



# THE RAFT

Resilience Adaptation Feasibility Tool

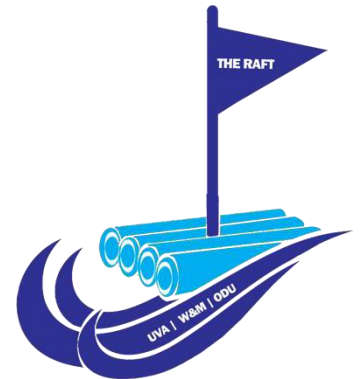
## Upper Mattaponi Indian Tribe

Scorecard  
Report

March 2023

### The RAFT Goal

To help Virginia's localities and Tribes improve resilience to hazards while remaining culturally, economically, and socially viable by providing an easy and accessible way to define and measure the resilience of land holdings and citizens.



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For more information, visit The RAFT website: [raft.ien.virginia.edu](http://raft.ien.virginia.edu)

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# Background

## What is The RAFT?

- “Full-service tool” and collaborative, community-driven process designed to assist localities in increasing their resilience to climate change influenced hazards including erosion from flooding and storms, as well as extreme heat. This set of environmental hazards was selected to align with resilience priorities of the Commonwealth of Virginia including those consistent with the Chesapeake Bay Program.
- Conceived and developed by an academic interdisciplinary collaborative called the “Core Team”
  - Institute for Engagement & Negotiation (IEN) at the University of Virginia
  - Virginia Coastal Policy Center (VCPC) at William & Mary Law School
  - Old Dominion University (ODU)

## The RAFT has three key components:

1. The RAFT **Scorecard**, completed with the Core Team, provides a comprehensive assessment of the Tribe’s resilience to three different hazards, including flooding, storms, and extreme heat. All these hazards must be included to receive a point in associated scorecard category because of the influences of climate change upon and potential nature-based solutions to them. Resilience is assessed for Tribal grounds. While land utilization as well as citizen distribution varies, resilience measures will be assessed for their capacity to address the needs of affiliated individuals from Tribal grounds. Listening sessions including focus groups, interviews, and surveys complement this policy-based assessment.
2. A **Resilience Action Workshop** where participants review the assessment findings, identify achievable action items and create a one-year Resilience Action Checklist.
3. **Implementation** in which the Core Team works with an Implementation Team to achieve items identified on the Resilience Action Checklist.

## How does The RAFT help?

1. Open a community conversation about community resilience, including gaps, and needs.
2. Support the community in identifying priority actions for the largest impact in increasing resilience.
3. Improve communication and coordination within the community and with regional, state, and federal agencies.
4. Help the community become better positioned to find and apply for relevant funding opportunities.
5. Earn a better Community Rating System (CRS) score, which saves residents money on their flood insurance premiums.

### What is resilience?

A resilient community is one that is able to anticipate, adapt, endure, and thrive in the face of change, uncertainty, and adversity.

The RAFT focuses on community resilience, improving the ability of a community to bounce back from hazard events such as hurricanes and extreme heat and deal with chronic issues such as erosion.

The RAFT takes a comprehensive approach by including environmental, cultural, economic, and social resilience. All these are vital for a community to thrive.

To build resilience, Tribes need capacities in areas of emergency management, infrastructure, planning, policy, and community well-being.

### The Resilience Cycle



Adapted from: NOAA Coastal Community Resilience Indicators and Rating Systems, 2015.

## Total Score

Category	Score Received	Possible Score
<b>1) POLICY, LEADERSHIP, AND COLLABORATION</b> <i>Measures policy and legislation in place for resilience and includes coordination and collaboration between various levels of government, and how accessible and open government data is to citizens and invited partners.</i>	10	20
<b>2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT</b> <i>Examines how well a Tribe has conducted risk assessments to prepare for flood, storm, and extreme heat hazards, identified vulnerable populations and their needs during or after a hazard, and developed plans for disaster preparedness and response, including a Hazard Mitigation Plan.</i>	15	20
<b>3) INFRASTRUCTURE RESILIENCE</b> <i>Assesses how well the Tribe has identified methods and plans for flood, stormwater, and heat control and protecting critical infrastructure including using natural and nature-based features (NNBF).</i>	9	30
<b>4) PLANNING FOR RESILIENCE</b> <i>Assesses the comprehensive plan and zoning code for resilience, how a tribe is using incentives to promote resilience in building and development, how policies protect ecosystems, how they use green infrastructure to improve resilience, and how much resilience has been incorporated into planning.</i>	4	20
<b>5) COMMUNITY ENGAGEMENT, HEALTH, AND WELL BEING</b> <i>Assesses how the Tribal government and staff engages with residents in planning for flood, storm, or extreme heat hazards including social equity considerations and examines the Tribe's attention to issues of health and wellness during and after hazards.</i>	16	20
<b>Total Score:</b>	<b>54</b>	<b>110</b>

