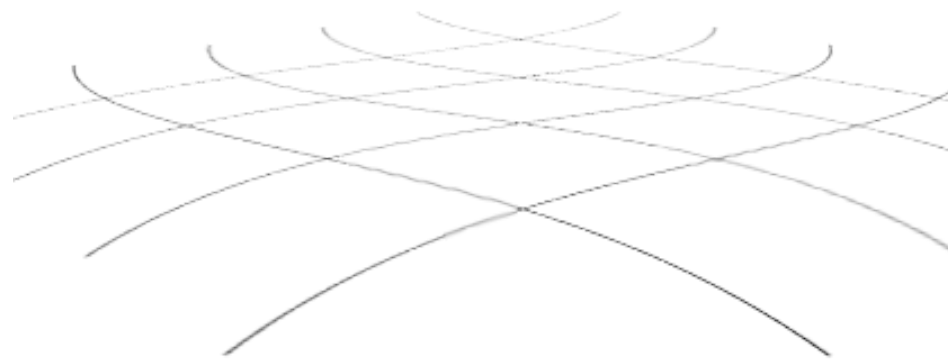


Richmond Connects Projects

Implement solutions to most pressing needs



Exploration of Possibilities



How we define accessibility matters

Access to what?

We all have important destinations to reach in our daily lives, but we don't all value the same destinations equally.

Access for whom?

Access varies by geography, and the ability to choose our level of access is a marker of privilege.

Accessibility is what transportation is all about



Mobility is a means of access

Accessibility does not contradict the need for mobility. Reliable high-speed, high-volume facilities provide access for many people across the country.



So is proximity

Creating human-scale environments can offer accessibility that is less dependent on speed.

Redefining Needs



Transportation as a means of access

- Enhancing connectivity
- Augmenting transit service and non-motorized facilities
- Highway capacity or operational improvements



Land use and urban design as a means of access

- Economic development - bring needed activities closer
- Master planned communities - build whole communities
- Affordable housing - make it possible to live in high-access areas



Who is affected?

- Which communities face challenges in accessing relevant destinations?
- What is the role of historic / systemic injustices in creating these challenges?
- Where are vulnerable individuals or communities at risk of displacement?



There is no one-size-fits-all accessibility



Destination Relevance

Different travelers need/benefit from access to different types of destinations.



Travel Budgets

Not all travelers are willing to travel the same distance or duration to reach a destination. Not all travelers can bear the same monetary costs of a trip.



Temporal variability

Travel times/costs and destination activities can vary by time of day, day of week, and seasonally.

Creating
"methodological
space" to consider all
the complex factors
that affect real
accessibility

Destination Relevance

Data

National Household Travel Survey (2017)

Estimate the probability of making a trip for a given **purpose** based on **traveler characteristics**

Work: work or work-related trips

Shopping: general errands or purchase of goods, services, or meals

Social: recreation, exercise, and visits to family or friends

Health: health care or adult care

Community: volunteering or religious/community activities

School: school or childcare

Over 27,000 different traveler types

Age: <17, 18-24, 25-34, 35-44, 45-54, 55-66, 67-74, 75+

Sex: Male, Female

Education: Less than HS, HS or equivalent, Some college/associates, Bachelors, Graduate/professional

Worker status: Full time, FT work from home, Part time, PT work from home, Non-worker

Disability: with disability, no disability

Income: <\$35K, \$35-50k, \$50-75K, \$75-100K, \$100-150K, >\$150K

Household size: 1, 2, 3, 4+

Context: Urban, Rural

Destination Relevance

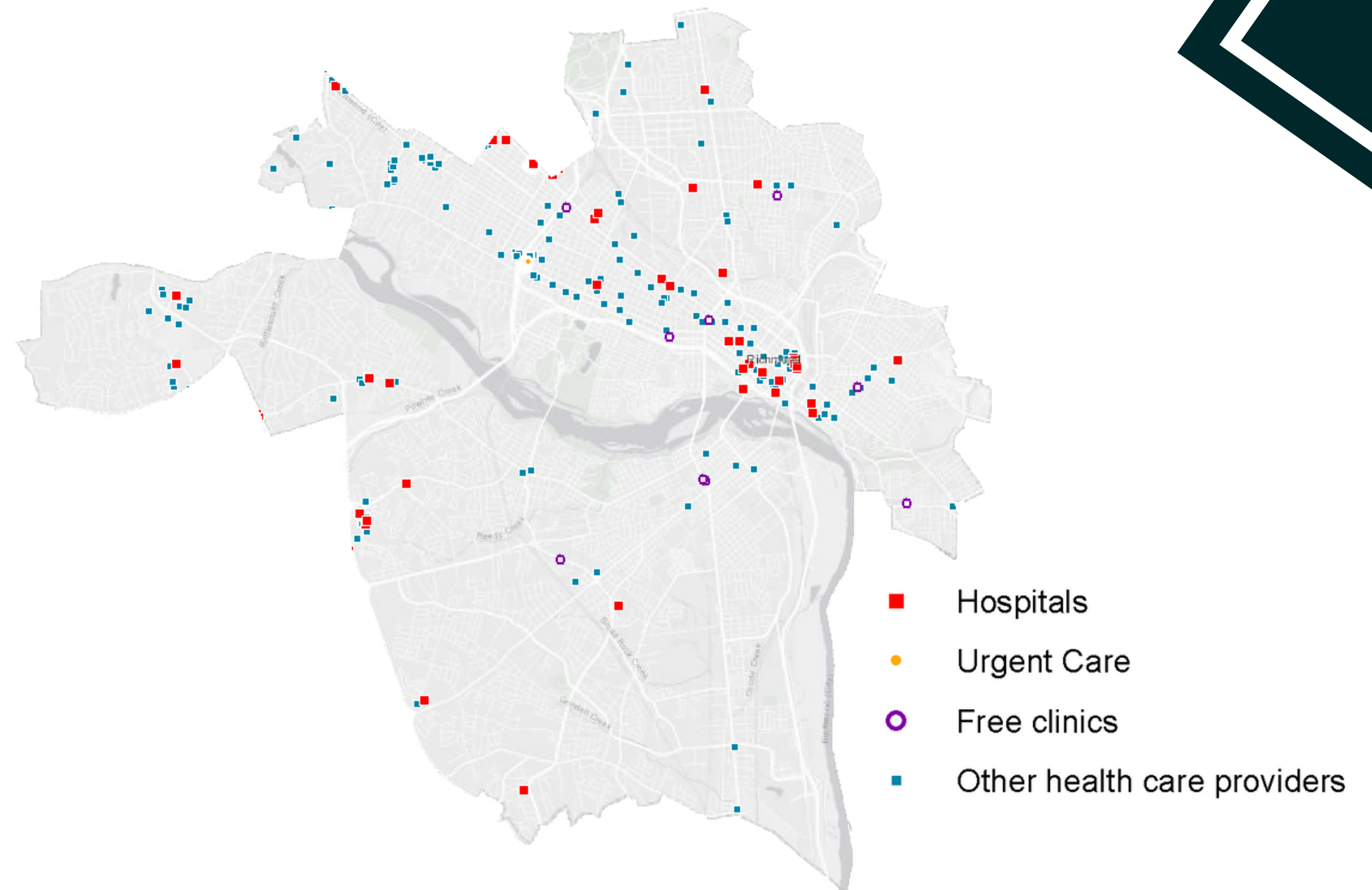
Data

20+ GIS layers

Where are destinations of various types located?

