

Downtown Richmond Permanent Transfer Hub

Site Selection Assessment

February 2024

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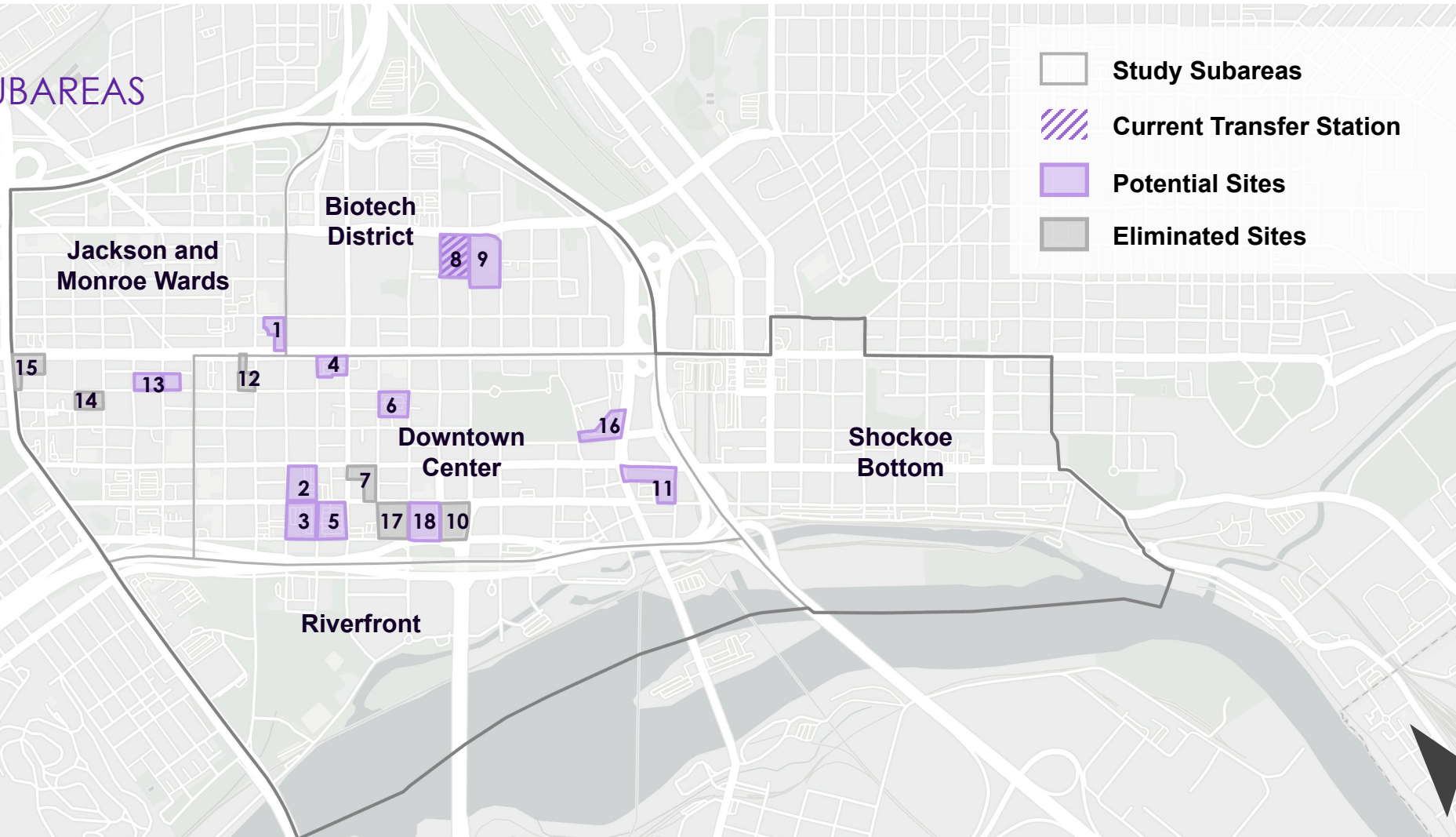
01

Executive Summary

EXECUTIVE SUMMARY | STUDY OVERVIEW

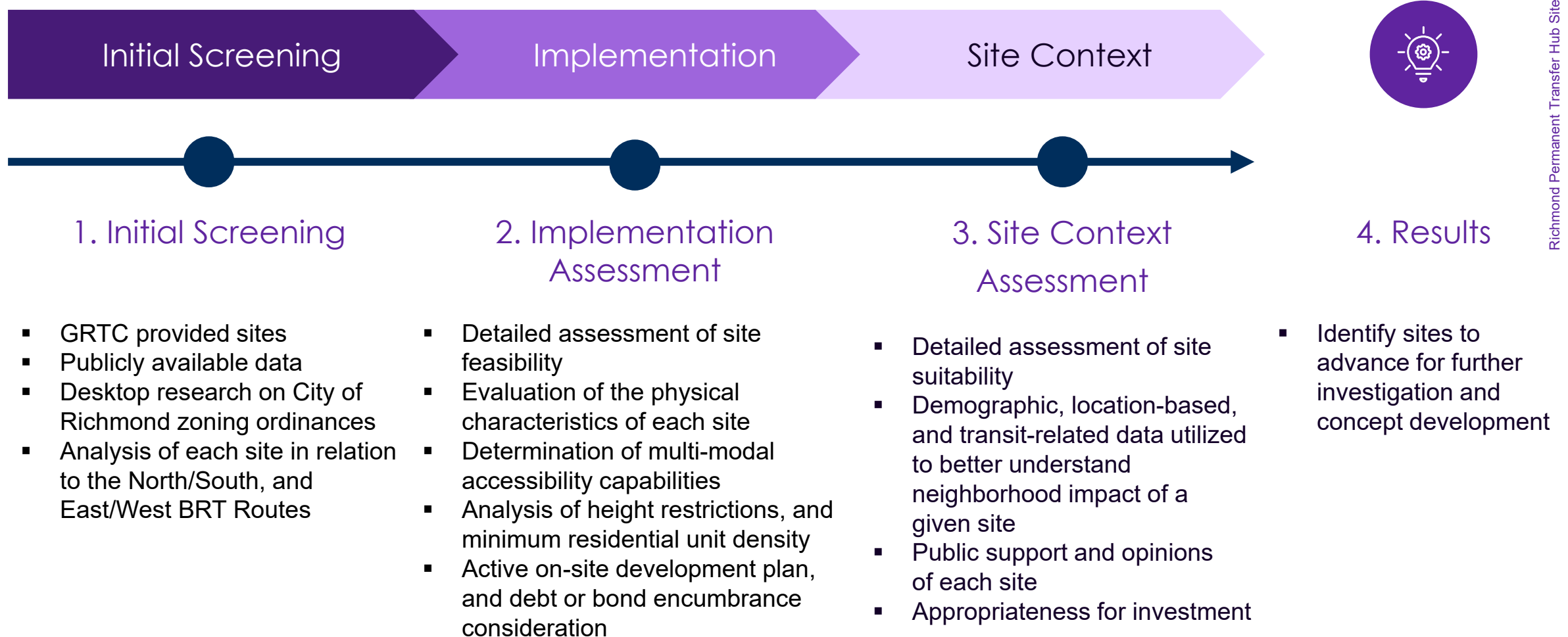
HR&A assessed the viability of the 18 sites provided by GRTC. Six of the 18 sites were eliminated immediately due to substantial existing development.

STUDY AREA AND SUBAREAS



EXECUTIVE SUMMARY | PROCESS

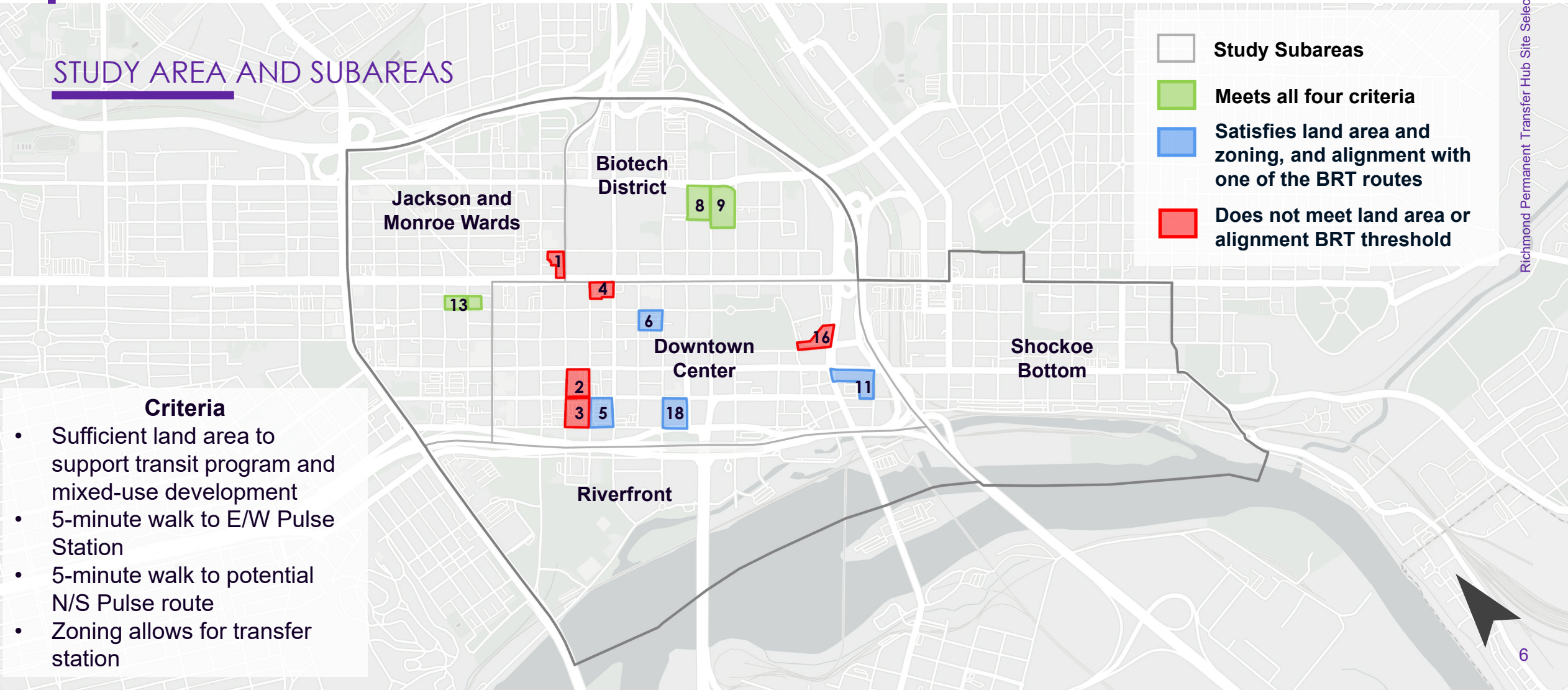
The site selection assessment was completed in three phases, focusing on eliminating non-viable sites, assessing ability to accommodate transit needs, and ability to support development.



