



JAMES RIVER PARK SYSTEM *MASTER PLAN*

16 OCTOBER 2019

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DESIGN TEAM

VHB

HARGREAVES ASSOCIATES

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WELCOME



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WELCOME

This is the James River Park...

Preface

The James River Park System Master Plan (JRPS MP) follows a familiar path established by the Downtown Plan in 2009, and the Richmond Riverfront Plan of 2012. This master plan is complementary to both preceding efforts and aims for similar adoption by the City Council upon conclusion. The likely administrative mechanism for adoption is as a stand-alone Planning Commission resolution, and City Council ordinance.

Upon the anticipated completion and adoption of Richmond 300 in 2021, both the earlier Riverfront Plan and this JRPS Master Plan will roll up into Richmond 300 as a single comprehensive plan. The JRPS MP differs from its predecessors in one distinct way by focusing on the entirety of the James River Park System whereas the earlier studies zoomed in solely on the downtown portion. In this one important respect, the JRPS MP is an overlay to the preceding plans while extending the focus of planning upriver along the James River.

Premise

The James River Park System is the finest urban wilderness in the United States. The JRPS has transformed the City of Richmond, and has in turn defined residents identity. The James River has helped shape the City of Richmond and is a critical part of the City's history and culture. As emphasized in Tyler Potterfield's book *Nonesuch Place: A History of the Richmond Landscape*, the river is 'the central element around which all other aspects of the Richmond landscape more or less revolve, and without the river Richmond would not warrant the appellation of "Nonesuch." The James River Park System, at more than 600 acres extending from Ancarrow's Landing to the Huguenot Flatwater, is the largest of the Richmond municipal parks. The total acreage balloons to nearly 1,200 acres by including the adjacent and abutting City properties managed by allied utility and public works departments that are amenable to park use and connections. The park is the most heavily visited city park with nearly two million visitors in 2017, the majority living beyond city limits. The primary attraction of the park are the more than 22 miles of interconnected trails, open to bikes and foot traffic. The trails range in difficulty from novice to expert in terms of the comparative ease of passage and technical challenges. The trail network navigates along both banks of the James River, affording views and access to the river with ample non-motorized watercraft activity. The Park was recently named one of the top six river parks in the United States by outdoor retailer REI.

Two key physical characteristics of the JRPS are:

Challenging, rocky topography, corresponding to the Fall Line of the James River

The park remains largely 'wild,' following decades of post-industrial indifference and regeneration of dense vegetation along the banks of the river

These two characteristics, among many others, drive the public perception of the JRPS as a compelling recreational landscape at the heart of the capital city and the broader region: a gem hidden in plain sight. The JRPS is by far the most popular attraction in the City of Richmond, and overuse is always a constant threat.

The JRPS generates nearly \$33.5M in economic activity, according to VCU (<http://files.constantcontact.com/db3a319f001/4d802e0f-ccb4-4093-82c4-047e9c4099a6.pdf>). Paradoxically, the staffing and budget for the park is surprisingly low. Correspondingly, capital improvements have been decidedly low-level, partially as a function of the restriction on impervious surface which the conservation easement places on about 280 acres of the Park. As such, park planning has focused on conservation and protection of existing natural and cultural resources while simultaneously maintaining quality recreational opportunities. This trifecta of abundant natural, cultural and recreational resources draws increasingly more visitors, exacerbating the wear and tear on the existing facilities, while fueling the demand for still more physical access.

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The JRPS has previously commissioned and participated in a number of studies and designs independently solving localized issues and upgrades. These prior efforts were jointly executed by the JRPS management and the many supporting groups with a vested interest in keeping the JRPS wild. These efforts have occasionally run concurrently and in some cases have not yet culminated in completed construction. It is within this context that the Friends of the James River Park System has partnered with the City to commission the first master plan in more than fifty years.

The purpose of the James River Park System (JRPS) Master Plan is to provide guiding principles to preserve, protect, and properly maintain the Park for years to come. The Master Plan is also a voice of the users and future users of the Park on how best to maintain and enhance the quality of the Park experience. This Park offers a curative, restorative experience: immersion in nature. This experience carefully balances nature and adventure as a counterpoint to urban life, but located in the heart of the Richmond. While the master plan will be recommending and setting forth principles to follow, the main goal of the plan is to preserve the wilderness in the Park.

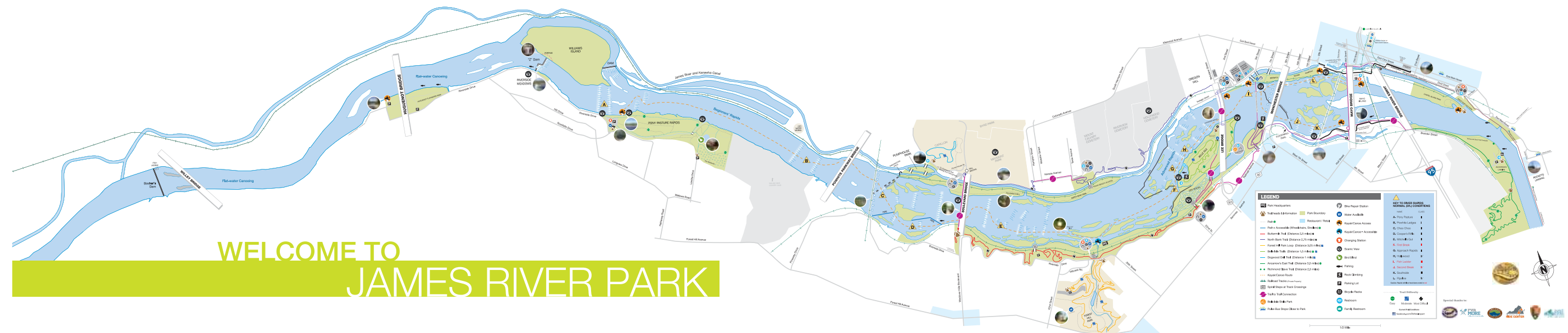
The JRPS has a fascinating history and has nurtured an amazing urban wilderness. From once being unsafe and unusable, the James River and the Park have developed into a beloved part of the City of Richmond. The previous Park Master Plan was adopted in 1968 that planned for seven years of development within the Park. With over 50 years passed since the first Park Master Plan was adopted, there have been many evolutions in the Park, mainly attributed to the user's participation, as well as the number of visitors steadily increasing. The park and the river are also major draws and reasons for people to live and work in the city. However, as the Park grows in popularity and the number

of visitors increases, the sustainability and maintenance of the Park grow harder to keep up with, which calls for an updated Master Plan.

The Park is the crown jewel of the region, and enjoys incredible support. Volunteer groups formed by citizens of the City of Richmond and the surrounding counties, as well as the Richmond City government have been key components in maintaining the natural feel of the Park and protecting areas from overdevelopment and maintaining that the Park be open and free to the public. With the Park being open and free there's risk and evidence of misuse of the Park. The Park has inadvertently taken on a "loved to death" culture where park visitors are happy to visit and use what the Park has to offer, however many visitors are unaware of the lasting impacts they leave when they misuse the Park and River. It is the responsibility of each park goer to protect and preserve this crown jewel by learning how to appropriately use the Park.

The Master Plan includes recommendations and guiding principles for a series of topic areas including: natural resources, transportation and access, trails and greenways, park buildings, park activities, park expansion, and identified focus areas. The Master Plan is not set in stone and is made to be flexible with the passing of time. The aim is that using the proposed guidelines will preserve the Park for future generations of Richmond citizens to use and enjoy the Park as past generations have.





A DIVERSE ATTRACTION

The James River Park System rests on both banks of the James River, stretching nearly the length of the city limits of Richmond, Virginia. The river has been the driver of so much cultural history, from the earliest settlements to transportation hub, and industrial production: all positioned at the rapids. The Fall Line is fundamentally a geologic zone of topographic diversity in turn concentrating a varied network of flora and fauna that has flourished along this stretch of the James River. This riverine landscape has suffered ecologically at times and rebounded in the more recent quarter century, evolving into what Outdoor Magazine called the “best river town in America,” in 2012, given the varied recreational opportunities nestled within the revitalizing landscape of the James River.

While there have been many changes within the Park, there remain historic buildings, landmarks, and preserved areas within the park, some of which were vital to the function of the City and have been players in shaping the Country’s history, one example being the Slave Trail. Most of these areas are identified as historic structures or are protected under the Park’s conservation easement, preventing development and destruction. Something else that has stood the test of time is the feeling and experience of being immersed in nature in an urban setting as Richmond. The Park is truly unique and offers Park goers a natural respite in the urban concrete jungle. The wild environment has formed the park into an urban adventure park, which offers a variety of activities and programs for varying ages and skill levels. Bikers, hikers, climbers, fishers, water activity enthusiasts, students, and nature lovers, flock to the Park to utilize the single-track trails, white-water rapids, flatwater sections, climbing walls, fishing areas, and untamed areas, to fulfill their nature and adventure recreation needs.

About this Document

The JRPS MP seeks to connect Richmond residents with the James River. The first and only dedicated JRPS master plan was authored in 1968 by Abbott & Associates. More recent efforts were kick-started by the Richmond Downtown Plan 2007-2009, focused on downtown redevelopment opportunities and urban housing, transportation engineering and economic development of the historic center, capitalizing on pre-Great Recession expansion in the surrounding counties. The Dover, Kohl & Partners-authored Downtown Plan study area stretched from I-95 in the north to a broad swath of Manchester on the south of the James River. This plan area spanned the riverfront between the Lee Bridge and Orleans Street downriver. A key Downtown Plan recommendation advocated for a detailed plan for both banks of the riverfront between the Lee Bridge and Ancarrow’s Landing.

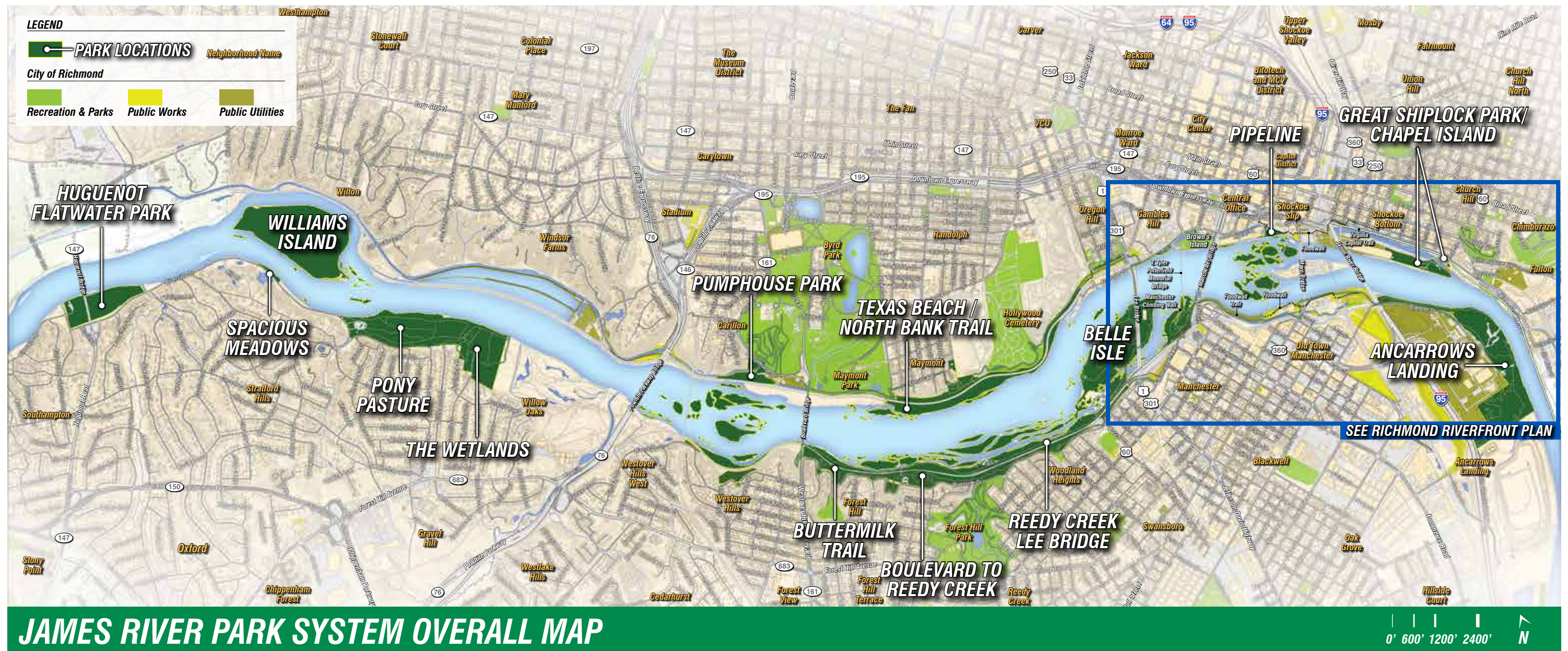
The Hargreaves Associates-authored Richmond Riverfront Plan began in 2011, balancing public open space improvements and private parcel redevelopment opportunities along the same Lee Bridge to Ancarrow’s Landing stretch of the James River. The Plan was particularly focused on establishing pedestrian and cycling connections to and along the riverfront, while concurrently encouraging infill development on underutilized post-industrial parcels near the river. The Richmond Riverfront Plan was initially adopted by City Council in 2012, with the Downriver chapter amended by City Council in 2017. The first implementation project was completed in 2016 as the T. Tyler Potterfield Memorial Bridge: an adaptive reuse of the 1901-era Brown’s Island Dam for direct pedestrian and cycle access between downtown and Manchester. Further study commenced on two Downriver parcels at the former Lehigh Cement parcel and the

Intermediate Wharf parcel, as well as conceptual study of the Missing Link trail along the south bank of the James River.

In 2018, the Friends of the James River Park System selected VHB and Hargreaves Associates to build upon the positive momentum of both the Richmond Riverfront Plan and the completion of the T. Tyler Potterfield Memorial Bridge project to provide a 21st century master plan for the James River Park. Whereas the Downtown Plan had focused primarily on redevelopment, and the Riverfront Plan balanced redevelopment with open space improvements, the James River Park Master Plan aims to swing the needle near-exclusively toward park facility improvements and connective strategies, continuing access to and along the river. Where the earlier two planning efforts extended no further upriver than the Lee Bridge, the James River Park Master Plan purview extends from Ancarrow’s Landing upstream to the Huguenot Bridge, with a primary focus upriver of the Lee Bridge. The intent is that this effort is a widened lens on the James River Park System proper, without duplicating or significantly diverging from the initiatives adopted by the Riverfront Plan, and no focus on adjacent private parcel redevelopment. This plan also builds upon previous and ongoing work related to local and regional greenway planning, bicycle and pedestrian facilities, natural resources and conservation, and site-specific infrastructure improvements. To help guide the Park staff, the FOJRP, and the consultant team, a Steering Committee (comprised of representatives from diverse stakeholder groups) and a Technical Committee (comprised of City staff from various departments) helped oversee the development of the plan.

The James River Park Master Plan has relied on extensive public engagement to help establish objectives for the plan, assess priorities from previous and

JAMES RIVER PARK SYSTEM MASTER PLAN



ongoing work, and suggest strategies to achieve the plan objectives. Early in the planning process, the study team conducted public meetings in each of the nine City Council Districts, one general public meeting, and several smaller-scale pop-up meetings. The meetings allowed people to interact with the study team, fill out project questionnaires, and draw on maps. In addition, an online survey tool helped expand the outreach effort, and resulted in over 2,300 completed surveys. Following this public process, the study team summarized the input received and reviewed it with the FOJRP, the Steering Committee, and the Technical Committee.

A word on master plans. Master planning is not a prescription for exactly what to fund or construct. This master plan is a living document, pointing the way forward based upon substantial public input in 2019, as a snapshot in time of where James River Park System is headed in the years ahead. A master

plan is intentionally adaptable and subject to changing demands as conditions change, constraints develop, and opportunities arise. Timelines and priorities will shift. Some projects contained within will necessarily take longer to implement than others, and new projects will undoubtedly arise. The purpose of the James River System Master Plan is a statement of principles for which the Park stands for, and to is to establish a single reference point for capital planning and future implementation.

Key challenges discussed in 2018-2019 include sharply rising visitation in the short term and the observed impacts of a changing climate. Increased park traffic in all modes coupled with increased storm water flows and flooding events with greater frequency and ferocity exacerbate physical wear and tear, often quickly. Both merit deeper investigation for how best for the Park to adjust priorities and demands to best serve City residents, and to ensure the Park

thrives in perpetuity. The core mission of the JRPS and the driving impetus of this master plan is to: **Conserve the James River Park System as a sustaining natural counterpoint to urban life, balancing both active recreation and passive enjoyment of the Park while preserving and protecting the natural environment.**

This immersion in the natural world drives the user experience of visiting the James River Park System. The James River corridor has been repeatedly distorted by transport, industry, war, and severe pollution, each with a staggering scale and impact. Richmond residents have mobilized to swing the pendulum in the opposite direction, favoring conservation and recreation, acknowledging the intangible qualities of exploring the natural world have a restorative and transformational impact on one's health.



GOALS & OBJECTIVES

EQUITABLE ACCESS

Facilitate greater access for diverse visitors to and through the Park and the James River

Provide connections between non-contiguous Park properties and to regional greenways

ENVIRONMENT AND STEWARDSHIP

Conserve wilderness by protecting un-programmed areas for discovery and adventure

Protect sensitive natural resources, reduce invasive species, and restore degraded habitat within the Park and the James River

Increase Park conservation easement coverage

Preserve cultural and historic assets in the Park

EDUCATE AND EXPAND

Educate school children and visitors on the history, natural resources, and conservation aspects of the Park and the James River

Expand and sustain recreational opportunities within the Park, where appropriate

Acquire additional parcels to improve connectivity and increase the size of the Park



2 PUBLIC ENGAGEMENT



PUBLIC ENGAGEMENT

A Stakeholder-Driven Plan...

Development of the JRPS MP relied on an extensive public outreach and engagement effort. This included neighborhood meetings, general public meetings, an online survey, pop-up meetings, and social media outreach. The process resulted in early and effective engagement that helped guide development of the Master Plan.

At the beginning of the planning process, the study team conducted neighborhood meetings in each of the nine City Council Districts, as follows:

- January 22, 2019 – 9th District
- January 29, 2019 – 7th District
- February 7, 2019 – 4th and 5th Districts
- February 12, 2019 – 2nd District
- February 19, 2019 – 8th District
- February 27, 2019 – 1st District
- February 28, 2019 – 3rd District
- March 5, 2019 – 6th District

These meetings consisted of an introductory presentation followed by an open house discussion during which meeting attendees were able to interact with the study team, fill out questionnaires, and draw on maps.

During this same timeframe, study team members and committee stakeholders conducted several smaller scale pop-up meetings, to help engage people in the process and encourage people to complete the survey questionnaire.

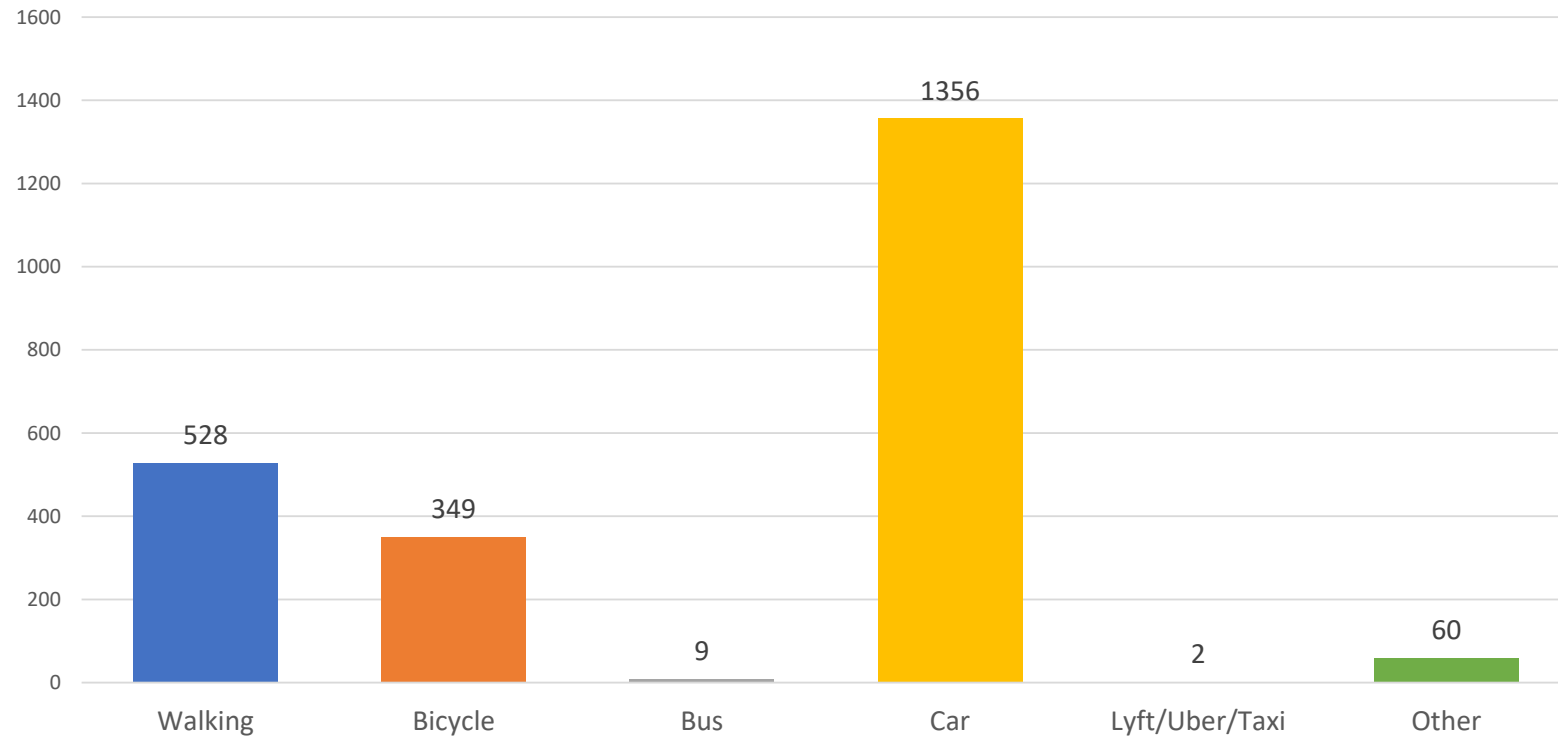
Finally, a general public meeting was held on March 6, 2019, to conclude the initial public outreach effort, and an additional public meeting was held on July 17, 2019 to present the Draft Master Plan.

The timing and format of the neighborhood meetings and initial public meeting allowed stakeholders to become involved in the planning process before any proposals were made. Through the course of 10 meetings, attendees wrote and drew on over 40 maps, making suggestions for physical improvements and policy considerations related to the topic areas included in this plan. Along with the results of the online survey (discussed below), the mapping results were reviewed with the project Technical Committee and Steering Committee, and helped inform the recommendations included in the Master Plan.

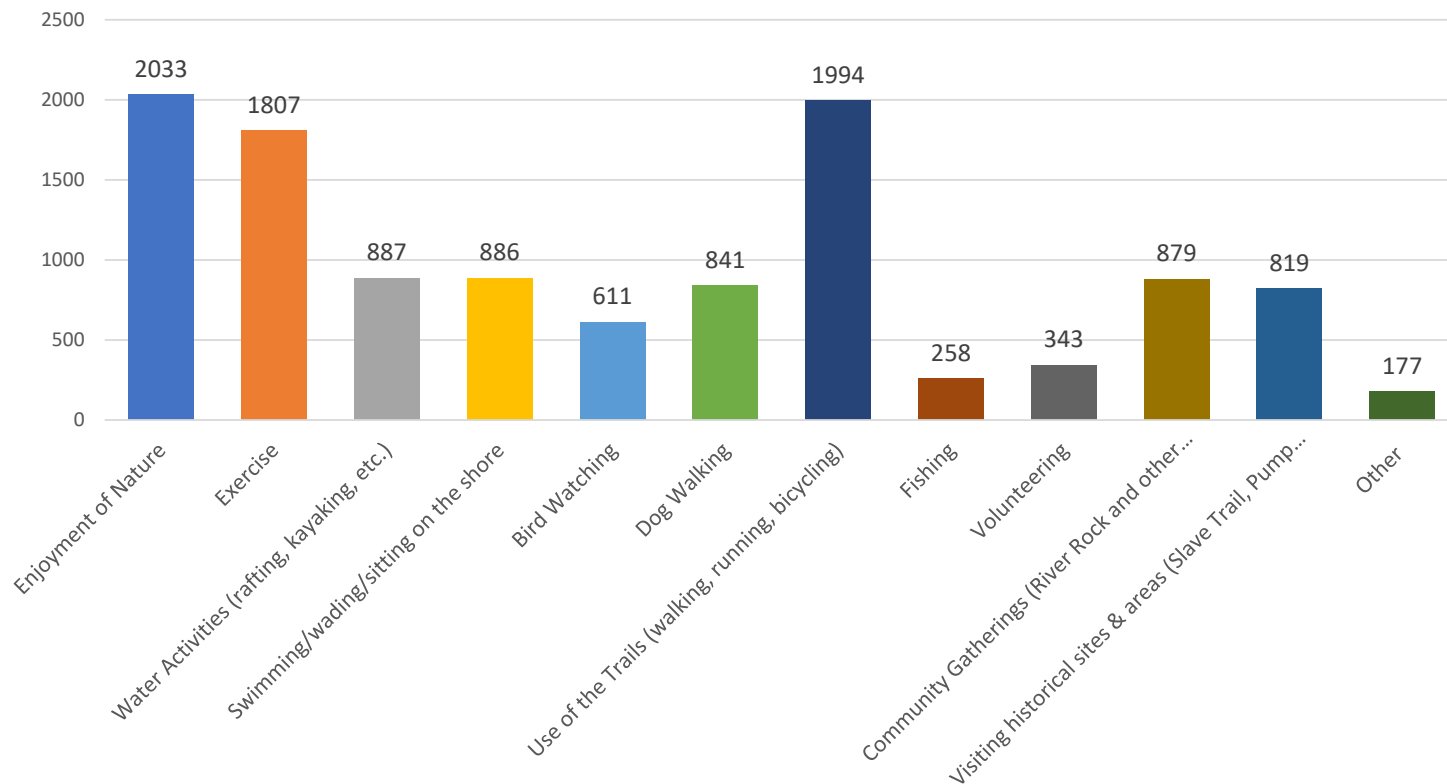
Concurrent with the public meeting timeframe, the study team activated an online survey to help garner input and understand priorities for the Master Plan. Survey response was very strong, with 2,353 surveys collected. The majority of respondents live in the City or in adjacent counties, responses were also received from the larger region, state, and beyond. A wide range of age groups completed the survey, led by the 25-34 year old cohort. Nearly three-quarters of respondents indicated that they visit the Park at least a few times a month. Weekends are the most popular time to visit the Park, and a majority of respondents indicated that their primary way of getting to the Park was by car (although walking and bicycling were also popular). While a majority of respondents said it was easy to get to the Park by their primary mode of transportation, 30% indicated that a lack of parking was a deterrent to visiting the Park.

JAMES RIVER PARK SYSTEM MASTER PLAN

What is Your Primary Mode of Transportation to Access the James River Park?



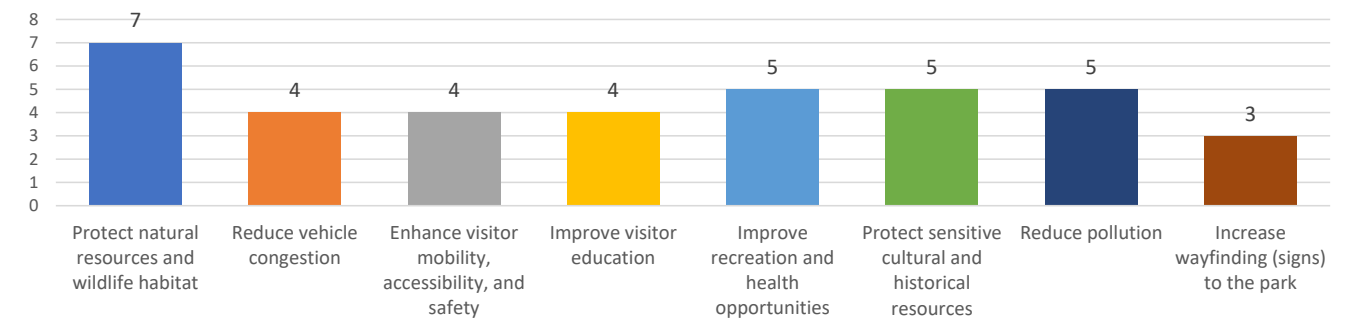
What Activities Do You Enjoy at the Park?



