

Climate-Smart Brownfields

June 6, 2024 – Part I

Mid-Atlantic TAB
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www.brownfields.wvu.edu/

Our Purpose

Mid-Atlantic TAB provides technical assistance on brownfield redevelopment to stakeholders in Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and Washington, DC.

Our services are funded by US EPA and free to stakeholders. We provide broad educational resources as well as project and community support that is tailored to meet the needs and priorities of each community or project stakeholder.



Our Team

Mid-Atlantic TAB is a collaboration among leading programs across the region:



Our Services

Education & Outreach

- Webinars
- Fact Sheets
- Brownfields Bootcamp
- Community Trainings
- Conference Presentations
- General resources

EPA Grantee Support

- State Cohort Facilitation
- Cooperative agreement support
- Grant Kickoff
- RFP support
- Quality Assurance info
- Community Involvement
- Grant Debriefs

EPA Applicant Support

- Workshops & webinars
- Grant planning consultations
- SAM.gov/grants.gov support
- Grant review
- Grant debrief

Site-Specific Technical Assistance

- Design Assistance
- Community involvement & facilitation
- Resource Roadmaps
- Ownership & property transfer consultation
- VRP/VCP Support
- Redevelopment Roundtables

Area-Wide Technical Assistance

- Inventory support
- Business & Brownfields Walkabout
- State program support

Series Overview

Part I: June 6, 2024

- Why focus on climate resilience and brownfields?
- Planning
- Assessment

Part II: June 13, 2024

- Demolition/Deconstruction
- Clean up
- Redevelopment

Climate smart brownfields revitalization doesn't just happen. It's planned for!

What is a Brownfield?

The US EPA defines a brownfield as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”





It can look like
this...



Or this.



Redeveloping with Equity and Resilience

WHAT

AND



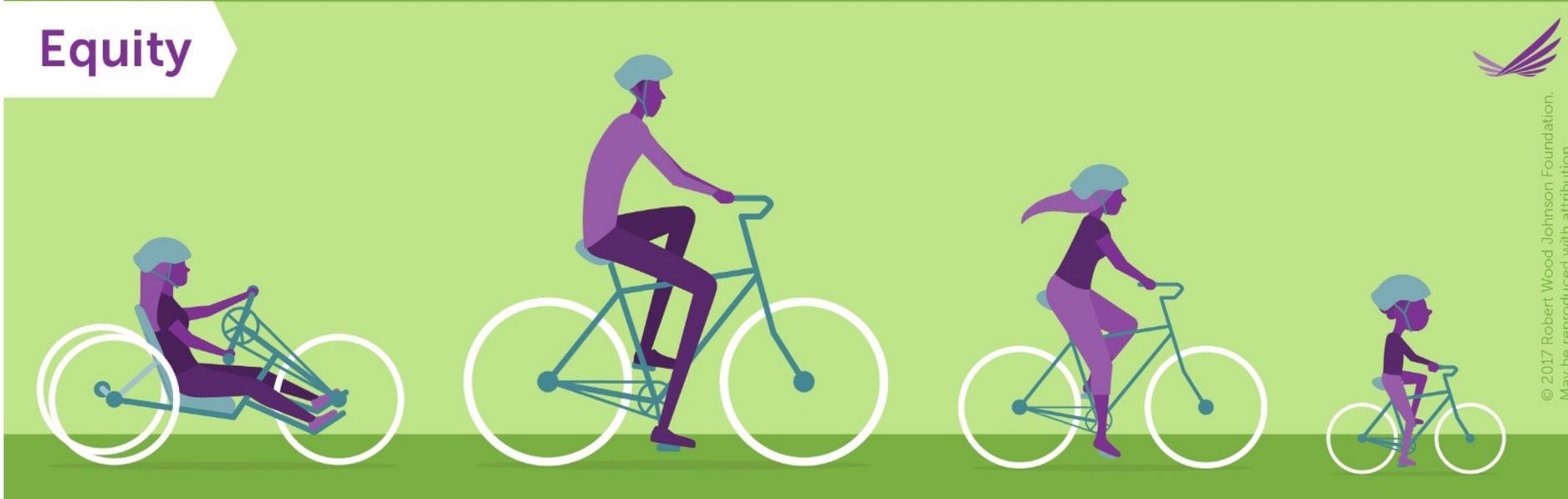
WHY :

What is Equity?

Equality



Equity



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Why is Equity Important?

Historically, industrial areas:

