



# County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

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July 28, 2022

Catherine J. Perkins, PE  
Project Manager  
Civil PPMD  
2 Hopkins Plaza  
Baltimore, MD 21201

Reference: Coastal Storm Risk Management Study Draft Integrated Feasibility Report and Environmental Assessment

Dear Ms. Perkins,

This letter provides comments from Fairfax County, Virginia regarding the Coastal Storm Risk Management Study Draft Integrated Feasibility Report and Environmental Assessment dated May 2022. Responses were coordinated with the Fairfax County Departments of Planning and Development, Public Works and Environmental Services, and Transportation and the Park Authority.

## Background

The United States Army Corps of Engineers (USACE) has released a Draft Integrated Feasibility Report and Environmental Assessment (IFR/EA) for the Metropolitan Washington District of Columbia Coastal Storm Risk Management Feasibility Study, in compliance with the National Environmental Policy Act and other environmental laws. The purpose of the study was to evaluate the feasibility of Federal participation in the implementation of solutions to reduce long-term coastal flood risk to vulnerable populations, properties, infrastructure, and environmental and cultural resources with consideration of future climate and sea level change scenarios to support resilient communities in Northern Virginia within the Middle Potomac River watershed.

The USACE's development and screening of measures and formulation of alternatives went through several iterations starting with an initial array of 11 alternatives, in addition to the no-action plan. After the USACE reviewed various possible projects, a Tentatively Selected Plan for the Belle Haven/Belle View area of Fairfax County was selected as the best solution, which is referred to as "Alternative 8." Alternative 8 includes the construction of a floodwall just north of Belle Haven Road from Barrister Place to 10th Street with a closure structure at 10<sup>th</sup> Street and at the George Washington Memorial Parkway (GWMP). Closure structures would

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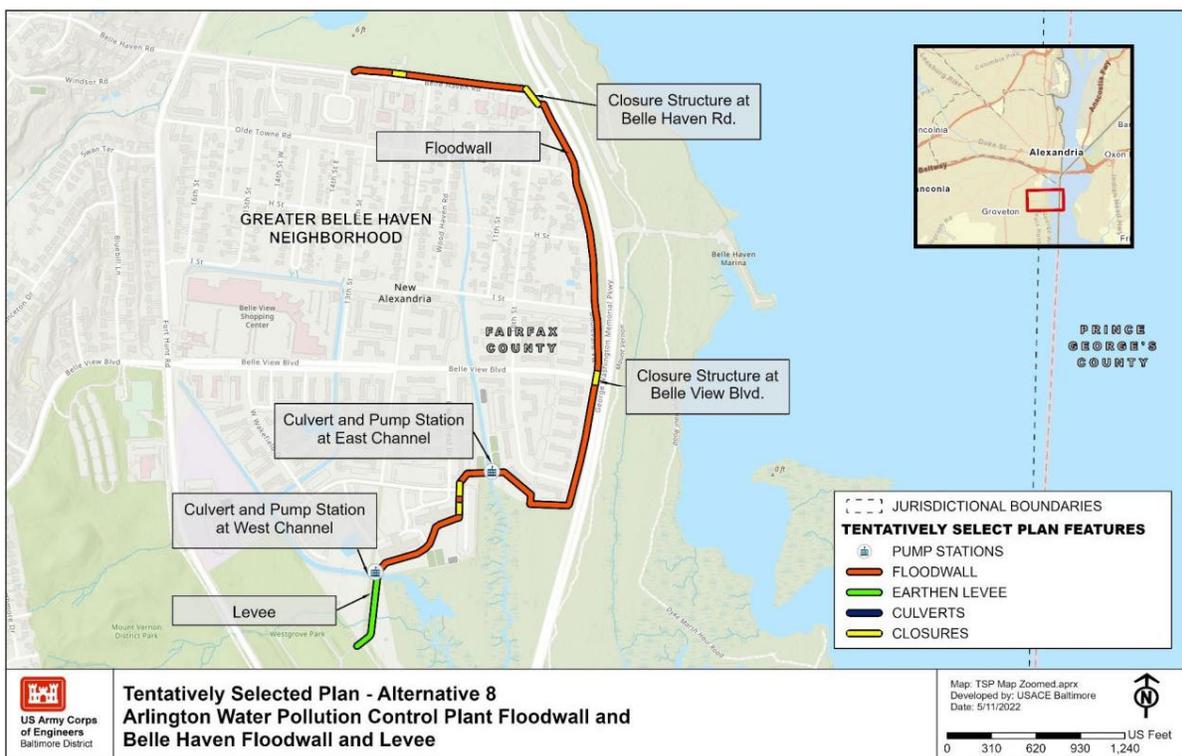
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also be constructed along Belle Haven Road and Belle View Boulevard. A floodwall would tie into the closure structure at 10th Street and run south along the west side of the GWMP, curving around Belle View Boulevard to 10th Street. The floodwall would then run west to East Wakefield Drive, tying into both sides of a closure structure on Potomac Avenue. The floodwall would continue west to West Wakefield Drive and tie into a small portion of earthen levee ending at Westgrove Dog Park. The proposed alignment length is 6,725 linear feet. 1,900 feet of I-walls, 3,715 feet T-walls, and 400 feet of earthen levee are anticipated, which may be as tall as eight feet. The Alternative #8 structure would be designed to provide protection for the 100-year Coastal Storm Event and Sea Level Rise (2080) with three feet of freeboard. Below is a graphical depiction of the approximate location of the proposed project.