The most popular destinations within the Park are Belle Isle, Buttermilk Trail/Reedy Creek, T. Tyler Potterfield Memorial Bridge, and Pony Pasture. Survey respondents highlighted recreation, wilderness appreciation, and water access as primary reasons for visiting the Park. The Park's proximity to home and/or work was also identified as something people love about JRPS. Primary activities for enjoyment at the Park included enjoyment of nature, use of the trails, and exercise. Survey results suggest that the Park adds to people's quality of life, supporting mental and physical health and providing a natural escape from the City.

When asked about the future of the Park, survey respondents suggested improved maintenance, improved etiquette, safety, and rules enforcement, and improved amenities such as restrooms and water fountains. Expansion of the Park, historic building restoration, and keeping areas undeveloped were also common themes. Protection of natural resources and wildlife habitat was chosen as the top priority among those listed in the chart below.

Rank the options below based on your priorities for the future of the park. Please list the items from the most important (8) to least important (1)



How the Input Helped Shape the Plan

By soliciting public input at the beginning of the planning process, the study team was able to ensure that this was a community and user-driven plan. Following the public meetings and conclusion of the online survey, the team reviewed and summarized all of the input received, including survey comments as well as map markups from the meetings. This summary was presented to and discussed by the project Steering Committee and Technical Committee, and was used as the basis for the recommendations and strategies included in this Plan.



3

MAINTENANCE & OPERATIONS



PHOTO COURTESY OF RICHARD HAYES

MAINTENANCE & OPERATIONS

A World-class Attraction...

The James River Park is an integral element of Richmond's character and identity. It is also a primary attraction for the City and the region. The Park brings visitors to the City, provides a place of special importance to City residents, and has also become a factor in people's choice to move to Richmond. A wide range of benefits, both measurable and intangible, accrue to the City and region as a result of the Park. These include ecological, historical, cultural, educational, recreational, personal well-being, and economic benefits.

The Park is currently funded solely by the City of Richmond, and is operated and maintained by the City's Department of Parks, Recreation, and Community Facilities, with a full-time staff of seven employees. The City also employs service-specific vendors, notably for provision and maintenance of temporary restroom facilities. The Park does not have its own safety, security, or emergency personnel, but relies on general City forces for these services, including water rescue. Working in partnership with City staff, the Friends of the James River Park is a volunteer organization to promote, conserve, and support the Park. Volunteering is a critical part of the Park's success; in 2018, 2,992 individual volunteers donated 8,531 hours to the Park. These combined forces are responsible for trash pickup, trail and facility repairs, educational and recreational programs, rules enforcement, and overall Park maintenance.

An enhanced program of operations and maintenance could reflect the high value of the Park by matching world-class operations with a world-class destination. This would require additional staff as well as continued reliance on volunteers and private vendors. Areas of focus could include servicing of trash and recycle cans, servicing of temporary restrooms, enforcement of litter and leash regulations, building maintenance and repair, environmental education, invasive species removal, and public safety and security. The City should consider dedicated police/security staff for the Park, which would allow these individuals to get to know the Park and become a recognized presence. Over the long-term, the City could consider transitioning Park governance to a conservancy model (see the following discussion on Governance).

"This park makes Richmond what it is and is a distinct factor in a lot of people moving to the city. Would love to see continual improvement. With the amount of traffic that this park has annually, they need to double staff in order to keep up with necessary maintenance."



PHOTO COURTESY OF WILLIAM DRAPER

GOVERNANCE

The adopted 2012 Richmond Riverfront Master Plan includes a section on Implementation + Governance, pointing the way forward for additional exploration of a single operating entity other than a municipal department. The section remains valid, identifying topics and considerations pivotal to transition from department management to a conservancy model. A detailed exploration of this topic is beyond the scope of the James River Park System Master Plan. The primary clarification to the 2012 document is that a future governing entity should manage the whole of the James River Park System, from end to end, and not be limited to the smaller and earlier Lee Bridge to Ancarrow's downtown scope.

There are plenty of successful models to consider and emulate as a precursor to developing a new governance structure for the James River Park System. Two separate local successes include management of *Maymont Park* and the

Lewis Ginter Botanical Garden respectively by two distinct and dedicated organizations. Further afield:

- Rock Creek Conservancy in Washington, D.C.
- Fairmount Park Conservancy in Philadelphia, PA
- The Shelby Farms Conservancy in Memphis, TN
- Emerald Necklace Conservancy in Boston, MA
- Guadalupe River Park Conservancy in San Jose, CA
- Golden Gate National Parks Conservancy in the San Francisco Bay Area
- Bryant Park, New York, NY

- Canal Park, Washington, DC
- Yards Park, Washington, DC

The preeminent park management organization is the Central Park Conservancy in New York City, NY. The Central Park Conservancy also runs The Institute for Urban Parks that may be an early resource for transforming the James River Park System management structure. Similarly, the High Line Network is also an emerging national resource for transforming municipal infrastructure into people-focused spaces, under the guidance of the Friends of the High Line. The transition to a new governance structure must necessarily involve a public process and the participation of the Friends of the JRPS MP Advisory Board as well as additional interested entities and City departments, collectively working toward a Richmond-specific solution.

STRATEGIES TO IMPROVE OPERATIONS & MAINTENANCE OF JAMES RIVER PARK

1. Hire additional staff and move toward full staffing based on 10-year projected needs
2. Assign dedicated Park police and enhance Park security
3. Increase enforcement of current regulations, including litter, leashes, fires, graffiti
4. Fund increased maintenance of temporary restrooms
5. Investigate other governance models for the Park

“The trash bothers me - I wish every user would care. I know we want people to “pack it out” but few do and so we have got to bring back the trashcans. I wish there were Park Police or at least some sort of regular police presence or JRP ambassadors.”



STRATEGIC OUTCOMES

1. Staffing levels result in an operations program appropriate to a world-class park
2. Security personnel become a recognized element of the Park, resulting in improved user behavior
3. Enforcement and education help foster a culture of stewardship among Park users
4. Improved restroom maintenance allows longer-term transition to permanent restroom facilities (see Park Buildings section of this plan)
5. Consensus-based plan for Park governance

IMPLEMENTATION

Implementation of the maintenance and operations strategies will require additional funding, staffing, and volunteer service. Funding for these efforts may benefit from the non-resident parking fees discussed in the Transportation and Access section of this plan. Funding and hiring for full staffing capacity should be a top priority (see James River Park Staffing projection below). The strategic outcomes listed above are achievable within the 10-year timeframe of the Master Plan.



“I would like to see the parks a little cleaner, and with better bathroom facilities.”

James River Park System Staffing					
Existing (2019)	2020	2025	2030	Full Build Out	
Superintendent				Superintendent	
Programs Manager				Labor Crew Chief (approved and unfilled)	
Rec Program Specialist I				Education Manager	
Maintenance Tech I				Programs Manager	
Labor Crew Chief (approved and unfilled)				Maintenance Tech III	
Maintenance Tech II (unfilled)				Maintenance Tech II (unfilled)	
	Maintenance Tech III	Office Manager	Maintenance Tech I	(2) Natural Resource Coordinator	
	Education Manager	(5) Law Enforcement Park Police		(2) Rec Program Specialist I	
		Rec Program Specialist		Office Manager	
				5 Law Enforcement Park Police	
				Other support staff	
				Superintendent (Greenways and Trails, City Wide)	
				Trail Manager (approved and unfilled)	
				2 Maintenance Tech II (trails)	
				Maintenance Tech I (trails)	
				Maintenance Tech II (Volunteer Coordinator Southern District)	



4

NATURAL RESOURCES



NATURAL RESOURCES

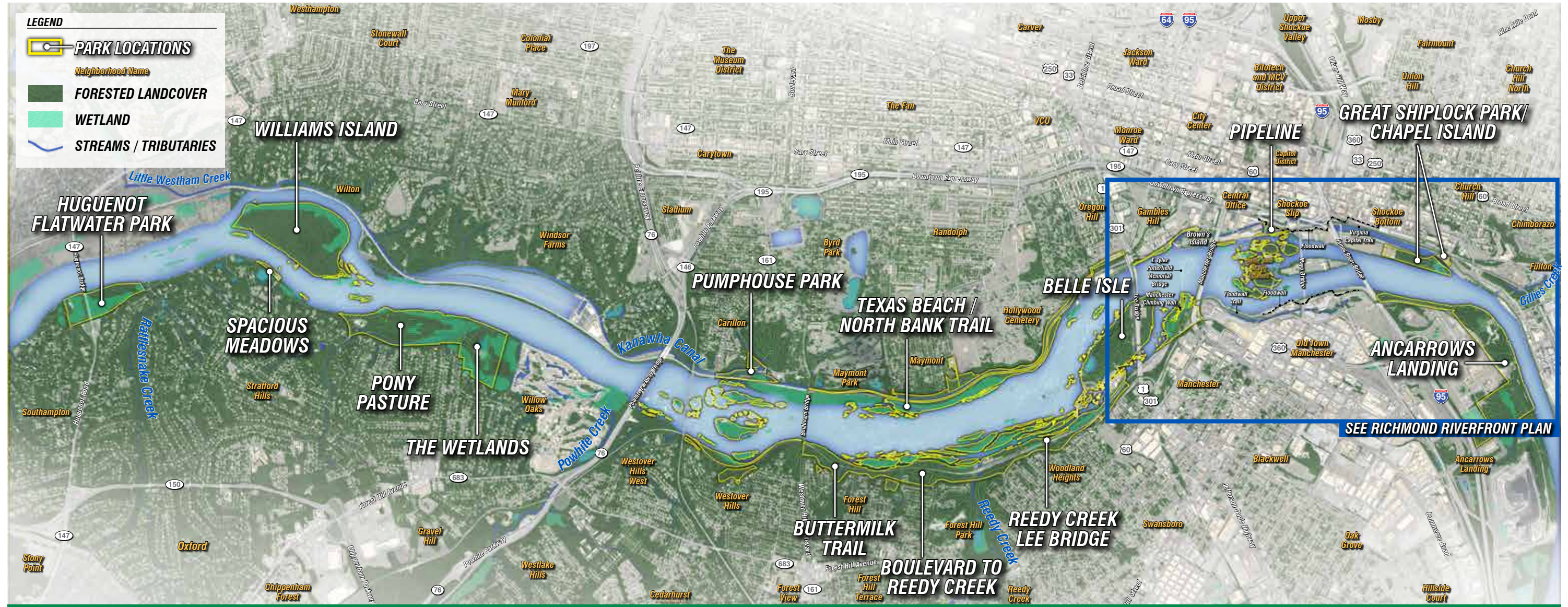
Where the wild things are, the urban wilderness...

The James River has been a defining feature of the City since the early development of Richmond in the 17th Century. As a critical river in Virginia's history, the James has provided important commercial opportunities that have shaped the City's culture and society. While the River's influence on the "human environment" has been well studied, the natural resources that are intrinsic to the River's ecological role have often been overlooked or misunderstood. Only recently have these natural resources been evaluated for their environmental importance locally and regionally, and as a result, terms such as "ecological integrity" and "ecosystem services" have become more commonplace when describing the JRPS. As the body of knowledge surrounding the James River and its natural resources, visitors to the James River Park System leave with a heightened understanding of "where the wild things are" in Richmond. The Park is alive, not just by virtue of the dynamic freshwater habitat of the River, but from the interwoven network of natural communities, native flora, and diverse wildlife that are protected within the rare "urban wilderness" that is the James River Park System.

The James River flows through the Park for approximately 8 miles between the Huguenot Flatwoods and Ancarrow's Landing, the western and eastern termini of the JRPS, respectively. This stretch of the James is considered unique locally and regionally, as nearly the entire river bottom (totaling over 1,000 acres) in the City consists of rocky terrain where river water drops 105 feet in elevation down the River's Fall Line. The Fall Line occurs over the geologic transition between the Piedmont and Coastal Plain physiographic provinces, and marks a point where distinct natural features from each province come together to form highly diverse aquatic and terrestrial ecological communities.

The portion of the James River's watershed feeding into the JRPS is remarkably vast, totally over 8,000 square miles of land within Virginia. The origin of the James is located nearly 200 miles west of Richmond, over the span of which thousands of tributaries and waterbodies flow into the River. Within the 8 miles of river flowing through the James River Park System, over 20 stream tributaries bisect the park boundaries before their confluence with the banks of the James River. The larger perennial streams that flow year-round include Rattlesnake Creek, Reedy Creek, and waters from Little Westham Creek where it joins the Kanawha Canal. The River and its tributaries are surrounded by a landscape with over 500 acres of mature hardwood forests, spread across riverine topography characterized by steep hillslopes and ridgelines along the Park's boundary, and an expansive floodplain bordering the River.

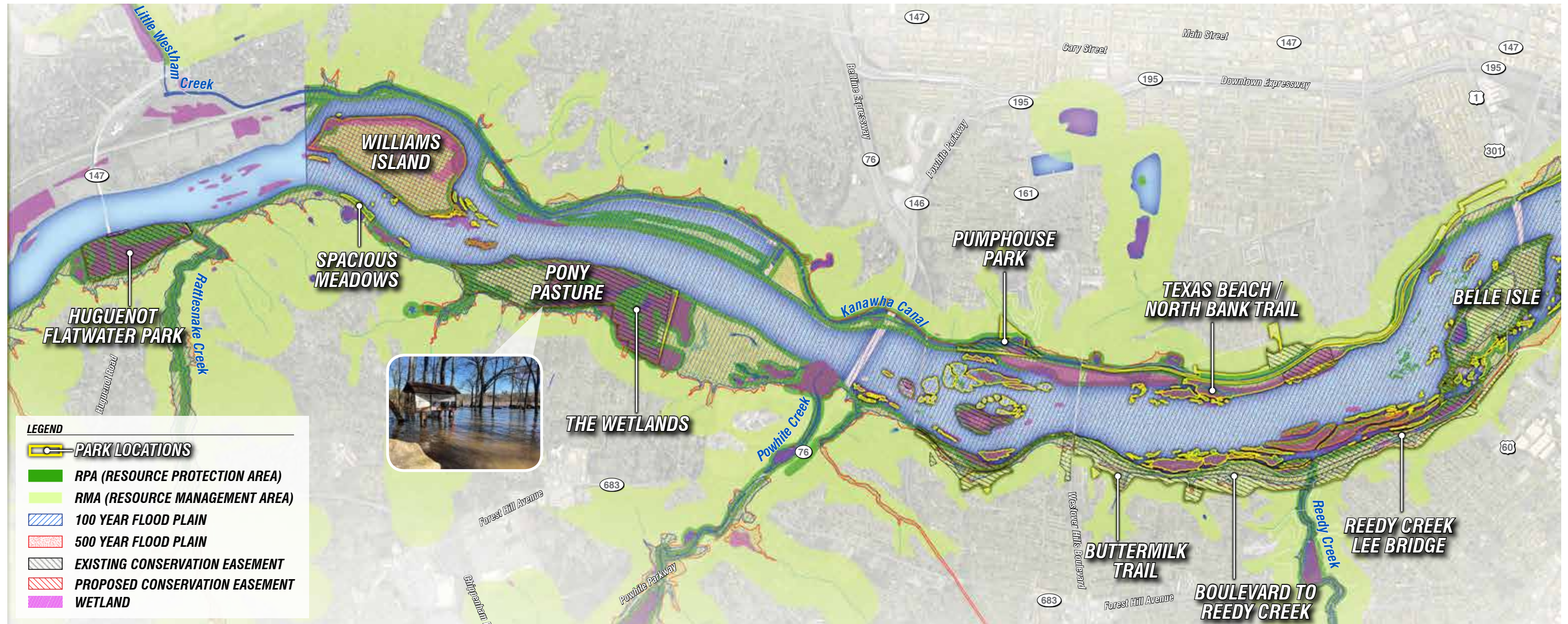
JAMES RIVER PARK SYSTEM MASTER PLAN



NATURAL RESOURCES OVERALL MAP

0' 600' 1200' 2400' N





ENVIRONMENTALLY SENSITIVE AREAS



The hydrologic relationship of the James River and its floodplain provides important functions and values, not just ecologically, but to the human environment in the City that surrounds the James River Park System. Within the City limits, most of the River and its floodplain are considered environmentally sensitive resources. The floodplain has expansive freshwater wetland systems that provide important ecological functions for floodwater retention, groundwater recharge, carbon sequestration, and nutrient filtration (among others).

The lateral extent of the floodplain can be defined by two hydrologic “benchmarks” associated with flood water elevation, known as the 100-year floodplain and the 500-year floodplain. Of the two, the 100-year floodplain has a much higher risk of flooding and is defined in the City’s Code of Ordinance as the area of “base flood,” within which the elevation of flood events has a one percent chance of being equaled or exceeded each year. The 500-year floodplain is defined on the same principle and is found at a higher elevation, and represents an area of minimal flood hazard with a 1-in-500 (0.2 percent) chance of flooding. The increased probability of flooding in the 100-year floodplain heightens the importance of the environmental resources found there, and draws attention to their sensitivity to natural and human-influenced alterations.

The James River and the freshwater streams and wetlands in its floodplain are protected under the federal Clean Water Act of 1972, the statutory authority that requires the public avoid and/or minimize damage to Waters of the U.S. (including wetlands). Protection of sensitive environmental resources is also afforded under the Chesapeake Bay Preservation Act of 1988, which has been codified in the City’s local ordinance to include the Chesapeake Bay Preservation Area (CBPA).

The City of Richmond’s CBPA includes the combined extent of a Resource Protection Area (RPA) and a Resource Management Area (RMA). Of these, the RPA is considered the most environmentally sensitive and is defined in the Code as “comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of State waters.” The RMA buffers the landward side of the RPA, providing an increased measure of protection for water quality.

NATURAL COMMUNITIES AND PLANT ECOLOGY

Each visitor in the James River Park System is afforded first-hand experiences of the Park's brilliant natural resources. Amongst each trail or vista, an inherently complex and diverse network of aquatic and terrestrial natural communities envelops those who spend time there. While only a few formal scientific studies have been conducted to comprehensively evaluate natural communities in the Park, a recent study was conducted in 2019 using *The Natural Communities of Virginia Classification of Ecological Groups and Community Types*, a classification system published by the Virginia Department of Conservation and Recreation in 2018.

The results of this study showed that at least seven natural community types are present in the JRPS, including higher elevation woodlands dominated by mature oak-hickory and mixed hardwood forest assemblages. Large native trees thrive in the canopy of these forested upland habitats, creating a rich composition of northern red oak, white oak, black gum, loblolly pine, mockernut hickory, pignut hickory, black cherry, and American beech, among many others. Examples of these communities are easily observed in the forests bordering the Butter-milk Trail on the southern side of the James River Park System, near the Park's Reedy Creek Headquarters.

These mature, forested communities stabilize the soil on the ridgelines and hillslopes that divide the many stream corridors conveying freshwater to the River from the surrounding urban watershed. The forests provide abundant upland habitat for wildlife and buffer the tributary streams with protective riparian (stream-side) zones that reduce the amount of pollutants that reach the James. Trails in the Park weave through its mature forests, allowing park visitors to experience these communities first-hand.

The lower elevation natural communities defining the Park's interior are comprised of floodplain swamps and forests, and shoreline habitats with dynamic sand/gravel/mud bars and rocky substrates in which seasonal herbaceous vegetation like American water-willow is often inundated by flowing water along the River's edge. The floodplain communities alone account for approximately 80 percent of the Park and provide critical ecosystem services associated with floodwater retention and soil stabilization. Like the Park's upland habitats, the floodplain ecosystem is characterized by a dense canopy of mature native tree species, including red maple, silver maple, green ash, sweet gum, hackberry, river birch, and American sycamore. Underlying these large trees, Park visitors can also see the well-structured forest understory with layers of saplings, shrubs, wildflowers, grasses, and mature vines that climb high into the forest canopy.

While the results of the 2019 natural community investigation show a broad picture of overall habitat diversity, other studies have taken a closer look at plant ecology in the Park through floristic inventories conducted to document all native plant species in the James River Park System. These inventories indicate that the Park's flora has a high degree of species richness and diversity, both of which are measures that can reflect increased ecological integrity and wildlife habitat value. Specifically, inventories by Newton Ancarrow in the late 1960's and early 1970's recorded over 400 wildflower species along the banks of the James and its floodplain. More recently, a 2018 inventory conducted by the College of William & Mary (W&M) documented more than 500 plant species inside the Park boundaries, including 65 unrecorded plants in the City, and six species considered rare in Virginia. Relative to the entire state of Virginia which has nearly 3,400 plant species, the Park's flora represents about 15 percent of all plant life in the Commonwealth.



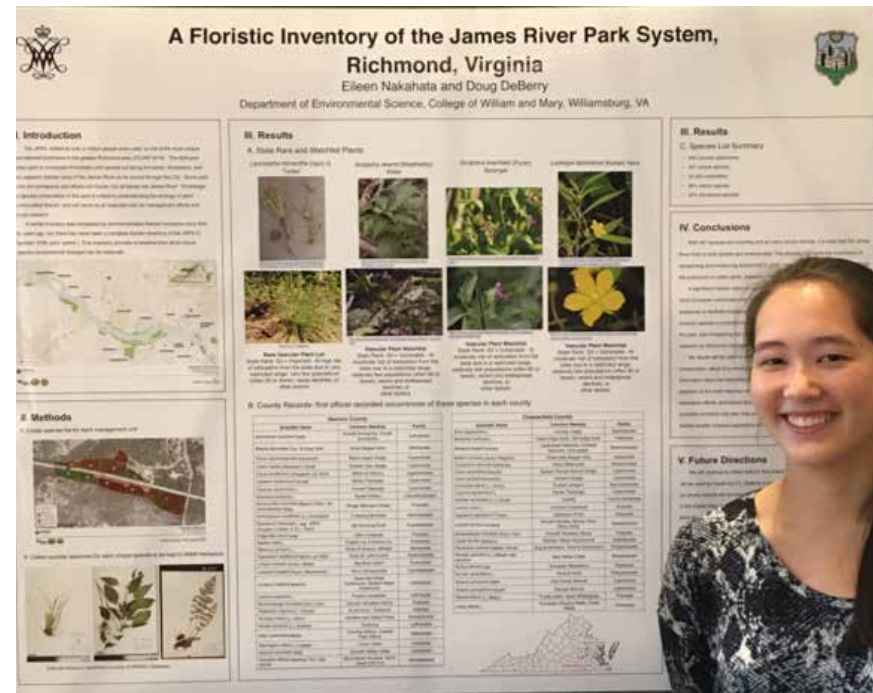
Ludwigia leptocarpa – S3



Lipocarpa micrantha – S2



Dicliptera brachiata – S3



INVASIVE PLANTS & THE INVASIVE PLANT TASK FORCE

Though these studies suggest a high degree of native plant abundance and diversity, the Park's native flora struggles to survive amid an overwhelming density and variety of invasive plant species that currently comprise approximately half of the Park's vegetation. Invasive plants "out compete" native plant species that have evolved within a balanced ecosystem of natural checks on their reproduction and spread, degrading wildlife habitat and overall ecological health.

The proliferation of invasive plant species in the Park began with European colonization as settlers brought seeds and plants from their home countries to Virginia and accelerated in the 18th to early 20th centuries as nurseries imported plant varieties, mostly from Asia, to meet market demand for ornamentals. In the modern era, globalized trade and travel, development, and utility and transportation infrastructure are among the contributors to the introduction and spread of invasive plants. Conditions favorable to invasive plants' establishment common to the Park include soil disturbance, "edge habitat" along roads and trails, intensive recreational use, and flooding. Of the more than 50 invasive plant species identified in the Park, the most prevalent include shrubs and vines such as Chinese privet, Amur honeysuckle, multiflora rose, English ivy, wintercreeper, and Japanese honeysuckle.

In early 2015, a coalition of local groups and individuals formed the James River Invasive Plant Task Force ("Task Force"), motivated by the scale and severity of invasive plant encroachment in the Park. At the same time, the Park was evaluating an initial proposal for a Habitat Restoration Plan that would include a strategy for invasive plant control. Recognizing loss of native plant species as a significant environmental risk, the Friends of the James River Park ("FoJRP") subsequently funded a comprehensive study to investigate the extent of invasive plant infestations in the Park. The study began the same year with a multi-phase, park-specific Habitat Restoration Plan. Phase 1 of the plan prioritized long-term control of invasive plants to increase native biodiversity, which led to the Park's first Invasive Plant Management Plan, funded by FoJRP and powered by the new Task Force and volunteers.

The mission of the Task Force is "to foster a thriving park ecosystem through invasive plant species management, restoration of native plant communities, public awareness and citizen involvement". The Task Force takes a pragmatic, evidence-based approach to management, prioritizing protection of native plant communities and mature tree canopy, response to newly emergent invasive species, and improvement of heavily-visited landscapes and viewsheds for public benefit.

Since 2015, the Task Force and its volunteers have collectively contributed nearly 10,000 hours of volunteer labor to implement the Invasive Plant Management Plan beginning with the park-wide inventory and assessment of non-native, invasive plant species in the first phase of the Invasive Plant Management Plan. The City used the inventory data to determine invasive plant "management units" throughout the Park. Each management unit has an environmentally compliant treatment "prescription" that indicates appropriate invasive plant control methods for each species with strict adherence to local and state regulations for controlling plants that live in ecologically sensitive habitats.

The Task Force, relying nearly entirely on volunteers, continues to consistently work on invasive plant removal, primarily in high-visibility management units found near popular Park destinations at Belle Isle, Chapel Island, Reedy Creek, and Pony Pasture. Management includes ongoing monitoring of progress; in 2018 the Task Force re-surveyed previously inventoried areas to document changes in invasive plant "cover" since the original 2015 survey. Habitat restoration includes allowing surviving native plant species to recover and repopulate an area and, in certain locations, planting of select locally-native tree, shrub, and herbaceous species best suited to site-specific conditions. The Task Force also engages in public outreach and education through media outlets, public presentations, and special events such as its annual program during National Invasive Species Awareness Week in late winter.

The Task Force steering committee, made up mostly of volunteers, includes representatives from the Richmond Tree Stewards, the Riverine and Pocahontas chapters of the Virginia Master Naturalists, VCU Center for Environmental Studies, the Virginia Department of Recreation and Conservation's Natural Heritage Program, Capital Trees, the Pocahontas Chapter of the Virginia Native Plant Society, the James River Association, Blue Ridge PRISM, and the James River Park System as well as a private professional botanist, a landscape architect, and a native plant nursery business owner and former aquatic biologist, all of whom work locally in the City of Richmond and surrounding counties.

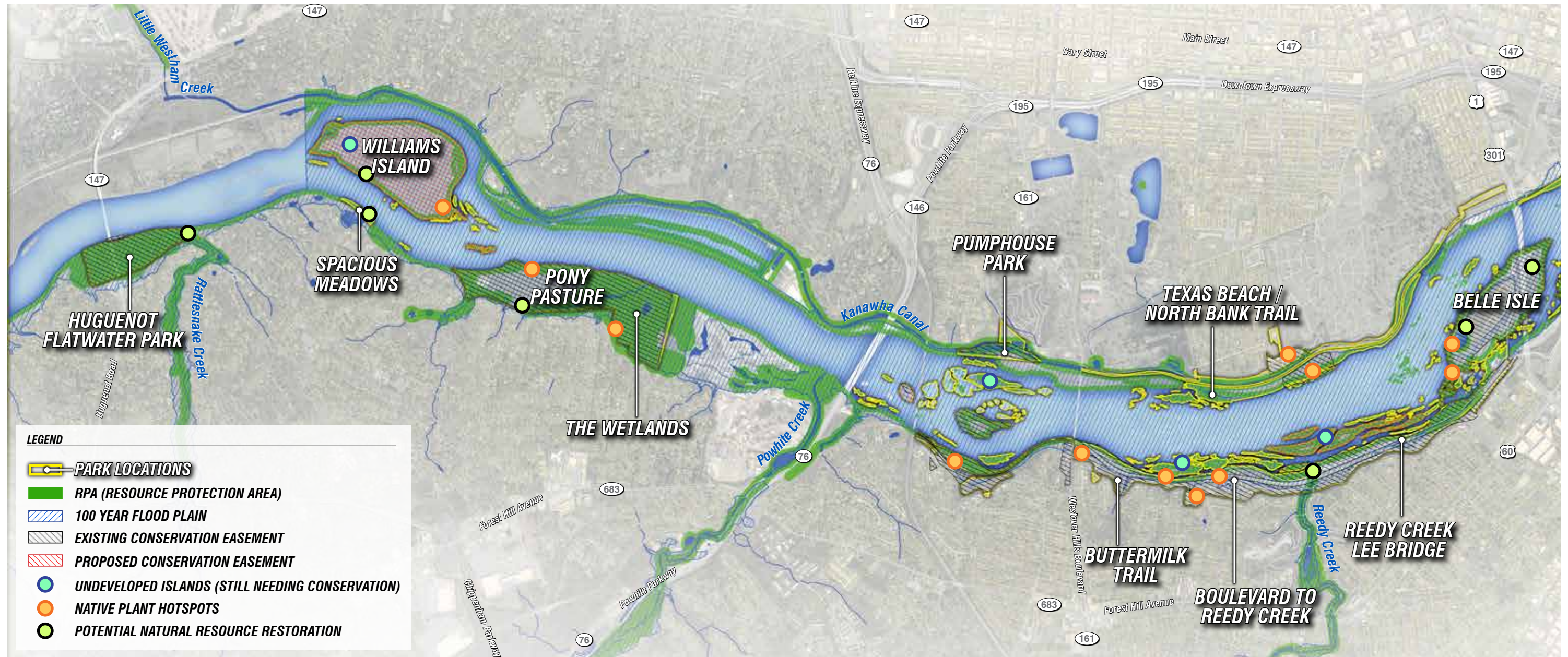


WILDLIFE

Whether to the laymen or experienced naturalist, past studies of the Park's flora indicate a uniqueness associated with habitats found in the James River Park System. But plant ecology is only part of a larger natural environment in the Park, as many wildlife species and populations rely on healthy plant communities to carry out normal biological activities like foraging, refuge, and reproduction. In this way, the flora and fauna of the Park are inherently linked, and together connect visitors to the City's urban wilderness that surrounds the James River. Studies of the Park's wildlife are well-documented by both citizens and scientists, and wildlife data is often presented in the Science in the Park section on Animals, located (<https://jamesriverpark.org/science-in-the-park/animals.php>) and elsewhere on the Park's website (<https://jamesriverpark.org/>).

