



Resilient Fairfax

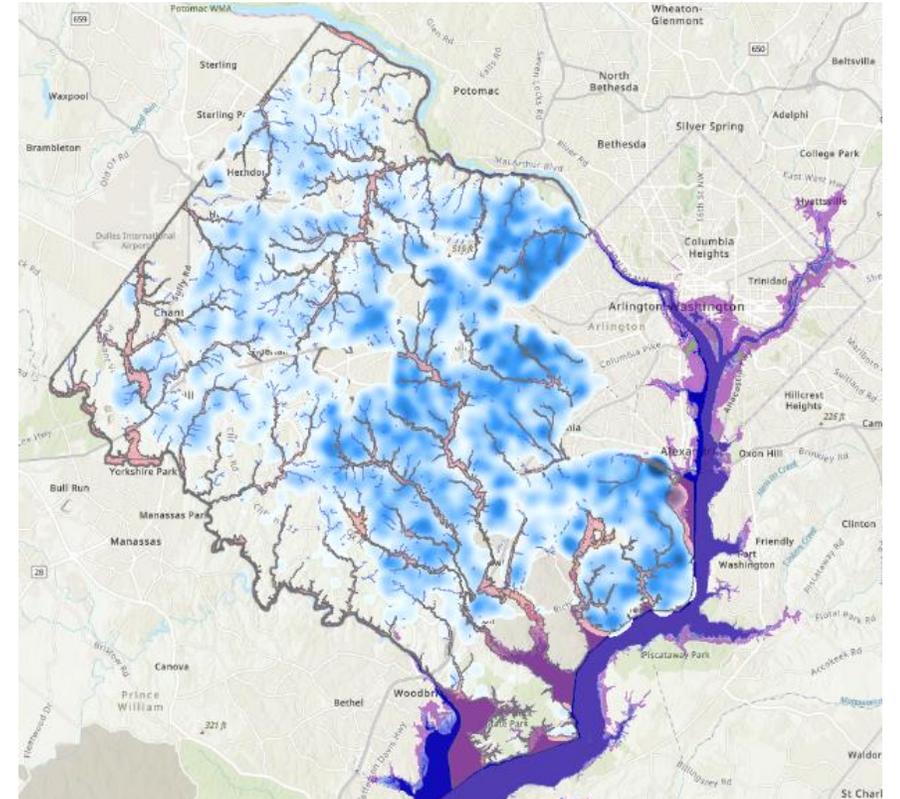
Update to the Board of Supervisors Environmental Committee

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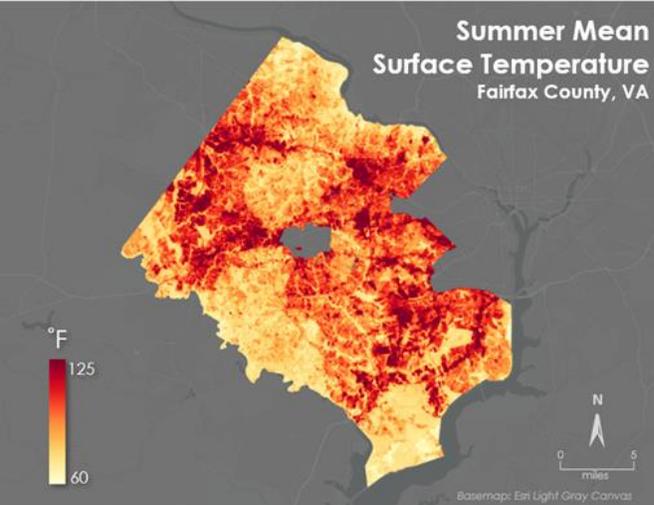
December 14, 2021