### Interpreting the Score

**Low Resilience: Less than 50%**- There are plenty of opportunities for improvement. The Tribe should decide whether it will be more beneficial to achieve the least difficult improvements first, or to tackle more challenging problems. The key is to decide which of these approaches makes the most sense, as the Tribe develops their Resilience Action Checklist.


**Moderate Resilience: 50% - 74%** – The Tribe is actively involved in coastal resilience planning and has achieved some successes. There are still opportunities for strengthening resilience. The Resilience Action Checklist should focus on weak categories and anticipate moderate to difficult improvements.

**High Resilience: 75% or More**- The Tribe is well prepared! There may still be room for resilience and the Resilience Action Checklist may focus on ways to improve resilience and further engage residents. Examples of policies, plans, and activities may assist other Tribes in the region and beyond.

If you see **CRS** next to an item, action to improve that metric can result in CRS credit.

If you see \$\$\$ next to an item, action to improve that metric supports economic resilience.

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If you see  next to an item, action to improve that metric supports environmental resilience.

If you see  next to an item, action to improve that metric supports engagement with vulnerable populations.

# 1) LEADERSHIP, POLICY, AND COLLABORATION

## 1.1 LEADERSHIP AND PLANNING FOR RESILIENCE:

2 / 4 Points



Collaboration among Tribal government decision makers, officials, departments, academia, and nonprofits is important in planning for resilience. Effective collaboration requires identifying leaders and organizations, establishing the roles of such leaders and organizations, and providing leadership training and educational resources.

Points	Scoring Metric
1	a. Leadership roles are identified for staff and/or elected officials important for planning for resilience to extreme heat, flood, and storm hazards. If staff is limited or nonexistent, the Tribe has tasked someone with handling resilience efforts for the community.
0	b. Training and education events are held for elected officials specifically on extreme heat, flood, and storm hazard resilience issues.
1	c. Training and education events are held for staff, or if staff is limited or nonexistent, training of whomever has been tasked with handling extreme heat, flood, and storm hazard resilience efforts for the community.
0	d. Staff and/or elected officials, or whomever has been tasked with handling extreme heat, flood, and storm hazard resilience efforts for the community, are meeting at least once per quarter to coordinate planning specifically on these resilience issues.

## 1.2 LEADERSHIP AND RESPONDING TO EMERGENCY:

2 / 4 Points


Collaboration among officials and relevant stakeholders is equally important in responding to a hazard. An organized, coordinated response to a hazard requires identifying stakeholders, establishing roles, creating plans, and publicizing information.

Points		Scoring Metric
0		a. Tribe has identified stakeholders who will require emergency response for extreme heat, flood, and storm hazards including socio-economically vulnerable populations, such as the elderly and medically fragile.
1		b. Tribe has established internal emergency response roles (e.g., standing committees, staff titles) for extreme heat, flood, and storm hazards, and these staff and partners participate in at least one training each year.
1		c. Tribe collaborates on resilience planning with the stakeholders who will need emergency response services for extreme heat, flood, and storm hazards and has provided citizens with opportunity to give input.
0		d. Tribe has a means of communicating these plans to citizens during extreme heat, flood, and storm events.



### 1.3 LOCAL COLLABORATION WITH STATE AGENCIES AND REGIONAL PDCs: 4 / 4 Points

Resilience issues go beyond political boundaries; therefore, tribes benefit from regional collaboration. Regular communication between local, multi-jurisdictional, state, and federal officials encourages sharing of information and ideas. Collaboration should include working with agencies that serve socio-economically vulnerable communities.

Points		Scoring Metric
1		a. Staff and/or officials engage with regional, state, and/or federal agencies on extreme heat, flood, and storm hazard resilience-oriented issues.
1		b. Participation in local and regional extreme heat, flood, and storm hazard resilience-oriented committees and initiatives to serve socio-economically vulnerable populations.
1		c. Elected officials participate on relevant local and regional extreme heat, flood, and storm hazard resilience-oriented commissions.
1	\$\$\$	d. Staff work to identify funding opportunities and priorities to address extreme heat, flood, and storm hazard resilience issues at the regional and state level.

