

The Elizabeth River Trail as Storyteller, Flood Mitigation Tool and Coastal Resilience Asset for Norfolk's Historic Working Waterfront

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The Elizabeth River Trail Connects Anchor Institutions, Major Employers & Economic Generators but can also be a storyteller.



**Our mission is to create a
resilient, inclusive, connected
urban riverfront trail to support
people and businesses in the region.**

Chelsea Managed Meadow



Before...



After...



Award Winning Meadow & Orchard





Volunteer Corps - Adopt-a-spot cleanup and planting



Pollinator Garden



April 2022

Signage: Installation of 500+ new signs is complete.
Will be linked to City's Emergency Response System.



From blighted brownfields to community open space - April 2022



Water Street Open Space



Resilience in an urban environment, native plants and bioretention meadows and soils to manage stormwater, cleaning and filtering it before it returns to the Elizabeth River.

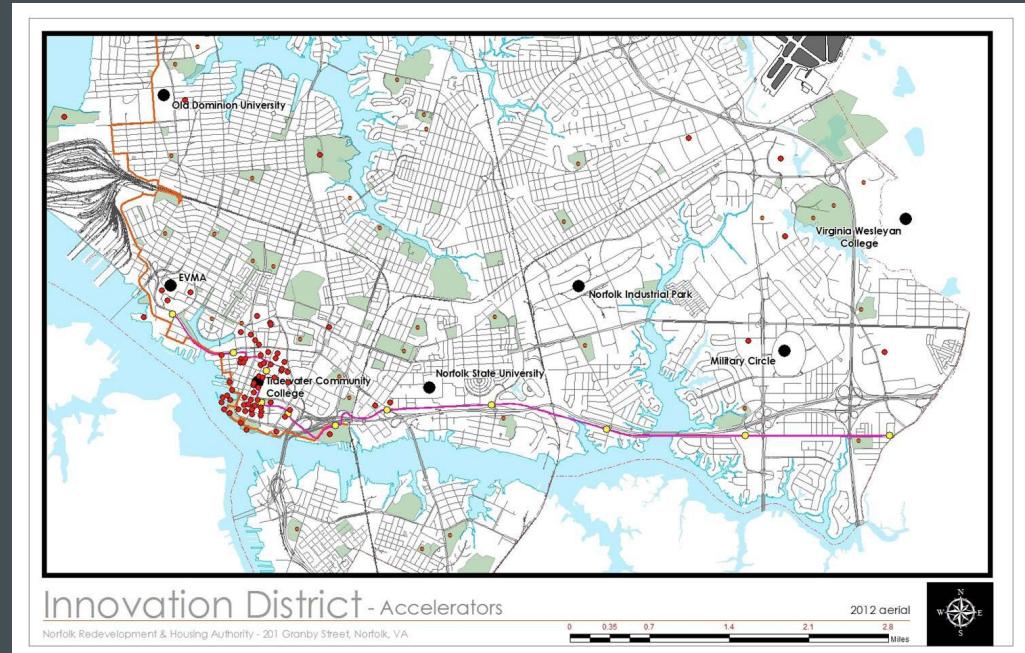


ERT Foundation Origins: Planning for Talent Attraction & Retention

The Beginning

Greater Norfolk Corporation

- Address Brain Drain
- Innovation Corridor
- Placemaking Committee



OPPORTUNITY. COLLABORATION. VISION.



Opportunity

The challenge of sea level rise provides opportunity to transform Norfolk into a resilient waterfront community.

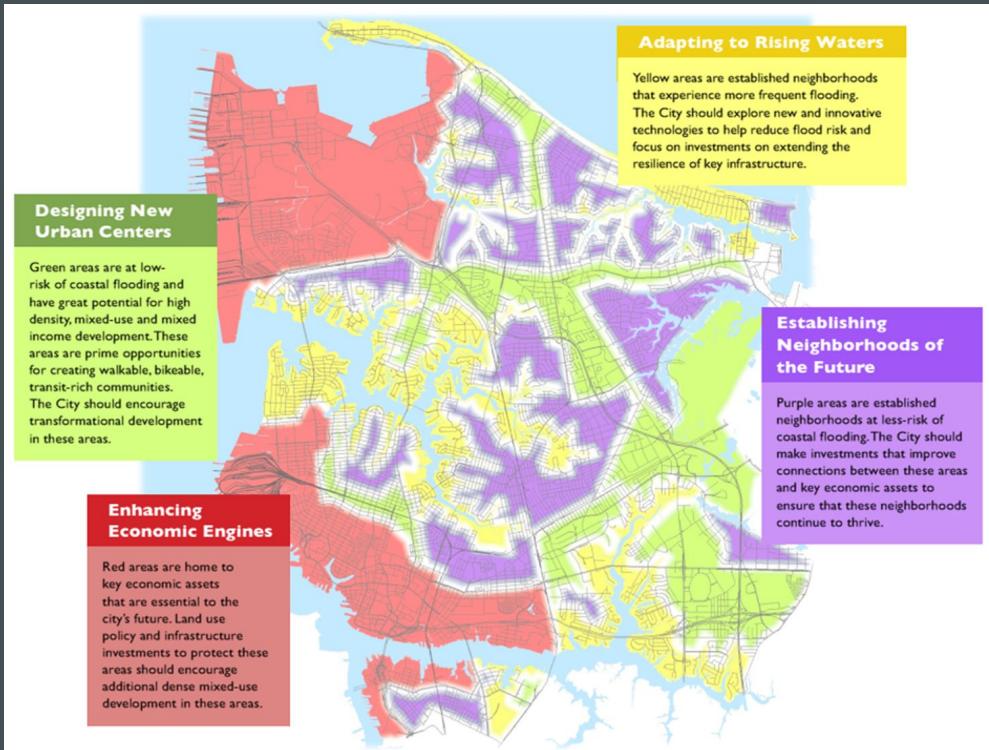
Collaboration

Collective brainpower drives adaptation solutions and new ways of thinking.

Vision

Norfolk is THE coastal community of the future.

Adopted November 22, 2016



Adapting to Rising Waters

Yellow areas are established neighborhoods that experience more frequent flooding. The City should explore new and innovative technologies to help reduce flood risk and focus on investments in extending the resilience of key infrastructure.

Designing New Urban Centers

Green areas are at low-risk of coastal flooding and have great potential for high density, mixed-use and mixed income development. These areas are prime opportunities for creating walkable, bikeable, transit-rich communities. The City should encourage transformational development in these areas.

Enhancing Economic Engines

Red areas are home to key economic assets that are essential to the city's future. Land use policy and infrastructure investments to protect these areas should encourage additional dense mixed-use development in these areas.