EXECUTIVE SUMMARY | INITIAL SCREENING

The initial screening assessment narrowed the focus to seven remaining candidate sites spread throughout Downtown Richmond.

STUDY AREA AND SUBAREAS



EXECUTIVE SUMMARY | IMPLEMENTATION ASSESSMENT

The implementation assessment process identified Sites 8 and 9 the best candidates to successfully meet transit facility needs while also achieving economic development goals

Site 5	Site 6	Site 8	Site 9
<ul style="list-style-type: none">• None of the parcels are publicly owned• Satisfactory sidewalk network• Height restricted by centerline ratio	<ul style="list-style-type: none">• Need to acquire private parcels to make feasible• Only two points of access• Capacity for transit program unlikely	<ul style="list-style-type: none">• All the parcels are publicly owned• Only two points of access• No height restrictions	<ul style="list-style-type: none">• All the parcels are publicly owned• Excellent sidewalk network• No height restrictions
Site 11	Site 13	Site 18	
<ul style="list-style-type: none">• None of the parcels are publicly owned• Capacity for transit program unlikely• Height restricted to less than 5 stories	<ul style="list-style-type: none">• About 1/3 of the parcels publicly owned• Capacity for transit program unlikely• Height restricted by the centerline ratio	<ul style="list-style-type: none">• None of the parcels are publicly owned• Satisfactory sidewalk network• Height restricted by Centerline ratio	<p>Key</p> <ul style="list-style-type: none">■ Advanced■ Eliminated

EXECUTIVE SUMMARY | SITE CONTEXT ASSESSMENT

The candidate sites can support at least 500 multifamily units, 10K to 30K square feet of retail space, and office or institutional uses to support surrounding businesses and organizations.

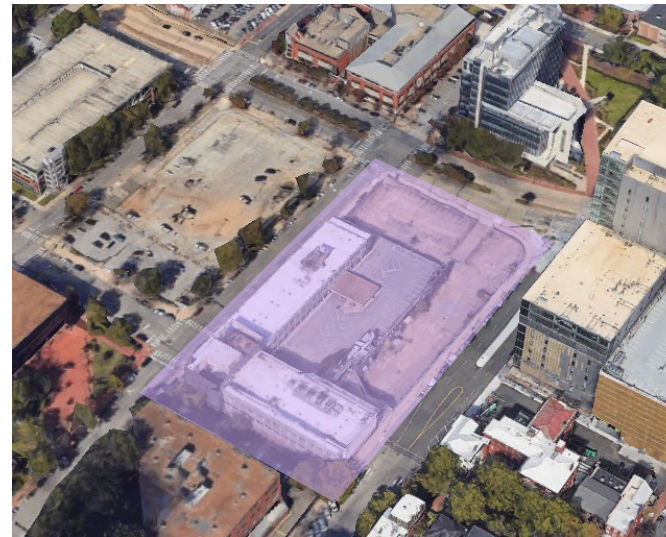
Site 8

- 500 Multifamily units
- 10K SF Retail Space
- Office and institutional uses to support surrounding organizations



Site 9

- 500 Multifamily units
- 30K SF Retail Space
- Office and institutional uses to support surrounding organizations



02

Site Selection Assessment Overview

SITE SELECTION ASSESSMENT OVERVIEW | GOALS

The site selection assessment is designed to provide a clear rationale for ranking the 18 sites and meet GRTC's goals for the Permanent Transfer Hub.



1. Illustrate implementation assessment framework, methodology, and results.



2. Ensure that the site selection criteria is representative of GRTC's goals.

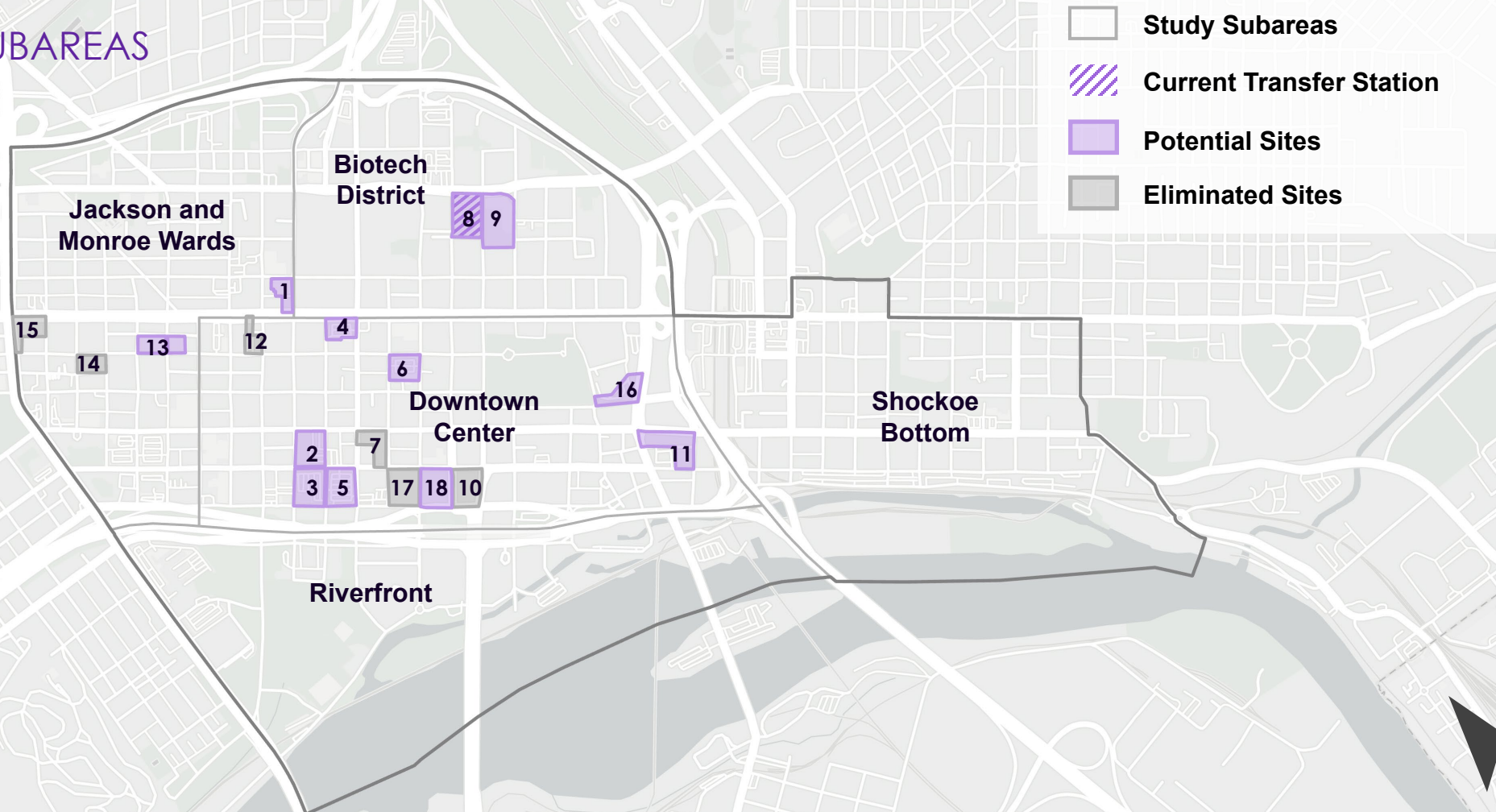


3. Identify up to three prioritized sites for further investigation and concept development.

SITE SELECTION ASSESSMENT OVERVIEW | EXISTING DEVELOPMENT

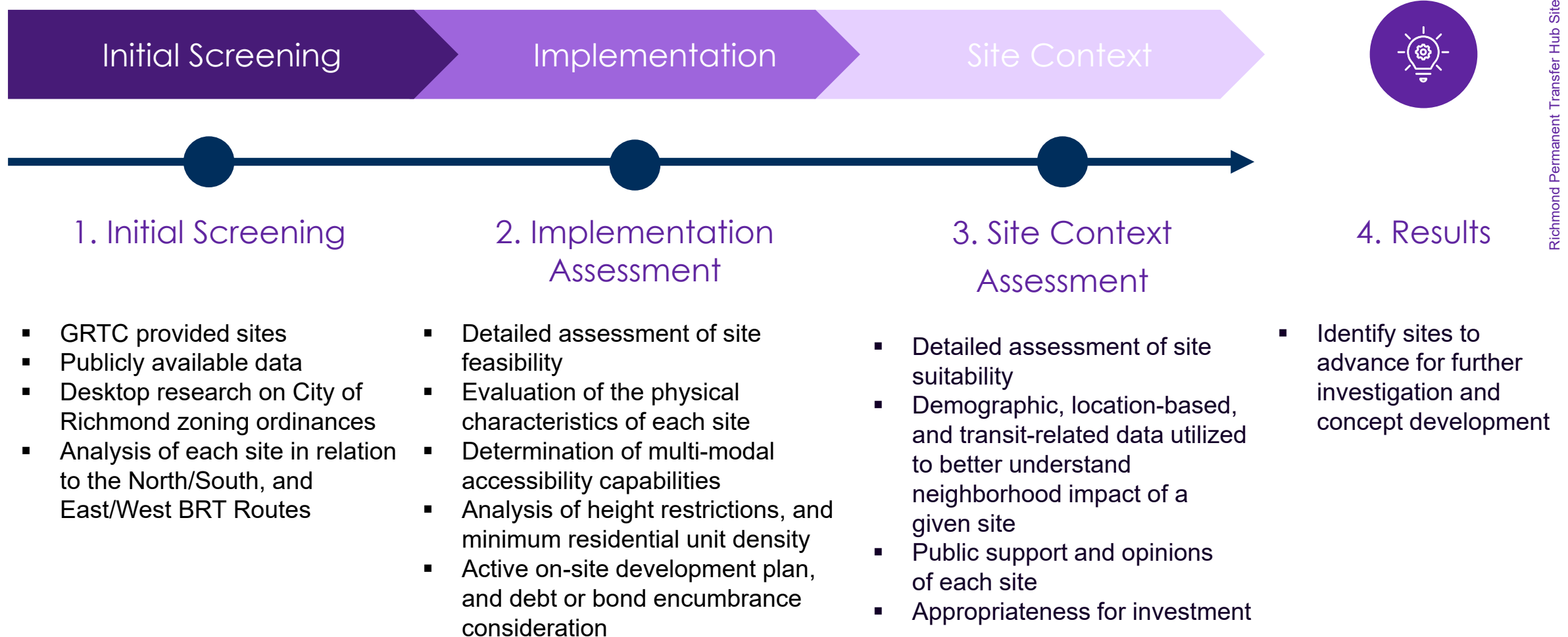
HR&A assessed the viability of the 18 sites provided by GRTC. Six of the 18 sites were eliminated immediately due to substantial existing development.