As stated by their website, "The animals that live in and around the James River Park System present year-round opportunities for your observation and study. A wide variety of terrestrial habitats are woven throughout the park and still deliver surprises – such as coyote and, most recently, grey fox." Wildlife species commonly observed by visitors include mammals, birds, insects, and fish. Extensive lists of species document data collected for the white-tailed deer, coyote, red fox, eastern grey fox, river otter, American mink, common raccoon, Virginia opossum, American beaver, Atlantic sturgeon, blueback herring, American shad, great blue heron, bald eagle, osprey, wild turkey, and dozens of waterfowl (ducks and geese) species. Looking beyond these larger "cosmopolitan" mammals, fish, and birds, Park visitors can also observe a multitude of insects, spiders, and small crustaceans such as fairy shrimp.





CONSERVATION & RESTORATION AREAS



The importance of conserving native biodiversity and restoring natural habitats has been a priority in the James River Park System for multiple decades. Park managers have established long-term connections with Richmond citizens, environmental organizations, school programs, and non-profits groups that support the Park, and have strived to increase public awareness of natural systems, ecosystem integrity, and the James River. This awareness was exemplified by the public's comments about the Park, reflecting that the James River Park System is widely recognized for its extraordinary ecological and societal values. Richmond's citizens are eager to improve efforts toward environmental stewardship, conservation of natural resources, ecological restoration, and innovative management practices that will sustain the City's urban wilderness for future generations.





ECONOMIC BENEFITS, RICHMOND 300, AND CLIMATE CHANGE

The importance of the natural resources in the James River Park System has also been assessed in terms of financial benefits related to tourism, as well for values associated with ecosystem services provided to the City and the region. Financially, an economic analysis conducted by Virginia Commonwealth University in 2017 assessed the Park's local

and regional economic contribution at approximately 33.5M. Further, ecosystem services were noted in the Richmond 300 Master Plan draft, which stated the need to recognize these services and initiate future assessments to study the potential adverse effects of climate change. This was echoed in the public response for the master plan, expressing the need

to evaluate the potential for natural resources in the Park to mitigate climate change effects related to increased rainfall and air temperature. See additional information on sea level rise later in this chapter.

STRATEGIES TO CONSERVE NATURAL RESOURCES

During the early stages of the master plan's public engagement period, public comments indicated a need for long-term strategies to conserve natural resources and increase ecological integrity in the JRPS. Building on previous JRPS accomplishments in land conservation, the need for additional conservation and restoration of natural resources is paramount to the public. The JRPS plays an important role in improving water quality in the James River. The Park should continue to work with the Department of Public Utilities on efforts to improve water quality. Mechanisms to implement conservation and restoration strategies include expanding conservation easements, repairing damaged streams and wetlands, reducing soil erosion, increasing native species biodiversity, and remediating land with previous industrial use. Important conservation and restoration areas are located throughout the park, and specific restoration activities in the future could include:

- **Expand Conservation Easements:** Adding land to the conservation easement in the Park would support public input regarding the desire to protect additional environmentally sensitive habitat as well as to increase protection of land with previous soil conditions critical to stormwater infiltration and flood protection. Priority areas include undeveloped river islands like Williams Island, Cooper Island, Archer Island, and Bohannon Island.
- **Restore Streams and Wetlands:** Streams with degrading channel conditions could be restored to reduce erosion and pollution in the James. Wetlands in the floodplain could be enhanced to improve hydrological connections to the James, and increase wetland functions associated with flood water retention, groundwater recharge, and natural filtration of pollutants. Opportunities for restoration are available in stream and wetland systems within Huguenot Flatwater Park, Pony Pasture, and Reedy Creek.
- **Reduce Soil Erosion:** Flood events have created severe soil erosion along portions of the river bank. Severe erosion increases sediment loads to the Chesapeake Bay, and can be hazardous to park visitors in high-use areas. Erosion on the northwest bank of Belle Island should be the highest restoration priority, due to actively eroding banks, tree loss, and proximity to major trails. Access points along the bank at Riverside Meadows and Williams Island could also be stabilized and planted with native vegetation.
- **Increase Native Biodiversity:** The Invasive Plant Task Force identified park-wide infestation of non-native invasive plants. Continuing the work of the Task Force and reducing the abundance of invasive plants is a high priority for restoring native species biodiversity.
- **Land Remediation:** Portions of the Park that were previously used to support industry are known to have impaired soil conditions that could be remediated. An example includes the former "Gas Works" site on Belle Isle.

- **Expand Wildlife Corridors:** As important as connections are for human movement, seamless and unbroken wildlife corridors of natural native habitat for wildlife is just as vital to the health of the river ecosystem. By reducing unhealthy human animal interactions and allowing for movement without barriers and hazards like roads and railroads, wildlife diversity can increase and strengthen.

Conservation and restoration of natural resources in these ways will improve ecological integrity, increase public exposure to conservation value and best management practices, and protect areas where the unique sense of solitude offered by the James River Park system should be left untouched. Existing JRPS models of success can be used to implement conservation and preservation strategies brought forth from public feedback. For example, in the past five years the JRPS Invasive Plant Task Force has worked diligently to enhance forest communities and native plant biodiversity by managing and removing overly abundant populations of invasive, non-native plants. Using public-private partnerships nonprofit organizations and Park managers created a habitat restoration plan phased initially to eradicate invasive plants. Funding provided by nonprofit groups, corporate sponsors, and the City has supported the implementation of this plan using environmental scientists and professionals experienced with habitat restoration and vegetation management practices. Progress of the plan is owed largely to volunteer contributions from citizen scientists from the nonprofit groups, but can be accelerated by identifying long-term public and private funding solutions to supplement the volunteer effort with strategically implemented professional services.



STRATEGIES TO CONSERVE NATURAL RESOURCES



The outline below categorizes public feedback on strategies needed in the JRPS to sustain and conserve natural resources:

Natural resource conservation, data collection, and management: Strategic implementation of standard practices to increase natural resource conservation, data collection, and management.

1. Conservation:

Conservation Easements: The existing mechanism for conservation in the JRPS has been the use of conservation easements that restrict certain types of development that could degrade the Park's natural resources. The public acknowledged that expanding upon the approximate 300 acres of JRPS land currently in conservation easements is critical to protect JRPS natural resources in perpetuity.

Conservation Value: Natural resources with the highest conservation value should be prioritized when considering new conservation easements. Concurrently, the Park could identify areas where additional visitor usage and dispersal may be appropriate.

2. Data Collection:

Natural Resource Inventories: The public acknowledged that the body of knowledge regarding the Park's natural resources must be expanded, and supported with scientific data collected from specific types of natural resource inventories. Examples include floristic inventories, wetland assessments, and feasibility studies for habitat restoration. The data collected during these inventories will support park management and decision-making, and provide the public in depth information about the natural resources in the JRPS. Data can also be used to support documentation required for environmental compliance to local, state, and federal regulations.

3. Management:

Existing Management Plans: The Richmond Riverfront Plan was adopted in 2012 and includes specific opportunities to make ecological improvements in the JRPS. As part of the JRPS Master Plan, the public recommended strategic implementation of these ecological improvements within the footprint of the Richmond Riverfront Plan, as well the entire JRPS. Key ecological improvements include reduction of impervious surfaces to increase natural stormwater infiltration, increasing diversity of native fauna through habitat restoration, and increasing restrictive covenants and conservation easements on privately-owned islands in the James River. The JRPS has already begun making these improvements, some of which are incorporated into a 2015 Habitat Restoration Plan, which include the Park's first Invasive Species Management Plan to begin reducing the high abundance of non-native invasive plant species spread throughout the Park's floodplain swamp and forest habitat.

Resource-Specific Management Plans: Due to the complexity and size of the JRPS, multiple types of management plans may be needed to strategize priorities over time. Examples of plans from other parks include a River Management Plan, Floodplain Management Plan, Water Quality Management Plan, Forest Management Plan, Wildlife Management Plan, and Land Conservation Plan, among others. The JRPS must strategize which types of management plans are needed, how they'll be funded, a timeline of implementation, and staff resources needed to maintain management decisions over the long-term.

Environmental Awareness: Environmental awareness programs in the JRPS have increased recently by formalizing the Environmental Education Program. Expanded public outreach and education initiatives are needed to strategically reach the public about key environmental issues such as ecosystem services associated with high riverine ecosystem integrity, as well as the adverse effects of non-point source pollution, habitat degradation, soil erosion, and invasive species proliferation. Central to these strategies is the creation of the Environmental Education Center at Pony Pasture.

Environmental Compliance: The JRPS has long history of complying with environmental regulations on the local, state, and federal level. As an example, federal regulations under the statutory authority of the Clean Water Act require avoidance and minimization of Waters of the U.S., including wetlands; the JRPS ensures that any proposed park activities are reviewed and permitted by the appropriate regulatory agency. The public understands the need for strict adherence to environmental compliance policies, especially as JRPS management priorities from the Master Plan are proposed and implemented.

STRATEGIC OUTCOMES

Many of the categories for natural resource improvements can be modeled using approved best management practices that have already been successfully implemented in urban parks with a similar size and complexity to that of the JRPS. Other improvements can be achieved using existing park-specific practices already in place, such as the use of conservation easements to protect the River's islands in perpetuity. Potential outcomes for proposed improvements to natural resources are outlined below:

1. Conservation:

Prevention of development and land use practices that damage natural resources

Protection of natural resources with the highest conservation value

Increased size of contiguous natural areas with high ecological integrity

Preservation of "living laboratory" concepts that define the JRPS and provides the public opportunities to increase knowledge of natural sciences and environmental awareness

2. Data Collection:

Completion of natural resources "baseline study"

Collection of comprehensive data sets allowing increased level of analysis and future studies of important ecological indices pertaining to climate change, ecological integrity, and ecosystem services.

Increased understanding environmentally sensitive resources

3. Management:

Continued implementation of ecological improvements from the Richmond Riverfront Plan, such as reducing impervious surfaces and protecting islands.

Increased focus from the City to develop and implement resource-specific management plans

Improved public engagement, understanding, and interest in natural resources in an urban environment

Meeting the public's interest for strict compliance to environmental regulations

"I think that a large focus needs to be on reestablishing the park's biodiversity and removal of invasive species. I feel as though this will ultimately catalyze the improvement of natural resources."

"Continue expanding invasive plant removal program and plant native trees."

IMPLEMENTATION

With established strategies and outcomes for improving natural resources, the path toward implementation is more predictable, and more feasible. Some activities needed to implement natural resource improvements in the JRPS are currently in practice but need additional financial support, such as the implementation of the 2015 Invasive Species Management Plan being carried out by the JRPS Invasive Plant Task Force. Current plans and new management practices must be carefully planned so that improvements to natural resources can be implemented concurrently, thereby allowing opportunities to maximize effectiveness and the efficient use of JRPS funding.

Regarding funding for the Park, a common response from the public engagement process for the JRPS Master Plan was that the City should better recognize the positive economic effects of tourism associated with the JRPS, and therefore develop sustainable mechanisms to properly allocate funds needed to support JRPS management activities, especially as visitation to the Park continues to rise. Because the JRPS is so well-supported by volunteer organizations, many of whom track their own funding dedicated to carry out park projects, financial data is available to better assess the adequacy of funding needed to support the Park as additional improvements are implemented.



SEA LEVEL RISE



PHOTO COURTESY OF WILLIAM DRAPER

Virginia is facing the impacts of sea level rise at a greater rate than the rest of the world.

- <https://toolkit.climate.gov/topics/coastal/sea-level-rise>
- <https://tidesandcurrents.noaa.gov/sltrends/>

Global sea level is rising at a rate of about 3 mm per year, while annual sea level rise in Norfolk has been over 5 mm since 2012.

- <https://oceanservice.noaa.gov/facts/sealevel.html>
- <https://www.vims.edu/research/products/slr/localities/nova/index.php>

Richmond will be impacted by sea level rise as it causes rising river levels upstream to the James River fall line at the 14th Street/Mayo Bridge, with relatively minor inundation even with several feet of sea level rise.

- <https://coast.noaa.gov/digitalcoast/tools/slr.html>

The exact amount sea and river level rise depends on global emissions, but many cities in Virginia are already planning for a future with higher sea levels. For example, the Hampton Roads Planning District Commission's Sea Level Rise Planning Policy and Approach recommends the following relative sea level rise scenarios:

- 1.5' above current mean higher high water (MHHW) for near-term (2018-2050)
- 3' above current mean higher high water (MHHW) for mid-term (2050-2080)
- 4.5' above current mean higher high water (MHHW) for long-term (2080-2100)

https://www.hrpdcva.gov/uploads/docs/05A_Attachment%20-%20HRPDC%20Sea%20Level%20Rise%20Planning%20Policy%20and%20Approach%20-%20Adopted%20101818.pdf



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5

TRANSPORTATION & ACCESS



PHOTO COURTESY OF WILLIAM DRAPER

TRANSPORTATION & ACCESS

Opportunities for Alternative Transportation...

Current access to the Park (and between sections of the Park) relies heavily on automobile use. The master plan survey revealed that 59 percent of responders use their car as the primary mode of transportation to the Park. However, walking and bicycling are also popular ways to get to the Park, identified by 38 percent of respondents as their primary modes. While people described access to the Park as easy, they identified limited parking and lack of pedestrian and bicycle facilities as deterrents to access. The City has recently collaborated with the Greater Richmond Transit Corporation (GRTC) to improve bus access to the Park, but service remains limited.

Improving access to the Park raises questions relative to carrying capacity. The Park will likely continue to face challenges associated with balancing enhanced and diversified access with the risk of over use. Existing parking capacity is limited during peak times, and helps meter overall Park usage. Parking is currently free for city residents and non-residents. The Park's conservation easement includes restrictions on impervious cover, and adding parking is not consistent with the easement or with the objectives of the plan.

Existing plans and initiatives that have informed this Master Plan include the City's Bicycle Master Plan and Vision Zero Action Plan. The Bicycle Master Plan includes recommendations for streets to complete Richmond's bike lane network, as well as future facilities to grow and continue the momentum of encouraging bicycle growth in the City. Vision Zero is an internationally known strategy to "eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all." In 2018, Richmond adopted the Richmond Vision Zero Action Plan, which set strategies to increase and promote safety on Richmond streets for active transportation modes.

A Sustainable System of Access

An enhanced system of multimodal access would limit parking to its existing footprint and consider the introduction of pervious parking materials. Charging parking fees for non-City residents could reduce parking demand, encourage use of alternative modes, and potentially allow existing parking areas to be reduced in size. Shuttle service (which could range from City-operated to privately-operated) would further reduce parking demand, could help reduce greenhouse gas emissions, could focus on peak demand times, and could help disperse visitors to underutilized areas of the Park (see Focus Area concepts for Shuttles and Satellite Parking). This Plan also involves working with other City departments to improve pedestrian and bicycle accommodations along the local road network, some of which would provide connections to the regional greenway network. This Plan incorporates the streetscape and neighborhood connections shown in the Riverfront Plan. A primary goal of this plan is to ensure equitable access to the Park.

STRATEGIES FOR REDUCING VEHICLE TRIPS TO THE PARK

1. Prohibit the construction of new parking areas serving the park system

Limiting parking to its existing footprint and capacity would achieve several important objectives. First, it would help the Park comply with the impervious surface limitations associated with the conservation easement; second, it would recognize that limited parking serves as a meter to help prevent overuse of JRPS; third, it would help encourage alternative transportation access to and between areas of the Park. The Park could also consider adding electric vehicle charging stations at some parking locations.

2. Consider shrinking existing parking areas and removing impervious surfaces in the park system

Especially if the alternative transportation elements of the Plan prove effective, the City should consider reducing the size of certain parking areas and/or converting impervious surfaces to pervious. This could help achieve transportation and access goals and also potentially reduce stormwater runoff and reduce maintenance costs.

3. Charge non-City residents for parking during peak and high-use times – consider volunteer service as way to earn parking pass for non-residents

This strategy would recognize and mitigate for the fact that many Park users do not currently contribute to funding for Park maintenance or programming. It could also encourage additional volunteer service and support alternative transportation goals.

4. Work with GRTC to increase seasonal service

5. Implement a pilot project for shuttle service that serves the park system on weekends between Memorial Day and Labor Day

The Focus Areas section of this Plan identifies several optional approaches to shuttle service to JRPS. Undertaking a City-operated pilot project would help gauge the effectiveness of this option, and help assess the potential for a permanent/expanded City or private shuttle service

6. Focus shuttle service to disperse visitors to areas east of Belle Isle, in conjunction with implementation of Riverfront Plan

The Riverfront Plan includes several optional shuttle routes. This area could become the focus of a City-operated pilot project, and could become a priority for consideration of a private shuttle service.

7. Consider unsolicited proposals for private shuttle service

Pending the results of a potential pilot shuttle service, the City should remain flexible and preserve the option of considering opportunities for privately-operated programs.

8. Work with City on roadway crossing improvements at primary nodes, including Riverside Drive and in the vicinity of Shiplock Park

The City should undertake a Road Safety Audit (RSA) on Riverside Drive in the vicinity of Reedy Creek and Forest Hill Park to assess potential improvements to support this primary area of roadway crossings and pedestrian/bicycle access. The RSA would identify corridor-based improvements. Also, concurrent with planned bike-walk street enhancements northeast of Shockoe Bottom, the City should investigate options to provide multimodal access through the major topographic change and roadway intersections.

9. Strengthen pedestrian and bicyclist connections to the park system from neighborhoods by installing pedestrian and bicyclist infrastructure such as sidewalks, crosswalks, pathways, and trails where such infrastructure is missing

The maps on the following pages highlight several ongoing and planned improvements, many of which are included in the City's Bicycle Master Plan.

10. Implement the Streetscape Connection improvements in the Richmond Riverfront Plan

STRATEGIC OUTCOMES

1. Reduced vehicular trips to the Park
2. Increased funding for Park-related multimodal projects
3. Improved neighborhood access
4. Expanded and equitable access for diverse populations
5. Improved dispersal of trail users
6. Reduced greenhouse gas emissions
7. Promotion of active transportation

IMPLEMENTATION

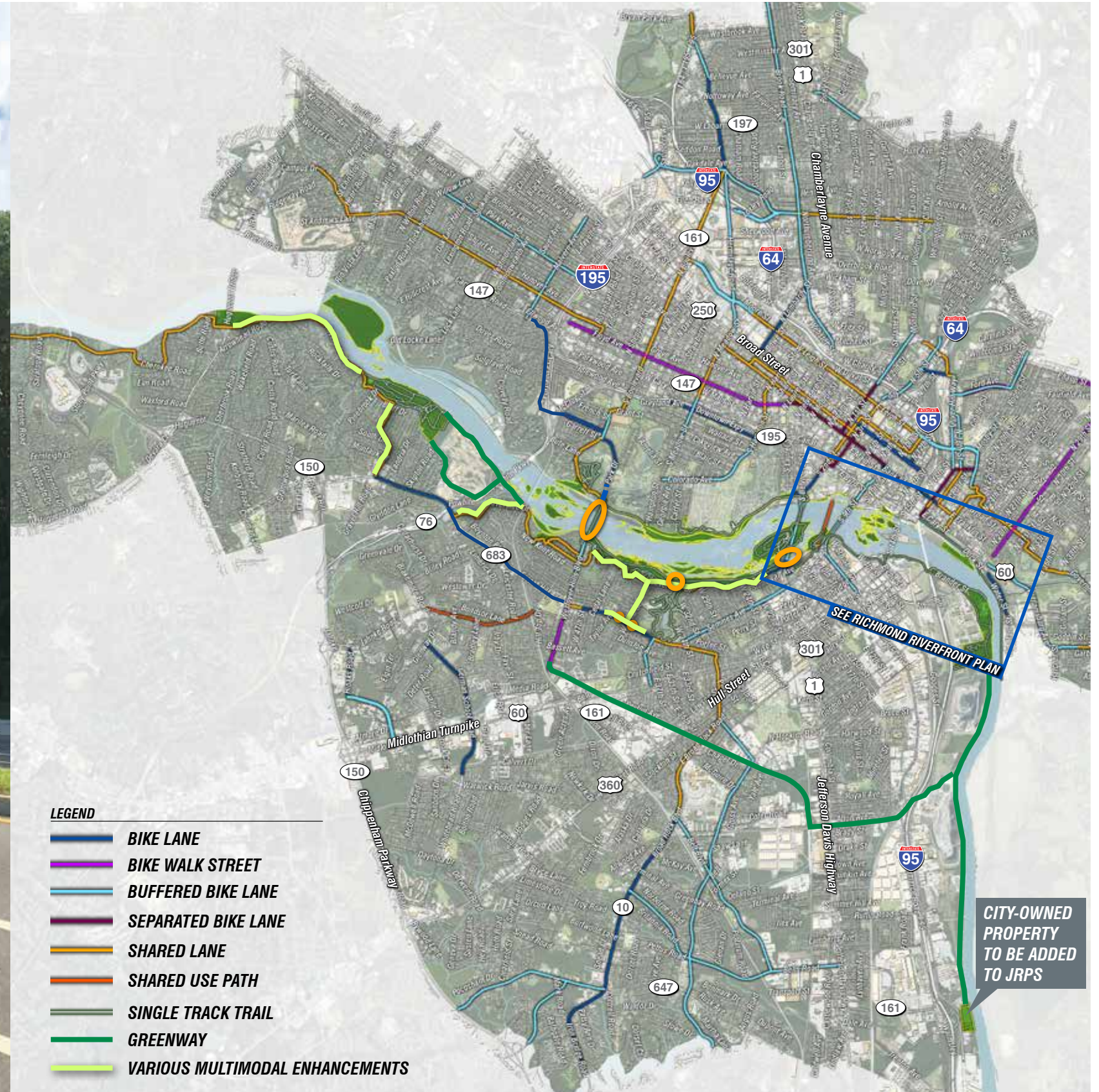
Implementation of the transportation and access strategies will require action involving Park staff, other City departments, collaboration with private interests, and potential partnering with individual landowners. The City may elect to implement a trial parking fee program for non-City residents, but may need a more detailed parking fee study in the long term to help determine rates and payment/metering mechanisms. Implementation of a pilot shuttle service could help assess its effectiveness and potentially encourage private sector undertakings. The City has ongoing and planned efforts (including funding applications) to implement aspects of the Bicycle Master Plan and other multimodal access enhancements that will benefit the Park. The FOJRP can help provide public support for key improvements. Development of the full system of multimodal access improvements is likely beyond the 10-year planning horizon of this Plan, but priority elements are realistically achievable within the 10-year timeframe.

“More trails to connect more city neighborhoods directly to JRPS.”

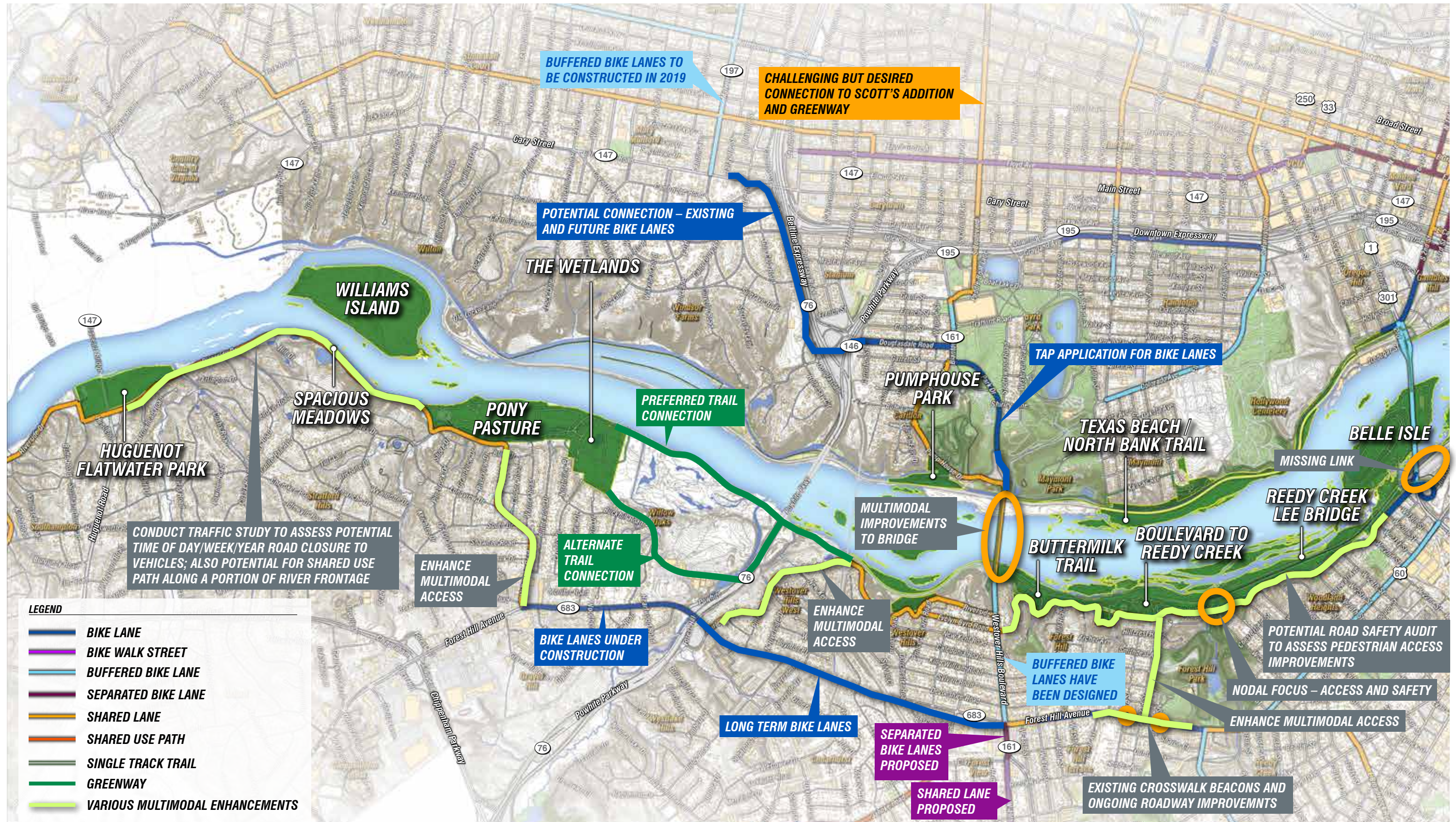
“A park and ride system with a remote lot may be a good way to reduce the vehicle congestion in and around park areas. Putting some of the RVA Bike Share stations in or around the park areas may also be a good way for people to get to and from the park.”

“I gave up biking on Riverside Drive because of automobile traffic/speeding.”

“Riverside Drive should be car free on Sundays like the Golden Gate Park in San Francisco. Speed should be reduced to 15 mph and have higher fines for speeding. There should be a multi use trail from pony pasture to flat water. This road is not safe for cyclists and pedestrians as it is today.”



MULTIMODAL NEIGHBORHOOD CONNECTIONS



MULTIMODAL NEIGHBORHOOD CONNECTIONS





PHOTO COURTESY OF WILLIAM DRAPER



PHOTO COURTESY OF WILLIAM DRAPER

6

TRAILS & GREENWAYS

TRAILS & GREENWAYS

The Park by Land...

The extensive trail system throughout the JRPS creates an amazing and unique urban adventure right in the center of the City. Free from automobiles, the trails are an active transportation hub for cyclists and pedestrians. The trails allow bikers, hikers, and park goers to immerse themselves in nature and experience the wild and unpredictable nature of the Park. The trail system also leads to River access points for users who come to the Park to utilize the River. Existing trails include wide shared use paths, singletrack mountain bike trails, and Park access roads. The trails range in difficulty, ranging from beginner to very experienced, which allow users of all abilities to use the trails at their comfort level. This one-of-a-kind amenity attracts people from all over the world. While the trail system provides a range of experiences for Park goers, the system is segmented, which can cause wayfinding confusion as well as clustering of hot spots for visitors.

