Resilient Fairfax

Climate Adaptation and Resilience Plan

Public Meeting #3

February 1, 2022

6:30 pm

Office of Environmental and Energy Coordination CADMUS WSP Inspiregreen

Welcome!

Resilient Fairfax Public Meeting #3

Office of Environmental and Energy Coordination

Agenda

I. **Introduction & Project Recap**
II. Resilient Infrastructure & Buildings
III. Climate Ready Communities
IV. Adaptive Environments
V. Integrated Action Planning
VI. Next Steps

Background: Difference Between the Climate Plans

Fairfax County is addressing both the **cause** and the **effects** of climate change

CECAP / Carbon-Free Fairfax

Cause: ***Reducing emissions that lead to global climate change***

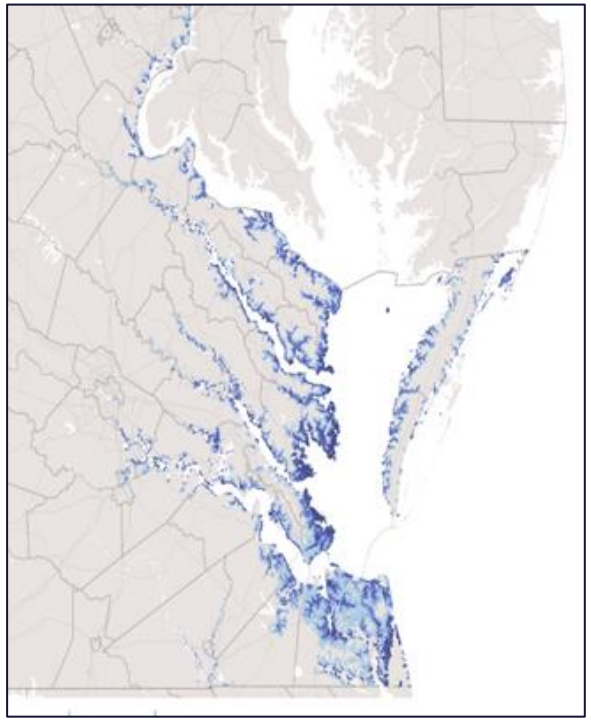
- Examples: Transition to renewable energy, energy efficiency, waste reduction, alternative transportation
- Community-led plan, because 95% of emissions are from the community
- January 2020 – July 2021 planning process
- Now transitioning to implementation → Carbon Free Fairfax

Resilient Fairfax *(focus of this meeting)*

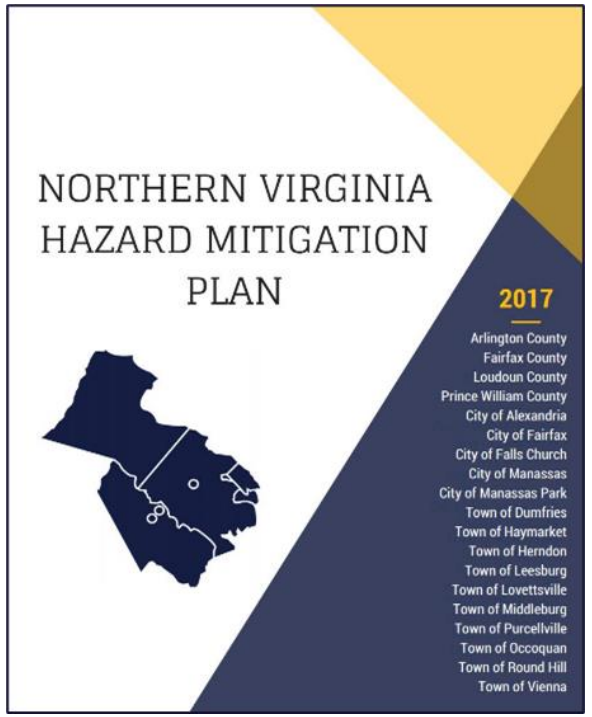
Effects: ***Adaptation & resilience to climate hazards***

- Examples: Resilience and ability to handle flooding, extreme temperatures, extreme weather, health hazards, precipitation pattern changes
- Led by government, because responsible for infrastructure and service upgrades
- Feb 2021 – Fall 2022 planning process

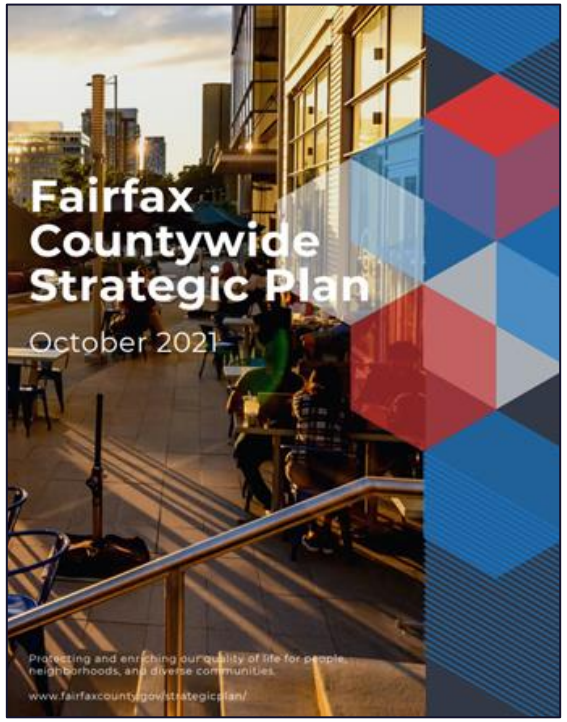
Concurrent Plans, Programs, Policy Updates



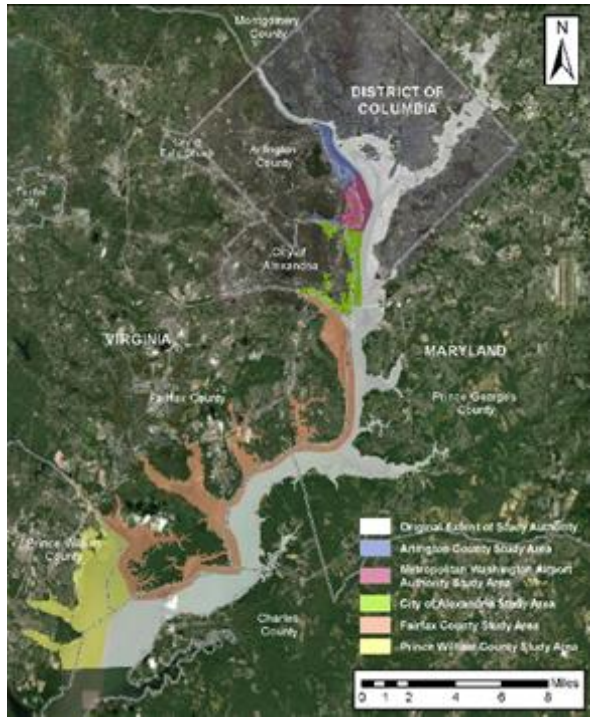
VA Coastal Resilience Master Plan



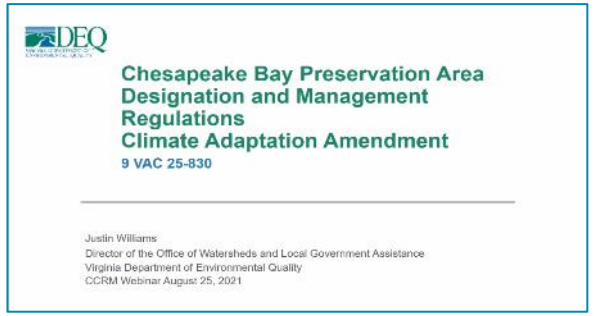
NOVA Hazard Mitigation Plan



Fairfax County Strategic Plan



USACE Coastal Storm Risk Study



VDEQ Ches. Bay Reg. Amend.