STUDY AREA AND SUBAREAS



SITE SELECTION ASSESSMENT OVERVIEW | PHASES

The site selection assessment was completed in three phases, focusing on eliminating non-viable sites, assessing ability to accommodate transit needs, and ability to support development.



SITE SELECTION ASSESSMENT OVERVIEW | METRICS

The site selection assessment focused on 26 metrics to identify the best sites based on site analysis, ability to meet transit needs, and ability to support development.

Site Control and Assembly

- Land Area
- Land Ownership
- Land Interest
- Site Topography
- Points of Access
- Community Support

Transit Network Optimization

- Alignment with BRT (E/W and N/S)
- Transit Program Capacity
- Multi-Modal Accessibility

Development Capacity

- Zoning
- Density Allowance
- Residential Unit Density
- NEPA
- Planned Development
- Bond/Debt Flexibility
- Nearby Development
- Nearby Uses
- Quality of Nearby Uses
- Overlay Districts

TOD Potential

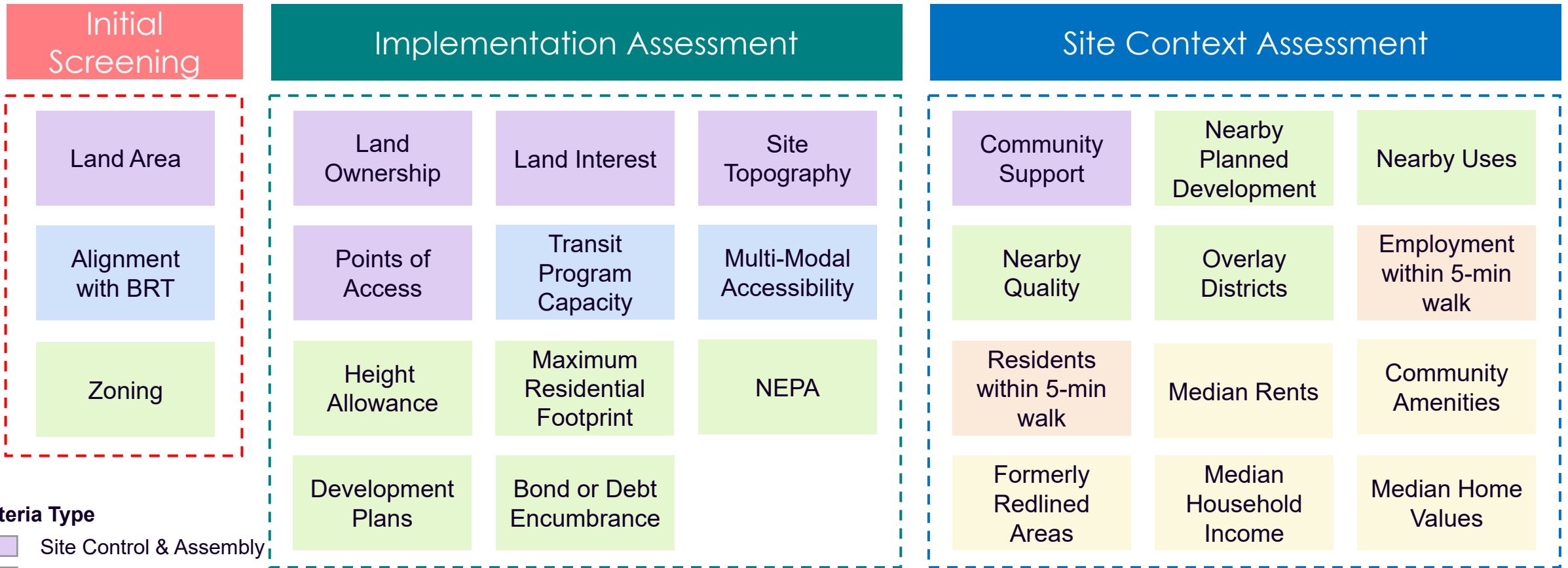
- Employment within 5-minute walk
- Residents within 5-minute walk

Community Benefits

- Nearby Community Amenities
- Identification of formerly “redlined” areas
- Median Household Income
- Median Home Values
- Median Rents

SITE SELECTION ASSESSMENT OVERVIEW | METRICS

The 26 metrics were organized into the three phases based on their implications on basic feasibility, overall implementation, and community context.



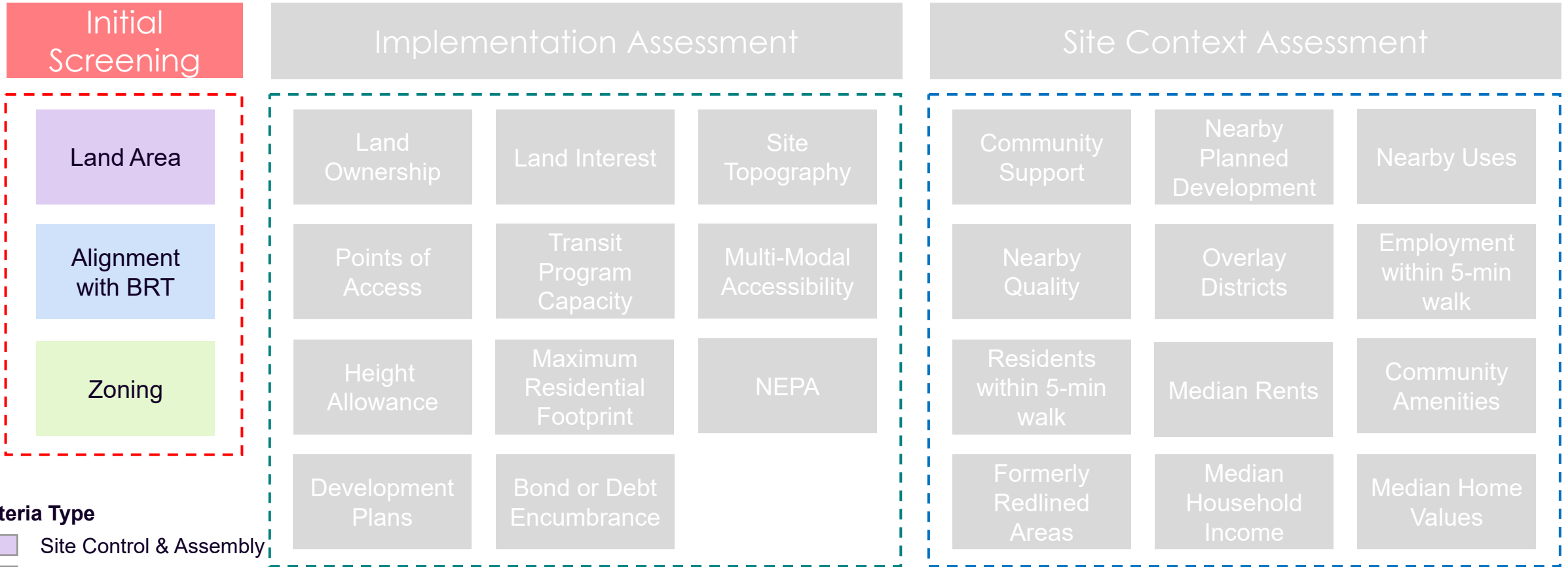
- Criteria Type**
- Site Control & Assembly
 - Transit Network Opt.
 - Development Capacity
 - TOD Potential
 - Community Benefits

03

Initial Screening

INITIAL SCREENING | OVERVIEW

The target sites were first assessed on their ability to accommodate the bus loop and mixed-use development, proximity to BRT, and existing zoning conditions.

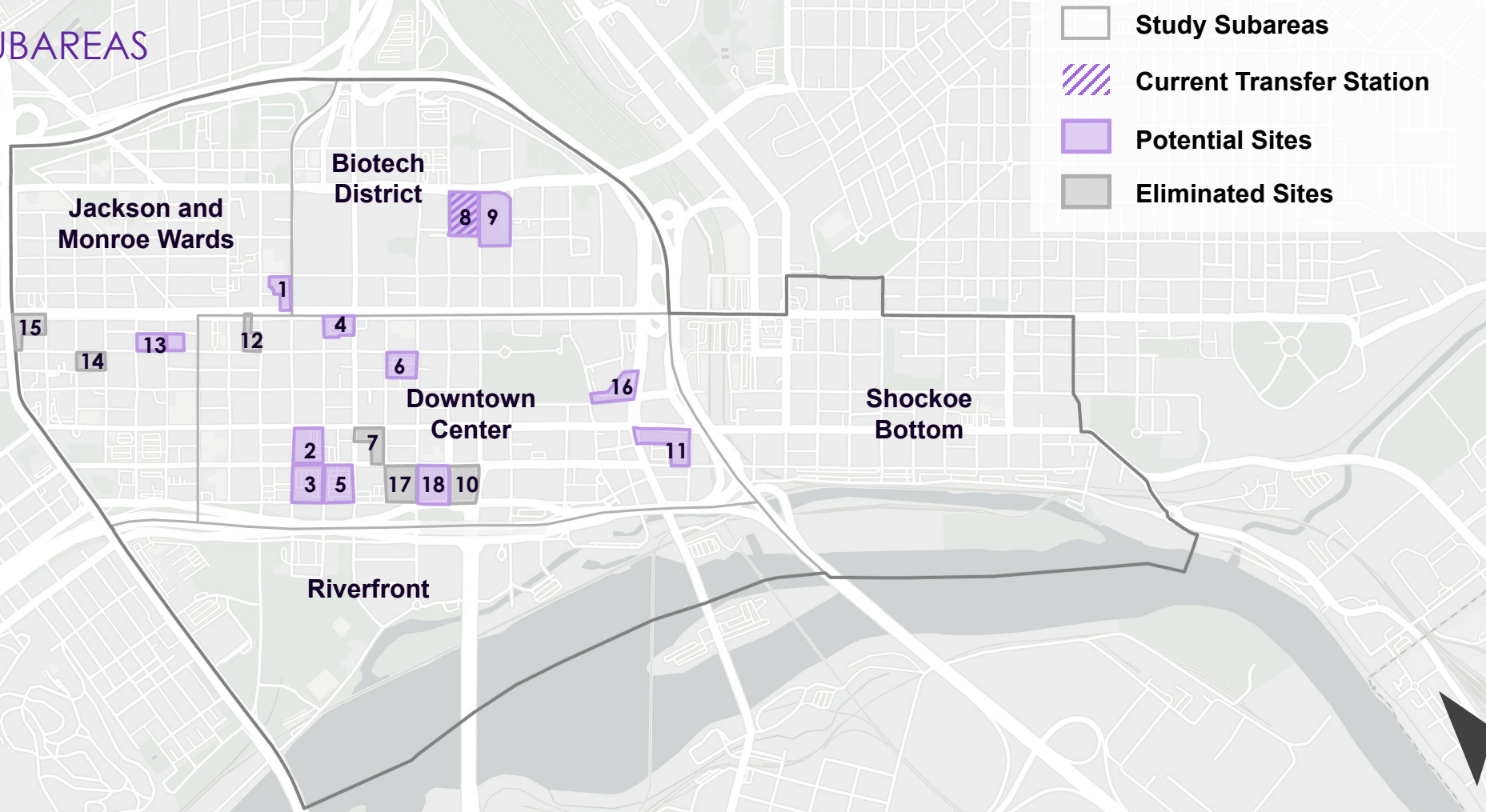


- Criteria Type**
- Site Control & Assembly
 - Transit Network Opt.
 - Development Capacity
 - TOD Potential
 - Community Benefits