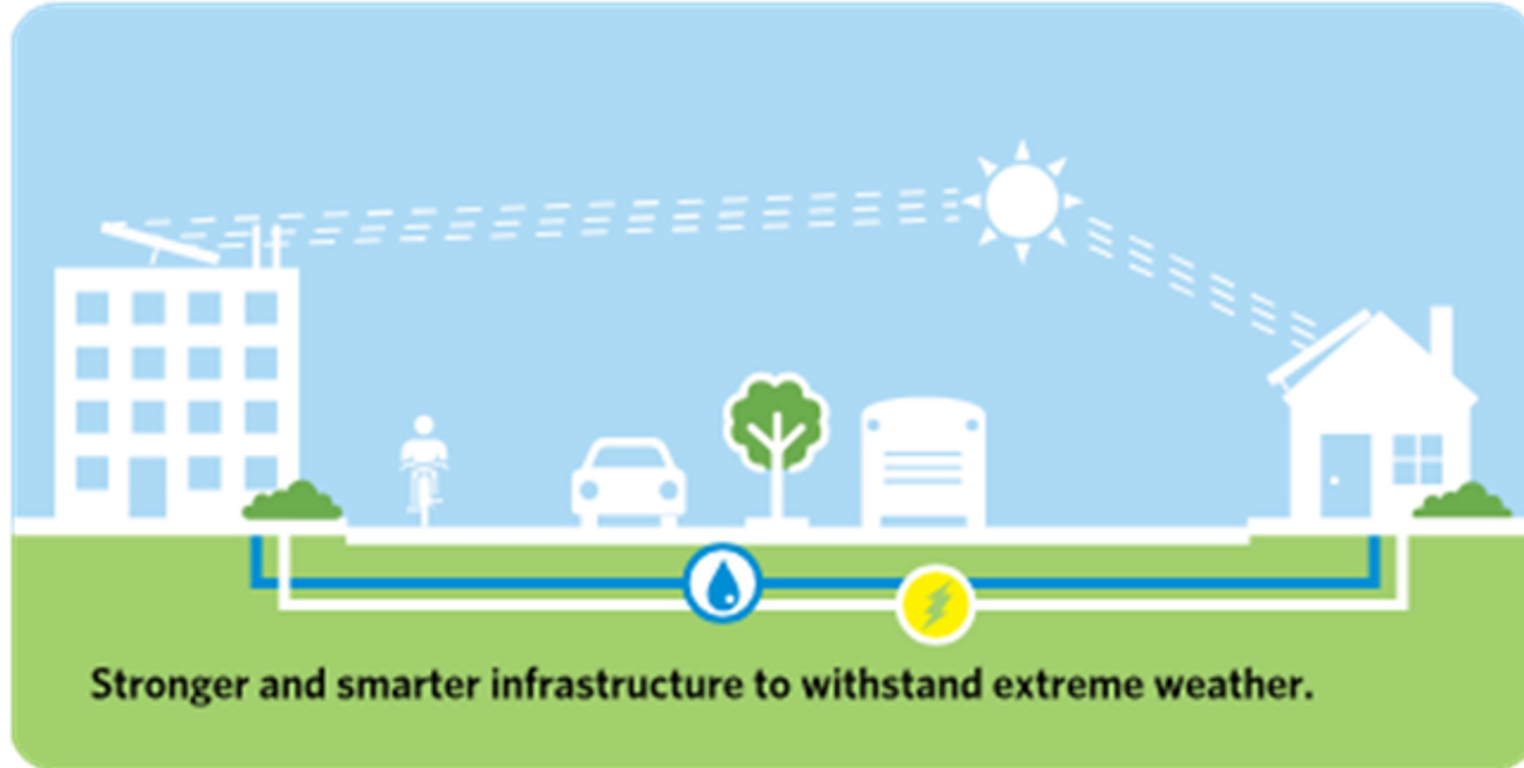
- Were **located in or became** areas with greater levels of **poverty**
- Posed significant **health risks** from
 - industrial practices AND
 - coal-based power

Actively correct past harms and prevent future risk



What is Resilience?

A region resilient to climate change
will have:



Why is Resilience Important?

Historically, industrial areas:

- Were **located on** or **near** waterways for transportation
- Posed significant **environmental risks** from
 - industrial practices AND
 - coal-based power
- Actively *correct past harms* and *prevent future risks*



The Opportunity

Brownfields provide a unique opportunity to:

- **Remediate contamination**, reducing existing health and environmental risks to *address past harms*
- Transition to **green practices** and **cleaner energy** to *prevent future* health and environmental *risks*



Why is this important?

It is the right thing to do!



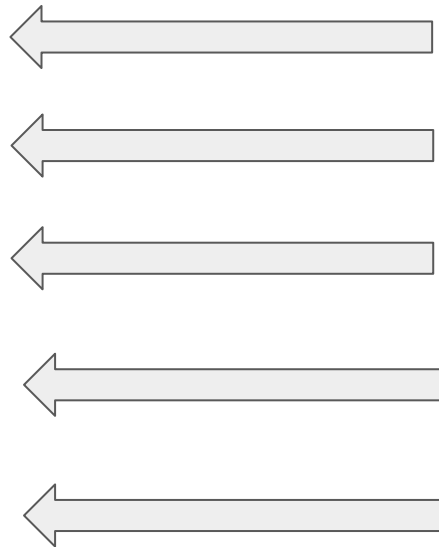
It will make your application more competitive!



Incorporating Equity and Resilience

Brownfield Cleanup Phases:

- Planning
- Assessment
- Demolition
- Cleanup Redevelopment
- Redevelopment



***Opportunities at Every
Stage of the Process***

Planning for Resilient Brownfield Revitalization

Key strategies for climate resilient redevelopment:

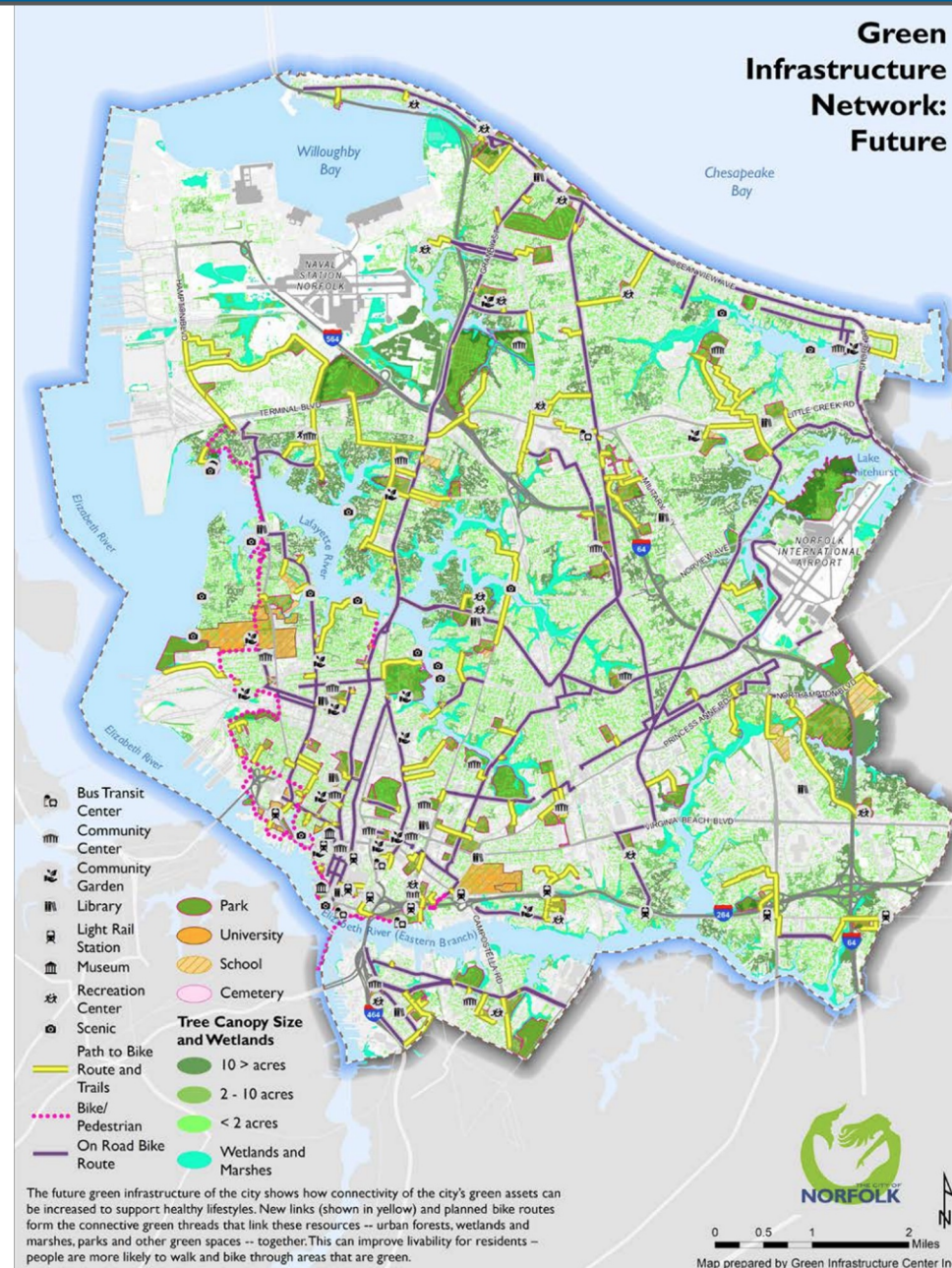
1. Identify and map climate infrastructure
2. Consider the impact of current and projected climate-related conditions
3. Screen properties for vulnerabilities to climate change impacts
4. Engage vulnerable and underserved populations to identify their needs for cleanup and reuse