CSN IDF Curve Research

VMRC Tidal Wetlands Guidelines

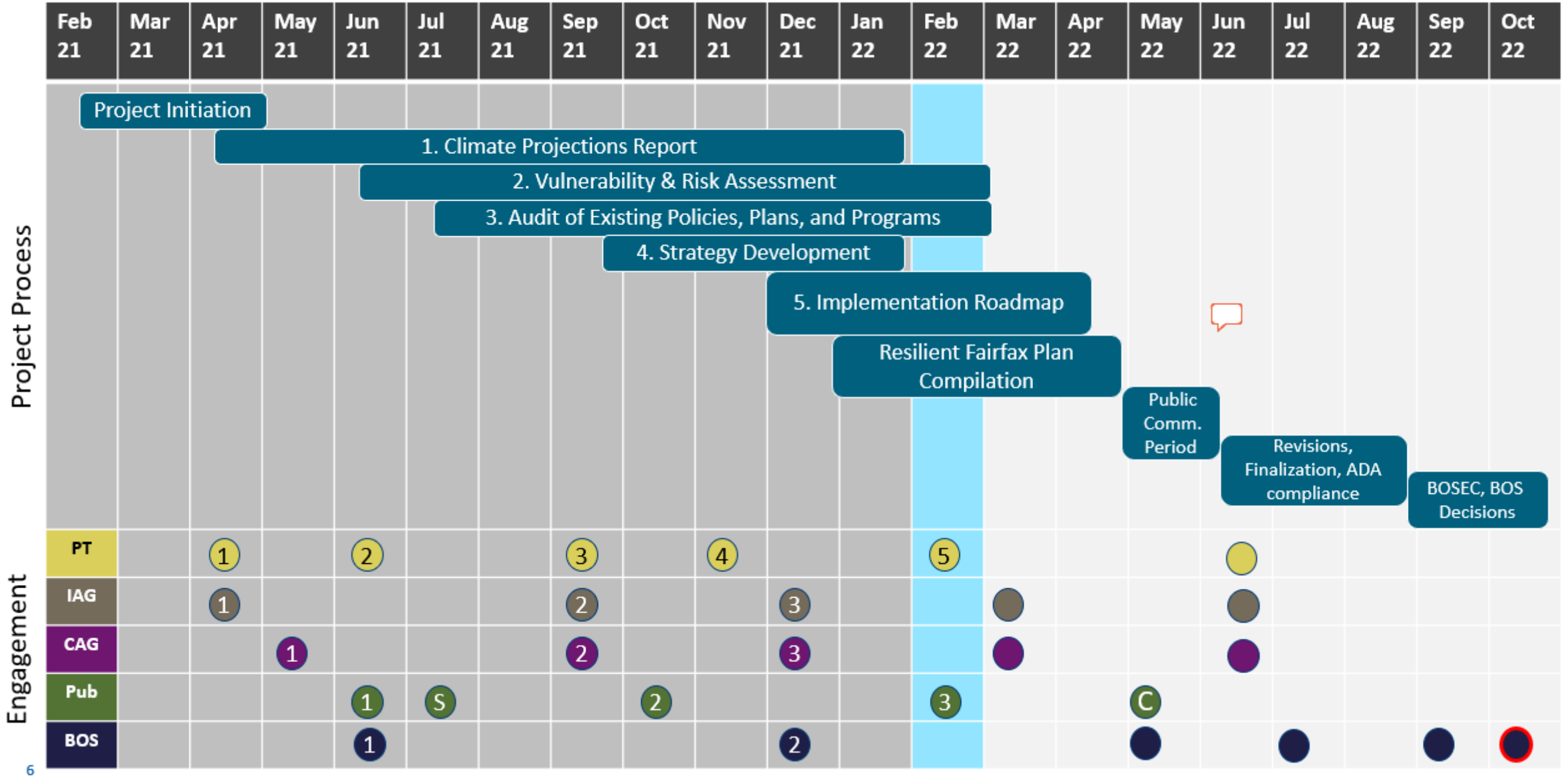
nvrc
Northern Virginia Regional Commission

Metropolitan Washington
Council of Governments

metro

Ongoing regional resilience work

Resilient Fairfax Planning Timeline



Meeting Goals & Reminders

Meeting Objective:

- Solicit public feedback on draft **adaptation & resilience strategies** for Resilient Fairfax

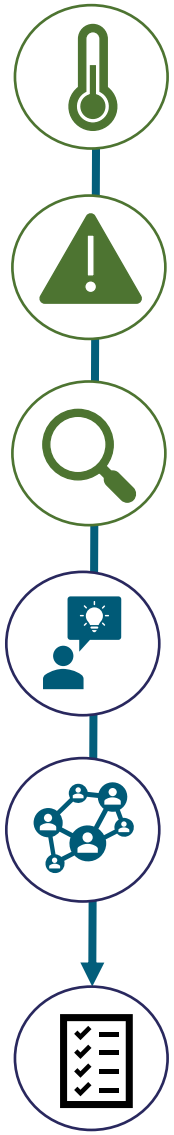
Things to keep in mind today to help shape the strategies:

- Consider how the strategy could **better address needs of your community,** particularly those most vulnerable
- Strategies are still **DRAFT form;** continued opportunities to provide feedback

Ground Rules:

- Step up; step back
- Speak openly & honestly and/or add your comments in the chat
- Listen carefully and respectfully to each person
- Please stay on topic – this meeting is about **Resilient Fairfax**
- For other questions or comments, please contact OEECinfo@fairfaxcounty.gov

Resilient Fairfax: Project Recap



Climate Projections Report (Done)

"What will our climate be like in the future?"

Vulnerability & Risk Assessment (Near Final)

"Given those projections, where are we vulnerable?"

Audit of Existing Policies, Plans, and Programs (Near Final)

"How are we doing as a county in terms of resilience?"

Strategies (Finalizing)

"What can we do to enhance our resilience?“

Implementation Roadmap (Ongoing: Winter 2021-Spring 2022)

"How should we implement the strategies?"