INITIAL SCREENING | POTENTIAL VS ELIMINATED SITES

Six of the original 18 sites were eliminated due to recently completed or active development that had occurred since the 2011 GRTC Study.

STUDY AREA AND SUBAREAS



INITIAL SCREENING | SITE CAPACITY

Nine of the remaining sites can support a 10-bay bus loop plus mixed-use development, but only two sites can accommodate a 12-bay bus loop with mixed-use development.

Sites 2, 3, 5, 6, 8, 9, 11, 13, and 18 all have the capacity to support a **10-bay bus loop and a mixed-use program.**

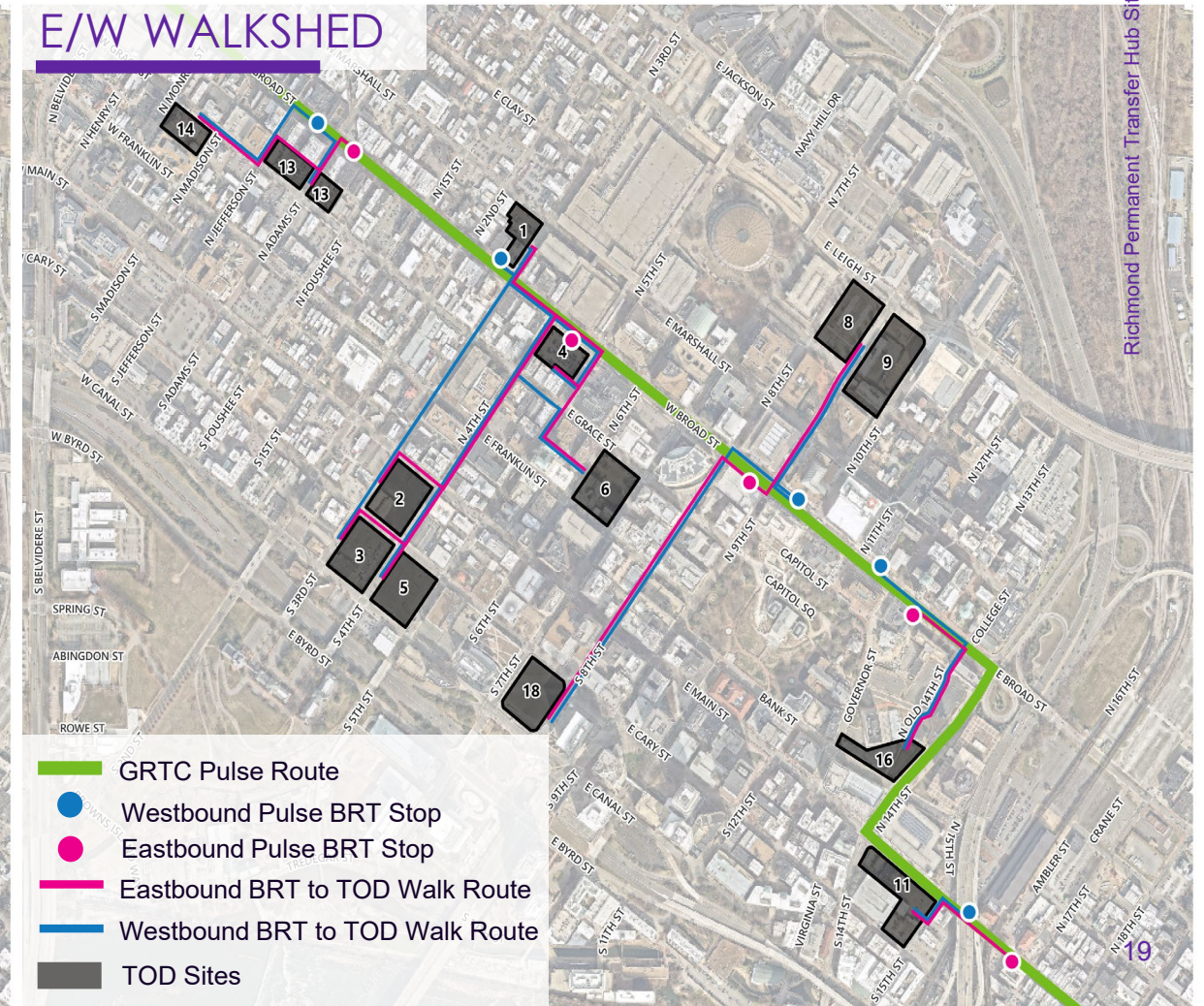
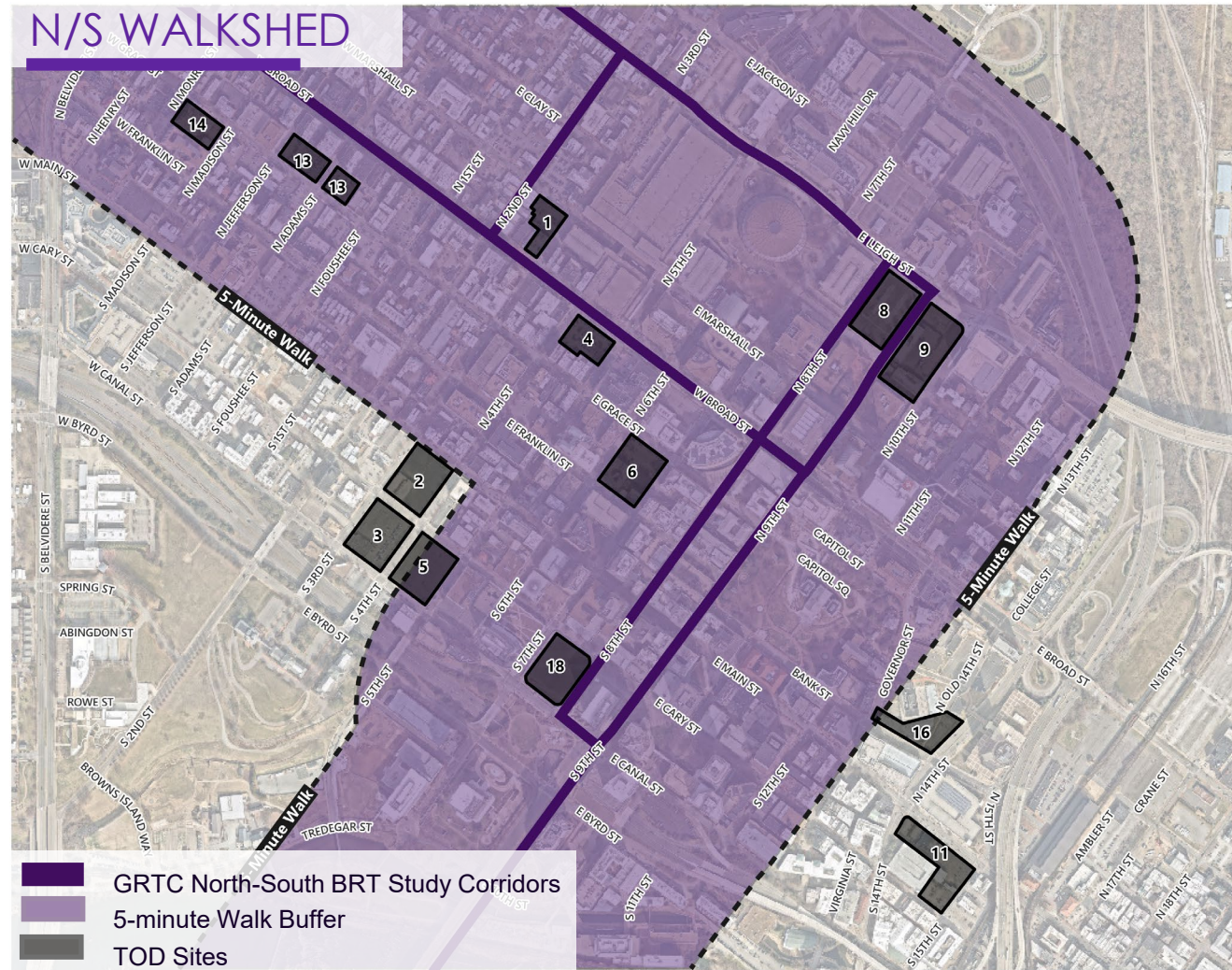
Land area is assessed by determining the residual square feet available when supporting a 10-bay loop. Residual square feet is the amount of space leftover when providing space for site-specific open space and setback requirements, the minimum floorplate required for TOD, the 10-bay loop footprint, and an additional 2,000 SF for required facilities.

¹Site 13 was not eliminated due to land area, because it could accommodate the bus loop and mixed-use development with fewer transit amenities.

