



2022 Virginia Community Flood Preparedness Fund

*First Colonial Road and
Oceana Boulevard
Stormwater
Improvements*



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I. Appendix A: Application Form

Appendix A: Application Form for Grant Requests for All Categories

Virginia Department of Conservation and Recreation
Virginia Community Flood Preparedness Fund Grant Program

Name of Local Government:

City of Virginia Beach

Category of Grant Being Applied for (check one):

☐ Capacity Building/Planning



Project

☐ Study

NFIP/DCR Community Identification Number (CID) 515531

If a state or federally recognized Indian tribe, Name of tribe N/A

Name of Authorized Official: Toni Utterback, P.E.

Signature of Authorized Official:

TPU

Mailing Address (1): 2875 Sabre Street, Suite 250

Mailing Address (2):

City: Virginia Beach

State: Virginia

Zip: 23452

Telephone Number: (757) 385-8746

Cell Phone Number: ()

Email Address: TPUtterback@vbgov.com

Contact Person (If different from authorized official): Charles Bodnar

Mailing Address (1): 2875 Sabre Street, Suite 250

Mailing Address (2): _____

City: Virginia Beach **State:** Virginia **Zip:** 23452

Telephone Number: (757) 385-8430 **Cell Phone Number:** () _____

Email Address: cbodnar@vbgov.com

Is the proposal in this application intended to benefit a low-income geographic area as defined in the Part 1 Definitions? Yes ☒ No ☐

Categories (select applicable project):

Project Grants (Check All that Apply)

- ☐ Acquisition of property (or interests therein) and/or structures for purposes of allowing floodwater inundation, strategic retreat of existing land uses from areas vulnerable to flooding; the conservation or enhancement of natural flood resilience resources; or acquisition of structures, provided the acquired property will be protected in perpetuity from further development.
- ☐ Wetland restoration.
- ☐ Floodplain restoration.
- ☐ Construction of swales and settling ponds.
- ☐ Living shorelines and vegetated buffers.
- ☐ Structural floodwalls, levees, berms, flood gates, structural conveyances.
- ☒ Storm water system upgrades.
- ☐ Medium and large scale Low Impact Development (LID) in urban areas.
- ☐ Permanent conservation of undeveloped lands identified as having flood resilience value by *ConserveVirginia* Floodplain and Flooding Resilience layer or a similar data driven analytic tool.
- ☐ Dam restoration or removal.
- ☐ Stream bank restoration or stabilization.
- ☐ Restoration of floodplains to natural and beneficial function.
- ☐ Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.

Study Grants (Check All that Apply)

- ☐ Studies to aid in updating floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.
- ☐ Revising other land use ordinances to incorporate flood protection and mitigation goals, standards and practices.
- ☐ Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA). For example, a local government might conduct a hydrologic and hydraulic study for an area that had not been studied because the watershed is less than one square mile. Modeling the floodplain in an area that has numerous letters of map change that suggest the current map might not be fully accurate or doing a detailed flood study for an A Zone is another example.
- ☐ Studies and Data Collection of Statewide and Regional Significance.
- ☐ Revisions to existing resilience plans and modifications to existing comprehensive and hazard.
- ☐ Other relevant flood prevention and protection project or study.

Capacity Building and Planning Grants

- ☐ Floodplain Staff Capacity.
- ☐ Resilience Plan Development
 - ☐ Revisions to existing resilience plans and modifications to existing comprehensive and hazard mitigation plans.
 - ☐ Resource assessments, planning, strategies and development.
 - Policy management and/or development.
 - Stakeholder engagement and strategies.

Location of Project (Include Maps): First Colonial Road and Oceana Boulevard Stormwater Improvements

NFIP Community Identification Number (CID#):(See appendix

F 515531

Is Project Located in an NFIP Participating Community? ☒ Yes ☐ No

Is Project Located in a Special Flood Hazard Area? ☐ Yes ☒ No

Flood Zone(s) (If Applicable): Zone AE (EL 8)

Flood Insurance Rate Map Number(s) (If Applicable): 5155310128G

Total Cost of Project: \$3,675,750.00

Total Amount Requested \$1,837,875.00

II. Appendix B: Scoring Criteria for Flood Prevention and Protection Projects

Appendix B: Scoring Criteria for Flood Prevention and Protection Projects

Virginia Department of Conservation and Recreation
Virginia Community Flood Preparedness Fund Grant Program

Applicant Name:	City of Virginia Beach	
Eligibility Information		
Criterion	Description	Check One
1. Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these)?		
Yes	Eligible for consideration	<input checked="" type="checkbox"/>
No	Not eligible for consideration	<input type="checkbox"/>
2. Does the local government have an approved resilience plan and has provided a copy or link to the plan with this application?		
Yes	Eligible for consideration under all categories	<input checked="" type="checkbox"/>
No	Eligible for consideration for studies, capacity building, and planning only	<input type="checkbox"/>
3. If the applicant is <u>not a town, city, or county</u>, are letters of support from all affected local governments included in this application?		
Yes	Eligible for consideration	<input type="checkbox"/>
No	Not eligible for consideration	<input type="checkbox"/>
4. Has this or any portion of this project been included in any application or program previously funded by the Department?		
Yes	Not eligible for consideration	<input type="checkbox"/>
No	Eligible for consideration	<input checked="" type="checkbox"/>
5. Has the applicant provided evidence of an ability to provide the required matching funds?		
Yes	Eligible for consideration	<input checked="" type="checkbox"/>
No	Not eligible for consideration	<input type="checkbox"/>
N/A	Match not required	<input type="checkbox"/>

Project Eligible for Consideration		<input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No	
Applicant Name:	City of Virginia Beach		
Scoring Information			
Criterion	Point Value	Points Awarded	
6. Eligible Projects (Select all that apply)			
Projects may have components of both 1.a. and 1.b. below; however, only one category may be chosen. The category chosen must be the primary project in the application.			
1.a. Acquisition of property consistent with an overall comprehensive local or regional plan for purposes of allowing inundation, retreat, or acquisition of structures.	50		
<input type="checkbox"/> Wetland restoration, floodplain restoration <input type="checkbox"/> Living shorelines and vegetated buffers. <input type="checkbox"/> Permanent conservation of undeveloped lands identified as having flood resilience value by <i>ConserveVirginia</i> Floodplain and Flooding Resilience layer or a similar data driven analytic tool <input type="checkbox"/> Dam removal <input type="checkbox"/> Stream bank restoration or stabilization. <input type="checkbox"/> Restoration of floodplains to natural and beneficial function. <input type="checkbox"/> Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.	45		
1.b. any other nature-based approach	40		
All hybrid approaches whose end result is a nature-based solution	35		
All other projects	25	25	
7. Is the project area socially vulnerable? (Based on ADAPT VA's Social Vulnerability Index Score.)			
Very High Social Vulnerability (More than 1.5)	15		
High Social Vulnerability (1.0 to 1.5)	12		
Moderate Social Vulnerability (0.0 to 1.0)	8	8	
Low Social Vulnerability (-1.0 to 0.0)	0		
Very Low Social Vulnerability (Less than -1.0)	0		
8. Is the proposed project part of an effort to join or remedy the community's probation or suspension from the NFIP?			

Yes	10	
No	0	0
9. Is the proposed project in a low-income geographic area as defined in this manual?		
Yes	10	10
No	0	
10. Projects eligible for funding may also reduce nutrient and sediment pollution to local waters and the Chesapeake Bay and assist the Commonwealth in achieving local and/or Chesapeake Bay TMDLs. Does the proposed project include implementation of one or more best management practices with a nitrogen, phosphorus, or sediment reduction efficiency established by the Virginia Department of Environmental Quality or the Chesapeake Bay Program Partnership in support of the Chesapeake Bay TMDL Phase III Watershed Implementation Plan?		
Yes	5	
No	0	0
11. Does this project provide “community scale” benefits?		
Yes	20	20
No	0	
Total Points		63

III. Appendix D: Checklist for All Categories

Appendix D: Checklist All Categories

Virginia Department of Conservation and Recreation

Community Flood Preparedness Fund Grant Program

Scope of Work Narrative	
Supporting Documentation	Included
Detailed map of the project area(s) (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
FIRMette of the project area(s) (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Historic flood damage data and/or images (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
A link to or a copy of the current floodplain ordinance	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Non-Fund financed maintenance and management plan for project extending a minimum of 5 years from project close	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
A link to or a copy of the current hazard mitigation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
A link to or a copy of the current comprehensive plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Social vulnerability index score(s) for the project area from ADAPT VA's Virginia Vulnerability Viewer	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If applicant is not a town, city, or county, letters of support from affected communities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Completed Scoring Criteria Sheet in Appendix B, C, or D	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Budget Narrative	
Supporting Documentation	Included
Authorization to request funding from the Fund from governing body or chief executive of the local government	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Signed pledge agreement from each contributing organization	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

IV. Required Application Components

B. Scope of Work Narrative – Projects

1. Project Information

The City of Virginia Beach is pleased to submit the First Colonial Road and Oceana Boulevard Stormwater Improvements project for consideration under the Flood Prevention and Protection Projects category of the 2022 Virginia Community Flood Preparedness Fund.

The following project information details the project site description including the scope of work to mitigate flooding, and highlights the impacted population, residential and commercial structures, and critical facilities in and around the project site.

a. Project Site Description

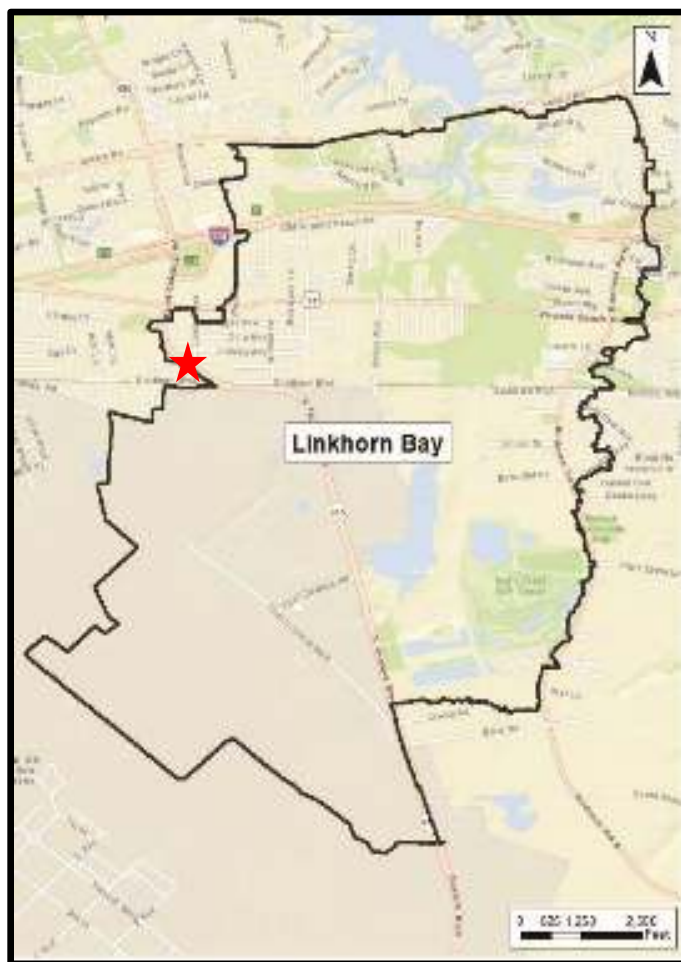


Figure 1: Project Location

The project is located south of Interstate 264, approximately 2.5 miles west of the oceanfront. The project area is included in the Linkhorn Bay drainage basin within the City of Virginia Beach shown in Figure 1. First Colonial Road at the convergence of Oceana Boulevard, experiences frequent flooding, as shown in Figure 4. Street flooding also occurs on Indiana Avenue and South First Colonial Road. Nearby private property experiences flooding, but habitable structures are unaffected. The flooding in this area is caused by inadequate stormwater infrastructure in the neighborhood adjacent to the roads. The City of Virginia Beach's Master Stormwater Management Models (SWMM) indicate First Colonial Road and Oceana Boulevard begin to experience flooding in a 10-year storm event. The location of the Simulated Flooding Area (SFA) is shown in Figure 2.