ITE Trip Generation

Estimate relative importance of particular destination types for a travel purpose



Health care locations

Travel Time Budgets

Data

National Household Travel Survey (2017)

Estimate the probability of making a trip for a given **purpose** and **mode** based on **traveler characteristics** given the required travel time

Work

All other purposes

Motorized (auto)

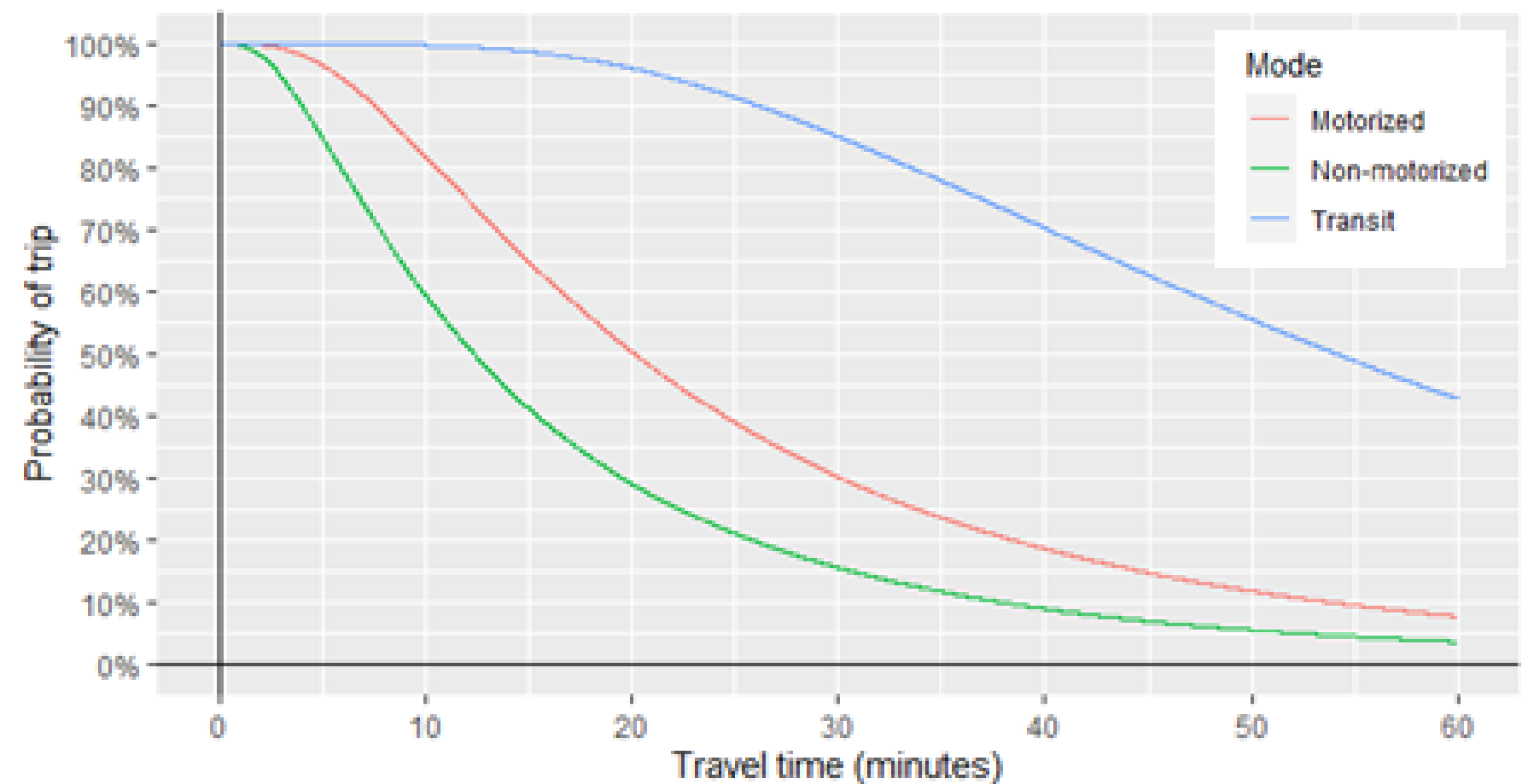
Transit

Non-Motorized (walk, bike)

Age: <17, 18-66, 67+

Worker status: Full time, Part time, Non-worker

Context: Urban, Rural



Network Attributes



How do facility characteristics affect accessibility?

- Literature is inconclusive about affect size of facility characteristics
- Rule of thumb is a 30% benefit to perceived travel costs, compounding when multiple benefits are present:
 - Sidewalks in good condition
 - Street trees
 - Bike lanes
- Also applies to detrimental conditions:
 - Sidewalks in poor condition
 - Adjacent parking lots
 - Alleyways
 - Bridges



Creating
"methodological
space" to account for
more facility
characteristics in
subsequent
applications

Competitive Access



Analyses of "access to opportunity" often generate intuitive heat maps, highlighting the most intensely-developed areas of a city or region



Real accessibility changes when we consider the presence of other travelers trying to reach the same destinations



Spatial mismatch: too few job opportunities accessible for too many workers



Imposes inequitable transportation cost burdens and dependency on high-speed mobility



Accessibility analysis process

1

Population synthesis

Detailed estimates of traveler demographics by census block

2

Destination Inventory

Assign point of interest data to blocks and specify relative importance weights

3

Enrich networks

Apply facility characteristic data to routeable networks

4

Analyze travel costs

Estimate origin-destination times and/or costs by mode

5

Apply traveler preferences

Use destination relevance and travel budget factors to summarize destinations reachable for each user type

6

Assess competitors

Normalize the number of destinations reachable by the number of competing travelers with access

7

Report composite accessibility

Summarize total relevant destinations reachable by mode and purpose given local traveler demographics



Many outputs, many applications

Access by mode and purpose

Separate results are generated for each mode and purpose of travel to support cross-modal comparisons.

Network embellishments

Results with and without network embellishments are generated to provide a frame of reference for understanding where accessibility is enhanced or degraded by facility characteristics.

Destination relevance

Results with and without destination relevance factors are generated to provide a frame of reference for understanding where accessibility aligns with traveler needs.

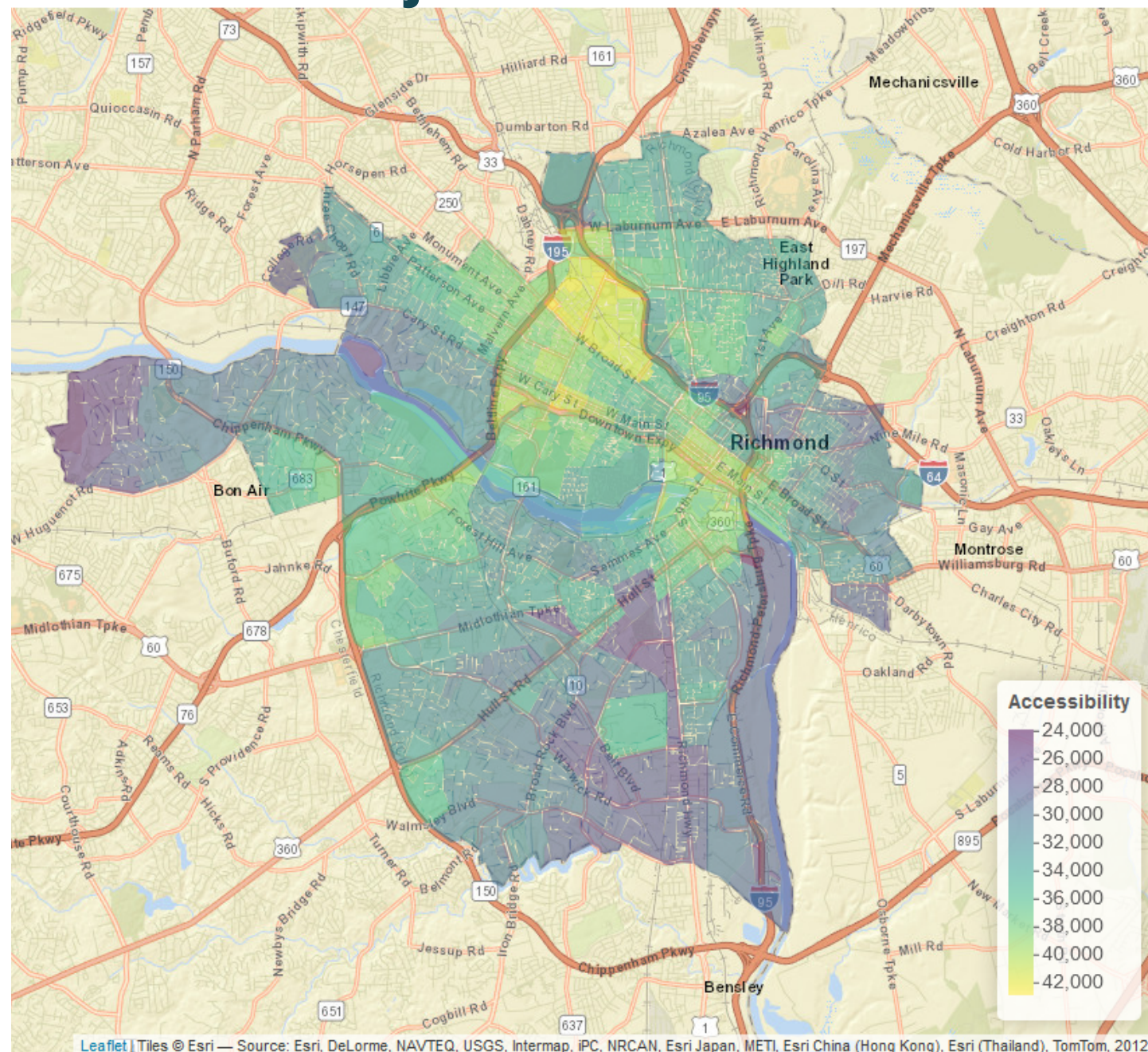
Competitors

Competitive and non-competitive results are generated to provide a frame of reference for understanding where spatial mismatch issues degrade access to opportunity.