Trail access to specific areas within the Park varies by location. Some areas are only accessible by boat or difficult means, which preserves habitats, natural environments, and a sense of adventure. Other areas have much easier access and tend to be crowded during peak times.

The existing JRPS trail system includes:

- Ancarrow's Landing (Poop Loop) – 2.5 miles rated easy
- Belle Isle – 3 miles rated easy to moderate
- Buttermilk Trail – 2.5 miles rated difficult
- Historic Slave Trail – 2.5 miles rated easy
- Huguenot Flatwater – 1 mile rated easy
- North Bank Trail – 2.5 miles rated difficult
- Pony Pasture – 3 miles rated easy
- The Wetlands – 2.5 miles rated easy

In addition, there are several key trail that connect to the JRPS trails:

- Dogwood Dell Bike Loop – 1 mile rated moderate
- Dogwood Dell Hiking Trail – 1 mile rated moderate
- Forest Hill Park Trail – 3.2 miles rated moderate
- Virginia Capital Trail – 52 miles rated easy to moderate

During public outreach, 86 percent of responders said that use of the trails was an activity they enjoyed at the Park, and a more continuous trails system was also identified as a top priority. A repeated response from the survey was: "I would like to see the JRPS connected to other city and county parks via greenway spaces and pedestrian/bike paths." The need for these linkages was also expressed in the 2012 James River Park System Trail Connectivity Plan. Furthermore, the 2010 Potential Greenways – City of Richmond by the Richmond Regional Planning District Commission identified a network of regional trail facilities, many of which were highlighted during the public process for this Plan. An enhanced system of trails and greenways would include east-west connections between Park properties as well as construction of larger regional projects. Improved connectivity along the River would help disperse Park users and limit the need to travel by vehicle between Park locations. A more fully developed regional greenway network would provide better neighborhood access to the Park, while also providing alternatives to the trails within the Park, potentially reducing user demand. This Plan seeks to ensure that regional projects incorporate wayfinding and signage for JRPS, includes new east-west connections west of Belle Isle, incorporates the connectivity elements of the Riverfront Plan, and supports regional greenway implementation. This Plan supports construction and connection to projects like the Gillies Creek Greenway, Reedy Creek Greenway, and the James River Branch Trail. The Park would also continue to maintain its single-track trail system and could make additions or modifications over time. Another repeated response that came out of the survey and public was the crowded trails during peak times of year and the lack of trail etiquette. One responder expressed this sentiment by saying: "The trails are already starting to get overcrowded at times with people that don't have trail etiquette, there needs to be more trail education so that folks know how to be good citizens of the trails and the park system so that we can all continue to enjoy using them."

Looking further ahead, as industries and technologies change, the JRPS should anticipate opportunities to acquire through purchase or easement, access along or across currently active rail right of ways. For instance, Norfolk Southern track cuts across the James River diagonally, from the Manchester floodwall to Great Shiplock Park via a series of bridges. Imagine a future where this track was adapted as a shared use path, free from motorized vehicles except at Mayo Bridge, directly transporting Park users above various James River islands, Mayo's Island, Chapel Island, and ultimately to Peach Street.

STRATEGIES FOR ENHANCING THE TRAILS AND GREENWAYS SYSTEM

1. Support efforts to fund and implement the Regional Greenways Plan

Although the majority of these projects will occur outside of the Park, FOJRP, the City, and other stakeholders should form partnerships to secure federal, state, local, and/or private funding for their implementation. The greenways represent large-scale infrastructure projects that will require significant investment in design and construction. This will likely require an update of the Regional Greenways Plan to focus on details like right-of-way, culverts and stream crossings, road crossings, and other constraints. The following primary greenways would improve pedestrian and bicyclist connectivity from neighborhoods to the park system:

- a. Gillies Creek Greenway** – more direct greenway connection to the Park from the northeast section of the City would encourage user access to the eastern areas of JPRS, potentially alleviating pressure on the sensitive western portions of the Park. Challenges include topographic constraints and roadway crossings, but the proposed trail would capitalize on the Virginia Capital Trail and could be coordinated with some of the transportation and access enhancements included in this Plan.
- b. Reedy Creek Greenway** (see Focus Area concept) – as discussed in this Plan, the Reedy Creek Greenway would connect JRPS with Forest Hill Park as well adjacent neighborhoods, would alleviate automobile and parking pressure, and would form part of the East Coast Greenway.
- c. James River Branch Trail** – in conjunction with ongoing and planned multimodal improvements, this facility would provide an important connection from the southeastern portion of the City to the heart of JRPS. It would also provide access to the City-owned property

south of Ancarrow's Landing that is proposed for addition into the JRPS.

d. Powhite Creek Greenway – by connecting JRPS to other parks and adjacent neighborhoods, the Powhite Creek Greenway would provide alternative access to JRPS, and could help encourage use of other parks, thereby alleviating pressure on JRPS.

e. East Coast Greenway – this major national north-south trail spine would pass directly through JRPS, and could become a primary non-motorized access route for Park visitors.

2. Work to ensure that regional projects incorporate wayfinding and signage for JRPS

Again, this will require coordination with various public and private partners to provide consistent branding, graphic treatment, and wayfinding detail.

3. Pursue east-west connections between Park properties to connect the Park and fill trail gaps

a. Huguenot Flatwater to Pony Pasture – this could involve improvements to and/or adjacent to Riverside Drive, and will require traffic analysis and coordination with other City departments (see also the Transportation and Access section of this Plan).

b. Pony Pasture to Buttermilk – priority consideration should be given to trail access along the River at the golf course, with optional consideration of routing south of the golf course and potentially connecting to the Powhite Creek Greenway.

c. Pump House Greenway (see Focus Area concept) – as described in this Plan, the greenway would form a major east-west connection between Park properties.

d. Kanawha Canal Greenway – Venture Richmond has been developing plans for a project that would re-water the canal and open it for access by non-motorized watercraft. The project also includes a greenway trail along the canal. FOJRP and the City should support efforts by Venture Richmond to design and implement the project.

4. Implement the trail connections in the Richmond Riverfront Plan, including the Missing Link

The Riverfront Plan includes east-west connections to help complete the trail network; this Plan incorporates those recommendations.

5. Maintain the existing singletrack network

This Plan does not propose new sections of singletrack, but supports the City's ongoing efforts to maintain, fill gaps, and establish connections to the system.

6. Preserve adventure in the Park by leaving certain areas as difficult to access

While this Plan contemplates new trails and greenway connections, it also formalizes the goal of ensuring that some areas within JRPS remain unconnected and even difficult to access.

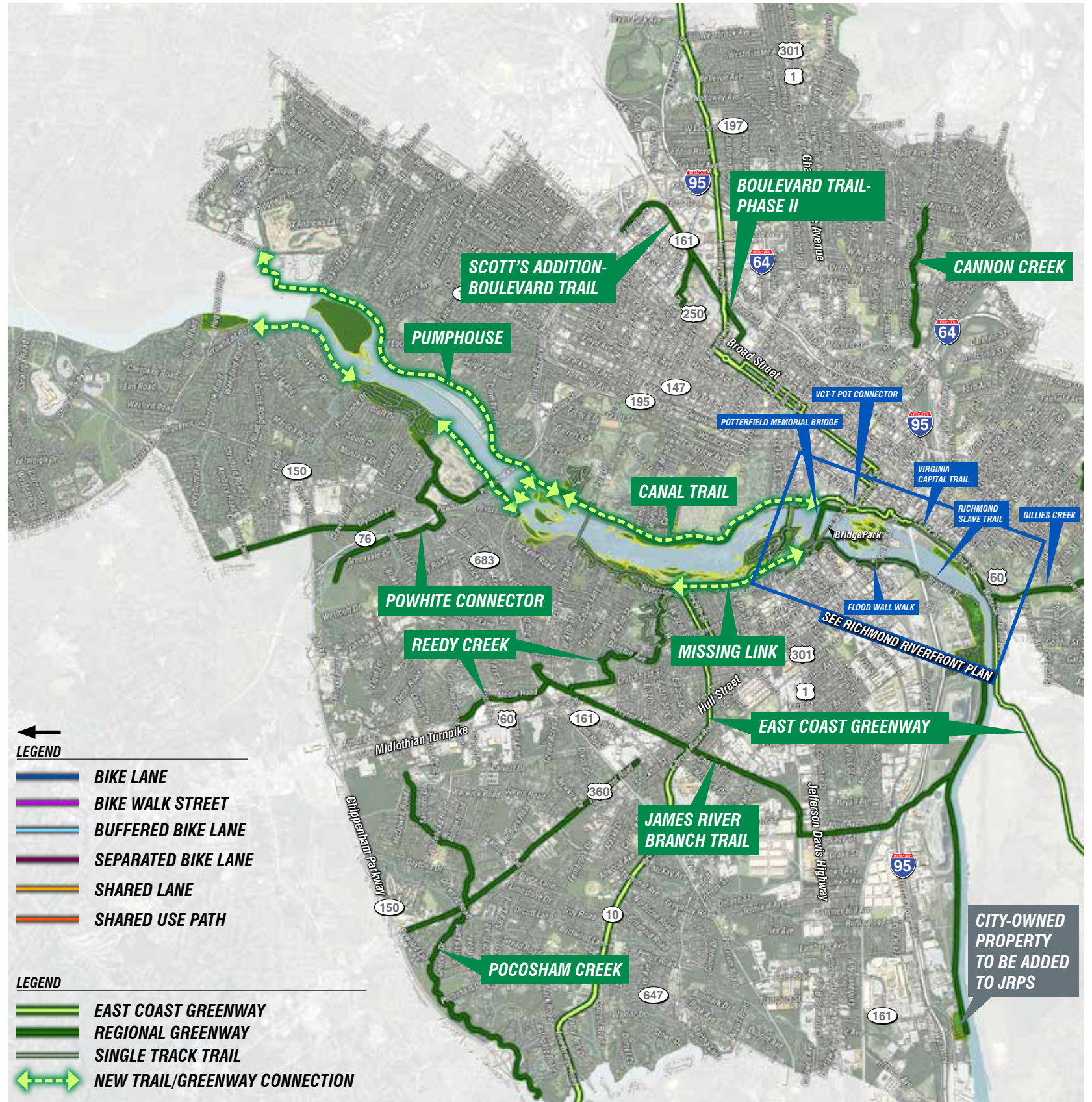
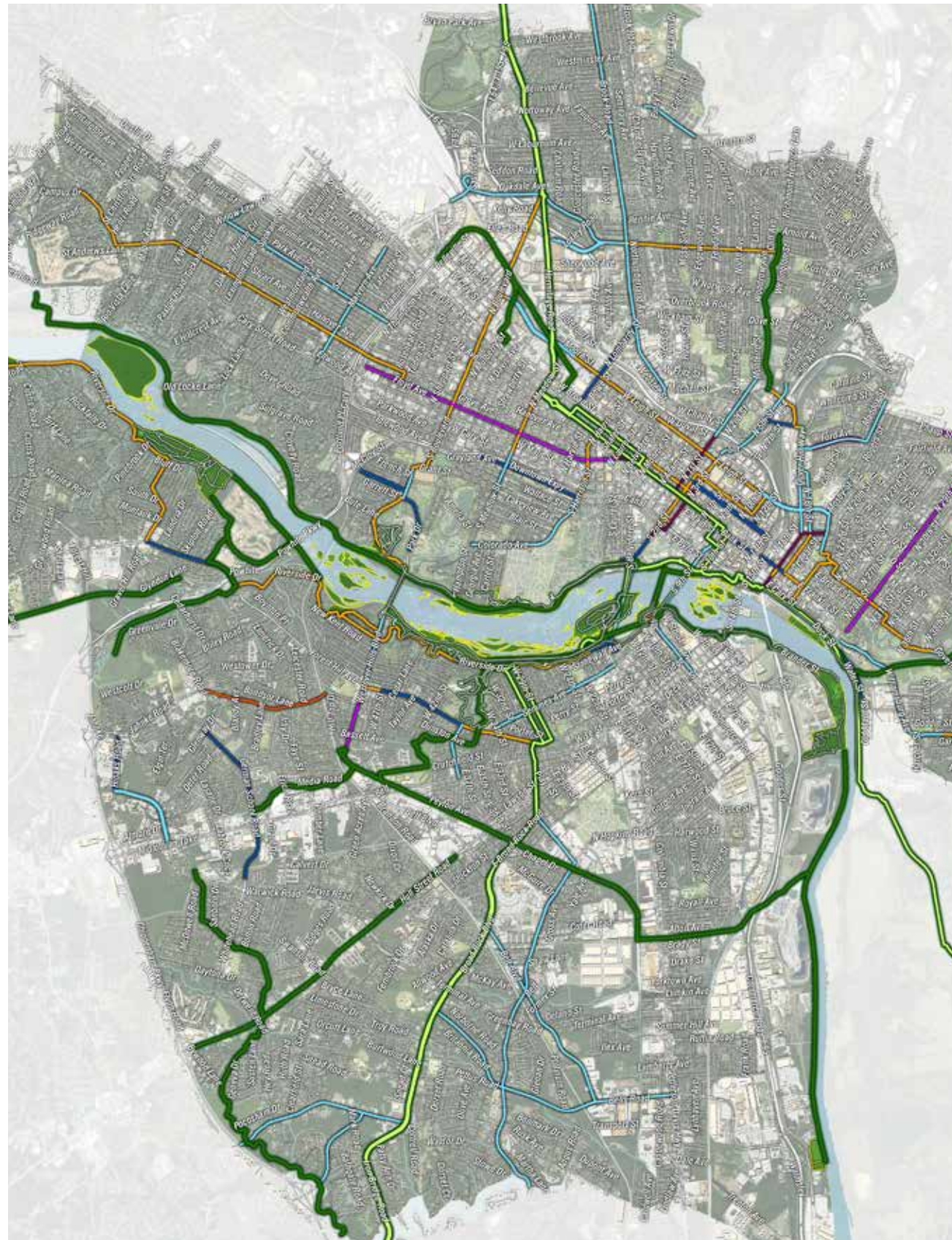
STRATEGIC OUTCOMES

1. Increased funding for Park-related and regional trail projects
2. Reduced vehicle trips to the Park
3. Improved neighborhood access
4. Expanded access for diverse populations
5. Improved wayfinding and dispersal of users within the Park
6. Preservation of wild areas within the Park

“Getting to the Park is easy on a bike, but there could be improvements in terms of bike lanes and increased bike racks at main entry points.”

IMPLEMENTATION

Implementation of the trails and greenways strategies will require action involving existing City property as well as potential new easements and/or acquisition of property. Funding for these improvements may take the form of federal programs such as the Transportation Alternative Program or the Recreational Trails Program, VDOT Revenue Sharing, or City funds. Partnerships with neighboring jurisdictions, state agencies, and private entities will enhance the City's ability to implement these improvements. Development of the full greenway system is likely beyond the 10-year planning horizon of this Plan, but priority elements are realistically achievable within the 10-year timeframe. The City and FOJRP could also support other local and regional efforts such as the James River Heritage Trail (currently under development by the Virginia Department of Conservation and Recreation), the planned Ashland to Petersburg Trail, and BridgePark, to the extent that these projects support the mission of this Plan. Efforts could also be made to incorporate the JRPS into the Virginia Outdoors Plan.



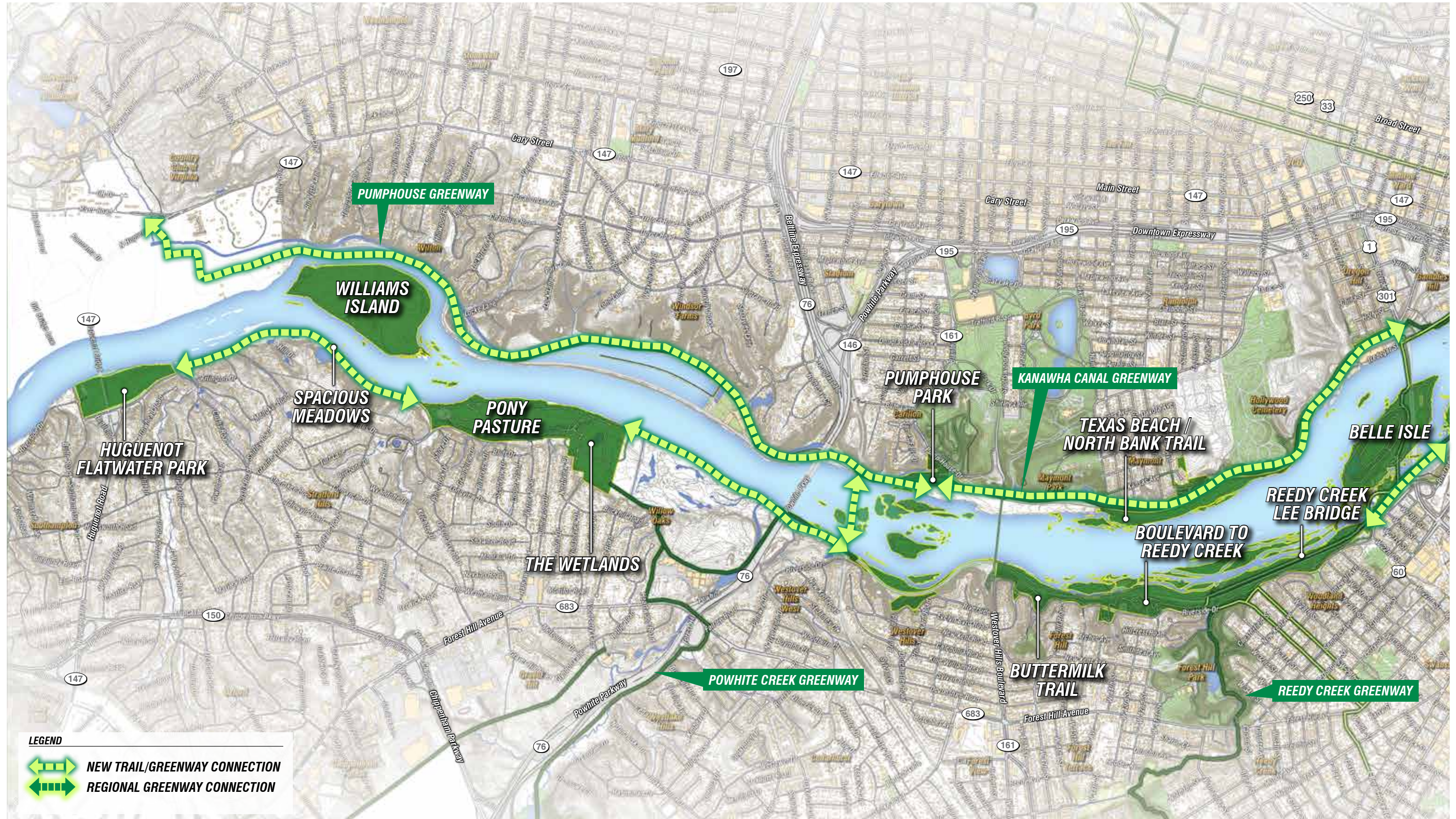
- LEGEND**
- BIKE LANE
 - BIKE WALK STREET
 - BUFFERED BIKE LANE
 - SEPARATED BIKE LANE
 - SHARED LANE
 - SHARED USE PATH

- LEGEND**
- EAST COAST GREENWAY
 - REGIONAL GREENWAY
 - SINGLE TRACK TRAIL
 - NEW TRAIL/GREENWAY CONNECTION

MULTIMODAL NETWORK

GREENWAYS & TRAILS





LEGEND

- NEW TRAIL/GREENWAY CONNECTION
- REGIONAL GREENWAY CONNECTION

GREENWAYS & TRAILS



ACCESSIBILITY & CONNECTIVITY

Preface

The JRPS and the City of Richmond are inextricably entwined, with the Park serving as a powerful ‘wild’ counterpoint to urban life. Accessing the James River Park System occurs in two ways: (1) getting to the Park from elsewhere and (2) navigating within the Park once arrived. These actions require continuity of travel corridors, whether multi-modal outside of the Park or primarily foot- and pedal-powered within the Park. Spatially, there is no physical room for a wholly contained JRPS loop road distinct from the surrounding city fabric.

Equitable access to the James River Park System varies along the length of the Park despite the more than 8-mile river distance. A largely homogenous population in race and income directly brackets both sides of the river with narrow diversity from upriver to downriver. The JRPS acknowledges that more equitable access can be achieved by implementing the ‘Downriver’ components of the 2012 Riverfront Plan to reduce the distance, increase the acreage and upgrade the quality of amenities adjacent to and accessible by historically underserved residents in this area. The continued conversion of former riverfront industrial parcels into non-traditional Park spaces furthers the long-running process of re-greening the riverfront for public recreational use while expanding the acreage available and broadening the demographics of users.

Continuity of paths within the Park is frequently interrupted due to insurmountable infrastructure or discontinuous designated ways. Continuity challenges are often circumvented with desire lines that have become single tracks or unsanctioned but tolerated footpaths. Many of these paths or trails are lightly used or unmarked, further challenging visitors to find their way through the Park, while rewarding those that do with the satisfaction of exploring the unfamiliar – the ‘wild’ that is so integral to the identity of the JRPS.

CONNECTIVITY

Situated at and straddling both the upper and lower Falls of the James River, the terrain is distinctly rocky, with abrupt changes in topography through varied natural geomorphology. The JRPS sits on the Fall Line, the geologic zone where current rivers cross from hard bedrock to softer sediments. This transition zone differentiates the rocky Piedmont zone from the flatter Atlantic Coastal Plain, providing the JRPS with a visual landscape richness deeply valued by visitors surveyed. Past infrastructure efforts related to canal, hydropower, rail, road, flood control, municipal utilities, and now defunct industrial development exerted an equally strong impact on this Fall Line landscape in previous efforts to harness the power generating capacity of the rapids. At the macro scale, the geomorphology physically and atmospherically shapes the experience of floating the river on various types of watercraft. The hills and ravines of the river corridor constrain the alignment of roadways, while the steam age determined rail alignments, transforming the river corridor in terms of moving earth and establishing massive embankments modifying the river flow. This palimpsest of sequential infrastructure improvements, including sewers, dams, and bridge abutments provide rich layers of incremental cultural change over two centuries in a Park system widely perceived of as wild and natural.

The combination of the natural terrain features and the built infrastructure artifacts determines the route of most likely travel to and along the river for current visitors. To a large extent, the Park is built out in terms of establishing new circulation routes. With approximately 42 miles of trails, a good portion of the Park system is accessible with varying degrees of effort. That said, there are several disconnects, such as the Missing Link, a desire line that has remained unrealized due to formidable topography and land ownership constraints. The North Bank Connector recently opened in 2019, providing a pivotal in-Park alignment to what was a mandatory detour across residential neighborhood streets.

With nearly two million visitors annually, and approximately 60% of visitors originating from beyond the City of Richmond, there is an out-sized demand on surface Parking for accommodating visitors, as the prevailing mode for transportation to and from the JRPS. One approach would be construction of more surface parking. However, as emphasized throughout this document, the exceptional experiential value of the current landscape is grounded in the conservation of its natural resources.

The JRPS operates under a conservation and open-space easement granted by the Commonwealth of Virginia and held by the Department of Conservation and Recreation, the Capital Region Land Conservancy and the Enrichmond Foundation. The easement declares the preservation of open space land serves a public purpose by conserving land and other natural resources and providing or preserving necessary Park, recreational, historic and scenic areas. The easement provides for the perpetual conservation of the property for future generations. Operationally, this means that the JRPS is restricted from adding more parking at the expense of Park acreage. The JRPS already restricts access to some existing surface parking lots, consolidating enforcement and maintenance of Park property with limited resources. The consensus is that the JRPS should not and will not be building additional roads and on-site parking lots to solve the growing access challenges.

Solving the pressure for expanded parking turns outward, with preliminary identification of topics for further study, including paid parking and multi-modal transportation including shuttles. Current access to parking within the Park is free. There are currently no meters within JRPS parking lots. When these lots fill up, as they are prone to do, vehicular visitors look to adjacent on street spaces with meters, or un-metered streets, often in residential neighborhoods. Unlimited free parking is not the model JRPS desires to pursue indefinitely. Rather, the JRPS prefers to shift away from a free parking strategy to one balancing a broader, multi-modal transportation strategy.

In the near term, JRPS will consider transitioning from a purely free parking model to a selective pay-to- Park strategy. One pay-to-park strategy may include roll out of City of Richmond resident decals, conferring free parking to city residents, while requiring those visitors without decals to pay. Methods of fee collection and enforcement require further consideration, including meters at each existing JRPS parking space. The City of Richmond already uses the Passport Parking mobile phone application allowing visitors to use their mobile phones to pay digitally and adjust duration remotely. The JRPS could implement this method across the Park, drawing heavily on the experience of other City departments for rollout and enforcement.

The promise of a mobile phone application for parking payment goes well beyond the digital collection. Mobile applications are key components of a variable rate parking payment system, allowing the JRPS to adjust the payment rates by lot, season, day, and time. For instance, it may be desired to charge a low rate during a low demand day, such as a Tuesday morning. Contrast that with a higher rate for Saturday afternoon during May, coinciding with a large Park-sanctioned event. This enables the Park administration to adjust rates to meet demand while simultaneously urging visitors to consider alternate modes of transport and alternate parking accommodations beyond the JRPS boundaries. Other apps provide data on real-time metered parking availability. Use of such an application tied into the real-time status of JRPS parking lot locations would help visitors assess their parking options versus seeking alternative transportation modes. As noted in previous master plans, the City of Richmond has ample surface parking lots across the downtown core. This both fuels the perception that parking should be ubiquitous and cheap, while downplaying the negative visual impact of sprawling surface lots. The JRPS is pointed away from increasing spaces and cheaper parking, though a strategy of economic equity for lower income residents must be addressed.

(continued)

ACCESSIBILITY & CONNECTIVITY

Multi-modal transportation historically encompassed walking, bicycling and public transit, though each of these modes have been outpaced by private automobile. The JRPS aims to reset this balance through a multi-pronged support for alternate options. For instance, expanding greenways out from the current Park properties to provide pedestrian and bike-only conduits for accessing the Park, consistent with expanding recreational opportunities. In another instance, the Greater Richmond Transit Company (GRTC) has participated in past efforts to accommodate access to the JRPS and more recently commenced the Pulse: frequent daily service vehicles that traverse Shockhoe Bottom and the East Riverfront, two areas that tie into the Virginia Capital Trail and possible future additions to the JRPS between Great Shiplock Park and Rocketts Landing. That said, the limited city streets along the James River work against maximizing public transit. Multi-modal transit may include future investigation of a Park-focused rubber-tired shuttle, operated either independently or jointly by governmental, private or non-profit organizations to alleviate vehicular congestion and demand at key Park destinations, as described in more detail elsewhere in this master plan.

ACCESSIBILITY

Materials and slope play prominent roles in determining the accessibility of the James River Park System. The majority of trails within the Park system are stone dust, packed earth or gravel. Each of these are pervious, allowing storm water to readily percolate through to the groundwater below without storm drainage infrastructure. However, granular pavements are prone to washouts from heavy rain events and sustained trafficking. In contrast, impervious paving is characterized primarily as stone, concrete or asphalt, none of which are fundamentally capable of passing storm water or flood water through their cross section. Pervious surfaces are generally best suited for foot and bike traffic, whereas impervious materials are better suited for motorized vehicle passage and conditions demanding high resiliency to weather-related events. Permeable unit pavers are widely available, yet less desirable in a flood-prone environment as the substrate clogs with debris. All are subject to catastrophic damage from flooding. The James River Park System has a large and growing easement restricting the extent of impervious pavements across many of the Park properties. The goal of this effort is to maximize the natural and wild character of the Park without encouraging widespread sprawl associated with standard best practices for conventional vehicular roadway design.

Much of the JRPS property is on extraordinary terrain, heavily constrained by topography, vegetation and drainage watersheds, with human circulation a challenge under the best of conditions. Trails in the James River Park System are primarily the result of volunteer-built off-road trails used by hikers, mountain bikers and trail runners. Their triple use description means that their configuration varies widely to accentuate ease or complexity of alignment, degree of difficulty in terms of negotiating steep slopes, constructed infrastructure, and natural features including trees and tributary streams. In short, there is no one-size-fits-all guidance for new or improved connective routes within the Park. Federal guidelines articulate maximum slopes for designating accessible routes as no more than 5% with a 2% cross slope. However, many of the trails and features of the JRPS were constructed well before the initial 1991 Americans with Disabilities (ADA) law went into effect.

Critical connective structures include late 1960-era stair towers, which are not practical for fully accessible retrofits. Site-built stair and unconventionally configured bridge structures provide crucial continuity across the Park terrain and are generally not modifiable for full ADA compliance without destroying the natural or cultural resource the Park is charged to conserve.

