



Resilient Fairfax: Climate Adaptation and Resilience Plan
 Infrastructure Advisory Group Meeting # 4: Implementation Roadmap
 March 23, 2022 | 1:00 P.M. | Via Teams
Meeting Summary

The fourth Resilient Fairfax Infrastructure Advisory Group meeting was hosted by Fairfax County, and took place on March 23, 2022, at 1 p.m. This document summarizes the presentation and discussion.

Attendees:

Type	Entity	Attendance
Local, Chair	Fairfax County Office of Environmental and Energy Coordination (OEEC)	Yes
Local	Fairfax County Dept of Public Works & Environmental Services (DPWES)	Yes
Local	Fairfax County Dept of Transportation (FCDOT)	Yes
Local	Fairfax County Department of Emergency Management and Security (DEMS)	Yes
Local	Fairfax County Public Schools (FCPS)	No
Regional	Metropolitan Washington Council of Governments (MWCOG)	Yes
Regional	Northern Virginia Regional Commission (NVRC)	Yes
State	Virginia Dept of Conservation & Recreation (VDCR)	No
State	Virginia Dept of Environmental Quality (VDEQ)	No
State	Virginia Dept of Emergency Management (VDEM)	No
State	Virginia Dept of Transportation (VDOT)	Yes
Federal	US Department of Defense – Fort Belvoir Public Works	No
Federal	Federal Emergency Management Agency (FEMA)	Yes
Utilities & Authorities	Columbia Gas of Virginia	Yes

Utilities & Authorities	Comcast	No
Utilities & Authorities	Cox of Northern Virginia	No
Utilities & Authorities	Dominion Energy	No
Utilities & Authorities	Fairfax Water	Yes
Utilities & Authorities	Northern Virginia Electric Cooperative (NOVEC)	No
Utilities & Authorities	Washington Gas	Yes
Utilities & Authorities	Verizon	Yes
Buildings	Engineers & Surveyors Institute	Yes
Buildings	National Association of Industrial & Office Properties (NAIOP)	Yes
Buildings	Northern Virginia Building Industry Association (NVBIA)	Yes
Buildings	RUCA Capital	
Transportation	Northern Virginia Transportation Authority (NVTA)	Yes
Transportation	Washington Metropolitan Area Transit Authority (WMATA)	No
Transportation	WTS International/ American Society of Highway Engineers (ASHE)	No
Consultant Team	Cadmus	Yes

Meeting Start: 1:00 p.m.

- I. **Welcome, Introduction, and Project Recap** | 1 p.m. –1:15 p.m.
- a. **Welcome:** Matthew Meyers from the Office of Environmental and Energy Coordination (OEEC) provided opening remarks to welcome participants, introduced the project team, and overviewed the agenda topics.
 - b. **Timeline:** Matthew Meyers previewed the project’s timeline, including the following points: Resilient Fairfax is just over halfway done. The Climate Projections Report, Vulnerability & Risk Assessment, and Audit of Existing Policies, Plans, and Programs documents are either final or near final and will be released to the public over the next two months. The strategy development process has been completed and the Implementation Roadmap is the next main deliverable.
 - c. **Meeting Goals and Reminders:** Julia Chase (Cadmus) outlined the meeting objectives of assisting the IAG’s review on the draft implementation roadmaps and soliciting feedback on the comprehensiveness of the implementation actions. She also reviewed the meeting ground rules.
 - d. **Review of Preceding Reports:** Julia Chase (Cadmus) provided a brief recap of the Resilient Fairfax project, outlining key takeaways from the following three technical reports:
 - i. **Climate Projections Report:** This report outlines the future climate conditions and hazards of Fairfax County. The following are six main takeaways from the report: warmer annual and seasonal temperatures, more extremely hot days, reduction in cold days, increase in annual and seasonal precipitation, increase in sea level and coastal flooding, and increase in heavy precipitation events.
 - ii. **Vulnerability & Risk Assessment:** This report outlines the assets, systems, and populations in Fairfax County that are vulnerable to climate threats. Vulnerability was calculated as a function of exposure, sensitivity, and adaptive capacity. The county’s top vulnerabilities were identified in the risk assessment, including: 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, and coastal flooding impacts along the Potomac River. These top vulnerabilities were then evaluated for level of “risk,” which refers to likelihood of the vulnerability occurring and the severity of the consequences.
 - iii. **Audit of Existing Policies, Plans, and Programs:** This report reviews existing policies, plans, and programs in Fairfax County 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.