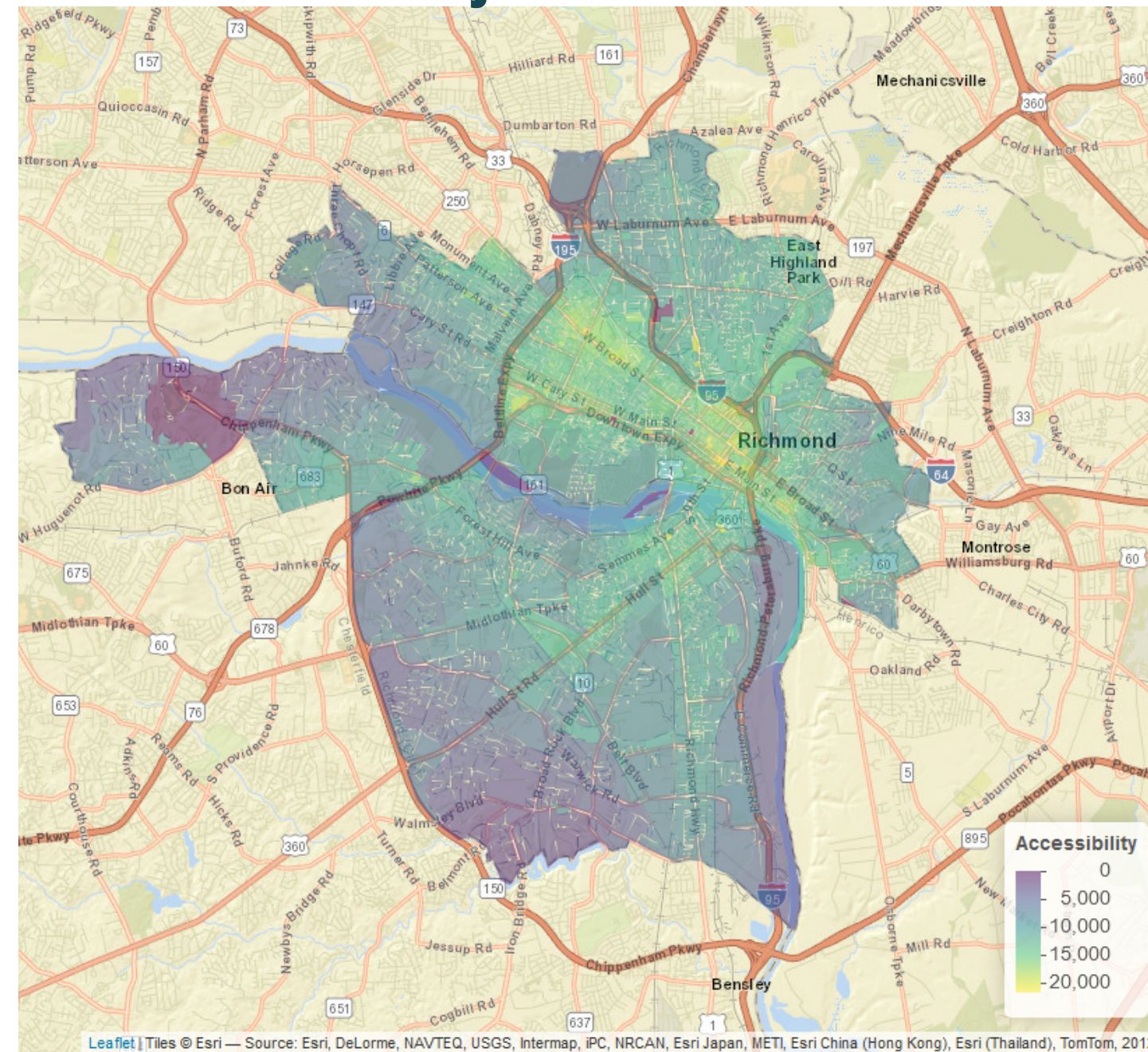
Accessibility Mapping

Heat maps highlight accessibility **hot spots** and **cold spots** by mode

Auto access to jobs



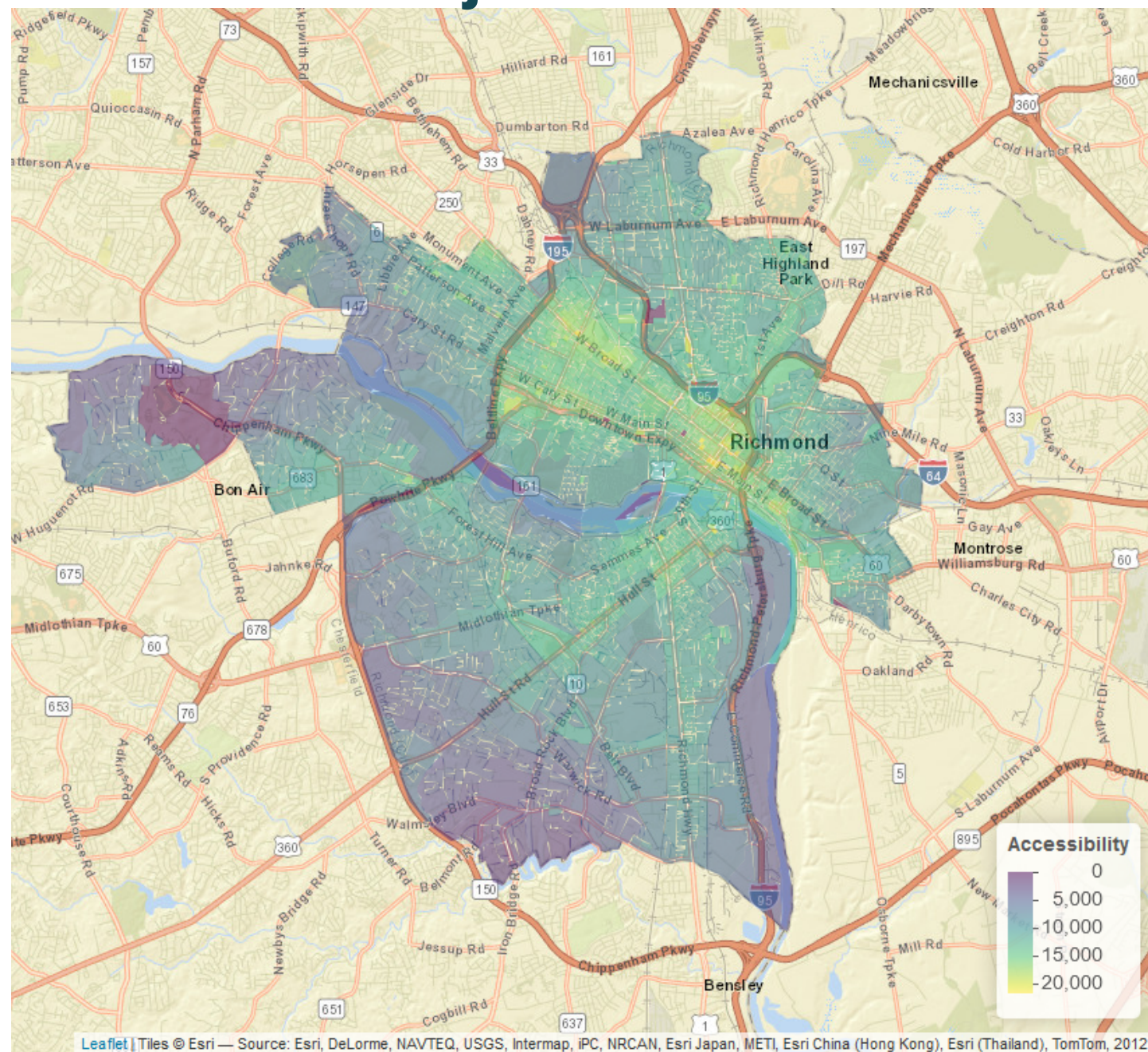
Transit access to jobs



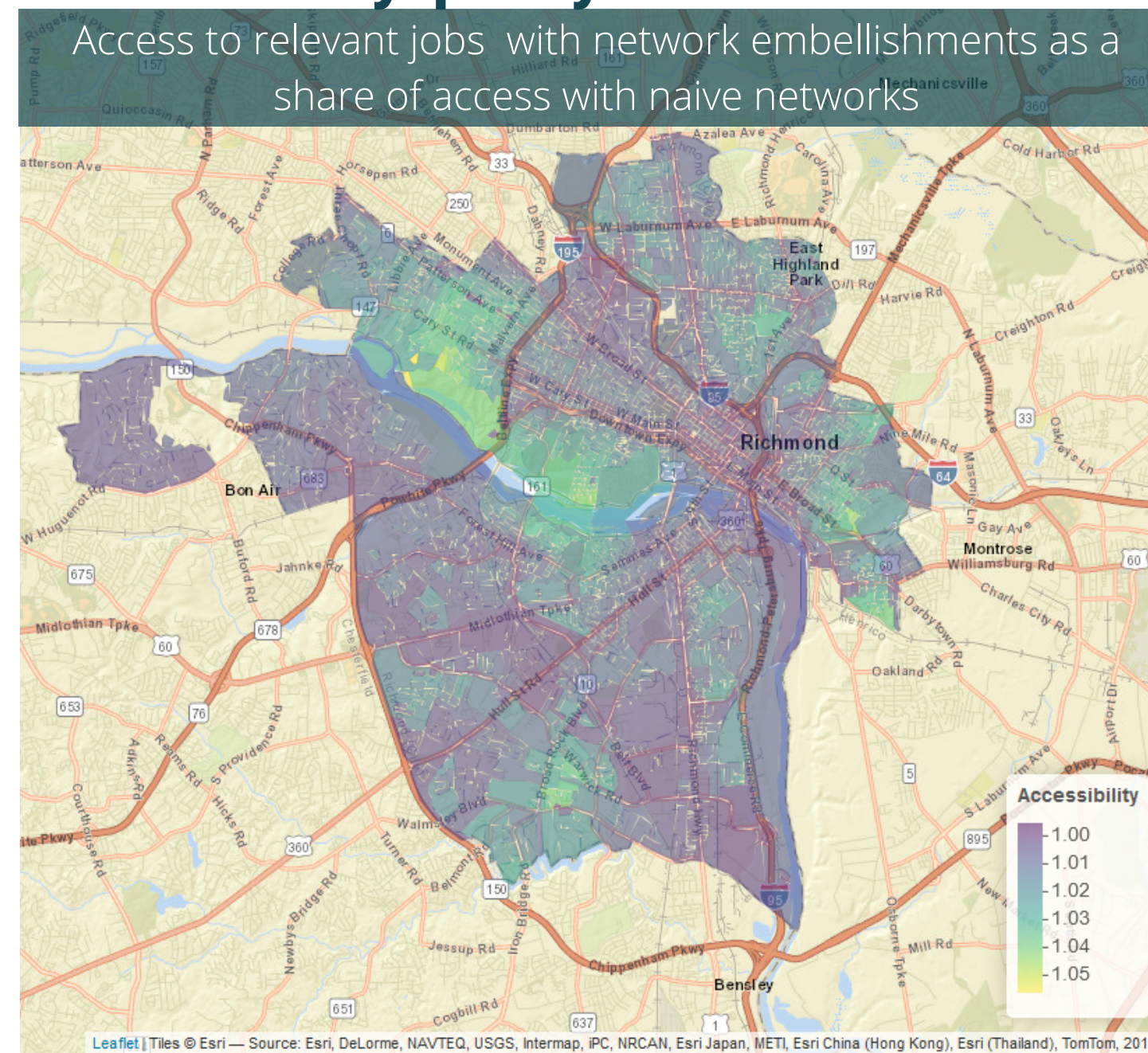
Accessibility Mapping

Where are **facility improvements** needed to enhance access?