The JRPS intends to pursue compliance with the current 2010 ADA Standards for Accessible Design for all new Park elements; and maximize public access in for all Park improvements and retrofits. Concurrently, the JRPS recognizes that not all areas of the Park can be fully compliant without significantly altering or degrading natural and

cultural resources. Federal law allows for some flexibility in new construction, with pending proposed technical provisions for Shared Use Paths addressing conditions where exceeding the 5% maximum slope is permissible. Complying with the standard 5% maximum slope is the objective, to the extent practicable, however there will be contexts where existing terrain, infrastructure, right of way dimensions, natural features, and other physical constraints make compliance impracticable. <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/shared-use-paths/supplemental-notice/comparison-to-aashto-guide>.

Trails designed to be used for specific recreational modes, such as mountain bikers, are not required to comply with federal technical requirements. Notably, the running slope of a trail may exceed the maximum 5%, provided the lengths of the slopes do not extend for excessive distances. For instance, a trail may approach 8.33%, but for no more than 200-feet. A trail may steepen to 10% for no more than 30-feet, and may ultimately reach 12%, but only for less than 10-feet. No more than 30 percent of the total trail length may exceed 8.33%. A 5-foot rest length with a less than 5% slope is required before and after each steep rise. Typical pavement cross slope is 2% maximum. Trail cross slope may approach 5% with natural surfaces for drainage but must conform to the 2% maximum if constructed of concrete, asphalt or boardwalk. <https://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/a-summary-of-accessibility-standards-for-federal-outdoor-developed-areas/trails>.

As with the preceding discussion of topography and slope, terrain also constrains the functional width of walks and trails. Recognizing lean capital budget funding realities and acknowledging the physical constraints of routing an accessible way through the Park, setting a prescriptive width dimension for one or all walks or trails is best left to site specific conditions and anticipated visitor counts. Whereas a prototypical 10-foot wide dimension is desired for most shared use paths, the in-the-field realities of the topographically diverse landscape of the James River Park System property makes this an ideal rather than a minimum standard. The south embankment path of the T. Tyler Potterfield Memorial Bridge was constructed with a 10-foot pavement and flanking 3-foot shoulders. In other locations this simply is not possible. The Floodwall Park pavement, for instance, is approximately 8-foot wide with no shoulders and enclosing guardrails. Other instances include single track trails justified along 8-foot high fences that could not exist without the latitude to craft a site-specific solution. The JRPS prefers to construct critical connections, even if it is not possible to conform to an ideal width.

The JRPS aims to maximize public access where this is readily achievable, fulfilling the objective to expand opportunities to experience the Park and the James River. Access shall necessarily be balanced with the objectives to conserve resources and preserve unprogrammed wilderness areas, yielding a broad diversity of environmental and recreational experiences. Generally, the JRPS is a more urban waterfront below Belle Isle, and wilder forest, with more varied natural conditions, upriver of Belle Isle. Not all Park parcels are uniformly accessible, nor anticipated to be retrofitted for maximum public access.

The JRPS seeks to ensure that all people have the highest level of accessibility that is reasonable to Park programs and facilities in conformance with applicable regulations and standards. The following provides guidance on accessibility and mobility for JRPS trails and Park destinations, in four parts:

- 1.0 Applicable Laws and Standards,
- 2.0 Accessibility Guidelines for Outdoor Developed Areas,
- 3.0 Mobility Device Guidelines,

ACCESSIBILITY & CONNECTIVITY

(continued)

4.0 Shared Use Path Accessibility Guidelines,

5.0 Trail Signage

All five parts shall be considered throughout site planning, design, construction and management of all trails and trail facilities by park staff.

1.0 Applicable Laws and Standards

Architectural Barriers Act Accessibility Standards of 2004; as amended through 7 May 2014 (ABAAS). All new and altered buildings and facilities must be designed and constructed in conformance with these standards.

American with Disabilities Act of 1990 (ADA). Prohibits discrimination on the basis of disability in all State and Local Government entities (Title II) and Place of Public Accommodation (Title III).

Accessibility guidance for the Park's trails will adhere to the federal guidelines for access and use of mobility devices, including:

- Application of Revised Final Title II Regulations of the American with Disabilities Act of 1990. (42.U.S.C 12131)
- Final rule of the Federal Accessibility Guidelines for Outdoor Developed Areas
- Utilization of Universal Trail Access Information Signage System
- Future reference to proposed rule on Shared Use Path Accessibility Guidelines.

2.0 Final Accessibility Guidelines for Outdoor Developed Areas

The JRPS will reference the 2013 Final Accessibility Guidelines for Outdoor Developed Areas <https://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/final-guidelines-for-outdoor-developed-areas> for new and altered trails, paddle launch/takeout areas, and other applicable trail facilities. Full compliance with Chapter 10 Recreation Facilities, is applicable to federal agencies, work performed on federal property, and for municipalities that have adopted the same for enforcement. The City of Richmond has not yet formally adopted this provision, nevertheless it remains the best practice as standard of care, with key provisions highlighted within <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/ada-aba-accessibility-guidelines-2004/chapter-10-recreation-facilities>. During the JRPS design process, evaluation and determination of accessibility for trails and outdoor trail facilities applicable to the Park will be conducted by the landscape architect/designer or Park coordinator of volunteer-run projects.

The Park will evaluate each new trail and designate existing trails utilizing the provisions and conditions set forth by the United States Access Board as outlined below. Due to the unique nature and conditions of each trail, the Park will evaluate each trail individually during the planning and design phases of all new trails or altered existing trails. Evaluation will utilize the Universal Trail Assessment Process (UTAP) where feasible (Universal Trail Assessment Process, FHWA, 2001). Accessibility limitations will be defined for each trail as part of the design development of each new trail and the information provided to the trail and trail facility user.

2.1 Trail Accessibility Provisions

Design and construction of trails dedicated for universal accessibility and limited accessibility will necessarily address

the following characteristics to comply with the Architectural Barriers Act:

- Surface
- Clear Tread Width
- Openings
- Protruding Objects
- Tread Obstacles
- Passing Space
- Slope
- Resting Intervals
- Edge Protection
- Signage

2.2 Accessible Route Definitions

The Federal Accessibility Guidelines defines three types of accessible routes:

1. Access routes relate to the built environment where all routes must meet accessibility requirements,
2. Outdoor recreation access routes relate to facilities in the outdoor environment where reasonable access is required, and
3. Accessible trails relate to a natural trail that is designated as suitable for all levels of ability and consistent with conditions that have been set forth by federal guidelines.

2.3 Conditions for Departure

United States Access Board's Final Outdoor Developed Areas Final Rule defines four conditions that allow for departure from technical provision guidelines. These conditions include:

1. Compliance is not practicable due to terrain,
2. Compliance cannot be accomplished with the prevailing construction practices,
3. Compliance would fundamentally alter the function or purpose of the facility or the setting.
4. Compliance is limited or precluded by any of the following laws, or by decisions or opinions issued or agreements executed pursuant to any of the following laws: Endangered Species Act; National Environmental Policy Act; National Historic Preservation Act; Wilderness Act; or other federal, state, or local law the purpose of which is to preserve threatened or endangered species; the environment; or archaeological, cultural, historical, or other significant natural features.

*(continued)***3.0 Mobility Device Guidance**

The trails in the James River Park System provide a wide range of conditions for trail accessibility and mobility. The JRPS endeavors to provide all visitors with the highest level of accessibility reasonable to programs, facilities and services in conformance with applicable regulations and standards. The 2010 federally adopted final regulations for Other Power-Driven Mobility Device (OPDMD) acknowledges that there are many types of devices visitors with mobility, circulatory, respiratory, or neurological disabilities rely on for access to public space. <https://www.ada.gov/opdmd.pdf>

The use of power-driven mobility devices for the purpose of accessibility must be allowed unless the Superintendent has determined specific devices cannot be accommodated for legitimate safety requirements and can provide an alternate if possible. Trail traffic may vary by time, day, month, season, and event, requiring Park staff to restrict or prohibit devices along specific trails, pavements or environments. Devices that exceed a given trail width are prohibited, and therefore permissible solely on multi-use trails surfaced with crushed aggregate materials, metal decking, and gravel service roads.

The JRPS may allow OPDMD's in prohibited areas when and where special conditions apply and safe use is assured, without adverse environmental, cultural or safety impacts to Park resources, at the sole discretion of the Superintendent. Generally, fundamental limitations for OPDMD's include:

- No internal combustion engines permitted,
- Electric-powered devices designed to transport a single individual with a disability as a substitute for walking use by a person with a mobility disability,
- Not to exceed 5 miles per hour speed limit for mobility devices,
- Mobility devices no wider than 36" are permitted,
- Restricted to pavements and trails less than 5% longitudinal slope,
- E-bikes (electric bikes or electric-assist bicycles) allowed on access and service roads, and those trails or connective paths 6 feet and wider, or as determined by the Superintendent,
- Single-track trails shall remain exclusively muscle-powered trails.

4.0 Shared Use Path Accessibility Guidelines

The U.S. Access Board is developing accessibility guidelines for shared-use paths. As defined under the proposed rule, the rule shared use paths are "primarily designed for bicyclists and others for transportation purposes such as commuting to work." Newly adapted Park facilities, including the 2016 T. Tyler Potterfield Memorial Bridge incorporated accessible routes, slopes and widths complying with federally defined Shared Use Paths as the project was conceived as a commuter through route between Manchester and the north side. The JRPS will continue to review the proposed guidelines and their applicability to new construction or alteration of shared-use paths that are defined and apply under this proposed rule. <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/shared-use-paths/supplemental-notice/comparison-to-aashto-guide>

5.0 Trail Signage

The JRPS will continue use of signage developed as part of the T. Tyler Potterfield Memorial Bridge, following the preceding directive of the Richmond Riverfront Plan describing development of a consistent and cohesive vocabulary of signs adaptable to a broad range of Richmond riverfront landscapes. Though the JRPS does not have a Park-wide signage plan, the intent is to incrementally install signs corresponding to new construction, renovated and adapted properties on a case by case basis.

The conservation and open space easement limits the size of signs to 9 square feet, with an emphasis on being unobtrusive. Resolving easement and Riverfront sign configuration inconsistencies will be necessary.

Federal guidelines for Trailheads and Trail Facilities became effective in 2013. These rules do not yet apply directly to the JRPS as it is not a federal entity. However, it does foreshadow continuing maturation of federal accessibility guidelines and forms the basic standard of care. The gist of the new rule is that newly constructed or altered trails shall require information on the length of the trail or trail segment; surface type; typical and minimum tread width; typical and maximum running slope; and typical and maximum cross slope. This requirement applies regardless of whether the trail complies with the technical requirements for trails. The information provided on the signs enables individuals with disabilities to decide whether to hike the trail based on the characteristics of the trail. <https://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/a-summary-of-accessibility-standards-for-federal-outdoor-developed-areas/trailheads>

"Accessibility in the form of tours/providing free transportation to James River park - connection with schools (RPS) and community center to enjoy natural resource."

"I would be into a parking/shuttle situation as well..or if the busses ran from where I live (Henrico co)!"





PHOTO COURTESY OF WILLIAM DRAPER

7 WATER BASED ACTIVITIES

WATER-BASED ACTIVITIES

The Park by Water...

The River is the sole reason Richmond sits where it is. In the 1600's ships sailed to the highest navigable location and settled in the Richmond region at the Falls of the James. The River would then be the main method of exporting and importing before trains and other methods came to be. Nowadays, the River is used for much more than just a port and yet has remained just as important and integral to Richmond's identity and function. Boating, stand up paddle boarding, white water rafting, swimming, tubing, and fishing are just some of the water based activities that attract people to the River and the Park.

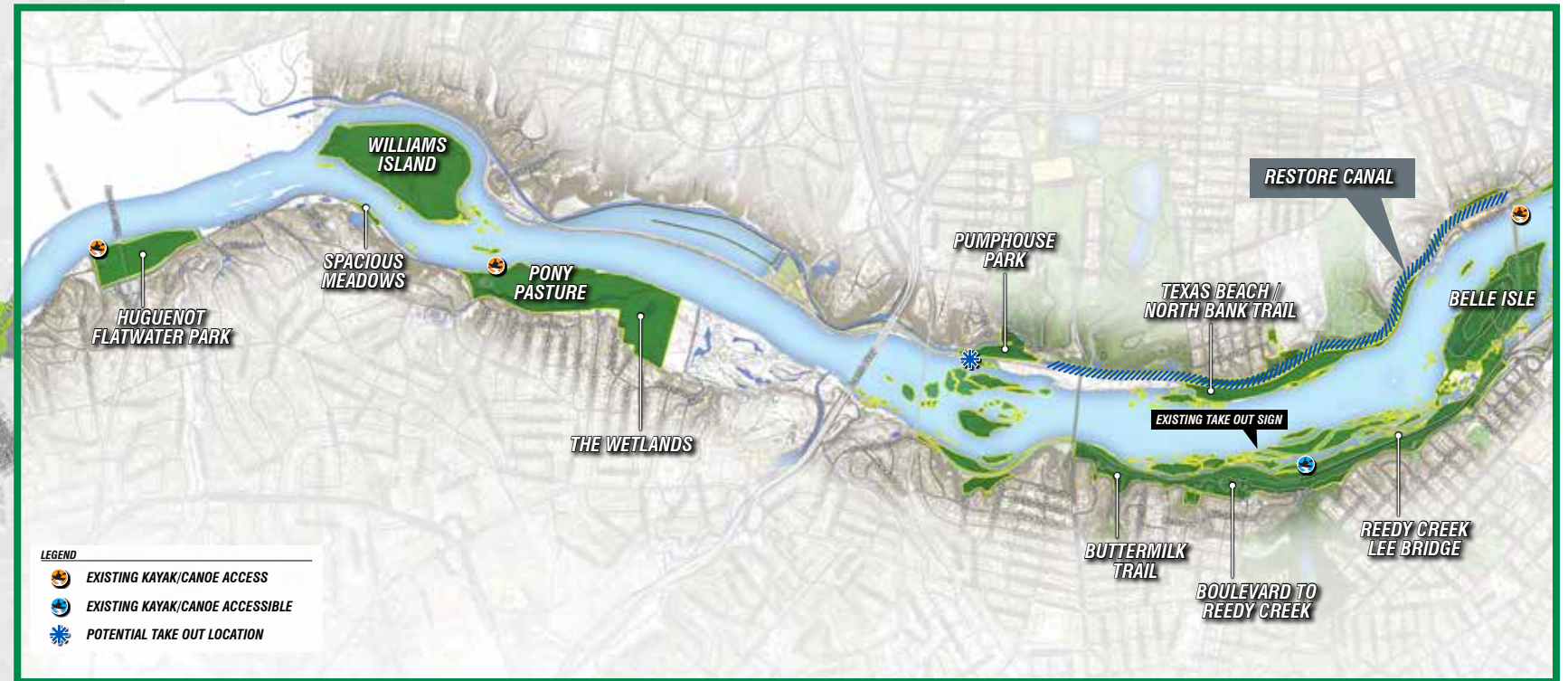
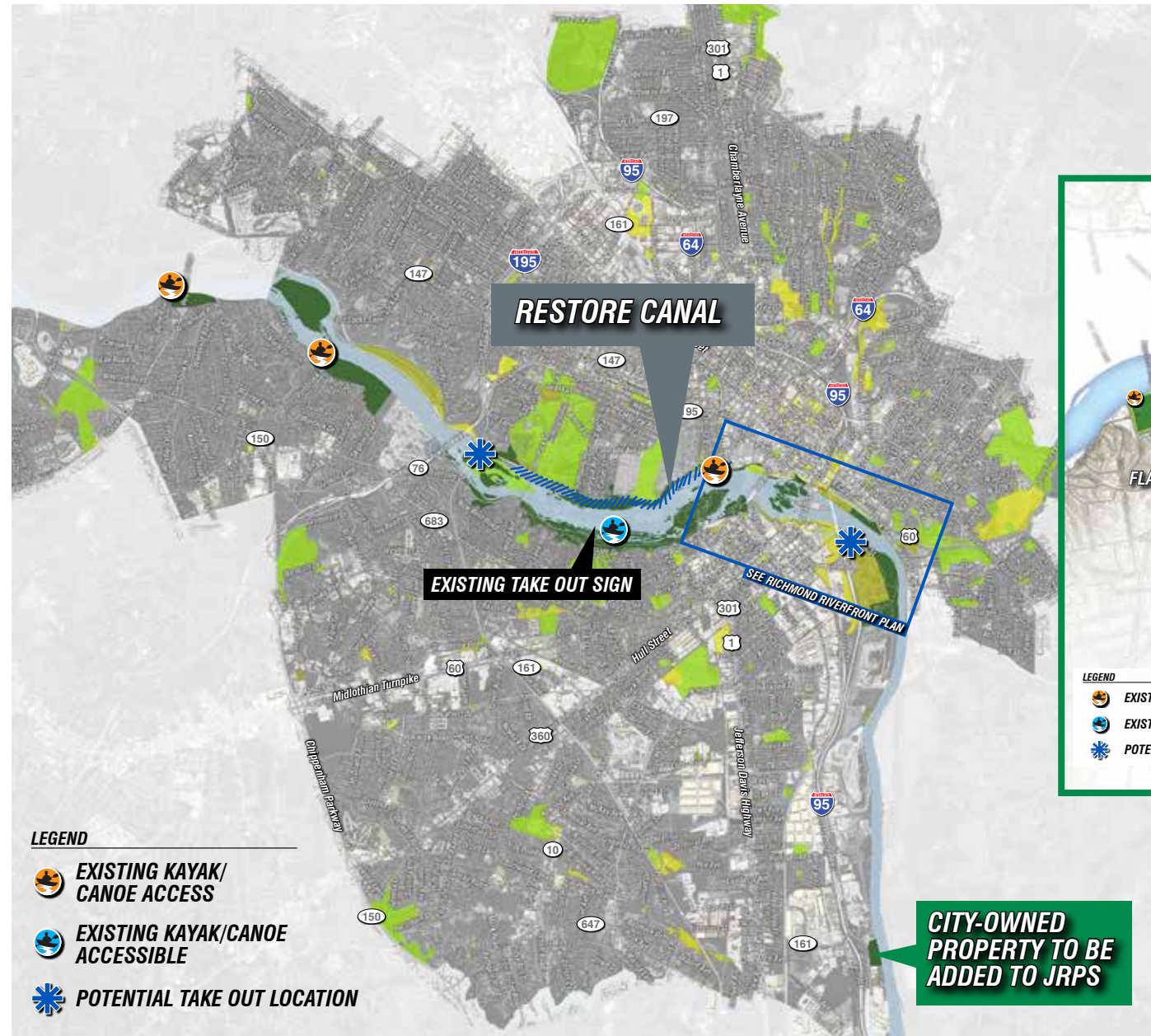
The River offers a wild and scenic experience with areas of white water rapids and flatwater, which makes it versatile for use. The River's whitewater, which include Class 4 rapids, has prompted an organization to begin forming a plan to create a white water rafting center to bring more adventure seekers to the River. The flatwater sections allow stand up paddle boarding, swimming and boating. This heavy demand puts pressure on the carrying capacity of the Park and the user experience

of the River. The canals along the River offer yet another type of water experience, and vary in their conditions of access and maintenance.

The Park includes numerous put in/take out locations, used by individuals, groups, and private river outfitters. These access points facilitate different experiences at different locations along the River. They also include varying degrees of accessibility. During public outreach there were numerous comments about the lack of accessibility throughout the Park and to the River. One survey responder commented: **"So many ways for [the Park] to improve. Easier and more access for all (not just the young and able bodied). I love its beauty and kayaking is one of the few forms of exercise I can still do. But I have to have someone put in and out for me. There are so many parts of the river with no access to anyone, let alone someone like me."** The Park also manages programs and opportunities to learn about and experience water based activities through the James River Park and companies.



PHOTO COURTESY OF WILLIAM DRAPER



WATER-BASED ACTIVITIES MAP

Improving the water-based activities in the Park would begin with a focus on universal accessibility, while embracing the natural and wild feel of the River. This would include adding more ADA features to boat put-ins and take-outs and developing ADA accessible paths and means to the River. An expanded education and outreach program would focus on water and flood safety, the history and importance of the River, ecology and proper use. Working with other stakeholders to reopen and maintain sections of canal would further enhance the River experience for Park visitors. Finally, this plan supports and incorporates the recommendations included in the Richmond Riverfront Plan.



RECOMMENDATIONS FOR IMPROVING WATER ACCESS IN THE PARK

1. Improve signage and online information about river dangers including Z-dam and rapids

As part of an overall consistent approach to signage, wayfinding, and education, the City should incorporate additional information about river safety, including the responsibility of users to understand risk and their own abilities.

2. Retrofit existing water access sites to be universally accessible; priorities include Huguenot Flatwater and 14th Street takeout

Working in a phased and prioritized manner, the City should provide universal access to put-in/take-out locations. As part of these upgrades, consider adding electrical poles for raft inflation.

3. Work with Venture Richmond to restore canal from Pumphouse to Tredegar

FORJP and the City should support efforts to secure funding for this project, which is likely a long-term objective requiring final design, permitting, and construction.

4. Work with the City and other stakeholders to improve/maintain canals

Access to and interpretation of the canal system should be a priority.

5. Designate a number of existing parking spaces for paddlers at popular water access sites (Huguenot Flatwater, Pony Pasture, Reedy Creek, and 14th Street Takeout)

6. Construct a rowing facility at Ancarrow's Landing in partnership with Richmond Community Rowing

7. Establish a community paddle share program for residents who do not own a paddlecraft

8. Implement the Richmond Riverfront Plan, specifically Downriver (also known as East Riverfront), to add a new water access site at Lehigh

9. Add a water access site for launching paddlecrafts underneath the Interstate 95 bridge on the south bank of the James River

STRATEGIC OUTCOMES

1. Increased understanding for and appreciation of the River and its ecology
2. Fully realized universal access to existing put-in/take-out points
3. Expanded education and outreach
4. Expanded access to historic canals
5. Establishment of a new rowing facility at Ancarrow's Landing

IMPLEMENTATION

Implementation of the water access strategies will require action on Park property as well as collaboration with other City departments and other stakeholders. The City will need to prioritize universal accessibility improvements for funding over several years, but a fully-accessible system is achievable within the planning horizon. Expanded educational programming will require additional Park staff, and could also involve outside experts and educational resources. Venture Richmond has developed preliminary plans for restoration of the Kanawha Canal from Pump House to Tredegar; FOJRP could support their efforts to fund and implement the project. Finally, the City is currently working with the Richmond Community Rowing on the potential new facility at Ancarrow's Landing; these efforts should continue.



“The Park is a rare resource for an urban setting. Its ability to link the urban to the natural is essential and should not be underestimated. It should invite people to the river, and allow for easy access to that tremendous resource.”

“more [guided] river-based activities would be great - I rarely, if ever, actually get in the water.”



8

PARK BUILDINGS



PARK BUILDINGS

Immersed in History...

Buildings within the JRPS range from large historical structures to smaller contemporary maintenance facilities. Although there are buildings located at various areas within the Park, many are concentrated on Belle Isle. Several of these are abandoned and need revitalization and recognition to make them a fully-contributing part of the Park experience. In their current state, some of these structures facilitate unsafe/illegal entry and vandalism. The historic buildings also lack interpretation signage identifying what they are and what purpose they originally served. As identified in the Riverfront Plan, some of these buildings have considerable historical significance, and could enhance the overall user experience if stabilized/restored/interpreted.

Many of the Park buildings are located on Belle Isle, and are discussed in the Riverfront Plan; this JRPS MP incorporates those recommendations. One point of emphasis from the Steering Committee deliberations on the JRPS MP relates to the former hydroelectric plant on Belle Isle. This structure and its surrounding site are part of the larger history of the City, the James River, and the Park.

West of Belle Isle, this Plan includes focus area concepts for the buildings at Pump House, Reedy Creek Headquarters, and Pony Pasture (see Focus Areas chapter later in this Plan). Pump House is a historic facility that provides context for what took place within the Park in the past, with significant opportunity for interpretation and adaptive reuse. The Pump House is currently owned by the City but has a volunteer group called the Friends of Pump House, which is raising funds and organizing efforts to revitalize and inspire Richmond citizens to visit and care about the Pump House. Reactivation of this site into a park could help disperse visitors within JRPS, especially in conjunction with the Pump House Greenway. Reedy Creek Headquarters serves important operational functions and also provides a community gathering place, educational resources, and restrooms. The Headquarters is now too small for its needs and requires expansion and updating. Expansion plans for Reedy Creek have been completed. Lastly, the existing building at Pony Pasture provides an opportunity for reimagining as an Environmental Education Center.

As described in the Park Activities section of this Plan, permanent restroom facilities could utilize existing unused or underutilized structures, thus enhancing the user experience without adding impervious cover or extending physical development into undeveloped areas.

STRATEGIES FOR MAINTAINING AND INTERPRETING PARK BUILDINGS

1. Complete preliminary plans for Pump House Park and progress to final plan stage; pursue implementation funding

Preliminary planning and design for restoration of Pump House and adaptive reuse of the building and site is well underway. The City and FOJRP should continue their support of this effort and encourage Friends of Pump House to help move the project into final design. Efforts to fund the improvements, through public and/or private sources, should follow.

2. Fund and construct improvements at Reedy Creek

The need for improved facilities at Reedy Creek is acute, and design plans have been completed. Funding and construction should be top priorities.

3. Pursue planning and design for Environmental Education Center at Pony Pasture

This Master Plans indicates at a conceptual level how the existing structure at Pony Pasture could be reinvigorated as an educational facility. This is likely a longer-term project, with additional planning and design needed in addition to fund raising.

4. Increase funding for maintenance of Park structures

Along with the increased Park staffing described herein, adequate maintenance and interpretation of Park structures will require additional funding. Investigate the potential to stabilize and interpret the historic hydroelectric plant and mill on Belle Isle. Also investigate the potential to use the triangle building on Belle Isle for restrooms and operations.

5. Implement the recommendations in the Riverfront Plan relating to Park buildings

STRATEGIC OUTCOMES

1. Adaptive reuse of Pump House with historical interpretation
2. Improved maintenance and operations capacity
3. Improved site circulation and wayfinding at Reedy Creek
4. Expanded educational capacity
5. Enhanced user experience with improved understanding of Park history and context



IMPLEMENTATION

Final site plans for the Reedy Creek maintenance facilities have been approved, and construction is achievable within the horizon of this Plan. Enhancements to Pump House and associated site improvements will need to progress through final design, and construction will prove costly. However, an aggressive funding campaign could result in project completion within 10 years. Given its preliminary status, the Pony Pasture Educational Facility is likely beyond the 10-year planning timeframe. The City and FOJRP should continue to engage stakeholder groups, such as Friends of Pump House, in planning and implementation of these improvements. Stabilization and interpretation of the structures on Belle Isle should be pursued consistent with the Riverfront Plan.



“I would love to see the Pump House brought back to life and made more accessible for walking through and touring, but also for event rentals and music.”







PHOTO COURTESY OF WILLIAM DRAPER

9

PARK ACTIVITIES

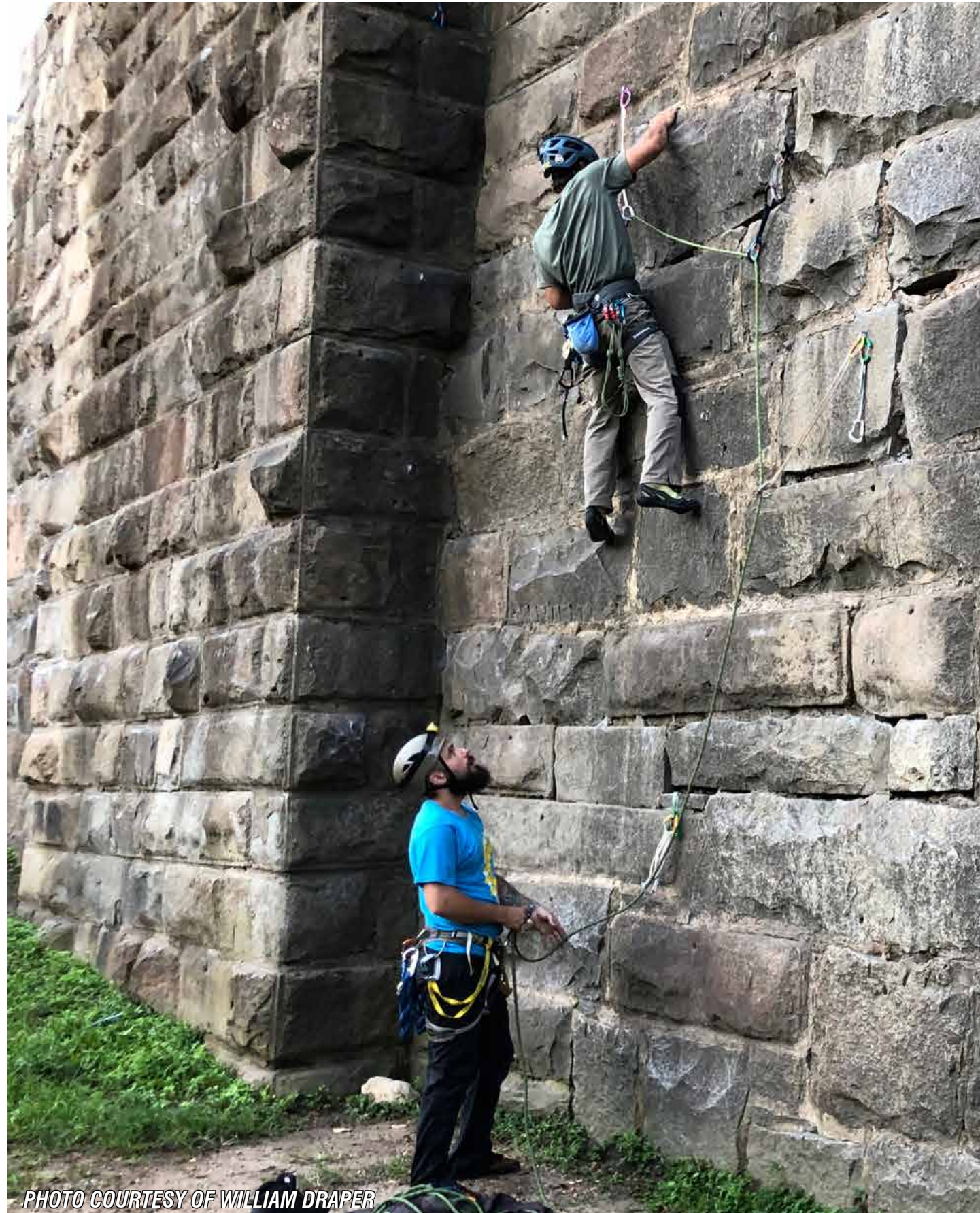


PHOTO COURTESY OF WILLIAM DRAPER

PARK ACTIVITIES

An Urban Wilderness Adventure...