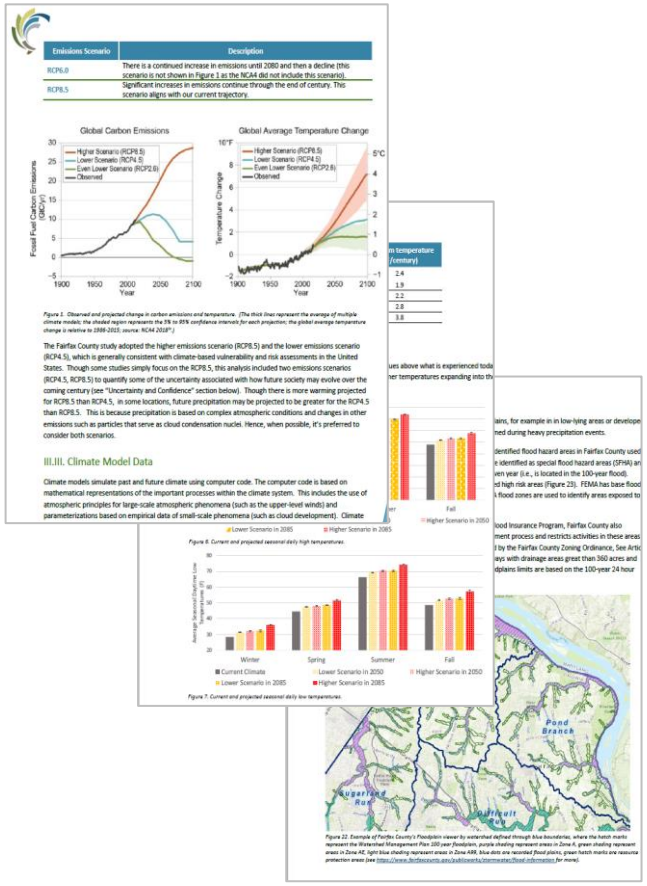
Climate Adaptation & Resilience Plan (Summer 2021)

Above rolled into one "Resilient Fairfax" plan + interactive maps, fact sheets, & resources

Resilient Fairfax: Project Recap, cont.

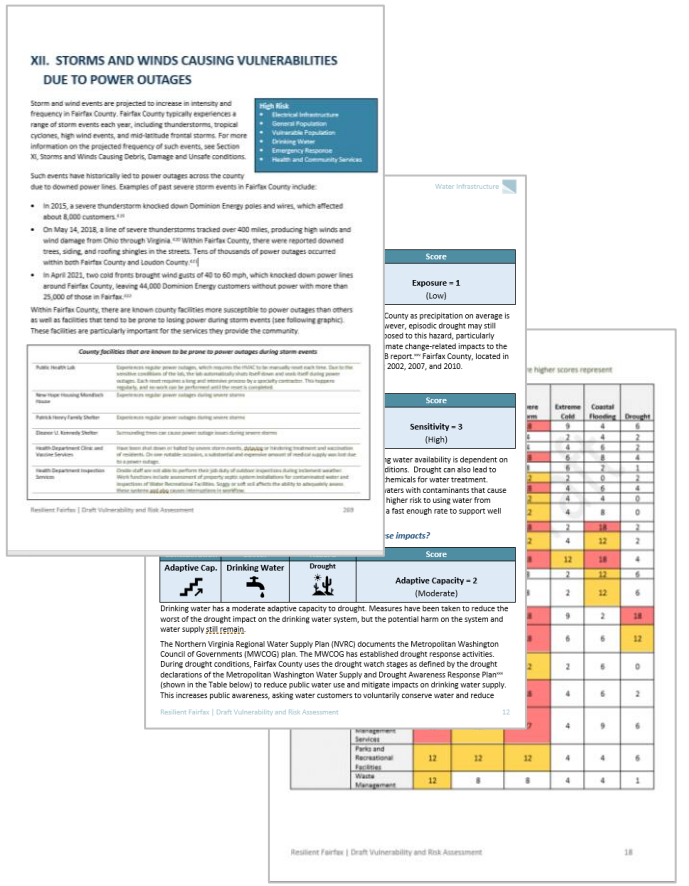
1. Climate Projections Report:

Future climate conditions & hazards



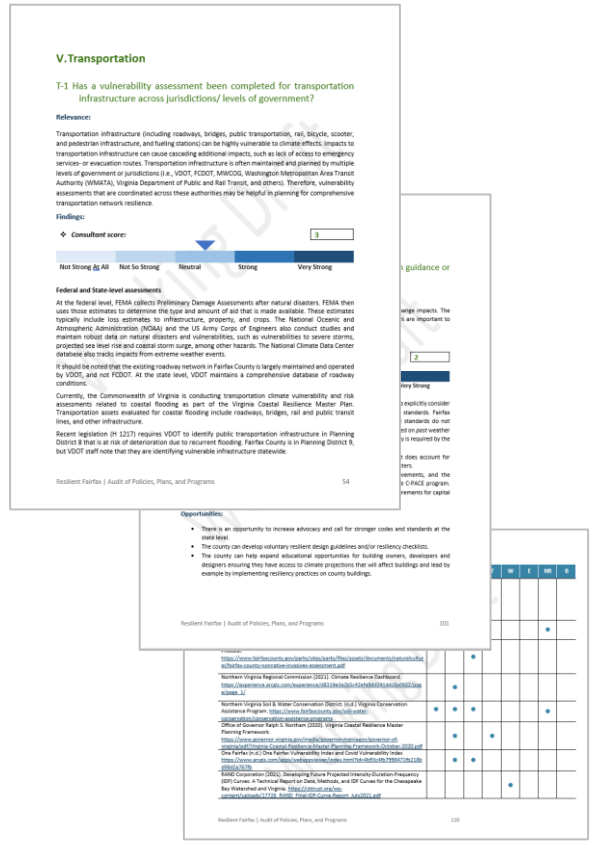
2. Vulnerability & Risk Assessment:

Vulnerability of assets, systems, and populations to climate threats & top risks



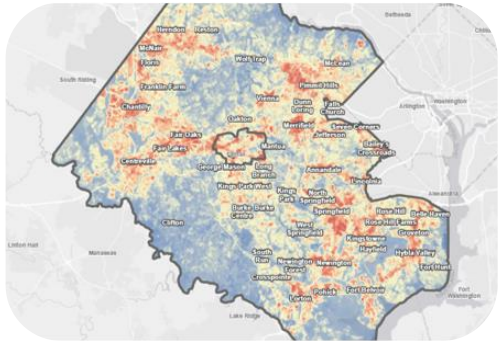
3. Audit of Policies, Plans, & Programs:

Strengths and gaps of existing county policies, plans, programs

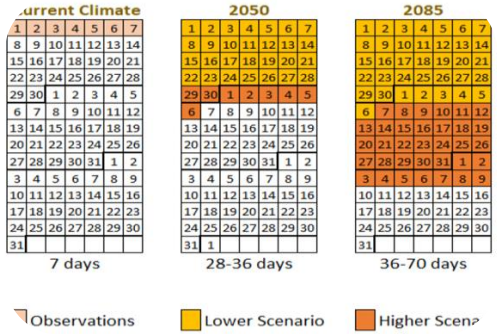


Project Recap 1: Climate Projections Report

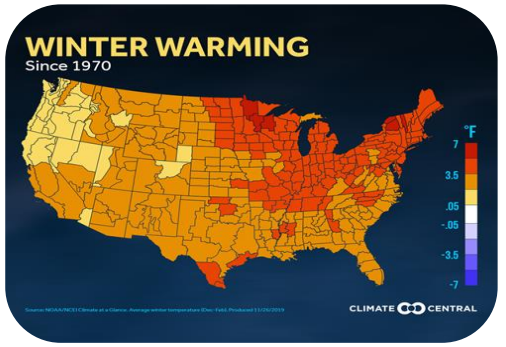
What climate conditions and hazards is Fairfax likely to face in the future?