**Proposed Tentatively Selected Plan- Alternative 8  
 Belle Haven Floodwall and Levee**



Source: Draft Integrated Feasibility Report and Environmental Assessment (USACE)

## Comments

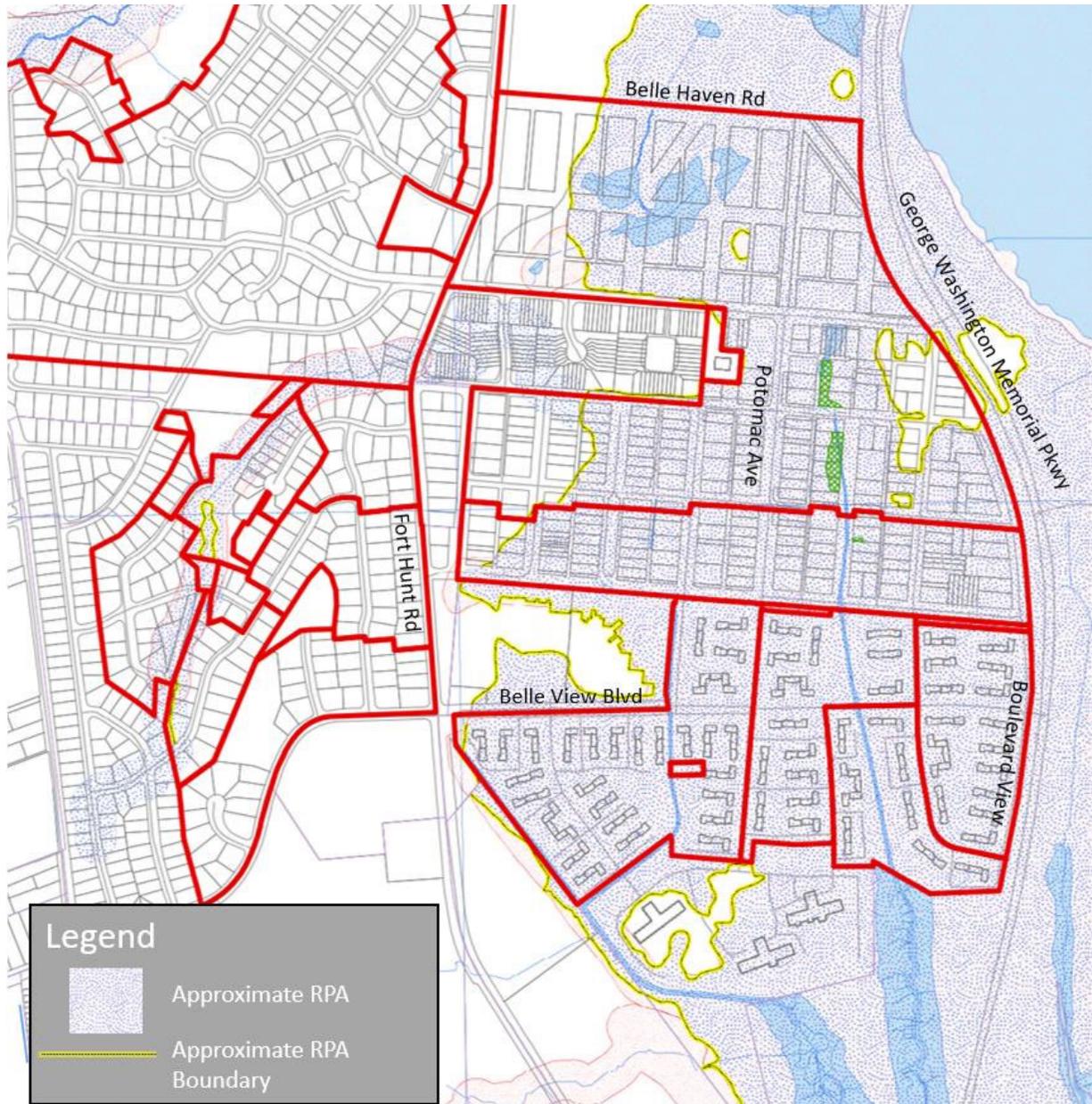
### Department of Planning and Development