- e. **Strategy Goals, Development Process and Criteria:** Julia Chase (Cadmus) overviewed the four strategy pillars, to be discussed in further detail during the discussion sections. Each pillar contains a set of goals and subsequent strategies and actions. The four pillars are:
- i. Resilient Infrastructure & Buildings,
 - ii. Climate Ready Communities,
 - iii. Adaptive Environments, and
 - iv. Integrated Action Planning.

She then outlined the prioritized and non-prioritized strategies under each pillar. The Infrastructure Advisory Group received the implementation roadmaps in advance of this meeting.

II. Resilient Infrastructure and Buildings 1:15 p.m. – 1:50 p.m.

- a. **Vision for Resilient Infrastructure and Buildings:** Julia Nassar (Cadmus) described the vision of Resilient Infrastructure and Buildings, specifically: infrastructure and buildings that can withstand climate impacts, keep residents safe, reduce service disruptions, and improve countywide resilience. Resilient infrastructure and buildings:
- i. Can withstand heat, flooding, and severe storms
 - ii. Are built and prepared for future conditions
 - iii. Are energy-resilient, energy efficient, and leverage diverse & clean energy sources with backup power
 - iv. Support safe movement to jobs, home, and other points of interest
- b. **Potential Strategies for Resilient Infrastructure and Buildings:** Julia Nassar (Cadmus) then presented three sample “Resilient Infrastructure and Buildings” strategies:
- i. *County infrastructure decisions:* 1) Revise Capital Improvement Program (CIP) evaluation process to include climate resilience considerations.
 - ii. *County buildings and facility resiliency:* Improve flood resiliency of county buildings and facilities.
 - iii. *Advocacy for external infrastructure resiliency:* Energy resiliency advocacy: Identify opportunities for distributed energy, coordinate with energy utilities, and develop an Energy Assurance Plan.
- c. **Discussion on Resilient Infrastructure and Buildings:** Julia Nassar (Cadmus) facilitated a discussion for the IAG to share feedback on the Resilient Infrastructure and Buildings implementation roadmaps. The following are key takeaways from the discussion:
- i. **Discussion on Strategy 5a:** Update Capital Improvement Program process to include climate resilience considerations:

- a. One participant asked: Is the current CIP prioritization process documented and what specific criteria would be added?
 - i. Allison Homer (OEEC) responded that yes, the CIP prioritization process is documented, and there is a set of prioritization criteria. These criteria include general environmental considerations, but they are not resilience specific. Through this strategy, we would collaborate with different departments involved in the Capital Improvement Process (CIP) process to add resilience-related criteria that are effective and feasible.
 - b. One participant recommended the project team review the City of Frederick's implementation guide for incorporating resilience into their CIP. This is the first year the City is testing the implementation guide.
 - c. A participant asked whether there is intent to apply this strategy to current CIP projects and cautioned against investments obsolescence (i.e., the county should not invest in projects that cannot function twenty years down the line). They noted interest in Fairfax's initiatives to identify alignment.
 - d. Matthew Meyers (OEEC) confirmed that the county is actively thinking about applying this strategy to existing and new CIP projects.
- ii. **Discussion on Strategy 6a:** Energy Resilience Advocacy and Partnership:
 - a. One participant noted that from the FEMA perspective, we are seeing more willingness to bury utility lines, when it was previously not considered cost-effective. There are a lot of microgrid applications as well, as we are seeing disruptions to electrical grids as the basis for disaster declarations more.
 - b. A participant noted that Washington Gas looking at advocating for a pilot energy efficiency program in DC and Virginia; Maryland has been approved by the commission. Once the Virginia project is established, Washington Gas can reach out to Fairfax County.
- ii. **Discussion on Strategy 5b:** Flood resilience for county buildings and other facilities.
 - a. One participant asked whether there was a way to evaluate insurance coverage for facilities. Some locations deploy less permanent flood mitigation strategies (e.g., sandbags), so we should revisit these strategies to determine the efficacy of temporary strategies. The participant recommended making sure any facilities that do not have current funding can receive funding if there is a disaster declaration. They provided the following recommendations for code enhancements regarding resilience: wind protections (structural considerations for building but also buffers between trees and structures) and heavy snow/ice loads on roofs.
- iii. **Discussion on Strategies 6b and 6c.**
 - a. One participant flagged that wetland restoration jumped out as seeming odd in the A/E (Architecture and Engineering) category.