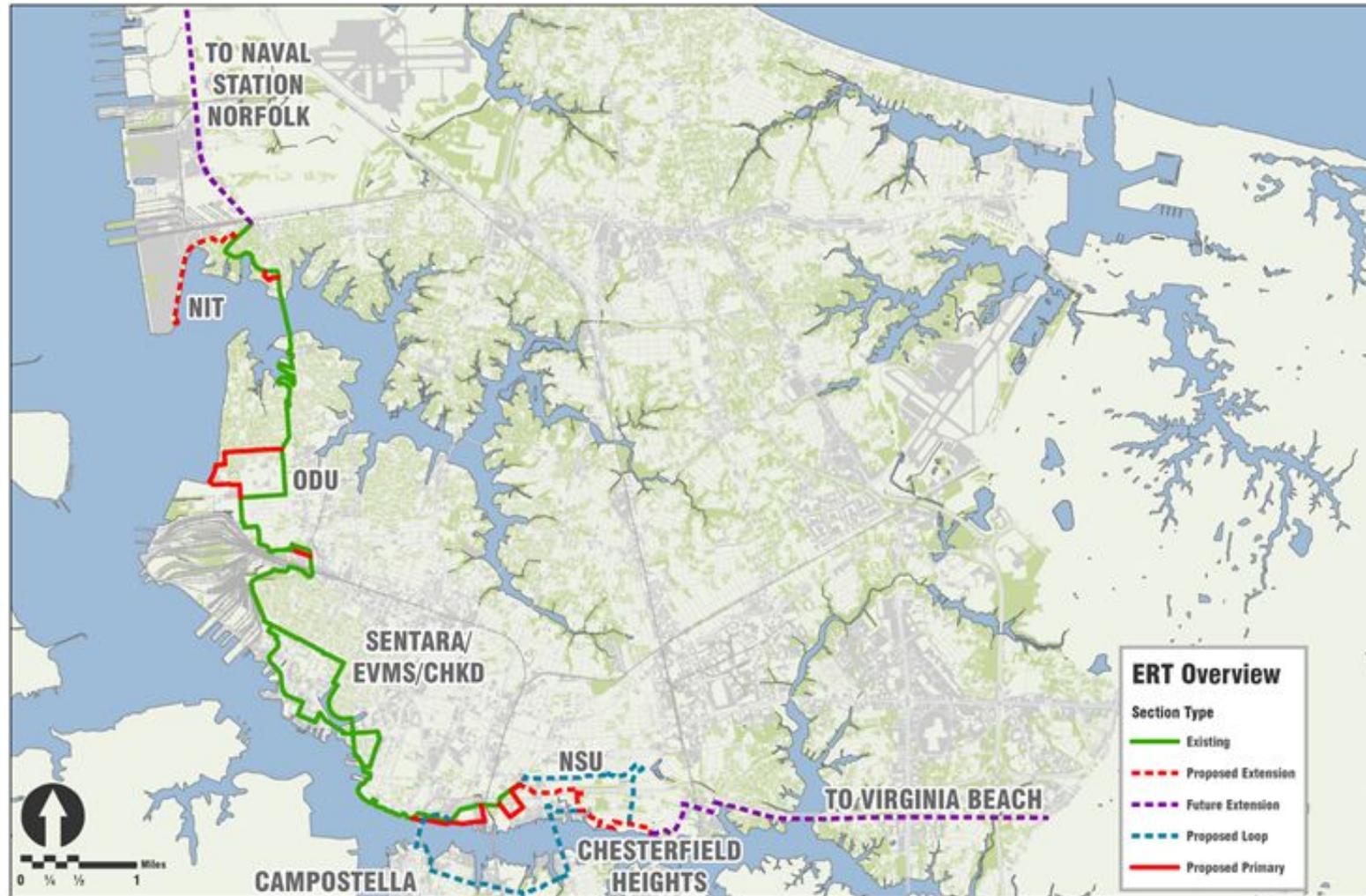
Establishing Neighborhoods of the Future

Purple areas are established neighborhoods at less-risk of coastal flooding. The City should make investments that improve connections between these areas and key economic assets to ensure that these neighborhoods continue to thrive.

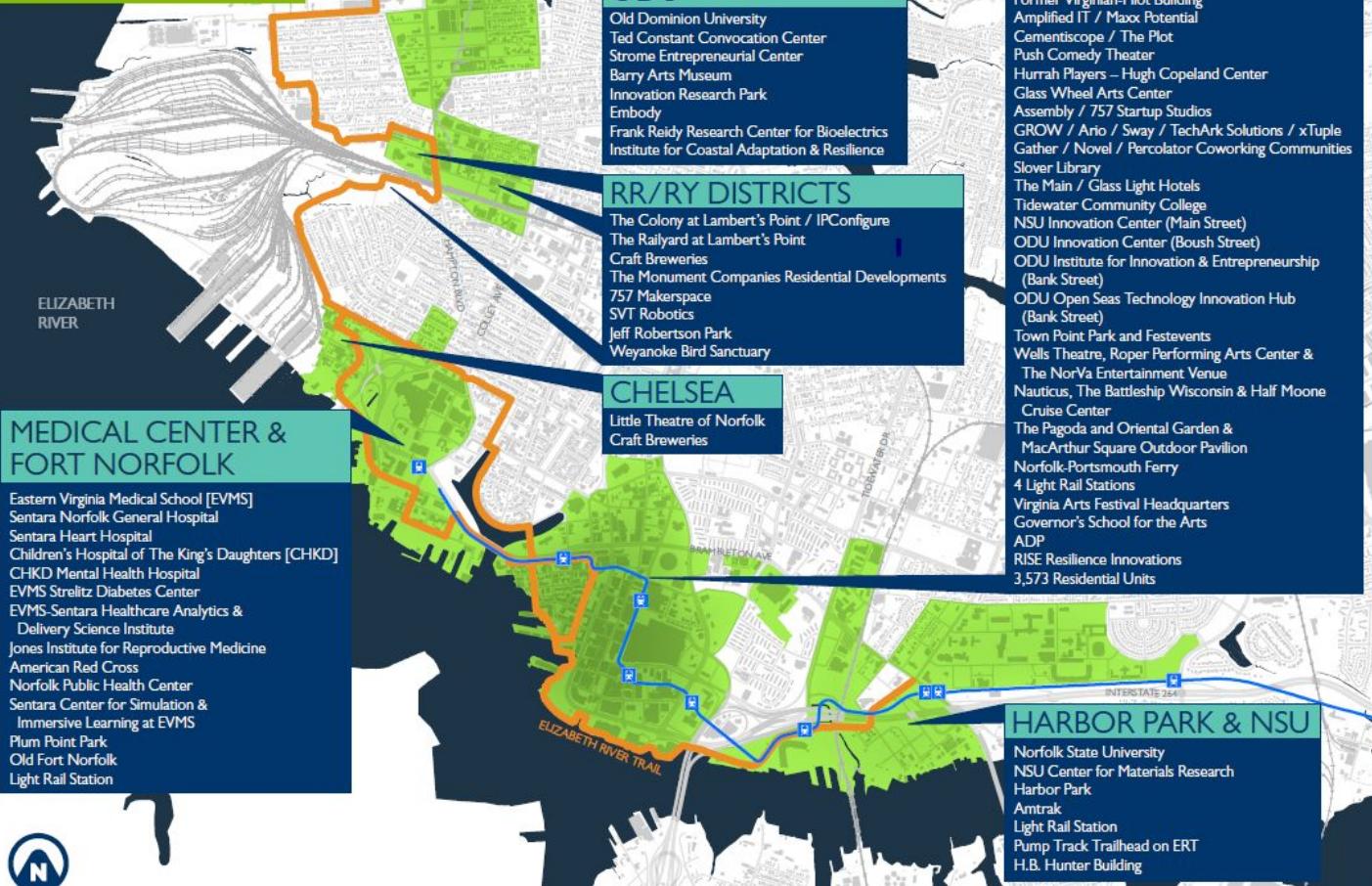
Guiding Principles

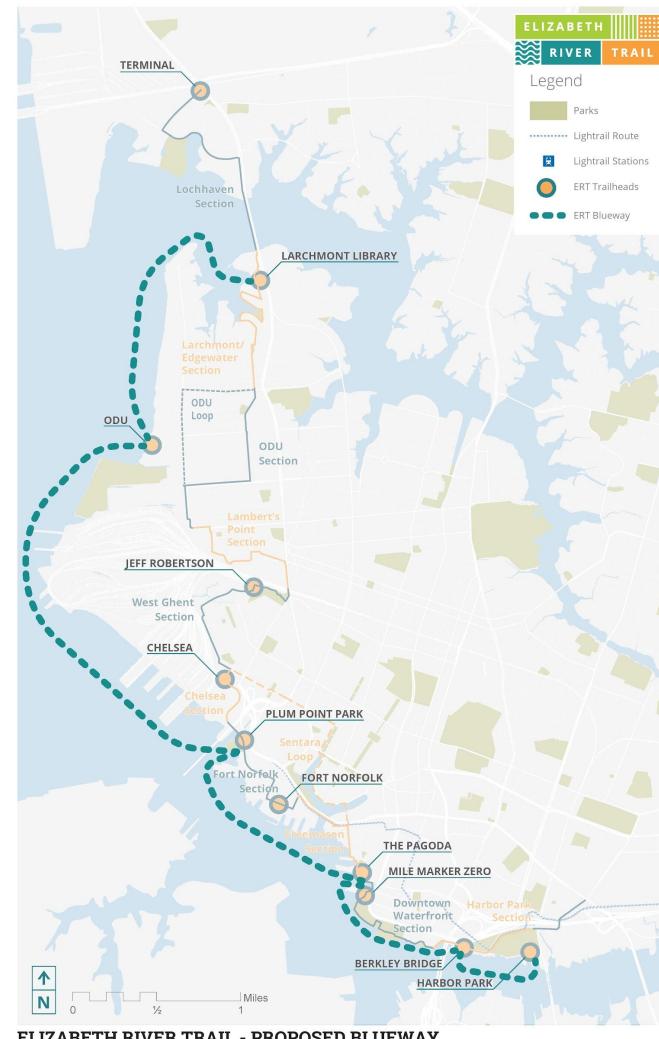
Masterplanning

- Stay as close to the Elizabeth River as possible
- Be a protected off-road multi-use trail wherever possible
- Highlight unique Norfolk features
- Connect neighborhoods
- Connect economic generators