Norfolk, VA: Planning for Climate Resilience

Green Infrastructure Plan

Zoning Ordinance

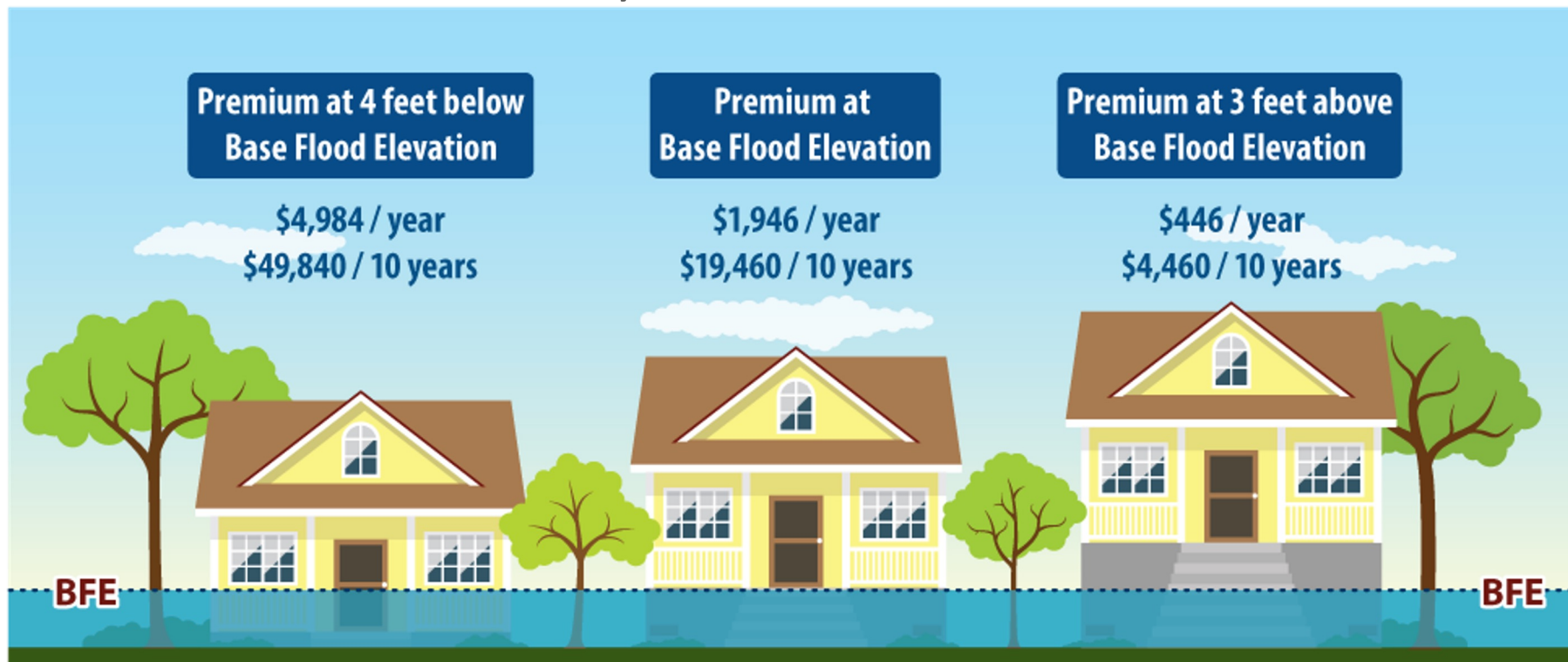
- Freeboard
- Resilience Quotient System
- Overlay Districts



Source: City of Norfolk, VA

Freeboard

Structures must be elevated at least 3 feet above the 100-year base flood level or 1.5 feet above the 500-year base flood level



Building above the Base Flood Elevation (BFE) can save you money over time.