Transit access to jobs



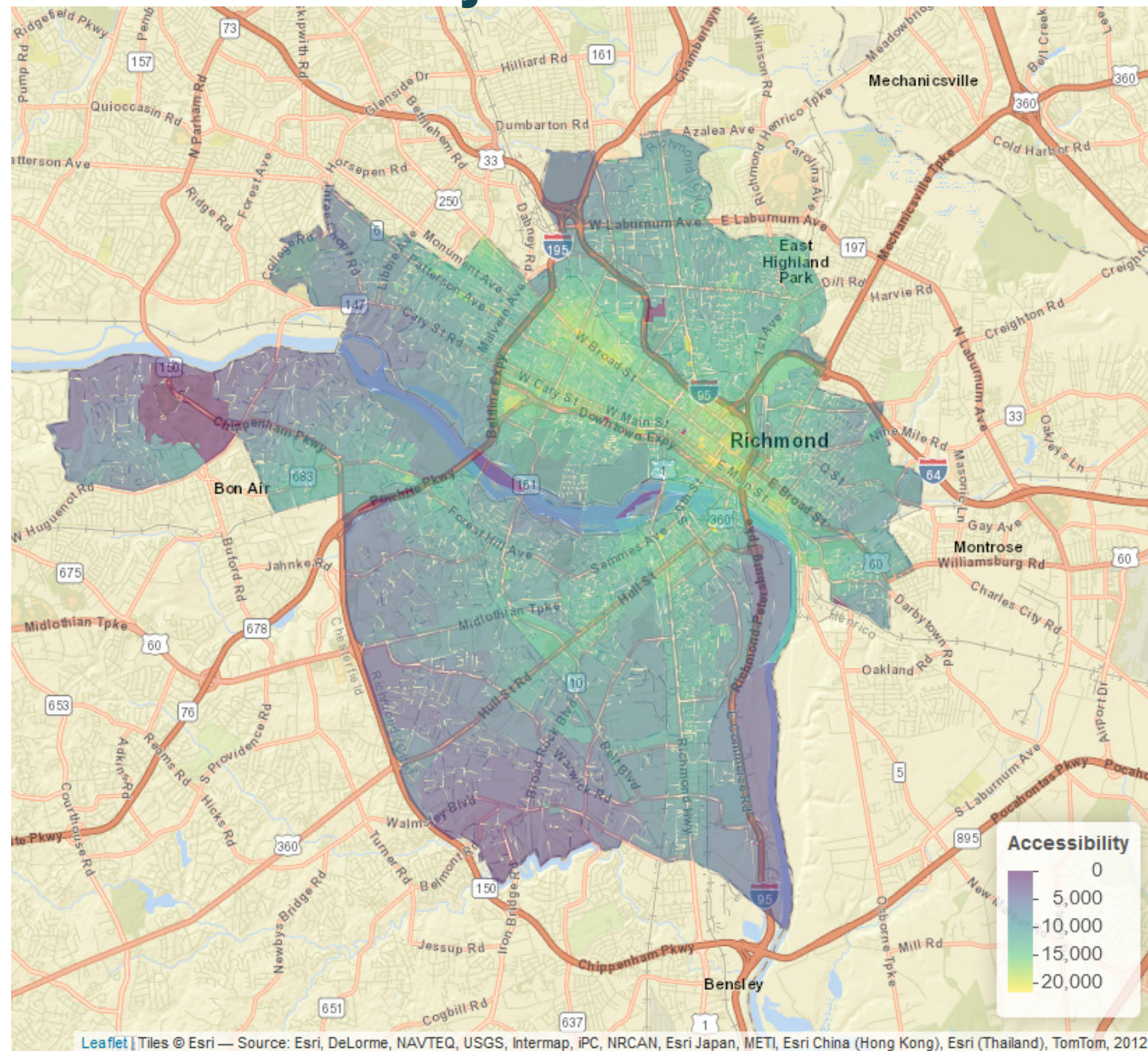
Transit facility quality ratio



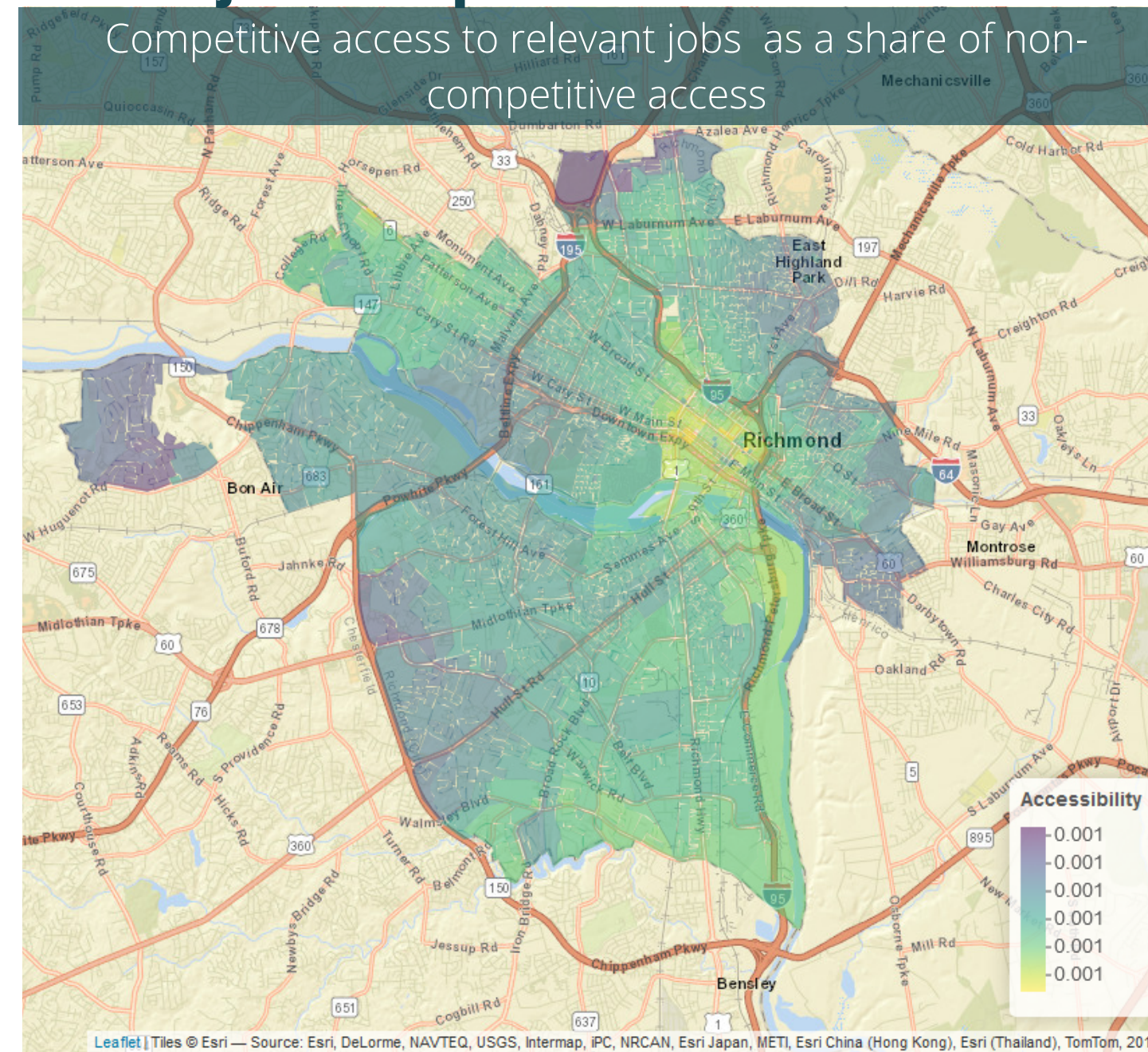
Accessibility Mapping

Where does **competition** for access undermine accessibility?

Transit access to jobs



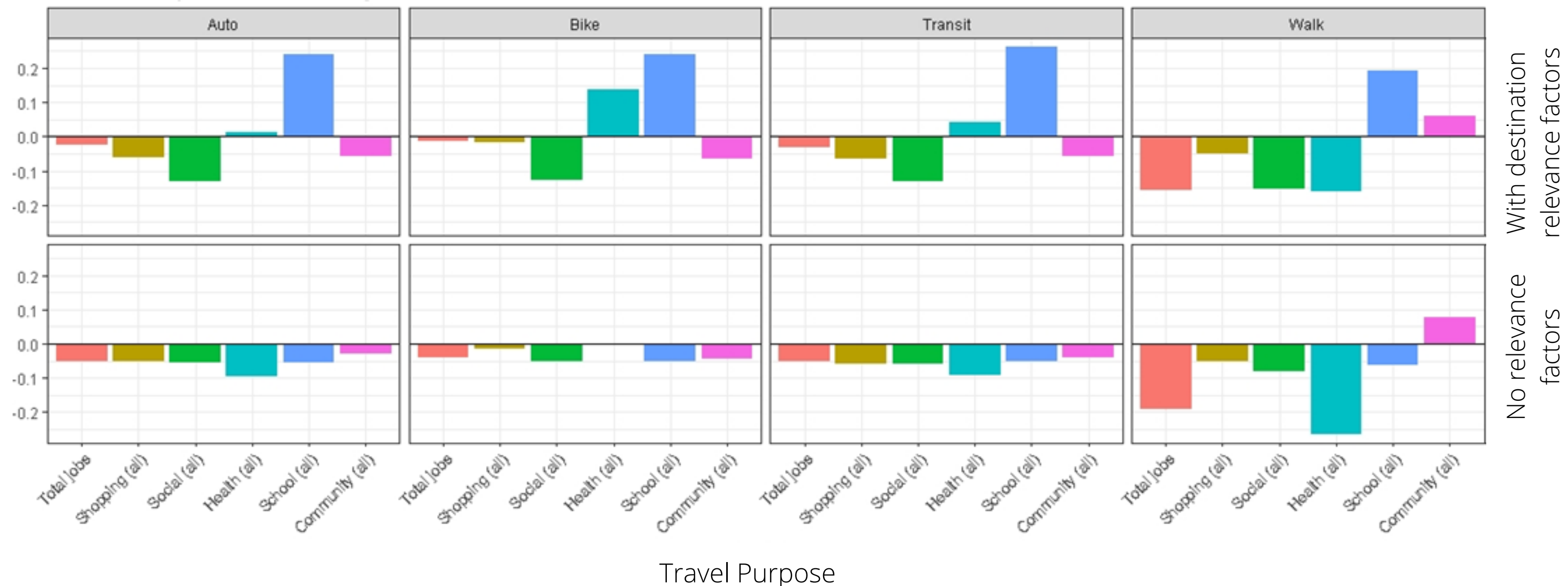
Transit jobs competitiveness ratio



Accessibility Summaries

Is accessibility provided equitably across the city?

- BIPOC relative to white
- Values above / below x-axis indicate higher / lower BIPOC accessibility averages
- With a few exceptions, BIPOC populations have lower average access across all modes



Exploration – Other Key Questions to Ask of Data

01 How can we measure lived accessibility?

A key foundation for following questions

02 Outcomes vs. access, where mismatch occurs?

End deficit thinking, exploration of patterns, barriers to access, technological barriers

03 Can we predict unintended consequences?

Assessing accessibility's change over time with gentrification and isolation in mind

We've given people no choice

Auto-centric legacy

- Has created an inequitable geography of access in which the most vulnerable users are often left behind
- Leads to overuse of cars even in highly accessible areas

Comprehensive solutions are needed

- Land use, urban design, economic development, affordable housing, and other strategies offer solutions to transportation problems

New and richer **metrics** are needed

- Plan for access in light of traveler preferences and needs
- Enhance analytics to add nuance and insight
- Better understand who is affected by investments and how

We need widespread equitable placemaking

Enhance **local accessibility** everywhere

- Through density, diversity, and design
- Think more holistically about transportation to focus on networks and access