The James River Park offers an incredible variety of experiences, attracting diverse user groups. This wilderness area within the heart of downtown Richmond allows people to enjoy unprogrammed and programmed activities ranging from contemplative to adventurous. Park visitors can enjoy the following:

- Birdwatching
- Wildlife viewing
- Canoeing/kayaking/stand up paddling
- Cycling
- Fishing
- Jogging/trail running/hiking/dog walking
- Photography
- Picnicking
- Rock climbing
- Swimming/tubing

The unique wild river experience and the range of activities make the Park a special place; they also introduce issues such as overuse, user conflict, and confusion about Park rules, visitor responsibilities, and stewardship. Given its wilderness focus, the Park appropriately includes amenities such as restrooms and water fountains in limited areas. However, the reliance on temporary restrooms (port-a-potties) can detract from the overall user experience.

Improving the James River Park System visitor experience will encourage all Richmonders to enjoy the park. An enhanced focus on user experience could help support the Park's position as a world-class destination. Areas of focus could include expanded educational programming and outreach, consistent and high-quality signage and wayfinding, and transition to permanent restroom facilities. Consideration could also be given to focusing outreach on user responsibilities and discouraging activities detrimental to the Park. The City could also consider the potential for areas and/or times when off-leash dog activities are permitted. The range of available activities at the Park is appropriate and likely does not warrant expansion to other activities. Rather, the focus should be on enhancing the essential wilderness and natural experience, along with the history of the Park and its various locations. Finally, this Plan supports and incorporates the recommendations included in the Richmond Riverfront Plan.

"I like to recall the deeper history, how the river formed and the First Peoples that lived on either side of the fall line. It could improve by having more education/events that speak to that deep history. Events that bring children in and teach them to be quiet in nature and observe are crucial to early development."

STRATEGIES TO IMPROVE THE USER EXPERIENCE AT JAMES RIVER PARK

1. Educate visitors about the ecosystem in which they live and what they can do to contribute to its health in partnership with local institutions and environmental nonprofit organizations
2. Implement Riverfront Plan and encourage dispersal of visitation to areas east of Belle Isle and downstream
3. Promote education as Park activity
 - a. History/reason for the Park
 - b. Natural resources
 - c. Water safety
 - d. Flood education
 - e. Memorialization on Belle Isle of the Civil War prison site of U.S. troops
 - f. River, canals, locks

4. Discourage human activities detrimental to the health of the park system via signage and enforcement
 - a. Promote Leave No Trace principles
 - b. Prohibit fires and grilling
 - c. Prohibit collecting of wood and plants
 - d. Prohibit dumping of any kind including leaves, grass clippings, and yard waste
5. Install consistently branded interpretive and wayfinding signage throughout the park system
 - a. Use recent trailhead and signage projects to consistent standards and themes for:
 - i. Kiosks
 - ii. Interpretive signs
 - iii. Wayfinding and mile markers
6. Post up-to-date maps of the park system at all entrances the park system

7. Install water fountains for humans and their pets at popular places in the park system
8. Transition from reliance on temporary restroom facilities to permanent structures
 - a. Improve maintenance and servicing of existing restrooms
 - b. Add permanent restrooms where sewer/water available
 - c. Consider alternative restrooms where sewer/water not available
9. Create a seasonal guide of interpretive and recreation programs in the park system
10. Implement a trial location and time for off-leash dog play (including swimming)
11. Consider scenic views with placement of signs, kiosks, and other structures.



STRATEGIC OUTCOMES

1. Branding, consistency, and quality associated with a world-class destination
2. Expansion of education as a primary Park activity
3. Cultivation of a user ethos and stewardship responsibility
4. Enhanced user experience with improved system of permanent restroom facilities and water fountains at strategic/priority areas
5. Continued emphasis on leaving certain places within the Park unimproved and difficult to access

“Permanent off leash dog area or hours with river and water access. Perhaps weekdays at Texas beach until 9am and weekends until 10am. Would be plenty for dog owners. There are already so many off leash dogs all the time.”

IMPLEMENTATION

Enhancing the user experience of existing park activities is achievable within the 10-year timeframe of this plan. The City will need to prioritize improvements to signage and wayfinding over several years to realize a consistent system of high-quality amenities. Expanded educational programming will require additional Park staff, and could also involve outside experts and educational resources. Priority consideration should be given to construction of permanent restrooms where water and sewer are currently available; the City should also select one location for pilot project use of alternative restroom technology. The City could also research and implement other historical hikes such as Tredgar to Belle Isle to T. Tyler Potterfield Memorial Bridge (Civil War Hike) and Pony Pasture to Reedy Creek to Ancarrow’s Landing (Conservationist/River Hero Hike).





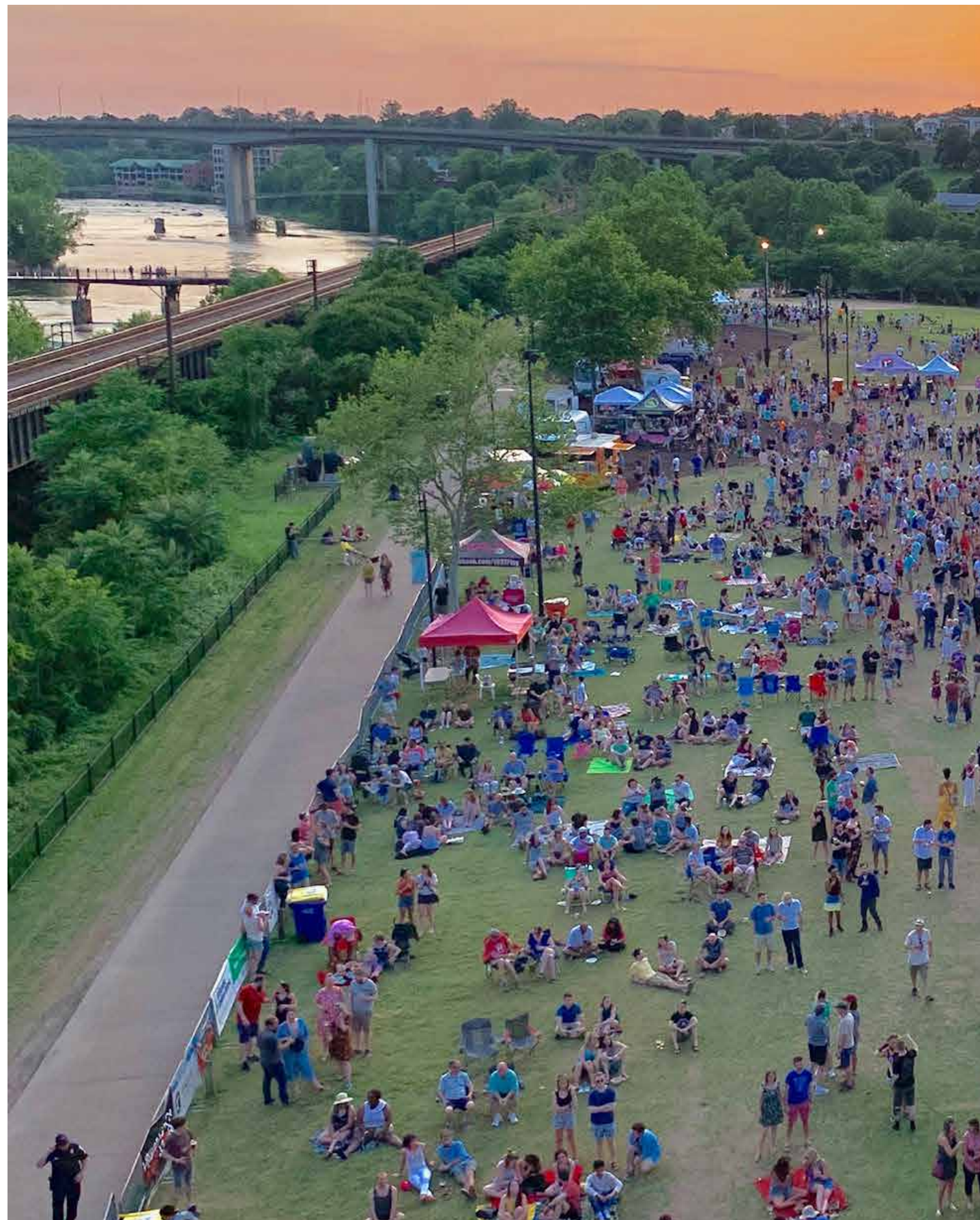
“Provide education on the benefits of the park and what a small gesture like leave no trace and bringing bags on walks to pick up garbage can do to make the park a better place. The park needs to be treated like our own yard. We want to keep it nice and enjoyable.”





PHOTO COURTESY OF WILLIAM DRAPER

10
PARK EXPANSION



PARK EXPANSION

A Growing Park...

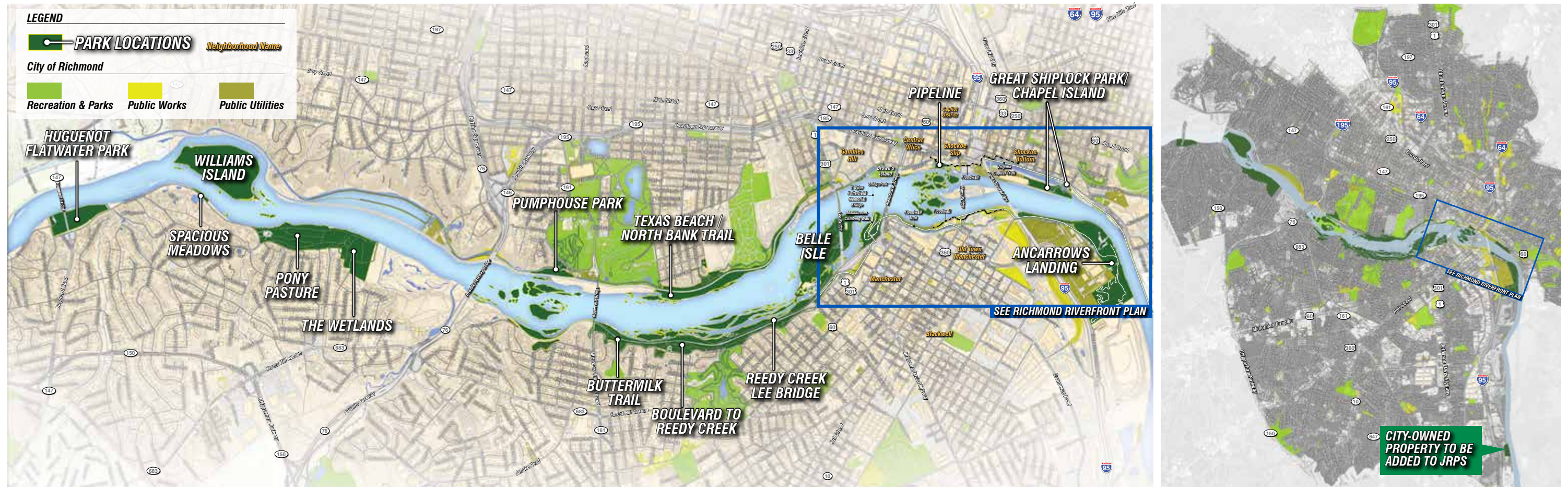
The steady rise of visitors to the James River Park System follows the corresponding growth rate of the Richmond metropolitan area rate, eclipsing that of Virginia and the nation, and exceeding 1 million for the first time ever in 2018. The City of Richmond population (nearly 230,000) is growing at a rate (12%) twice that of the Commonwealth and the nation averages <https://datawrapper.dwcdn.net/9M20y/2/>. Few Commonwealth counties and cities are experiencing larger rate spikes, and those are largely in Northern Virginia. This reflects a continued shift of Virginians to increasingly urban areas as the balance of Commonwealth county populations decrease.

This increasing metro and city population is looking for destinations for daily and weekly recreational pursuits, driving up visitation and general wear and tear on the James River Park System. Visible results include greater numbers of people encountered, full parking lots, overflowing trash receptacles, damaged resources of all description, and accelerated trail degradation. This in turn triggers negative perceptions. Belle Isle and Pony Pasture are two JRPS destinations that are frequently observed to be full of people, or over capacity.

The JRPS can impose restrictions on particularly heavy use areas, through parking closures, trail closures and removals, with the intent of reducing human impacts on general and specific areas. That amounts to a short-term defensive strategy without a longer-term solution, and without fully embracing the inherent opportunity. The alternative is to increase Park area, expanding the viable recreational footprint to distribute activities across a wider network of properties. This will have the effect of decompressing the demands on a concentrated smaller area by dispersing visitors. Acquiring properties is a parcel by parcel effort coinciding with private ownership timelines, requiring patience but also the wherewithal to act promptly at notice to sell, and a sense of which properties are desirable for the Park.

“Acquisition of more islands in the river.”

JAMES RIVER PARK SYSTEM MASTER PLAN



OPPORTUNITIES FOR EXPANSION

The Richmond Riverfront Plan identified numerous properties below the I-95 bridge in an area labeled “Downriver,” also known more broadly as the East Riverfront. This area includes City-owned properties managed by the departments of Public Works, Public Utilities, and Economic Development Authority that are not currently used for active infrastructure or redevelopment. The 2012 Plan accelerated with the removal of the Lehigh Cement plant and completion of the Virginia Capital Trail. This East Riverfront area has more recently changed with the arrival of the Stone Brewing facility, the reconfiguration of the East Main Street corridor, and modification of the Intermediate Terminal Dock. The 2012 Plan was amended in 2017, and the former Lehigh parcel completed schematic design later in 2017. The intent is re-design the Lehigh parcel as a JRPS Downriver property, following the 2015 completion of the Virginia Capital Trail that crosses the now cleared property.

The Gillies Creek Greenway remains a pivotal connective landscape with the potential tie-in to a variety of neighborhoods and communities well beyond Chimborazo Park. The Gillies Creek Greenway would touch on the City-owned 8-acre Fulton Gas Works before continuing upstream. The creek itself remains the subject of a study for an impending combined sewer overflow (CSO) reconfiguration. The greenway component ideally would factor into the reconfiguration planning, if not precede the CSO project. There are a few key, privately held parcels that could also be factored into a future Park expansion, increasing continuity of park properties along the Virginia Capital Trail between Chapel Island and Rocketts Landing.

On the Ancarrow’s side, the JRPS already borrows access to DPU property for the ‘Poop Loop,’ adjacent to the City Waste Treatment Facility. Another nearly 4-acre DPU property (address 1850 Deepwater Terminal Rd.) exists immediately upriver of Goode’s Creek farther south along Deepwater Terminal Road. Two other DPW parcels (address 4430 and 4450 Deepwater Terminal Rd.) totaling nearly three acres are also owned by DPU, and sit at an advantageous

position adjacent to the Walmsley Blvd exit to I-95, just north of the terminal. The JRPS anticipates a future when aggregate extraction and petroleum transfer is reduced or diminished, opening up access to additional river-facing parcels along the length of Deepwater Terminal Road. At the end of this road, another forty acres of wooded City property lies at the terminal tip, forming the City southernmost boundary. JRPS will continue to look for opportunities to access these City properties where feasible, and to pursue easements across or acquire private parcels where possible to significantly expand the Park footprint, particularly where future development is unlikely due to regulatory controls.

Looking back, upriver, the majority of islands are owned by either the City of Richmond or the Commonwealth. However, there are a number of islands with unknown ownership according to the City Office of the Assessor of Real Estate Parcel Mapper, and a few privately held. Acquiring these parcels outright or affecting an easement over the same is in the Parks’ best interest in terms of maximizing habitat, reducing public safety concerns, and controlling potentially negative visual impacts to the larger system. Mayo Island was the single largest island identified in 2012 Riverfront Plan, and remains the primary, privately held island for future Park acquisition. Since then, this property has been repaved with approximately 625 striped parking spaces.

The two primary railroads, CSX and Norfolk Southern, own considerable property across the riverfront, often in crucial locations. The Park shall identify pivotal parcels that enable key connective paths to and along the river, for coordination with both railroads. Easements along or over the tracks may be the short-term solution for accommodating park circulation without conflicting with rail operations. As noted in the 2012 Riverfront Plan, Rails with Trails is a legitimate solution from a liability standpoint. The Park remains committed to identifying just those areas where partnering with railroads would dramatically improve Park connectivity, such as the Missing Link.



STRATEGIES TO EXPAND JAMES RIVER PARK



1. *Implement the Richmond Riverfront Plan, specifically Downriver (also known as East Riverfront), to create new riverside public spaces for people to enjoy and disperse visitors*
2. *Identify and prioritize incorporation of publicly-owned parcels along the James River and its tributaries into the park system*
 - a. *15-acre city-owned riverside parcel in Richmond's 8th District*
 - b. *City-owned parcel at Boshers Dam*
3. *Identify and prioritize acquisition of privately-owned parcels along the James River (including islands) and its tributaries*
4. *Investigate creation of a regional James River Park System cooperatively managed by the City of Richmond, Henrico County, and Chesterfield County.*



11
FOCUS AREAS



SHUTTLES & PARKING

The scarcity of parking close to the James River, despite ample downtown surface parking was noted in the 2012 Riverfront Plan. That plan identified two hypothetical rubber-tired shuttle routes utilizing Mayo Bridge and the Lee Bridge to collect and distribute Park users to various locations along the lower James. The JRPS will not build their way out of a parking crunch for two reasons. The first is that it is against the Park mission to build surface parking at the expense of existing park acreage. The second is that due to having met and exceeded the allowable amount of impervious surface within the conservation easement area of the Park allowed in the Deed of Easement, the Park cannot construct additional impermeable pavement areas. The approach is thus shifted to identifying off-site parking options and creating convenient and efficient connections to these lots.

A rubber-tired shuttle offers more than simple access to existing or future satellite parking locations. While the JRPS aims for a diversity of interlocking circuits for walking, running, and cycling, there are inevitably several 'out and back' routes that could benefit from a shuttle return ride. Floating the James River on kayak, tube, or standup paddle board typically concludes downriver and would benefit from a shuttle capable of accommodating equipment transport back to the original departure point.

Expanding on the earlier Riverfront shuttle diagrams, potential shuttle route alignments follow three basic strategies: parallel, transverse, and loop routes.

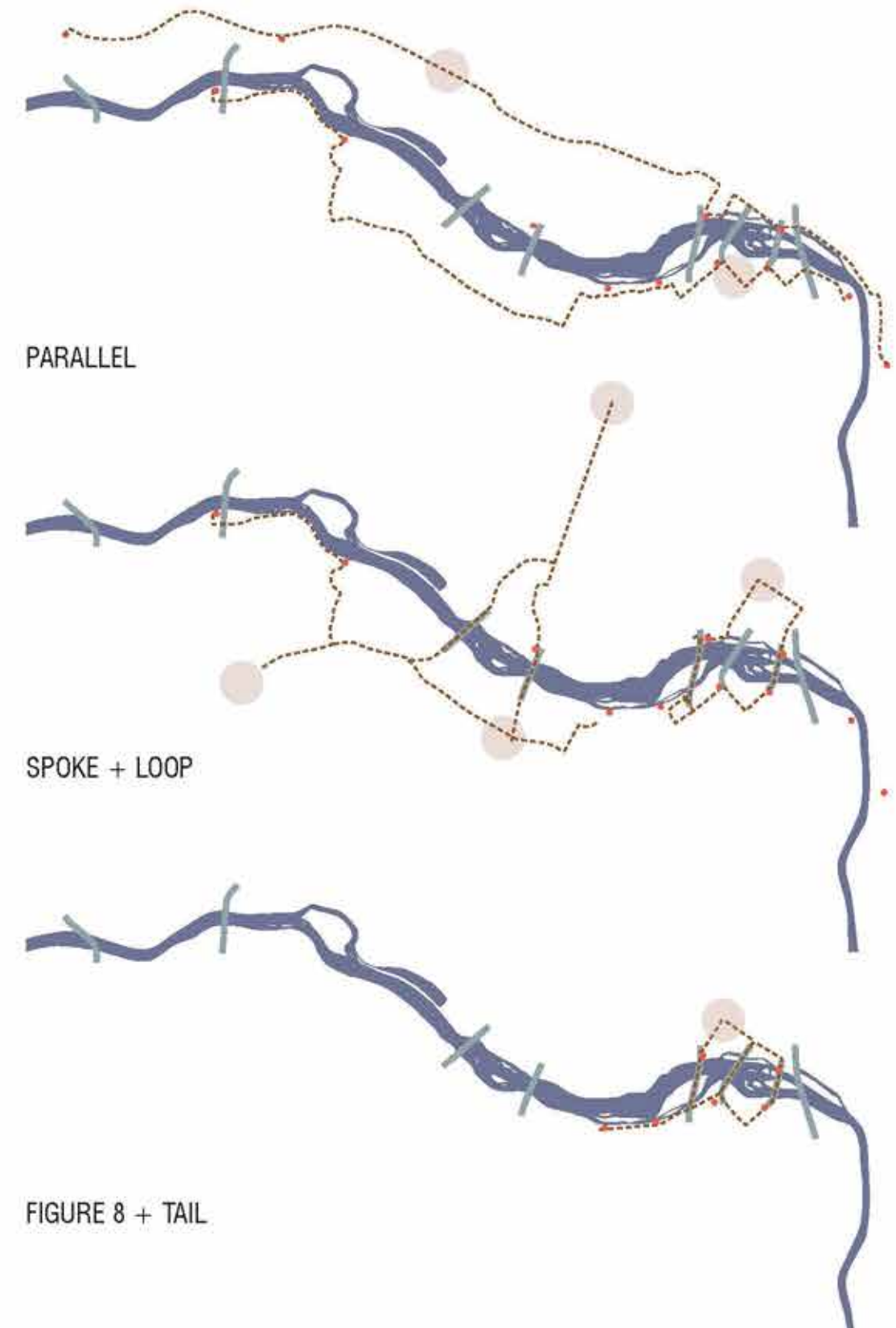
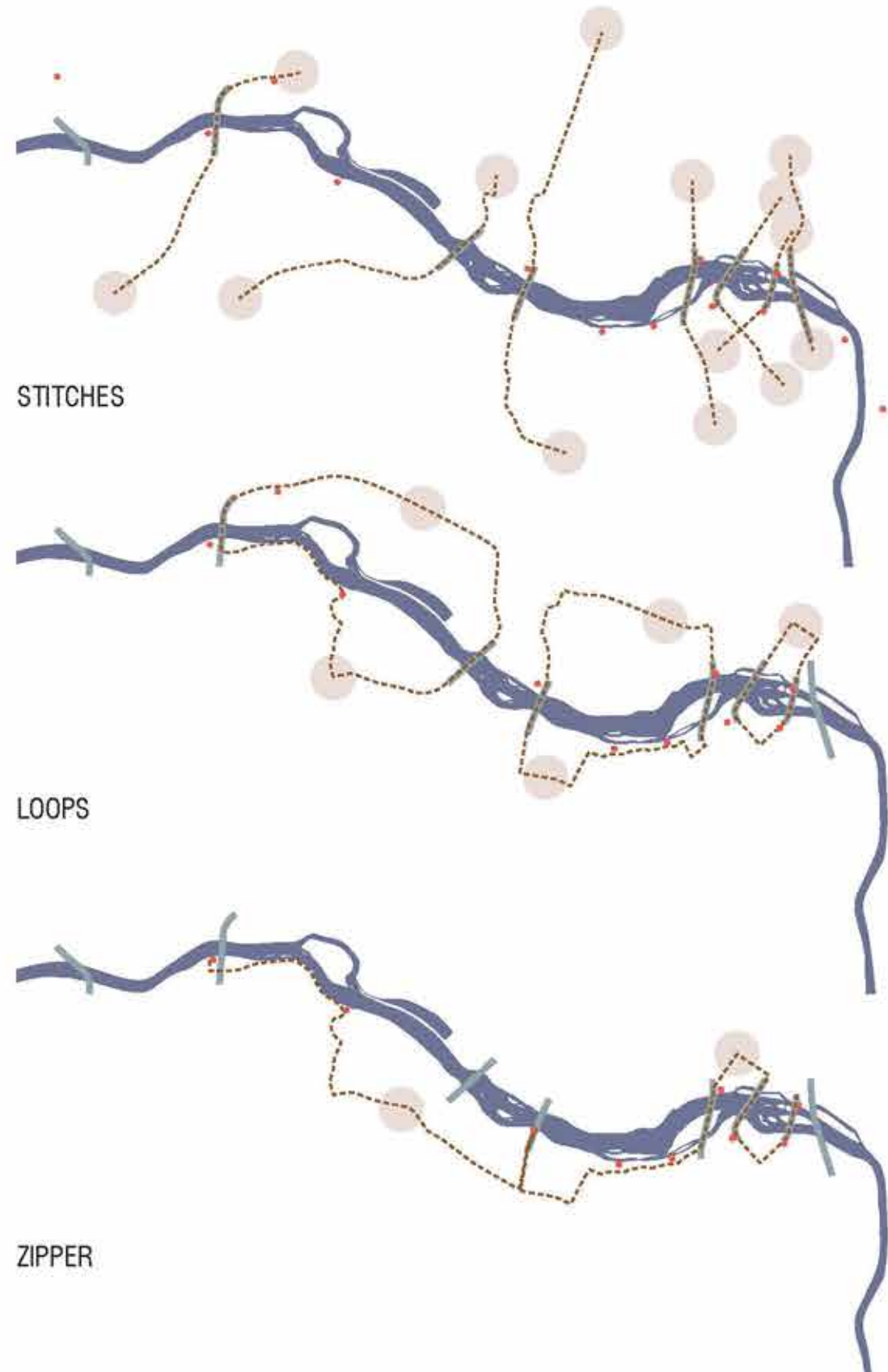
The James River has two banks, with the park distributed unevenly along both sides. Parallel routes could run from Henrico County to Rocketts Landing along the north side; however, the only roads that make that feasible (River Road, Cary Street Road, the Downtown Expressway, and Dock Street) are so far away from the river until Dock Street that their utility is suboptimal. Similarly, on the south side, a shuttle between Ancarrow's and Reedy Creek makes sense with proximity to the river, as does a shuttle between Pony Pasture to Huguenot Flat. The Reedy Creek to Pony Pasture vehicular route is circuitous along Riverside Drive, and a half mile distant along Forest Hill Avenue, reducing their efficacy.

Transverse routes perpendicular to the James River would necessarily correspond with the seven bridges between Huguenot and the I-95 James River Bridge as crossings between as-yet undetermined satellite parking options and readily accessible bridge-to-river connections. The Mayo Bridge, Manchester Bridge, Lee Bridge, and Boulevard Bridges offer traversable connections between a shuttle drop off and the river, with varying degrees of ease. The primary attraction of transverse routes across the river is that this could directly connect two satellite parking locations, including public and private facilities, with the shortest route to a JRPS destination.

Loops or circuits build upon the attractiveness of transverse routes to conceptually stop at multiple satellite parking lots and multiple JRPS destinations. The same issue constraining the parallel vehicular alignment complicates the loop

strategy: there are few upriver/downriver roads closely paralleling the river. Three plausible loop routes are shown, each meriting further field work. The Falls Loop originates near the VCU Medical campus, traversing the Mayo Bridge and the Manchester Bridge, with stops at the 14th St Takeout, Floodwall Park and the 7th St Trailhead, creating a loop just under 4-miles. The Rapids Loop uses the Lee Bridge and the Boulevard Bridge, as well as Riverside Drive and the Downtown Expressway, with stops at Tredegar, 21st Street Tower, Reedy Creek, and the Pump House, along an 8-mile loop. The Flats Loop uses the Powhite Parkway Bridge and the Huguenot Bridge, as well as Forest Hill Avenue, Riverside Drive, River Road, and Cary Street Road, with stops at Pony Pasture and Huguenot Flats, along a 10-mile route.