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Figure 3: Project Concept Plan

100-yr Storm Before Improvements

100-yr Storm After Improvements

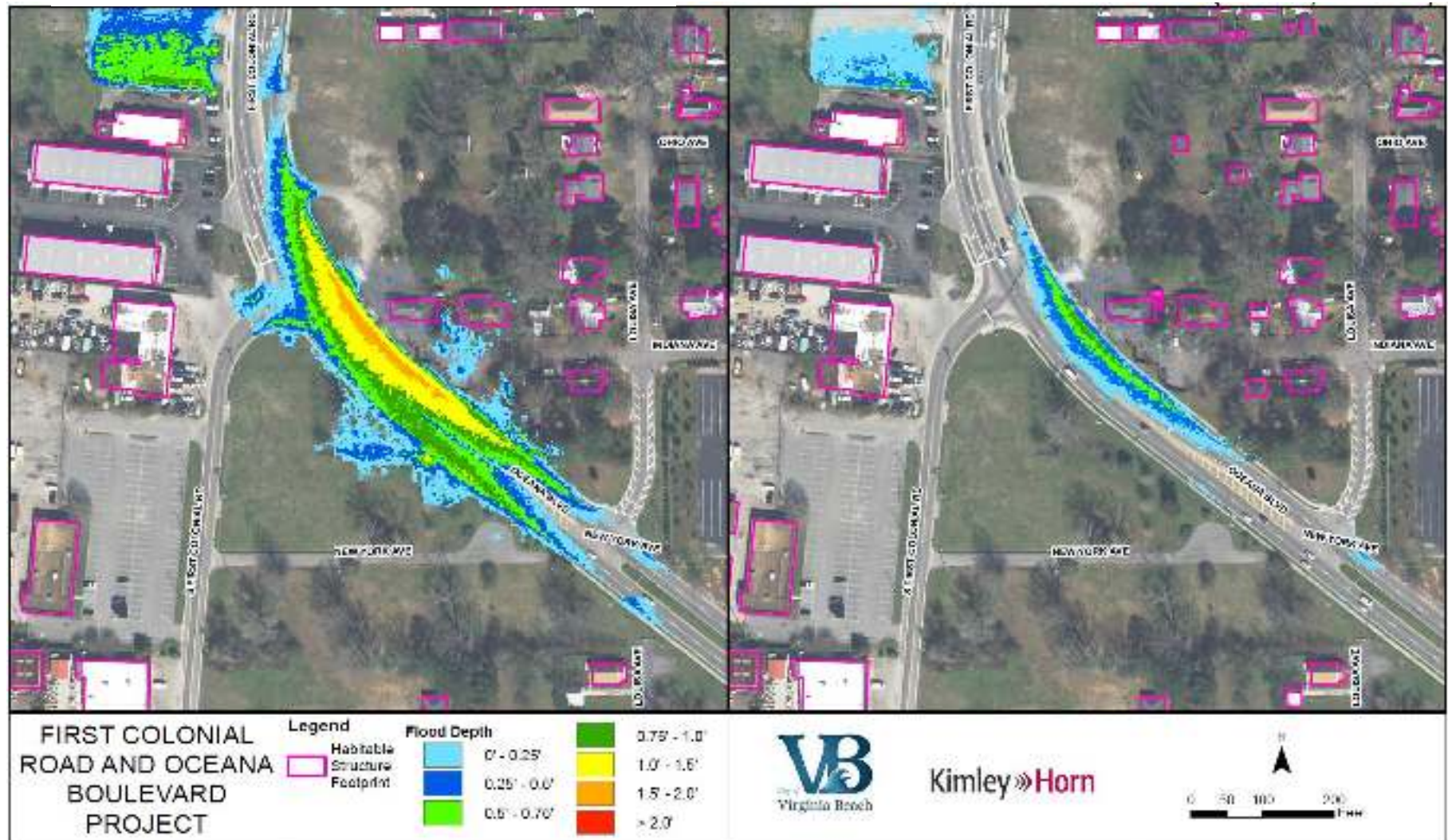


Figure 4: Flood Depth Maps

No habitable structures are impacted in the 100-year storm based on the City of Virginia Beach’s Hazus data. Applying the Benefit-Cost Ratio (BCR) methodology, the project is given a BCR of one (1); however, as additional HAZUS data becomes available, the score should be re-evaluated, and the ranking score appropriately adjusted. In addition, the project is given a Benefit Ratio (BR) of one (1) due to mitigation of all street flooding to meet the requirements of the City of Virginia Beach *Public Works Design Standards Manual (PWDSM)*.

Utility relocations for the proposed Stormwater Management Facility and pipe connections are not expected. No property acquisition is required as all construction will occur within the right-of-way (ROW) or on City-owned property.

b. Population

The First Colonial Road and Oceana Boulevard project is located in census block group 518100448.062, as shown in Figure 5, which has a population of 944. The residential population has declined by approximately 14% in the past two decades. The median household income in 2021 dollars is \$65,733. There are approximately 427 residential housing units, 37% which are owner-occupied, 51% which are renter-occupied, and 12% which are vacation rentals. Residents are 60% white, 27% black, 12% Hispanic, and 1% other.

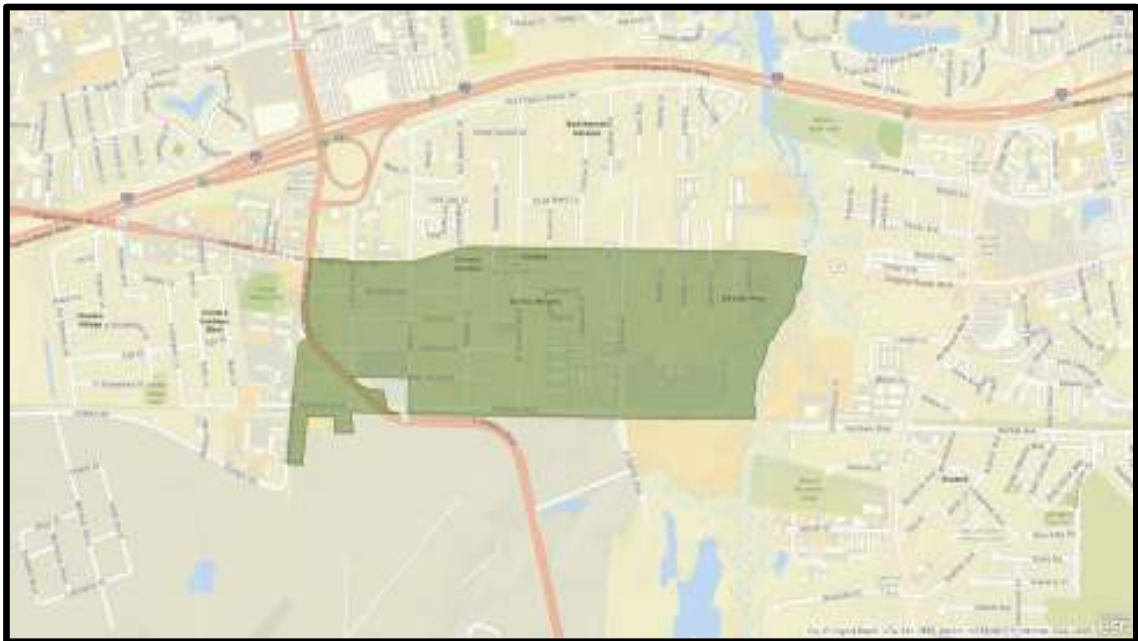
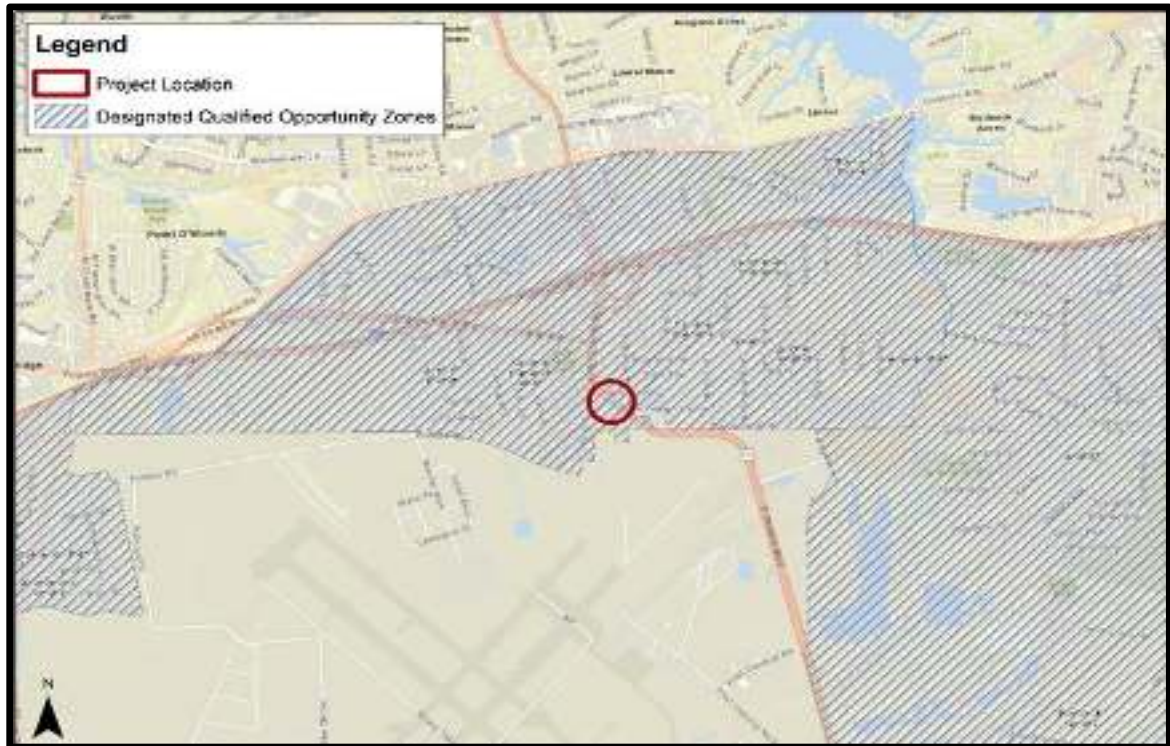


Figure 5: Census Block Group for First Colonial Road and Oceana Boulevard

As shown in Figure 6, the project is located within a designated qualified opportunity zone as determined by the United States Secretary of the Treasury via delegation of authority to the Internal Revenue Service.



*Figure 6: Opportunity Zone for First Colonial Road and Oceana Boulevard
(Source: Virginia Economic Development Partnership (VEDP) GIS Open Data)*

c. Historic Flooding Data and Hydrologic Studies Projecting Flood Frequency

The City maintains records of where residents report flood issues, and what type of flooding is causing the issue. Residents regularly report flood issues through a hotline which is then recorded in a flood event database. Within a half-mile radius around the project location, there have been 110 instances of flood reports associated with heavy rain or high tide recorded in the database between 1995 and 2021.

d. Local Government to Provide its Share of the Cost

The City of Virginia Beach is fully prepared to cover the cost share of the proposed project, as highlighted in Section D. Budget Narrative – Amount of Cash Funds Available. The funding for the grant match is contained within the City budget.

e. Local Floodplain Management Regulations

The City recognizes the vital importance of floodplains in the natural movement of water through the community.

Appendix K of the Virginia Code of Ordinances regulates development in the community's floodplains. The City requires that a permit is obtained for any construction or development in the special flood hazard area (SFHA).

For more information and details regarding the City's floodplain management and ordinances, please see:

- [Virginia Beach Floodplain Ordinance](#)

In addition, a copy of the floodplain ordinance has been included in Section E: Supporting Documentation.

f. Repetitive Loss and/or Severe Repetitive Loss Properties

The repetitive loss database from 2019-2020 shows one repetitive loss property within a quarter of a mile radius around the project area – see support letter from City of Virginia Beach Floodplain Administrator in Section E: Supporting Documentation.

g. Residential and/or Commercial Structures

The project area consists of 14 residential structures and 15 commercial structures.

h. Critical Facilities

The following six critical facilities are located within a two-mile radius around the proposed project site: NAS Oceana, Virginia Beach Police Department Second Precinct, EMS 14 Virginia Beach, Fire Station #11 Beach Borough, Virginia Beach Convention Center, and Linkhorn Park Elementary School.

NAS Oceana is the sole East Coast Master Jet Base and is home to all east coast strike fighter jet squadrons.

The Virginia Beach Convention Center is used as a command center during severe snowstorms and is used as a mass vaccination site.

2. Need for Assistance

Monetary support to implement the proposed project will benefit not only Virginia Beach and the surrounding community members but will have trickle-down impacts for the broader Lynnhaven River Watershed.

The project is in a Moderate social vulnerability classification with an index score of 0.6, per ADAPT Virginia's Vulnerability Viewer, see Figure 7.