## 1.4 ADAPTIVE GROUNDS MANAGEMENT:

2/ 4 Points

Adaptive management involves updating ordinances and plans to incorporate resilience based on new findings and emerging strategies. Use of data, scientific analyses, and new information is important to inform local policies. Adaptive management means incorporating lessons learned from research that informs best methods for addressing the needs of socio-economically vulnerable populations.

Points	Scoring Metric
0	a. Tribe incorporated new heat, flood, and storm data, scientific analyses, and approaches to resilience, within the last five years into Floodplain Management.
1	b. Tribe incorporated new heat, flood, and storm data, scientific analyses, and approaches to resilience, within the last five years into Zoning.
0	c. Tribe incorporated new heat, flood, and storm data, scientific analyses, and approaches to resilience, within the last five years into Site and Subdivision planning.
1	d. Tribe incorporated new heat, flood, and storm data, scientific analyses, and approaches to resilience, within the last five years into Comprehensive Plan.

**1.5 The NFIP's COMMUNITY RATING SYSTEM:****0 / 4 Points**

Communities wishing to go above and beyond the minimums of the National Flood Insurance Program can choose to participate in the Community Rating System (CRS). Participating communities implement higher standards of floodplain management, and in return, residents are eligible for flood insurance premium reductions. Localities can do many things to improve their scores. For more information, see FEMA's CRS website or the Wetlands Watch website on the subject.

Points		Scoring Metric
0	CRS	a. Grounds have achieved a CRS Score of 9 or higher.
0	CRS	b. Grounds have achieved a CRS Score of 8.
0	CRS	c. Grounds have achieved a CRS Score of 7.
0	CRS	d. Grounds have achieved a CRS Score of 6 or lower.

**TOTAL SCORE FOR SECTION 1:****10 / 20 POINTS**

## 2) RISK ASSESSMENT AND EMERGENCY MANAGEMENT

### 2.1 GROUNDS EXPOSURE AND VULNERABILITY ASSESSMENT:

**0/ 4 Points**





Tribes should conduct and use an assessment of their exposure and vulnerability to flood, storm, and extreme heat hazards in developing policies and programs. Tribes should be knowledgeable of their risks, raise awareness in the community about vulnerable areas, help target action to assist the most threatened areas and reduce possible damage, and save costs by being preemptive not reactive.

Points	CRS	Scoring Metric
0	CRS	a. Exposure and/or vulnerability assessments for extreme heat, flood, and storms hazards are completed, mapped and updated within the last 5-7 years, available at the local level, and (as evidence of being used) referenced in Tribal policy making.
0	CRS	b. Sources of flooding (for coastal, inland, and/or flash flood events) and distribution of heat are identified and updated within last 5 years as applicable.
0	CRS	c. Flooding for different return period events and number of extreme heat days are identified, projected, and mapped.
0	\$\$\$ CRS	d. Additional vulnerabilities (see above), including cultural, historic and economic assets, are identified and updated within the last 5 years.

## 2.2 RISK ASSESSMENT FOR VULNERABLE POPULATIONS:

4 / 4 Points


Tribes should conduct risk assessments of their socio-economically vulnerable populations. These populations include those in areas of high poverty, elderly, caregivers, veterans, homeless, transient or nomadic communities, children and youth, physically or mentally disabled people, medically fragile people and non-English speakers. Because these populations may not have resources to change their vulnerability, it is vital for tribal government to identify these populations, ways to reduce their risk, and create plans for assistance during and after hazard events. Tribes need to conduct outreach to their vulnerable populations.

Points		Scoring Metric
1	 CRS	a. Tribe has identified vulnerable populations that are subject to flood, storm, and extreme heat hazards.
1		b. Tribe has engaged vulnerable populations and provided them with meaningful information (e.g., accessible, in their own language, relevant to their circumstances) relating to their vulnerability to flood, storm, and extreme heat hazards.
1		c. Tribe has worked with vulnerable populations to increase their emergency preparedness and evacuation plans so they know their risk and know what steps should be taken during and after an event requiring evacuation or sheltering, including seeking refuge in cooling centers.
1		d. Tribe partners with organizations that provide assistance to vulnerable populations before, during and after hazard events, including food banks or pantries with refrigeration units and backup generators.

## 2.3 BUSINESS AND ECONOMIC RISK ASSESSMENT:

3/ 4 Points

Tribes need to identify cultural, business and economic vulnerabilities to flood, storm, and extreme heat hazards. Assets are differentially affected by these hazards and attention should be paid to making sure that assets that serve socio-economically vulnerable populations are considered. Including cultural, business, and economic vulnerability in a risk assessment and emergency management is important for resilience and recovery after a hazard event.