Resilient Fairfax: Background

- **Board of Supervisors direction**
 - [Environmental Vision](#)
 - [Fairfax Green Initiatives Board Matter](#)
- **June 16, 2020:** [Climate adaptation and resilience plan proposal](#) endorsed by BOSEC
- **September 29, 2020:** Funds approved in FY2020 Carryover budget
- **February 2021:** Consulting support services task order approved with Cadmus, WSP and Nspiregreen
- **June 15, 2021:** [First project update to BOSEC](#)



Resilient Fairfax: Overview



1. What climate conditions and hazards do we face now? In the future?

- Climate Projections Report
- Temperatures, precipitation, flooding, storm severity, drought

2. Where are we vulnerable?

- Climate Vulnerability and Risk Assessment
- Homes, businesses, neighborhoods, infrastructure, services & operations, people in path of climate effects

3. How are we currently doing in terms of resilience?

- Audit of Existing Policies, Plans, and Programs
- Which programs are working well? Where do we have gaps?

4. Which strategies will strengthen our resilience?

- Adaptation and Resilience Strategies
- Physical upgrades, policies, design standards, services, staffing, procedural changes, agency coordination, etc.

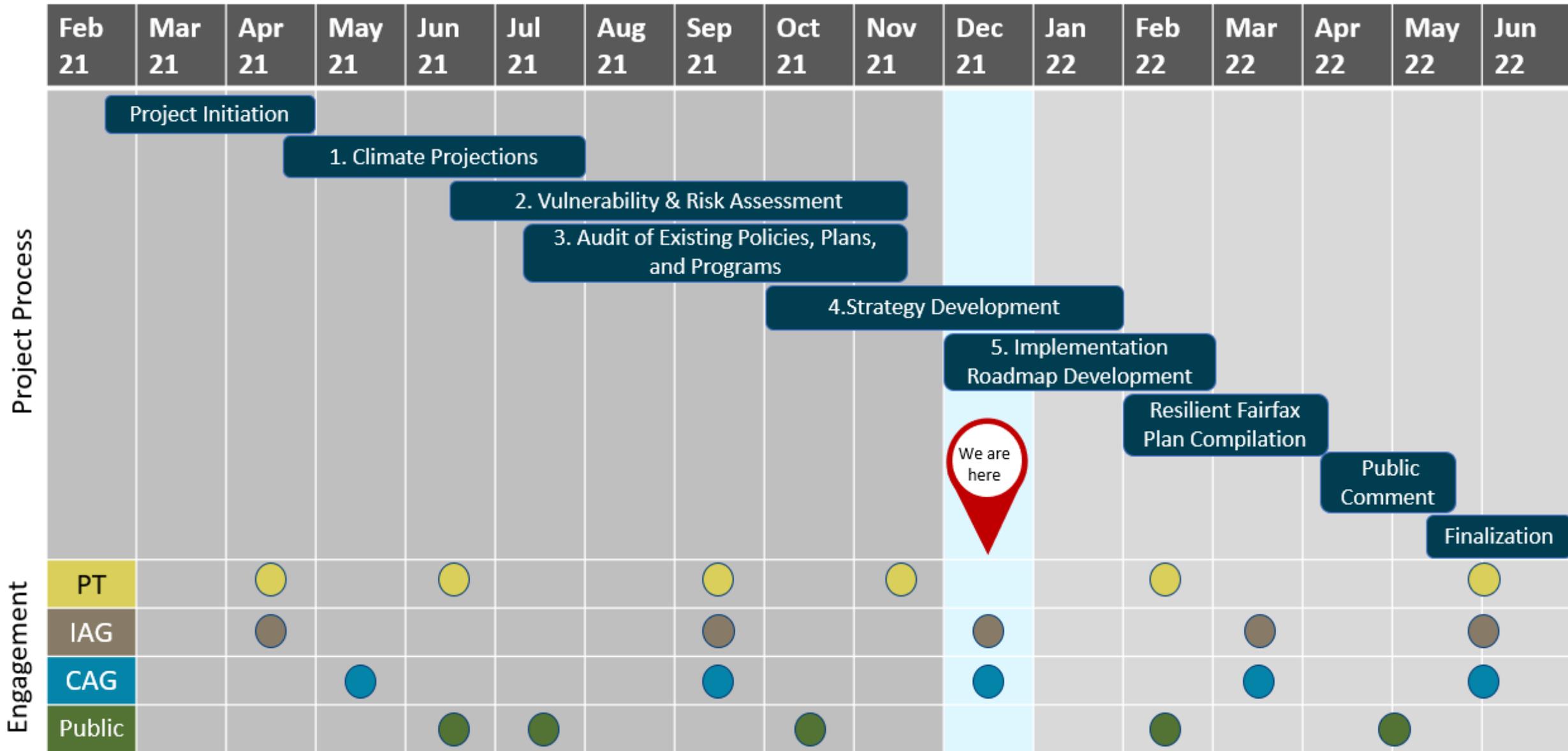
5. What is the path to implementation?