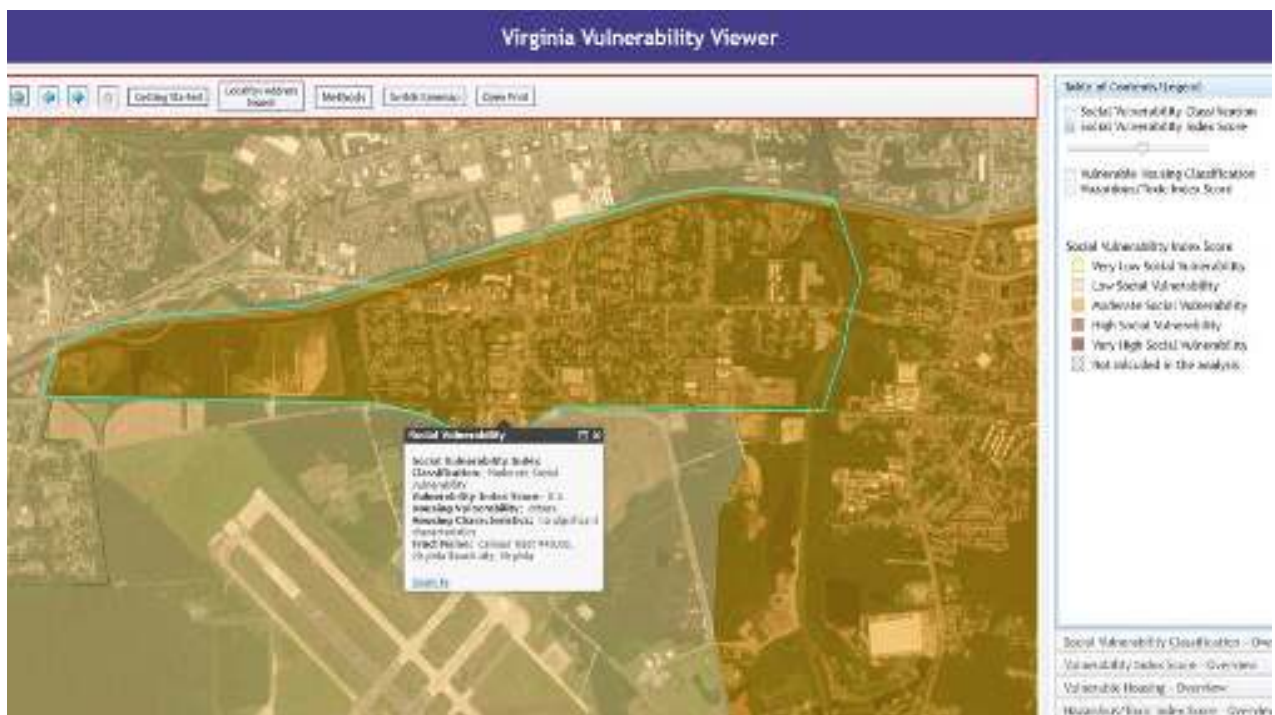


Figure 7: ADAPT Virginia Vulnerability Viewer for First Colonial Road and Oceana Boulevard

3. Goals and Objectives

The major benefit of the project is ensuring that First Colonial Road/Oceana Boulevard provides safe access to NAS Oceana and can effectively serve as an evacuation route in a 100-year storm with 3.0 feet sea level rise. The project also relieves flooding in an area that is considered economically disadvantaged and is located within a Strategic Growth Area (SGA), which is identified in the [City's Comprehensive plan](#) as an area designated to absorb future growth in the City. Street flooding along South First Colonial Road and Indiana Avenue will be resolved, as well as the flooding that occurs on the private property along Indiana Avenue.

This project is among the highest-ranked projects within the City because it provides a solution to mitigate the flooding and does not require property acquisition since the project is located within the right-of-way (ROW) or on City property.

4. Approach, Milestones, and Deliverables

The following approach, milestones, and deliverables lays out a plan of action.

Our milestone schedule assumes an executed agreement date in September 2022. The expected progression of the project is shown in our milestone schedule, and notable deliverables for each milestone are listed below.

By the end of the grant period, the project will have completed construction.

a. Approach & Deliverables

Activity 1 – Field Investigation

The City will prepare and obtain required authorizations to conduct surveys. The City will then compile existing datasets and coordinate with identified subcontractors to survey baseline field conditions at the identified project site. This baseline field data will support the development of engineering design criteria. The data will also serve as an input for evaluating the most effective design of the project features to meet the project goals and objectives.

Deliverables:

- Field Survey Data Reports and Mapping Database
- List of Project Area Property Owners and Tax Map Parcel Boundary Mapping

Activity 2 – Final Design

The project team will leverage the collected field data in conjunction with the existing hazard outputs from the Sea Level Wise study to develop technical design criteria for existing and future condition scenarios. Hydrologic and Hydraulic Stormwater Management Modeling (SWMM) modeling will also be performed and developed for the Project Area to calibrate field-collected data including tidal levels and flows. Stormwater drainage outfalls will be field evaluated, and analyses performed to determine appropriate pipe sizes and replacement requirements.

Under this activity, the project team will develop engineering and design plans, including a construction schedule and staging plan for implementation. Preliminary cost estimates will be developed at the 60% design level and refined at the 90% design level. Technical specifications and bid quantities will be developed for construction procurements, including proposed materials and quantities.

Deliverables:

- Hydrologic and Hydraulic Analyses- SWMM Modeling
- 30%, 60%, 90% and PS&E design plans
- Design renderings
- Final plans, specifications, and bid sheets
- Construction cost estimates
- Construction schedule estimate

Activity 3 – Construction

Contractor procurement activities will begin which include bid document development, coordination, requests for information and reporting. A construction work plan will be developed to include identification of project staging area, construction phasing sequence, and anticipated construction schedule.

Deliverables:

- Pre-construction survey
- Conduct weekly inspections to monitor construction progress
- Post-construction survey and as-built plans

b. Milestone Schedule

The milestone schedule assumes an executed agreement date in September 2022. The expected progression of the project is shown in the milestone schedule, and notable deliverables for each milestone are listed below:

Year 1:

- *4th Quarter (2022)*
 - Field Investigation
 - 30% Concept Design Submission
- *1st Quarter (2023)*
 - 30% Concept Design Submittal
- *2nd Quarter (2023)*
 - 60% Design Submission
 - Public Engagement Meeting
- *3rd Quarter (2023)*
 - 90% Design PS&E
 - Submit Bid Documents

Year 2:

- *4th Quarter (2023)*
 - 100% Final PS&E
 - Submit Bid Documents
- *1st Quarter (2024)*
 - Final Bid Coordination / Acceptance
- *2nd Quarter (2024)*
 - Construction NTP, Oversight, Management, and Inspection Services

Year 3:

- *4th Quarter (2025)*
 - Project Closeout
 - Begin Warranty Period

Table 1: Schedule Summary

Activity	Schedule	Duration
Design	10/2022 – 01/2024	15 Months
Site Acquisition/Easements	N/A	0 months
Utility Relocation	N/A	0 Months
Total Construction	04/2024-10/2025	18 Months
Contingency	N/A	0 Months

5. Relationship to Other Projects

In addition, the City has several other planned and ongoing efforts that will work in conjunction with this project to provide flood reduction in the drainage basin and surrounding areas. Furthermore, there is an upcoming Public Utilities waterline replacement project within the project area.

Stormwater Master Plan

The City Council initiated an update of the City’s Stormwater Master Plan in 2014. This effort is running on a partial parallel track and interchanging information with aspects of the sea level rise study. Existing and future nuisance flooding and decreasing system performance due to sea level rise will be addressed between the Stormwater Master Plan and the recommendations from the Sea Level Wise Adaptation Strategy plan.

Ongoing Flood Protection

Indicators for sea level rise impacts within the City have included nuisance flooding and instances of repetitive losses to coastal flooding. The City has been progressive in addressing flooding issues and fully intends to follow this effort with the adoption of strategies that protect our vitality. In the last five years, the City has completed \$43.8 million in flood protection projects, and over the next 10 years, the City expects to spend an additional \$135 million on currently identified flood protection projects. We are firmly committed to the implementation of strategies and in-the-ground solutions as it moves forward with these projects - providing measurable returns and case study examples of communities adapting to the changing hazard environment.

6. Maintenance Plan

The City of Virginia Beach has a comprehensive maintenance plan in place to proactively preserve City-owned assets. This includes measures to clean all 1,700 miles of City-maintained pipe at least once every five years and perform CCTV of the system at least once every 15 years as required by the City's Municipal Separate Storm Sewer System (MS4) permit. In addition, there are currently 3,384 City BMP facilities that are inspected every five years, and maintenance and/or repairs are completed as needed. It also includes a contract street sweeping program that aims to sweep all City-maintained streets, excluding the Oceanfront and Town Center areas, seven times per year. The contract street sweeping is supplemented by in-house street sweeping crews that regularly sweep the Oceanfront and Town Center Areas.

In addition, reactive maintenance is completed as needed by in-house crews including cave-in repairs, minor pipe replacement, etc. Dedicated local funds are also available each year to utilize for contract reactive repairs as needed.

The pipe and BMP installed with this project will be added to the City's maintenance inventory and placed on the maintenance cycle as aforementioned.

7. Criteria

The City has demonstrated, through this application, that the grant criteria have been met. For more details and locations of criteria, please see Table 2 below. The completed scoring criteria are included in Appendix B of this application.

Table 2: Grant Criteria

Criteria	Satisfaction?
Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these or a recognized state or federal Indian tribe?	Yes.
Does the local government have an approved resilience plan meeting the criteria as established by this grant manual? Has it been attached or is a link provided?	Yes. Approved on July 20, 2021. The Virginia Beach Resilience Plan (Sea Level Wise) can be found on our website .
For local governments that are not towns, cities, or counties, have letters of support been provided from affected local governments?	Not Applicable.
Has the applicant provided evidence of an ability to provide the required match funds?	Yes. Please see Section D: <i>Budget Narrative Amount of Cash Funds Available</i> for more information.
Has the applicant demonstrated to the extent possible, the positive impacts of the project or study on the prevention of flooding?	Yes. Please see Section B: <i>Scope of Work Narrative</i> for more details.

D: Budget Narrative

The following budget narrative details the proposed project expenditures.

1. Estimated Total Project Cost

A detailed cost breakdown for the project area is provided in Table 3 below. This cost breakdown is based on the 15% design concept.

Table 3: Cost breakdown

Element	Element Sub-Total
Design	\$ 390,000
Site Acquisition	\$ -
Utility Relocation	\$ 195,000
Construction Engineering and Inspection	\$ 292,500
Construction Total Construction	\$ 1,950,000
Overall Project Contingency (30%)	\$ 848,250
Estimated Total Cost	\$ 3,675,750

2. Funds Requested from the Fund

The City is requesting a total of \$1,837,875 (50% of total project cost estimate) in funding over the proposed period of performance, with a cost-share/in-kind contribution by the City of \$1,837,875 (50% of total project cost estimate). The funding will support the implementation of the detailed work plan and scope outlined in this narrative.

3. Cash Funds Available

The City has \$1,837,875 of cash on hand, contained within the City budget. This amount of cash funds is sufficient, that when combined with the potential grant funding, the City will have all necessary funds available to complete the project.

4. Funding Authorization

Please refer to supporting documentation Section E: Supporting Documentation City Manager Approval, for the documentation authorizing the funding request.