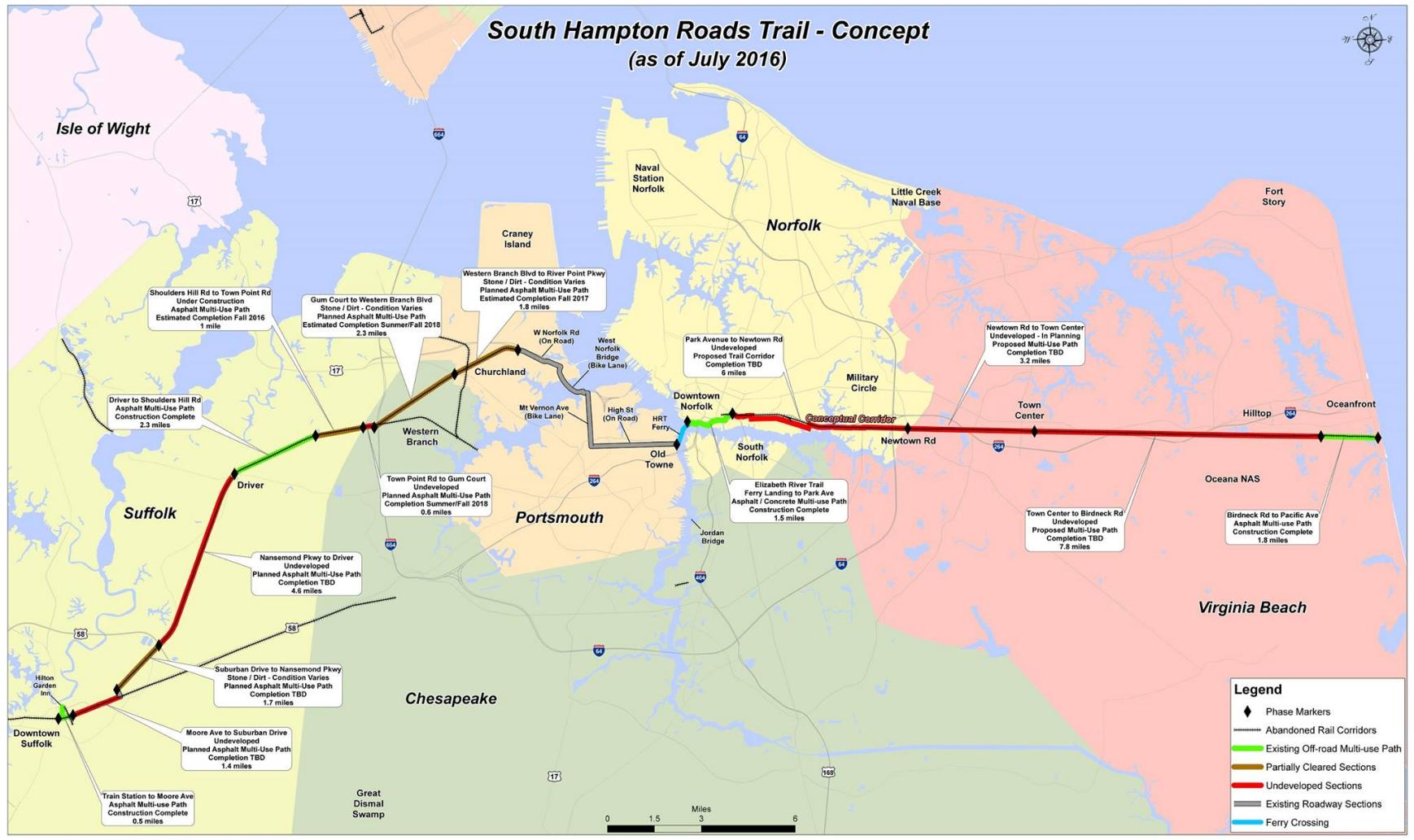
NORFOLK INNOVATION CORRIDOR





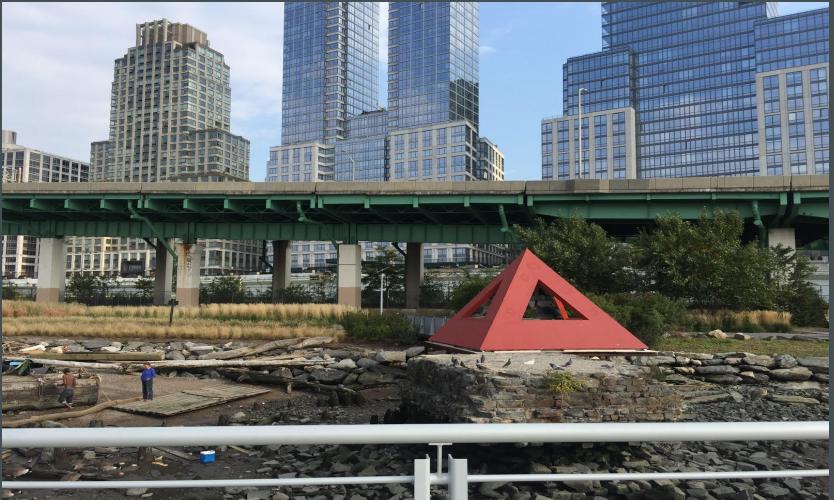
South Hampton Roads Trail - Concept

(as of July 2016)