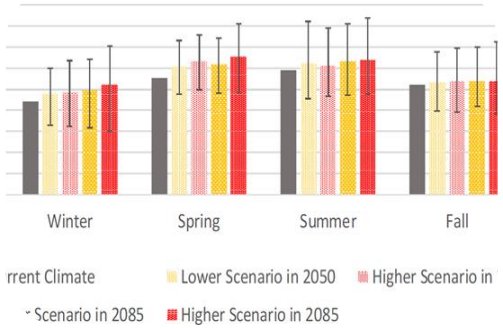
Warmer annual & seasonal temperatures



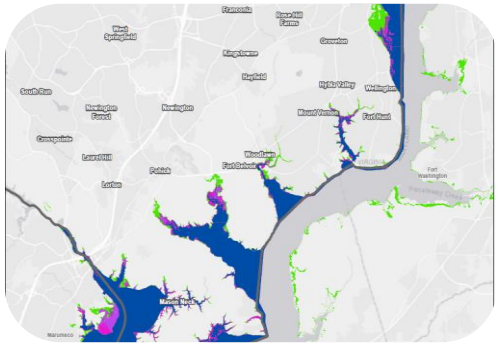
More extremely hot days



Reduction in cold days



Increase in annual and seasonal precipitation



Increase in sea level & coastal flooding (Potomac River)

Increase in heavy precipitation events

Project Recap 2: Vulnerability and Risk Assessment

Fairfax County's Top Vulnerabilities

Exposure: is the population/ infrastructure exposed to the hazard?

Sensitivity: when exposed to the hazard, does something bad happen?

Adaptive Capacity: are we able to adapt to the hazard?

Total Vulnerability =

Exposure x Sensitivity x Adaptive Capacity

Sector	Subsector	Extreme Heat	Heavy Precipitation and Inland Flooding	Severe Storms and Wind	Extreme Cold	Coastal Flooding	Drought
Water infrastructure	Drinking Water	8	8	18	9	4	6
	Stormwater	4	12	4	2	4	2
	Wastewater	8	12	4	4	6	2
Energy & Comms	Electricity	18	8	18	6	8	4
	Natural Gas	1	8	8	6	2	1
	Communication	4	8	12	2	0	2
Transportation	Roadways	12	18	18	4	6	4
	Public Transit	12	12	12	4	4	0
	Bike & Ped	12	8	12	4	8	0
Buildings	Buildings	6	18	18	2	18	2
Populations	General Population	12	12	12	4	12	2
	Vulnerable	27	18	18	12	18	4
Natural & Cultural	Water Bodies	12	12	8	2	12	6
	Wetlands and Environmentally Sensitive Areas	12	12	8	2	12	6
	Trees and Forested Areas	12	12	18	9	2	18
	Agricultural Districts and Farms	18	12	18	6	6	12
	Cultural and Historical Resources	4	12	12	2	6	0
Public Services	Health and Community Services	12	8	18	4	6	2
	Emergency Response and Management Services	18	12	27	4	9	6
	Parks and Recreational Facilities	12	12	12	4	4	6
	Waste Management	12	8	8	4	4	1

Project Recap 2: Vulnerability and Risk Assessment, cont.

Fairfax County's Top Risks

Heavy precipitation causing inland flooding of communities

Combined events impacting natural systems

Storms & wind causing debris, damage, and unsafe conditions

Storms & wind causing vulnerabilities due to power outages

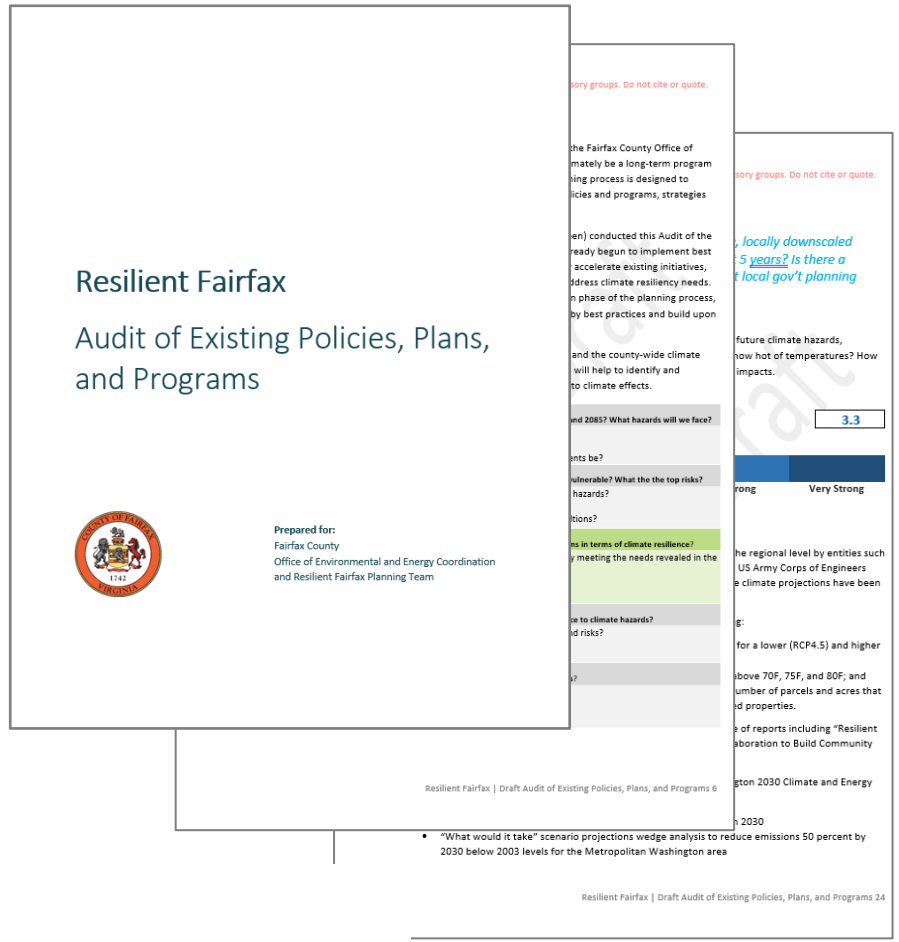
Extreme heat causing health related impacts

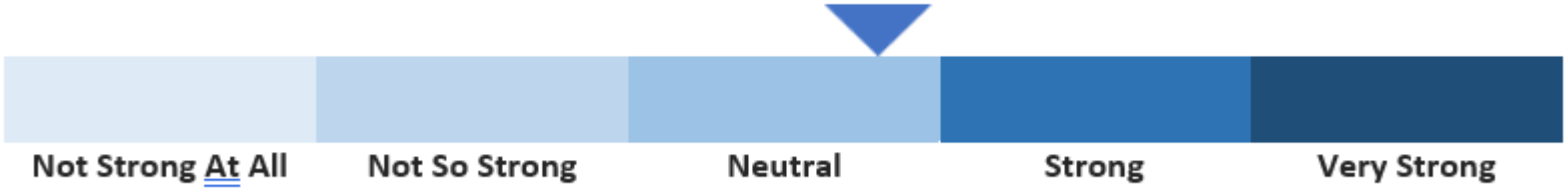
Coastal flooding (Potomac River) impacts

Project Recap 3: Audit

By reviewing existing programs, plans, and policies related to climate resilience, the Audit helps to identify:

1) Where Fairfax has **already begun to implement best practices** for increasing resiliency,
2) **Opportunities** to expand, extend, or accelerate **existing initiatives**, and
3) **Gaps** where **new strategies** or policy updates may be needed to address climate resiliency needs.