E: Supporting Documentation

1. Detailed Construction Estimate
2. Virginia Beach Resilience Plan DCR Approval
3. City Manager Approval
4. City of Virginia Beach Floodplain Administrator Support Letter
5. Copy of Floodplain Ordinance

1. Detailed Construction Estimate



CITY OF VIRGINIA BEACH
DEPARTMENT OF PUBLIC WORKS
STORMWATER ENGINEERING CENTER



OPINION OF PROBABLE CONSTRUCTION COST (2020 DOLLARS)
LINKHORN BAY DRAINAGE BASIN
PROJECT: FIRST COLONIAL ROAD AND OCEANA BOULEVARD ALTERNATIVE 1

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					\$197,050
	MOBILIZATION	1	LS	\$99,500	\$99,500
	FIELD OFFICE (TYPE III)	6	MO	\$1,500	\$9,000
	CONSTRUCTION SURVEYING	1	LS	\$10,000	\$10,000
	CLEARING AND GRUBBING	3	AC	\$15,000	\$45,000
	TEST PITS	10	EA	\$500	\$5,000
	REMOVE EXISTING CONCRETE CURB AND GUTTER	50	LF	\$10	\$500
	REMOVE EXISTING CONCRETE SIDEWALK	30	SY	\$10	\$300
	DEMOLITION OF PAVEMENT	1850	SY	\$15	\$27,750
DRAINAGE					\$1,184,250
	15" CONC. PIPE	150	LF	\$185	\$27,750
	24" CONC. PIPE	400	LF	\$275	\$110,000
	42" CONC. PIPE	500	LF	\$350	\$175,000
	SELECT BORROW FOR TRENCH BACKFILL, CBR-15	1,000	CY	\$35	\$35,000
	24" END SECTION ES-1 OR 2	1	EA	\$1,500	\$1,500
	42" END SECTION ES-1 OR 2	1	EA	\$4,000	\$4,000
	EROSION CONTROL STONE CL. 1, EC-1	70	TON	\$200	\$14,000
	STORMWATER BMP	1	LS	\$720,000	\$720,000
	MINOR STRUCTURE EXCAVATION	1,200	CY	\$25	\$30,000
	STORMWATER MANAGEMENT DRAINAGE STRUCTURE SWM-1	1	EA	\$15,000	\$15,000
	CVB STD MANHOLE	4	EA	\$7,500	\$30,000
	CVB STD CATCH BASIN	4	EA	\$5,500	\$22,000
INCIDENTALS					\$11,000
	STD. CG-6 CURB AND GUTTER	50	LF	\$25	\$1,250
	HYDRAULIC CEMENT CONCRETE SIDEWALK 4"	30	SY	\$50	\$1,500
	CONCRETE ENTRANCE PAVEMENT 7"	55	SY	\$150	\$8,250
MAINTENANCE OF TRAFFIC					\$34,000
	TEMPORARY (CONSTRUCTION) SIGN	2,700	EACH/DAY	\$5	\$13,500
	ELECTRONIC ARROW BOARD	30	EACH/DAY	\$250	\$7,500
	FLAGGER SERVICE	480	HR	\$25	\$12,000
	GROUP 2 CHANNELIZING DEVICES	1,000	EACH/DAY	\$1.00	\$1,000
EROSION AND SEDIMENT CONTROL					\$61,500
	TEMPORARY SILT FENCE (TYPE A)	2,200	LF	\$10	\$22,000
	CONSTRUCTION ENTRANCE - VDOT #1 AGGREGATE	30	TN	\$100	\$3,000
	DROP INLET SILT TRAP	15	EA	\$500	\$7,500
	TEMPORARY SEED	100	LB	\$30	\$3,000
	TOPSOIL (CLASS B, 4" DEPTH)	400	CY	\$65	\$26,000
CONSTRUCTION CONTINGENCY 30%					\$450,000
CONSTRUCTION SUBTOTAL					\$1,950,000
DESIGN & CONSTRUCTION SERVICES					\$682,500
	ENGINEERING DESIGN	20%	% OF CN SUBTOTAL	\$390,000	\$390,000
	CONSTRUCTION ENGINEERING AND INSPECTIONS			\$292,500	\$292,500
	UTILITY RELOCATION ALLOWANCE	10%	% OF CN SUBTOTAL	\$195,000	\$195,000
	SUBTOTAL				\$2,827,500
	CONTNGENCY	30%	% OF CN SUBTOTAL	\$848,250	\$848,250
TOTAL CONSTRUCTION COST					\$3,675,750

Notes:

This cost opinion is based solely on the conceptual design exhibit dated June 2020 and represents a Class 3 Estimate as defined by AACE International recommended practice No. 18R-97.

The Engineer has no control over the cost of labor, materials, or equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs, as provided here, are made on the basis of the Engineer's experience and qualifications and represent the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from opinions of probable cost prepared for the Owner.

2. Virginia Beach Resilience Plan DCR Approval

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of
Administration and Finance

Russell W. Baxter
Deputy Director of
Dam Safety & Floodplain
Management and Soil & Water
Conservation

Nathan Burrell
Deputy Director of
Government and Community Relations

Thomas L. Smith
Deputy Director of
Operations

July 20, 2021

Toni Utterback, P.E.
Department of Public Works
2875 Sabre Street, Suite 250
Virginia Beach, VA 23452

RE: Virginia Beach Resilience Plan Second Submission - CFPPF

Dear Ms. Utterback:

Thank you for the resubmission of the Sea Level Wise Adaptation Plan for City of Virginia Beach. After careful review and consideration, the Virginia Department of Conservation and Recreation has deemed the Plan complete and meets all the criteria outlined in the June 2021 Community Flood Preparedness Grant Manual. This approval will remain in effect for a period of three years, ending on July 31, 2024.

The following elements were evaluated as part of this review:

1. Element 1: It is project-based with projects focused on flood control and resilience. DCR RESPONSE

- a. Project-based: Four watersheds—each with a defined geographic area, analysis of community social and environmental characteristics, types of flooding, and a tailored flood resilience strategy with discrete projects identified.

Projects focused on flood control and resilience include:

Neighborhood	Flood Control Project
Elizabeth River	City-wide alignment, living shoreline, marsh restoration, land conservation
Lynnhaven	Chesapeake Bay alignment, Lesner Bridge Neighborhood alignment (East & West), beach & dune nourishment, ecological revetments, shellfish reef restoration, seagrass restoration
Oceanfront	Atlantic Oceanfront alignment, Rudee Heights alignment
Southern Rivers	West Neck Creek city-wide alignment, Muddy Creek Road city-wide alignment, Sandbridge city-wide alignment

**additional projects listed within the Sea Level Wise Adaptation Strategy.*

2. Element 2: It incorporates nature-based infrastructure to the maximum extent possible. DCR RESPONSE

600 East Main Street, 24th Floor | Richmond, Virginia 23219 | 804-786-6124

*State Parks • Soil and Water Conservation • Outdoor Recreation Planning
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*

- a. Nature-based infrastructure: Flood mitigation projects throughout the city incorporate nature-based solutions and were identified for maximum use within specific watersheds.

3. Element 3: It includes considerations of all parts of a locality regardless of socioeconomics or race. DCR RESPONSE

- a. All parts of a locality: Locality divided into four watersheds, covering the entirety of the jurisdictional boundary.
- b. Social vulnerability: Social implications of flood hazards and analysis of populations at-risk documented.
- c. Demographic Analysis: Demographic and Population Vulnerability Analysis conducted by Dewberry and incorporated into the Plan.

4. Element 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. DCR RESPONSE

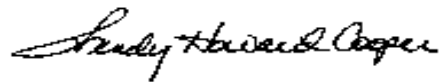
- a. Coordination with other projects, plans, and activities: Contains the planning processes and frameworks which outline local and regional plans used by the City and address resilience; and how they have been integrated for flood adaptation planning.
- b. Clearly articulated timeline or phasing for plan implementation: Program phases clearly articulated and described in detail—Impact assessment, Adaptation research, Strategy development, and Long-term implementation.

5. Element 5: Is based on the best available science, and incorporates climate change, sea level rise, storm surge (where appropriate), and current flood maps.

- a. Technically backed water-resources analysis, sea level rise projections, storm surge, and climate change incorporated into strategic approach.

VA DCR looks forward to working with you as you work to make Virginia Beach a more resilient community. If you have questions or need additional assistance, please contact us at cfpf@dcr.virginia.gov. Again, thank you for your interest in the Community Flood Preparedness Fund.

Sincerely,



Wendy Howard Cooper, Director
Dam Safety and Floodplain Management

cc: Darryl Glover, DCR

3. City Manager Approval



City of Virginia Beach

DEPARTMENT OF BUDGET AND MANAGEMENT SERVICES
(757) 385-8234
FAX (757) 385-1857

VBgov.com
MUNICIPAL CENTER
BUILDING 1
2401 COURTHOUSE DRIVE
VIRGINIA BEACH, VA 23546-9012

INTER-OFFICE MEMORANDUM

DATE: March 30, 2022
TO: Patrick Duhaney, City Manager
FROM: Kaitlyn James, Budget and Management Services *KJ*
SUBJECT: Virginia Community Flood Preparedness Fund Grant – Round III

The Department of Public Works is requesting permission to submit two applications for the Virginia Community Flood Preparedness Fund Grant from the Virginia Department of Conservation and Recreation. The Virginia Community Flood Preparedness Fund was established in the 2020 session of the General Assembly. Money in this fund comes from the auction of carbon allowances through the Regional Greenhouse Gas Initiative. It was established to provide support to localities across Virginia to reduce the impacts of flooding, including flooding driven by climate change.

The first application is for the First Colonial Road and Oceana Boulevard Stormwater Improvements project in the amount of \$1,837,875. This project will provide upgraded stormwater infrastructure to mitigate frequent flooding. First Colonial Road/Oceana Boulevard is a secondary evacuation route and provides one of the primary access roads to Naval Air Station (NAS) Oceana. This project does not require property acquisition since the project is located with the right-of-way or on City property. There is sufficient funding for the fifty percent local match for this grant in CIP 100601, "First Colonial and Oceana Boulevard."

The second application is for \$5,000,000 for a Back Bay Wetlands Restoration project to provide marsh terraces in Back Bay to promote wetland restoration and reduce frequent flooding. If awarded, the grant will require a local match of \$24.1 million. There is sufficient funding within CIP 100551, "Stormwater Green Infrastructure," which has appropriations to date of \$40 million as a result of the bond referendum.

Budget & Management Services recommends this grant application for approval. Please indicate approval or disapproval below. The application due date is April 8, 2022.

F A R O 3/30/2022

Approve (Date)

N/A

Disapprove (Date)

4. City of Virginia Beach Floodplain Administrator Support Letter



City of Virginia Beach

VBgov.com

DEPARTMENT OF PLANNING & COMMUNITY DEVELOPMENT
PHONE (757) 385-4621
FAX (757) 385-5667
VA Relay Number TTY: 711

2875 SABRE STREET, SUITE 500
VIRGINIA BEACH, VA 23452-7385

January 31, 2022

Wendy Howard Cooper
Division of Dam Safety and Floodplain Management
600 East Main Street, 24th Floor
Richmond, Virginia 23219

RE: Community Flood Preparedness Fund – First Colonial Rd and Oceana Blvd

Dear Ms. Cooper,

While the proposed project is not located in a Federal Emergency Management Agency (FEMA) mapped Special Flood Hazard Area (SFHA), the area encompassed by the project is considered to be an area subject to recurrent flooding. This particular area begins to experience flooding during the 10-yr storm event due to inadequate stormwater infrastructure. First Colonial Road/Oceana Boulevard is a secondary evacuation route and is one of the primary access roads to Naval Air Station (NAS) Oceana. While there are no repetitive loss properties in the project neighborhood, there is one (1) repetitive loss property located just outside the project neighborhood.

If I can provide any further information or assistance, please call me at 757-385-4621, or e-mail me at wmcnamar@vbgov.com.

Sincerely,

Whitney McNamara, CFM
Floodplain Administrator and CRS Coordinator

5. Copy of Floodplain Ordinance

ORD-3309

AN ORDINANCE TO ADOPT APPENDIX K,
(FLOODPLAIN ORDINANCE) OF THE CITY
CODE, PERTAINING TO FLOODPLAIN
DISTRICTS, PERMITS, VARIANCE
CONDITIONS AND ENFORCEMENT

Section Added: Appendix K, Floodplain Ordinance

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VIRGINIA
BEACH, VIRGINIA:

That Appendix K, Floodplain Ordinance, of the Code of the City of Virginia
Beach, Virginia, is hereby adopted to read as follows:

ARTICLE I - GENERAL PROVISIONS

Sec. 1.1. Statutory authorization and purpose.

A. This ordinance is adopted pursuant to the authority granted to localities by Va.
Code § 10.1 – 600 et seq.

B. The City Council finds the purpose of these provisions is to prevent the loss of
life and property, the creation of health and safety hazards, the disruption of commerce
and governmental services, the extraordinary and unnecessary expenditure of public
funds for flood protection and relief, and the impairment of the tax base by:

1. Regulating uses, activities, and development that, alone or in combination
with other existing or future uses, activities, and development, will cause
unacceptable increases in flood heights, velocities, and frequencies;
2. Restricting or prohibiting certain uses, activities, and development from
locating within districts subject to flooding;
3. Requiring all uses, activities, and developments that do occur in flood-
prone districts be protected or flood-proofed against flooding and flood
damage;
4. Protecting individuals from buying land and structures that are unsuited for
intended purposes because of flood hazards; and
5. Acknowledging that the tide data over the last 100 years shows that
Virginia Beach is facing an increased danger of flooding caused by both
sea level rise and subsidence.