#### *Water Resources Protection*

The Environment Element of the Comprehensive Plan Policy Plan states that the protection and restoration of the ecological integrity of streams is expected in Fairfax County. In order to minimize the impacts that new development and redevelopment projects may have on County streams, the Comprehensive Plan encourages the protection of stream channels and buffer areas along stream channels, and the restoration of degraded stream channels and riparian buffer areas. (Fairfax County Comprehensive Plan, 2019 Edition, Policy Plan, Environment, Amended through 11-9-2021, Pages 7-9).

The Mount Vernon Planning District, located within Area IV, as defined by the County's Comprehensive Plan, includes substantial portions of the Cameron Run, Belle Haven, Little Hunting Creek, and Dogue Creek watersheds. The County has developed several recommendations to support stream protection and restoration, reduction of pollution flowing into the County's waterways, attainment of state and federal water quality standards, and the restoration of the Chesapeake Bay and its tributaries. These recommendations include the following for new development: improvements in stormwater facilities and management, including "*low impact development (LID) practices, projects to restore riparian buffers and streams, [and] outreach and education to improve residents' activities that affect water quality.*" (Fairfax County Comprehensive Plan, 2017 Edition, Mount Vernon Planning District, Overview, Amended through 1-25-2022, Page 7). Sensitive areas such as tidal and non-tidal wetlands, streams, 100-year Floodplains, Resource Protection Areas (RPAs), and Environmental Quality Corridors (EQCs) are likely to be impacted by proposed Alternative #8. The proposed area of Alternative #8 experiences flooding from the Potomac River and includes RPA and floodplain areas. Below is a graphical depiction of the approximate location of RPAs in this area.

### Approximate RPA Locations



Source: Fairfax County, Department of Planning and Development

Fairfax County recognizes that the USACE is not subject to the provisions of the Chesapeake Bay Preservation Ordinance (CBPO) or County policies. Environmental Quality Corridors (EQCs) as defined in the Policy Plan Element of Fairfax County's Comprehensive Plan should also be considered for preservation. Land areas that include all 100-year floodplains, areas of 15% or greater slopes adjacent to the floodplain, and all wetlands qualify for designation as

EQCs and should be considered for limited disturbance. (Fairfax County Comprehensive Plan, 2019 Edition, Policy Plan, Environment, Amended through 11-9-2021, Pages 15-18). This draft IFR/EA includes proposed environmental impact mitigation actions that would be prioritized for the project, which include sediment control during construction, minimizing impacts to the local Bald Eagle population through the use of buffers, and changes to water levels in nearby wetlands and streams.

