

CONVERGENCE

Presenting



Speaker



Luncheon



Dinner



Supporting



Gather | Guernsey Tingle



2022
CONVERGENCE



RVA FACILITATOR



Brian Anderson,
President & CEO, ChamberRVA

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2022
CONVERGENCE



TECH OPPORTUNITIES



Anthony J. Romanello,
Executive Director, Henrico Economic Development Authority

Convergence Conference 2022

October 13th, 2022



HENRICOEDA
VIRGINIA • USA

TAXES DOWN, PRIVATE INVESTMENT UP

	Before Tax Rate Change	Tax Year 2022	Increase %
Machinery & Tools ¹	\$180M	\$332M	84%
Business Personal Property Data Centers ²	\$20M	\$848M	4,140%
BPOL ³	\$20B	\$26B	30%
All Business Personal Property ⁴	\$899M	\$1.9B	111%

**R&D Tax Rate
Reduced by
74% to 90¢
in 2022**

**Data Center
Tax Revenue
up 422%
since 2017**

[1] M & T rate lowered from \$1.00 to \$0.30 in 2015
 [2] Business Personal Property data center rate lowered from \$3.50 to \$0.40 in 2017
 [3] BPOL exemption increased from \$100K to \$200K in 2019, \$400K in 2020, and \$500K in 2021
 [4] No change in tax rate for non-data center BPP. | Base year is 2015



A DATA-DRIVEN WORLD

- Each day 2.5 quintillion bytes of data created
(1 quintillion = 1 million Terabytes = 1 billion Gigabytes)
700 TB of data per minute generated
- In 2018, 22 billion connected devices
38.6 billion by 2025
50 billion by 2030
- **Data consumption** growth by these devices is also growing rapidly
 - 2010, 2 zettabytes of data consumed
 - 2018, 33 zettabytes
 - 2021, 74 zettabytes
 - 2024, 149 zettabytes
- 600+ hyperscale data centers as of 2021
(doubled since 2015)
- By 2023, data center industry: \$174 billion
- Resurgence of Subsea Cables
 - 2016-2020: \$13.8B value-creation, 107 new cables
 - 2022-2023: \$8B in new subsea project under development

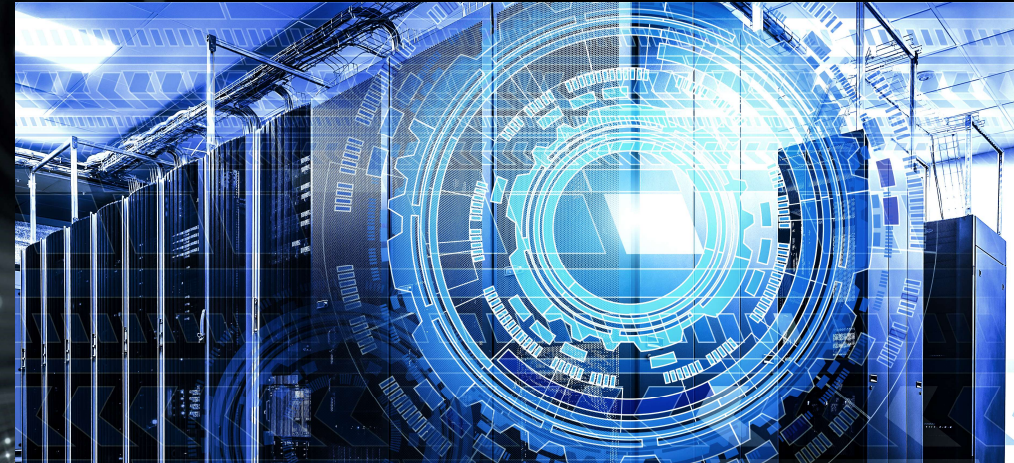
1TB of hard drive; one billion 1TB = 1ZB





DATA CENTERS ARE THE ENGINES OF DIGITAL ECONOMY

- **Global Data Centers 2019:** 416 terawatts or **3%** of world's electricity, nearly 40% more than UK
- **Carbon Neutral:** Net zero carbon dioxide emissions
- **Carbon Negative:** Reduction of carbon footprint to less than neutral
- **EU data centers** to be carbon neutral by 2030
- **Dominion:** 2.6 GW off-shore wind (660K homes), 16 GW solar project (4M homes); **NetZero by 2050**
- **Multi-Story Data Centers** maximizing FAR





Growing Henrico's Economy For All




MEGA DATA CENTER DEALS




 ← \$15 Billion — 





 ← \$11 Billion — 


 ← \$10 Billion — 

 ← \$10.1 Billion — 

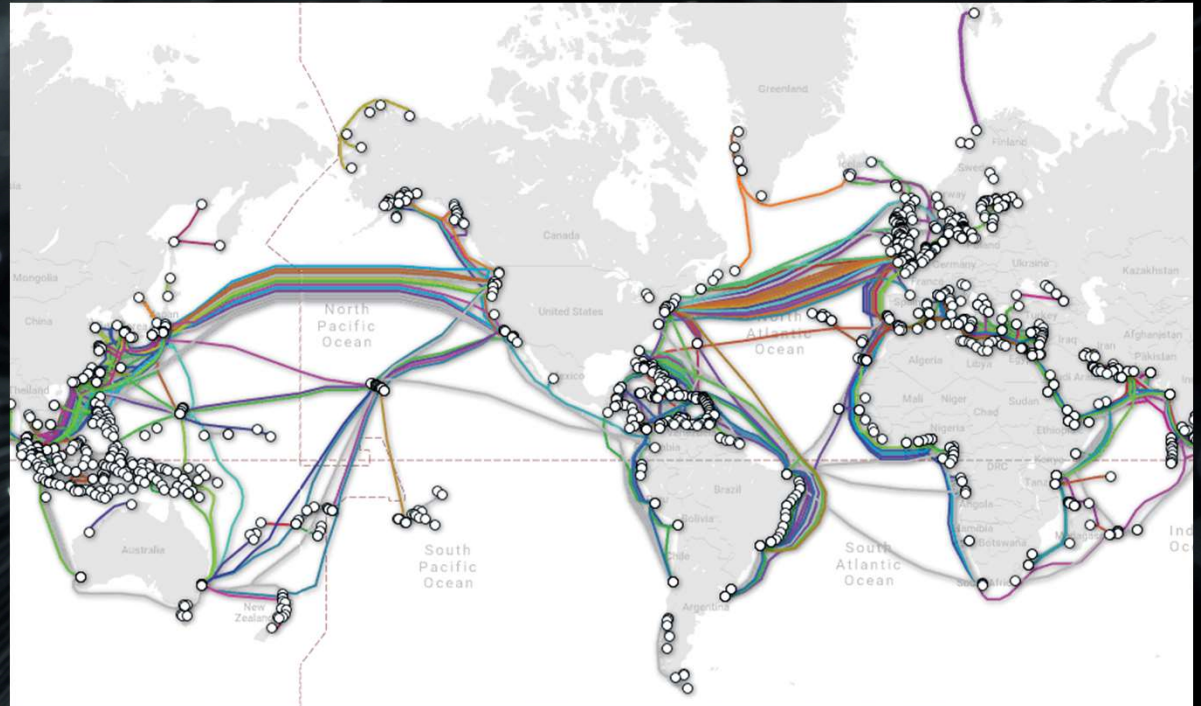

 ← \$8.4 Billion — 


 ← \$8 Billion — 


 ← \$7.6 Billion — 


SUBSEA CABLES

- 99.7% of all data on subsea
- **2016-2020**: \$13.8B value-creation, 107 new cables
- **2021-2023**: \$8B in new development
- \$10 Trillion daily transactions
- Hyperscalers in Subsea



163 years | 1.2M+ kms

464 cables | 1,245 Cable Landing Stations

DATA CENTER & CONNECTIVITY SOLUTIONS 

HENRICO SUBSEA CABLES



- **Google DUNANT**: new subsea cable from France to Virginia
- **MAREA (Microsoft, Facebook, Telxius)**: Upgraded capacity with Infinera to **30 Tbps per fiber pair** for total capacity
 - **Total 240 Tbps**
 - Third upgrade: **160 Tbps → 209.6 Tbps → 300 Tbps**
- **Telxius Network PoP** enable trans-Atlantic subsea loop

HENRICO SUBSEA | 18% OF EAST COST CAPACITY

Digital Connectivity Gateway between U.S., Europe, South America, Africa & Asia

- 6 subsea cables
- 9 countries
- 30+ networks
- 30+ backhaul providers
- 2 Internet Exchanges
- Europe Diversity
- South America Diversity
- Ashburn Diversity



18%

Richmond 2021
% of East Coast
Subsea Cables

CONFLUENCE
NETWORKS



DE-CIX RICHMOND INTERNET EXCHANGE

- Major milestone in evolution of Henrico Internet Infrastructure
- Richmond/Henrico became part of:
 - ✓ *Largest neutral ecosystem in the WORLD*
 - ✓ *Largest data center neutral ecosystem in NORTH AMERICA*



**RICHMOND/
HENRICO**



Growing Henrico's Economy For All

DE-CIX Deploys its Internet Exchange Platform in Four QTS Mega Data Centers



US expansion enhances connectivity options for QTS customers in Chicago, Dallas, Piscataway, NJ and Richmond, VA with the world's leading carrier and data center neutral interconnection ecosystem

NEWS PROVIDED BY
QTS Realty Trust, Inc. →
Mar 25, 2021, 09:00 ET

OVERLAND PARK, Kan., interconnection, QTS Realty Trust, Inc. solutions, today announced that the company has extended its next generation of solutions to Chicago, Dallas/Irving, TX

DE-CIX Richmond Now Live

DE-CIX Richmond offers immediate access to over twenty locally connected networks

December 01, 2021 08:01 AM Eastern Standard Time

RICHMOND, Va.--(BUSINESS WIRE)--DE-CIX, the world's leading Internet Exchange (IX) operator, announces that its newest IX, DE-CIX Richmond, is now live and exchanging traffic. DE-CIX Richmond replaces the Richmond Virginia Internet Exchange (RVA-IX). Members of the non-profit RVA-IX were seamlessly transitioned to DE-CIX's globally leading Apollon multi-service interconnection platform, effective November 16, 2021. DE-CIX Richmond now provides both existing and new interconnected networks with a state-of-the-art platform offering additional capacity, redundancy, scalability and enhanced services, improving connectivity capabilities in the market.