Source: FEMA

Resilience Quotient System

To be approved, new constructions must earn a minimum number of points in each of the following areas:

- Risk Reduction
- Stormwater Management
- Energy Resilience

Requirements vary based on type and size of construction

Overlay Districts

Targeted areas with zoning requirements based on their unique needs

Coastal Resilience Overlay (CRO):

- Permeable surfaces for all new parking spaces
- Onsite stormwater infiltration and storage requirements
- Salt-tolerant native plant species



Source: Homes.com

Water Street Open Space-Norfolk, VA



Source: City of Norfolk, VA

- City demolished a dilapidated structure to build this green space in the CRO Zone
- Native plants, bioretention methods
- Repurposed concrete slab to public plaza
- One piece of the larger Harbor Park Waterfront redevelopment and resilience initiative
- EPA Area-Wide Planning funds, Brownfields Assessment Grant, VA Brownfields Restoration and Economic Redevelopment Assistance Fund Site Remediation Grant

Climate-Focused Environmental Site Assessments (ESAs)

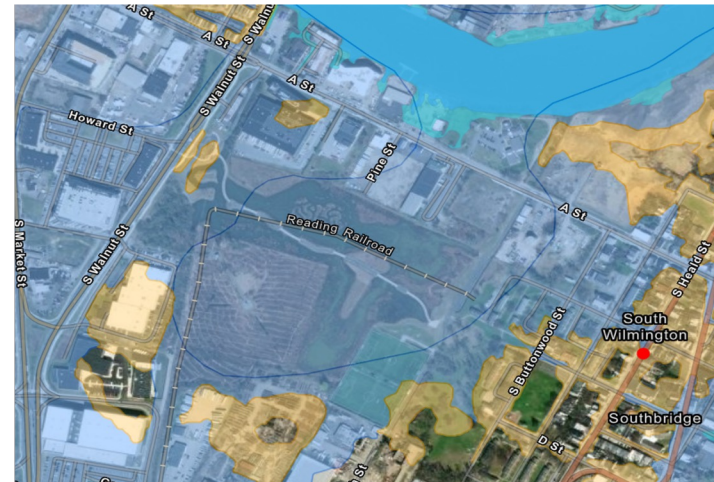
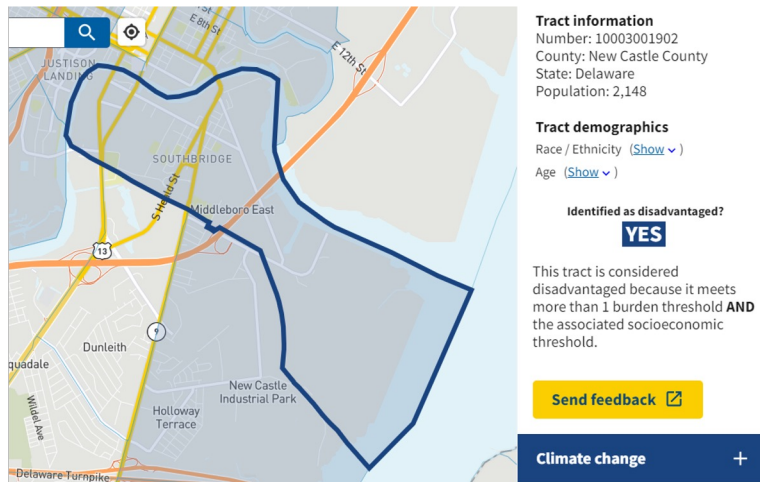
Key strategies for ESAs with a climate focus:

1. Use potential climate impacts as a factor in determining which sites to assess first
2. Inventory and visualize potential climate impacts
3. Consider how testing is done
4. Determine how climate impacts influence remediation of the site
5. Incorporate findings into redevelopment plans – and grant applications!

Phase I ESA

Frame inquiry in terms of community context and environmental risks- past, present, and future.

- What do the community context and site characteristics tell us about future resilience?



Phase II ESA

Once contaminants are located and identified ask:

- How does a pollutant react to increased temperatures?
- How could it be impacted by high temperatures or high winds?
- Could flooding mobilize the contaminants?



Source: Stromberg/Garrigan & Assoc

Phase III: Assessment of Clean Up Alternatives

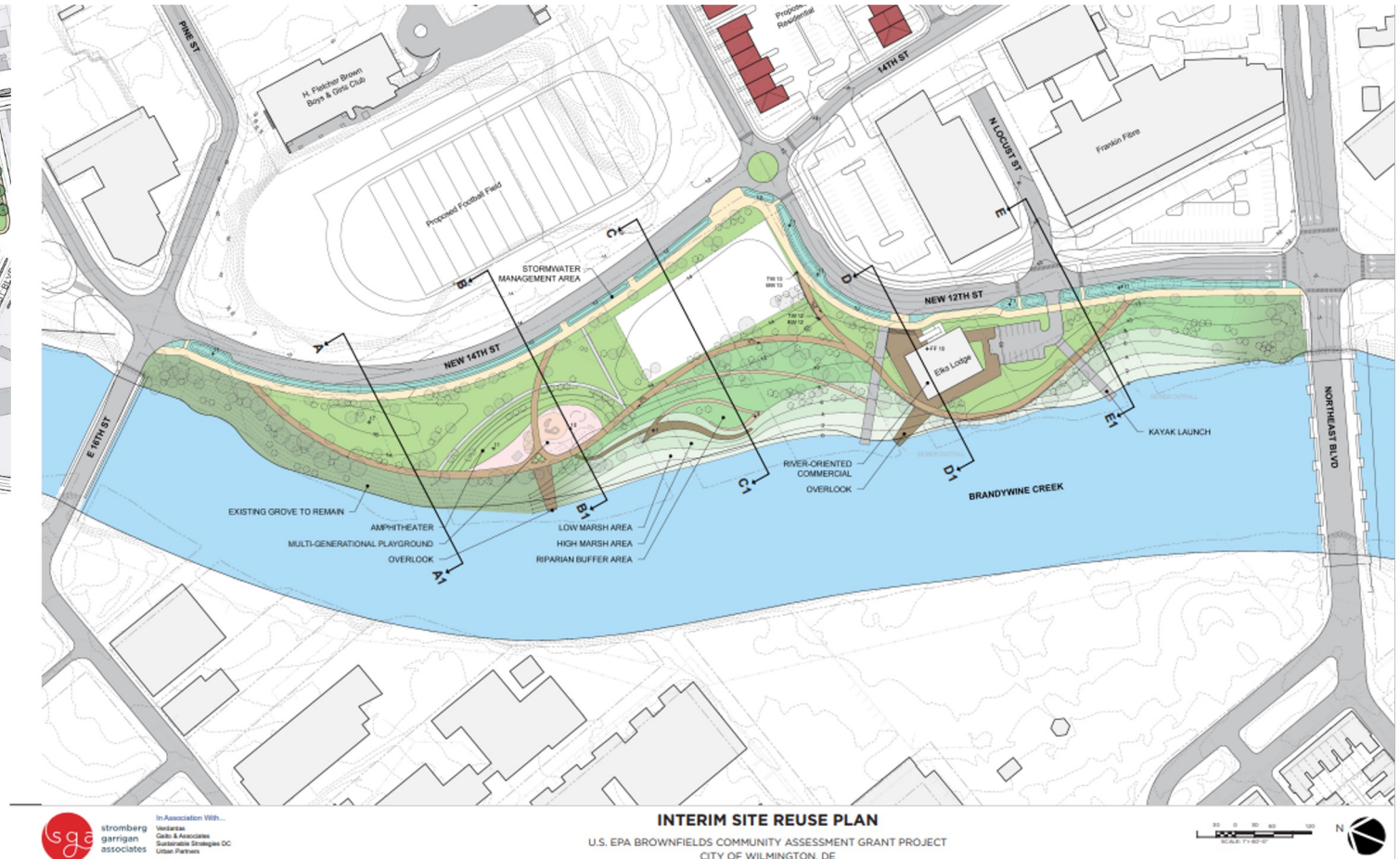
Goal: *To ensure that cleanups remain effective as the climate changes.*