46
47
48 **Sec. 1.2. Applicability.**
49

50 These provisions shall apply to all privately and publicly owned lands within the
51 jurisdiction of the City of Virginia Beach and identified as areas of special flood hazard
52 according to the Flood Insurance Rate Map (FIRM) that is provided to the City of
53 Virginia Beach by the Federal Emergency Management Agency (FEMA) and dated May
54 4, 2009 or identified as floodplains subject to special restrictions in Section 4.10 of this
55 ordinance.
56

57 **Sec. 1.3. Definitions.**
58

59 *Base flood.* The flood having a one (1) percent chance of being equaled or
60 exceeded in any given year; also referred to as the one hundred (100) year flood.
61

62 *Base flood elevation.* The FEMA designated one (1) percent annual chance
63 water surface elevation. The water surface elevation of the base flood in relation to the
64 datum specified on the City's FIRM.
65

66 *Basement.* Any area of the building having its floor sub-grade (below ground
67 level) on all sides.
68

69 *Breakaway wall.* A wall that is not part of the structural support of the building
70 and is intended, through its design and construction, to collapse under specific lateral
71 loading forces without causing damage to the elevated portion of the building or the
72 supporting foundation system.
73

74 *City Council.* The body designated to review appeals made by individuals with
75 regard to decisions of the Floodplain Administrator in the interpretation of this
76 ordinance.
77

78 *City Manager.* The City Manager of the City of Virginia Beach, or his designees.
79

80 *Development.* Any man-made change to improved or unimproved real estate,
81 including, but not limited to, buildings or other structures, the placement of
82 manufactured homes, streets, mining, dredging, filling, grading, paving, excavation or
83 drilling operations, storage of equipment or materials, or the subdivision of land.
84

85 *Elevated building.* A non-basement building built to have the lowest floor elevated
86 above the ground level by means of solid foundation perimeter walls, pilings, or columns
87 (posts and piers).
88

89 *Encroachment.* The advance or infringement of uses, plant growth, fill,
90 excavation, buildings, permanent structures, or development into a floodplain, which
91 may impede or alter the flow capacity of a floodplain.
92

93 Existing construction. Structures for which the “start of construction” commenced
94 before the effective date of the most recent FIRM (May 4, 2009) “Existing construction”
95 may also be referred to as “existing structures.”
96

97 Flood or flooding.
98

99 1. A general or temporary condition of partial or complete inundation of
100 normally dry land areas from:
101

102 a. The overflow of inland or tidal waters;
103

104 b. The unusual and rapid accumulation or runoff of surface waters
105 from any source; or
106

107 c. Mudflows, which are proximately caused by flooding as defined in
108 paragraph 1.b. of this definition and are akin to a river of liquid and
109 flowing mud on the surfaces of normally dry land areas, as when
110 earth is carried by a current of water and deposited along the path
111 of the current.
112

113 2. The collapse or subsidence of land along the shore of a lake or other
114 body of water as a result of erosion or undermining caused by waves or
115 currents of water exceeding anticipated cyclical levels or suddenly
116 caused by an unusually high water level in a natural body of water,
117 accompanied by a severe storm, an unanticipated force of nature such
118 as flash flood or an abnormal tidal surge, or by some similarly unusual
119 and unforeseeable event that results in flooding as defined in paragraph
120 1.a. of this definition.
121

122 Flood Insurance Rate Map (FIRM). An official map of the City, on which FEMA
123 has delineated both the special flood hazard areas and the risk premium zones
124 applicable to the community. A FIRM that has been made available digitally is called a
125 Digital Flood Insurance Rate Map (DFIRM).
126

127 Flood Insurance Study (FIS). A report by FEMA that examines, evaluates, and
128 determines flood hazards and, if appropriate, corresponding water surface elevations, or
129 an examination, evaluation, and determination of mudflow and flood-related erosion
130 hazards.
131

132 Floodplain. Any land area susceptible to being inundated by water from any
133 source.
134

135 Flood proofing. Any combination of structural and non-structural additions,
136 changes, or adjustments to structures which reduce or eliminate flood damage to real
137 estate or improved real property, water and sanitary facilities, or structures and their
138 contents.

Floodway. The channel of a river or other watercourse and the adjacent land areas that shall be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot. The “floodway” may also be referred to as the “regulatory floodway”.

Freeboard. A factor of safety usually expressed in feet above the base flood elevation for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed. When a freeboard is included in the height of a structure, the flood insurance premiums may be less expensive.

Highest adjacent grade. The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic structure. Any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places in states with historic preservation programs that have been approved by the Secretary of the Interior; or
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior or
 - b. Directly by the Secretary of the Interior in states without approved programs.

Hydrologic and Hydraulic Engineering Analysis. Analyses performed by a professional engineer licensed by the Commonwealth of Virginia, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other

frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

Letters of Map Change (LOMC). A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective FIRM or FIS. Letters of Map Change include:

1. Letter of Map Amendment (LOMA): An amendment based on technical data showing that a property was incorrectly included in a designated Special Flood Hazard Area (SFHA). A LOMA amends the current effective FIRM and establishes that a land as defined by metes and bounds or a structure is not located in a SFHA.
2. Letter of Map Revision (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F) is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the City's floodplain management ordinance.
3. Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum National Flood Insurance Program (NFIP) requirements for such projects with respect to delineation of SFHAs. A CLOMR does not revise the effective FIRM or FIS.

Lowest floor. The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44CFR §60.3.

Manufactured home. A structure, transportable in one or more sections, that is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than one hundred eighty (180) consecutive days, but does not include a recreational vehicle.

Manufactured home park or subdivision. A parcel (or contiguous parcels) of land divided into two (2) or more manufactured home lots for rent or sale.

Market value. The value of a structure, established prior to the damage in question, as determined by property values used for tax assessment purposes (assessment) as adjusted by the Virginia Beach Real Estate Assessor (market factor) to reflect current market conditions, or as determined by an independent appraisal done by a professional appraiser.

New construction. For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after October 3, 1970 and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management ordinance adopted by the City and includes any subsequent improvements to such structures.

Post-FIRM structures. A structure for which construction or substantial improvement occurred after October 3, 1970.

Pre-FIRM structures. A structure for which construction or substantial improvement occurred on or before October 3, 1970.

Recreational vehicle. A vehicle that is:

1. Built on a single chassis;
2. Four hundred (400) square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

Regulatory flood protection elevation (design flood elevation). The base flood elevation plus the freeboard required by this ordinance.

Special flood hazard area (SFHA). The land in the floodplain subject to a one (1) percent or greater chance of being flooded in any given year as set forth in this ordinance. These areas are designated as AE, AO, A, and VE on the FIRM.

Start of construction. For other than new construction and substantial improvement under the Coastal Barrier Resources Act (P.L. 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement, or other improvement was within one hundred eighty (180) days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure. For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

Substantial damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

Substantial improvement. Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before the start of construction of the improvement. This term includes structures that have incurred substantial damage regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and are the minimum necessary to assure safe living conditions; or
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, shall comply with

all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places shall be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

Violation. The failure of a structure or other development to be fully compliant with the provisions of the floodplain ordinance in effect at the time of construction or development. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

Watercourse. Any natural or artificial lake, river, creek, stream, ditch, channel, waterway, gully, ravine, swale, or wash in which water flows, either continuously, periodically, or intermittently, and which has a definite channel, bed, or banks.

Sec. 1.4. Compliance and liability.

A. No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of this ordinance and any other applicable ordinances and regulations that apply to uses within the City.

B. The degree of flood protection sought by the provisions of this ordinance is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This ordinance does not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.

C. This ordinance shall not create liability on the part of the City of Virginia Beach or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

Sec. 1.5. Records.

Records of actions associated with administering this ordinance shall be kept on file and maintained by the Floodplain Administrator.

356 **Sec. 1.6. Abrogation and greater restrictions.**

357
358 This ordinance supersedes any ordinance currently in effect in the floodplain.
359 Any ordinance, however, shall remain in full force and effect to the extent that its
360 provisions are more restrictive.

361
362 **Sec. 1.7. Severability.**

363
364 If any section, subsection, paragraph, sentence, clause, or phrase of this
365 ordinance be declared by the courts to be unconstitutional or invalid for any reason
366 whatsoever, such decision shall not affect the validity of the ordinance as a whole other
367 than the part so declared to be unconstitutional or invalid.

368
369 **Sec. 1.8. Penalty for violations.**

370
371 Any person who fails to comply with any of the requirements or provisions of this
372 ordinance or directions of the directors of planning or public works or any authorized
373 employee of the City of Virginia Beach shall be guilty of the appropriate violation and
374 subject to the penalties therefore. Any violation of the provision of this ordinance shall
375 be punishable by a fine of not more than one hundred dollars (\$100.00). Each person
376 shall be deemed guilty of a separate offense for each and every day or portion thereof
377 during which any violation of any of the provisions of this ordinance is committed.

378
379 The Virginia Uniform Statewide Building Code (VA USBC) addresses building
380 code violations and the associated penalties in Section 104 and Section 115.

381
382 In addition to the above penalties, all other actions are hereby reserved, including
383 an action in equity for the proper enforcement of this ordinance. The imposition of a fine
384 or penalty for any violation of, or noncompliance with, this ordinance shall not excuse
385 the violation or noncompliance or permit it to continue, and all such persons shall be
386 required to correct or remedy such violations within a reasonable time. Any structure
387 constructed, reconstructed, enlarged, altered, or relocated in noncompliance with this
388 ordinance may be declared by the City of Virginia Beach to be a public nuisance and
389 abatable as such. Flood insurance may be withheld from structures constructed in
390 violation of this ordinance.

391
392 **ARTICLE II - ADMINISTRATION**

393
394 **Sec. 2.1. Designation of the floodplain administrator.**

395
396 The City Manager of the City of Virginia Beach is hereby appointed the
397 Floodplain Administrator to administer and implement this ordinance. The Floodplain
398 Administrator has delegated the duties and responsibilities set forth in this ordinance to
399 the Departments of Public Works and Planning, as specified below.

400
401 **Sec. 2.2. Duties and responsibilities of the Department of Public Works.**

The duties and responsibilities of the Department of Public Works shall include but are not limited to:

- A. Interpreting floodplain boundaries and providing available base flood elevation and flood hazard information;
- B. Verifying that applicants proposing an alteration of a watercourse have notified adjacent communities, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), and other appropriate agencies (Virginia Department of Environmental Quality (VADEQ), United States Army Corps of Engineers (USACE), etc.) and have submitted copies of such notifications to FEMA;
- C. Advising applicants for new construction or substantial improvement of structures that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that Federal flood insurance is not available on such structures; areas subject to this limitation are shown on FIRMs as Coastal Barrier Resource System Areas or Otherwise Protected Areas;
- D. Submitting to FEMA, or requiring applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses prepared by or for the City, within six (6) months after such data and information becomes available if the analyses indicate changes in base flood elevations;
- E. Maintaining and permanently keeping Flood Insurance Studies, FIRMs (including historic studies and maps and current effective studies and maps) and Letters of Map Change;
- F. Notifying FEMA when the corporate boundaries of the City of Virginia Beach have been modified and:
 1. Providing a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to this ordinance has either been assumed or relinquished through annexation; and
 2. If the FIRM for any annexed area includes SFHAs that have flood zones with regulatory requirements that are not set forth in this ordinance, prepare amendments to this ordinance to adopt the FIRM and appropriate requirements, and submit the amendments to the City Council for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended ordinance shall be provided to the Department of Conservation and Recreation

(Division of Dam Safety and Floodplain Management) and FEMA.

- G. Upon the request of FEMA, completing and submitting a report concerning participation in the NFIP, which may request information regarding the number of buildings in the SFHA, the number of permits issued for development in the SFHA, and the number of variances issued for development in the SFHA.

Sec. 2.3. Duties and responsibilities of the Department of Planning.