DE-CIX's newest IX, DE-CIX Richmond, is now live and exchanging traffic. DE-CIX Richmond replaces the Richmond Virginia Internet Exchange (RVA-IX). There are currently over 20 local networks connected from three #datacenters in the market.

[Tweet this](#)

"We are excited to see how DE-CIX will transform the Richmond interconnection market, enhancing international connectivity capabilities in light of our access to Virginia Beach, where multiple new transatlantic subsea cables are landing," adds Scott K. Brown, cofounder of the RVA-IX and President of Pixel Factory, a data center where the DE-CIX Richmond IX will be accessible from. "DE-CIX service capabilities, from peering to access to the cloud and content providers, as well as its global reach – available across a proven platform, which has had 100% uptime for DE-CIX in the US since they've been in operations in North America – is a win for the market. It is an honor to pass the torch in Richmond to the leading global IX operator, DE-CIX."

Richmond is part of World's Largest Interconnection Network

Connected to 23 Countries / 4 Continents



And the largest carrier & DC neutral interconnection ecosystem in North America



40
Internet Exchanges

3000+
connected networks

500+
data centers

105+
Tbit capacity



Growing Henrico's Economy For All

SPEED OF LIGHT!

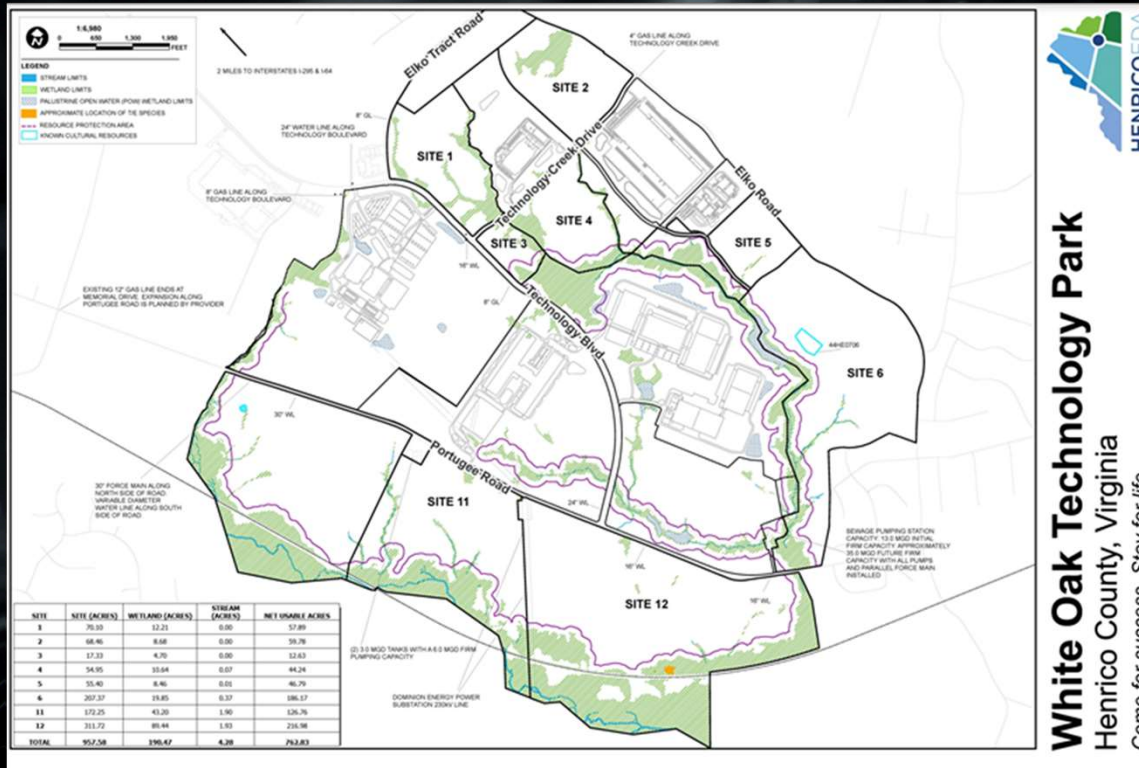
From Henrico To:	Latency (milliseconds)
Ashburn, VA	3.8
VA Beach	2.74
Madrid, Spain	72.74
Frankfurt, Germany	82.74
Marseille, France	79.27
London, UK	85.49
Rio de Janeiro, Brazil	102.74
Sao Paulo, Brazil	108.24



In blink of an eye, you can transmit data back and forth **twice from Henrico to Spain**



WHITE OAK TECHNOLOGY PARK



- 2,300-acre, master-planned, publicly owned premier industrial park
- Extensive fiber, water & sewer, and electric infrastructure
- ~760 acres of shovel-ready sites available for data centers and/or advanced manufacturing



WOTP EXISTING BUSINESSES

- \$12M annual tax revenue
- 6.3 MSF
- 887 Employees



INTERGLOBIX CO-FOUNDED THE NAP IN HENRICO

QTS RICHMOND

NAP



Where data center, subsea fiber and terrestrial networks converge

“The subsea cables that terminate in Richmond have opened an amazing opportunity for Henrico County to become a LOCUS for both domestic and international applications. That gives good reason for the creation of the QTS Richmond NAP, a place where multiple providers and Internet services can meet, connect and reach the international cables that link Virginia to other parts of the world.”



- DR. VINT CERF

*Chief Evangelist for Google
Father Of the Internet
Internet Hall of Fame Pioneer*



INTERNET
HALL of FAME



Growing Henrico's Economy For All

IEIC BOARD MEMBERS





Dr. Vint Cerf
 Father of the Internet
 Internet Hall of Fame Pioneer
 Google Chief Internet Evangelist
IEIC Chairman


 INTERNET
 HALL of FAME


 Clint Heiden IEIC Founder  	 Vinay Nagpal IEIC Executive Director  	 Rafael Arranz COO, Telxius 	 Staffan Göjeryd CEO, Telia Carrier 	 Steve Alexander CTO, Ciena 	 Howard Boville CTO, Bank of America 	 Dr. Mark Boxer CIO, Cigna 	 Ivo Ivanov CEO, DE-CIX International 	 Dr. Jason Black Director of Network Development, NVIDIA 	 Sarah Keller Head of Global Technology Sourcing & Supply Chain, Uber 
 Frank Nazzaro CTO, Freddie Mac 	 Asher Kagan CEO, Blade Group 	 Jon Greaves CTO, QTS Data Centers 	 Michael Leidinger CTO, Hilton 	 Andrew Dugan CTO, CenturyLink 	 Dr. Ken Washington CTO, Ford Motor Company 	 Anthony Romanello Executive Director, Henrico EDA 	 Dr. Barbara Boyan Dean, College of Engineering 	 Vinay Kanitkar CTO, Akamai 	 Krishna Narayanaswamy Co-Founder & Chief Scientist 



IEIC/NAP SUMMIT 1.0

- Inaugural Summit held in 2019
- 400 attendees, 30 speakers & five panels
- The new transatlantic fiber terminates at QTS Richmond creating opportunities and economic growth in and around Henrico Virginia



QTS Gathers the Rest of Virginia in Richmond

May 13th, 2019 by Rob Powell · Leave a Comment



Last week I had the privilege of attending the [QTS Richmond NAP Summit](#) down in Richmond Virginia. Central Virginia's infrastructure market has been on the rise for years, a phenomenon I have been following closely. [Multiple fiber projects, data center expansions](#), and the arrival of [Telxius' MAREA and BRUSA cables](#) down in Virginia Beach have created an opportunity that the whole region is just now starting to understand.

JUNE 10, 2019 PUBLISHED IN ISSUE 2, EVENTS

QTS Richmond Nap Summit

WHEN: 7 May 2019

WHERE: QTS Richmond Data Center, Henrico County

WHY: Consortium of Industry luminaries, including leaders from Facebook, Google, Microsoft, Telxius to discuss Richmond's emerging status as a global Internet hub. By [InterGlobix](#)



perhaps the most telling commentary came during the Subsea and Facebook's Najam Ahmad repeatedly emphasized their priority in infrastructure resources. The highly concentrated spaces like Northern Virginia and Marseilles need alternatives, and not enter space but for the entire ecosystem that surrounds them. The ecosystem were definitely there listening.

engagement from the local community. Not only was a team of and deeply involved in the event at multiple levels, but I talked owners and developers looking to understand the infrastructure now participating were members of the education community, especially University, which would like nothing more than to churn out telecom economic boon.



IEIC/NAP SUMMIT 2.0 | 8 NOVEMBER 2022

Global Luminaries from the Internet Infrastructure Industry

Tuesday, November 8

- Official ribbon-cutting ceremony / opening of DE-CIX Richmond/Henrico
- IEIC/NAP Summit 2.0 with keynote speakers and panelists
- Henrico as 'blueprint' for Internet Ecosystem development
- Economic growth impact
- Cross-industry coverage: Healthcare, Banking, Education, Media, Financial, Automotive, Banking

23 countries

4 continents

3,000+ networks

500+ data centers

40 Internet exchanges

Discover more:

IEIC Global NAP Summit 2.0

November 8, 2022

ieicco.com/summit-2-0/

REGISTER NOW



Growing Henrico's Economy For All

AWAKENING POSSIBILITIES





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2022
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ECONOMIC DEVELOPMENT + EQUALITY = REAL CHANGE



Leonard Sledge,
Director, City of Richmond's Economic Development
Department

Economic Development + Equity = Real Change

City of Richmond

2022 CONVERGENCE
Presented by Leonard Sledge
October 13, 2022



DEPARTMENT OF
**ECONOMIC
DEVELOPMENT**

THANK YOU!!!