Points		Scoring Metric
1	\$\$\$	a. Tribe has included the business sector in its assessment and mapping of extreme heat, flood, and storm hazard vulnerability.
1	\$\$\$	b. Tribe has engaged council and finance staff in hazards mitigation and/or resilience planning.
0	\$\$\$ 	c. Tribe has programs for cultural asset management particularly assets that serve socio-economically vulnerable populations, to encourage each asset to be protected in case of an emergency and plan for preservation.
1	\$\$\$	d. Tribal emergency management communicates with business sector regarding business' operations, cultural preservation, and roles during hazard events or evacuation.

## 2.4 HAZARD MITIGATION:


4/ 4 Points

The Hazard Mitigation Plan (HMP) is required by state code as a condition of emergency assistance. It is important for regional HMPs to specifically address flood, storm, and extreme heat hazards by identifying what resources and areas are at risk, to enable actions to reduce future risks. Furthermore, having an HMP is essential to be eligible for certain grants and funding related to hazards.

Points	Scoring Metric
1	a. The HMP specifically addresses extreme heat, flood, and storm hazard resilience.
1	b. Tribe is engaging in regional coordination for Hazard Mitigation through a regional plan.
1	c. The HMP details how the Tribe collaborates with Virginia Department of Emergency Management and Department of Conservation and Recreation Floodplain Management, the Federal Emergency Management Agency State Hazard Mitigation Officer and National Weather Service.
1	d. The HMP is approved by FEMA, was developed with meaningful public engagement with socio-economically vulnerable communities and is formally adopted by Tribal governing body.

**2.5 RESIDENT EMERGENCY PREPAREDNESS:****4/ 4 Points**

Well-organized emergency preparedness plans save lives and property and help ensure that tribes can act in sufficient time. They contribute to faster and more efficient post-hazard recovery. Preparedness for vulnerable populations includes ensuring that residents have the opportunity to learn water and heat safety including swimming skills. Communities should consider participating in regional, national, or state-wide outreach events such as Hurricane Preparedness Week.

Points		Scoring Metric
1	CRS	a. Tribe has a current emergency preparedness plan, updated within the last five years, which identifies emergency preparedness risks and needs, including knowledge of water safety, heat safety and heat related illness management.
1	CRS	b. Tribe conducts citizen outreach at least once a year to inform residents about emergency preparedness.
1	CRS	c. Tribe engages resident groups, including schools, hospitals, and other groups, in testing preparedness through emergency drills, disaster simulations, and planning workshops.
1	CRS 	d. Tribe has implemented early warning signals/systems/emergency warning tools for its residents, particularly those most vulnerable.

**TOTAL SCORE FOR SECTION 2:****15/ 20 POINTS**






### 3) INFRASTRUCTURE RESILIENCE

#### 3.1 STORMWATER INFRASTRUCTURE:

0/ 4 Points

Stormwater management is regulated by state law, which requires localities either create and operate a stormwater management program or request the state to operate its stormwater management program. Local ordinances must comply with the Virginia Stormwater Management Act and regulations, as well as the Virginia Erosion and Sediment Control Law. Additional stormwater management and flood risks are typically handled at the Tribal government level through environmental regulation, site plan approval, and subdivision approval. Tribes that go beyond the minimum state requirements are better able to manage stormwater and increase their resilience to storm hazards. Stormwater infrastructure may include use of bioswales, dry ponds, retention basins, rainwater management systems, low impact development, rainwater collection and management systems, green infrastructure, rooftop gardens, and green and open spaces.

Points		Scoring Metric
0	\$\$\$ 	a. Tribe offers at least one official incentive for private property activities that manage stormwater.
0		b. Tribe funds stormwater management projects through stormwater utility fees, user fees, grants, or other creative funding mechanisms.
0		c. Tribe implements one or more stormwater BMPs on public property for educational demonstration, as shown by signage, tours, or other information.
0		d. Tribal stormwater policy goes above and beyond the minimum state requirements.

### 3.2 CRITICAL TRANSPORTATION INFRASTRUCTURE:

1/ 4 Points

An evaluation of critical transportation infrastructure allows a Tribe to understand its grounds' capacity and preparedness for flood, storm, and extreme heat hazards and identify their transportation needs and priorities.