Site	Parcel Size	Req'd Open Space & Setback	Min. Floorplate for TOD	10-bay Bus Loop	Operations Space	Residual SF (10-bay loop)
1	39,580 SF	5,166 SF	17,150 SF	52,000 SF	2,000 SF	(36,736)
2	85,310 SF	10,075 SF	17,150 SF	52,000 SF	2,000 SF	4,085
3	84,660 SF	10,023 SF	17,150 SF	52,000 SF	2,000 SF	3,487
4	45,870 SF	6,270 SF	17,150 SF	52,000 SF	2,000 SF	(31,550)
5	85,490 SF	10,089 SF	17,150 SF	52,000 SF	2,000 SF	4,251
6	83,540 SF	9,933 SF	17,150 SF	52,000 SF	2,000 SF	2,457
8	90,500 SF	9,050 SF	17,150 SF	52,000 SF	2,000 SF	10,300
9	131,120 SF	13,112 SF	17,150 SF	52,000 SF	2,000 SF	46,858
11	83,200 SF	5,000 SF	17,150 SF	52,000 SF	2,000 SF	7,050
13	81,540 SF	10,723 SF	17,150 SF	52,000 SF	2,000 SF	(333)¹
16	60,200 SF	8,816 SF	17,150 SF	52,000 SF	2,000 SF	(19,766)
18	84,000 SF	9,970 SF	17,150 SF	52,000 SF	2,000 SF	2,880

INITIAL SCREENING | PROXIMITY TO BRT

Sites 1, 4, 6, 8, 9, 13, and 14 are within a five-minute walk of the existing East/Westbound BRT line and the potential North/Southbound BRT routes.



INITIAL SCREENING | ZONING ALLOWANCE

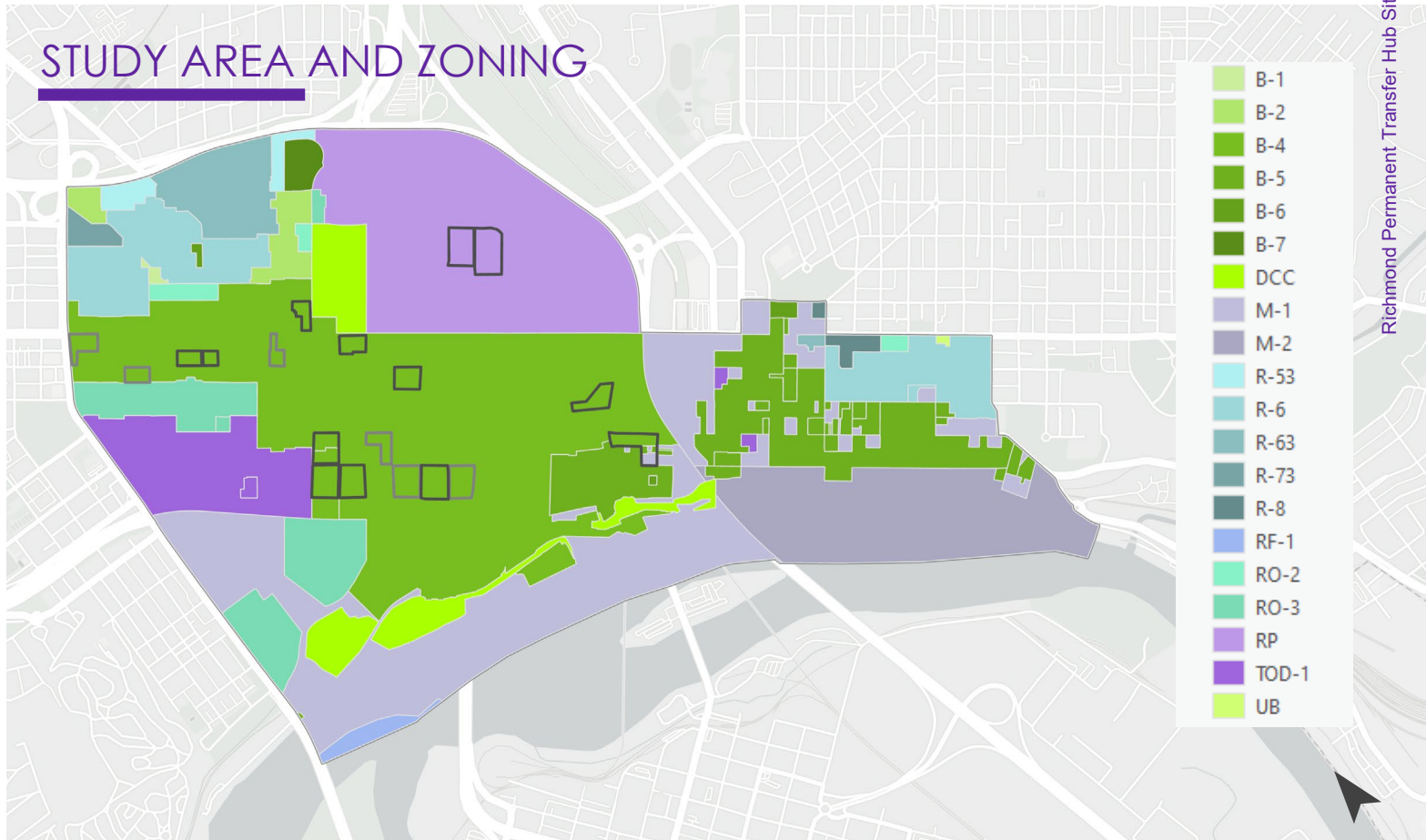
The City of Richmond zoning regulations allow for a transfer hub at all 12 sites.

Zoning Designation

B-4: Allows for a transfer hub by-right
Sites 1, 2, 3, 4, 5, 6, 13, 16, and 18

RP: Allows for a transfer hub by-right
Sites 8 and 9

B-4, B-5, and M-1: M-1 does not allow for a transfer hub, while B-5 allows for a transfer hub under the condition that they are government owned and/or operated facilities.
Site 11



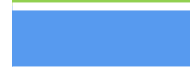
INITIAL SCREENING | RESULTS

Seven sites sufficiently meet the fundamental conditions necessary to warrant additional research, including suitable land area and proximity to the BRT routes.

Site	Site Control and Assembly	Transit Network Optimization		Development Capacity
	Land Area	Alignment with BRT (E/W)	Alignment with BRT (N/S)	Zoning
1	No	Yes	Yes	Yes
2	Yes	No	No	Yes
3	Yes	No	No	Yes
4	No	Yes	Yes	Yes
5	Yes	No	Yes	Yes
6	Yes	No	Yes	Yes
8	Yes	Yes	Yes	Yes
9	Yes	Yes	Yes	Yes
11	Yes	Yes	No	Yes
13	Yes	Yes	Yes	Yes
16	No	Yes	No	Yes
18	Yes	No	Yes	Yes



Meets all four criteria



Satisfies land area and zoning, and alignment with one of the BRT routes

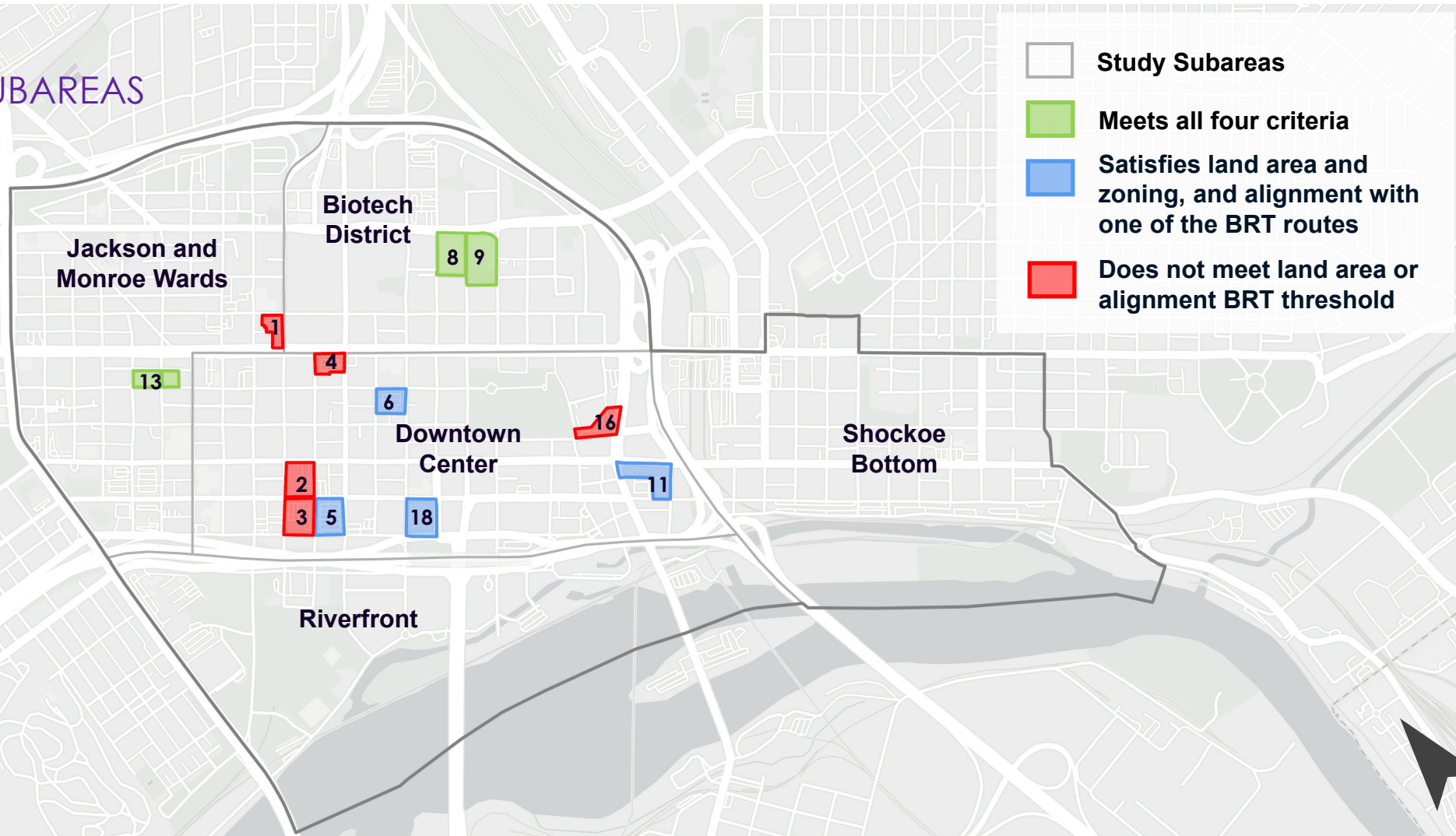


Does not meet land area or alignment BRT threshold

INITIAL SCREENING | RESULTS

The initial screening narrowed the focus to seven remaining candidate sites spread throughout Downtown Richmond.