The duties and responsibilities of the Department of Planning shall include but are not limited to:

- A. Reviewing applications for permits to determine whether proposed activities will be located in the SFHA;
- B. Reviewing applications to determine whether proposed activities will be reasonably safe from flooding and requiring new construction and substantial improvements to meet the requirements of this ordinance;
- C. Reviewing applications to determine whether all necessary permits have been obtained from the Federal, State, or local agencies from which prior or concurrent approval is required; in particular, permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, structures), any alteration of a watercourse, or any change of the course, current, or cross section of a stream or body of water, including any change to the SFHAs of free-flowing non-tidal waters of the State;
- D. Approving applications and issuing permits to develop in flood hazard areas if the provisions of this ordinance have been met, or disapproving applications if the provisions of this ordinance have not been met;
- E. Granting administrative variances pursuant to Section 6.1 of this ordinance;
- F. Inspecting, or causing to be inspected, buildings, structures, and other development for which permits have been issued to determine compliance with this ordinance or to determine if non-compliance has occurred or violations have been committed;
- G. Reviewing Elevation Certificates and requiring incomplete or deficient certificates to be corrected;
- H. Maintaining and permanently keeping documentation supporting the issuance and denial of permits, Elevation Certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been flood

494 proofed, and other required design certifications, variances, and records of
495 enforcement actions taken to correct violations of this ordinance;

496
497 I. Enforcing the provisions of this ordinance, investigating violations, issuing
498 notices of violations or stop work orders, and requiring permit holders to take
499 corrective action;

500
501 J. Advising the City Council regarding the intent of this ordinance and, for each
502 application for a variance, preparing a staff report and recommendation; and

503
504 K. Administering the requirements related to proposed work on existing
505 buildings;

506
507 1. Making determinations as to whether buildings and structures that are
508 located in flood hazard areas and that are damaged by any cause have
509 been substantially damaged; and

510
511 2. Making reasonable efforts to notify owners of substantially damaged
512 structures of the need to obtain a permit to repair, rehabilitate, or
513 reconstruct, and prohibit the non-compliant repair of substantially
514 damaged buildings except for temporary emergency protective
515 measures necessary to secure a property or stabilize a building or
516 structure to prevent additional damage.

517
518 **Sec. 2.4. Shared duties and responsibilities.**

519
520 The duties and responsibilities shared by the Departments of Public Works and
521 Planning shall include but are not limited to:

522
523 A. Undertaking, as determined appropriate by the Floodplain Administrator due
524 to the circumstances, other actions that may include but are not limited to:
525 issuing press releases, public service announcements, and other public
526 information materials related to permit requests and repair of damaged
527 structures; coordinating with other Federal, State, and local agencies to assist
528 with substantial damage determinations; providing owners of damaged
529 structures information related to the proper repair of damaged structures in
530 SFHAs; and assisting property owners with documentation necessary to file
531 claims for Increased Cost of Compliance coverage under National Flood
532 Insurance Program (NFIP) flood insurance policies; and

533
534 B. It is the duty of the City Floodplain Administrator to take into account flood,
535 mudslide, and flood-related erosion hazards, to the extent that they are
536 known, in all official actions relating to land management and use throughout
537 the entire jurisdictional area of the city, whether or not those hazards have
538 been specifically delineated geographically (e.g., via mapping or surveying).

Sec. 2.5. Use and Interpretation of FIRMs.

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of SFHAs, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

- A. Where field surveyed topography indicates that adjacent ground elevations:
 - 1. Are below the base flood elevation, even in areas not delineated as a SFHA on a FIRM, the area shall be considered a SFHA and subject to the requirements of this ordinance;
 - 2. Are above the base flood elevation, the area shall be regulated as a SFHA unless the applicant obtains a Letter of Map Change that removes the area from the SFHA.
- B. In FEMA-identified SFHAs where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified SFHAs, any other flood hazard data available from a Federal, State, local or other source shall be reviewed and reasonably used.
- C. Base flood elevations and designated floodway boundaries on FIRMs and in Flood Insurance Studies (FISs) shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths or lower base flood elevations.
- D. Other sources of data shall be reasonably used if such sources show increased base flood elevations or larger floodway areas than are shown on FIRMs and in FISs.
- E. If a Preliminary FIRM and/or a Preliminary FIS has been provided by FEMA:
 - 1. Upon the issuance of a Letter of Final Determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering this ordinance.
 - 2. Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to Section 4.6 and used where no base flood elevations or floodway areas are provided on the effective FIRM.
 - 3. Prior to issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodway areas exceed the base flood elevations or designated floodway widths in existing flood hazard data provided by

FEMA. Such preliminary data may be subject to change or appeal to FEMA.

Sec. 2.6. Jurisdictional boundary changes.

A. The City floodplain ordinance in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas. The City shall pass a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. If the FIRM for any annexed area includes SFHAs that have flood zones with regulatory requirements that are not set forth in this ordinance, the City shall prepare amendments to this ordinance to adopt the FIRM and appropriate requirements, and submit the amendments to the City Council for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended ordinance shall be provided to the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.

B. In accordance with the Code of Federal Regulations, Title 44 Subpart (B) Section 59.22 (a) (9) (v), all NFIP participating communities shall notify FEMA and, optionally, the Department of Conservation and Recreation in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

C. So that all FIRMs accurately represent the community's boundaries, a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority shall be included with the notification.

Sec. 2.7. District boundary changes.

The delineation of any of the Floodplain Districts may be revised by the City of Virginia Beach where natural or man-made changes have occurred or where more detailed studies have been conducted or undertaken by the USACE or other qualified agencies, or an individual documents the need for such change. However, prior to any such change, approval shall be obtained from FEMA.

Sec. 2.8. Interpretation of district boundaries.

Initial interpretations of the boundaries of the Floodplain Districts shall be made by the Floodplain Administrator. Should a dispute arise concerning the boundaries of any of the Districts, the City Council shall make the necessary determination. The person questioning or contesting the location of the District boundary shall be given a reasonable opportunity to present his case to the City Council and to submit his own technical evidence if he so desires.

632 **Sec. 2.9. Submitting technical data.**

633
634 A community's base flood elevations may increase or decrease resulting from
635 physical changes affecting flooding conditions. As soon as practicable, but not later than
636 six (6) months after the date such information becomes available, a community shall
637 notify FEMA of the changes by submitting technical or scientific data. Such a
638 submission is necessary so that upon confirmation of those physical changes affecting
639 flooded conditions, risk premium rates and floodplain management requirements will be
640 based upon current data.

641
642 **Sec. 2.10. Letters of map revision.**

643
644 When development in the floodplain causes a change in the base flood elevation,
645 the applicant, including state agencies, shall notify FEMA by applying for a Conditional
646 Letter of Map Revision or a Letter of Map Revision.

647
648 **Sec. 2.11. Appeals to decisions made by the Floodplain Administrator.**

649
650 It is further provided that any decision of the Floodplain Administrator or his
651 designee may be modified, reversed, or affirmed by the City Council upon appeal by
652 any aggrieved party to such decision, if such appeal is filed with the Floodplain
653 Administrator within thirty (30) days of such decision.

654
655 **ARTICLE III - ESTABLISHMENT OF FLOODPLAIN DISTRICTS**

656
657 **Sec. 3.1. Description of Floodplain Districts.**

658
659 **A. Special Flood Hazard Areas (SFHA)**

660
661 The SFHAs shall include land in the floodplain subject to a one (1) percent or
662 greater chance of being flooded in any given year. The basis for the delineation of these
663 districts shall be the FIS and the FIRM for the City of Virginia Beach prepared by FEMA,
664 Federal Insurance Administration, dated May 4, 2009, and any subsequent revisions or
665 amendments thereto.

666
667 The boundaries of the SFHAs are established as shown on the FIRM, which is
668 declared to be a part of this ordinance and shall be kept on file at the City of Virginia
669 Beach Department of Public Works, and include the following districts:

- 670
671
 1. The **Floodway District** is in an **AE Zone** and is delineated, for the
 - 672 purposes of this ordinance, using the criterion that certain areas within
 - 673 the floodplain must be capable of carrying the waters of the one (1)
 - 674 percent annual chance flood without increasing the water surface
 - 675 elevation of that flood more than one (1) foot at any point. The areas
 - 676 included in this District are specifically defined in Table 7 of the above-
 - 677 referenced FIS and shown on the accompanying FIRM.

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2. The **AE Zones** on the FIRM accompanying the FIS shall be those areas for which one (1) percent annual chance flood elevations have been provided and the floodway has **not** been delineated.
 3. The **A Zone** on the FIRM accompanying the FIS shall be those areas for which no detailed flood profiles or elevations are provided, but the one (1) percent annual chance floodplain boundary has been approximated.
 4. The **AO Zone** on the FIRM accompanying the FIS shall be those areas of shallow flooding identified as AO on the FIRM.
 5. Reserved.
 6. The **VE or V Zones** on FIRMs accompanying the FIS shall be those areas that are known as Coastal High Hazard areas, extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storm or seismic sources.

698 B. Floodplain subject to special restrictions.

699
700 The City of Virginia Beach may identify and regulate local flood hazard or
701 ponding areas that are not delineated on the FIRM. These areas are identified in
702 Section 4.10 and may be delineated on a map using best available topographic data
703 and locally derived information such as flood of record, historic high water marks, or
704 approximate study methodologies.

705
706 **ARTICLE IV – FLOODPLAIN DISTRICT PROVISIONS**

707
708 **Sec. 4.1. Permit and application requirements.**

709
710 A. Permit Requirement

711
712 All uses, activities, and development occurring within any floodplain district,
713 including placement of manufactured homes and structures, shall be undertaken only
714 upon the issuance of the appropriate permit. Such development shall be undertaken
715 only in strict compliance with the provisions of this Ordinance and with all other
716 applicable codes and ordinances, as amended, such as the VA USBC and the City of
717 Virginia Beach development ordinances. Prior to the issuance of any such permit, the
718 Building Official shall require all applications to include compliance with all applicable
719 state and federal laws and shall review all sites to assure they are reasonably safe from
720 flooding. Under no circumstances shall any use, activity, or development adversely
721 affect the capacity of the channels or floodways of any watercourse, drainage ditch, or
722 any other drainage facility or system.

724 B. Site Plans and Permit Applications

725
726 All applications for development within any floodplain district and all building
727 permits issued within the floodplain shall incorporate the following information:

- 728
729 1. The elevation of the base flood at the site;
730
731 2. The elevation of the lowest floor (including basement) or, in V zones, the
732 lowest horizontal structural member;
733
734 3. For structures to be flood-proofed (non-residential only), the elevation to
735 which the structure will be flood-proofed; and
736
737 4. Topographic information showing existing and proposed ground
738 elevations.
739

740 **Sec. 4.2. General Standards.**

741
742 A. The following provisions shall apply to all permits issued in all floodplain
743 districts:
744

- 745 1. New construction and substantial improvements of all structures shall be
746 located, elevated, and constructed according to the VA USBC and
747 anchored to prevent flotation, collapse, or lateral movement of the
748 structure.
749
750 2. Manufactured homes shall be anchored to prevent flotation, collapse, or
751 lateral movement. Methods of anchoring may include, but are not limited
752 to, use of over-the-top or frame ties to ground anchors. This standard
753 shall be in addition to and consistent with applicable state anchoring
754 requirements for resisting wind forces.
755
756 3. New construction and substantial improvements shall be constructed
757 with materials and utility equipment resistant to flood damage.
758
759 4. New construction or substantial improvements shall be constructed by
760 methods and practices that minimize flood damage.
761
762 5. Electrical, heating, ventilation, plumbing, air conditioning equipment, and
763 other service facilities, including duct work, shall be designed and/or
764 located so as to prevent water from entering or accumulating within the
765 components during conditions of flooding.
766
767 6. New and replacement water supply systems shall be designed to
768 minimize or eliminate infiltration of flood waters into the system.
769

770 7. New and replacement sanitary sewage systems shall be designed to
771 minimize or eliminate infiltration of flood waters into the systems and
772 discharges from the systems into flood waters.

774 8. On-site waste disposal systems shall be located and constructed to
775 avoid impairment to them or contamination from them during flooding.

777 9. No use shall be permitted if such use will increase the amounts of
778 potentially damaging materials, including those likely to be injurious to
779 health, that might be transported in floods.

780
781 B. In all SFHAs, the following additional provisions shall apply:

783 1. Prior to any proposed alteration or relocation of any channels or of any
784 watercourse or stream, within the City a permit shall be obtained from
785 the USACE, VADEQ, the Virginia Marine Resources Commission, and
786 the Wetlands Board through the joint permit application process.
787 Furthermore, notification of the proposal shall be given by the applicant
788 to all affected adjacent jurisdictions, the Department of Conservation and
789 Recreation (Division of Dam Safety and Floodplain Management), other
790 required agencies, and FEMA.

792 2. The flood carrying capacity within an altered or relocated portion of any
793 watercourse shall be maintained.