Points	Scoring Metric
1	a. Tribe has identified critical transportation infrastructure, assessed its vulnerability within last 5 years.
0	b. Tribe has developed a protection plan and a contingency plan for critical transportation infrastructure within last 5 years.
0	c. Tribe has a plan available and has informed citizens which critical transportation infrastructure to utilize in the case of evacuation or extreme heat hazard.
0	d. Tribe has informed citizens about which critical transportation infrastructure are vulnerable to storm, flood and extreme heat hazards.

### 3.3 WATER SUPPLY AND WASTEWATER MANAGEMENT SERVICES:

0/ 4 Points


Communication and coordination about a Tribe's water and wastewater enables a coordinated, cohesive, and synchronized response to a hazard.

Points	Scoring Metric
0	a. Tribe conducts an assessment of its drinking water supply and wastewater management, both public sources and private wells, to identify vulnerabilities to storm hazards.
0	b. Tribal water supply plan addresses flooding and hazard events to assure safe drinking water supply and water conservation.
0	c. Tribe conducts a citizen education program on safe drinking water to assure post-event public health and safety.
0	d. Tribe communicates with municipal water and wastewater utility, to manage ongoing challenges to safe water, including during and after a storm, Additionally, the Tribe has established methods of communication with private well and water system operators, to ensure all are informed about how they can increase their water system resiliency.

### 3.4 ELECTRICITY INFRASTRUCTURE:

2/ 4 Points

Power failure may be caused by flood, storm, and extreme heat hazards. Power outages pose health risks, particularly for the elderly. Electricity is generated by private providers within the Commonwealth. Companies are subject to voluntary and mandatory energy production standards and regulations set by the state or federal legislature and managed by various state level agencies. Companies participate in partnerships within their sector for power restoration following a hazard. Additional electricity production matters are typically handled at the local level through fire safety inspection and site plan approval. Tribes that go beyond the minimum Commonwealth requirements are better able to manage electricity and increase their resilience to flood, storm, and extreme heat hazards. Back-up electricity infrastructure may include use of generators, on-site fuel storage, cooling centers, and spray parks.

Points		Scoring Metric
0	\$\$\$	a. Tribe’s fire safety plan has been updated within the last 5 years and addresses flood, storm, and extreme heat hazard effects upon electrical infrastructure.
1		b. Tribe has developed a plan to protect critical electrical infrastructure and address gaps in back-up power provision within the last 5 years.
0		c. Tribe conducts a citizen education program on back-up power resources and electrical safety to assure post-event public health and safety.
1		d. Tribe communicates with electricity utility, to manage ongoing challenges to electricity provision, including during and after a heat wave, flood, or storm event. Additionally, the Tribe has established methods of communication with consumers, to ensure all are informed about how they can increase their electrical system resiliency and avoid or respond to power outages.

### 3.5 CRITICAL INFRASTRUCTURE FOR EMERGENCY SERVICES:

4 / 4 Points

An evaluation of critical infrastructure for emergency services including shelters, cooling centers, spray parks, emergency facilities, medical, electrical, and other essential services allows a Tribe to understand its capacity and preparedness for hazards. Critical infrastructure ensures that socio-economically vulnerable populations, not just those who can afford it, will have access to quality drinking water, electricity, food, and shelter.

Points	Scoring Metric
1	a. Tribe identifies critical infrastructure for emergency services and assessed its vulnerability within last 5 years.
1	b. Tribe has a plan to protect critical infrastructure from storms, floods, and extreme heat within last 5 years.
1	c. Tribe informs citizens which critical emergency infrastructure they should use during flood, storm, and extreme heat hazards.
1	d. Tribe has a contingency plan for continuing services. This plan has been developed or updated in last 5 years.

### 3.6 FLOOD CONTROL INFRASTRUCTURE:

1/ 4 Points





Flooding may be caused by seasonal melt, precipitation patterns, storms, waterway blockages, tides, and impoundment failure. Flood control structures, including levees and dams, of a certain size are regulated by the state through permitting and reporting requirements. These and other built flood control structures require maintenance to maintain their designed capacity and safety. Tribes engaged in awareness raising and planning are better able to manage flood hazards.

Points		Scoring Metric
0	\$\$\$	a. Tribe has identified flood control and dam safety infrastructure vulnerabilities and developed a contingency plan within last 5 years.
0		b. Tribe has developed plans to enhance resilience by identifying synergies between flood control structures, including levees and dams if applicable, and other options, such as nature-based solutions.
0		c. Tribe informs citizens which flood control structures, including dams, are vulnerable to flooding.
1		d. Tribe communicates with state agencies, to manage ongoing challenges to structural safety. Alternatively, or additionally, the Tribe has established methods of communication with structure and adjacent landowners, to ensure all are informed about how they can increase their structural resiliency and avoid or respond to floods.