- Implementation Roadmap
- Funding sources, staffing, timelines

Resilient Fairfax Key Players

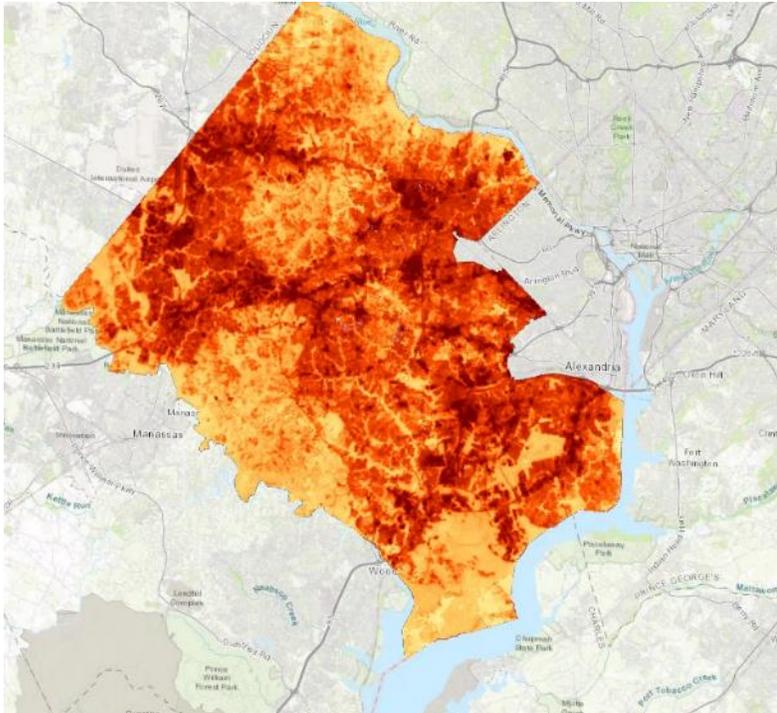
Project Managers	Office of Environmental and Energy Coordination (OEEC) Staff	
Consultants	Cadmus, WSP, NspireGreen	
Planning Team	County departments and agencies	
Infrastructure Advisory Group (IAG)	Infrastructure managers and utilities at the local, regional, state, and federal levels	
Community Advisory Group (CAG)	Residents of each Supervisor District, advocates, non-profits, community groups	