Identify and protect **vulnerable communities** from displacement

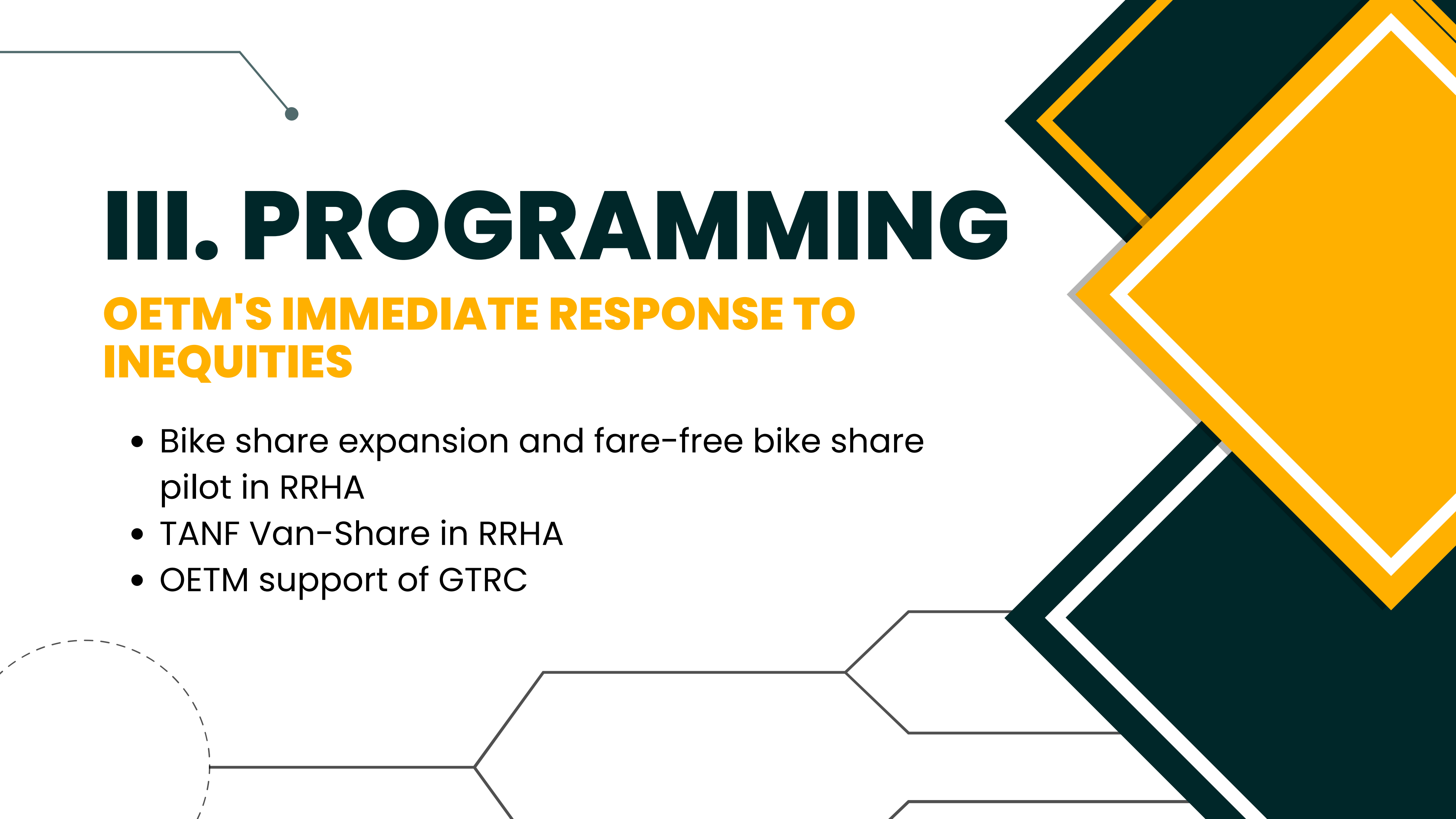
- The benefits of placemaking are lost if current residents are displaced to inaccessible locations

Provide multimodal access to **relevant destinations** in areas of targeted growth and investment.

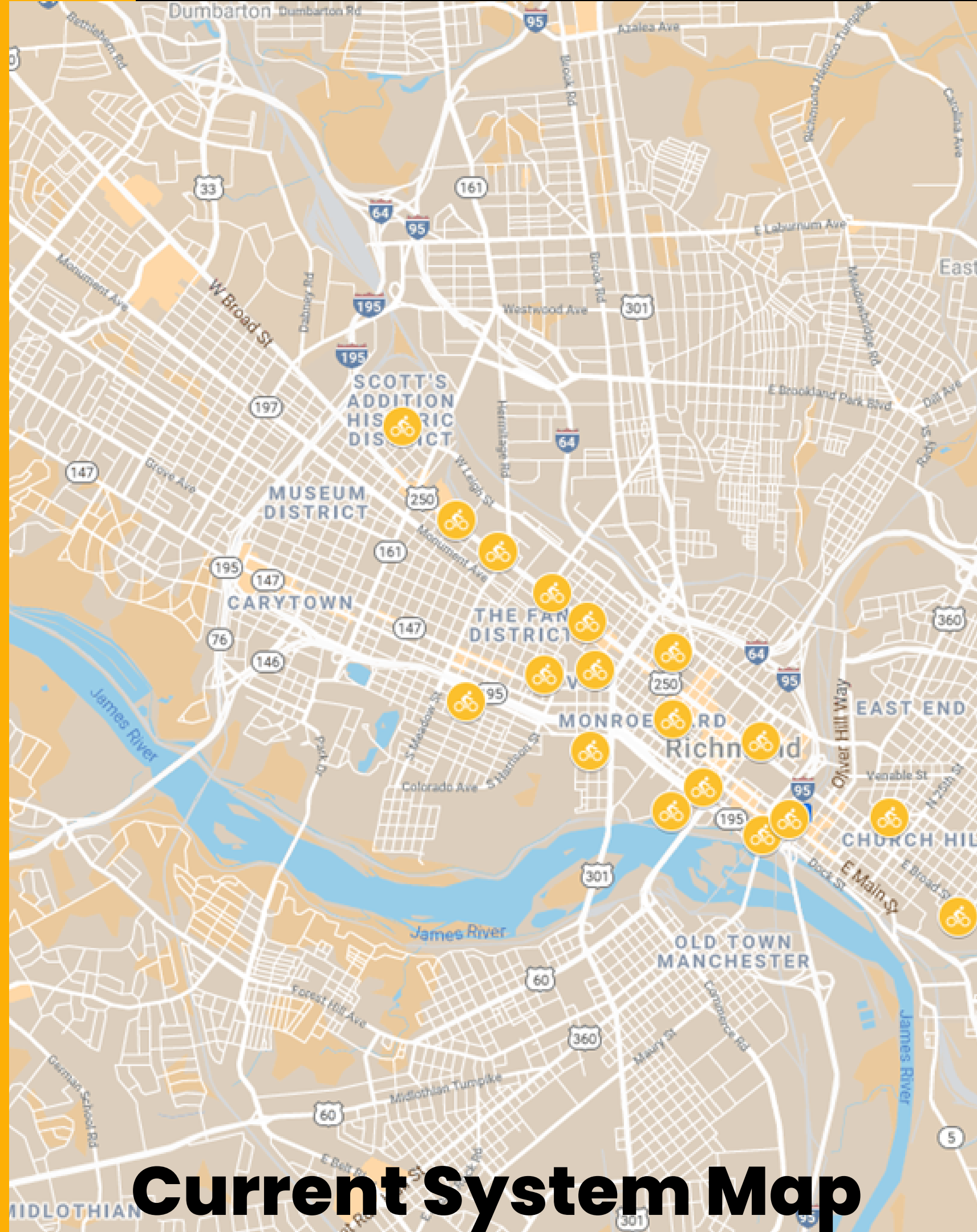


III. PROGRAMMING

OETM'S IMMEDIATE RESPONSE TO INEQUITIES

- Bike share expansion and fare-free bike share pilot in RRHA
 - TANF Van-Share in RRHA
 - OETM support of GTRC
- 