### 3.7 NATURAL AND NATURE-BASED FEATURES:

1/ 4 Points

Natural and nature-based features (NNBF) are features that define natural landscapes and are either naturally occurring or have been engineered to mimic natural conditions. Examples include beaches and dunes; vegetated forest buffers, salt marshes, freshwater wetlands, parks, greenways, preserves, and submerged aquatic vegetation; oyster reefs; and barrier islands. Green infrastructure (GI) is similar and complementary, and uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and heat and create healthier urban environments. At the city or county scale, green infrastructure is a patchwork of natural areas that provides habitat, flood protection, temperature regulation, cleaner air, and cleaner water. At the neighborhood or site scale, stormwater and heat management systems that mimic nature soak up and store water as well as reduce temperatures. Both NNBF and GI may be undertaken by a Tribe in a variety of ways.

Points		Scoring Metric
0		a. Tribe has identified natural and nature-based features that are protective and can assist with resilience such as to reduce wind speeds, flooding, and heat.
0		b. Tribe has developed plans and policies that use natural and nature-based features to enhance flood, storm, and extreme heat resilience.
1		c. Tribe is implementing projects that are in accordance with the plans and policies developed to utilize natural and nature-based features to increase flood, storm, and extreme heat resilience.
0	\$\$\$ 	d. Tribe offers incentives for the use of natural and nature-based features to increase flood, storm, and extreme heat resilience.

**TOTAL SCORE FOR SECTION 3:**

**9/ 30 POINTS**

## 4) PLANNING FOR RESILIENCE

### 4.1 BUDGET, FUNDING AND STATE & FEDERAL ASSISTANCE:

**0/ 4 Points**

Hazard mitigation efforts, when properly funded, can reduce or prevent damage and decrease costs from storms and other hazards. To ensure proper funding a tribe can budget for mitigation efforts, assess the potential economic impact from a storm hazard, and identify sources of funding for mitigation projects.

Points	Scoring Metric	Scoring Metric
0		a. Tribe has capital improvement (CI) funding for resilience. Projects include upgrading critical infrastructure, water and wastewater systems and food and health systems, with priority for needs of vulnerable populations.
0	\$\$\$	b. Tribe has conducted an economic and cultural impacts assessment of flood, storm, and extreme heat hazards.
0		c. Tribe has identified specific actions for resilience (pre/post extreme heat, storm, and flooding mitigation) in Hazard Mitigation Plan.
0	\$\$\$	d. Tribe has identified funding for non-CI resilience projects, including priority needs of vulnerable populations impacted



## 4.2 HAZARD RESILIENCY IN COMPREHENSIVE PLAN:

0/ 4 Points





A comprehensive plan is a tribe vision for future land use, development, adaptation, and resilience. Resilience to hazards can be addressed in comprehensive plans by incorporating elements such as green infrastructure, open space preservation, infill development, the National Flood Insurance Program (NFIP), the Community Rating System (CRS), and stormwater management. The ideal comprehensive plan identifies equity and the need to identify and support socio-economically vulnerable populations as a priority for resilience, as well as a priority preference for restoration, green infrastructure and connectivity.

Points		Scoring Metric
0		a. The comprehensive plan discusses how citizen engagement around resilience informed the plan.
0		b. The comprehensive plan includes clear discussion of resilience and incorporates assessments to inform the development of policies to reduce vulnerability to hazards.
0		c. The comprehensive plan includes goals and objectives for preserving and protecting natural resources that mitigate hazards, such as trees to address heat islands and wetlands to act as flood buffers.
0		d. The comprehensive plan addresses impacts on critical infrastructure and essential services from flood, storm, and extreme heat hazards, particularly for impacts affecting socio-economically vulnerable populations.

### 4.3 LAND USE ORDINANCES:

0/ 4 Points

A Tribe's land use ordinances (such as zoning, subdivision, and floodplain) should enact the tribe's vision and policies laid out in its comprehensive plan. Land use ordinances can be used to conserve and protect natural resources, ecosystems, agricultural lands, heat-prone areas, and areas vulnerable to flooding. Chesapeake Bay Preservation Act ordinances serve as a model and going beyond these ordinances provides greater resilience.