- Could rising groundwater levels or increased flooding compromise an engineered cap and expose contaminants?
- Can developing an interim use help mitigate ongoing blight and reduce negative impacts caused by severe weather events?

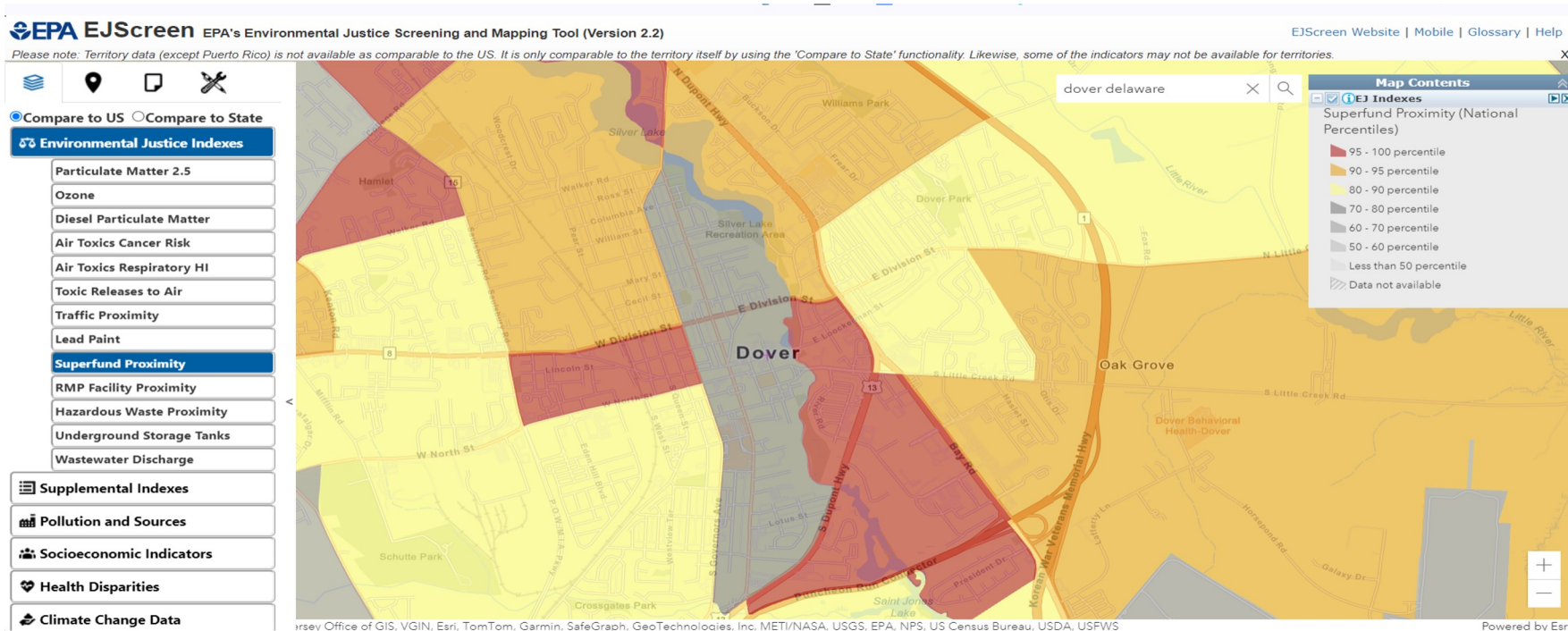
Proposed Interim Reuse Plan-Wilmington, DE