794
795 3. Sand dunes, barrier beaches, and other natural protective barriers shall
796 remain intact to provide protection against wind, waves, and erosion
797 drainage. Any person who desires to use or alter any coastal primary
798 sand dune, other than for the purpose of conducting the activities
799 specified in section 1602 of the Zoning Ordinance of the City of Virginia
800 Beach, shall first obtain a permit from the USACE, VADEQ, the Virginia
801 Marine Resources Commission, and the Wetlands Board through the
802 joint permit application process.

803
804 **Sec. 4.3. Elevation and construction requirements.**

805
806 In all SFHAs where base flood elevations have been provided in the FIS or
807 generated by a licensed professional in accordance with Section 4.6 of this ordinance,
808 the following provisions shall apply:

809
810 A. Residential Construction Requirements

811
812 New construction or substantial improvement of any residential structure or
813 manufactured home in Zones AE and A with detailed base flood elevations shall have
814 the lowest floor, including basement, elevated to a minimum of two (2) feet above the
815 base flood level.

817 B. Non-Residential Construction Requirements

818
819 New construction or substantial improvement of any commercial, industrial, or
820 non-residential building or manufactured home shall have the lowest floor, including
821 basement, elevated a minimum of two (2) feet above the base flood level. Buildings
822 located in AE zones may be flood-proofed in lieu of being elevated provided that all
823 areas of the building components below the elevation corresponding to the base flood
824 elevation plus a minimum of two (2) feet freeboard are water tight with walls
825 substantially impermeable to the passage of water, and use structural components
826 having the capability of resisting hydrostatic and hydrodynamic loads and the effect of
827 buoyancy. A professional engineer or architect licensed by the Commonwealth of
828 Virginia shall certify that the standards of this subsection are satisfied. Such certification,
829 including the specific elevation (in relation to NAVD88) to which such structures are
830 flood proofed, shall be maintained by the Building Official.

831
832 C. Space Below the Lowest Floor Requirements

833
834 In zones A, AE, and AO, fully enclosed areas of new construction or substantially
835 improved existing structures that are below the regulatory flood protection elevation
836 shall:

- 837
838 1. Not be designed or used for human habitation, but shall only be used for
839 parking of vehicles, building access, or limited storage of maintenance
840 equipment used in connection with the premises. Access to the enclosed
841 area shall be the minimum necessary to allow for parking of vehicles
842 (garage door), limited storage of maintenance equipment (standard
843 exterior door), or entry to the living area (stairway or elevator).
844
845 2. Be constructed entirely of flood resistant materials below the regulatory
846 flood protection elevation.
847
848 3. Include measures to automatically equalize hydrostatic flood forces on
849 walls by allowing for the entry and exit of floodwaters. To meet this
850 requirement, the openings shall either be certified by a professional
851 engineer or architect licensed by the Commonwealth of Virginia or meet
852 or exceed the following minimum design criteria:
853
854 a. Provide a minimum of two (2) openings on different sides of each
855 enclosed area subject to flooding.
856
857 b. The total net area of all openings shall be at least one (1) square inch
858 for each square foot of enclosed area subject to flooding.
859
860 c. If a building has more than one (1) enclosed area, each area shall
861 have openings to allow floodwaters to automatically enter and exit.
862

- 863 d. The bottom of all required openings shall be no higher than one (1)
864 foot above the adjacent grade.
865
866 e. Openings may be equipped with screens, louvers, or other opening
867 coverings or devices, provided they permit the automatic flow of
868 floodwaters in both directions.
869
870 f. Foundation enclosures made of flexible skirting are not considered
871 enclosures for regulatory purposes and, therefore, do not require
872 openings. Masonry or wood underpinning, regardless of structural
873 status, is considered an enclosure and requires openings as outlined
874 above.
875

876 **D. Manufactured Homes and Recreational Vehicle Requirements**
877

- 878 1. All manufactured homes placed, or substantially improved, on individual
879 lots or parcels must meet all the requirements for new construction,
880 including the elevation and anchoring requirements in Article 4, section
881 4.2, and section 4.3 of this ordinance.
882
883 2. All recreational vehicles placed on sites shall either:
884
885 a. Be on the site for fewer than one hundred eighty (180) consecutive
886 days; or
887
888 b. Be fully licensed and ready for highway use (a recreational vehicle is
889 ready for highway use if it is on its wheels or jacking system, is
890 attached to the site only by quick disconnect type utilities and security
891 devices and has no permanently attached additions); or
892
893 c. Meet all the requirements for manufactured homes in Article 4 section
894 4.3(D)(1).
895

896 **Sec. 4.4. Floodway requirements.**
897

898 The following provisions shall apply within the Floodway District of an AE zone:
899

900 A. Within any floodway area, no encroachments, including fill, new construction,
901 substantial improvements, or other development shall be permitted unless it has been
902 demonstrated through hydrologic and hydraulic analysis performed in accordance with
903 standard engineering practice that the proposed encroachment will not affect normal
904 flood flow, result in any increase in flood levels within the community, increase erosion
905 within or adjoining to the floodway, cause the diversion of floodwaters during the
906 occurrence of the base flood discharge, increase peak flows or velocities in a manner
907 likely to lead to added property damage or hazards to life, or increase the amounts of
908 damaging materials that might be transported in floods. Hydrologic and hydraulic
909 analyses shall be undertaken only by professional engineers or others of demonstrated

910 qualifications, who shall certify that the technical methods used correctly reflect
911 currently-accepted technical concepts. Studies, analyses, computations, etc., shall be
912 submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.
913

914 Encroachments, including fill, new construction, substantial improvements, and other
915 development within the floodway that would result in any increase in flood levels within
916 the community during the occurrence of the base flood discharge is specifically
917 prohibited. No variance shall be granted for any development, use, or activity that would
918 cause any increase in the water surface elevation of the base flood.
919

920 If the above provisions are satisfied, all new construction and substantial improvements
921 shall comply with all applicable provisions of Article 4.
922

923 B. The placement of new or replacement manufactured homes (mobile homes)
924 is prohibited.
925

926 C. The following uses and structures may be permitted in the floodway district,
927 subject to the requirements of Articles III, IV, V, and VI of this ordinance:
928

929 1. Public and private outdoor recreational facilities;

930 2. Agricultural uses, including farming, grazing, and the raising of poultry or
931 livestock; provided, that poultry or livestock shall not be housed within
932 five hundred (500) feet of any residential, apartment, or hotel district;

933 3. Open uses, such as public and private roadways, off street parking, or
934 loading and unloading areas related to uses in adjoining districts;

935 4. Commercial mining, soil removal, and sand pits subject to regulations
936 applicable to extractive industries as set forth in the conditional use
937 provisions of the Zoning Ordinance of the City of Virginia Beach;

938 5. Public improvements, such as dams, levees and channel improvements,
939 and utilities installations and substations, including temporary storage of
940 materials, except flammable, toxic or noxious materials, and temporary
941 location of maintenance installations; and

942 6. Uses and structures customarily accessory and clearly incidental and
943 subordinate to uses listed above, including in connection with
944 agricultural uses; roadside stands for the sale of agricultural products
945 produced on the premises; provided that:

946 a. Only one (1) such stand shall be permitted per lot;

947 b. No such stand shall exceed five hundred (500) square feet in floor
948 area; and

- c. No such stand on the street frontage shall be erected within twenty (20) feet of the property line.

Sec. 4.5. AE Zone requirements.

The following provisions shall apply within all AE zones:

A. Until a regulatory floodway is designated, no new construction, substantial improvements or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zone AE on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the City.

B. Notwithstanding the criteria set forth in Section 4.10, development activities in Zones AE on the City of Virginia Beach FIRM that increase the water surface elevation of the base flood by more than one (1) foot may be allowed, provided that the applicant first applies, with the City of Virginia Beach's endorsement, for a Conditional Letter of Map Revision, and receives the approval of FEMA.

Sec. 4.6. A Zone requirements.

The following provisions shall apply within an A zone:

A. For these areas, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevations and floodway information from federal, state, and other acceptable sources, when available. Where the specific one (1) percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the USACE Floodplain Information Reports, the U.S. Geological Survey Floodprone Quadrangles, etc., then the applicant for the proposed use, development, and/or activity shall determine this base flood elevation. For development proposed in the A Zone the applicant shall use technical methods that correctly reflect currently accepted non-detailed technical concepts, such as flood hazard analyses, point on boundary, known high water marks from past floods, or detailed methodologies including hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.

B. The Floodplain Administrator reserves the right to require a hydrologic and hydraulic analysis for any development and to determine the base flood elevation. When such base flood elevation data is utilized, the lowest floor shall be elevated to minimum of two (2) feet above the base flood level. During the permitting process, the Floodplain Administrator shall obtain:

1. The elevation of the lowest floor (including the basement) of all new and substantially improved structures; and

- 995
996 2. If the structure has been flood-proofed in accordance with the
997 requirements of this ordinance, the elevation (in relation to NAVD88) to
998 which the structure has been flood-proofed.
999

- 1000 C. When the data is not available from any source, the lowest floor of the
1001 structure shall be elevated to not less than two (2) feet above the highest
1002 adjacent grade.
1003

1004 **Sec. 4.7. AO Zone requirements.**
1005

1006 The following provisions shall apply within an AO zone:
1007

- 1008 A. All new construction and substantial improvements of residential structures
1009 shall have the lowest floor, including basement, elevated above the highest
1010 adjacent grade an amount not less than the depth number specified in feet on
1011 the FIRM. If no flood depth number is specified, the lowest floor, including
1012 basement, shall be elevated no less than two (2) feet above the highest
1013 adjacent grade.
1014

- 1015 B. All new construction and substantial improvements of non-residential
1016 structures shall:
1017

- 1018 1. Have the lowest floor, including basement, elevated above the highest
1019 adjacent grade an amount not less than the depth number specified in
1020 feet on the FIRM. If no flood depth number is specified, the lowest floor,
1021 including basement, shall be elevated at least two (2) feet above the
1022 highest adjacent grade; or
1023

- 1024 2. Together with attendant utility and sanitary facilities be completely flood-
1025 proofed to the specified flood level so that any space below that level is
1026 watertight with walls substantially impermeable to the passage of water
1027 and with structural components having the capability of resisting
1028 hydrostatic and hydrodynamic loads and effects of buoyancy.
1029

- 1030 C. Adequate drainage paths around structures on slopes shall be provided to
1031 guide floodwaters around and away from proposed structures.
1032

1033 **Sec. 4.8. Reserved.**
1034

1035 **Sec. 4.9. V and VE Zone requirements.**
1036

1037 The following provisions shall apply within V and VE Zones:
1038

- 1039 A. All new construction and substantial improvements in Zones V and VE shall
1040 be elevated on pilings or columns so that:

1. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to a minimum of two (2) feet above the base flood level; and
 2. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one (1) percent chance of being equaled or exceeded in any given year.
- B. A professional engineer or architect licensed by the Commonwealth of Virginia shall develop or review the structural design, specifications, and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Article IV, Section 4.6 A.
- C. The Floodplain Administrator shall obtain the elevation (in relation to NAVD88) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V and VE. The Floodplain Administrator shall maintain a record of all such information.
- D. All new construction shall be located landward of the reach of mean high tide.
- E. All new construction and substantial improvements shall have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood-lattice work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than ten (10) and no more than twenty (20) pounds per square foot. Use of breakaway walls that exceed a design safe loading resistance of twenty (20) pounds per square foot may be permitted only if a professional engineer or architect licensed by the Commonwealth of Virginia certifies that the designs proposed meet the following conditions:
1. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 2. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each

1087 have a one (1) percent chance of being equaled or exceeded in any
1088 given year.

1089
1090 F. The enclosed space below the lowest floor shall be used solely for parking of
1091 vehicles, building access, or storage. Such space shall not be partitioned into
1092 multiple rooms, temperature-controlled, or used for human habitation.

1093
1094 G. The use of fill for structural support of buildings is prohibited. When non-
1095 structural fill is proposed in a coastal high hazard area, appropriate
1096 engineering analyses shall be conducted to evaluate the impacts of the fill
1097 prior to issuance of a development permit.

1098
1099 H. Existing nonconforming uses and structures located below the level of the
1100 base flood elevation, as shown in the FIS and accompanying FIRMs, shall not
1101 be expanded.

1102
1103 I. The man-made alteration of sand dunes, which would increase potential flood
1104 damage, is prohibited.