Project Timeline



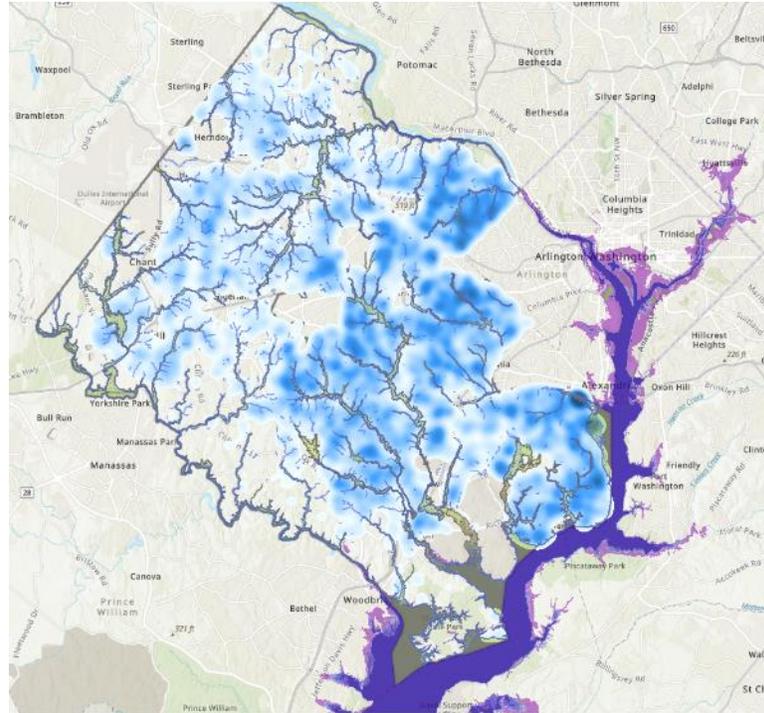
Climate Projections

Warmer



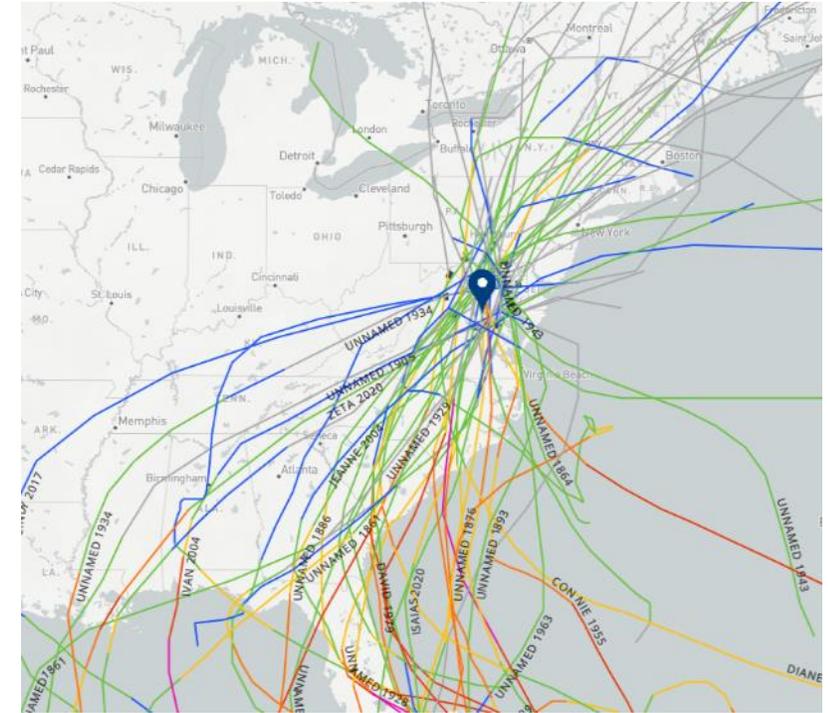
- **Annual temperature rise 4.4 – 8°F** by 2085
- **Extreme heat days** projected to increase from 7 to 70 days per year by 2085
- **Urban Heat Island Effect** on top of temperature increase

Wetter



- **Annual and seasonal precipitation** increase
- **Precipitation intensity** increase across all return periods
- **Sea level rise** of 3 feet --> Potomac River