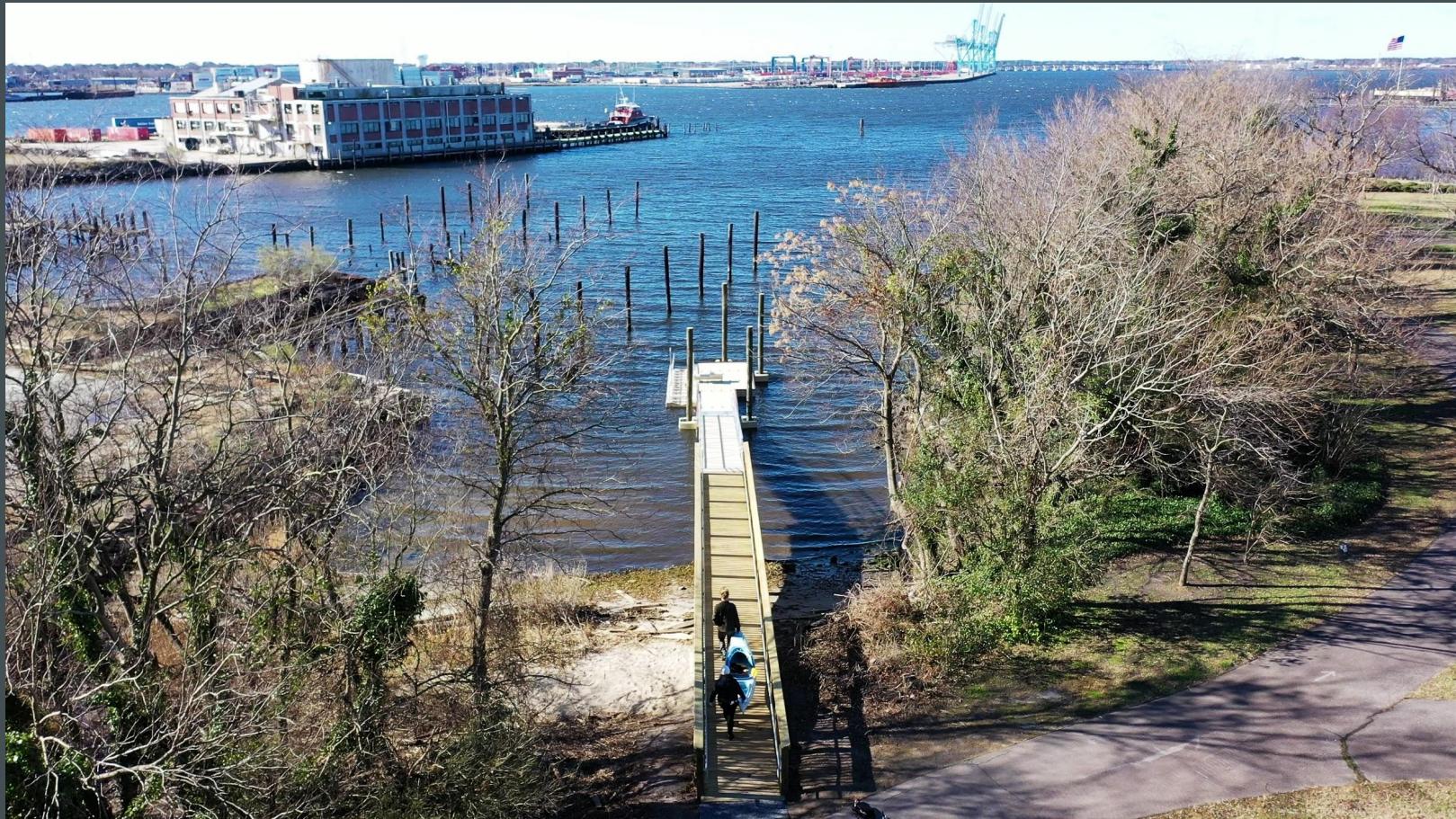
Google Earth

Image Landsat / Copernicus

Plum Point Park Trailhead



Kayak Launch - Completed in January 2020



Double Turbo Challenge Course - Completed September 2020

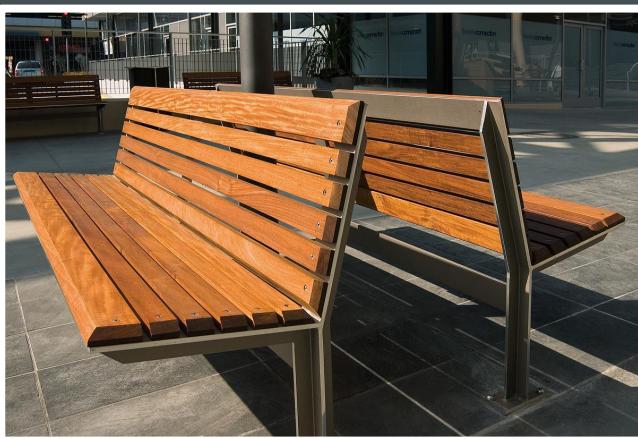
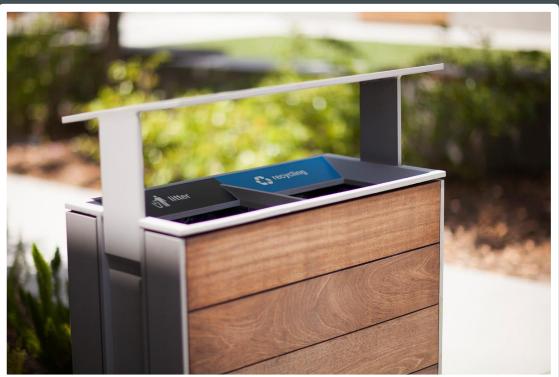




Obstacle Course

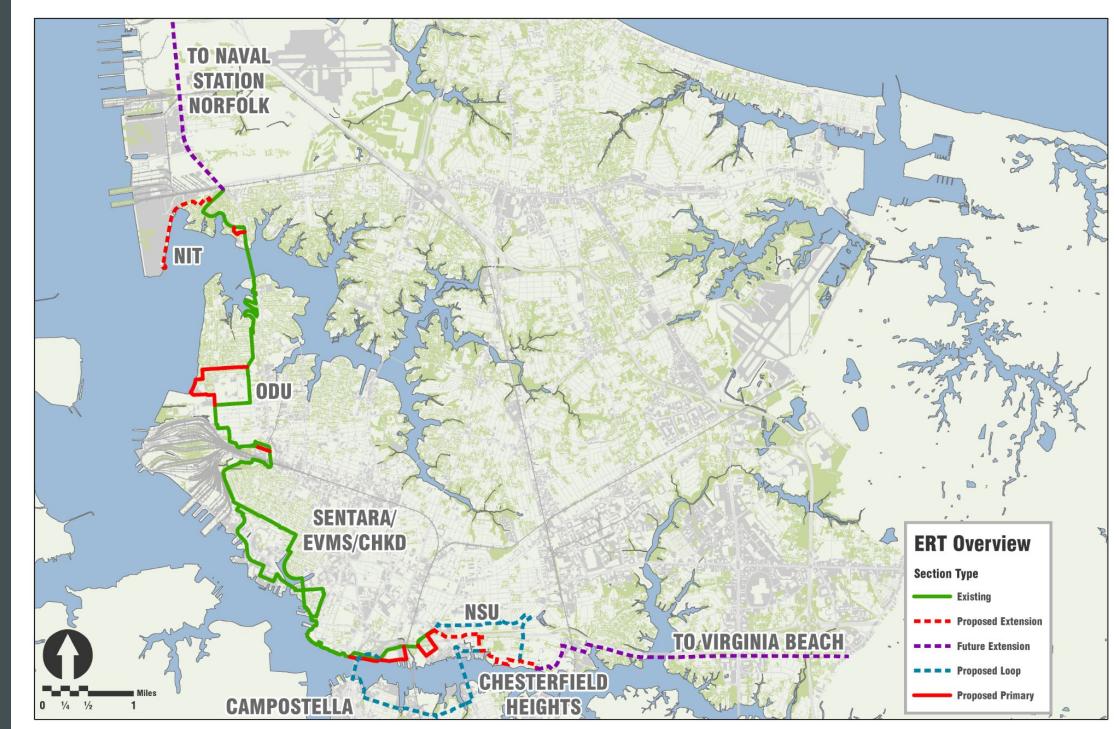
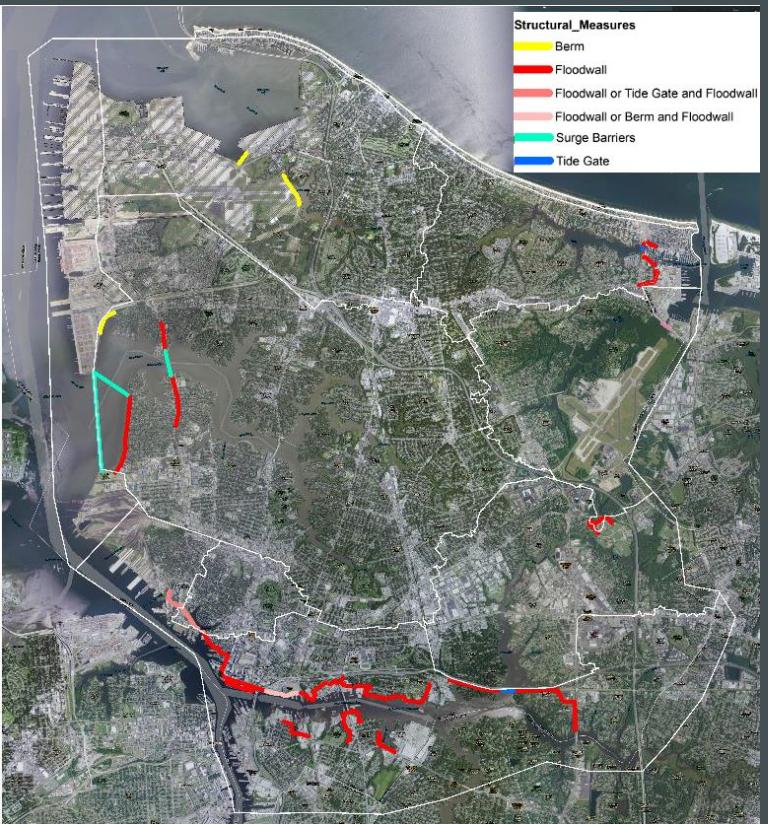