STUDY AREA AND SUBAREAS

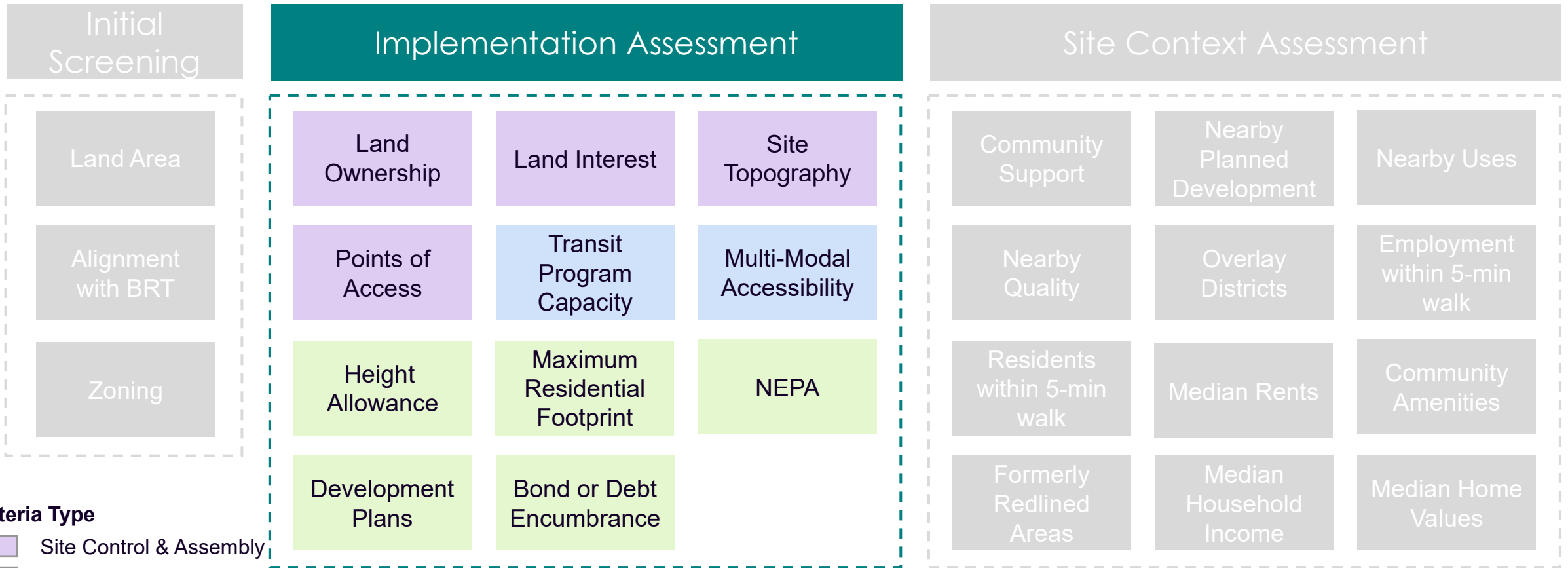


04

Implementation Assessment

IMPLEMENTATION ASSESSMENT | OVERVIEW

The implementation assessment leverages 11 criteria that provide insight into the physical and logistical feasibility of the Permanent Transfer Hub.



- Criteria Type**
- Site Control & Assembly
 - Transit Network Opt.
 - Development Capacity
 - TOD Potential
 - Community Benefits

IMPLEMENTATION ASSESSMENT | SITE CONTROL AND ASSEMBLY

Four criteria were used to understand the ease of acquiring site control and navigating development on-site, including providing multiple points of access for bus activity.

Land Ownership

Given that publicly-owned land is likely less costly, calculating the percentage of each site that's publicly owned indicates which sites may be more cost-prohibitive from a land acquisition standpoint.

Land Interest

Determining whether there's interest describes the extent to which the property owner has been engaged in conversations and is interested in partnering.

Site Topography

Sites with slopes higher than 25% from the right-of-way are unfavorable as they pose a significant cost barrier.

Points of Access

Two or more points of access are preferred, as it allows for greater efficiency operating within the existing transit system.

IMPLEMENTATION ASSESSMENT | SITE CONTROL AND ASSEMBLY

Each of the sites have a reasonable slope and at least two points of access. Sites 6, 8, and 9 have the most publicly-owned parcels.

Site	Land Ownership	Land Interest	Site Topography	Points of Access
5	0%	TBD	Slopes less than 25%	More than two points
6	85%	Potential	Slopes less than 25%	Two points
8	100%	Interest	Slopes less than 25%	Two points
9	100%	Interest	Slopes less than 25%	More than two points
11	0%	N/A**	Slopes less than 25%	More than two points
13	35%	N/A**	Slopes less than 25%	More than two points
18	0%	TBD	Slopes less than 25%	More than two points

**Not assessed because the site is impractical based on other criteria.

IMPLEMENTATION ASSESSMENT | TRANSIT NETWORK OPTIMIZATION

These two metrics determine the ability of the site to accommodate the transit program based on its shape and to accommodate multi-modal accessibility.

Transit Program Capacity

This metric considers both the shape and size of a site, which can have implications for the feasibility of fitting a transit facility on-site. Irregularly-shaped sites provide additional challenges regarding implementation.

Multi-Modal Accessibility

Allows for a better understanding of existing sidewalk and bike network, identifying the site's ability to provide multi-modal access.

IMPLEMENTATION ASSESSMENT | TRANSIT NETWORK OPTIMIZATION

Sites 8, 9, and 18 have capacity for a transit program. Site 5 may be able to accommodate a bus loop, whereas sites 6, 11, and 13 have significant challenges.

Site	Transit Program Capacity	Multi-Modal Accessibility
5	Possibly	Grade: Moderate Continuity: Good Quality: Satisfactory
6	Unlikely	Grade: Minimal Continuity: Good Quality: Satisfactory
8	Yes	Grade: Minimal Continuity: Good Quality: Satisfactory
9	Yes	Grade: Minimal Continuity: Good Quality: Fair
11	Unlikely	Grade: Moderate Continuity: Good Quality: Poor
13	Unlikely	Grade: Minimal Continuity: Good Quality: Satisfactory
18	Yes	Grade: Moderate Continuity: Moderate Quality: Satisfactory

IMPLEMENTATION ASSESSMENT | DEVELOPMENT CAPACITY

Lastly, each site was assessed on its development capacity, including environmental conditions and existing site plan requirements.

Height Allowance

Given that sites are located across four different zoning districts, respective regulations may limit total developable area.

Maximum Residential Footprint

This criteria analyzes whether a site can accommodate the maximum footprint of Wood/Type 3A Podium construction, which is the recent precedent in Richmond.

NEPA

Sites are assessed to better understand existing environmental conditions to ensure compliance with NEPA and avoid additional cost burden.

Development Plans

Any active plans on a given site could pose a barrier to implementation, as it would require incorporation into existing plans or receiving a development plan amendment.

Bond or Debt Encumbrance

Any existing bond or debt encumbrances on a given site pose additional cost burdens.

IMPLEMENTATION ASSESSMENT | DEVELOPMENT CAPACITY

Sites 8 and 9 can accommodate the highest density development. Site 11 has the most significant height restriction. The remaining sites can accommodate medium density.

Site	Height Allowance	Accommodates Maximum Residential Footprint	NEPA	Development Plans	Bond or Debt Encumbrance
5	Centerline ratio	Yes	Nothing apparent	No	No
6	Centerline ratio	No	NRHP Building	No	No
8	No	Yes	Nothing apparent	No	No
9	No	Yes	Being addressed by existing remediation plan	No	No
11	Less than 5 stories	Yes	Nothing apparent	No	No
13	Centerline ratio	No	Nothing apparent	No	No
18	Centerline ratio	Yes	Nothing apparent	No	No

IMPLEMENTATION ASSESSMENT | RESULTS

Sites 8 and 9 are the best candidates to support an implementable project, due to public ownership of land, no height restricts, and multiple points of site access.

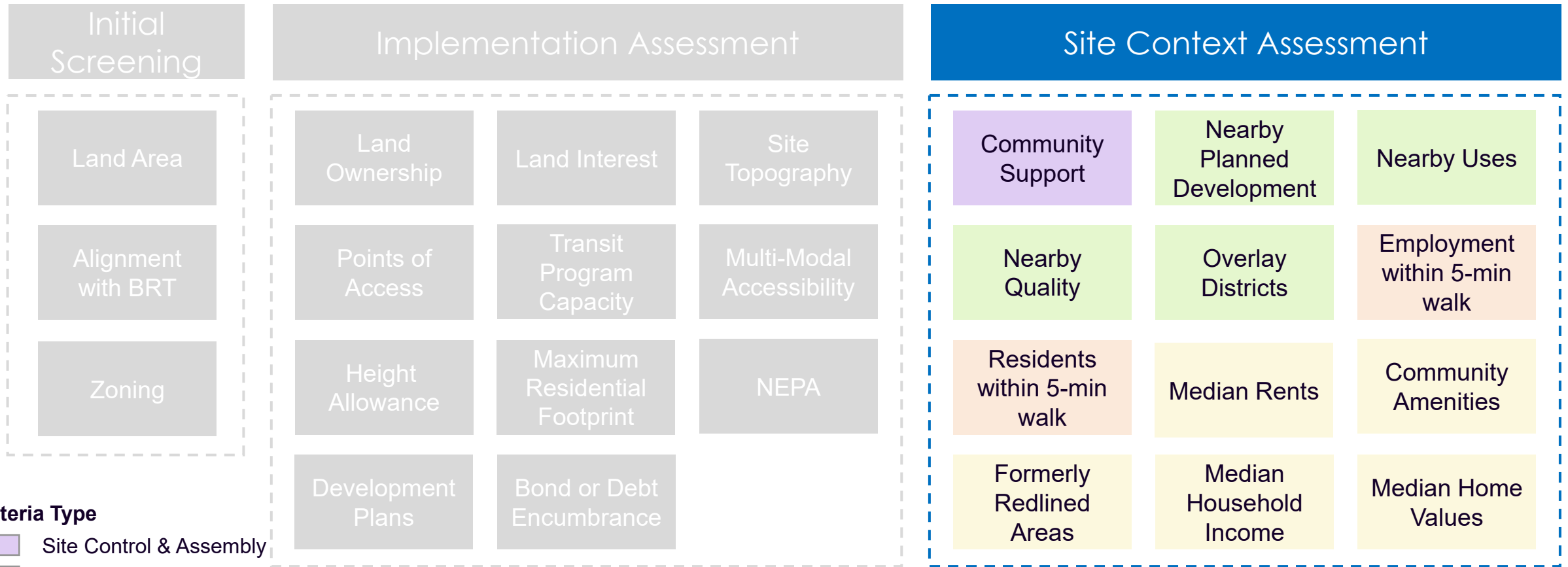
Site 5	Site 6	Site 8	Site 9
<ul style="list-style-type: none">• None of the parcels are publicly owned• Satisfactory sidewalk network• Height restricted by centerline ratio	<ul style="list-style-type: none">• Need to acquire private parcels to make feasible• Only two points of access• Capacity for transit program unlikely	<ul style="list-style-type: none">• All the parcels are publicly owned• Only two points of access• No height restrictions	<ul style="list-style-type: none">• All the parcels are publicly owned• Excellent sidewalk network• No height restrictions
Site 11	Site 13	Site 18	
<ul style="list-style-type: none">• None of the parcels are publicly owned• Capacity for transit program unlikely• Height restricted to less than 5 stories	<ul style="list-style-type: none">• About 1/3 of the parcels publicly owned• Capacity for transit program unlikely• Height restricted by the centerline ratio	<ul style="list-style-type: none">• None of the parcels are publicly owned• Satisfactory sidewalk network• Height restricted by Centerline ratio	<p>Key</p> <ul style="list-style-type: none">■ Advanced■ Eliminated

05

Site Context Assessment

SITE CONTEXT ASSESSMENT | OVERVIEW

Sites 8 and 9 were assessed further to understand how each site might navigate economic conditions and provide community benefits.