Weirder

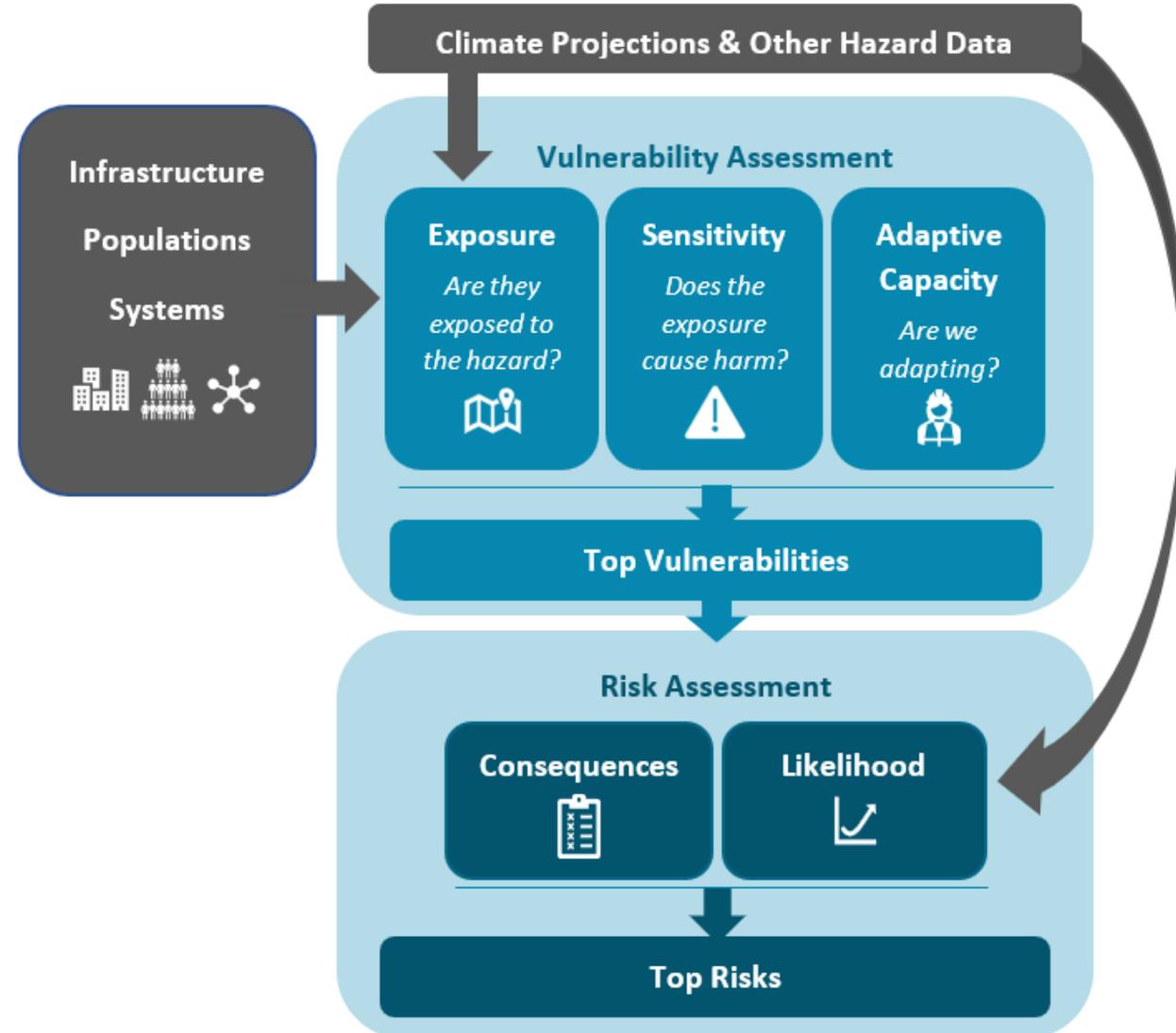


- **Severe storm strength** increase, including tropical storms, derechos, hurricanes, nor'easters
- **Unseasonably warm/cool** temperatures
- **Periods of no precipitation** followed by sudden, heavy precipitation

2. Vulnerability and Risk Assessment

“Given these projections, where are we vulnerable?”

