Resilience Planning Overview for the City of Norfolk

In response to the resilience planning requirements of the **Community Flood Preparedness Fund** ("the CFPF" or "Fund") outlined within the 2021 CFPF Grant Manual (Appendix G: Elements of Resilience Plans), the City of Norfolk ("the City") has prepared the following Resilience Planning Overview of formal and relevant plans utilized for resilience planning efforts by the City to prioritize potential projects and to assist the City is its efforts to secure funding for such critical resilience plans, studies and projects.

The **Elements of Resilience Plans** taken from Appendix G of the 2021 CFPF Grant Manual, from which communities are expected to highlight the stated resilience planning contents as they related to CFPF grant applications, are as follows:

1. *It is project-based with projects focused on flood control and resilience.*
2. *It incorporates nature-based infrastructure to the maximum extent possible.*
3. *It includes considerations of all parts of a locality regardless of socioeconomics or race.*
4. *It includes coordination with other local and inter-jurisdictional projects, plans, and activities and has a clearly articulated timeline or phasing for plan implementation.*
5. *Is based on the best available science, and incorporates climate change, sea level rise, storm surge (where appropriate), and current flood maps.*

Norfolk's resilience planning elements are not contained within an adopted "stand alone" plan. However, Norfolk's utilizes various plans within a resilience repertoire, which altogether serve multiple needs for various audiences; from technical to public-facing to operational. This Resilience Planning Overview will expressly identify to the grant reviewer, and to the public, how various resilience planning documents of the City of Norfolk satisfy all the CFPF Resilience Plan elements.

The following plans for the City of Norfolk will contribute to this Resilience Planning Overview:

- ***plaNorfolk2030*** (2013, as amended)
- ***Vision2100*** (2016)
- ***Hampton Roads Hazard Mitigation Plan*** (2022)
- ***Combined Coastal and Precipitation Flooding Master Plan*** (2017)
    - Appendix A: ***Norfolk Preliminary City-wide Coastal Flooding Mitigation Concept Evaluation and Master Plan Development*** **(Fugro Atlantic)**
    - Appendix B: ***City-wide Drainage and Watershed Master Plan*** **(Timmons Group)**
- ***A Green Infrastructure Plan for Norfolk*** (2018, as amended)
- ***USACE Coastal Storm Risk Management (CSRM) Feasibility Study and Environmental Impact Statement*** (2019)
- ***Zoning Ordinance of the City of Norfolk*** (2018, as amended)

Responses are provided below in red based on the various Norfolk plans for the following example resilience elements outlined in Appendix G of the 2021 CFPF Grant Manual:

- ***Equity based strategic polices for local government-wide flood protection and prevention.***
  The ***Hampton Roads Hazard Mitigation Plan*** recommends the highest priority of protection to be reserved towards protection projects for severe repetitive loss areas (Mitigation Actions 8 &

11) in Norfolk. Research in Norfolk has shown that these areas are often places where the most vulnerable residents are housed.

Additionally, Mitigation Action 12 recommends Norfolk begin risk/hazard mitigation efforts equitably by first implementing a major flood control project within the historically black community of Chesterfield Heights; implementation of a $112M HUD project awarded through the National Disaster Resilience Competition (construction currently underway).

- **Proposed projects that enables communities to adapt to and thrive through natural or human hazards.**
  The ***Combined Coastal and Precipitation Flooding Master Plan*** (Norfolk's "Flooding Master Plan") is based on a major multi-year study effort supported by technical analyses and recommendations from Fugro Atlantic within the ***Norfolk Preliminary City-wide Coastal Flooding Mitigation Concept Evaluation and Master Plan Development*** (the "Fugro report"). The Flooding Master Plan is also supporting by a thorough analysis and priority ranking technical guide of the City's drainage conveyance system, ***City-wide Drainage and Watershed Master Plan*** by Timmons Group.

  Together, with this technical supporting documentation, the Flooding Master Plan provides the framework for Norfolk to intelligently review and prioritize flood protections project to enable Norfolk to adapt and thrive to current and future flood threats.

- **Documentation of existing social, economic, natural, and other conditions present in the local government.**
  The ***USACE Coastal Storm Risk Management* (CSRM) *Feasibility Study and Environmental Impact Statement*** presents a robust analysis of the best recommendations for City-wide flood protection measures for the City of Norfolk. This report includes 10% engineered designs for the various flood protection measures recommended throughout the entire community, and a preliminary Environmental Impact Statement is included outlining the existing social, economic, natural conditions, vulnerabilities and stressors within the natural and social environment, as well as proposed impacts. See the various CSRM appendices for these detailed conditions and impact reports.

- **Review of the vulnerabilities and stressors, both natural and social in the local government.**
  See CSRM comment above. Additional overview of the vulnerabilities and stressors can be found in the ***Hampton Roads Hazard Mitigation Plan***.

- **Forward-looking goals, actionable strategies, and priorities through as seen through an equity-based lens.**
  Norfolk remains committed to presenting all action plans through an equity-based lens, as found within the actionable strategies of ***A Green Infrastructure Plan for Norfolk*** and the ***Hampton Roads Hazard Mitigation Plan***. Both plans are tactical, and recommendation are based on a 5-year forward-looking outlay. Recommendations of the Fugro report are based on a 50-year outlay, and recommendations of ***Vision2100*** geared towards the year 2100.