Staff has the following recommendations for the USACE's consideration:

- Maintain vegetated buffers and improve stream water quality; minimize disturbance within floodplains, RPAs, and EQCs to the extent feasible; and include restoration of impacted RPAs using native plantings and the treatment and removal of non-native invasive vegetation.
- Strive to limit land disturbance activities through enhanced floodwall designs in sensitive areas, as described in the County's CBPO (Chapter 118 of the County Code), including conformance with the requirements for areas designated as RPAs.
- Exercise caution during construction for roads within vegetated areas. Such disturbance and vegetation removal would increase the vulnerability of soil to water and wind erosion and potentially result in the corresponding sedimentation and pollution of downstream watercourses during construction.
- Since large portions of the proposed development are within the FEMA 100-year floodplain, preservation and restoration practices are recommended, such as buffer restoration, which would include the reforestation of upland and riparian buffer areas. These practices help filter pollutants and reduce runoff by intercepting the water and increasing surface storage and infiltration.
- If any stormwater controls are required, these should include LID techniques such as bioretention facilities and grassed swales.
- Any tidal wetlands within the Mean Low Water and Mean High Water lines that may be disturbed should be restored with 'living shoreline' concepts to encourage nature-based stabilization techniques. Contiguous living shoreline stabilization projects allow for the highest likelihood of the continued longevity of and benefits to local subaqueous ecosystems.

### *Soils*

The Mount Vernon Planning District *"is within the Coastal Plain geologic province. Consequently, soils are marginal for septic tank usage. Slippage-prone swelling clays underlie most of the district. Any development in areas with these conditions should be based on the latest technologies for stabilizing marine clays from soil slippage. Assurances which protect the county and affected properties should be provided."* (Fairfax County Comprehensive Plan, 2017 Edition, Mount Vernon Planning District, Overview, Amended through 1-25-2022, Page 7).

There is the potential for Grist Mill-Woodstown Complex soils in the northern portions of the project site and Mattapex soils in southern areas. These soil types can be highly variable.

Unstable slopes can lead to serious land slippage. The seasonal high-water table is between 1½ and 3½ feet below the surface. Depth to hard bedrock ranges from 50 to more than 300 feet. Problematic clay soils may be present as well. USACE should evaluate the soil characteristics during a geotechnical evaluation in support of the proposed construction. Hydric soils that might be supportive of wetlands would be evaluated as part of the wetland delineation and permitting efforts. Staff recommends USACE continue to test and evaluate these problematic soils as the design and construction of this project progresses.

#### *Forest Resources Policies and Impacts*

The Comprehensive Plan anticipates that new development will include an urban forestry program and be designed in a manner that retains and restores meaningful amounts of tree cover, consistent with planned land use and good silvicultural practices. Good quality vegetation should be preserved and enhanced, and lost vegetation restored through replanting. (Fairfax County Comprehensive Plan, 2019 Edition, Policy Plan, Environment, Amended through 11-9-2021, Pages 17-18).

In order to ensure the viability of the proposed plantings, staff recommends tree protection, to include adequate supervision during construction, to ensure that tree protection measures are implemented as planned. Additionally, staff recommends that the project avoid the following, where feasible: significant changes to elevations (both “cut” and “fill” operations); changes to water flow; and excavation within the critical root zones of surrounding trees to be protected. Additionally, staff recommends vegetative screening of the proposed structures, where feasible, featuring native and non-invasive trees, shrubs, perennial grasses and grass-like plants, and forbs for each planting area in the project design. Fairfax County recently published Technical Bulletin 22-04, regarding seeding guidelines, to promote the use of native plant species and to limit the use of invasive plant species in seeding applications for soil stabilization, restoration, agriculture, turf, and landscaping (see [Fairfax County Seeding Guidelines](#)). Additionally, staff recommends soil rebuilding for areas impacted by construction to help ensure the viability of the proposed plantings.