- Criteria Type**
- Site Control & Assembly
 - Transit Network Opt.
 - Development Capacity
 - TOD Potential
 - Community Benefits

SITE CONTEXT ASSESSMENT | SITE 8

In addition to being the current transfer station, Site 8 is closest in proximity to the City Center redevelopment which is expected to include a mix of uses including multi-family housing.

Employment*	8,800
Households*	<10
Community Amenities	Medical offices
Planned Development	Office (38%) Hotel (62%)
Nearby Uses	Retail (4%) Office (82%) Hotel (14%)
Nearby Quality	Class A (10%) Class B (90%)
Vacant Land	92,500 SF



Source: Esri

*Within 5-min walk

SITE CONTEXT ASSESSMENT | SITE 8

Site 8 could provide housing and retail options for nearby workers in the Biotech District, while bringing households back to a neighborhood that was decimated by urban renewal.

Community Support Stakeholders expressed support for maintaining the current location of the transfer station.

Equity Considerations Site 8 is south of formerly redlined parcels and the former Navy Hill neighborhood. Residential development can help counteract trends caused by urban renewal.

Formerly "Redlined" Areas Adjacent

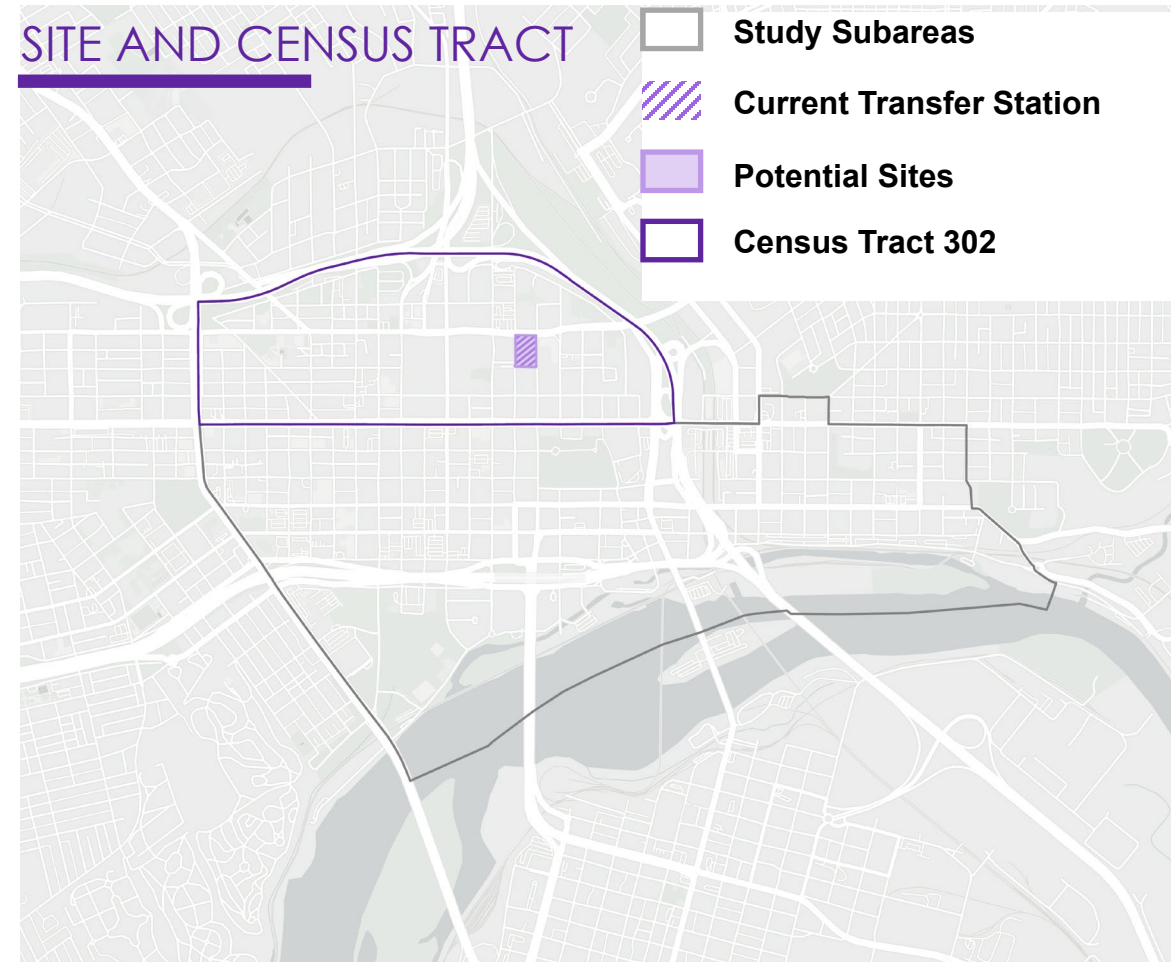
Median Household Income* \$34,600

Median Home Values* \$307,900

Median Rents* \$990

Source: American Community Survey 2021

*Census Tract



SITE CONTEXT ASSESSMENT | SITE 8 HIGHEST AND BEST USE

With an unrestricted potential developable area, Site 8 has great potential to support a significant development with a diverse mix of uses.

Vertical Development	500 Multifamily Units 50,000 SF Office/Institutional Space
Ground Level Retail	10,000 SF
Number of Bus Bays Supportive	Up to 10 Bays
Integration with Transit Program	Maintains current location of the transfer station, but requires temporary displacement of the transfer station during construction
Transit Supportive Programming	This site would benefit from investment in residential uses, and a wide variety of goods and services as they are scarce.
Density Bonuses Available	No
Zoning Implications	No Zoning Change Needed



SITE CONTEXT ASSESSMENT | SITE 9

Site 9 has the largest population of daytime workers and is dominated by office space. However, there is no proximate housing to allow those workers to live near their workplace.

Employment*	27,700
Households*	<10
Community Amenities	Medical offices
Planned Development	Office (38%) Hotel (62%)
Nearby Uses	Retail (4%) Office (88%) Hotel (8%)
Nearby Quality	Class A (7%) Class B (93%)
Vacant Land	92,500 SF



Source: Esri
*Within 5-min walk

SITE CONTEXT ASSESSMENT | SITE 9

Site 9 is immediately adjacent to the VCU medical district, providing an opportunity for Site 9 to provide housing and retail offerings for VCU workers.

Community Support Stakeholders expressed support for the site. Not having to displace the current transfer station was appealing.

Equity Considerations Site 9 is south of formerly redlined parcels and is proximate to the former Navy Hill neighborhood. Residential development can help counteract trends caused by urban renewal.

Formerly "Redlined" Areas Adjacent

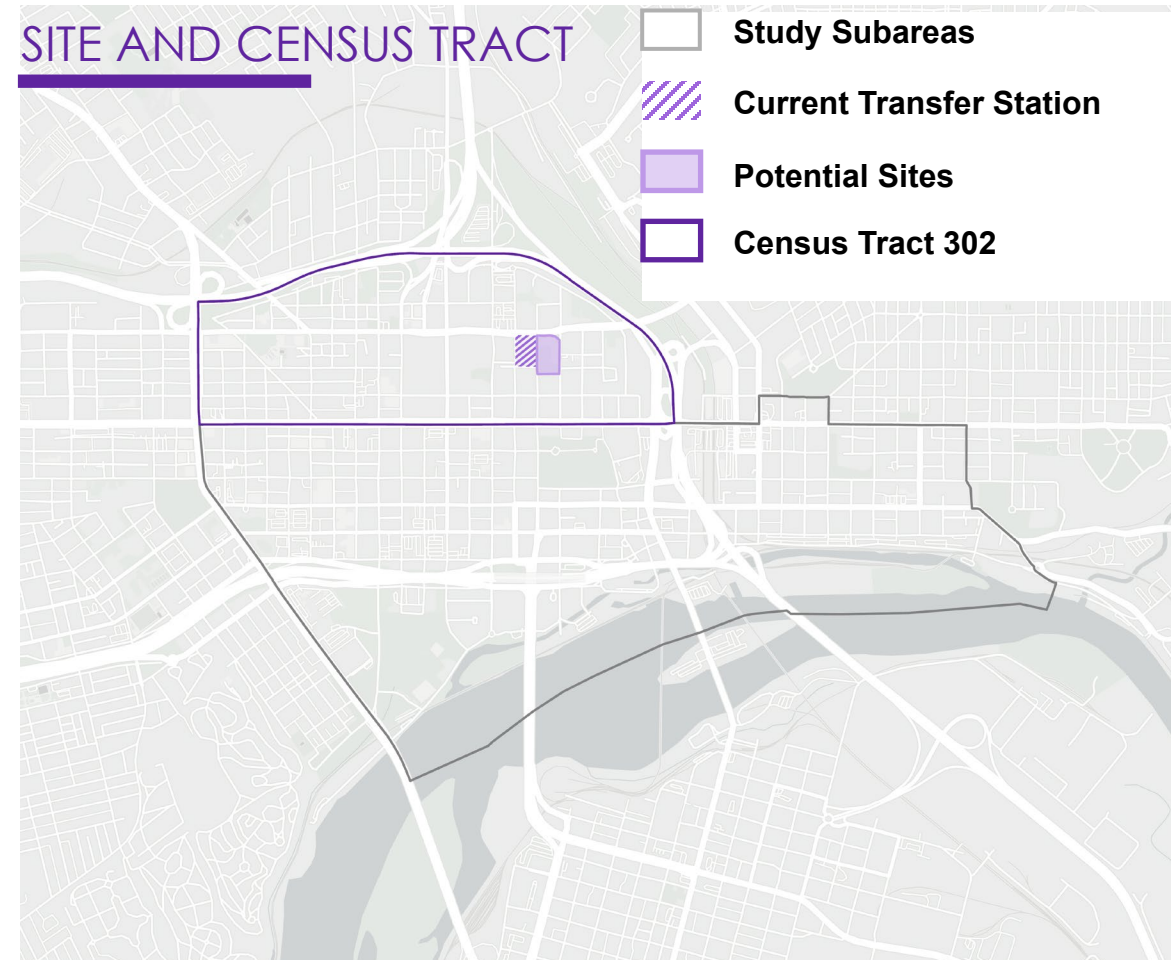
Median Household Income* \$34,600

Median Home Values* \$307,900

Median Rents* \$990

Source: American Community Survey 2021

**Census Tract*



SITE CONTEXT ASSESSMENT | SITE 9 HIGHEST AND BEST USE

Site 9 is slightly larger than Site 8, providing more flexibility to accommodate the Permanent Transfer Hub and associated overbuild.