A Look Back...COVID-19 Response

Awarded 450 grants totaling \$6.1+ million to support the continuity of small businesses and organizations

Formation of the Capital Region Business Response Team

Collaborated with ChamberRVA to launch ForwardRVA to support the safe reopening of businesses in the Richmond Region

Established the First Responder Meal Program

ACCELERATE OUT OF THE PANDEMIC



RESULTS

FY20-FY22 RESULTS

FY20

\$68M+ announced capital investment
550+ announced new jobs



FY21

\$409M+ announced capital investment
1,000+ announced new jobs



FY22

\$552M+ announced capital investment
2,230+ announced new jobs



FY20-FY22 RESULTS

Approved increasing the revenue threshold to enable more small businesses to be exempt from the BPOL tax

Approved the creation of a city-wide Technology Zone to encourage the growth of technology businesses in Richmond

Approved the Richmond Equity Agenda

Developed baseline community benefits to consider when negotiating development agreements

WE GOT BETTER



S.P.E.E.D.

Strategic Plan for Equitable Economic Development (S.P.E.E.D.)

Ordinance 2016-090 required "...a comprehensive economic development plan, an economic development implementation strategy, and a process for including economic growth areas in the City's master plan."

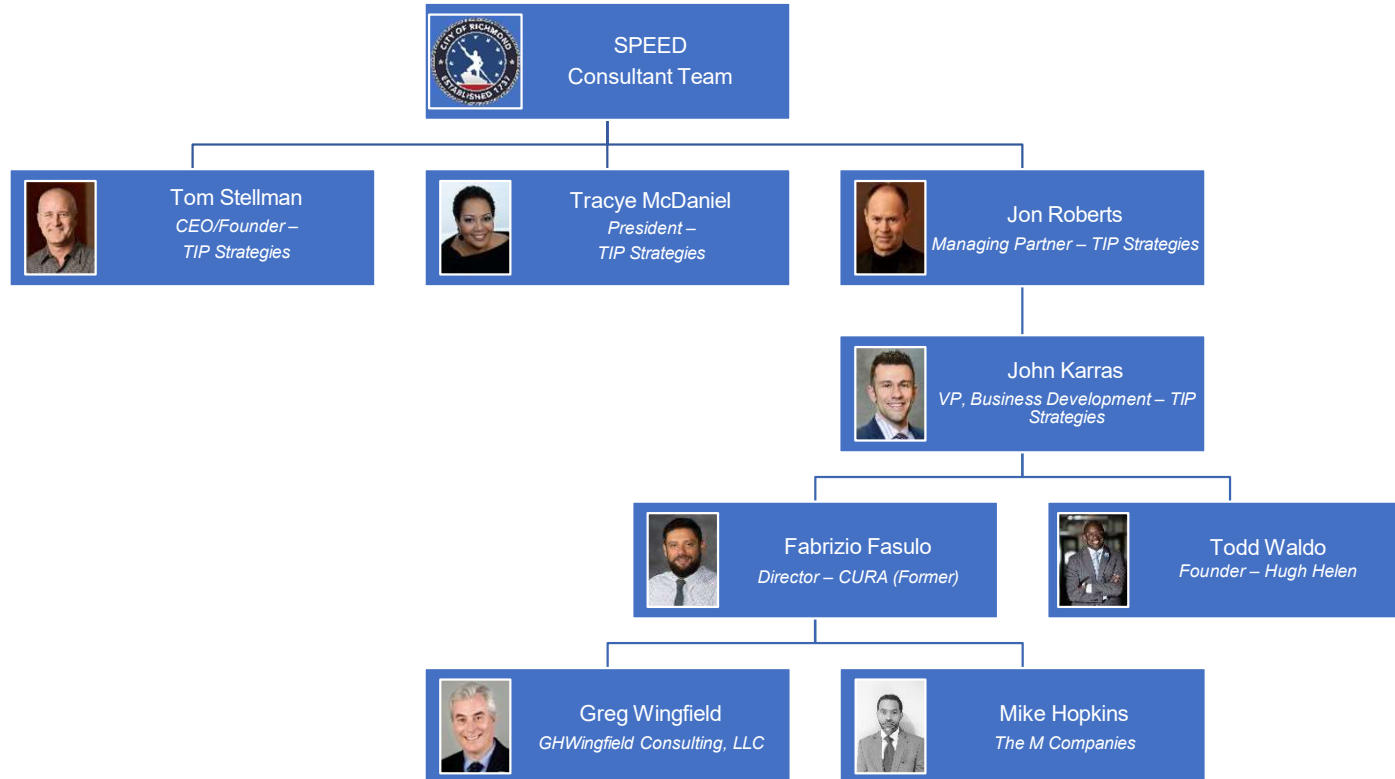
August 2019 – TIP Strategies contracted to facilitate the creation of the City's Economic Development Strategic Plan (renamed the Strategic Plan for Equitable Economic Development – "S.P.E.E.D."). The goal was to develop an executable plan for Richmond to be competitive in attracting new jobs and investment and achieving equitable economic growth.

March 2020 – The COVID-19 pandemic prompted revisiting the assumptions and recommendations in the draft plan.

May 2020 – The murder of George Floyd prompted expanding the strategies, objectives, and initiatives to further drive equitable economic growth.

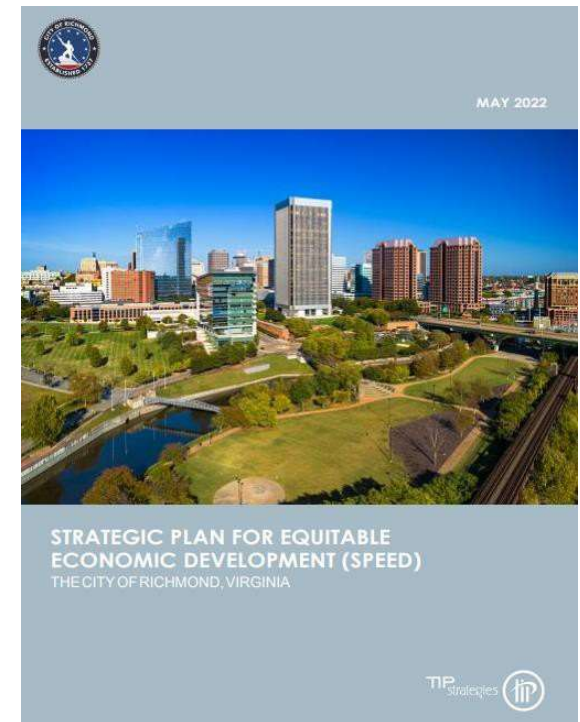
June 27, 2022 – Richmond City Council unanimously adopted the S.P.E.E.D.

TIP Strategies Team



Community & Stakeholder Input

- 15 member Steering Committee
- Meetings with 200+ community and business leaders, Councilmembers; stakeholders; and Richmond 300 Advisory Council and Economic Development Working Group
- 800 responses from an online community survey



Key Findings

FIGURE 1. PERCENT OF ADULTS 25+ WITH BACHELOR'S DEGREE OR HIGHER BY RACE, 2020

CITY	AFRICAN AMERICAN	WHITE	GAP
Richmond, VA	14.4%	65.2%	451%
Minneapolis, MN	16.6%	62.5%	377%
Baltimore, MD	17.6%	57.7%	328%
Washington, DC	29.1%	89.8%	309%
Boston, MA	23.2%	67.3%	290%
Charleston, SC	21.9%	62.8%	287%
Atlanta, GA	27.9%	78.9%	283%
Kansas City, MO	16.7%	44.1%	263%
Pittsburgh, PA	20.1%	50.8%	253%
Portland, OR	23.9%	54.9%	230%
Columbus, OH	19.4%	43.0%	222%
Raleigh, NC	31.3%	63.0%	201%
Louisville, KY	17.3%	33.9%	195%
Charlotte, NC	29.8%	57.0%	191%
Austin, TX	29.9%	56.9%	190%
Nashville, TN	28.0%	48.8%	174%
Oklahoma City, OK	23.6%	34.1%	145%



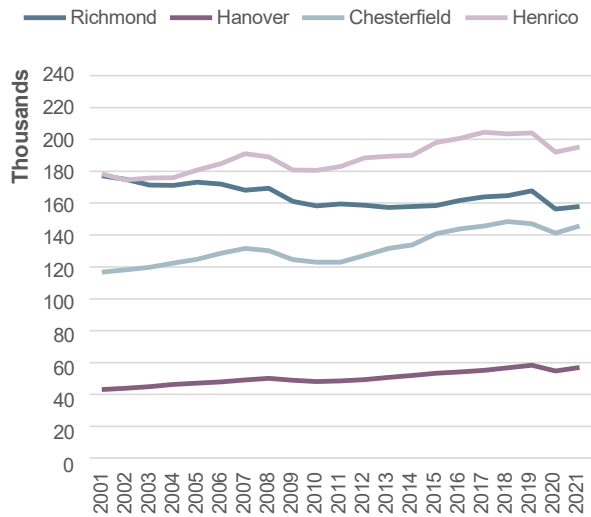
Key Findings

FIGURE 4. SHARE OF OCCUPATIONS IN CITY OF RICHMOND BY RACE AMONG TOP 5 HIGHEST- PAYING AND BOTTOM 5 LOWEST-PAYING OCCUPATIONS, 2021