The best solution is likely a hybrid of the Parallel, Transverse, and Loop configurations, incorporating components of each. Identifying viable satellite parking anchors, efficient routes, and detailed logistical questions will drive the ultimate geographic distribution. A hybrid variation, such as a 'zipper' that moves back and forth across several of the bridges, or a modified 'figure eight plus tail,' might best service locations downriver of the Boulevard Bridge. A successful approach will balance free or low-price parking fees at satellite locations along convenient vehicular arteries that connect to high demand JRPS destinations. Travel times would be short, and the cost minimal to offset the inconvenience of remote parking for an extended visit to the James River Park System.



SHUTTLES & SATELLITE PARKING APPROACHES



GREENWAYS

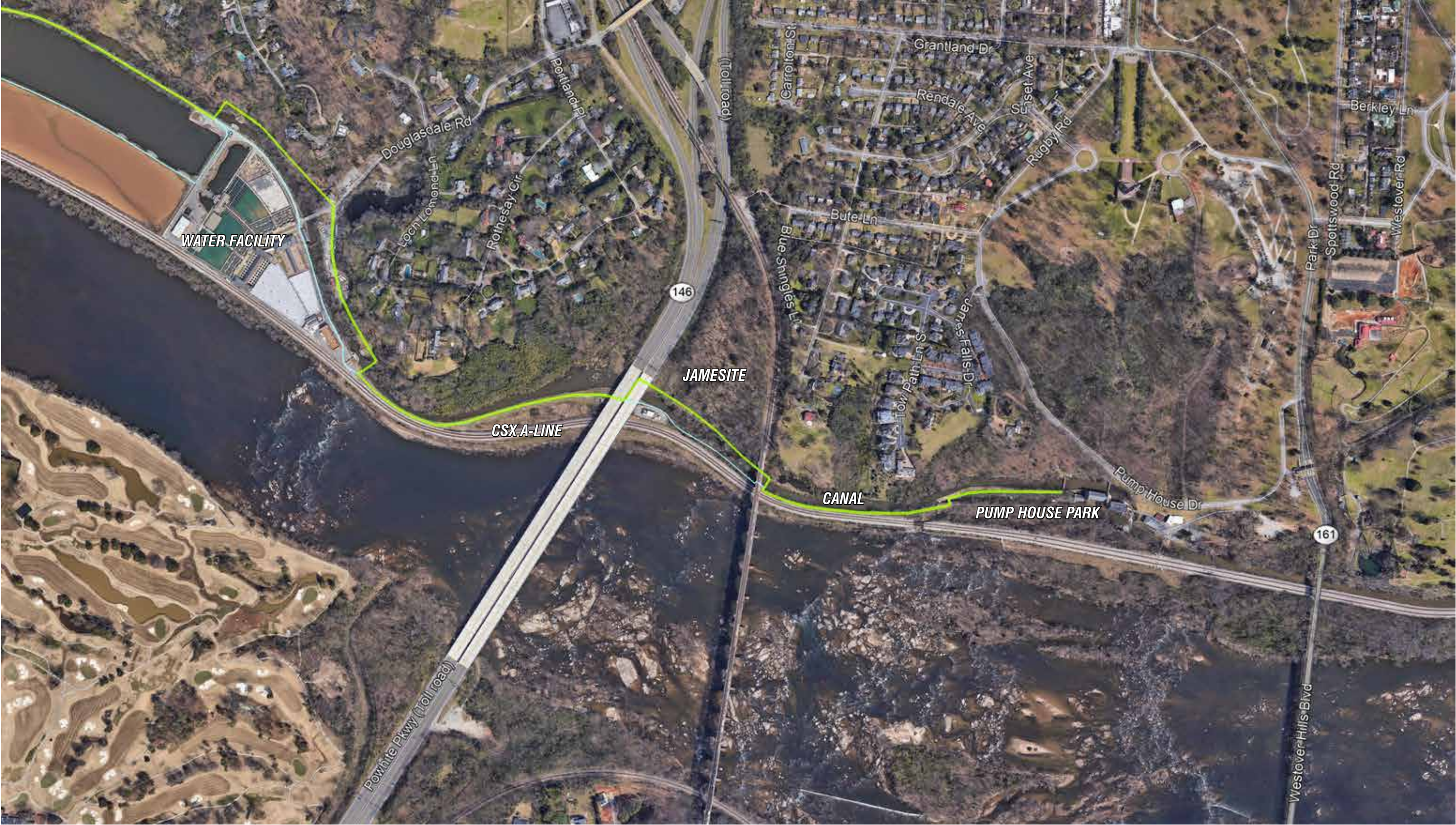
The James River Park System intends to establish two new greenways to expand circulation options beyond the Park by forging connections to nearby bike/pedestrian networks and other parks and recreational opportunities. This effectively reduces the pressure on the JRPS as the most heavily trafficked destination by dispersing recreational activity across a much larger network. Greenway is defined herein as a linear recreational corridor, exclusively for pedestrian and bicycle use, connecting natural features and cultural destinations both within and beyond the Park. The greenways occasionally share alignments with and cross vehicular streets, though in service of maximizing continuity of trails free of motorized vehicles.

The Pump House Greenway would originate at the Pump House and extend 4.0 miles upriver to the Huguenot Bridge, within the James River floodplain. The Reedy Creek Greenway would originate at the Reedy Creek Trailhead, and extend 3.5 miles to German School Road, south of the James River. Both would follow complex alignments to negotiate existing infrastructure (bridges, dams, locks, weirs, railroads, culverts, pipes, water works, and city streets); water bodies (river, creeks, and canals); and the challenges of public-private parcel ownership, adjacencies, and easements. Generally traversable topography is interrupted by noteworthy exceptions, where terrain is steep and difficult. Making both greenway alignments fully ADA-compliant for universal accessibility will be difficult, given steep terrain, protected historic structures, and mature trees.

A standard ten-foot wide pavement is preferred with three-foot wide shoulders on either side for recovery, lighting and furnishings. Categorized as a 'Shared Use Path', this corridor accommodates both pedestrians and bicyclists moving in both directions. Notably, the current James River Park System rarely accommodates this standard cross section. Detailed evaluation will clarify where narrower pavements and shoulders are required to make the desired connections, even if suboptimal. For example, the Reedy Creek Greenway alignment traverses City sidewalks and streets, as well as undeveloped properties, and so it is highly unlikely that a full-length 'Shared Use Path' cross section is achievable, although it remains the objective wherever achievable to create a unified connective network. Both proposed greenways are subject to intermittent flooding, one along the James River flow way, and the other along the Reedy Creek corridor. Consequentially, paving materials will need to vary as appropriate and will likely be inundated and impassable during heavy weather events.

For each greenway, a single full-length alignment is proposed as a conceptual baseline. However, each future greenway may ultimately take a different trajectory to achieve the objective of extended access along the James River and/or connection to outlying neighborhoods, parks, and regional greenways, further knitting the James River into a larger network. Each greenway would be phased with some sections easier to achieve than others. Both greenways seek to maximize public property alignments, including parcels owned by Recreation & Parks, and Public Works. There are parcels privately held by individuals, trusts and corporations, and other entities that would need to be approached about possible easements or land transfers to fully complete either alignment. Additional fencing or screening may be desirable in some locations to limit foot and tire traffic through and along currently untraveled terrain, particularly abutting private parcels.





PUMP HOUSE GREENWAY - PUMP HOUSE

PUMP HOUSE GREENWAY

The Pump House Greenway traverses upriver, generally paralleling the James River and the James River and Kanawha Canal. The conceptual alignment crosses the canal with pedestrian bridges to avoid infrastructure constraints where possible.

Departing from the historic Pump House, the greenway heads west-northwest along the well-travelled canal towpath to the Washington Arch. For 1,025 feet between the Arch and the CSX A-Line railroad bridge, the alignment hugs the CSX tracks, along a narrow, currently vegetated strip between the CSX mainline and the canal. The rail bridge abutment provides the first fixed impediment. The conceptual greenway alignment bridges the canal immediately downriver of the CSX A-Line rail bridge to the north side of the canal, continuing upriver across the triangular Jamesite parcel between the two overhead bridges. The alignment would bridge back to the asphalt pavement beginning beneath the Powhite Parkway Bridge. Alternatively, the path could be structured to tightly hug the landside of the bridge abutment, before continuing between the widening towpath wedge to the Water Works structure below the Powhite Parkway Bridge. The Pump House Greenway would then follow the Public Utilities pavement 1,650 feet upriver to Lock 15, a twentieth century structure.

The Greenway then spans the canal to the landside bank immediately downriver of Lock 15, avoiding direct access to the City of Richmond Water Facility, and runs 1,000 feet along what is currently Water Facility back of house, to Douglasdale Road. There is continuity of City property from the Pump House to the City Water Facility at Douglasdale Road, though the canal cross section occupies much of this variable width parcel. From Douglasdale, the greenway continues 860' along the canal to pass Lock 14 and then crosses the canal by a future bridge to again rejoin the asphalt pavement, all without entering the inner secure perimeter of the City Water Facility. The alternative is to keep the route between the canal and CSX rail, which would require intrusion into the City Water Facility perimeter along a 1,540-foot alignment, with probable security concerns.

The Pump House Greenway follows an existing, compacted aggregate pavement 1,860 feet between an informal alley of trees to the upriver tip of the City Water Facility. An alternate alignment routes the greenway between two

settling ponds along the narrow middle causeway for nearly a mile. At this point, the historic canal hugs the CSX roadbed and the hillside. The City Water Facility intake channel passes under the CSX tracks, leaving no land for the greenway. At this nexus, the greenway will need to rise to a new bridge structure spanning the CSX mainline tracks before dropping back down to terra firma. The proposed greenway then tracks along the City Water Facility channel to a broad expanse of historic granite locks immediately downriver of Deadman's Hill.

The greenway hugs the riverside of Deadman's Hill, passing the existing weir anchored to Williams Island, continuing for nearly a mile further upriver, along the outer curve of the James River's secondary channel. The CSX railroad embankment dominates the former James River and Kanawha Canal towpath that defines this narrow curve, separating the railbed from the river and the East Branch Tuckahoe Creek on the outer, northern side of the rail. The Greenway would preferably run along the inside curve of the railbed, facing Williams Island. The complexity of realizing this alignment would be significant as there is scant land available on either side of the CSX roadbed to plan for an easement exclusively on land. Spanning the back channel to Williams Island provides a potentially less challenging and costly alignment, though this option has been rejected due to the negative impact on the habitat integrity from opening the ~96-acre island to sizable public access.

The Greenway alignment moves west from Richmond to Henrico County at the upper end of Williams Island, proceeding ~2,000 feet to the first CSX underpass. Turning north, the greenway would run perpendicular toward the East Branch Tuckahoe Creek, before passing over an existing, but privately posted, curved wooden creek span (CSX Et Al Access) ending at the River Road/Huguenot Road. Alternatively, the greenway would arc westward and south along the existing pavement to the upriver CSX underpass, before paralleling the CSX mainline for 1,200 feet to the East Branch Tuckahoe Creek for a final future span to the Virginia Eye Institute parking lot.

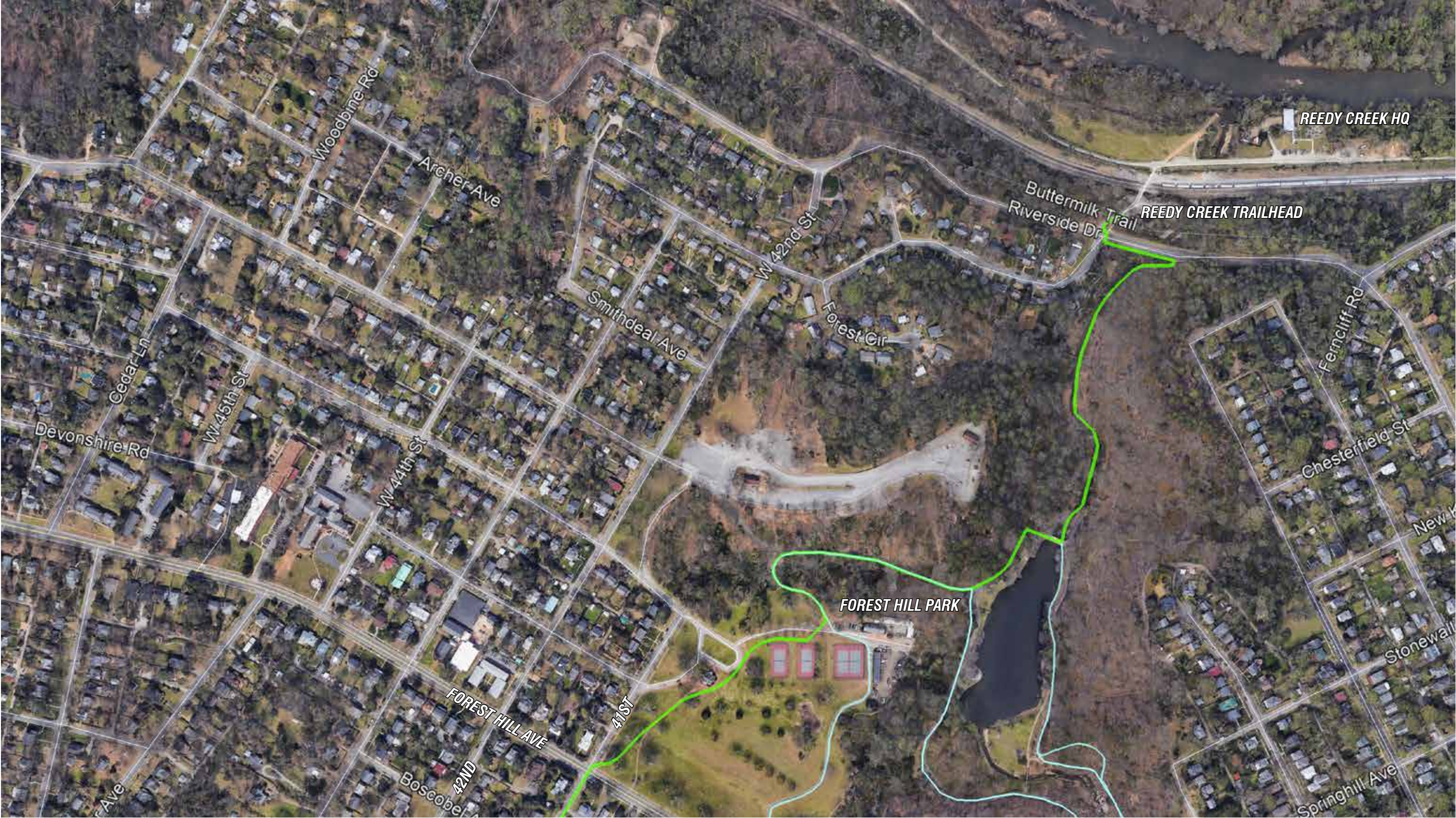
As noted, significant engineering complexity of adequate footprint and proximity to James River floodwaters make this Greenway concept challenging to implement. Access rights and easements through or adjacent to restricted municipal facilities, private corporate parcels and private residential properties add further legal complexity to explore.



PUMP HOUSE GREENWAY - WATER FACILITY



PUMP HOUSE GREENWAY - WILLIAMS ISLAND



REEDY CREEK GREENWAY - FOREST HILLS

REEDY CREEK GREENWAY

The Reedy Creek Greenway originates at the Buttermilk/Reedy Creek Trailhead, crossing Riverside Drive before heading downriver 260 feet for a right turn into Forest Hill Park. The alignment follows the existing Forest Hill Park Loop along the east side of Reedy Creek to the lake.

From the existing loop bridge, three possible alignments merit further consideration. The middle alignment follows the asphalt pavement along the west side of the lake before ascending steeply to Forest Hill Avenue along the existing route framed by WPA-era stone retaining walls, a defining characteristic of the historic park. The downside to this middle alignment are the steep slopes and cross slopes which if modified would negatively impact the historic retaining walls. The western alignment seeks a less steep route through the woods before emerging immediately north of the tennis courts, then following a narrower and shallower sloping trajectory to Forest Hill Avenue. Both the middle and western alignment options cross Forest Hill Avenue at the fully signalized W. Roanoke Street intersection. This contrasts with the eastern alignment that departs from the lake bridge along a steep and largely unimproved trail following the eastern bank of Reedy Creek behind the Patrick Henry School before emerging at the Semmes Avenue intersection at Dundee Avenue. This eastern alignment negotiates steep terrain and would require significant trail alignment modification to achieve ADA-compliance. However, the eastern alignment includes few historic constraints in comparison to the middle alignment, as well as near-total tree cover in contrast to the far more exposed western route.

The three alternates for traversing Forest Hill Park seek to discourage mid-block crossings of Forest Hill Avenue between Brookside Road and Carson St, with the primary desire line at the un-signalized Bland St. Public safety concerns with unsanctioned mid-block crossings to desirable retail establishments along Forest Hill Avenue emphasizes the attractiveness of signalized crossings at Dundee and W. Roanoke respectively. A fourth alternate was explored of passing under Forest Hill Avenue bridge at Reedy Creek. Field exploration of the creek bed shows little soil and ample boulders, evidence of repeated scouring by potent floodwaters: this under-the-bridge terrain is subject to extreme damage and would be difficult to maintain without constant recovery efforts to clear the passage beneath the existing span, and is therefore not recommended. A fifth option utilizes the existing pedestrian-actuated signalized crosswalk at W 41st Street, and a turn west to W 42nd Street.

Once across Forest Hill Avenue, the preferred alignment follows the south sidewalk before turning right on Bland St and continuing onto Dunston Avenue to W. Roanoke. This alignment follows the east bank of Reedy Creek along low traffic volume streets, promising some off-road trail alignment. The western route proceeds south from Forest Hill Avenue along W. Roanoke to Dunston Ave, along the most direct route with higher traffic volume and a sidewalk available only on the east side of Dunston. The eastern alignment follows Dundee Avenue south ~625 feet to a paper street just beyond Beattie Street. At this point the alignment tracks through two city blocks to daylight at the Bland St/E. 36th Street intersection before continuing west along Dunston Avenue.

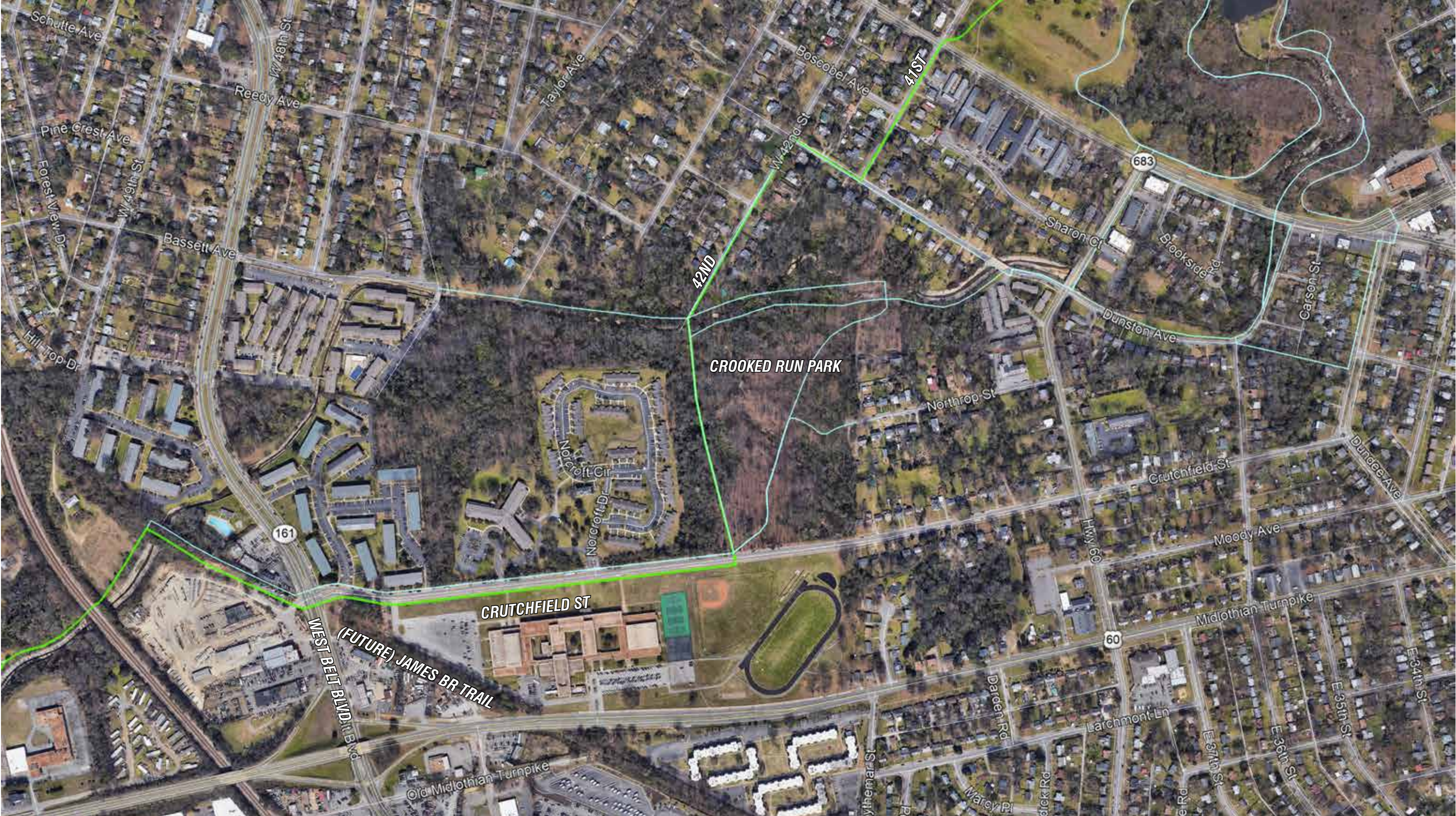
From the Dunston/W. Roanoke intersection, the greenway should follow the east bank of the Reedy Creek into

Crooked Branch Park to near W 42nd Street before heading southeast to Crutchfield Street, across from George Wythe High School. Alternatively, the alignment could continue west along Dunston before turning south on W 42nd Street, culminating with a short bridge span over the creek, continuing to Crutchfield Street. The point at which W 42nd Street intersects with the Reedy Creek is the nexus for various spokes, including: one that continues west to connect with Bassett Avenue; a second running along the west/north bank of Reedy Creek until forced to span the creek to stay on City property. A third alternate runs from Crutchfield St. diagonally north to run along the east bank of Reedy Creek, with an existing short spur connecting to Northrop Street. This heavily wooded City parcel is the largest public space on this greenway, beyond Forest River Park, and internal circulation merits deeper study.

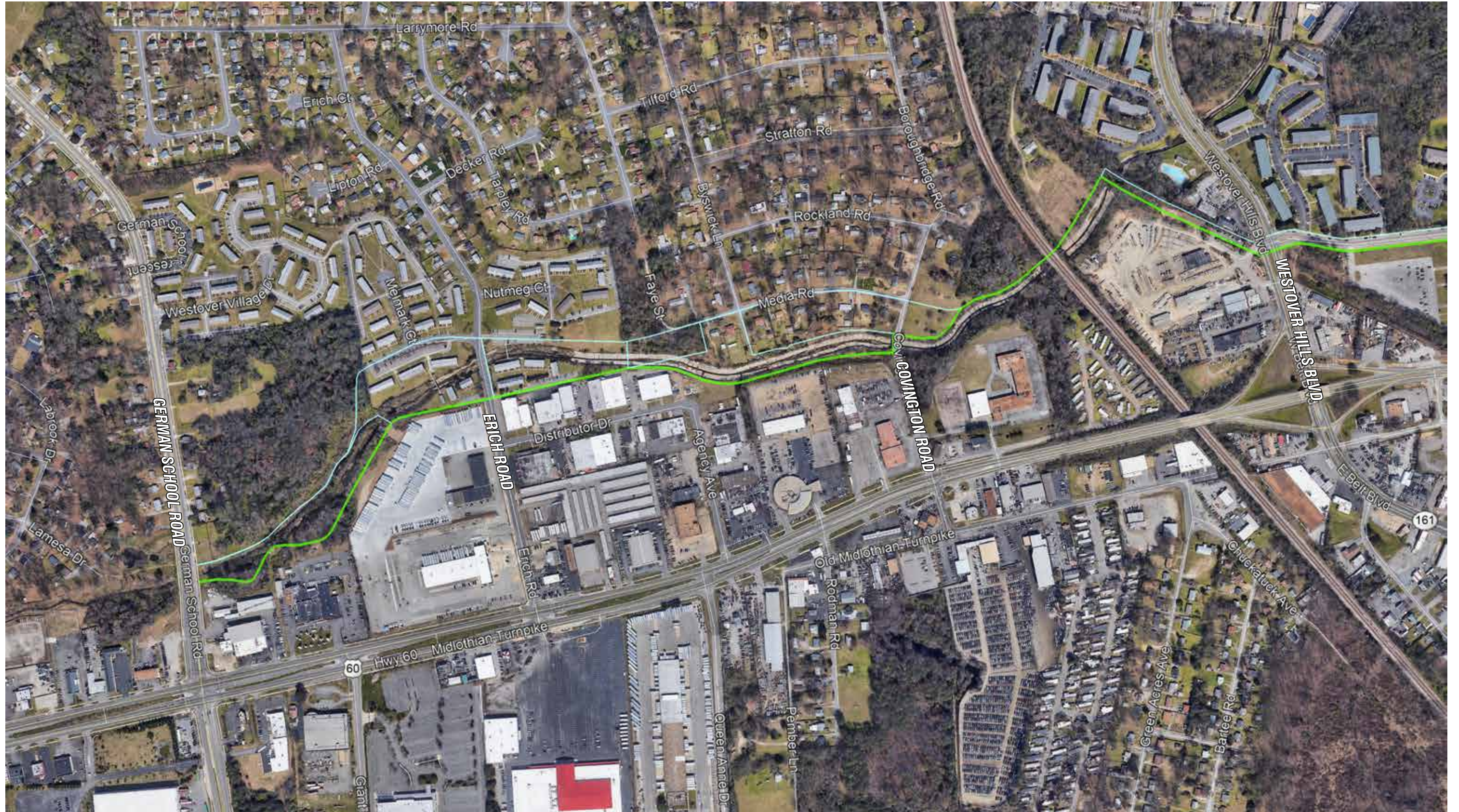
The greenway continues 2,000 feet west along Crutchfield Street where no sidewalk is available on the north side, though an ample sidewalk exists on the high school side of the street. On-street painted sharrows would be necessary for on-street cycling. The alignment continues to the signalized intersection with Westover Hills Blvd and the former CSX line, expected to be the future James River Branch Rail Trail, running 2.5 miles to Cofer Road. The Reedy Creek Greenway shares this rail alignment for 800 feet, spanning the Reedy Creek to the west/north bank before continuing onward to Covington Road. Passing over or under the mainline railroad is a substantial obstacle. A 130-foot long span over the CSX A-Line tracks with corresponding accessible ramps is necessary to span the railroad embankment. Alternatively, a descent down to the concrete creek corridor with corresponding ramps with a 130-foot tunnel passage under the railroad embankment may be an easier solution, though subject to frequent high-water closure and safety concerns that the far less costly overhead span avoids.

From Covington Road, three more options present themselves. Along the west bank, the alignment could follow City property before turning north on Byswick Lane to Media Road. Alternatively, the greenway could align with the east end of Media Road, continuing to Faye Street before striking off through woods and private parcels to Erich Road. The third alignment turns south on Covington Road, across the bridge, with an immediate turn paralleling the east/south bank of the Reedy Creek. This southerly route minimizes adjacency to residential properties but tracks across several commercial/industrial parcels before tying into an unnamed paper street paralleling Distributor Drive. All greenway alignments between Erich Road and German School Road traverse multiple private property along the final 1,300 feet, with no public lands available. The southerly route continues across Erich Road, tracking Reedy Creek behind commercial/industrial parcels with ample room for the greenway. Similarly, an alignment originating at Melmark Road enters the woods and several private parcels before daylighting at German School Road. The primary decision in this final 1,300 feet of corridor is whether to span Reedy Creek at the terminus of the unnamed paper street, or to continue along the south bank, traversing the wooded backlots of several commercial properties.

The Reedy Creek Greenway provides a key trail connector between the JRPS and the future James River Branch Trail as well as the on-street bike lanes connecting into a larger trail network anchored by Pchontas State Park.