- **Strategies that guides growth and development away from high-risk locations that may include strategies in comprehensive plans or other land use plans or ordinances or other studies, plans or strategies adopted by a local government.**
  Vision2100 is serves a land use guide for the City. The plan divides Norfolk up into four main areas by which the City will focus new investments and make necessary steps to prepare for a changing environment:
  - ✓ Purple: Low Flood Risk / Low Degree of Civic Assets: Establishing Neighborhoods of the Future
  - ✓ Green: Low Flood Risk / High Degree of Civic Assets: Designing New Urban Centers
  - ✓ Yellow: High Flood Risk / Low Degree of Civic Assets: Adapting to Rising Waters
  - ✓ Red: High Flood Risk / High Degree of Civic Assets: Enhancing Economic Engines (protect!)

- **Proposed acquisition of land or conservation easements or identification of areas suitable for conservation particularly areas identified as having high flood attenuation benefit by *ConserveVirginia* or similar data driven tools.**
  Vision2100 provides the framework for selecting the areas suitable for conservation easements. The ***Norfolk Zoning Ordinance*** provides the mechanism for purchasing land conservation easement credits from the Coastal Resilience Overlay through transferring Resilient Quotient points to the Upland Resilience Overlay (requires extinguishment of a density unit – developable dwelling unit). The conservation easement, while recorded on the deed and kept on file with the Planning Department, can be held by the property owner, the Zoning Ordinance also permits it to be placed in a land trust.

- **Identification of areas suitable for property buyouts in frequently flooded areas.**
  See ***Vision2100*** "Yellow" areas (High Flood Risk / Low Degree of Civic Assets: Adapting to Rising Waters) and Coastal Resilient Overlay areas on the Norfolk Zoning Map.

- **Identification of critical facilities and their vulnerability throughout the local government such as water and sewer or other types identified as "lifelines" by FEMA.**
  A list of all critical facilities is contained within the *Norfolk Emergency Operations Manual* (2020). See Mitigation Action 5 from ***Hampton Roads Hazard Mitigation Plan***: "Purchase and install generators or other continuous power sources for critical facilities and infrastructure. This action may include, but is not limited to pump stations, EOC (Emergency Operations Center), shelters, underpasses and important traffic signals." The critical facilities list is available upon request.

- **Identified ecosystems/wetlands/floodplains suitable for permanent protection.**
  See ***A Green Infrastructure Plan for Norfolk***, this includes an *Action Plan Appendix for Threatened and Endangered Species* within critical floodplain habitats, as well as a detailed ecological inventory with recommendations for floodplain protection measures within an connected open space corridor network.

- **Identified incentives for restoring riparian and wetland vegetation.**
    - The City's Public Works Division of Stormwater Management offers the **Stormwater Fee Reduction Program** for homeowners and businesses who opt to implement water quality improvements on their private property including riparian buffer and shoreline management improvement.
    - **Environmental Conservation Consulting** – Norfolk annually funds a contract to coordinate with residential property owners for implementation of water quality improvements on their private property including riparian buffer and shoreline management improvement through a cost-share program. Property owners get a percentage of the project paid through the contractor via the Environmental Conservation Consulting services contract.
    - Norfolk regularly applies for grants to partner with community organizations for implementation of green infrastructure of public lands – projects are reviewed by the **Watershed Management Task Force** to ensure that projects are furthering the goals and objectives of the adopted ***Green Infrastructure Plan for Norfolk***.

- **A framework for implementation, capacity building and community engagement.**
  The **Watershed Management Task Force** and the recently created Program for Public Information committee are two groups made up of joint staff/citizen/technical expert members, which collectively drive the City's ongoing programing for green infrastructure projects and flood mitigation messaging. Capital Improvement Project funding recommendations from the ***Green Infrastructure Plan for Norfolk*** are also reviewed monthly by the Watershed Management Task Force.

- **Strategies for creating knowledgeable, inclusive community leaders and networks.**
  The 12-member Norfolk Coastal Management Review Board (CMRB) provides recommendations to the 7-member Erosion Advisory Commission, which is partially comprised of members of the CMRB. The CMRB is made up of elected leaders, civic league presidents/community leaders and technical experts from the Virginia Institute of Marine Science, Virginia Marine Resources Commission, Army Corp of Engineers, Old Dominion University Department of Ocean, Earth and Atmospheric Sciences, and city technical staff, providing workshops, seminars and project assessments of coastal mitigation and erosion projects; specifically intended to build grassroots technical capabilities and citizen champions within the community. The Norfolk CMRB and Erosion Advisory Commission is established by City Code and guided by the City's adopted Sand Management Plan.

- **A community dam safety inventory and risk assessment posed by the location and condition of dams.**
  Not applicable in Norfolk – not at dam risk.

- **A characterization of the community including population, economics, cultural and historic resources, dependence on the built environment and infrastructure and the risks posed to such infrastructure and characteristics by flooding from climate change, sea level rise, tidal events or storm surges or other weather.**
  This general characterization is well documented within the general/comprehensive plan for the City of Norfolk – ***plaNorfolk2030***. This includes dozens of resiliency recommendations for flood risk reduction and communication.

- **Strategies to address other natural hazards that would cause, affect or result from flooding events including:**
  - **Earthquakes.**
  - **Storage of hazardous materials**
  - **Landslides/mud/debris flow/rock falls.**
  - **Prevention of wildfires that would result in denuded lands making flooding, mudslides or similar events more likely.**
  - **Preparations for severe weather events including tropical storms or other severe storms, including winter storms.**

  The ***Hampton Roads Hazard Mitigation Plan*** is a FEMA-accredited all-hazards plan.