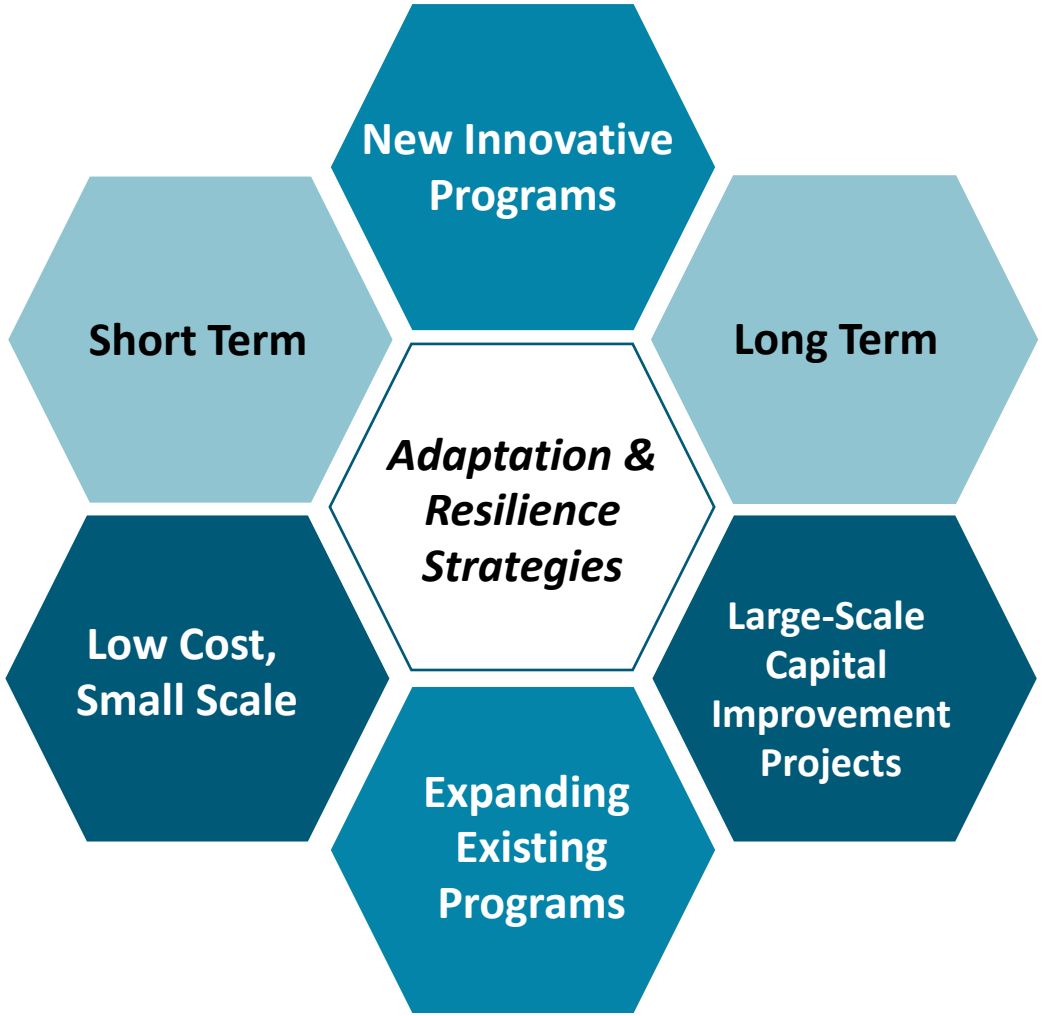




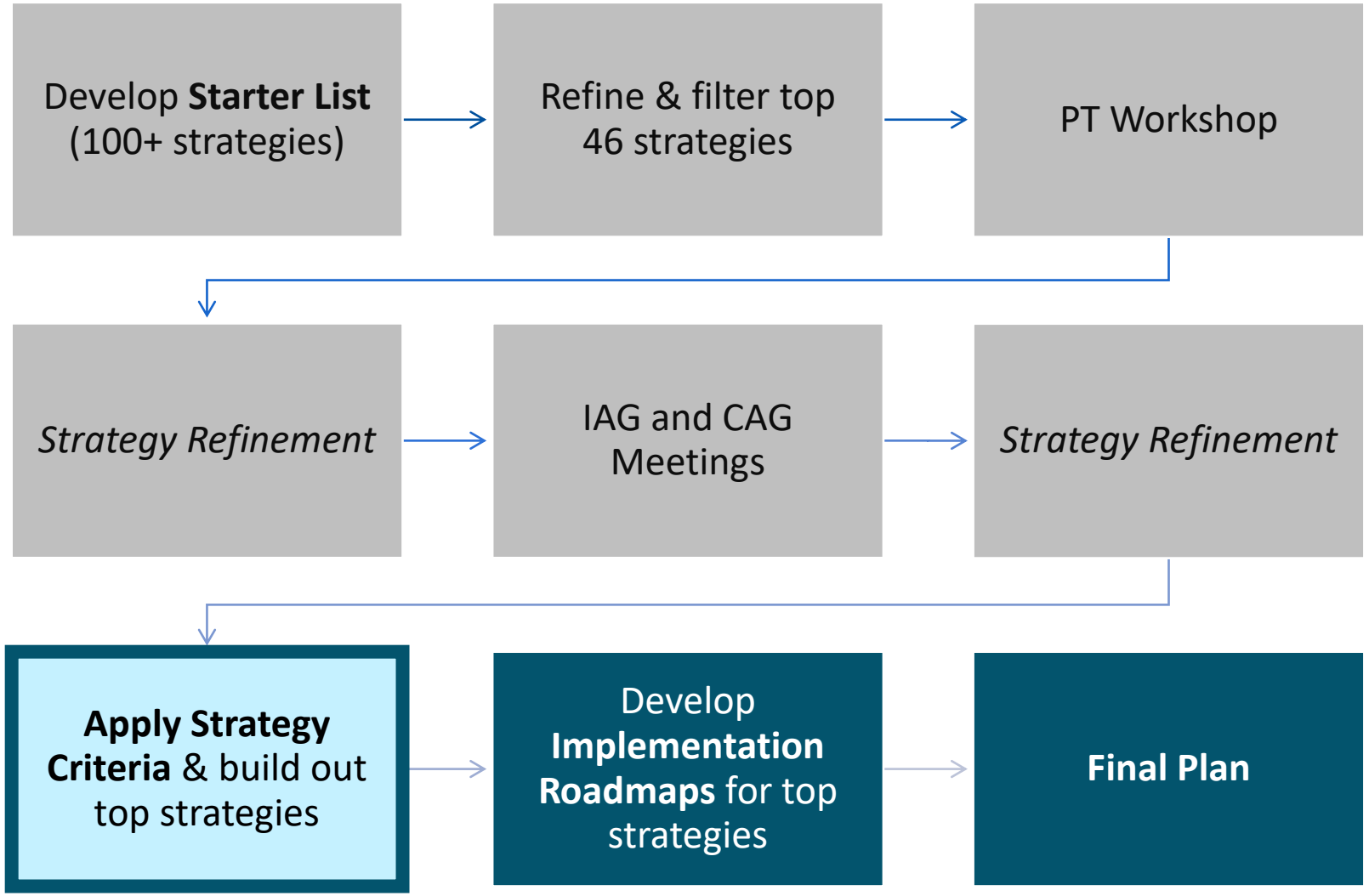
Strategy Goals

Strategies should:

- ✓Include a diverse and balanced mix of actions
- ✓Address range of top risks
- ✓Be within county control
- ✓Consider key next steps