Vertical Development	500 Multifamily Units 50,000 SF Office/Institutional Space
Ground Level Retail	30,000 SF
Number of Bus Bays Supportive	Up to 12 Bays
Integration with Transit Program	Maintains proximity to existing transfer station and allows the transfer station to remain in its existing location during construction.
Transit Supportive Programming	Investment in residential uses, and a wide variety of goods and services as they are scarce.
Density Bonuses Available	No
Zoning Implications	No Zoning Change Needed



SITE CONTEXT ASSESSMENT | COMMUNITY FEEDBACK

Stakeholders supported locating the Permanent Transfer Hub at Sites 8 or 9, citing connection with the City Center development and continuity with the existing transfer station.

SITE 8	SITE 9
<p data-bbox="563 505 1997 696">“Sites 8 and 9 are far from most downtown destinations today unless you’re a student, and the lack of people makes it feel less safe. However, the City Center plan could change this area a lot.”</p>	
<p data-bbox="563 743 1997 865">“These are the biggest sites – they would be good for high rises, larger amenities, or could help add green space that’s missing from downtown.”</p>	
<p data-bbox="563 912 1220 1090">“I like where the bus transfer station is today, and I’d like to keep this location.”</p>	<p data-bbox="1342 912 1997 1090">“Using this site, we won’t need to transfer on the street again while the station is being built”</p>
	<p data-bbox="1342 1138 1997 1316">“Removing the building here can reconnect Clay St and the interesting streetscapes nearby.”</p>

SITE CONTEXT ASSESSMENT | TRANSFER STATION SURVEY

From the public outreach conducted by GRTC, 72 respondents provided insightful comments regarding desired enhancements and additions to the new transfer station.

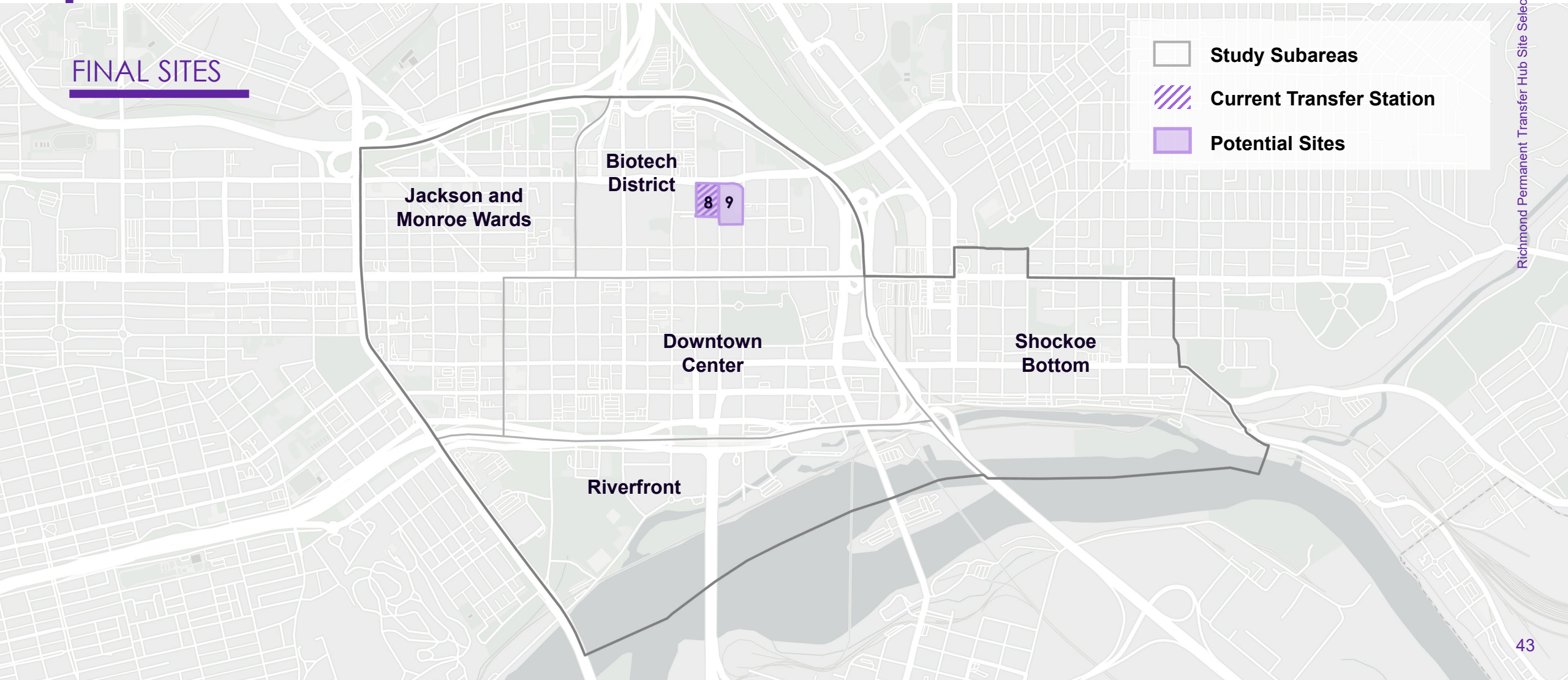


06

Moving Forward

MOVING FORWARD | FINAL SITES

Based on the 26 criteria used in the site selection assessment, sites 8 and 9 are the preferred options for developing the Permanent Transfer Hub.



FINAL SITES

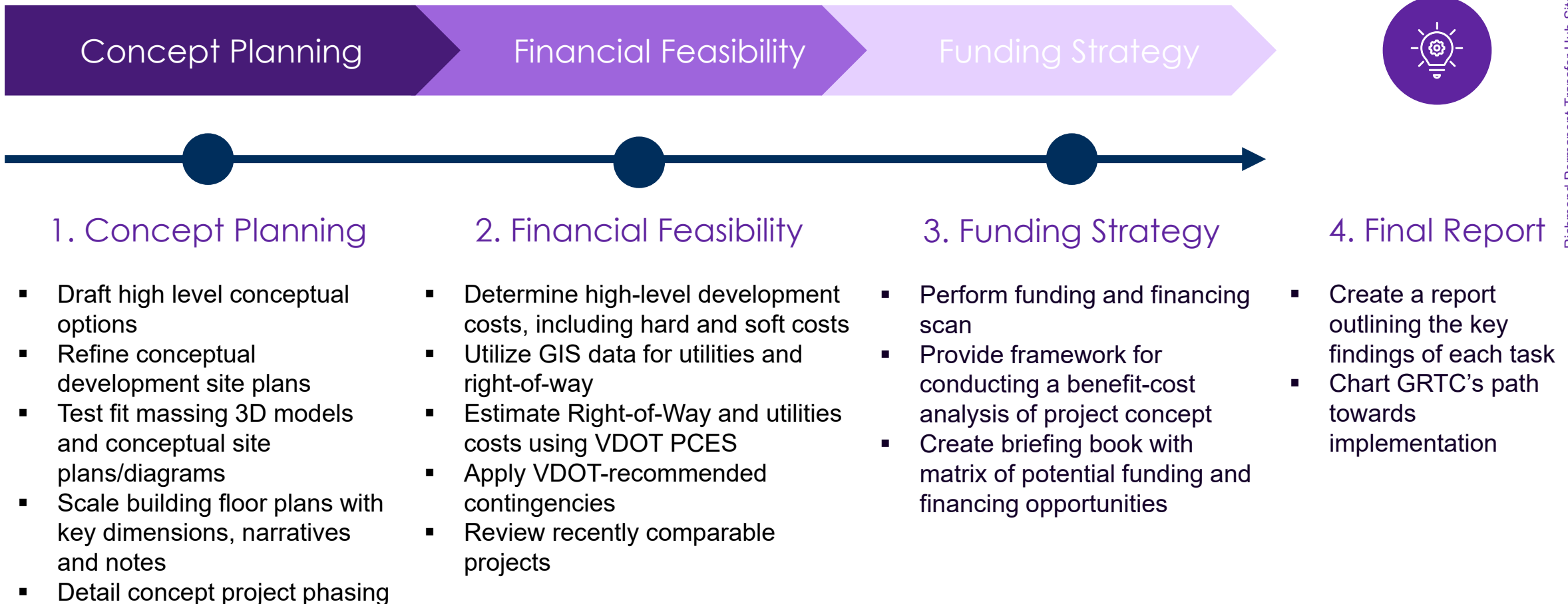
MOVING FORWARD | STRENGTHS AND WEAKNESSES

Site 9 is slightly larger than Site 8, providing more flexibility for accommodating the Permanent Transfer Hub. However, Site 9 has more environmental and development timeline challenges.

	SITE 8	SITE 9
PROS	<ul style="list-style-type: none">• Alignment with both BRT routes• All the parcels are publicly owned• Proximity to streets slates for green street design• Aligns with envisioned City Center plan	<ul style="list-style-type: none">• Alignment with both BRT routes• All the parcels are publicly owned• More than two points of entry• Proximity to streets slates for green street design• Avoids displacement of current transfer station• Aligns with envisioned City Center plan
CONS	<ul style="list-style-type: none">• Only two points of entry• Current transfer station would need to be temporarily relocated during construction• Potential sacrifice of bays along E side to allow for frontage on one side	<ul style="list-style-type: none">• Challenges with grade of 10th St• Demolition of existing structure could delay timing

MOVING FORWARD | NEXT STEPS

Sites 8 and 9 will be advanced through three additional phases to flesh out potential conceptual designs, evaluate financial feasibility of site programming, and identify applicable funding sources to support implementation.



Downtown Richmond Permanent Transfer Hub

Site Selection Assessment

February 2024