1105
1106 **Sec. 4.10. Floodplain subject to special restrictions.**

1107
1108 A. All FIRM delineated SFHAs located in the following areas shall be identified
1109 as a floodplain subject to special restrictions:

- 1110
1111 1. North Landing River and its tributaries south of Lynnhaven Parkway;
1112
1113 2. West Neck Creek and its tributaries south of Shipps Corner Road,
1114 London Bridge Road, and the portion of Dam Neck Road east of its
1115 intersection with London Bridge Road; and
1116
1117 3. Bays, creeks, lakes, guts, coves, wetlands, marshes and swamps and
1118 their tributaries comprising the Back Bay watershed south of South
1119 Birdneck Road and east of Princess Anne Road and General Booth
1120 Boulevard.

1121
1122 B. The following provisions shall apply within the floodplain subject to special
1123 restrictions:

- 1124
1125 1. Notwithstanding any provision of this ordinance to the contrary, no filling
1126 shall be permitted, including filling with material excavated from the
1127 same floodplain except for
1128
1129 a. The purpose of public roadway or other similar public works
1130 construction;
1131

- b. The maintenance, alteration, or relocation of bona fide agricultural ditches, swales, or agricultural pathways or those ditches required for proper lot drainage;
- c. For shoreline stabilization or maintenance projects, such as riprap revetment, bulkheads, or other treatment used to stabilize and protect the banks of waterways, the City Manager or his designee may approve the placement of fill provided the following criteria are met:
- i. A joint permit application is submitted;
- ii. The alignment of the stabilization structure is along the escarpment or in line with adjacent stabilization structures; and
- iii. Fill must be the minimum necessary to support the stabilization project.
2. The City Manager, or his designee, may approve the placement of fill provided that the following criteria are met:
- a. Proposed fill within the floodplain:
- i. Shall be mitigated to result in no decrease in flood storage volume on the site;
- ii. Shall be mitigated entirely on the same site that will incur the fill;
- iii. Shall be contiguous to the existing floodplain that is being filled; and
- iv. Shall be limited to the smallest amount of area and volume possible to correct irregularities within the boundary of the project.
- b. The combined areas of fill and mitigation shall not exceed five (5) percent of the total area within the floodplain located on the site that will incur the fill.
3. Residential dwelling structures shall not be located within the floodplains subject to special restrictions on lots created after October 23, 2001. Residential dwelling structures located in local flood hazard areas as of October 23, 2001 may be expanded with attached additions to a total footprint of less than one thousand (1,000) square feet; such additions shall also comply with the requirements set forth in Article V of this ordinance.

- 1178
1179 4. On lots where single family dwellings are permitted by right and which
1180 were recorded on or before October 23, 2001 and meet the
1181 requirements of section 402(b) of the City Zoning Ordinance, the
1182 minimum fill necessary shall be permitted only for the following:
1183
1184 a. A driveway or other on-site parking area;
1185
1186 b. To ensure the proper functioning of a septic system;
1187
1188 c. To ensure proper lot drainage given the existing and proposed
1189 development in the immediate area; and
1190
1191 d. To meet the VA USBC requirements for slab or crawl foundations.
1192

1193 **Sec. 4.11. Subdivision proposal requirements.**
1194

1195 A. All subdivision proposals shall be consistent with the need to minimize flood
1196 damage.
1197

1198 B. All subdivision proposals shall have public utilities and facilities such as sewer,
1199 gas, electrical, and water systems located and constructed to minimize flood damage.
1200

1201 C. All subdivision proposals shall have adequate drainage provided to reduce
1202 exposure to flood hazards.
1203

1204 D. Base flood elevation data shall be obtained from the most recent FIRM (May
1205 4, 2009) or developed using detailed methodologies, including hydraulic and hydrologic
1206 analysis, comparable to those contained in a FIS for all final plats and other
1207 development proposals (including manufactured home parks and neighborhoods).
1208

1209 **ARTICLE V – EXISTING STRUCTURES IN FLOODPLAIN AREAS**
1210

1211 **Sec. 5.1. Existing structures.**
1212

1213 A structure or use of a structure or premises that lawfully existed prior to the
1214 adoption of this ordinance, but which is not in conformity with this ordinance, may be
1215 continued subject to the following conditions:
1216

1217 A. Any existing structures in the Floodway Area shall not be expanded or
1218 enlarged unless it has been demonstrated through hydrologic and hydraulic
1219 analyses performed in accordance with standard engineering practices that
1220 the proposed expansion or enlargement would not result in any increase in
1221 the base flood elevation.
1222

1223 B. Any modification, alteration, repair, reconstruction, or improvement of any

kind to a structure and/or use located in any floodplain areas to an extent or amount of less than fifty (50) percent of its market value shall conform to the VA USBC.

- C. Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, in a floodplain area to an extent or amount of fifty (50) percent or more of its market value shall be undertaken only in full compliance with this ordinance and shall require the entire structure to conform to the VA USBC.

ARTICLE VI - VARIANCES AND APPEALS

Sec. 6.1. Administrative variances.

The Floodplain Administrator shall approve or deny an application requesting an administrative variance after receipt of a complete application. Administrative variances may only be granted for the following uses, development, or redevelopment:

- A. A residential attached garage or detached garages constructed at the elevation corresponding to the base flood elevation may be flood proofed according to the requirements outlined in Section 4.3 B of this ordinance in lieu of the elevation requirements.
- B. As defined in Section 4.10 Floodplains subject to special restrictions.
- C. Any structure or use sustaining damage not caused by flood to an extent or amount of fifty (50) percent or more of its market value to allow the structure to be rebuilt to the freeboard height in effect at the start of construction for the original structure. If the structure is a Pre-FIRM structure, full compliance with the current VAUSBC freeboard above the base flood elevation is required. Structures that are utilizing an approved land management plan for their on-site waste disposal may be allowed to continue the use of the land management plan as long as it is approved by the City and the Health Department, even for damage or destruction resulting from flood.

Sec. 6.2. City Council variances.

- A. Notwithstanding any other provision of this ordinance, the City Council shall have the authority to grant such variances from the terms of this ordinance as will not be contrary to the public interest in cases in which the strict application of the provisions of this ordinance would effectively prohibit or unreasonably restrict the use of the subject property. No variance shall be granted for any proposed use, development, or activity within any Floodway District that will cause any increase of the base flood elevation.

1269 B. In acting upon applications for variances, the City Council shall satisfy all
1270 relevant factors and procedures specified in other sections of this ordinance and shall
1271 consider the following additional factors:
1272

- 1273 1. The danger to life and property due to increased flood heights or
1274 velocities caused by encroachments.
1275
- 1276 2. The danger that materials may be swept on to other lands or transported
1277 in floods posing the risk of injury to others.
1278
- 1279 3. The proposed water supply and sanitation systems and the ability of
1280 these systems to prevent disease, contamination, and unsanitary
1281 conditions.
1282
- 1283 4. The susceptibility of the proposed facility and its contents to flood
1284 damage and the effect of such damage on the individual owners.
1285
- 1286 5. The importance of the services provided by the proposed facility to the
1287 community.
1288
- 1289 6. The requirements of the facility for a waterfront location.
1290
- 1291 7. The availability of alternative locations not subject to flooding for the
1292 proposed use.
1293
- 1294 8. The compatibility of the proposed use with existing development and
1295 development anticipated in the foreseeable future.
1296
- 1297 9. The relationship of the proposed use to the comprehensive plan and
1298 floodplain management program for the area.
1299
- 1300 10. The safety of access by ordinary and emergency vehicles to the property
1301 in time of flood.
1302
- 1303 11. The expected heights, velocity, duration, rate of rise, and sediment
1304 transport of the flood waters expected at the site.
1305
- 1306 12. The historic nature of a structure. Variances for repair or rehabilitation of
1307 historic structures may be granted upon a determination that the
1308 proposed repair or rehabilitation will not preclude the structure's
1309 continued designation as a historic structure and the variance is the
1310 minimum necessary to preserve the historic character and design of the
1311 structure.
1312
- 1313 13. Such other factors that are relevant to the purposes of this ordinance.
1314

1315 **Sec. 6.3. Application process.**

1316
1317 A. Applications for variances from the requirements of this ordinance shall be
1318 made to the City Council and filed with the director of planning. The fee for
1319 such applications shall be six hundred fifty dollars (\$650.00). Except in cases
1320 in which such fee is waived, the director shall not accept any application not
1321 accompanied by payment of the required fee. The procedure for the
1322 advertising, hearing and determination of applications for floodplain variances
1323 shall be in accordance with the requirements pertaining to applications for
1324 subdivision variances, as set forth in Section 9.4 of the Subdivision
1325 Ordinance. In cases in which a variance application is filed by reason of a
1326 natural disaster that is the subject of a federal declaration of emergency,
1327 application and associated advertising fees shall be waived and such
1328 application shall be given expedited processing to the maximum practical
1329 extent.

1330
1331 B. All applications shall be accompanied by the following:

- 1332
1333 1. A separate map, on a 1" = 100' or greater scale, identifying all proposed
1334 land disturbance, including fill and mitigation areas, and the limits of the
1335 existing and proposed SFHAs, tidal and non-tidal wetlands, Southern
1336 Watershed Management Area Buffer, and CBPA Resource Protection
1337 Area Buffer; and
1338
1339 2. A preliminary floodplain study addressing the physical and
1340 environmental characteristics of the floodplain located on adjoining
1341 properties and in the general area. Such study shall be sufficient to show
1342 that the variance, if granted, will meet the standards defined in Section
1343 6.3 and in addition thereto, shall:
1344
1345 a. Contain supporting data and calculations as appropriate, given the
1346 preliminary nature of the floodplain study;
1347
1348 b. Comply with all applicable Public Works Specifications and
1349 Standards; and
1350
1351 c. Be certified by a professional engineer, architect, surveyor,
1352 landscape architect or practitioner of a related field having a valid
1353 license issued by the Commonwealth of Virginia or who is exempt
1354 from licensure pursuant to applicable provisions of the Virginia
1355 Code.

1356
1357 **Sec. 6.4. Requirements.**

1358
1359 No variance shall be granted unless the following requirements are met:
1360

A. Such variance will not create or result in:

1. Unacceptable or prohibited increases in flood heights;

2. Additional threats to public safety;

3. Extraordinary public expense;

4. Nuisances; or

5. Fraud or victimization of the public.

B. The granting of such variance will not be detrimental to other property in the vicinity.

C. The circumstances giving rise to the variance application are not of a general or recurring nature.

D. Such circumstances arise from the physical character of the property or from the use or development of adjacent property and not from the personal situation of the applicant.

E. The granting of such variance will not be in conflict with any city ordinance or regulation.

F. Variances shall be the minimum necessary to provide relief.

G. All variances shall meet all of the requirements for the Chesapeake Bay Preservation Area Ordinance (Appendix F) and the Southern Watersheds Management Ordinance (Appendix G), unless a variance therefrom is granted.

Sec. 6.5. Notification.

The Floodplain Administrator shall notify the applicant for a variance in writing that the issuance of a variance to construct a structure below the base flood elevation a) increases the risks to life and property and b) will result in increased premium rates for flood insurance.

Sec. 6.6. Records.

A record of all variance actions, including justifications for the granting of variances and notifications issued pursuant to this section shall be maintained by the Floodplain Administrator. Any variances that are issued shall be noted in the annual or biennial report submitted to FEMA.

Sec. 6.7. Appeals to variance decisions.

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1408
1409
1410
1411

Appeals of decisions by the City Council under this ordinance shall be subject to review by the Circuit Court of the City of Virginia Beach, if filed within thirty (30) days from the date of City Council action.

Adopted by the Council of the City of Virginia Beach, Virginia, on the 26th day of November, 2013.



CFPF, rr <cfpf@dcr.virginia.gov>

City of Virginia Beach CFPF Round 3 Submission

1 message

Stanley F. Smith Jr. <SFSmitJr@vbgov.com>
To: "cfpf@dcr.virginia.gov" <cfpf@dcr.virginia.gov>

Wed, Apr 6, 2022 at 1:55 PM

Hello,

Please find attached two CFPF project submission packages for the City of Virginia Beach:

- CID515531_VirginiaBeach_CFPF-1: *March Terrace Creation in Back Bay*
- CID515531_VirginiaBeach_CFPF-2: *First Colonial Road and Oceana Boulevard Stormwater Improvements*

All necessary application forms and required documents for each project are located within the pdfs. Please let us know if you have any questions or require further information. Thank you in advance for your consideration of these projects.

Thanks,

Stanley

Stanley Smith, Jr., P.E.

City of Virginia Beach

Public Works Engineering

484 Viking Drive

[Virginia Beach, VA 23452](#)

(Direct) 757-385-8459 | sfsmitjr@vbgov.com



2 attachments

CID515531_VirginiaBeach_CFPF-1.pdf
6926K

CID515531_VirginiaBeach_CFPF-2.pdf

6001K