Trailhead Shelter



The ULI Panel: Strategic Positioning - Coastal Resilience





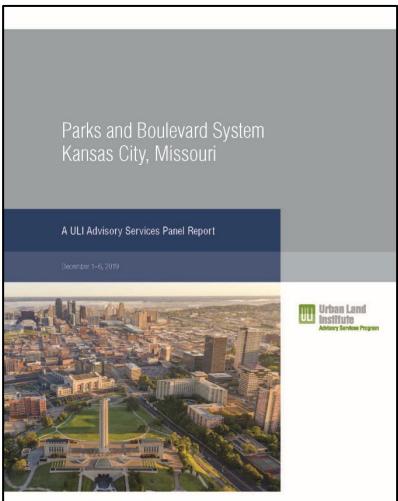
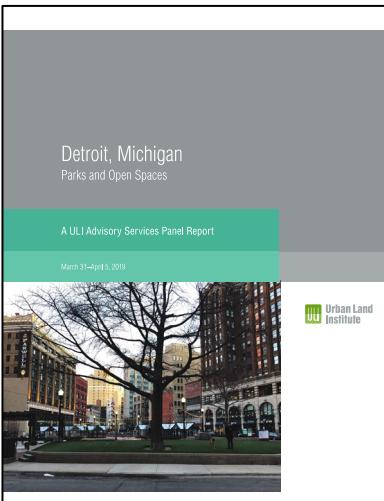
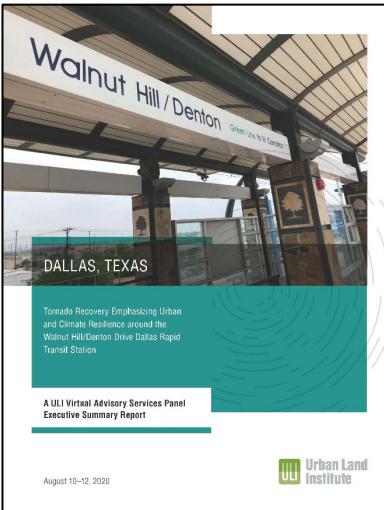
About the Urban Land Institute

ULI is a nonprofit research and education organization whose mission is to shape the future of the built environment for transformative impact in communities worldwide

A multi-disciplinary membership organization with more than 46,000 members in private enterprise and public service

What the Urban Land Institute does:

- Conducts Research
- Provides a forum for sharing of **best practice**
- Writes, edits, and publishes **books** and **magazines**
- Organizes and conducts **meetings**
- Directs outreach programs
- Conducts **Advisory Service Panels**



ADVISORY SERVICES PANELS

Since 1947, ULI's Advisory Services Panel program has helped more than 700 communities find independent, strategic, and practical solutions for the most challenging land use issues.

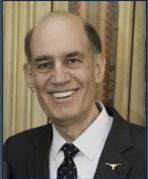
Our program is now virtual!

Thank you to our sponsor!



ULI Panelists and Staff

Selected for their subject matter expertise to provide **objective, volunteer** recommendations



Fernando Costa
(Panel Chair)
City of Fort Worth
Fort Worth, TX



Paul Moyer
Jacobs
Arlington, VA

ULI Staff
Lauren McKim Callaghan
Director, Advisory Services

Leah Sheppard
Senior Manager, Urban Resilience

Luke Hamel
Advisory Services



Ryan Bouma
AECOM
Washington, DC



Rogelio Pardo
Urban Movement Labs
Los Angeles, CA



Rachael Griffith
Chester County Planning
Commission
West Chester, PA



Caleb Stratton
(Panel Advisor)
City of Hoboken
Hoboken, NJ

Guiding Themes

The Trail is **more** than a trail

- Transportation
- Flood control
- Economic development
- Neighborhood vitality

Success depends upon strong **partnerships**

- City
- Businesses
- Anchor institutions
- Other communities in Hampton Roads region

The Trail can be a catalyst for **diversity, equity, and inclusion** (DEI)

- Users
- Adjacent neighborhoods
- ERTF board and committees



How can the Trail best be leveraged for coastal resilience and flood protection in its current or future alignment? How might the trail fit into Norfolk's other strategies and local investment to enhance resilience?

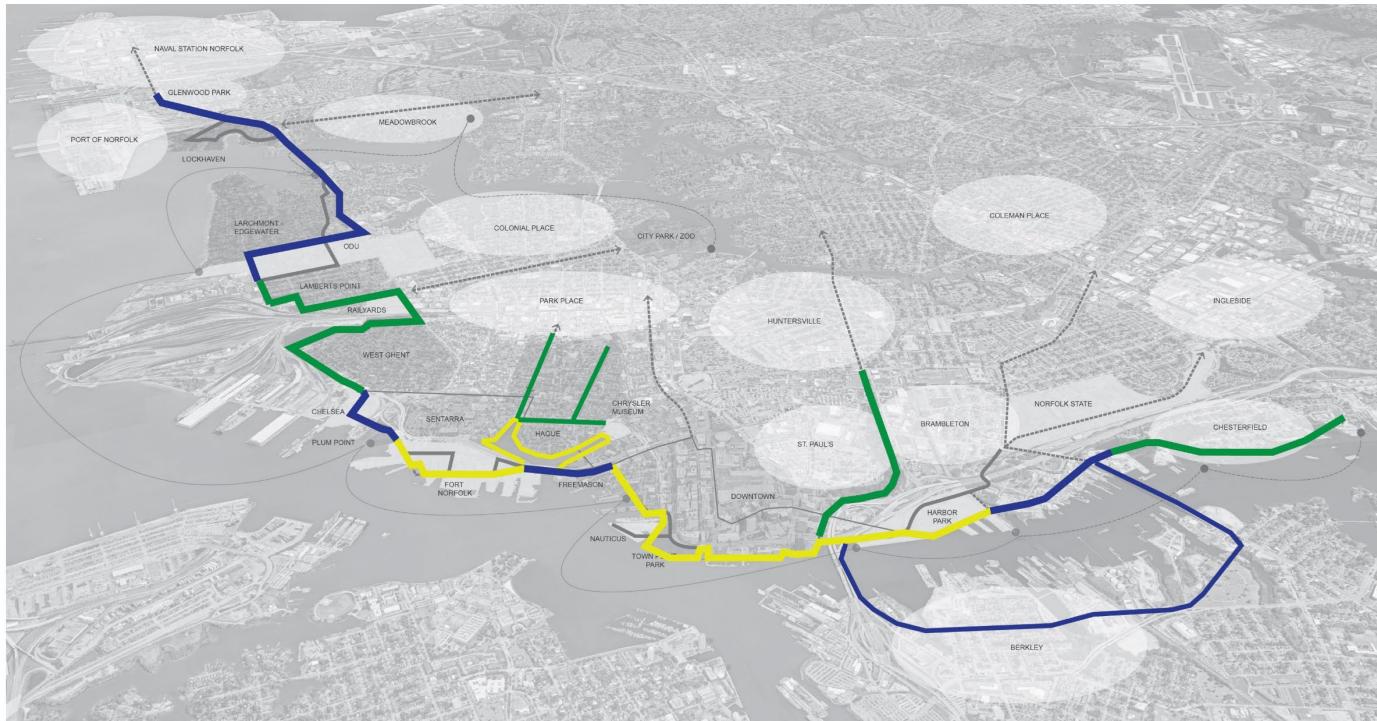
ERT + Flood Resilience

- The Trail can help the city adapt to its changing climate and help mitigate the extent of that change
- Segments of the Trail, and their surrounding spaces, are well located to intercept rising river levels and capture rainfall