- 27 sub-sectors analyzed for 6 hazards
- **Vulnerability =**
 - *Exposure*
 - *Sensitivity*
 - *Adaptive Capacity*
- **Risk =**
 - *Likelihood*
 - *Severity of Consequence*



Top Vulnerabilities

	<p>1. Heavy Precipitation causing inland flooding of communities (186)</p>	 <p>People Roads Transit <u>Bldgs</u> SWM WWM EMS Parks/Rec Waters ESAs Trees Historic Farms</p>
	<p>2. Combined hazard stress on natural systems (186)</p>	 <p>Waters ESAs Trees Farms Parks/Rec</p>
	<p>3. Storms & Wind causing damage & safety risks (177)</p>	 <p>People EMS HCS Roads Trees Bike/Ped Transit <u>Bldgs</u> Parks/Rec Historic</p>
	<p>4. Storms & Wind causing power outage impacts (159)</p>	 <p>Electric People EMS HCS Water Telecomm Transit <u>Bldgs</u> Parks & Rec</p>
	<p>5. Extreme heat causing health impacts (117)</p>	 <p>People EMS HCS Transit Bike/Ped Parks/Rec WM</p>
	<p>6. Coastal flooding impacts (72)</p>	 <p>People Buildings Waters ESAs</p>
	<p>7. Extreme heat causing damage to built systems (54)</p>	 <p>Electric Roads Transit Bike/ Ped</p>

3. Audit of Existing Policies, Plans, and Programs

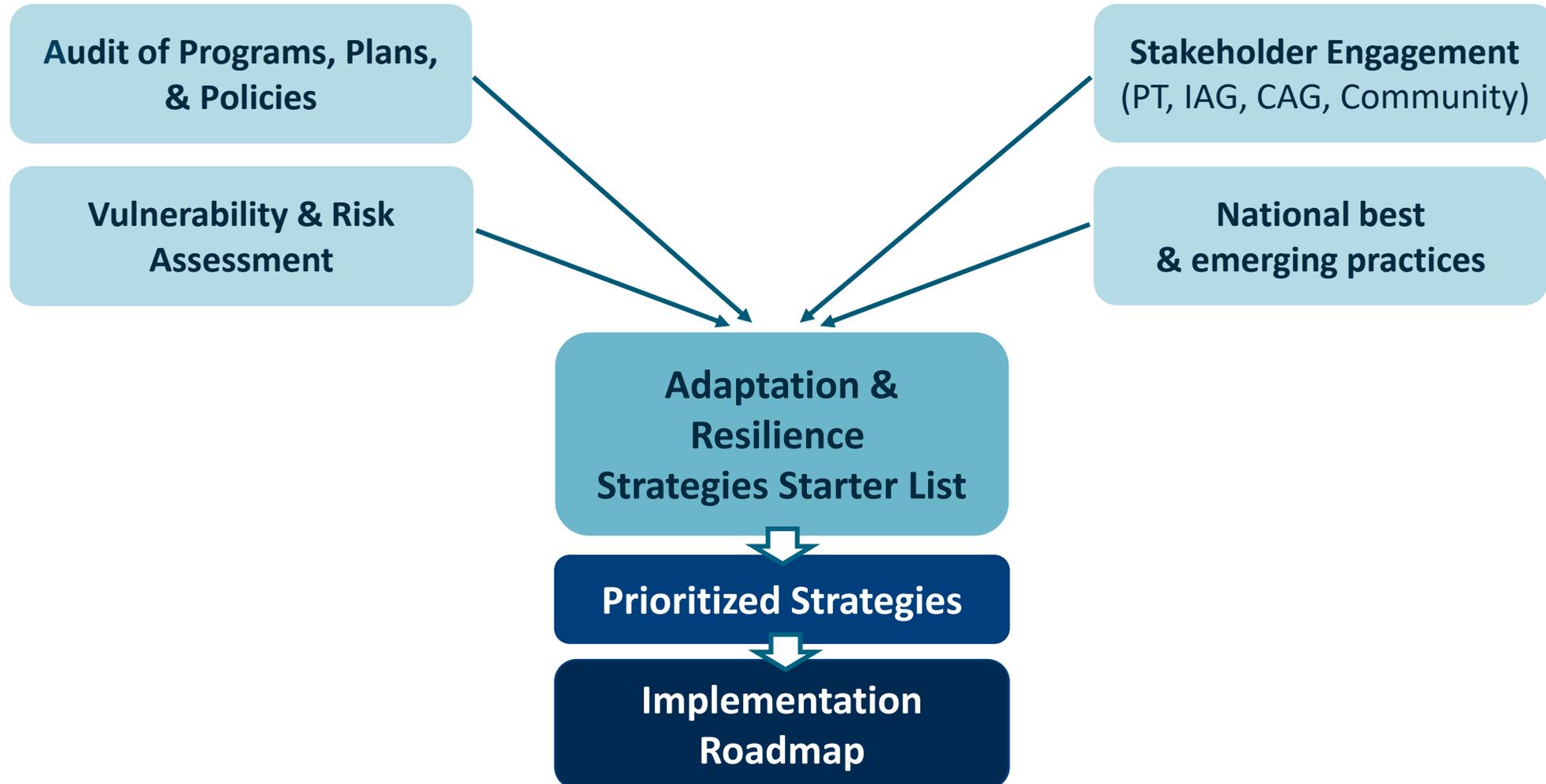
“How are we currently doing in terms of climate resilience?”