Source: Stromberg/Garrigan & Assoc



Tools that Can Help: Environmental Justice

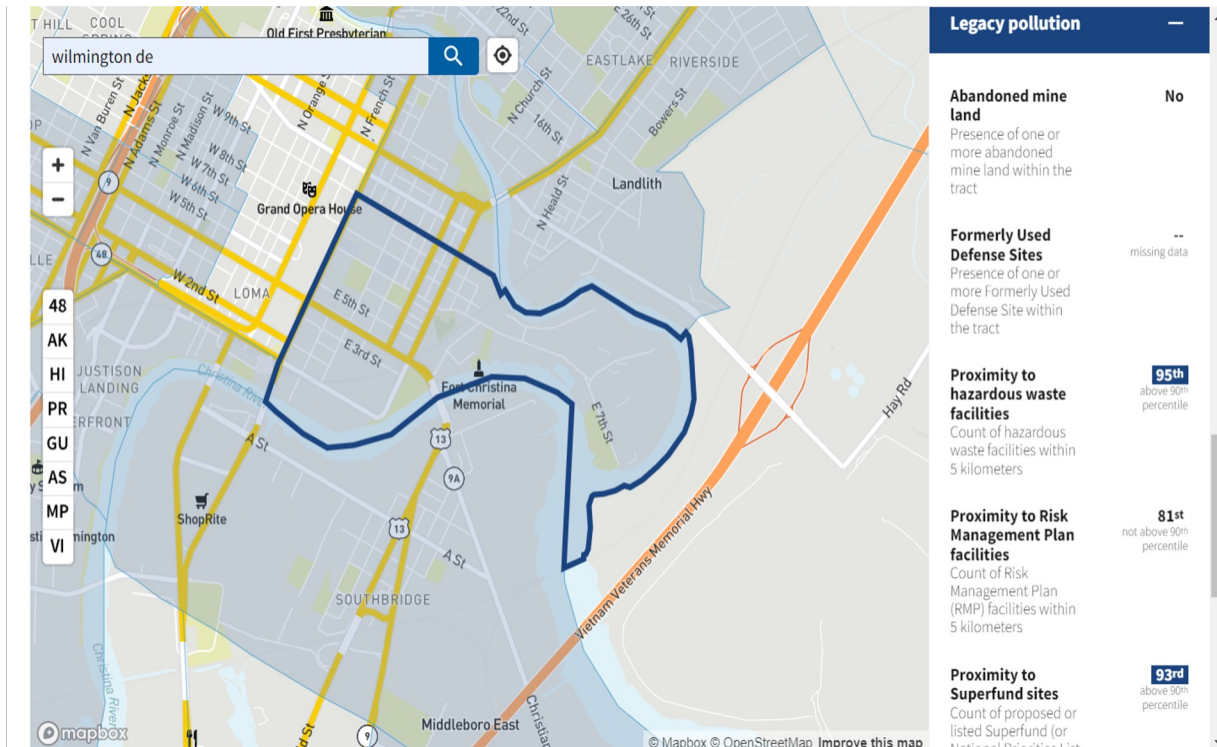


<https://www.epa.gov/ejscreen>

Tools that Can Help: CEJST



Climate and Economic Justice Screening Tool



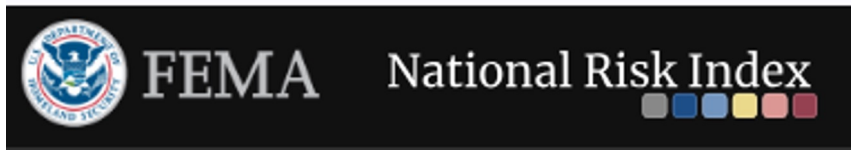
Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold **AND** the associated socioeconomic threshold.