ERT + Flood Resilience

- TRAIL SEGMENTS THAT COULD POTENTIALLY FUNCTION AS A 'BRIDGE' [CONNECTING PEOPLE TO CRITICAL DESTINATIONS DURING FLOOD EVENTS]
- TRAIL SEGMENTS THAT COULD POTENTIALLY FUNCTION AS AN 'ELEVATED SHORELINE' [AN EMBANKMENT THAT KEEPS FLOOD WATERS AWAY FROM VULNERABLE PROPERTY AND INFRASTRUCTURE]
- TRAIL SEGMENTS THAT COULD POTENTIALLY FUNCTION AS A 'SPONGE' [A SERIES OF COASTAL OR INTERIOR WETLANDS THAT INTERCEPT, STORE AND FILTER FLOOD WATER]



Segments of the Trail can each play different roles in a comprehensive Resilience strategy. The suggestions in this diagram are preliminary and require more in-depth analysis and validation to determine their viability.

As an 'Elevated Shoreline'

The Trail can be elevated to create a new 'activated barrier protecting property further inland

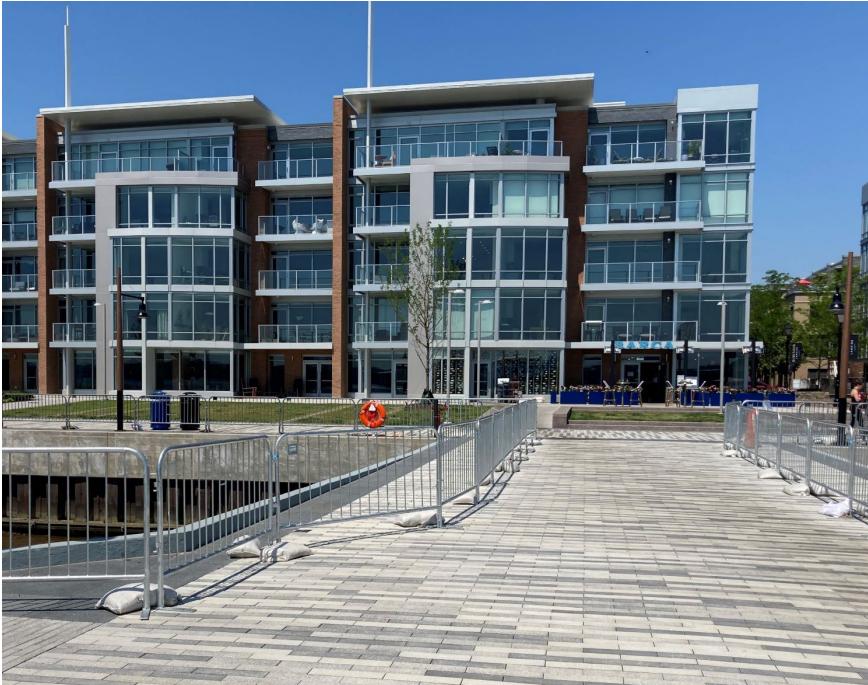


Richmond British Columbia

SOURCE: AECOM

As an ‘Elevated Shoreline’

The Trail can be elevated to create a new barrier protecting property further inland



Alexandria, VA



Richmond British Columbia

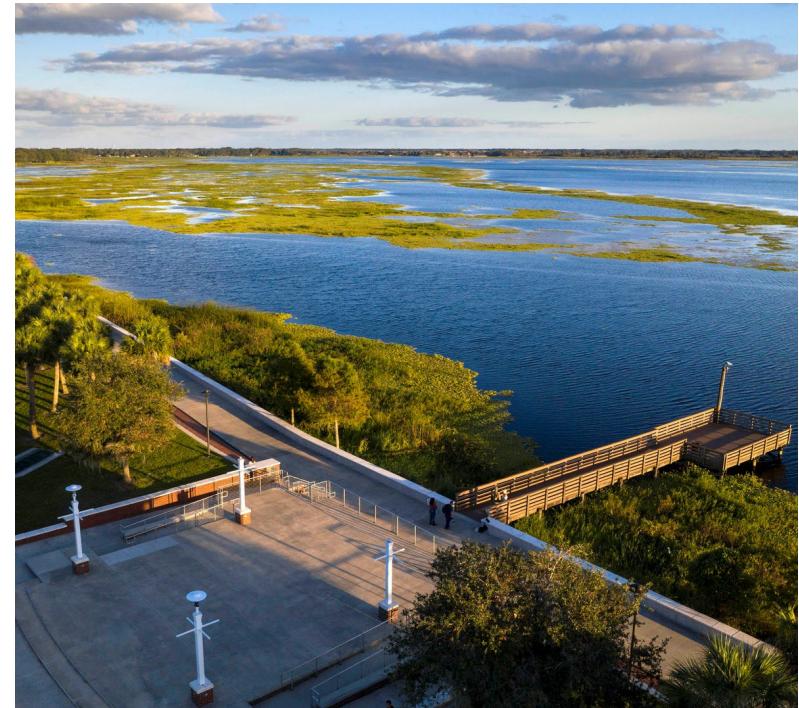
SOURCE: AECOM

As a 'Sponge'

The Trail can soak up rainfall and create a shoreline buffer for wave action



Gold Coast Australia



Kissimmee, FL

SOURCE: AECOM

As a 'Bridge'

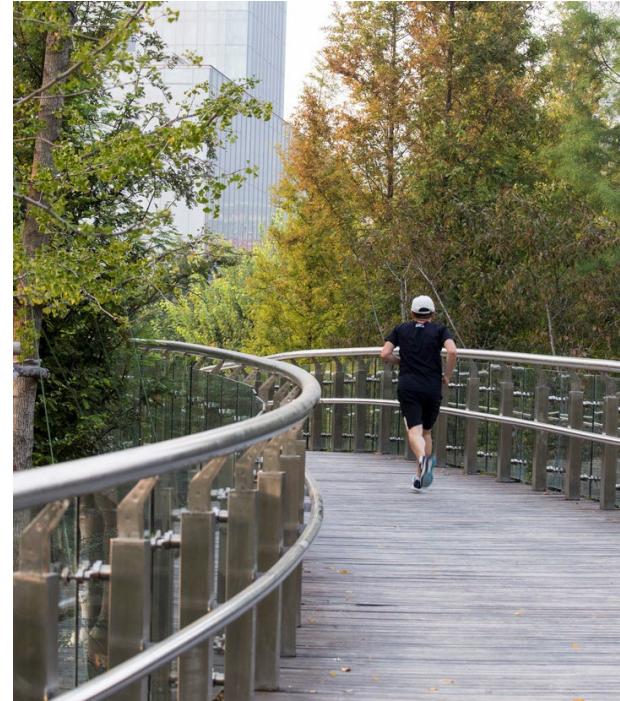
The Trail can become a safe route during flood events connecting neighborhoods with emergency services and/or critical destinations



Philadelphia, PA



Philadelphia, PA



Qingdao, China

SOURCE: AECOM

As a 'Storyteller'

The Trail can include interactive art and interpretive elements that raise awareness of the ways Norfolk is adapting to a changing climate