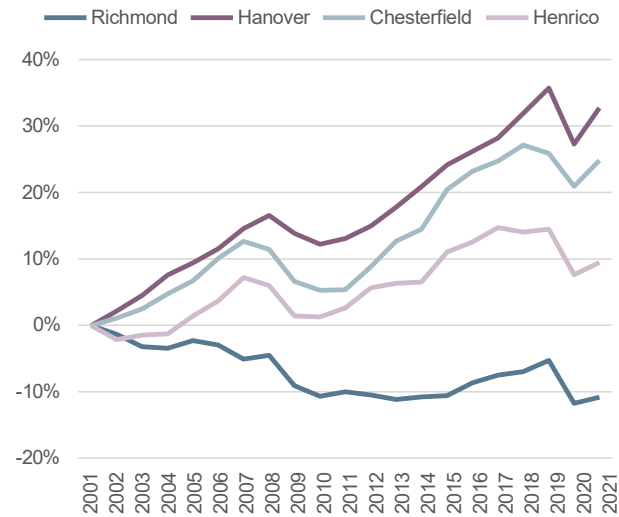
OCCUPATION ↓	AVG. ANNUAL WAGE	AFRICAN AMERICAN SHARE	WHITE SHARE	AFRICAN AMERICAN OVER/UNDER REPRESENTATION
Management	\$134,800	3.7%	7.2%	0.52
Legal	\$111,000	1.0%	2.0%	0.50
Computer & mathematical	\$98,100	2.6%	4.9%	0.52
Architecture & engineering	\$91,400	0.6%	2.1%	0.30
Healthcare practitioners & technical	\$90,300	5.9%	6.9%	0.85
TOP 5 HIGHEST-PAYING OCCUPATIONS & BOTTOM 5 LOWEST-PAYING OCCUPATIONS				
Transportation & material moving	\$40,100	11.0%	4.4%	2.49
Personal care & service	\$31,900	2.7%	2.1%	1.26
Healthcare support	\$31,300	6.6%	2.3%	2.85
Building & grounds cleaning & maintenance	\$29,300	4.8%	3.0%	1.62
Food preparation & serving related	\$27,200	8.7%	6.0%	1.46

Key Findings

FIGURE 5. EMPLOYMENT TRENDS, 2001-2021
TOTAL EMPLOYMENT



PERCENT CHANGE IN EMPLOYMENT



5-Year SMART Goals

1. **\$3 billion in announced capital investment for economic development projects**
2. **3,000 announced new jobs with annual salaries at or above \$52,000 (110 percent of the City's median household income)**
3. **Reduce the poverty rate by 5 percentage points**
4. **Public and private sector real estate development activities that generate \$25 million in annual real estate tax revenue**
5. **2,500 postsecondary credentials awarded to Richmond residents**



S.P.E.E.D. Objectives & Initiatives

OBJECTIVE 1. COMMUNITY

INITIATIVE 1.1. ECONOMIC EQUITY & COMMUNITY ENGAGEMENT

Advance implementation of the City's Equity Agenda to improve equity across City departments and economic development program.

INITIATIVE 1.2. BROADBAND INTERNET FOR EVERY RESIDENT

Embark on a full-scale broadband initiative—the Richmond Public Telecommunications Infrastructure Initiative (RPTI)—that ensures internet access to every residence in the city of Richmond.

INITIATIVE 1.3. SKILLS & EDUCATION

Enhance the skills and education of Richmond's youth and adult population to access higher-wage employment opportunities.

INITIATIVE 1.4. MINORITY BUSINESS DEVELOPMENT

Support minority businesses by aligning partners, making more capital available for minority business enterprises (developers, contractors, entrepreneurs, and small businesses), and launching creative new business models.

INITIATIVE 1.5. REAL ESTATE DEVELOPMENT

Position Richmond for quality redevelopment citywide and aggressively pursue new commercial, industrial, and mixed-use development in Priority Growth Nodes and in corridors that have not attracted transformational redevelopment.



S.P.E.E.D. Objectives & Initiatives

OBJECTIVE 2. INNOVATION

INITIATIVE 2.1. LIFE SCIENCES INNOVATION

Establish the goal of making Richmond a “top 20 Life Sciences Cluster” by 2026.

INITIATIVE 2.2. INNOVATION WITHIN TARGET INDUSTRIES

Leverage R&D efforts of existing employers to stimulate spinoff business growth, entrepreneurial activity, and creative solutions for new products and services that enhance the city’s major industry clusters.

INITIATIVE 2.3. ENTREPRENEURIAL COMPANIES & SMALL BUSINESSES

Cultivate a strong environment of support networks, creative talent, capital access, and physical spaces for entrepreneurial activities and small business growth.

INITIATIVE 2.4. EQUITABLE SMART CITY INFRASTRUCTURE

Invest in new technologies that make the City of Richmond a national leader in equitable “smart city” infrastructure, in collaboration with Dominion Energy, VCU, RPS, and other large institutions in the city.

INITIATIVE 2.5. REMOTE WORKERS

Launch a remote worker attraction and retention initiative—RemoteRVA—to make Richmond a destination of choice for remote workers in the Eastern US.

S.P.E.E.D. Objectives & Initiatives

OBJECTIVE 3. INDUSTRY

INITIATIVE 3.1. BUSINESS RETENTION & EXPANSION

Expand the City's business retention and expansion program.

INITIATIVE 3.2. ANCHOR INSTITUTIONS

Support Richmond's anchor institutions and partner with them to support smaller local businesses.

INITIATIVE 3.3. INCENTIVES

Activate the City's suite of existing incentives and business finance tools within the EDA, RRHA, and City departments (and explore creating new incentives) to stimulate new business investment and job growth.

INITIATIVE 3.4. MARKETING & IMAGE

Launch new City-specific marketing initiatives focused on internal and external audiences including existing businesses, talent, entrepreneurs, investors, corporate executives, and the real estate community.

INITIATIVE 3.5. TARGET INDUSTRY RECRUITMENT

Focus recruitment efforts on Richmond's target industries, including international business development.

PLAN & EXECUTE

Purposeful Planning & Strategic Planning

RICHMOND 300 A Guide for Growth

1 City-Wide Vision

3 Maps to guide Richmond's growth

Nodes Map
Depicts the places where people and jobs are located and the convergence of many uses and multiple modes of transportation.

Future Land Use Map
Depicts how an area should look and feel in the future; not necessarily what the area is like today.

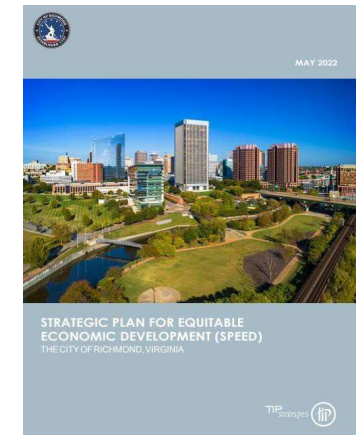
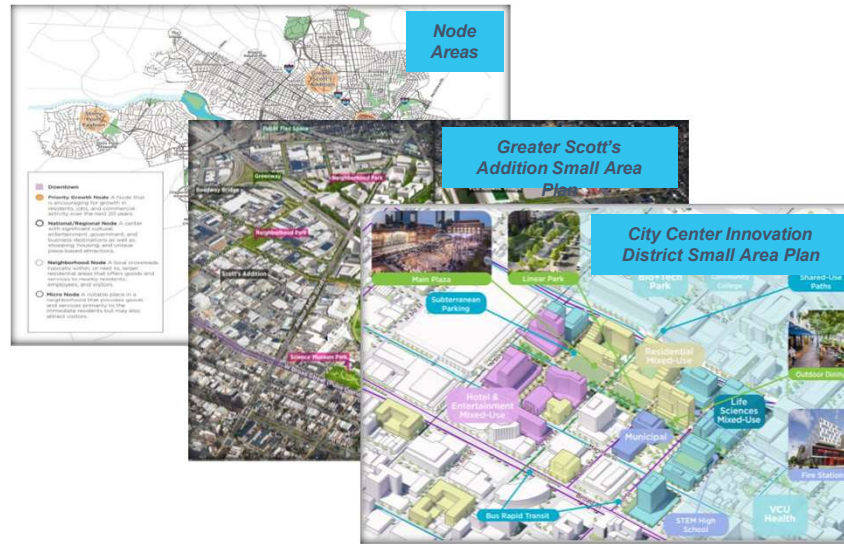
Future Connections Map
Depicts infrastructure improvements needed to support the envisioned development pattern.

5 Topic Visions with goals, objectives, and strategies



<https://tinyurl.com/Richmond300>

2021 Daniel Burnham Award for a Comprehensive Plan from the American Planning Association



Office of Equitable Development

Strategic Plan for Equitable Economic Development - S.P.E.E.D.
(<https://tinyurl.com/RichmondSPEED>)

City of Richmond Equity Agenda
(<https://www.rva.gov/rvaequity>)





Richmond Equity Agenda - *Utilizing Economic Development to Create Economic Justice*

1. Continue to support the Office of Equitable Development to facilitate the creation of the more sustainable, beautiful and equitable city envisioned by Richmonders in the Master Plan;
2. Continue to work with and support small businesses through the Department of Economic Development and the Office of Minority Business Development;
3. Establish a Downtown Task Force to assist with revitalizing the City's downtown core, working with business owners, Venture Richmond, and Richmond Region Tourism;
4. Redevelop core areas of the City, prioritizing community benefits, such as green space, affordable housing, and job opportunities for Richmonders;
5. Require community benefits agreements from all developers that purchase City-owned land for redevelopment, or that receive a financial benefit from the City for economic development to ensure greater equity in job education and training, contracting, business opportunities and investment;
6. Establish an Equitable Economic Development Scorecard; and
7. Provide the use of City-owned real estate through the surplus property process to encourage affordable housing, community building, and economic development projects.