<https://screeningtool.geoplatform.gov/>

Tools that Can Help: FEMA National Risk Index



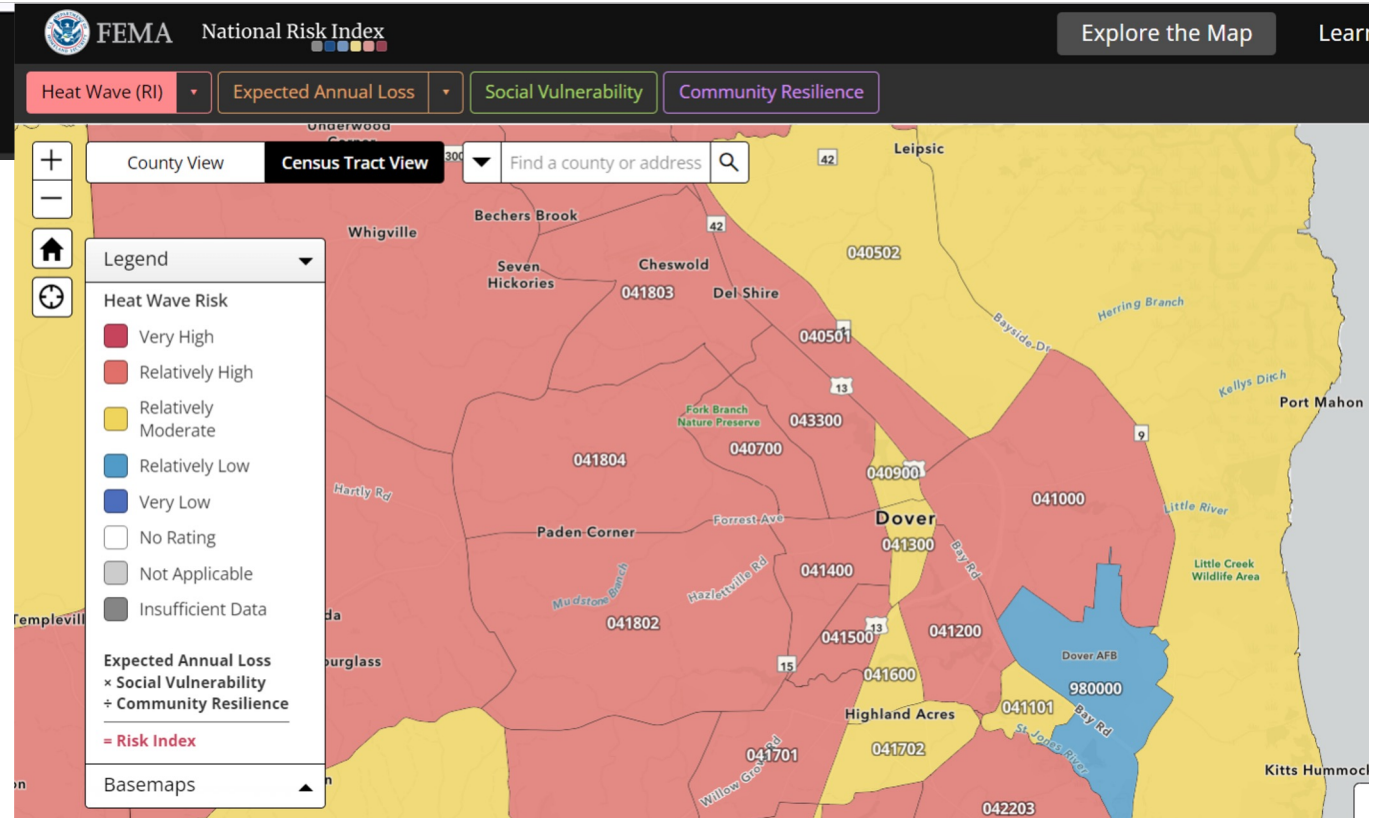
Focus on Natural Hazards

Risk index =

Expected Annual Loss

Social Vulnerability

Community Resilience



<https://hazards.fema.gov/nri/>

Visualizing Impacts: NOAA SLR Viewer



<https://coast.noaa.gov/slr/>

Visualizing Impacts: NOAA SLR Viewer



EPA Region 3 State Resources

DE: <https://floodplanning.dnrec.delaware.gov/>

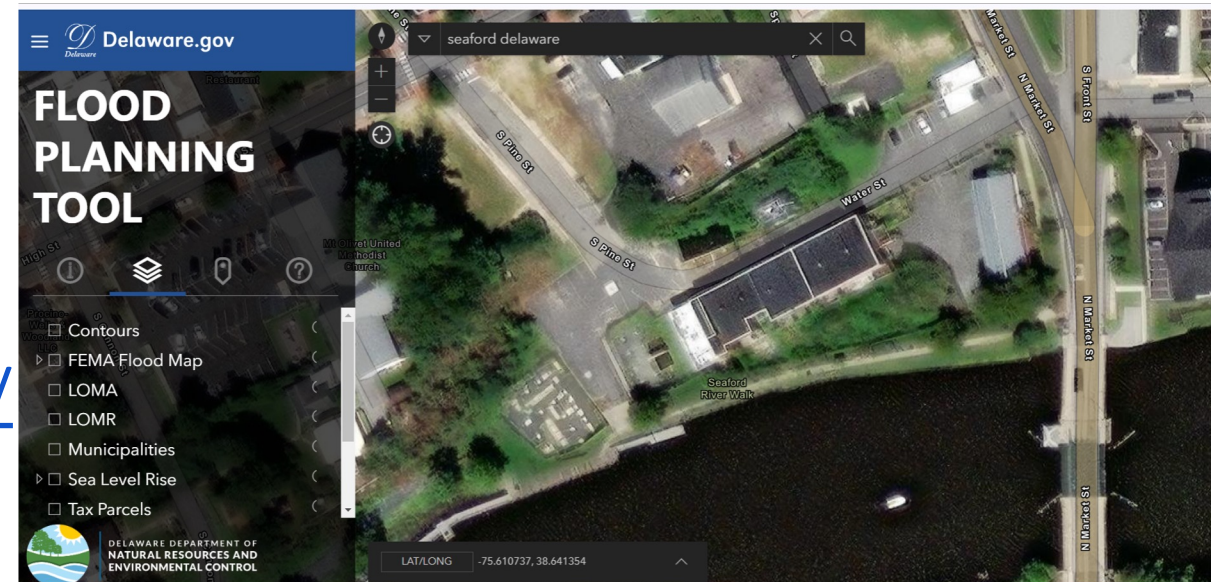
WV: [WV Flood Tool](#)

MD: [GIS Tools & Other Applications](#)