#### *Heritage Resources*

Staff notes that in the Belle Haven area, there are no County designated historic overlay districts. However, one resource is located on the County Inventory of Historic Sites: the George Washington Memorial Parkway. This resource is also on the Virginia Landmarks Register and in the National Register of Historic Places. Additionally, the Belle Haven community, immediately adjacent to the proposal, is more than 50 years old. There is a potential for archaeological significance in this area. Staff has the following recommendations for the USACE consideration:

- Staff notes that the proposal may negatively impact the George Washington Memorial Parkway, which would be located on the river side (to the east) of the proposed flood walls. Staff recommends that future environmental analysis of the project consider locations both to the east and west of the George Washington Memorial Parkway for the

construction of the flood walls and levees to determine how to best respect the historic resource.

- Staff recommends that the Belle Haven/New Alexandria community be analyzed for further historic significance as part of any future environmental analysis, given that the community is more than 50 years old and an early suburb of Fairfax County.

#### *Other Considerations*

Only minimal vehicular and construction equipment operations would be anticipated during construction. The associated noise impacts would be considered temporary.

#### Department of Public Works and Environmental Services (DPWES)

##### *Operation and Maintenance*

- Pages V and 171 of the IFR/EA estimates annual operation and maintenance costs to be \$16,000 for the floodwall, earthen levee, and pump stations. This cost seems very low. Fairfax County pays \$585 per month for SCADA communication at the Huntington Levee and the electric bill can vary from \$700 to \$2,500 per month. These utility costs alone cost more than \$16,000 per year for a single pump station. Additional staff resources should also be factored into the maintenance cost. DPWES currently have pump station staff onsite at Huntington Levee and New Alexandria Pump Station during large storm events (12-hour shifts). DPWES may need additional personnel to staff the proposed pump stations and floodwall during major storm events.
- Page 19 of Appendix G and Page 121 of the IFR/EA state, “It is only during times of extreme flooding due to a coastal event or a massive storm occurring within the entire Potomac River watershed that the pump stations would be utilized. During these scenarios, the water level of the Potomac River would be so high that it would reach the riverside of the floodwall, which would result in the closure of the flap and sluice gates of the floodwall’s drainage pipes.” How will the existing pump station and tide gate function during “massive” storm events in conjunction with the proposed floodwall and pump stations? Will they be decommissioned if the project moves forward?
- Figure E-3 in the draft IFR/EA shows the proposed floodwall terminating at the northern end adjacent to the existing F Street Wastewater Pumping Station and the levee at the southern end terminating at the existing River Towers Wastewater Pump Station. The design should ensure that the floodwall and levee do not create adverse conditions that could impede normal operations or otherwise impact the existing wastewater pump stations.

#### *Land Acquisition*

- Page V of the IFR/EA and Appendix F: Real Estate Plan estimates lands and damages real estate costs at \$1,167,000. If the wall is largely located on private land (i.e., Belle View Condos, River Towers, and private residential properties) then this estimate seems very low.
- A portion of the proposed floodwall appears to be in Virginia Department of Transportation (VDOT) Right-of-Way. Has USACE initiated coordination with VDOT on the IFR/EA?

#### *Trees*

- Tree resources are only mentioned in the assessment with respect to minimizing impacts to birds. Trees are a valuable resource, providing numerous environmental services and ecological, economic, social, and human health benefits. Not only should the proposed floodwall avoid removal of trees, but consideration should be given to protecting trees with other infrastructure from inundation during flooding events.