- i. Allison Homer (OEEC) noted it can be broadened to include procurement more broadly.
- b. One participant noted VDOT is developing a draft resilience plan that has good alignment and synergy with the actions in Fairfax County’s resilience plan. VDOT is generally looking at flooding as the most prominent issue. The plan is also looking at adaptive design criteria, hydrology, materials, and projected precipitation. There is upcoming regulatory action to look at projected rainfall. VDOT is looking at this and what it might mean for its projects (e.g., drainage infrastructure).
- c. Allison Homer (OEEC) asked whether the way strategy 6c is worded make sense to VDOT and FCDOT.
 - i. One participant noted it makes sense for VDOT and FCDOT to do this work together given so many projects are shared.
 - ii. Another participant highlighted that the text emphasizes supporting and advocating some of these measures. They noted benefits to idea sharing and working as a group. Design guidelines are something VDOT would be interested in understanding where they are going.
- d. Matthew Meyers (OEEC) noted that it is important to look at the changes that are needed to design standards. Many VDOT and FCDOT projects are focused on expanding and improving transportation capacity; we need to also look at increasing resilience of transportation infrastructure.
 - i. One participant recommended the Northern Virginia Transportation Authority is looped in on this work.
- e. A participant noted that the idea of doing more advocacy work for resilient infrastructure is good but could also be challenging because may require asking transportation staff to do non-transportation work. Resilient transportation work may conflict with other areas of advocacy within FCDOT, and it may cause challenges in moving resilience planning up the priority list.

III. **Climate Ready Communities** | 1:50 p.m. – 2:10 p.m.

- a. ***Vision for Climate Ready Communities:*** Julia Nassar (Cadmus) described the vision of Climate Ready Communities, specifically: A well-connected and prepared community is better able to respond to and recover from climate impacts. Climate Ready Communities have:
 - i. Strong social cohesion to support community response to climate hazards
 - ii. Homes and neighborhoods that are prepared for flooding, extreme heat, storms, and power outages
 - iii. Resources easily accessible to all members before, during, and after climate events

- iv. Historical inequities addressed and the needs of the most vulnerable populations prioritized
- b. **Potential Strategies for Climate Ready Communities:** Julia Nassar (Cadmus) then presented three sample strategies to the public:
 - i. *Network of Safe & Resilient Spaces:* Resilience Hubs: pursue development of a network of resilience hubs in climate-vulnerable areas of the county.
 - ii. *Adaptation Action Areas (AAAs):* develop AAAs where resilience action is prioritized.
 - iii. *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.
 - iv. *Education & guidelines:* Launch a climate resilience education and guidance program; "Resilience ambassadors" program.
 - v. *Climate Ready Development (flood):* Integrate climate hazard and resilience considerations into development regulations, processes, and retrofits. Pursue and implement a flood-risk reduction plan for the Fairfax County community.
 - vi. *Climate Ready Development (heat):* Integrate climate hazard and resilience considerations into development regulations, processes, and retrofits. Propose county incentive and assistance programs that reduce heat-related climate risk.
 - vii. *Climate Ready Development (Zoning):* Integrate climate hazard and resilience considerations into development regulations, processes, and retrofits. Pursue Zoning Ordinance Amendment to enhance resilience.
- c. **Discussion on Climate Ready Communities:** Julia Nassar (Cadmus) facilitated a discussion for the IAG to share feedback on the Climate Ready Communities implementation roadmaps. The following are key takeaways from the discussion:
 - a. One participant asked whether emergency shelters can serve as resilience hubs in communities with the most needs? One example of a community working on establishing a resilience hub in Maryland is Prince George's County located within equity emphasis areas. They have been working with utility partners to create energy resilience for hub locations.
 - i. Julia Nassar (Cadmus) clarified the distinction between emergency shelters and resilience hubs, emphasizing the latter is more focused on community participation and needs.
 - b. One participant offered that microgrids for heating will offset required supply and provide more clean energy. Their organization has one microgrid effort in Prince William County and about 50 more sites in D.C. and Maryland that they are interested in piloting as well.
 - c. One participant recommended examining where flooding has occurred outside of floodplains and consider advocating for elevation. Insurance premiums are less

expensive in these areas because they are located outside a floodplain, but few property owners actually have a flood insurance policy.