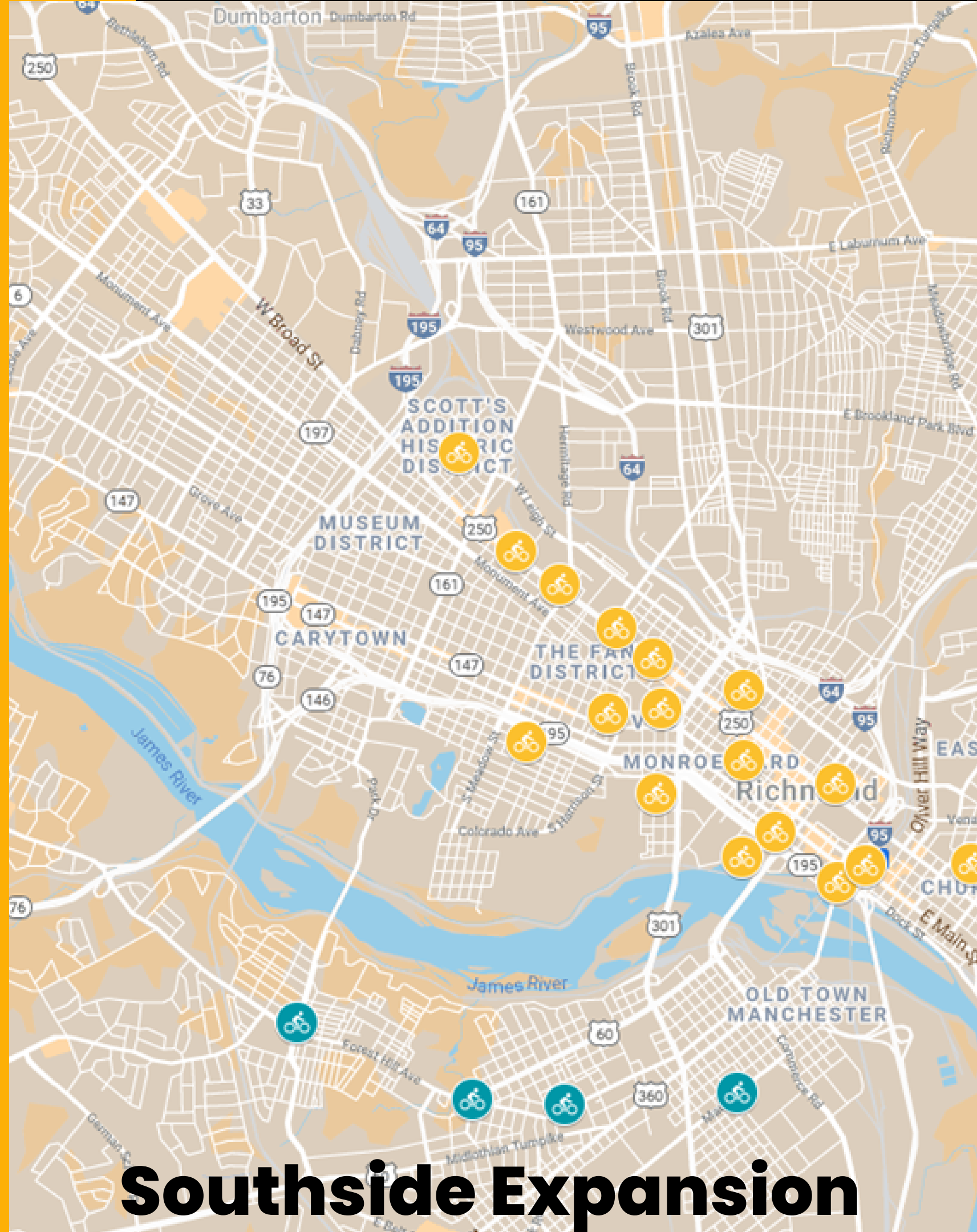
Phase II Rollout



Current System Map

- **19 stations**
- **Lowest performing stations have been relocated to new locations at Abner Clay Park and Chimborazo Park.**
- **OETM conducted public surveys to determine locations for the Phase II expansion.**

Phase II Rollout



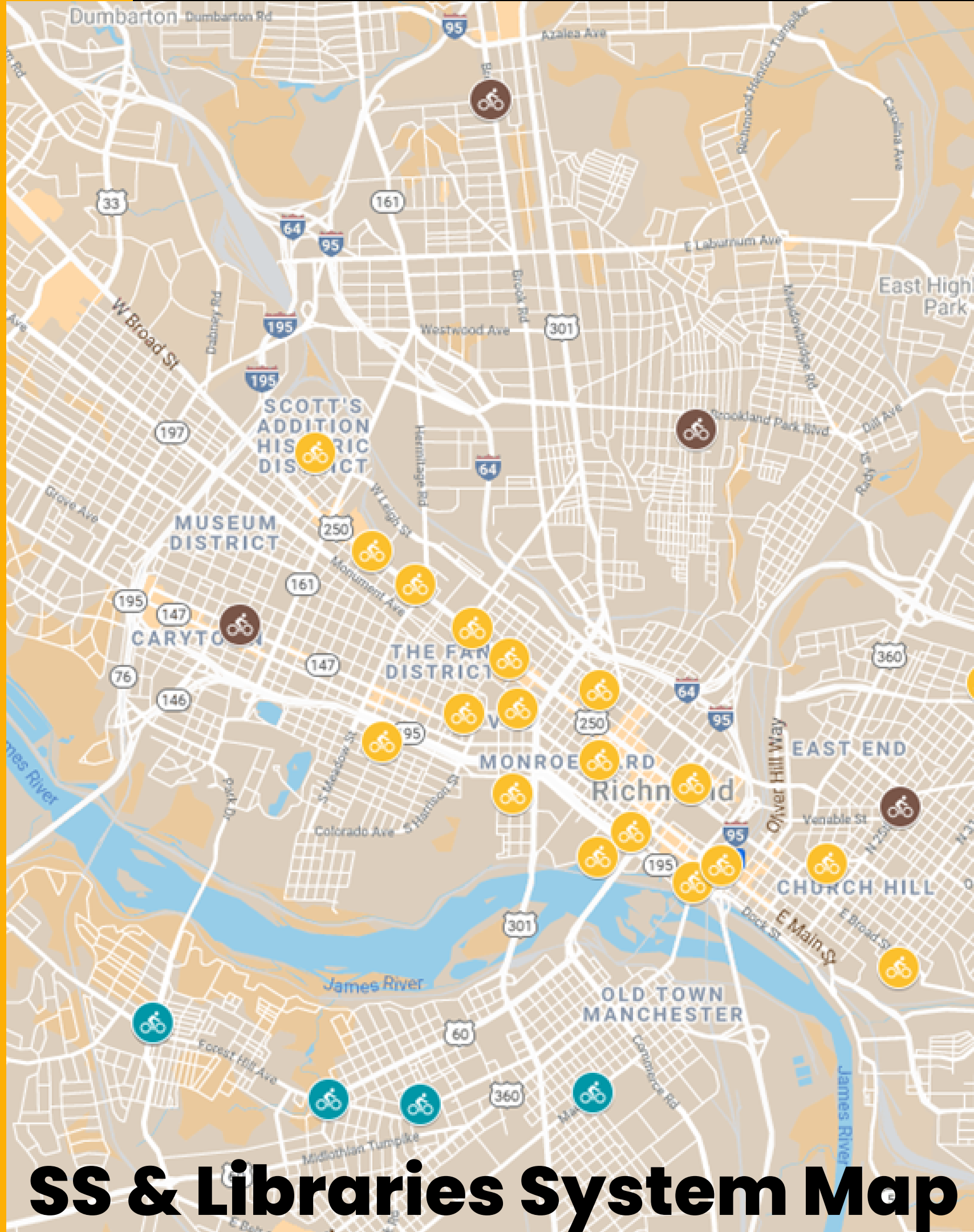
Southside Expansion

Southside Expansion

• Survey respondents showed significant demand for RVA Bikeshare to expand southward. Particularly in the population centers along the Forest Hill / Semmes Avenue corridor.

• Southside locations include Blackwell Pool, Carter Jones Park, Forest Hill Park, and Westover Hills Library.