Strategy Development Process



Strategy Criteria

Tier 1: Prioritization Criteria	**Prioritization Criteria**			
	✓ Within County Control		✓ Addresses a Top Risk	
Tier 2: Strategy Development Criteria	**Implementation Criteria**			
	Capacity	Robustness	Technical Feasibility	Alignment with Plans
	Co-Benefits			
	Quality of Life & Public Health	Environmental Quality	Avoided Losses & Economic Benefit	Social Equity

Overview of Draft Strategy Categories

Resilient Infrastructure & Buildings

- Resilience in major county infrastructure decisions
- County building & facility resiliency
- Advocacy for external infrastructure resiliency

Climate Ready Communities

- Network of safe & resilient spaces
- Community capacity to prepare for, withstand, and recover from events
- Climate-ready development

Adaptive Environments

- Protection of natural resources that enhance resilience
- Restoration of damaged areas with nature-based and natural solutions

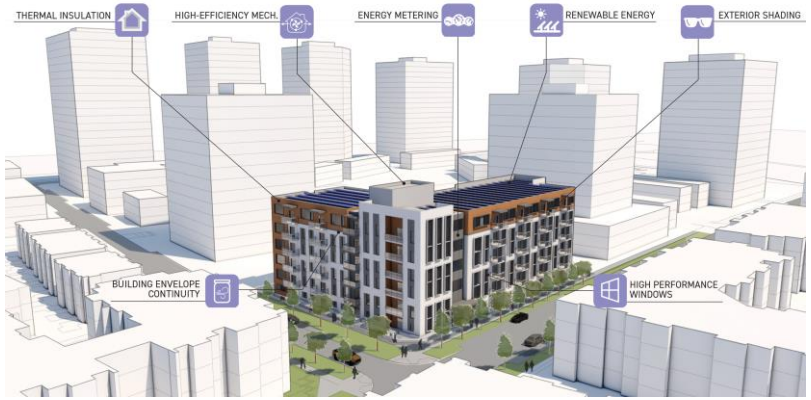
Integrated Action Planning

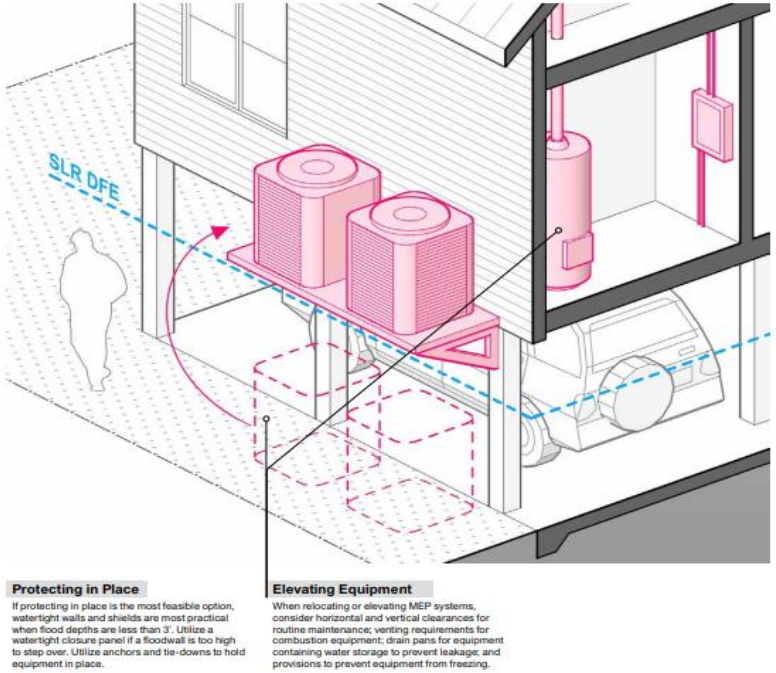
- Resilience into county plans and policies
- Resilience data collection
- Funding plan
- Continued interagency coordination

Draft Goals & Strategies Overview

Resilient Infrastructure & Buildings

Goals			
	County infrastructure decisions	**County building and facility resiliency**	**Advocacy for external infrastructure**
Strategies	Capital Improvement Program (CIP) criteria	Flood resilience for county facilities	Energy resiliency advocacy
	Climate projections into stormwater capital infrastructure decisions	Energy resilience for county facilities	Building code advocacy
	Climate projections into wastewater & transportation planning	Blank cell	Blank cell
	A/E Procurement	Heat resilience for county facilities	Public transit resilience advocacy
	PFM Updates	Blank cell	Blank cell





**Draft strategies may be further revised during review by appropriate county agencies.*

Draft Goals & Strategies Overview

Climate Ready Communities

Goals: Network of Safe and Resilient Spaces	Goals: Community Capacity	Goals: Climate Ready Development
Strategies: Resilience Hubs	Strategies: Engagement & aid in vulnerable areas	Strategies: Flood-resilient development standards to factor in climate
Strategies: Adaptation Action Areas (AAAs)	Strategies: Education & guidelines	Strategies: Heat-resilient development standards to factor in climate
Strategies: Targeted tree plantings	Strategies: Workforce development	Strategies: Transfer of Development Rights Ordinance
Strategies: Warning system	Strategies: C-PACE expansion	

Resilience Hub

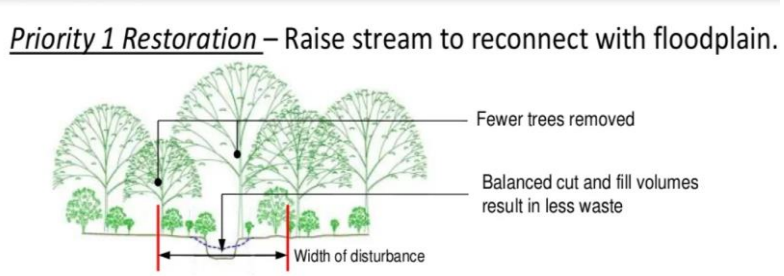
**Draft strategies may be further revised during review by appropriate county agencies.*

Draft Goals & Strategies Overview

Adaptive Environments

Goals	
Protection of existing natural resources that enhance resilience	**Restoration of damaged areas with nature-based and natural solutions**
Strategies	
Conservation and protection of environmentally sensitive areas	Green infrastructure: for stormwater management & heat mitigation
Update conservation easement requirements	Stream corridor restorations
Enhance review process for Resource Protection Areas (RPA) to minimize encroachments	Urban reforestation
Consolidated Natural Resources Management Plan	Living shorelines, wetland and floodplain restorations
Climate Projections in Urban Forestry Program	Regenerative agriculture

**Draft strategies may be further revised during review by appropriate county agencies.*



Pimmit Run Tributary Stream Restoration

Draft Goals & Strategies Overview

Integrated Action Planning

Goals: General Planning	Data Collection	Funding Plan	Agency Collaboration & Coordination
Strategies: Comprehensive Plan	Resilience metrics	County Climate Fund	Agency collaboration
Zoning Ordinance	Research and data support	Federal & state funding	Staff training and capacity building
Strategic Plan	Database of flood prone areas	Long-term data funding	Continuity of Operations (COOP)
Climate Health Plan	Hazard mitigation action tracking	Additional funding opportunities	Blank cell
Blank cell	Tree canopy and rainfall data	Blank cell	Blank cell