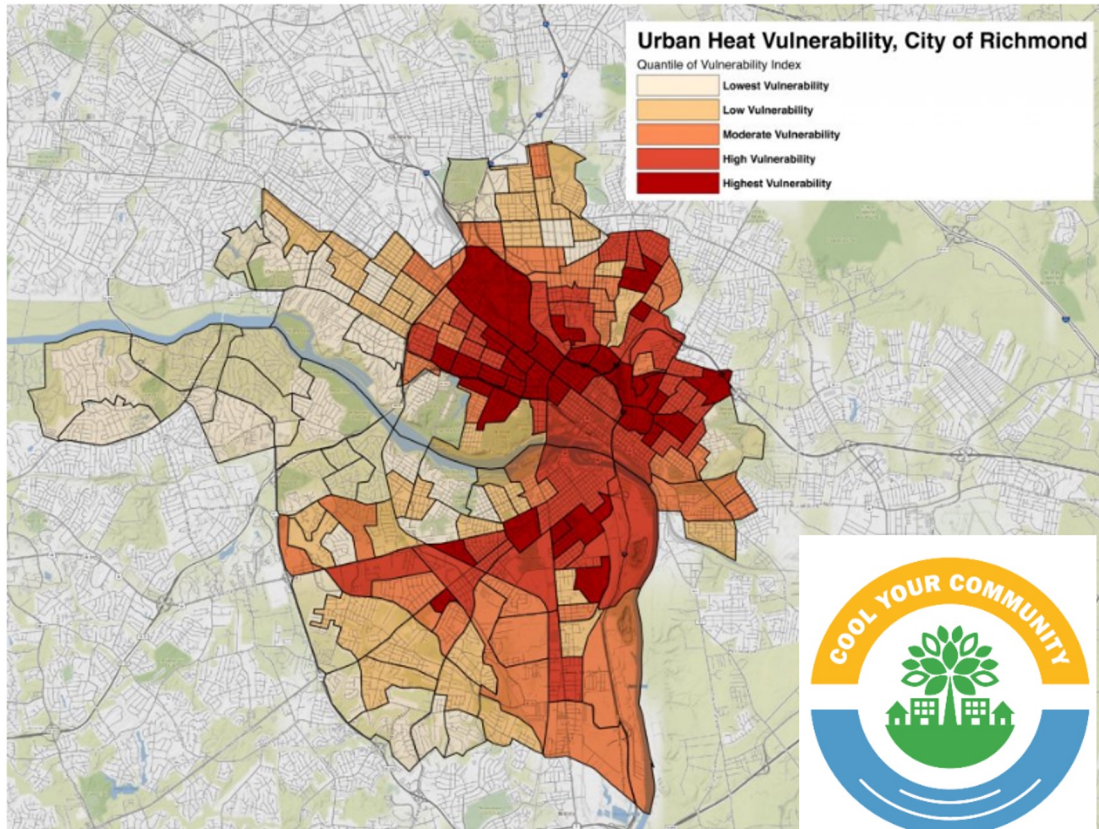
DC: <https://dcfloodrisk.org/>

VA: <https://casdsis.dcr.virginia.gov/VFRIS/>

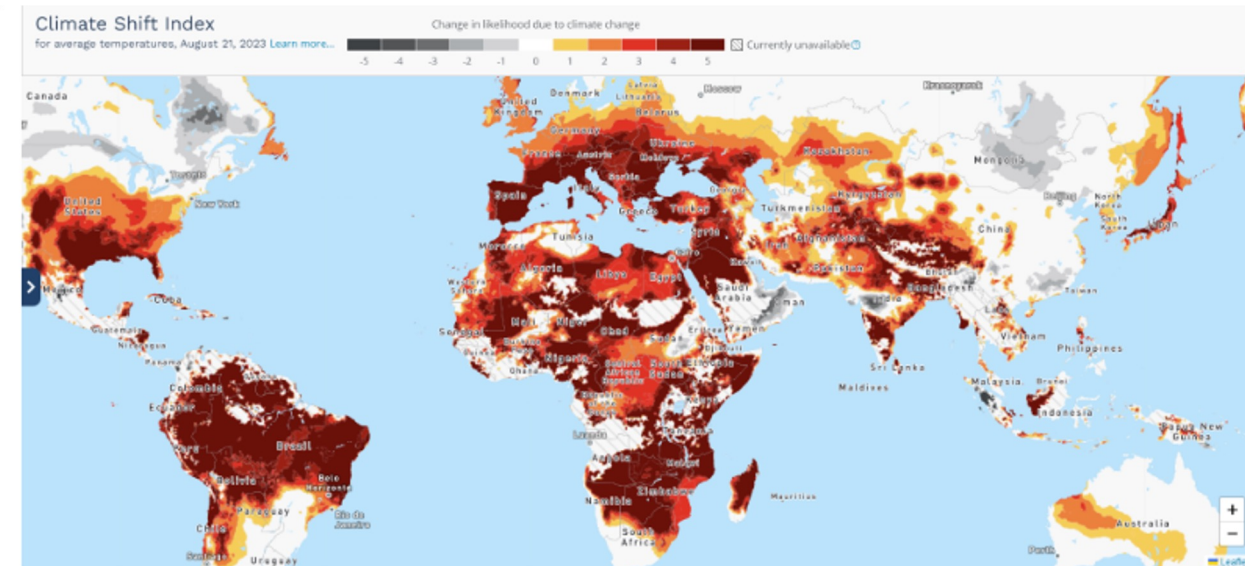
PA: <https://pafloodrisk.psu.edu/>



Visualizing Impacts: Heat Islands



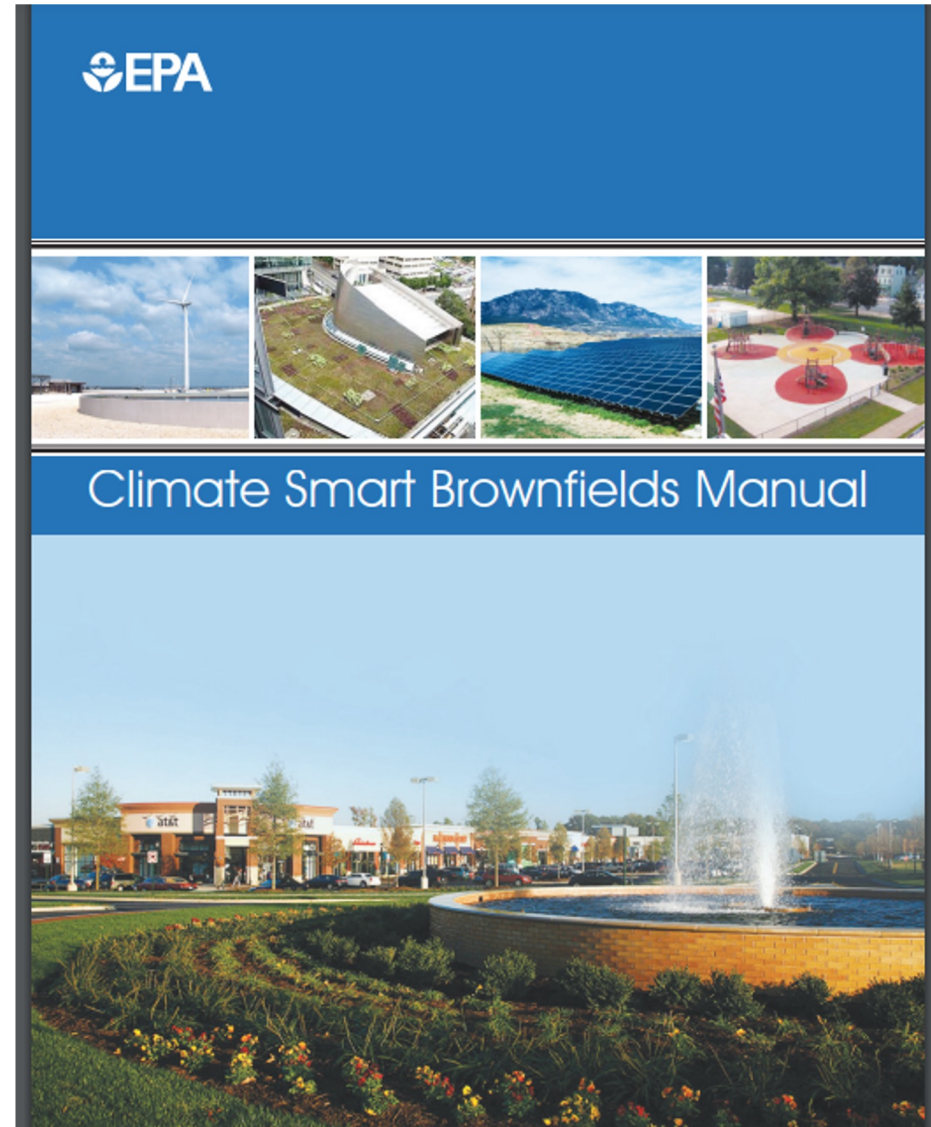
Science Museum of Virginia



<https://csi.climatecentral.org/climate-shift-index>

Climate Smart Brownfields Manual

<https://www.epa.gov/land-revitalization/climate-smart-brownfields-manual>





Join us next week for Part II

Part II: June 13, 2024 at 1PM

- Demolition/Deconstruction
- Clean up
- Redevelopment

*Climate smart brownfields revitalization doesn't just happen.
It's planned for.*