- ✓ 100+ Policies, Plans, and Programs reviewed by Consultants, Planning Team, IAG, CAG
- ✓ 50 Questions
- ✓ 8 categories

	Category	Summary	Preliminary Question Scores
	Governance	Strong	3.4 Average: 3.8, 4, 4.2, 4.1, 2.9, 3.8, 1.9, 3.0
	Water Infrastructure	Strong	3.3 Average: 3.0, 4.0, 3.0, 4.0, 4.0, 2.0, 3.0
	Natural & Cultural Resources	Strong	3.3 Average: 2.0, 4.0, 3.0, 2.0, 4.0, 3.3, 4.0, 4.0, 3.7, 2.5
	Cross-Cutting	Strong	3.1 Average: 3.3, 3.8, 2.6, 3.8, 2.0, 2.3, 3.8
	Energy Infrastructure	Neutral	2.7 Average: 2.0, 2.0, 4.1, 4.6, 2, 2, 2, 2.5
	Population Services	Neutral	2.6 Average: 2.7, 2.2, 2.4, 3.4,
	Buildings & Sites	Neutral	2.3 Average: 2.0, 2.0, 3.0
	Transportation Infrastructure	Neutral	2.1 Average: 2.5, 2.0, 2.0

4. Strategies for Climate Adaptation and Resilience

“What should we do?”



Example Implementation Strategies and Actions

Heavy Precipitation causing inland flooding of communities

- **Existing Policies and Regulations**
 - Floodplain Management
 - Chesapeake Bay Preservation Ordinance
 - Stormwater Management Ordinance
- **Design Standards**
 - Older neighborhoods not built to today's standards
 - Residential infill development vs. new subdivisions
 - VDOT road and bridge standards
- **Capital Improvement Projects**
- **Residents and Businesses Actions**
- **Partnerships**
- **Funding**



Resilient Fairfax Next Steps

Next Steps

- **Ongoing:** Development of Strategies and Implementation Roadmap
- **April 2022:** Resilient Fairfax Plan compiled draft released for Public Comment
- **July 2022:** Final Draft Resilient Fairfax Plan presented to BOSEC
- **Fall 2022:** Present Final Resilient Fairfax Plan to Board of Supervisors

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