Diamond District

Current State



DEPARTMENT OF
**ECONOMIC
DEVELOPMENT**



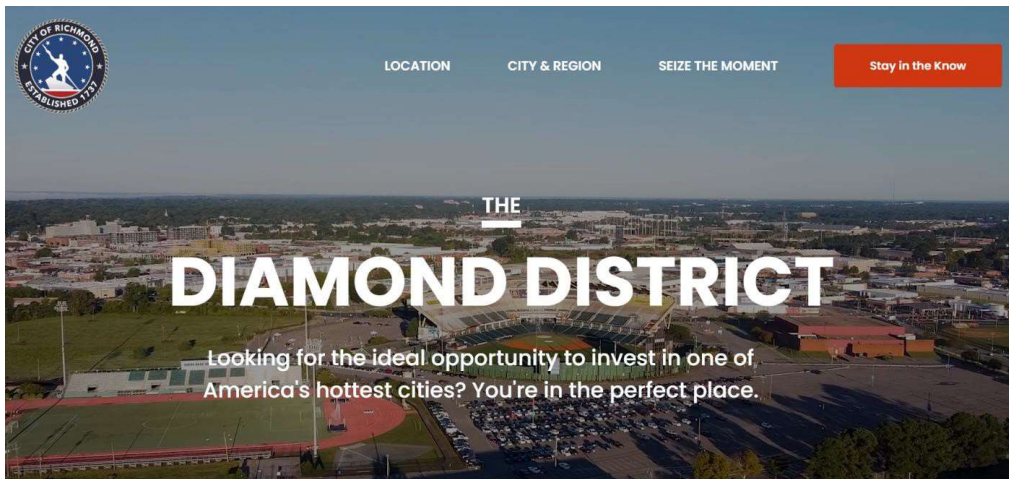
Diamond District

Small Area Plan Vision

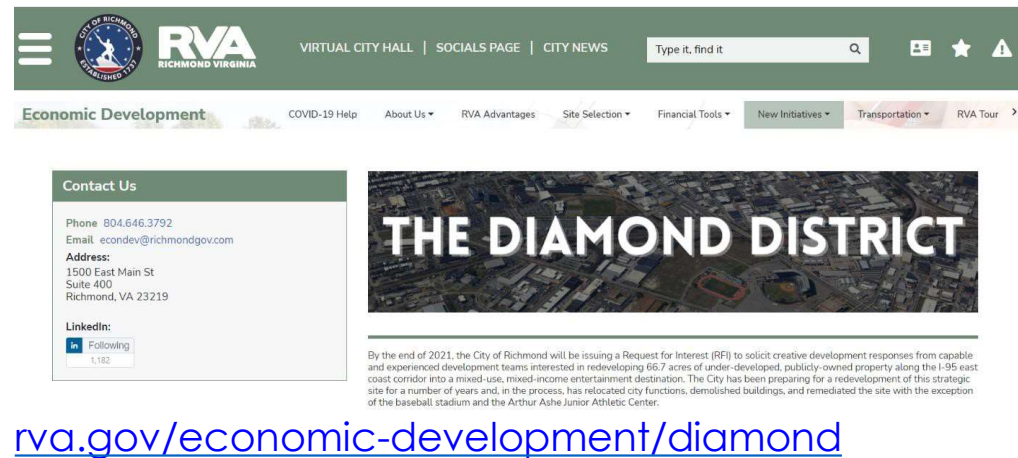


DEPARTMENT OF
**ECONOMIC
DEVELOPMENT**

Marketing



rvadiamond.com



Process – RFI to RFAI to RFO

Request for Interest (RFI)

15 respondents provide qualifications and vision for the project

Issued: Dec 28, 2021
Due: February 15

RFAI Invitees

Evaluation Panel reviews 15 RFI responses and invites 6 respondents to respond to the RFAI

Announcement: March 23

Request for Additional Information (RFAI)

Respondents provide details on program and financing

Issue: March 23
Due: April 25

Finalists

Evaluation Panel reviews RFAI responses and selects finalists invited to respond to the RFO

Announcement: May 10

Request for Offers (RFO)

Finalists provide an offer and final development program

Issue: June 3
Due: June 28

Public Meeting: June 8



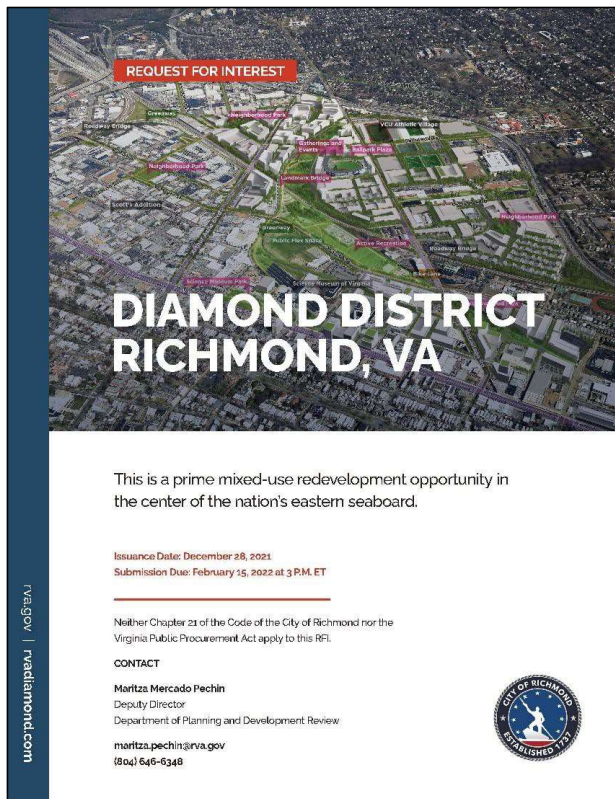
Preferred Team

Evaluation Panel recommends the preferred development team to the Mayor and subsequent submission of documents for City Council approval

Announcement: September 12



Process – RFI to RFAI to RFO



Project Goals

RFO included clarifying assumptions for some goals

Evaluation Criteria

Goals

Development

- Public Infrastructure & Public Open Space
- New Baseball Stadium
- Replace Sports Backers & Arthur Ashe Jr. Athletic Center functions in new facilities off-site
- Mixed-income housing
- Office, Hotel, & Retail
- Parking, Transit, and Bicycle & Pedestrian
- Phasing
- Quality Design & Sustainable Development

Community

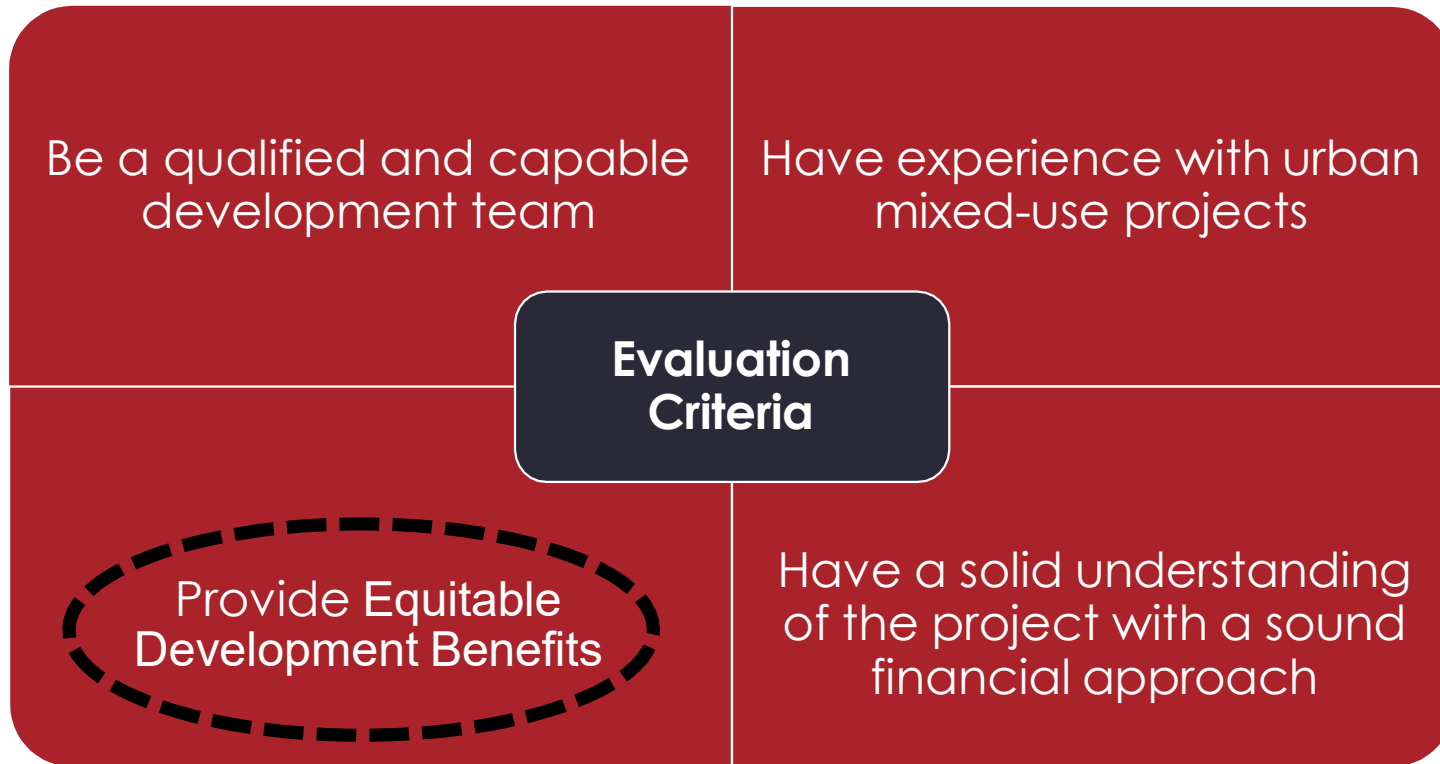
- Create a New Urban Neighborhood
- Families and Children Focused
- Provide Connectivity to Surrounding Neighborhoods
- Create a Model Sustainable District
- Honor the Legacy of Arthur Ashe Jr.
- Employment
- Promote Diversity, Equity & Inclusion
- Ensure Minority Business Enterprises and Emerging Small Businesses Participation in all Segments of the Project