Phase II Rollout



SS & Libraries System Map

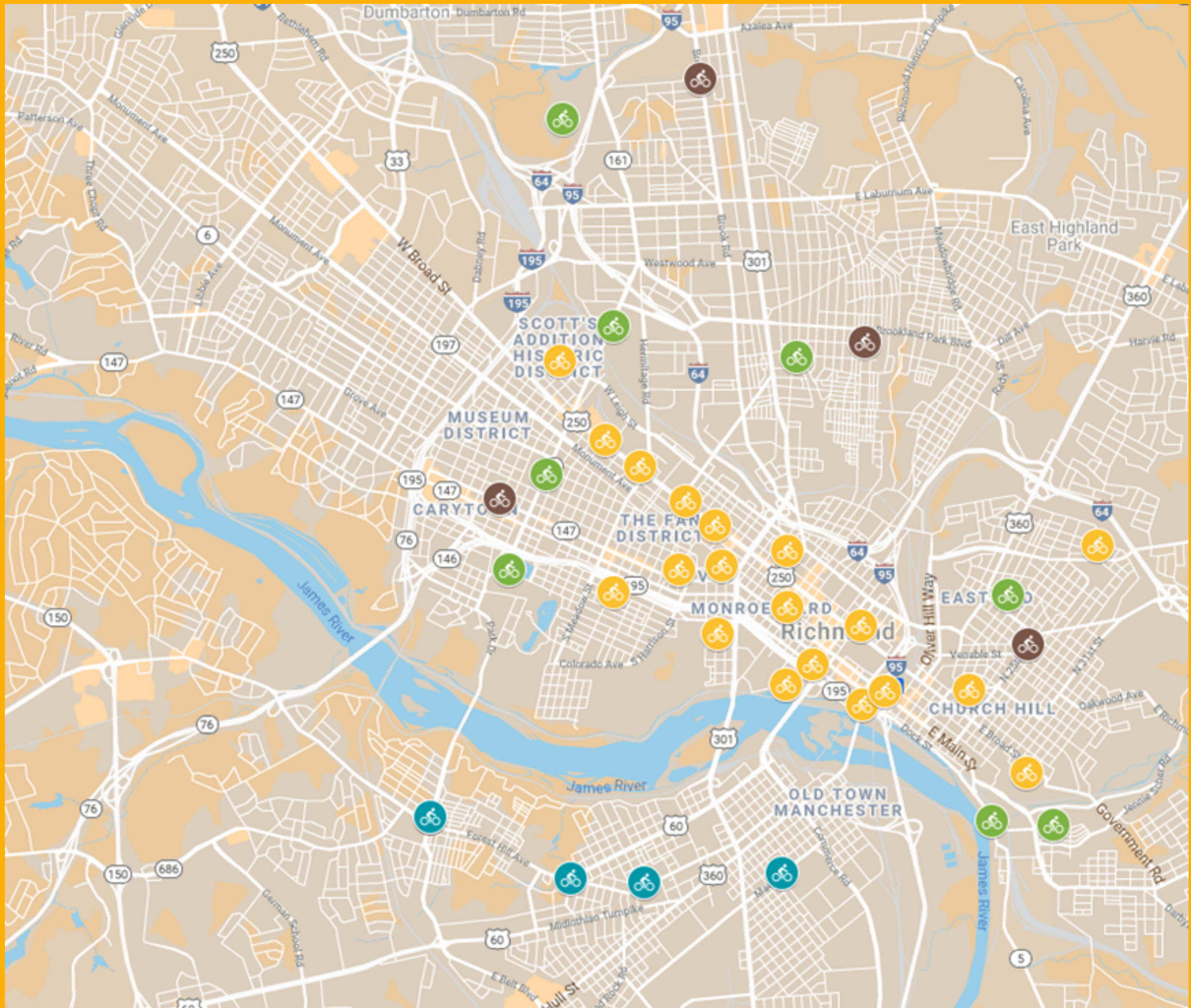
Richmond Public Libraries Partnership

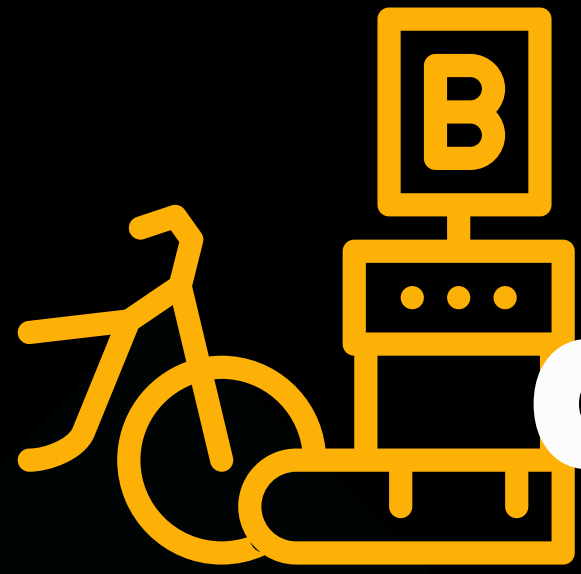
- **RPL has approved RVA Bikeshare locations at Ginter Park Library, North Avenue Library, East End Library, Belmont Library, and Westover Hills Library.**

- **RVA Bikeshare will incorporate into RPL's landscape renovation master plan.**

- **Strategic locations**

Phase II Rollout





double in size

2022 Bikeshare system

100%

connected to grid power



100%

Converted to Electric Assist

Fairfield court pilot



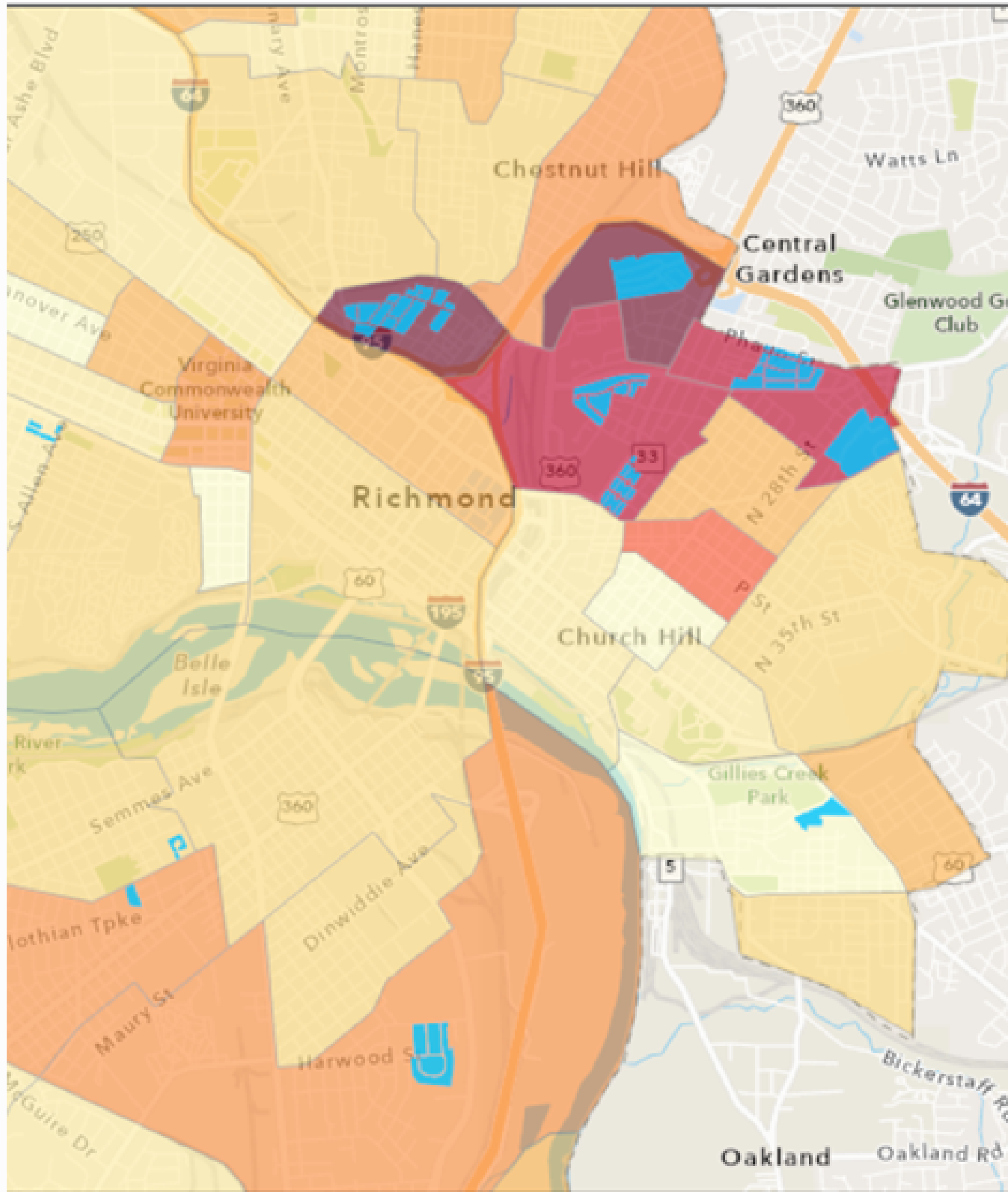
- **Collaboration with Richmond Redevelopment Housing Authority (RRHA)**

- **Fairfield Court resident survey = high need**

- **Free RVA Bikeshare passes to residents.**

- **Test Case for potential other public housing communities.**

Van Share Pilot



- **Lowest car ownership**
- **Lowest incomes**
- **Highest need for assistance to and from employment centers**
- **279K Grant to Deploy Program**

Van Pilot

TANF RRHA Residents

Identifying a Need

Conversations with residents at outreach events. Survey data.
Demographic data.

Pursuing funding

Awarded VTA TANF fare-free grant. RRHA community is large density of TANF eligible individuals.



Support High-Quality Transit



Contact Us.

Office of Equitable Transit & Mobility



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rva.gov/connects

rva.gov/public-works/transit-equity