OFFICE OF Environmental and Energy Coordination FAIRFAX COUNTY

**Draft strategies may be further revised during review by appropriate county agencies.*

Draft Goals & Strategies Overview

Each Implementation Roadmap will outline the following for prioritized strategies:

- **Lead:** Department leading
- **Partners:** Departments or partners supporting
- **Timeline:** Timeline for implementation
- **Cost:** Cost estimates for implementation
- **Implementation Actions:** Action steps
- **Equitable Implementation:** Considerations for equity focused implementation
- **Funding Opportunities:** Potential funding sources

Agenda

I. Introduction & Project Recap

II. Resilient Infrastructure & Buildings

III. Climate Ready Communities

IV. Adaptive Environments

V. Integrated Planning

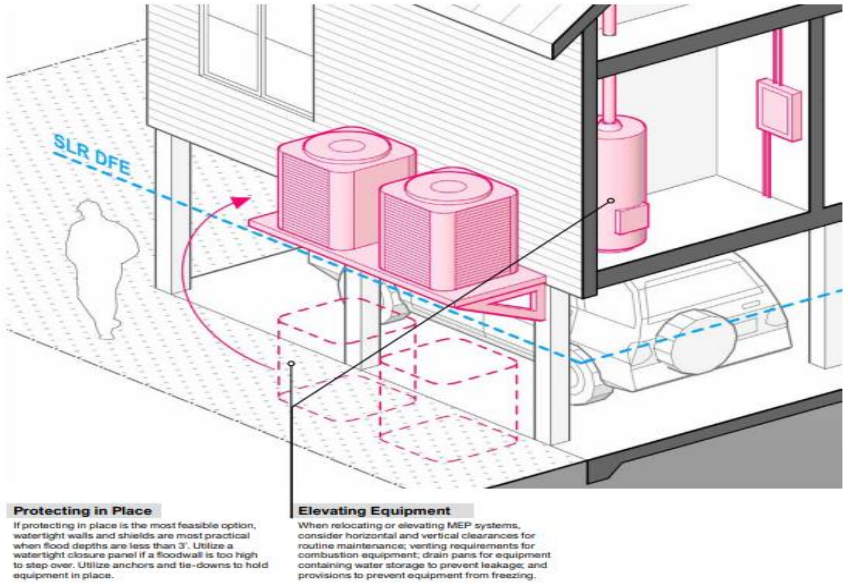
VI. Next Steps

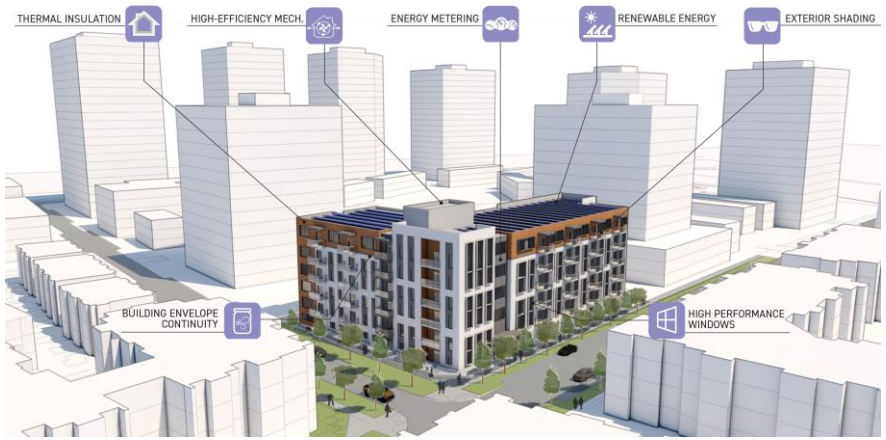
Resilient Infrastructure & Buildings

Infrastructure and buildings that can withstand climate impacts, keep residents safe, reduce service disruptions, and improve countywide resilience.

Resilient infrastructure and buildings …

- ✓ Can withstand heat, flooding, and severe storms
- ✓ Are built and prepared for future conditions
- ✓ Are energy-resilient, energy efficient, and leverage diverse & clean energy sources with back up power
- ✓ Support safe movement to jobs, homes, and other points of interest





Office of Environmental and Energy Coordination

Resilient Infrastructure & Buildings: Draft Strategies

County infrastructure decisions	County building and facility resiliency	Advocacy for external infrastructure resiliency
Capital Improvement Program (CIP) criteria: Revise CIP evaluation process to advance capital projects that build resilience to climate hazards & impacts.	**Flood resilience for county facilities:** Address county building vulnerabilities to flooding and storm hazards, especially critical service provider buildings.	**Energy resiliency advocacy:** • Identify opportunities for distributed energy • Coordinate with energy utilities • Develop Energy Assurance Plan
Climate projections into stormwater project infrastructure decisions: Integrate future climate projections into the county's stormwater infrastructure projects planning and design.		

Additional Strategies in this Category

- PFM and A/E updates
- Incorporate climate projections into wastewater & transportation planning
- Heat & energy resilience upgrades for county facilities
- Building Code Advocacy
- Public Transit Resilience Advocacy

**Draft strategies may be further revised during review by appropriate county agencies.*

Resilient Infrastructure & Buildings: Discussion

- What do you like or dislike about these draft strategies?
- What should be considered as the county implements these strategies?
- What needs of community members, particularly more vulnerable populations, need to be addressed?
- With which community-based organizations can the county partner to implement these strategies?

Agenda

I. Introduction & Project Recap

II. Resilient Infrastructure & Buildings

III. Climate Ready Communities

IV. Adaptive Environments

V. Integrated Planning

VI. Next Steps

Climate Ready Communities

A well-connected and prepared community is better able to respond to and recover from climate impacts.

Climate Ready Communities have:

- ✓ Strong social cohesion to support community response to climate hazards
- ✓ Homes and neighborhoods that are prepared for flooding, extreme heat, storms, and power outages
- ✓ Resources easily accessible to all members before, during, and after climate events
- ✓ Historical inequities addressed and the needs of the most vulnerable populations prioritized

Resilience Hub

Climate Ready Communities: Draft Strategies

Network of Safe and Resilient Spaces	Community Capacity	Climate Ready Development
Resilience Hubs • Pursue development of Resilience Hubs network beginning with pilot • Assess needs, facility capacity and barriers to access **Adaptation Action Areas** • Identify and prioritize areas of the county most in need of resilience action	**Engagement & aid in vulnerable areas** • Launch community engagement campaign for continuous identification and alleviation of pressing resilience needs, access to resources, and meaningful inclusion of vulnerable populations. **Education & guidelines** • Launch a climate resilience education and guidance program • "Resilience ambassadors" program	**Flood-resilient development standards to factor in climate** • Pursue potential updates to county development review procedures and standards that factor in both existing conditions and projected climate change. • In addition to requirements, draft "above and beyond" voluntary resilience design guidelines.

Additional Strategies in this Category

- Targeted tree plantings
- Warning System
- Workforce development
- C-PACE expansion
- Heat-resilient development standards to factor in climate
- TDR ordinance

**Draft strategies may be further revised during review by appropriate county agencies.*

Climate Ready Communities: Discussion

- What do you like or dislike about these draft strategies?
- What should be considered as the county implements these strategies?
- What needs of community members, particularly more vulnerable populations, need to be addressed?
- With which community-based organizations can the county partner to implement these strategies?