Fiscal


- Maximize New Tax Revenues
- Minimize City Financing
- Establish a Community Benefit Fund
- Create a “TIF District” Solely for the 67.7 Acre Diamond District



Evaluation Criteria



Evaluation Criteria



REQUEST FOR INTEREST


The Opportunity

The Diamond District has unparalleled access to the region and the entire east coast via highways and is a 20-minute drive to the Richmond International Airport. The City of Richmond owns 60 acres and Virginia Commonwealth University owns 6.6 acres of the property in the Diamond District. The City desires to have the Diamond District redeveloped into a mixed-use, mixed-income urban live-work-play destination with a new baseball stadium as a major entertainment anchor.

More about the site

The Diamond District is currently home to a baseball stadium, surface parking, the Arthur Ashe Jr. Athletic Center, Sports Backers Stadium, a recreational baseball field, vacant land, and streets, as shown in the aerial map. See Appendix B for more information about the parcels.

	Address	Owner	Acreage
A	3011 N. Arthur Ashe Blvd	City of Richmond	6.481
B	3017 N. Arthur Ashe Blvd	City of Richmond	4.052
C	3001 N. Arthur Ashe Blvd	City of Richmond	9.32
D	2909 N. Arthur Ashe Blvd	City of Richmond	12.15
E	2907 N. Arthur Ashe Blvd	City of Richmond	19.1
F	2911 N. Arthur Ashe Blvd	VCU	6.604
G	2728 Hemitage Rd	City of Richmond	10.9
Total Acreage			67.57



The Diamond District property is 67.57 acres.

rva.gov | rvaatlantiamd.com

11



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REQUEST FOR INTEREST

Equitable Development Benefits

See Appendix E for Anticipated Minimum Community Benefits Requirements

- Inclusion of affordable for-sale and rental housing units
- Implementation of a development program that includes a diverse, inclusive development team and diverse equity participation, and that creates diverse and inclusive opportunities for the business community, including Minority Business Enterprises and Emerging Small Businesses, in development, design, construction, and ongoing operation.
- Potential to create new employment at a mix of skills and abilities
- Potential to act as a catalyst for economic development in the area
- Impact to increase tourism and the Richmond sports and entertainment community
- New open green space connected throughout the site and to adjacent communities
- Site-wide and building-specific sustainability and resiliency features

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REQUEST FOR INTEREST

19

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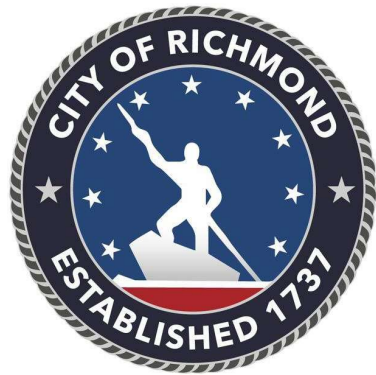
REQUEST FOR INTEREST

- Potential to enhance the meaningful employment opportunities available to local residents through workforce training programs and the creation of sustainable and well-paying jobs with benefits and upward economic mobility

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11

Partners



RVA Diamond Partners

Republic

LOOP CAPITAL

THALHIMER | REALTY PARTNERS



RVA Diamond Partners

Development Team:

- Republic, Loop Capital, Thalheimer Realty Partners
- Pennrose, NixDev, Southside Community Development, Capstone, M Companies, JMI Sports

Design Team:

- SOM, Nelson Byrd Woltz
- KEI, 510 Architects, Poole & Poole, Hickok Cole
- DLR Group (*Stadium Design*)

Community Equity and Workforce Development:

- J&G Workforce Development
- The Robert Bobb Group

Public Activation:

- Groundswell Design Group, Sir James Thornhill, Culture & Cuisine, Campfire, Madison + Main

Concept

RVA Diamond Partners will deliver a transformational future for the Diamond District: an authentic Richmond neighborhood and one-of-a-kind ballpark experience that celebrates creative placemaking, art, culture, sport, and the incredible upbeat personality of one of the East Coast's most compelling cities.

We look forward to working with the community and city, as true partners in this dynamic development that will catapult Richmond to the forefront of conversations about successful, large-scale, mixed-income, mixed-use, and stadium-integrated development, establishing the Diamond District as a national model for urban regeneration.

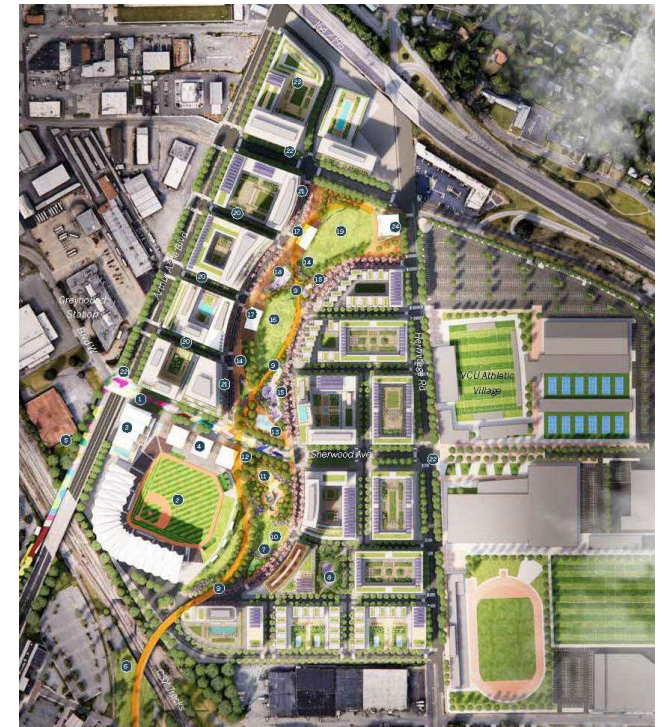
Our vision for the Diamond District is firmly rooted in the rich culture of the city and designed to catalyze a more verdant, equitable, and inclusive future for all Richmonders. We firmly believe that community building and inclusive placemaking, along with excellence in planning and design and exceptional development acumen can support Richmond's continued evolution into a global city.



The Plan

	Phase 1	Total Build Out (Phases 1-4)
Rental Housing	1,134 units [184 at 60% AMI, 39 at 30% AMI (20 PBV)]	2,863 units [469 at 60% AMI, 100 at 30% AMI (51 PBV)]
For-sale Housing	92 units (18 at 60-70% AMI)	157 (31 at 60-70% AMI)
Office	Ability to convert multi-family parcel to office	935,000 SF
Hotel	1 hotel with 180 rooms	2 hotels with 330 rooms
Retail	58,018 SF	195,000 SF
Parking	1,695 structured parking spaces	6,800 structured parking spaces
Other	Baseball stadium 4.2 acres park space Streets and infrastructure	11.1 acres park space Streets and infrastructure
Minimum investment	\$627.6 million	\$2.44 billion

AMI=area median income; PBV=project-based vouchers; SF=square feet



Our Partnership with the Developer Includes...

45% MBE Equity Ownership

20% of all Housing is Affordable – Rental and For Sale Units

\$1M Fund for Closing Cost Assistance

Housing Units Available for Residents with Project Based Vouchers

Continue to Honor the Legacy of Arthur Ashe, Jr.

Minimum 5% Equity Ownership Available for Local Investors

City Shares in the Developer's Profit When Buildings are Sold



Our Partnership with the Developer Includes...

\$500K
Scholarship
Fund

Local
Hiring
Goals

\$16.50/Hour or
Prevailing Wage
Rate for
Construction
Jobs

Establish a Small
Business Institute
and Create a \$500K
Revolving Loan
Fund

Partnership with
Virginia Union
University

40% MBE/ESB
Participation Goal
During & Post
Construction



AND THEN...

Up Next! City Center

Current State



DEPARTMENT OF
**ECONOMIC
DEVELOPMENT**

IN CLOSING...

What is Economic Development?

“The process in which an economy grows or changes and becomes more advanced, especially when both economic and social conditions are improved.”

- Cambridge Dictionary

THANK YOU!!!

CONVERGENCE

Presenting



Speaker



Luncheon



Dinner



Supporting

Gather | Guernsey Tingle



2022
CONVERGENCE



PHARMACEUTICAL ADVANCED MANUFACTURING



Dr. Eric Edwards,
Co-founder and Chief Executive Officer, Phlow Corp

CONVERGENCE

Presenting



Speaker



Luncheon



Dinner



Supporting



Gather | Guernsey Tingle





Ending Essential Medicines Shortages Once and For All.

Leading the way in U.S.-based advanced manufacturing.

Phlow Corporate Overview





OUR VISION

Make the U.S. a country where every human being has access to the essential medicines necessary to sustain life and conquer disease.

A scientist in a white lab coat and safety glasses is using a pipette to transfer liquid into a flask. The background shows a laboratory setting with various glassware and equipment. The entire image has a green tint and a subtle grid pattern.