REEDY CREEK GREENWAY - CRUTCHFIELD STREET



REEDY CREEK GREENWAY - GERMAN SCHOOL ROAD



BYRD PUMP HOUSE PARK // VIEW LOOKING NORTHEAST

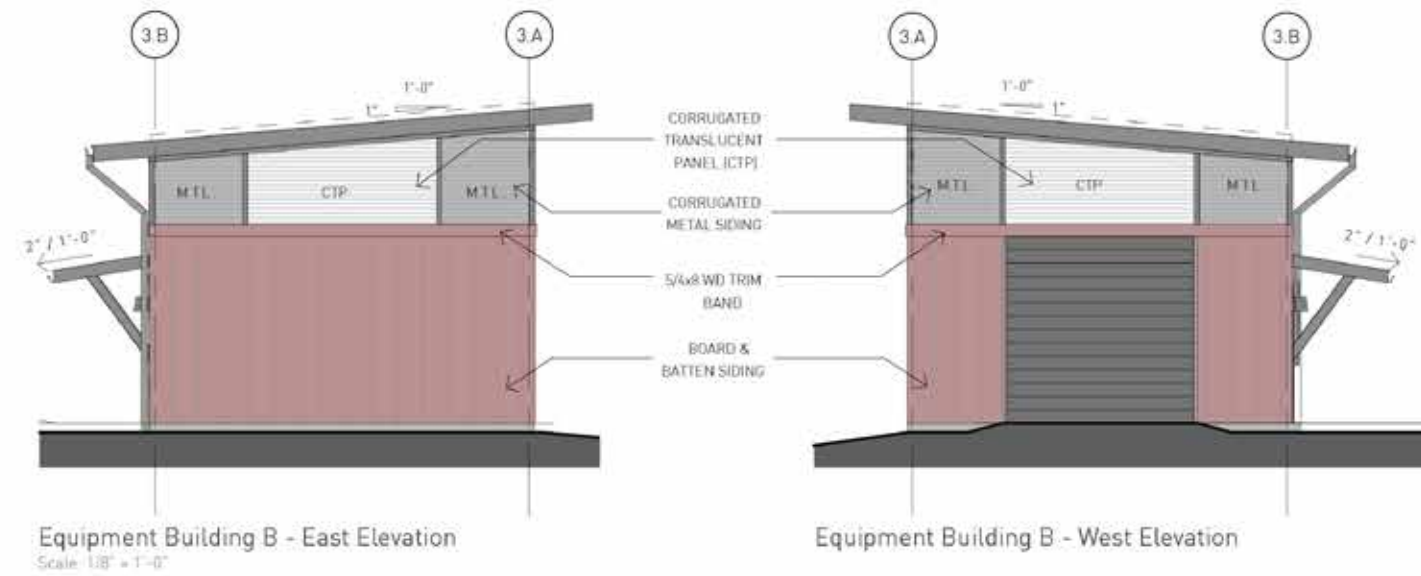
BYRD PUMP HOUSE PARK



The 1882 Byrd Park Pump House is an iconic Gothic Revival structure mysteriously set astride the confluence of several granite-lined canals, long since de-activated. The complex of three buildings is located on the lower end of Byrd Park, upriver from the Boulevard Bridge, and facing the heavily trafficked CSX mainline railroad paralleling the James River. The Friends of Pump House have developed a proposal to adaptively re-use this aging complex, supported by a design by the Timmons Group and 3north, which is currently undergoing evaluation by the Commonwealth of Virginia Department of Historic Resources. The primary goal is to transform these structures into an event center and educational resource. To make this possible, substantial modification to site pavements are necessary for code compliant access and logistical service of the complex and immediate grounds, including pedestrian and vehicular access across challenging topographic terrain; across the canals; and down to the water sheet for recreational use.

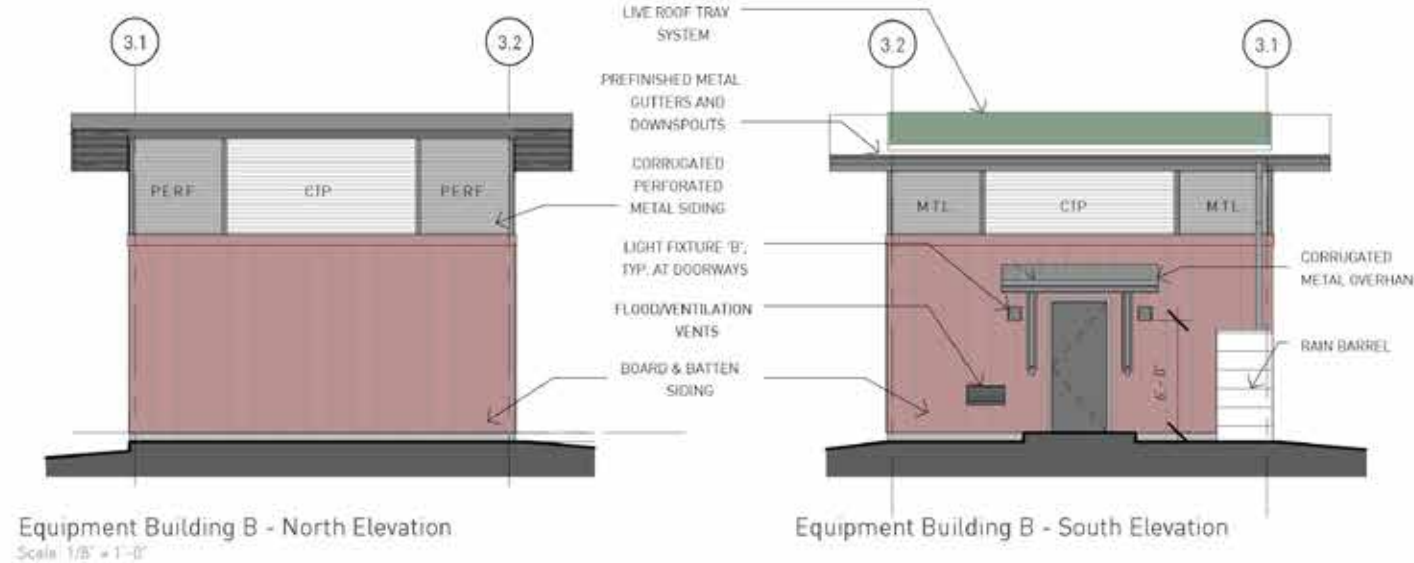
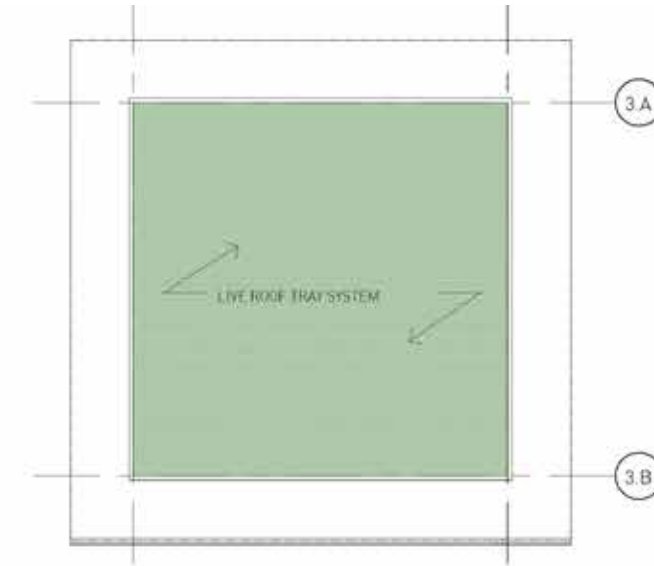
The Pump House adaptive re-use is consistent with the park-wide objective to transform existing historic infrastructure for contemporary recreational use wherever possible, while also reinforcing and enhancing strong native plant communities. The cultural history of the Pump House looms large in the collective memory as the site of notable advances in transportation and drinking water infrastructure, with an upstairs dance hall, all from a distant era. The cut stone granite and elegant woodwork of the Pump House are accentuated by the setting of this complex amidst a wild, wooded river parcel. The current plan strikes a delicate balance between regulatory protections and constraints, and a consensus desire to reinvigorate the complex with current use in an unparalleled atmosphere.

Pump House Park will serve as a trailhead for a future Pump House Greenway. This trail will point upriver to additional historic infrastructural artifacts and distinctly stunning stretches along the James River extending the North Bank Trail westward.



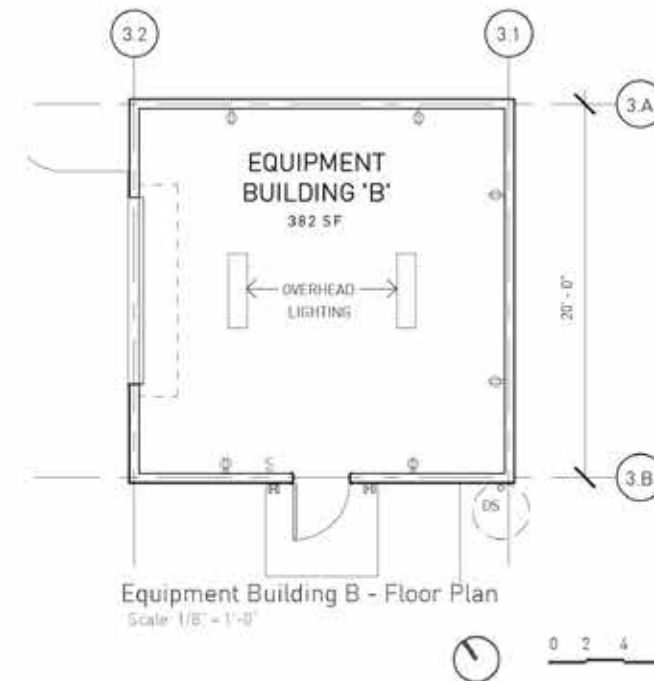
Equipment Building B - East Elevation
Scale: 1/8" = 1'-0"

Equipment Building B - West Elevation



Equipment Building B - North Elevation
Scale: 1/8" = 1'-0"

Equipment Building B - South Elevation



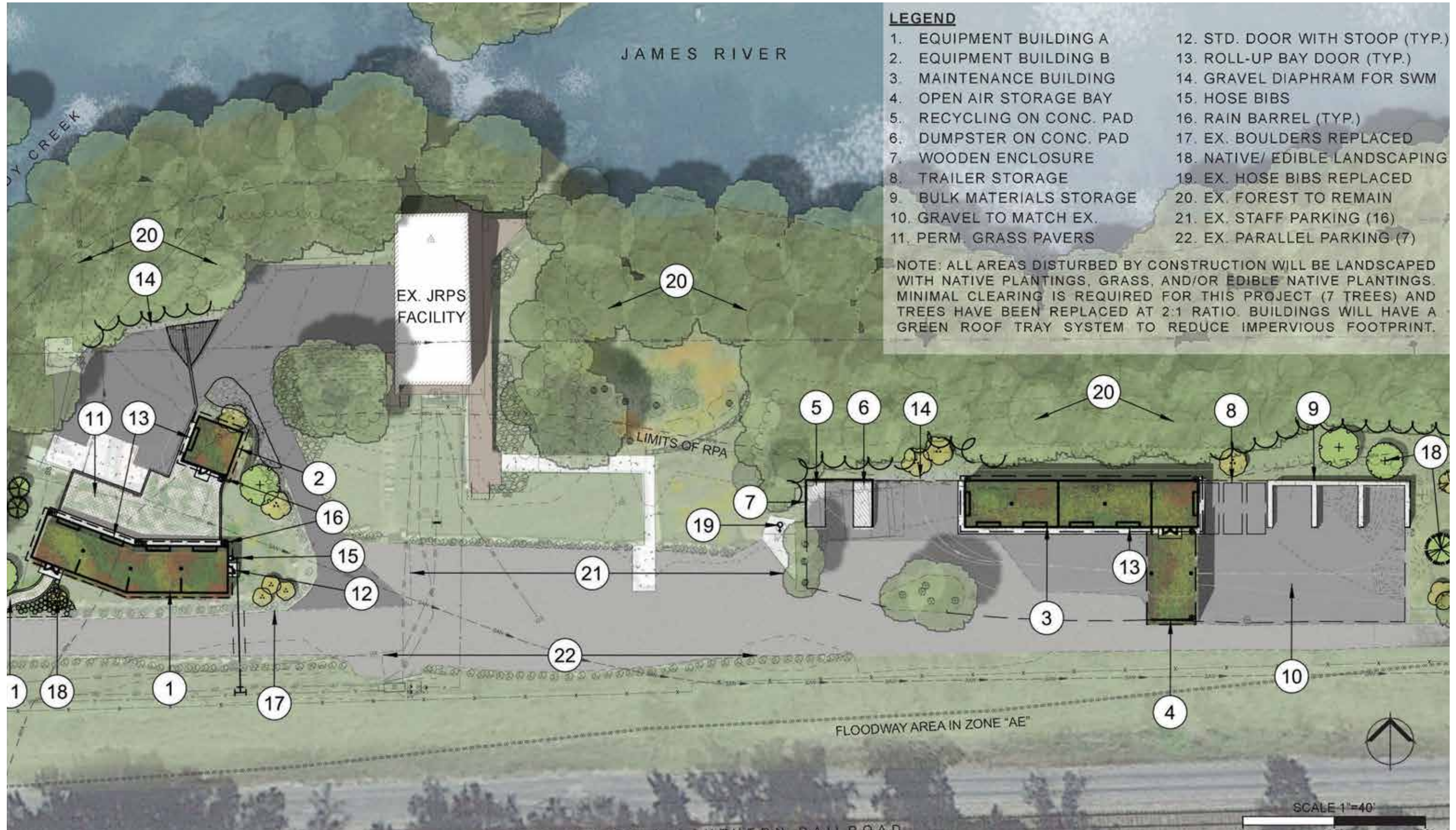
Equipment Building B - Floor Plan
Scale: 1/8" = 1'-0"

REEDY CREEK HEADQUARTERS & WELCOME CENTER

The Reedy Creek Park Headquarters, located off Riverside Drive at Hillcrest Road, sits at the south side confluence of Reedy Creek and the James River. Originally constructed for a full range of administrative, educational and workshop / maintenance purposes, this structure was almost immediately deemed insufficient for the needs of the park in 1975. More than 40 years later, the current JRPS Master Plan supports adjustments to the structure that will address programmatic conflicts, spatial inadequacies, and additional updates to meet contemporary demands.

The Timmons Group and 3north have completed 90% Construction Documents, which were approved by the Planning Commission in 2018. The plans include new timber-framed structures containing maintenance, workshop, and storage, located on the current trailer parking area downriver of the headquarters. Bulk materials storage will be formalized within three distinct enclosures to better contain material and facilitate transfer to remote sites. Roll-up dumpster and recycling pads will be enclosed by three-sided walls visually screening large containers for refuse material transfer. Immediately adjacent to the Reedy Creek outfall, two additional timber-framed structures will expand educational programming and associated storage. A dedicated shared use path will be constructed along the railroad fence line, separating increasing pedestrian and bike traffic from Park operations vehicles. The project balances JRPS programming needs with daily operations, while showcasing the Park's commitment to green building techniques, including natural ventilation, green roofs, rainwater harvesting, permeable paving, and native species. The project aims to provide the Park with structures that are both economical to construct, but also practical to operate and maintain as a long-term addition to the Park. The desired result is an expanded headquarters accommodating an expanded welcome center program as a public destination.

JAMES RIVER PARK SYSTEM MASTER PLAN



REEDY CREEK HEADQUARTERS & WELCOME CENTER



EXISTING VIEW.



EXISTING VIEW

PONY PASTURE EDUCATIONAL CENTER

Pony Pasture Rapids Park is a heavily visited destination within the JRPS, particularly desirable for engaging the river directly from the rocks, or from the shade of riparian canopy along the sandy shore. An existing 1,400 square foot restroom structure with park offices above is sited within this heavily wooded parcel. This structure should be expanded to include an educational space.

The existing structure sits amid dense tree cover, facing the large Pony Pasture parking lot less than 100-feet away. A creek curves tightly along the river-facing facade of the building, under a bridge that leads to the entrance. All doorways to the restroom and the stair to the second floor are on this facade, as are all windows looking out over the bridge and toward the parking lot.

A contiguous addition of a two-story volume to the existing structure would offer an educational space at a critical node within the JRPS. Additional public space, including a new, secure classroom, would necessarily have to be fully accessible from existing or modified grade, and above the floodplain elevation. Outdoor classroom space could be configured as an elevated deck, effectively doubling instructional space. Replacing the sloped roof with a shallower roof would also maximize functional office and storage space on the second floor, above the new ground floor classroom. No architectural studies have been performed to date and should be pursued in order to confirm appropriate program and massing.



PROPOSED MASSING

PONY PASTURE EDUCATIONAL CENTER





PHOTO COURTESY OF WILLIAM DRAPER

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PHASING & IMPLEMENTATION



PHOTO COURTESY OF WILLIAM DRAPER

IMPLEMENTATION

Taking Action...

The previous sections of this Plan identify specific goals, objectives, and strategies for the stewardship of the James River Park System. This section focuses on implementation, and outlines a general timeframe to undertake the actions, initiatives, and projects included in the Plan. The implementation plan is based on input from the public, advisory committees, and technical team. It attempts to prioritize those elements identified as most important by these various groups, while emphasizing certain early action items that carry relatively low cost, high impact, or both. Also, although the implementation plan identifies general timeframe horizons for specific projects, the plan remains flexible, recognizing that funding opportunities or other factors might require earlier (or later) action on a particular item.

Full implementation of the recommendations will take time and will require participation by multiple entities and partners. Also, a variety of funding sources will likely be needed. Some of these may include: City funds, Transportation Alternatives Program, Highway Safety Improvement Program, revenue sharing, private sources, public partners, and the Recreational Trails Program.

Where possible, the following table identifies broad planning-level opinions of probable cost. These figures are preliminary, and reflect a high-level master plan focus. The intent is to provide a general cost range to assist with project planning and fund raising. As projects are developed and design plans are advanced, these costs will likely change to reflect additional project detail and fuller understanding of constraints. In some cases, it is simply not possible to assign a cost to very preliminary or general action items. Given the above caveats, and understanding that much more detailed design and revised costs will be necessary, a very preliminary figure for total cost of all improvements is approximately \$80 million.

SHORT-TERM ACTIONS (1-2 YEAR)

DESCRIPTION	RESPONSIBILITY	POTENTIAL PARTNERS	COST	NOTES
Hire additional staff	DPRCF	FOJRP, JROC		Hiring based on Superintendent's 10-year needs projection.
Increase enforcement of existing rules	DPRCF	Police Dept		Dependent on hiring additional staff.
Increase maintenance of restrooms	DPRCF	Private vendor		Contract negotiations with vendor.
Expand Conservation Easement	DPRCF	DCR, Enrichmond Foundation, Capital Region Land Conservancy		Target parcels as identified in Plan.
Continue Invasive Plant management	Task Force	FOJRP, DPRCF, private entities		Continued support of volunteer efforts with park staff and financial backing.
Implement short-term recommendations from City Bicycle Master Plan, with special consideration of park access	DPW	DPRCF, Bike Walk RVA	\$1,400,000	Cost total for all short-term projects; see Bicycle Master Plan for details.
Evaluate and design trail connection from Pony Pasture to Buttermilk	DPRCF	DPW, private entities, Bike Walk RVA, Community Groups	\$150,000	Evaluate feasibility of alternative alignments; assess constraints such as property ownership, topography, culverts and stream crossings, roadway crossings, rail crossings. Select and design final alignment.
Construct Missing Link Trail	PDR	DPRCF, DPU, DPW, Bike Walk RVA, JRA	\$2,000,000	Project from Riverfront plan – Feasibility Study underway.
Begin retrofitting access points for universal accessibility	DPRCF	JROC, DPW, DPU, DGIF, Sports Backers, Sportable, private entities	\$40,000-\$350,000 per location	Typical cost per location. Includes grading/access improvements and ramp enhancements.
Improve signage and information about river dangers	DPRCF	FOJRP, JROC	\$2,000 per sign	Select strategic sign locations; augment website.
Designate parking for paddlers	DPRCF	JROC		Use existing parking.
Construct improvements at Reedy Creek Welcome Center and HQ	DPRCF	DPU, FOJRP	\$800,000	Estimate based off 100% Construction Document.
Begin fundraising campaign for restoration of Pump House	Friends of Pump House	FOJRP, DPRCF	\$450,000	Funds needed to go from 30% design documents to 100% construction documents.
Implement expanded environmental education program	DPRCF	RPS, private schools, Homeschool groups, JRAC, Blue Sky Fund, JRA private entities		Includes efforts to discourage detrimental activities and promote Park stewardship.
Incorporate publicly-owned parcels into Park	DPRCF	City		Includes City-owned parcels south of Ancarrow's Landing and all lands adjacent to the park.
Create users guide to Park programs	FOJRP	DPRCF		Program staff to take lead.
Implement trial time and location for off-leash dogs	DPRCF	Animal Control		Based on feedback from community at Dog forum held in 2013.
Implement trial time to close Riverside Dr. to vehicles between Pony Pasture and Huguenot Flatwater	DPRCF	DPW, City Council		
Design and install consistent interpretive and wayfinding signage	DPRCF	FOJRP	\$2,000 per sign	Typical cost per sign.
Acquire private parcels to expand Park	DPRCF	DPW, DPU, FOJRP, Trust for Public Lands		Specific parcels and cost to be determined.

MID-TERM ACTIONS (2-5 YEARS)

DESCRIPTION	RESPONSIBILITY	POTENTIAL PARTNERS	COST	NOTES
Hire additional staff	DPRCF	FOJRP		Hiring based on Superintendent's 10-year needs projection.
Assign dedicated police patrols	Police Department; DPRCF	FOJRP		
Conduct natural resource inventories	DPRCF	Private entities; universities	\$30,000-\$50,000 per study	Typical cost per study. Examples include floristic inventory, wetlands assessment. See Natural Resources section.
Develop and adopt resource management plans	DPRCF	FOJRP; DPU, private entities, universities	\$10,000 per plan	Typical cost per plan. Examples include forest management plan, wildlife management plan. See Natural Resources section.
Implement Reedy Creek Stream Restoration	DPU	DPRCF,DPW	\$475 per linear foot of stream	Typical cost per linear foot. Total cost dependent on project details and extents.
Restore wetlands at Pony Pasture	DPU, DPRCF,	ISTF, FOJRP,JROC,CBF, ACB	\$45,000 per acre	Typical cost per acre. Total cost dependent on project details and extents.
Increase GRTC service to Park	GRTC,DPRCF	City, FOJRP,		
Implement mid-term recommendations from City Bicycle Master Plan, with special consideration of park access		Bike walk RVA	\$2,400,000	Cost total for all mid-term projects; see Bicycle Master Plan for details.
Implement pilot seasonal shuttle service	DPRCF	GRTC, FOJRP, DPW	\$100,000 per year	Seasonal/weekend trial of public shuttle service; also consider proposals for private service.
Construct trail from Pony Pasture to Buttermilk	DPRCF	DPW,DPU, RVA Health District	\$2,000,000-\$3,000,000	Alignment pending results of prior evaluation.
Improve connection from Huguenot Flatwater to Pony Pasture	DPRCF	DPW,DPU, Bike walk RVA, RVA Health District	\$500,000	Conduct traffic study and implement results for potential time of day/week/year road closure on Riverside Drive; assess potential for shared use path along a portion of route.
Design and construct trail from Ancarrow's Landing to City-owned parcel south along James River	DPRCF	DPW,DPU, Private entities, Bike Walk RVA, RVA Health District	\$4,000,000	3.3 miles. Uses typical construction cost of \$1M per mile plus 20% design and contingency.
Work with Venture Richmond to restore Kanawha Canal and develop greenway	Venture Richmond	FOJRP,DPRCF, DPU	\$14,100,000	Cost from prior study.
Update regional greenway plan	DPW,DPRCF	RRPDC, Bike walk RVA	\$200,000	Address constraints, linkages, priorities, costs.
Construct rowing facility at Ancarrow's Landing	Private entity	DPRCF		Planning underway. Project would be privately funded.
Stabilize and interpret Belle Isle hydro plant and former mill	DPRCF	DHR	\$250,000-\$500,000	Assumes stabilization and interpretation of building – does not include restoration or reuse of building.
Convert triangle building to restroom and maintenance/storage use	DPRCF	FOJRP, JROC, RPD, RFD	\$100,000	Assumes utilities are readily available.
Design and install consistent interpretive and wayfinding signage	DPRCF	FOJRP	\$2,000 per sign	Typical cost per sign.
Implement the riverfront open space recommendations in the Riverfront Plan	PDR,DPRCF	JRA, DPRCF Advisory Board		See Riverfront Plan for details.
Expand shuttle service	DPRCF	GRTC, FOJRP	\$150,000 per year	Pending results of pilot project, implement expanded public or private shuttle.
Restore Pump House and develop Pump House Park	DPRCF	DPU, Friends of Pump House, FOJRP	\$12,000,000	Cost estimate based on 30% design document.
Conduct parking study and implement fee structure This could be moved to the short term	DPRCF	DPW, RPD	\$50,000-\$100,000	
Convert some parking areas to pervious material	DPRCF	DPU, CBF, JRA, ACB	\$3,000 per space	As part of parking maintenance, consider replacement of impervious cover with pervious materials.
Acquire private parcels to expand Park	DPRCF	DPW, DPU, FOJRP, Trust for Public Lands		Specific parcels and cost to be determined.

LONG-TERM ACTIONS (5-10 YEARS)

DESCRIPTION	RESPONSIBILITY	POTENTIAL PARTNERS	COST	NOTES
Hire additional staff	DPRCF	FOJRP, JROC		Hiring based on Superintendent's 10-year needs projection.
Implement long-term recommendations from City Bicycle Master Plan, with special consideration of park access	DPW	Bike walk RVA, DPRCF	\$2,400,000	Cost total for all long-term projects; see Bicycle Master Plan for details.
Design and construct Pump House Greenway	DPRCF	DPU, DPW, Bike walk RVA, RVA Health District	\$5,000,000	4.2 miles. Uses typical construction cost of \$1M per mile plus 20% design and contingency.
Design and construct Reedy Creek Greenway	DPRCF	DPW, DPU, Bike walk RVA, ECG, RVA Health District	\$3,700,000	3.1 miles. Pending results of updated regional greenways plan. Uses typical cost of \$1M per mile plus 20% design and contingency.
Restore and maintain canals	DPU	DPRCF, Canal and Navigation Society, DHR , FOPHP		
Design and construct new water access points at Lehigh and under I-95	DPRCF, PDR	DPU, JRA, FOJRP, DGIF, VDOT	\$150,000	New access points should be universally accessible.
Establish a paddle share program	DPRCF	Sports Backers, JROC, JRA, outside entities		Modeled off of paddle Share Program in Minneapolis.
Install water fountains at heavy use locations	DPRCF	DPU, Sports Backers	\$10,000 – \$20,000per location	Typical cost per year round fountain. Low end assumes utilities are available.
Install additional permanent restrooms	DPRCF	DPU, FOJRP, JRA, Sports Backers	\$50,000-\$150,000 per location	Conventional where water/sewer available, alternative elsewhere. Typical cost per location.
Design and construct education center at Pony Pasture	DPRCF	DPU,RPS, Private entities	\$300 per square foot	Cost dependent on final plans and size of building. Typical construction cost of \$300 per square foot.
Investigate alternative Park governance model	FOJRP	DPRCF, JROC private entities		
Design and construct Gillies Creek Greenway	DPRCF	DPU,DPW, RVA Health District, Bike walk RVA	\$2,400,000	2 miles. Pending results of updated regional greenways plan. Uses typical cost of \$1M per mile plus 20% design and contingency.
Design and construct James River Branch Trail	DPRCF	DPW, DPU, CSX, Rail to trail Conservancy, Trust for Public Lands	\$2,000,000 for property acquisition; \$5,200,000 construction	4.3 miles; includes connection along Bellemeade Road. Pending results of updated regional greenways plan. Uses typical cost of \$1M per mile plus 20% design and contingency.
Design and construct East Coast Greenway	DPRCF	East Coast Greenway Alliance, DPW, DPU, Bike walk RVA	\$1,000,000 per mile	Pending results of final alignment. Portions of ECG may use other trail segments. Typical cost of \$1M per mile.
Design and construct Powhite Creek Greenway	DPRCF	DPW,DPU, private entities, bike walk RVA	\$2,400,000	2 miles. Pending results of updated regional greenways plan. Uses typical cost of \$1M per mile plus 20% design and contingency.
Acquire private parcels to expand Park	DPRCF	DPW, DPU, FOJRP, Trust for Public Lands		Specific parcels and cost to be determined.
Increase regional cooperation	DPRCF	RRPDC		Seek partnerships with adjacent localities, regional entities, non-profit organizations.
Establish timeframe to revisit and update Master Plan	FOJRP	DPRCF		November 1, 2029

JAMES RIVER PARK SYSTEM *MASTER PLAN*

16 OCTOBER 2019



CITY OF RICHMOND, VIRGINIA PARKS, RECREATION AND COMMUNITY FACILITIES + FRIENDS OF THE JAMES RIVER PARK

VHB | HARGREAVES ASSOCIATES



**HARGREAVES
ASSOCIATES**