Agenda

I. Introduction & Project Recap

II. Resilient Infrastructure & Buildings

III. Climate Ready Communities

IV. Adaptive Environments

V. Integrated Planning

VI. Next Steps

Adaptive Environments

Natural environments that are protected and restored to improve overall county resilience to climate impacts.

Adaptive Environments in Fairfax include:

- ✓ Green infrastructure that enhances neighborhood resilience to heat and flooding
- ✓ Ecosystems that are able to thrive, provide ecosystem services and natural resilience, and be accessible to the public
- ✓ Environmentally sensitive areas that are protected and conserved
- ✓ Future conditions are considered in natural resources planning

Pimmit Run Tributary Stream Restoration

Adaptive Environments : Draft Strategies

Protection of Existing Natural Resources that Enhance Resilience	**Restoration of Damaged Areas with Nature-based and Natural Solutions**
Conservation and protection of environmentally sensitive areas • Explore strategic partnerships and/or financing opportunities for conservation and protection of environmentally sensitive areas, including but not limited to tidal and freshwater wetlands, intermittent streams, and habitat for key species.	**Green infrastructure: Pursue greening for stormwater management & heat mitigation** • Identify areas that are flood-prone/ heat vulnerable that can be resolved through green infrastructure (i.e., do not need larger scale improvements). • Support community greening to encourage reduction of impervious spaces and increase of green spaces in communities. Develop maintenance programs for green spaces.

Additional Strategies in this category

- Conservation easement requirement updates
- Enhance RPA review process
- Consolidated Natural Resources Management Plan
- Climate projections into Urban Forestry Program
- Stream restoration, living shorelines, wetland restoration
- Urban reforestation
- Regenerative agriculture

**Draft strategies may be further revised during review by appropriate county agencies.*

Adaptive Environments: Discussion

- What do you like or dislike about these draft strategies?
- What should be considered as the county implements these strategies?
- What needs of community members, particularly more vulnerable populations, need to be addressed?
- With which community-based organizations can the county partner to implement these strategies?

Agenda

I. Introduction & Project Recap
II. Resilient Infrastructure & Buildings
III. Climate Ready Communities
IV. Adaptive Environments
V. Integrated Action Planning
VI. Next Steps

Integrated Action Planning

Integration of climate in planning and coordination ensures resiliency is at the forefront of county initiatives.

A county with integrated action planning is:

- ✓ Monitoring progress, supporting transparency, and informing implementation
- ✓ Integrating climate change preparedness across county operations
- ✓ Advocating for resilience action beyond county control (e.g., public transit, building codes, energy resilience)
- ✓ Positioning county to be competitive for state and federal funding opportunities
- ✓ Building new funding streams and providing dedicated funding source to support county's climate goals

OFFICE OF
Environmental and
Energy Coordination
FAIRFAX COUNTY

Integrated Action Planning: Draft Strategies

Data Collection	Funding Plan	Agency Collaboration & Coordination
Resilience Metrics: • Develop metrics for ongoing assessment of community resilience and improvements. • Considerations should include but are not limited to: vulnerable populations, social factors, built infrastructure, and environmental infrastructure.	**Climate Fund:** • Explore options for development of a county Climate Fund for county investment in climate adaptation and mitigation projects with priority considerations for more vulnerable communities. **Federal & State Funding:** • Increase use of federal and state funding for resilience projects, including natural and nature-based solutions in addition to built infrastructure resilience.	**Collaboration:** • Establish a system for continued climate resilience collaboration between county departments, regional entities, and levels of government.

Additional Strategies in this Category

- Amendments to Comprehensive Plan, Zoning Ordinance, Strategic Plan, and Climate Health Plan
- Research and data support
- Tree canopy and rainfall data
- Consolidation of flood-prone area databases
- Staff training, COOP assistance, and capacity building

**Draft strategies may be further revised during review by appropriate county agencies.*

Integrated Action Planning: Discussion

- What do you like or dislike about these draft strategies?
- What should be considered as the county implements these strategies?
- What needs of community members, particularly more vulnerable populations, need to be addressed?
- With which community-based organizations can the county partner to implement these strategies?

Agenda

I. Introduction & Project Recap
II. Resilient Infrastructure & Buildings
III. Climate Ready Communities
IV. Adaptive Environments
V. Integrated Planning
VI. Next Steps

Next Steps

- ❑ **Climate Projections Report** posting on web: *February*
- ❑ **Vulnerability and Risk Assessment** posting on web: *March*
- ❑ **Audit of Policies, Plans, and Programs** posting on web: *March*
- ❑ Develop **Implementation Roadmaps** for top strategies: *Ongoing*
- ❑ Draft **Climate Adaptation and Resilience Plan** public comment period: *May*

- Please contact ResilientFairfax@fairfaxcounty.gov with any questions or comments about Resilient Fairfax.
- Please contact carbonfreefairfax@fairfaxcounty.gov with any questions or comments about greenhouse gas emissions reduction or reducing our contributions to climate change.
- Please contact OEECinfo@fairfaxcounty.gov with any questions or comments about other initiatives.

Draft Goals & Strategies Overview: For Reference

Resilient Infrastructure & Buildings			Climate Ready Communities			Adaptive Environments		Integrated Action Planning			
County infrastruc-ture decisions	**County building & facility resiliency**	**Advocacy for external infra-structure resiliency**	**Network of Safe & Resilient Spaces**	**Community Capacity**	**Climate Ready Development**	**Protection of existing natural resources that enhance resilience**	**Restoration of damaged areas with nature-based and natural solutions**	**General Planning**	**Data Collect-ion**	**Funding Strategy**	**Agency Coord-ination**
Capital Improvement Projects (CIP) criteria updates	Flood resilience for county facilities	Building code advocacy	Resilience Hubs	Engagement & aid in vulnerable areas	Flood-resilient development standards to factor in climate	Conservation and protection of environmentally sensitive areas	Green infrastructure: for stormwater management & heat mitigation	Comprehensive Plan updates	Resilience metrics	County climate fund	Interagency collaboration
Stormwater Capital Project decisions	Heat resilience for county facilities	Public transit advocacy	Adaptation Action Areas (AAAs)	Education & guidelines for flood, heat, and storm resilience	Heat-resilient development standards to factor in climate	Updates requirements for conservation easements	Stream corridor restorations	Zoning Ordinance updates	Research & data support	Federal & State Funding	Staff training and capacity building
Public Facility Manual (PFM) Updates	Energy resilience for county facilities	Energy resiliency advocacy	Targeted tree plantings	Workforce development for resilience skillsets	Transfer of Development Rights (TDR) ordinance	Enhance review process for Resource Protection Areas (RPAs)	Urban reforestation	Strategic Plan updates	Tree canopy data	Funding for long-term data collection	Continuity of operations plans (COOP) during hazards
Architecture and Engineering (A/E) procurement updates			Warning system for extreme heat and other climate hazards	C-PACE expansion		Consolidated Natural Resources Management Plan	Living Shorelines	Climate and Health Plan completion	Hazard mitigation tracking	Additional funding, grants, PPPs, cost-shares	
Wastewater planning						Climate projections into Urban Forestry program	Wetland and floodplain restoration		Flood-prone areas and rainfall data consolidation		
Transportation planning							Regenerative agriculture		Lidar regular updates		

**Draft strategies may be further revised during review by appropriate county agencies.*

Thank You!

OFFICE OF
Environmental and
Energy Coordination
FAIRFAX COUNTY

CADMUS

wsp

Inspiregreen™