Points		Scoring Metric
0	CRS 	a. Tribal land use regulations protect areas vulnerable to flooding by limiting development inside the floodplain or encouraging development outside the floodplain.
0	CRS 	b. Tribal land use regulations protect areas vulnerable to flooding by setting higher standards in existing flood zones or by designating additional flood zones beyond those designated by FEMA.
0	CRS 	c. Tribal land use regulations protect heat-prone areas and areas vulnerable to flooding by setting buffers, including open space.
0	CRS 	d. Tribal land use regulations protect areas vulnerable to flooding by using setbacks to protect flood-prone areas.

#### 4.4 INCENTIVES FOR HAZARD RESILIENCE:





0 / 4 Points

Incentive programs encourage infill development and protect open spaces, while protecting flood and heat-prone areas and critical ecosystems. Incentives should be developed with citizen and partner input, with particular attention to consulting agencies and organizations working with or providing services to socio-economically vulnerable populations as well as agencies and organizations working to build community resilience.

Points		Scoring Metric
0	\$\$\$	a. Tribe offers an incentive for achieving resilience goals: discourage development in areas prone to flooding; protect critical ecosystems; encourage sustainable development; improve resilience in high-risk areas; reduce heat island effects, and preserve natural assets.
0	\$\$\$	b. Tribe offers a second incentive for achieving the goals listed above.
0	\$\$\$	c. Tribe offers a three or more incentives for achieving the goals listed above.
0	\$\$\$	d. Tribe develops incentives in consultation with agencies and organizations working with socio-economically vulnerable populations.

**4.5 NATURAL RESOURCE PRESERVATION:****1 / 4 Points**

Natural resources are important to the tribe’s economy, culture, environment, and quality of life. Natural resources also can help protect against storm hazards and minimize damage from storm events. The preservation of these critical natural resources is paramount to providing resilience for a Tribe during these events. These actions should go beyond the Chesapeake Bay Preservation Act Ordinance.

Points		Scoring Metric
0	CRS 	a. Tribe has identified and mapped natural resources that are important for broad ecosystem health and heat reduction, and which are at risk of being lost due to heat, flooding, and storm hazards.
0	CRS 	b. Tribe has developed plans and policies that preserve and restore natural resources to increase resilience to extreme heat, floods, and storms.
0		c. Tribe has programs with residents, civic organizations, and nonprofit organizations to educate community about the natural resource preservation plan and engage them in helping to implement the plan.
1		d. Tribe is funding actions that implement the natural resource preservation plan.



**TOTAL SCORE FOR SECTION 4:****4 / 20 POINTS**

## 5) ENGAGEMENT, HEALTH, AND WELL-BEING

### 5.1 INVOLVEMENT IN RESILIENCE PLANNING:

4 / 4 Points

For community resilience, it is important to use meaningful engagement strategies where citizens are able to provide feedback and suggestions through meetings, workshops, and surveys. For example, to reach diaspora and the elderly, media and social media that serves these populations is effective. Engagement enables citizens and partners to provide input to the Tribe. Better informed citizens are better able to ensure their tribe remains resilient to hazards.

Points		Scoring Metric
1		a. Tribe has a written policy regarding the role of citizens, businesses, schools, pantries, clinics, institutional, nonprofit, faith-based communities, veterans, and other stakeholders in extreme heat, flood, and storm hazard resilience.
1	CRS	b. Tribe has staff dedicated to engagement in extreme heat, flood, and storm hazard resilience, including a standing committee that addresses resilience as part of its work.
1	CRS 	c. Tribe holds at least one meeting per year, including one for vulnerable citizens to address extreme heat, flood, and storm hazard resilience issues and posts the results of the meetings. For 75-150,000, at least two such meetings per year; for 150,000+ at least three per year.
1	CRS 	d. Tribe informs and engages vulnerable populations about extreme heat, flood, and storm hazard resilience by using website, social media, media serving minorities, and faith-based organizations to enable them to provide suggestions about issues and strategies.

## 5.2 PROVIDING HAZARD RESILIENCE INFORMATION:

3 / 4 Points

Citizens need free and open access to information related to resilience and planning. Information sharing allows citizens to understand their risks and the importance of resilience. Information should be shared easily and presented in a manner which is clear and easy to understand, and easy to access in ways that reach different populations in the tribe.

Points		Scoring Metric
1	CRS	a. Tribe provides to citizens localized user-friendly information on extreme heat, flood, and storm resilience, in digital and non-digital formats and in multiple languages where appropriate based on demographics.
1	CRS	b. Tribe provides to citizens localized user-friendly information on extreme heat, flood, and storm resilience, on a website (e.g., interactive maps).
1	CRS	c. Tribe provides localized user-friendly information on extreme heat, flood, and storm resilience in public spaces (e.g. offices or community buildings).
0	\$\$\$	d. Tribe provides citizens with localized, user-friendly information about economic and cultural costs and risks associated with extreme heat, flood, and storm hazards.