OUR MISSION

To reliably supply affordable, high-quality, essential medicines through U.S.-based advanced manufacturing processes.

Who We Are



- Phlow is a trailblazing, Public Benefit Corporation, that is *re-imagining essential medicine development and manufacturing* from start to finish through flow chemistry and other advanced continuous manufacturing processes.
- Everything Phlow does is designed to secure affordable, high-quality essential medicines for all Americans.
- Phlow solves the broken essential medicines supply chain by offering a resilient end-to-end solution that is U.S.-based, comprehensive, and fully integrated.

Key Accomplishments and Milestones



Delivered more than

2 MILLION

doses of essential Medicine to the Strategic National Stockpile (SNS) to support Covid-19 efforts.



Construction under way on multiple cGMP facilities with targeted completion by 2023 for the first production facility.



Launched advanced manufacturing development programs for multiple essential medicine API programs and completed validation for our first program.

Closed on \$20 million Series A preferred offering to support commercial sustainability initiatives.



SMALL BUSINESS PRIME CONTRACTOR OF THE YEAR AWARD

Received the U.S. Department of Health and Human Services (HHS), Office of Small and Disadvantaged Business Utilization (OSDBU), Small Business Prime Contractor of the Year Award for excelling in our contract performance.



Accepted into the U.S. Food and Drug Administration (FDA) Emerging Technology Program.



PARTNERSHIP

between Phlow, Civica, AMPAC Fine Chemicals, and VCU's Medicines for All Institute was recognized by the Richmond-Petersburg business community as the catalyst for the Growth and Opportunity Virginia initiative grant to build a pharmaceutical cluster in the region. The State of Virginia has committed \$10M to infrastructure and is considering further investments.

Partnered with VCU's Medicines for All and the leading standards setting organization, U.S. Pharmacopeia (USP), to co-locate a world-class continuous research and development (R&D) lab with Phlow.



Phlow has been included in HHS/ASPR/BARDA Contract Development and Manufacturing Organization Network to provide domestic API capability for essential medicines and medical countermeasures.



Launched a pioneering Children's Hospital Coalition with over 27 of the Nation's most distinguished hospitals who will enter into long-term supply agreements with Phlow.



Formed alliance with Fresenius Kabi to address the unmet needs of children's hospitals and rapid response to public health emergencies like COVID-19.



Phlow Creating a Secure, Robust, And Resilient Domestic Supply Chain is Essential for U.S. National Security and Future Generations.

Increasing Urgency to Address Deficiencies in the Global Pharmaceutical Supply Chain for Essential Medicines

Geopolitical Conflict

Forbes

LEADERSHIP STRATEGY

Supply Chain Crisis Worsens As Russia's War Against Ukraine Continues

Edward Segal Senior Contributor ©
I cover crisis-related news, issues and topics.

Apr 2, 2022, 12:41pm EDT

Listen to article 7 minutes



LNG (Liquefied natural gas) tanker Rudolf Samoylovich, sailing under the flag of Bahamas, moors

Public Health Crises

The Washington Post
Democracy Dies in Darkness

Sections Try four weeks free

BUSINESS

Covid shutdowns in China are delaying medical scans in the U.S.

Doctors are postponing nonemergency tests after a GE Healthcare factory in Shanghai was closed amid covid lockdowns

By Christopher Rowland
May 11, 2022 | Updated May 11, 2022 at 5:45 p.m. EDT



Contrast media is widely used in cardiac care, such as during this angioplasty at Mount Sinai Hospital in New York. Hospitals have experienced acute shortages of the drug because of coronavirus lockdowns in China. (Mark Lennihan/AP)

Natural Disasters

Supply Chain Hurdles Will Outlast Pandemic, White House Says

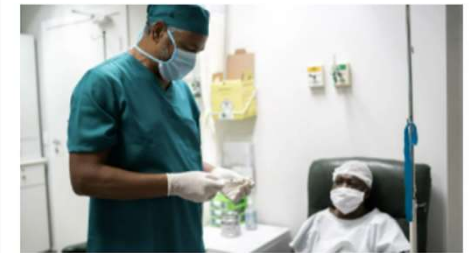
The administration's economic advisers see climate change and other factors complicating global trade patterns for years to come.

Give this story 82



Supply Chain Disruption

Supply Chain Crunch Is Causing Drug Shortages for Cancer, COVID-19, and Other Diseases

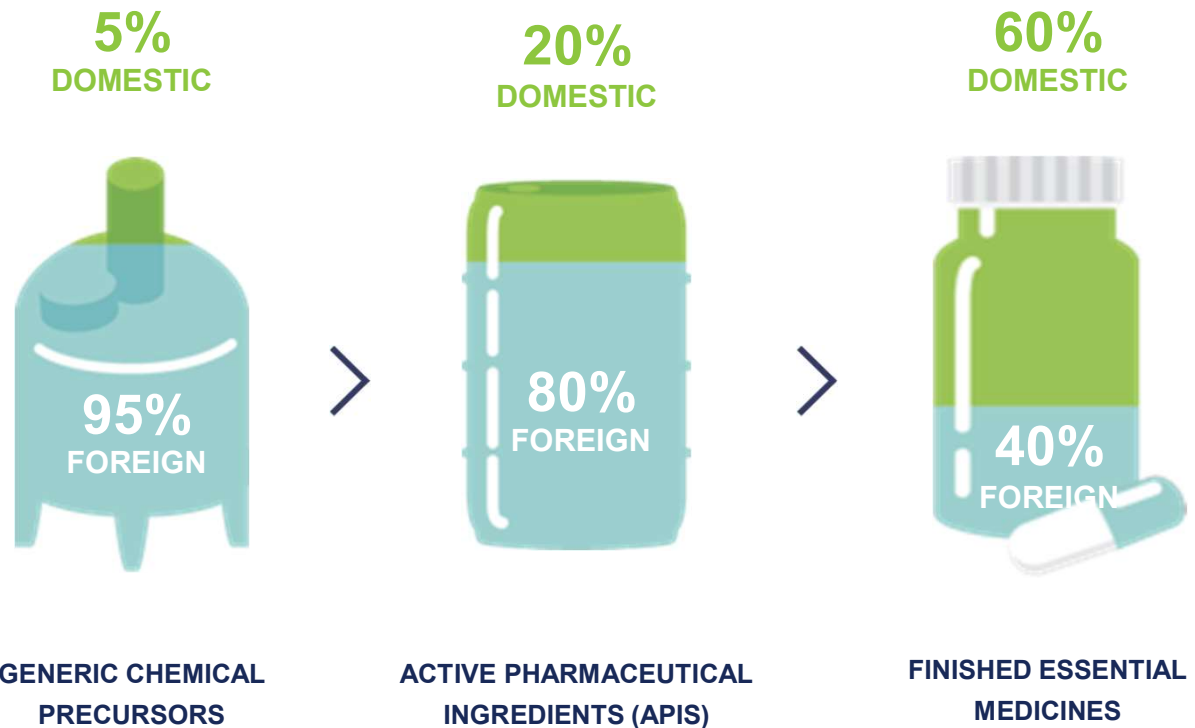


Experts say the current shortage of medications is nothing new. It's been happening for years. FG Trade/Getty Images

- Officials report the global supply chain disruption is causing shortages of crucial medications in the United States.
- Among them are drugs used to treat cancer as well as COVID-19.
- Experts say drug shortages have been occurring for years and a multi-prong approach is needed to resolve the ongoing problem.

It all started with this Problem...

A broken supply chain that has resulted in the shortage of the essential medicines that our Nation requires to sustain life and conquer disease.



The United States is Dangerously Dependent on Foreign Sources for Generic Medicines and Active Pharmaceutical Ingredients.

Reference: "Review of the Food and Drug Administration's Foreign Drug Inspection Process." U.S. HHS Office of Inspector General, U.S. HHS Office of Inspector General, 2022.

And it's ending with this Solution...

A public-private partnership to re-imagine the broken essential medicines supply chain and the over-reliance on foreign manufacturers for our Nation's medicines.



Phlow has assembled a world-class team and like-minded strategic partners to improve availability of vital medicines that save lives.



Strategic Partnerships & Alliance Building

Phlow is re-building critical infrastructure in the U.S. while actively accelerating the manufacturing of essential medicines at risk of shortage.



Building & Reshoring Infrastructure



Advanced Manufacturing Processes



Using continuous manufacturing processes, Phlow is able to reduce costs and waste, while improving quality and yield.