Richmond British Columbia



Cleveland, OH

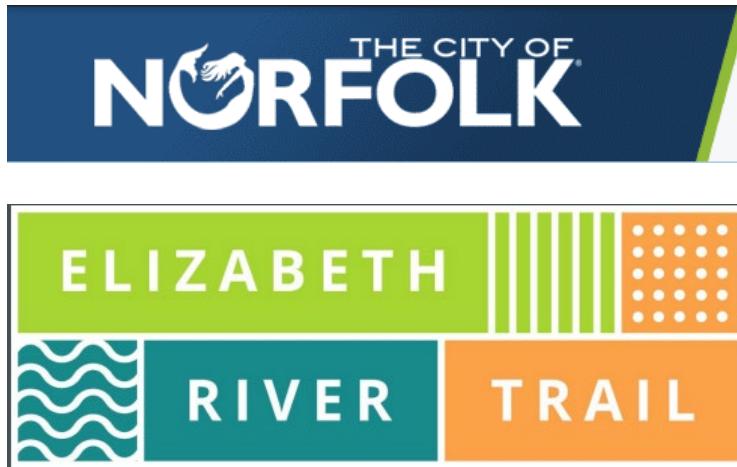


SOURCE: AECOM

**How can the trail become a diverse, equitable
and inclusive community asset to also enhance
neighborhood and economic resilience?**

Diversity, Equity, and Inclusion (DEI)

Make the Trail a diverse, equitable, and inclusive community asset to also enhance neighborhood and economic resilience reflecting the larger city and region

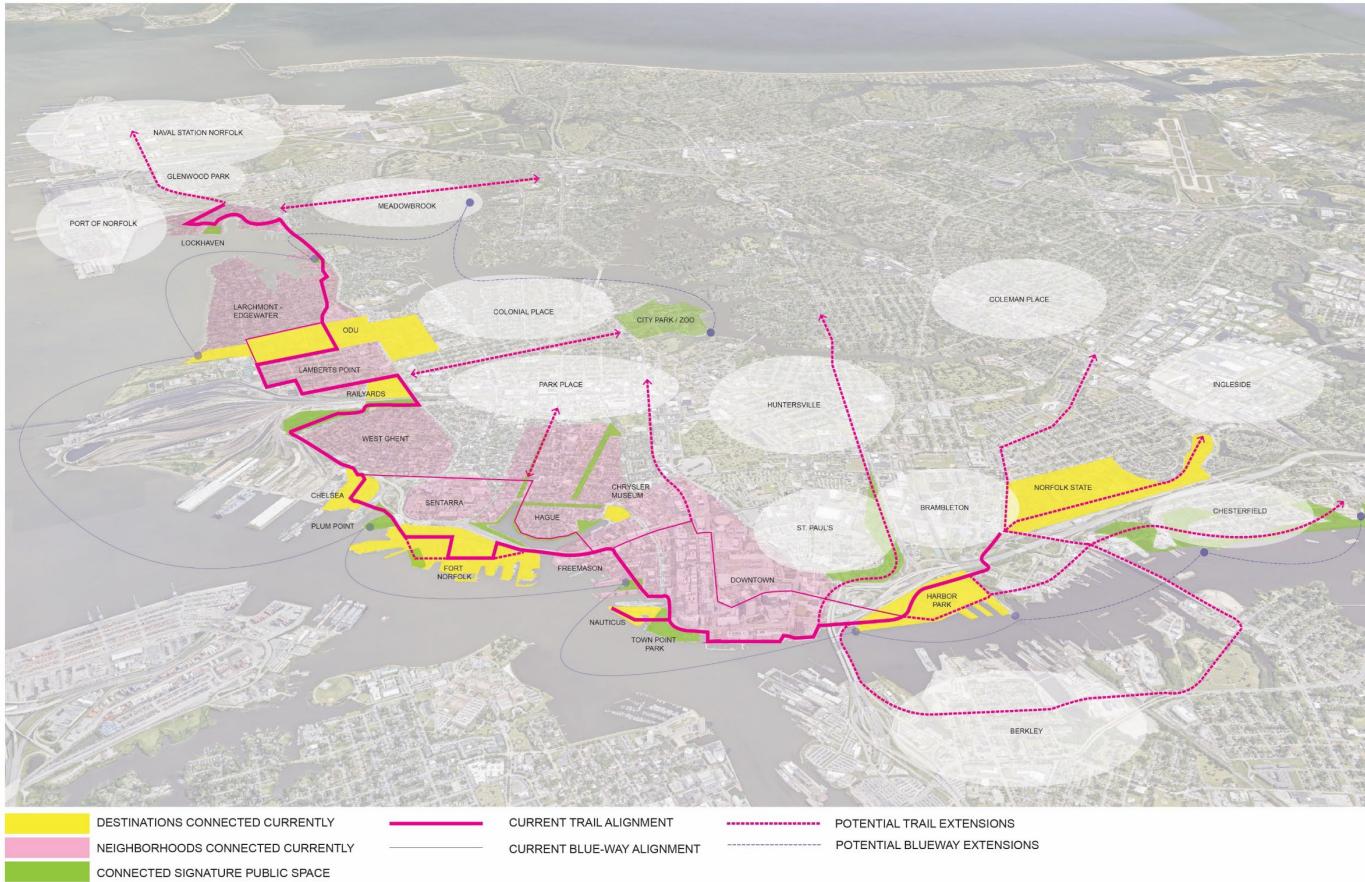


- Build on the city of Norfolk DEI initiative
 - “The city of Norfolk is at the heart of the Hampton Roads region. A 400-year-old community that grew up along the waterfront is now home to roughly 247,000 residents. The world’s largest naval station, NATO’s North American headquarters and four college and universities thrive within our borders. Our population is diverse”
 - “To reflect our diversity and to champion equity and inclusion in city services and programs, Norfolk is the first city in Hampton Roads to launch a Diversity, Equity, and Inclusion initiative”

Current Trail Destinations + Connections



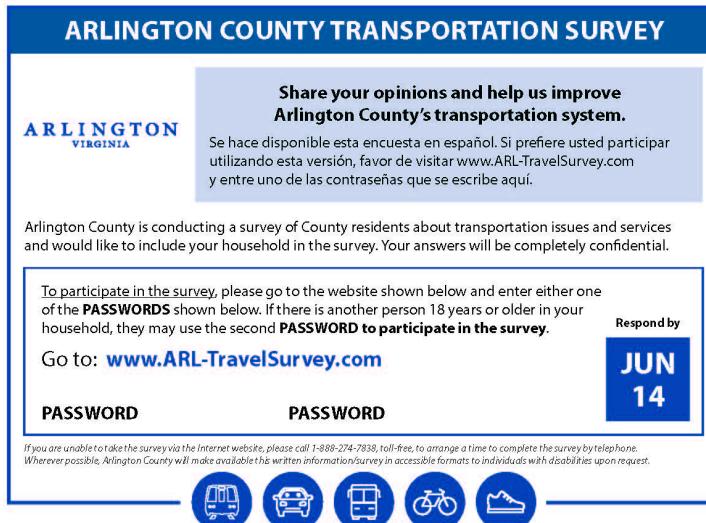
(Potential) Future Connections [to other trails and communities]



The suggestions in this diagram were inspired by stakeholder engagement during the panel. This diagram is intended to show how Trail 'tributaries' can connect more neighborhoods to the ERT trail experiences along the River. They are preliminary and require more in-depth analysis and revision through an inclusive public process to determine the best routes for Trail expansion.