### 5.3 LEADERSHIP & VOLUNTEER NETWORKS FOR RESILIENCE: 2 / 4 Points

Developing community leaders and strong volunteer networks are important aspects of building a Tribe’s health and wellness resilience. Leaders can be responsible for informing residents, expressing citizen concerns, and assisting with local preparedness. Leaders can be called on during emergencies to assist citizens in need and to assist with post-hazard recovery. Tribes can build this capacity by offering volunteer opportunities to cultivate experienced, local responders.

Points	Scoring Metric
0	a. Tribe supports and invests in community-led initiatives on extreme heat, flood, and storm hazard resilience.
1	b. Tribe offers training opportunities and education opportunities for community leaders or volunteers to educate citizens on what they can do to increase their extreme heat, flood, and storm hazard resilience on individual properties or in neighborhoods.
1	c. Tribe supports community leaders or volunteers in education and outreach efforts about extreme heat, flood, and storm hazard resilience by providing them with materials, speakers for gatherings, or support for resident action projects.
0	d. Tribe highlights the work of community leaders or volunteers in supporting and advancing extreme heat, flood, and storm hazard resilience, on its website, through social media, Facebook, awards, or other means.

## 5.4 RESILIENT SYSTEMS TO PROVIDE FOOD, HEALTHCARE, AND MEDICINE: 4/ 4 Points

If a Tribe's food, healthcare, and medicine systems are not resilient before a hazard event, then the tribe may face a substantially longer recovery. Food, health, and medicine systems must be sustained before, during and after hazard events, and are dependent on critical systems, including transportation and utilities. Lower-income and minority populations often already struggle to access food, health, and medicine, and are among the vulnerable populations during a flood, storm, and extreme heat hazard.





Points		Scoring Metric
1		a. Tribe has plans for providing food to vulnerable populations, has areas for improvement, has developed partnerships to address these needs, and has provided information to citizens on how to access food during emergencies through its comprehensive, emergency operations plan, or other plans.
1		b. Tribe has plans for providing healthcare to vulnerable populations, has areas for improvement, has developed partnerships to address these needs, and has provided information to citizens on how to access healthcare during emergencies through its comprehensive, emergency operations plan, or other plans.
1		c. Tribe has plans for providing medicine to vulnerable populations, has areas for improvement, has developed partnerships to address these needs, and has provided information to citizens on how to access medicine during emergencies through its comprehensive, emergency operations plan, or other plans.
1		d. Tribe has plans for providing cooling centers to vulnerable populations, has areas for improvement, has developed partnerships to address needs during an extreme heat event, and has provided information to citizens on how to obtain access through its comprehensive, emergency operations plan, or other plans.



## 5.5 PHYSICAL AND MENTAL HEALTH FOR SOCIAL EQUITY IN COMMUNITY RESILIENCE:

### 3/ 4 Points

To ensure that socio-economically vulnerable and underserved populations do not experience disproportionate impacts from flooding and other hazards, a Tribe needs to be able to predict how its citizens may fare during a hazard event, and then help those who are most vulnerable. One key measure that can be useful to Tribes in this effort is the metric for “deaths of despair” — or the prevalence of suicide, cirrhosis of the liver, and overdoses – which can serve as a proxy for the Tribe’s physical and mental health, as persons who are suffering from depression and addictions are less likely to be able to respond effectively during storm, flood, and extreme heat events. A Tribe with good physical and mental health will be better able to respond effectively to new or changing conditions as well as to recover from stressful events.

Points		Scoring Metric
0		a. Tribe maintains data on community physical and mental wellbeing and challenges through specific metrics, such as the metrics for “deaths of despair” (suicide, cirrhosis of the liver, overdoses) and hazard related deaths and injuries (drowning, debris impact, heat stroke).
1		b. Tribe has met at least once with partners to identify “trusted messengers” for communicating with vulnerable populations.
1		c. Tribe has identified, or maps its vulnerable citizens, and has done this in partnership with nonprofits, faith- based organizations, and its health and community services board.
1		d. Tribe has a plan with nonprofits, faith-based organizations, and health and community services board that helps its physically and mentally challenged vulnerable populations prepare for flood, storm, and extreme heat events, and that provides assistance to them during and after these events.

**TOTAL SCORE FOR SECTION 5:**

**16/ 20 POINTS**