#### Department of Transportation

In addition to the safety and financial benefits to Belle Haven residents from reduced flood risk, Alternative 8 is expected to improve the flood resilience of roads, bus service (Connector routes 101 and 152), and active transportation within the community. Alternative 8 would decrease flooding impacts and increase functioning of road infrastructure (and bus service) during flood events. Alternative 8 may propose to close the intersections of Belle Haven Road-10<sup>th</sup> Street-George Washington Memorial Pkwy (GWMP) and Belle View Boulevard-GWMP, which would cause significant impacts to the vehicle, transit, and active transportation in this community. A future design should clarify the type of road closure structures that are intended for this project. If temporary closures will not be used, and various transportation crossings are closed permanently, then staff have the following comments:

- The design should be reviewed to determine if pedestrian and bicycle access across the GWMP at Belle Haven Road-10<sup>th</sup> Street-GWMP and/or Belle View Boulevard-GWMP locations can be maintained, or nearby alternative routes can be improved and/or constructed. If this is not possible, Belle Haven residents will be significantly inhibited from accessing the GWMP trail, which is a major transportation route and recreation amenity. The alternative route for accessing the trail to the south is Westgrove Boulevard-Park Terrace Dr-Tulane Dr – 1.25 miles. The alternative route for accessing the trail to the north is Fort Hunt Road-Richmond Highway-Richmond Highway/Old Town ramp trail – 1.75 miles. Notably, Fort Hunt Road lacks a sidewalk or trail between Belle Haven Road and Huntington Avenue and would have to be improved to provide an acceptable alternative.

- This would also inhibit pedestrians from accessing two bus stops for the Washington Metropolitan Area Transit Authority Route 11C, which are located along the GWMP.
- The proposal to sever the vehicle connections at the Belle Haven Road-10<sup>th</sup> Street-GWMP and Belle View Boulevard-GWMP intersections, would likely result in negative impacts to vehicle operations. Belle Haven Road (7,200 AADT) and Belle View Boulevard (8,100 AADT) are both secondary roads that carry traffic to GWMP, Fort Hunt Road, and Richmond Highway. If the GWMP intersections are closed, all traffic leaving the Belle Haven community must leave the community accessing Fort Hunt Road and most northbound and southbound traffic would be rerouted to Fort Hunt Road. This could increase delay at the Fort Hunt Road-Belle View Boulevard/Beacon Hill Road, Fort Hunt Road-Belle Haven Road, Fort Hunt Road-Huntington Avenue, and Fort Hunt Road-Richmond Highway intersections. Traffic operations should be evaluated, and appropriate mitigations provided if the intersections are closed.  
[https://www.virginiadot.org/info/resources/Traffic\\_2019/AADT\\_029\\_Fairfax\\_2019.pdf](https://www.virginiadot.org/info/resources/Traffic_2019/AADT_029_Fairfax_2019.pdf)
- If vacation and abandonment of road right-of-way are eventually required, they will proceed under Virginia State Codes §15.2-2272(2) and §33.2-909. Fairfax County Department of Transportation processes for vacation and abandonment must be followed, which would include review by utility companies, the Virginia Department of Transportation (VDOT), and other Fairfax County agencies. Closing intersections may also necessitate building VDOT-approved turnarounds.
- Please note that the Belle Haven Road-10<sup>th</sup> Street-GWMP and Belle View Boulevard-GWMP intersections were restriped during Fall 2021 as part of the *Southern George Washington Memorial Parkway Safety Study*. The intersection design changes were intended to improve safety over the old design, but the data on the crash risk of the new intersection condition is limited due to the short timeframe.  
<https://www.nps.gov/gwmp/learn/management/south-parkway-safety-study.htm>

#### Park Authority (FCPA)

The provided documents show the southern end of an earthen levee extending into Westgrove Park. Westgrove Park will experience direct impacts of lost land, recreation facilities, vegetation, and habitat, increased storm water discharge, invasive species, as well as wildlife habitat quality impacts. Therefore, FCPA staff would like to review all future documents and plans at the earliest opportunity as the project progresses. Additionally, the FCPA requests the opportunity to review the future submission of the Section 106 of the National Historic Preservation Act consultation as it progresses.

Thank you for the opportunity to comment on the IFR/EA. If you have any questions regarding these comments, please contact Craig Carinci at (b) (6) or 703-324-5500.

Sincerely,

(b) (6)

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