Contract Development & Manufacturing



Phlow is creating active pharmaceutical ingredients and finished pharmaceutical products that are essential to the Nation's health

Data Analytics



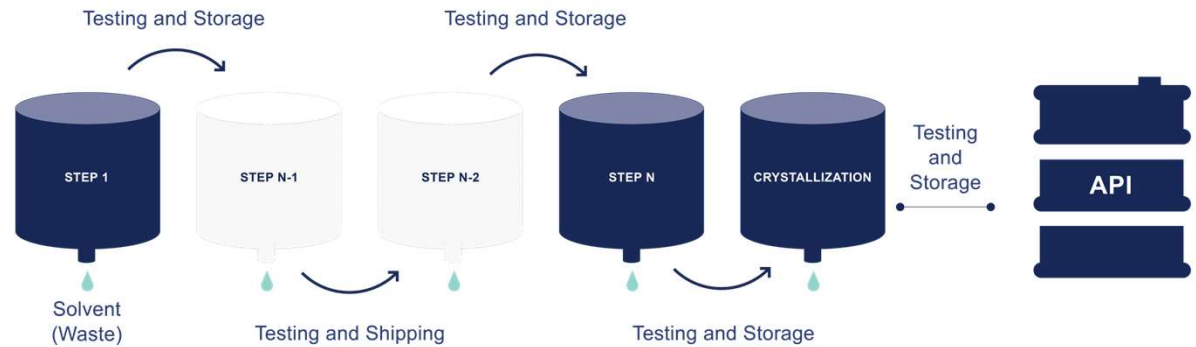
Phlow is Utilizing a Novel Approach to Continuous Flow Chemistry & Advanced Manufacturing

Batch vs. Continuous Manufacturing

Phlow is at the Cutting Edge of Continuous Drug Development and Manufacturing

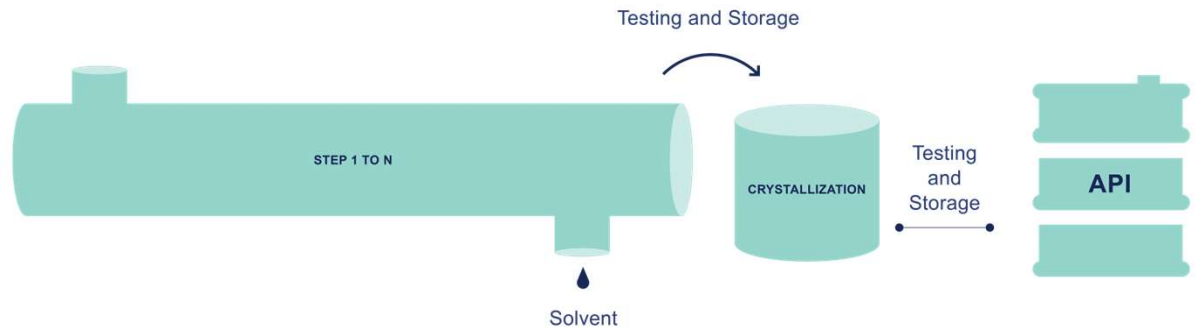


Batch Synthesis (weeks to months)



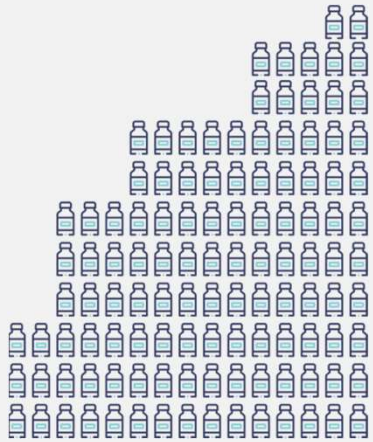
Continuous Synthesis (days)

Short Supply Chain + Small Equipment



Advantages of Phlow's Continuous Manufacturing

Significantly Increases Yield, Lowers Cost, and Reduces Environmental Impact



**INCREASED
PRODUCTION
VOLUMES**



CONSISTENT
QUALITY + UNIFORMITY



REDUCED
WASTE



SMALLER FOOTPRINT



AUTOMATED PROCESS
MONITORING AND CONTROL



REDUCED PROCESSING TIMES



LOWER OPERATING COSTS



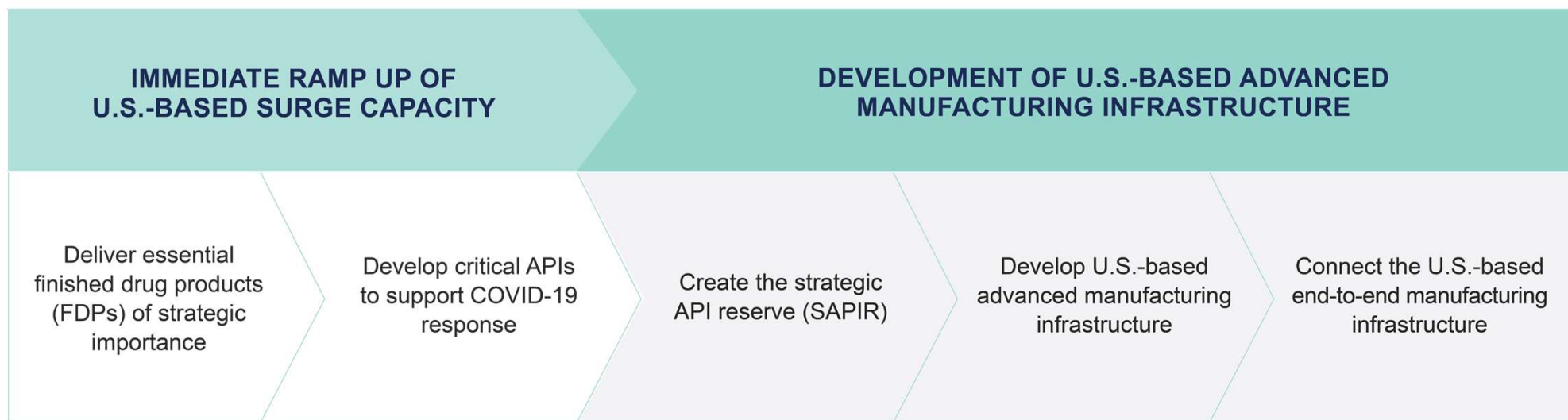
AUTOMATION
REDUCING MANUAL
OPERATIONS TO
IMPROVE SAFETY AND
QUALITY



*Phlow's United States
Government Plan of Action*

U.S. Government Program

Phlow is domestically manufacturing the active ingredients and essential medicines that are critical to our nation's health security under a 4-year \$440 million contract with options to extend to \$900 million.



This project has been funded in whole or in part with Federal funds from the Biomedical Advance Research and Development Authority (BARDA), Assistant Secretary for Preparedness and Response (ASPR) and the Department of Health and Human Services (HHS) under Contract No. 75A50120C00092.



Phlow's Advanced cGMP API Manufacturing Facilities in the U.S

Phlow is leveraging existing infrastructure in Virginia and building multiple API cGMP facilities



Phlow Laboratory

Construction Complete Q4 2022

Co-located in the Richmond, VA at Biotech-8 with VCU's Medicines for All Institute and the United States Pharmacopeia Lab



Strategic Active Pharmaceutical Ingredient Reserve (SAPIR)

(30,100 sq.-ft.)



Hybrid Manufacturing Facility (HMF)

Capacity: 40- 60 MT

Featuring State-of-the-art Automation (21,700 sq.-ft.)



Co-located in Petersburg, VA with AMPAC



KILO cGMP Facility

Capacity: 250-500 kg

to Produce Highly Potent APIs (19,200 sq.-ft.)

SAPIR™

Fixing a weakened manufacturing and distribution chain.



Building and managing an asset of critical national importance that will strengthen national defense and provide significant reliability for the entire essential medicine supply chain.

- Modeled after the Strategic Petroleum Reserve
- A stockpile of API that can be quickly converted into essential medicines via the SEMRAP™ program
- APIs have significantly longer shelf life than finished pharmaceuticals, dramatically reducing cost and waste



*The importance of the
“I”nnovation-64 Corridor*



In the last six months...

- \$52.9M – EDA Grant
- \$13.6M – Local Match to EDA
- \$29.6M – Va. Funds Wastewater
- \$10.0M – Va. Funds Inno Center
- \$5.0M – Va. Funds KSM Project

\$111 Million



ALERT TOP STORY

Inside greater Richmond's big plan for pharmaceutical manufacturing

Eric Kolenich Oct 4, 2022 1



Frank Gupton, left, CEO of the Medicines for All Institute, and Eric Edwards, second left, co-founder & CEO of Phlow Corp., give a tour to, from third left, Makola Abdullah, VSU president, Mark Warner, US Senator, Michael Rao, VCU president, and others at Biotech Center, Virginia Bio+Tech Research Park in Richmond, Va., on Tuesday, October 4, 2022. The tour was the part of celebration for the nearly \$53 million in federal funding for the Richmond-Petersburg region's Alliance for Building Better Medicine.

Daniel Sangjib Min/TIMES-DISPATCH

SUPPLY CHAIN PROJECT

\$2.5M

Lead: VEDP – GRP & VGR

Location: Greater Richmond & Petersburg, VA



ALLIANCE FOR BUILDING
BETTER MEDICINE





HOME OF INNOVATION

The Richmond and Hampton Roads regions have been the home of American innovation for over 400 years.

Today, the I-64 Innovation Corridor is ground zero for innovative business practices, scientific breakthroughs, world-class healthcare, military advancements, artistic endeavors, and equitable social and economic practices. Examples include:

ADVANCED PHARMACEUTICAL MANUFACTURING

Phlow, located in **Petersburg**, was conceived out of research by VCU Engineering's Medicines for All Institute (M4ALL). This trailblazing, public-benefit corporation was awarded an \$800 million-plus contract in May 2020 by the U.S. government to repatriate the manufacturing supply chain of essential medicines.

Phlow is a member of the Advanced Pharmaceutical Manufacturing and R&D Cluster Accelerator, an industry association focused on manufacturing critically important medicines within the United States. The Accelerator was selected in December 2021 as one of 60 finalists in Phase 1 of EDA's \$1 billion Build Back Better Regional Challenge, receiving \$500,000 to further develop its Phase 2 application. The EDA will ultimately award 20-30 grants between \$25 million and \$100 million. RVA757 Connects provided a letter of support for the Phase 2 application.

ENERGY INNOVATION

In **Hampton Roads**, Dominion Energy is building the first offshore wind farm to be installed in federal waters, propelling Virginia to national leadership in America's transition to clean energy. Hampton Roads is on a trajectory to become a supply chain hub for wind power generation and lead offshore wind development for the entire Mid-Atlantic.

NATIONAL SECURITY INNOVATION

U.S. military research investments from Richmond to Hampton Roads are advancing the latest aircraft design concepts, missile technology, ship designs, logistics science, and treatments for post-traumatic stress disorder.

How RVA757
Connects can
support Phlow
and ABBM





Questions?

Eric Edwards, Co-founder, President & CEO

eedwards@phlow-usa.com

804.207.4893