Diversity, Equity, and Inclusion (DEI)

Conduct survey and focus on new connections to expand the Trail to communities of color



<https://transportation.arlingtonva.us/wp-content/uploads/sites/19/2021/06/Arl-Co-HTS-Postcard-2021.jpg>

- Conduct survey of potential and future Trail users to gauge interest in enhanced access to the Trail
- Pursue Trail connections that align with survey results
 - Pursue connection to Norfolk State University
 - Develop relationships with the neighborhoods that show interest in a Trail connection
 - Implement activities and programs that proactively work with these communities to build awareness, interest, and buy-in to the trail connection

Diversity, Equity, and Inclusion (DEI)

Events and educational programming focused on DEI

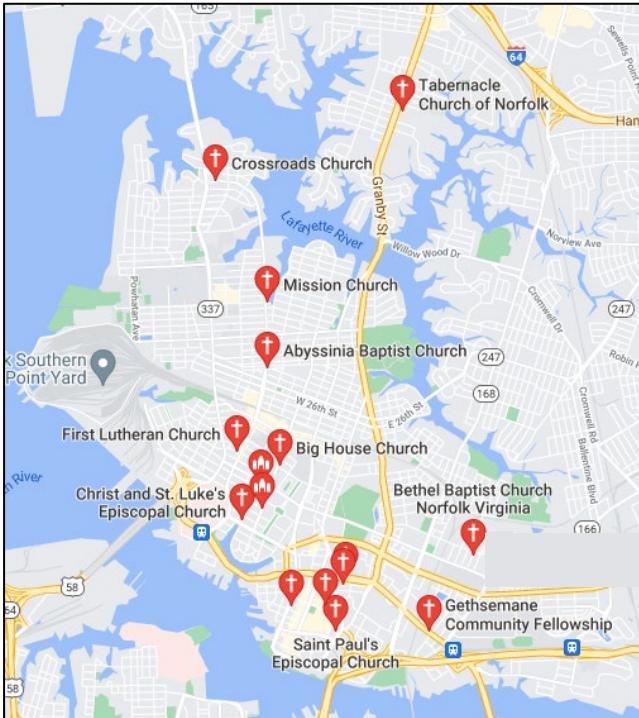


- Connection of Trail to Healthy Norfolk
 - Build on proximity and engagement of Sentara to have programs that directly engage health professionals with communities of color along the Trail as part of a healthy walking or other exercise program
 - Encourage the city of Norfolk to join the 10-Minute Walk Movement (<https://10minutewalk.org>). The Movement seeks to ensure 100% of everyone in the city has safe access to a quality park. The Trail is a key building block to achieve that goal.

<https://10minutewalk.org/>

Diversity, Equity, and Inclusion (DEI)

Partnerships



Source google maps

- Local houses of worship
 - Connect with communities of color and leverage other ongoing programs is to reach out to local houses of worship
 - Opportunity to invite members to activities, encourage involvement, and spread the word
- Local schools
 - Connecting with interested, younger riders to engage in training or mentorship
 - Engage universities along the Trail
- Minority owned businesses
 - Highlight benefits of locating along the trail
 - Connection and overlay of the Norfolk Innovation Corridor (NIC)
 - Collaborate with Downtown BID and Downtown Norfolk Council and others

Blazing the Trail: A Path Towards Resilience

Blazing the Trail

Trail-based flood risk strategy

- Condition assessment
- Cost/benefit analysis



Blazing the Trail

Financing & implementation

- Focus on trail's resilience value
- Emphasize new & expanded trail connectivity
- Prioritize projects with co-benefits



Blazing the Trail

Engagement

- Internal
- Public
 - City & Regional Partners
 - Army Corps
 - Community Engagement
- Private

Projects recommended by the US Army Corps of Engineers to reduce flooding over the next 50 years at Norfolk

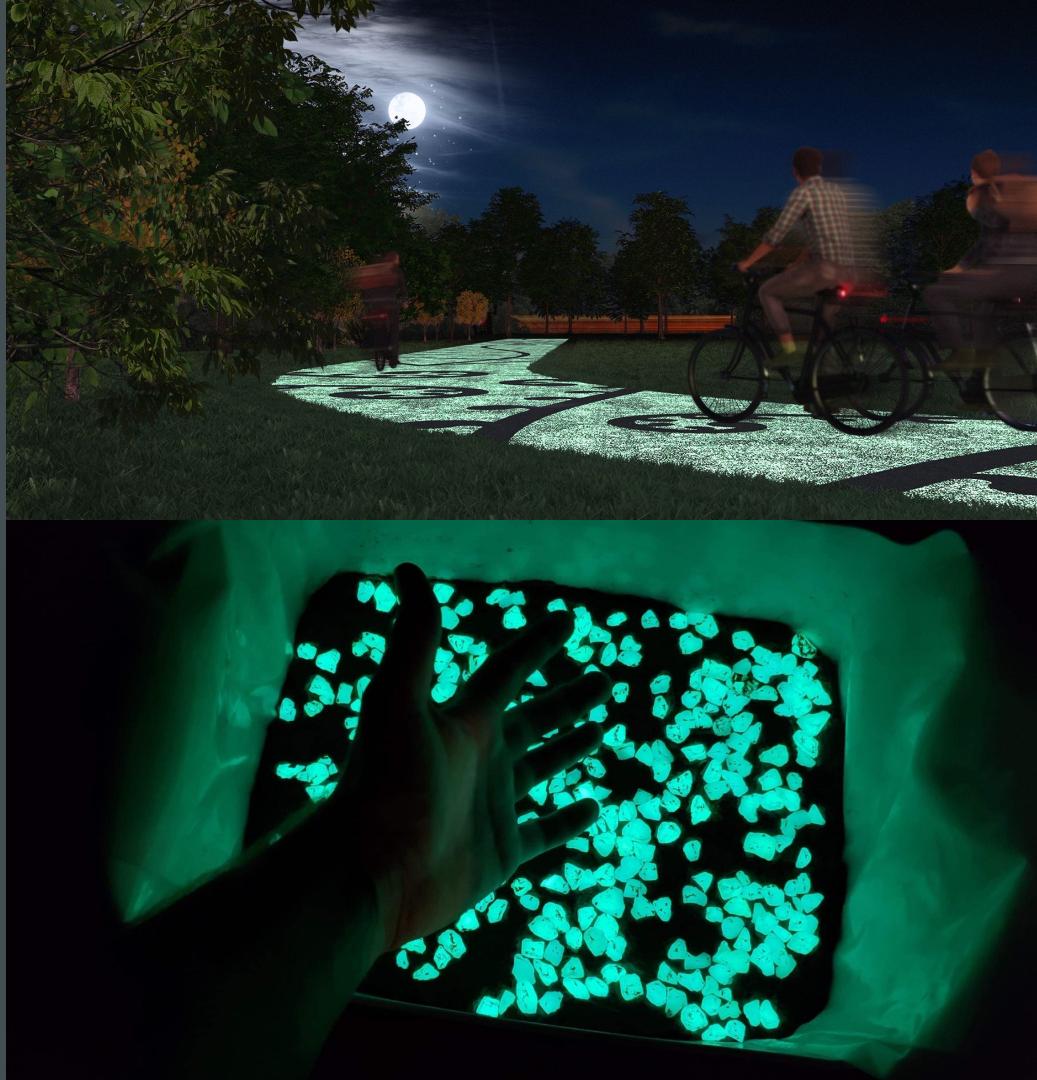
Source: US Army Corps of Engineers,
City of Norfolk Coastal Storm Risk
Management Study



In Closing

The ERT:

- as the placemaking spine of Norfolk
- amplifies culture, history, and businesses
- is a critical component of a resilient Norfolk



The Board:

Pete Buryk
City of Norfolk

John Garrett
TowneBank Norfolk

Kurt Hofelich
Sentara Healthcare

Elizabeth Kersey
PRA Group

John Matson
TowneBank Norfolk (Retired)

Rachel McCall
Downtown Norfolk Council

Andria McClellan
Norfolk City Council

Chuck McPhillips
Kaufman & Canoles

Jeff Miller
Miller Energy

Kevin Murphy
Norfolk City Planning Commission

Christine Neikirk
Smartmouth Brewing Company

Peter Oberle
Community Leader

Mel Price
Work Program Architects

Liz Scheessele
Timmons Group

Dr. Camden Wood Selig
Old Dominion University

Ann Stokes
Ann P. Stokes Landscape Architects

Chris Uiterwyk
IPConfigure, Inc.

Melody Webb
Norfolk State University

Dr. Terry Whibley
Women Caring, PLC

100% Board Member Participation
in the Comprehensive Campaign



KAUFMAN & CANOLES
attorneys at law



BISCHOFF MARTINGAYLE



DOWNTOWN NORFOLK^{dn}
Downtown Norfolk Council



elizabethrivertrail.org