IV. **Adaptive Environments** 2:10 p.m. – 2:15 p.m.

- a. ***Vision for Adaptive Environments:*** Julia Chase (Cadmus) described the vision of Adaptive Environments, specifically: natural environments that are protected and restored to improve overall county resilience to climate impacts. Adaptive Environments include:
 - i. Green infrastructure that enhances neighborhood resilience to heat and flooding
 - ii. Ecosystems that are able to thrive, provide ecosystem services and natural resilience, and be accessible to the public
 - iii. Environmentally sensitive areas that are protected and conserved
 - iv. Future conditions are considered in natural resources planning
- b. ***Potential Strategies for Adaptive Environments:*** Julia Chase (Cadmus) then presented the following sample strategies to the public:
 - i. ***Protection of Existing Natural Resources that Enhance Resilience:*** Develop a consolidated natural resources management plan.
 - ii. ***Protection of Existing Natural Resources that Enhance Resilience:*** Pursue 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.
 - iii. ***Restoration of Damaged areas with Nature-based and Natural Solutions:*** Pursue green infrastructure projects that provide climate resilience benefits.
- c. ***Discussion on Adaptive Environments:*** Julia Chase (Cadmus) facilitated a discussion for the IAG to share feedback on the Adaptive Environments implementation roadmaps. No comments were provided.

V. **Integrated Action Planning** | 2:15 p.m. – 2:25 p.m.

- a. ***Vision for Integrated Action Planning:*** Julia Nassar (Cadmus) described the vision of Integrated Action Planning: integration of climate in planning and coordination, ensuring resiliency is at the forefront of county initiatives. A county with integrated action planning is:
 - i. Monitoring progress, supporting transparency, and informing implementation
 - ii. Integrating climate change preparedness across county operations
 - iii. Advocating for resilience action beyond county control (e.g., public transit, building codes, energy resilience)
 - iv. Positioning the county to be competitive for state and federal funding opportunities

- v. Building new funding streams and providing dedicated funding source to support the county's climate goals
- b. **Potential Strategies for Integrated Action Planning:** Julia Nassar (Cadmus) then presented three sample strategies to the public:
 - i. **Funding Plan:** 1) 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. 2) 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.
 - ii. **Data Collection: 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.
 - iii. **Agency Collaboration & Coordination:** Establish a system for continued climate resilience collaboration between county departments, regional entities, and levels of government.
- c. **Discussion on Integrated Action Planning:** Julia Nassar (Cadmus) facilitated a discussion for the IAG to share feedback on the Integrated Action Planning implementation roadmaps. The following are key takeaways from the discussion:
 - i. One participant recommended considering prioritizing projects that can meet multiple goals at once.
 - ii. One participant asked whether the county climate fund would cover both Resilient Fairfax and CECAP?
 - a. Julia Chase (Cadmus): The strategy as listed is to provide a dedicated funding source for climate resilience projects. Revisions could be made to include mitigation as well.

VI. **Next Steps** | 2:25 p.m. – 2:30 p.m.

- a. Julia Chase (Cadmus) and Matthew Meyers (OEEC) concluded the meeting by outlining the project team's next steps (including upcoming public release of the Climate Projections Report, Vulnerability and Risk Assessment, and Audit of Existing Policies, Plans, and Programs), and opportunities to remain engaged throughout the process.
 - i. The public can [follow the Resilient Fairfax process on this website](#).
 - ii. The [Climate Projections Report can be found on the OEEC website here](#)
 - iii. The Vulnerability and Risk Assessment and Audit of Existing Policies, Plans, and Programs will be likewise posted on the website.
 - iv. The public comment period on the compiled plan is currently scheduled for May-June 2022.



- v. Anyone can reach the Resilient Fairfax team at any time by emailing ResilientFairfax@fairfaxcounty.gov.

Meeting Adjourned: 2:30 p.m.