CITY OF SUFFOLK

P.O. BOX 1858, SUFFOLK, VIRGINIA 23439-1858 PHONE: (757) 514-4012

CITY MANAGER

April 6, 2022

Virginia Department of Conservation and Recreation
Attention: Virginia Community Flood Preparedness Fund
Division of Dam Safety and Floodplain Management
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Dear Sir or Ma'am:

Please accept this written correspondence as signed documentation authorizing the City of Suffolk's request for funding from Round 3 of the 2022 Virginia Community Flood Preparedness Fund (CFPF).

The CFPF funding would enable the City of Suffolk to conduct the Finney Outfall to Nansemond River Drainage Area Study in Downtown Suffolk. The total cost of the proposed study is $72,881.36 Following the 90% Fund / 10% Match requirements for this category, the City respectfully requests funding from the CFPF in the amount of $65,593.22 Furthermore, the City will provide the 10% matching contribution from the Public Works Professional Services budget, in the amount of $7,288.14

Thank you for your consideration of this grant proposal. If you have any questions about this proposal please contact Matt Fanghella at 757-514-7675 or mfanghella@suffolkva.us or Heather Baggett at 757-514-7627 or hbaggett@suffolkva.us.

Sincerely,

Albert S. Moor, II P.E.
City Manager

p.c. Robert Lewis, Director of Public Works

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 Suffolk

Category of Grant Being Applied for (check one):

____**Capacity Building/Planning**

_____**Project**

__X__**Study**

NFIP/DCR Community Identification Number (CID): 510156

If a state or federally recognized Indian tribe, Name of tribe: n/a

Name of Authorized Official: Albert S. Moor, II P.E.

Signature of Authorized Official: 

Mailing Address (1): P.O. Box 1858

Mailing Address (2): City Manager's Office

City: Suffolk **State:** VA **Zip:** 23439

Telephone Number: (757) 514-7675 **Cell Phone Number:** (757) 266-7924

Email Address: amoor@suffolkva.us

Contact Person (If different from authorized official): Matt Fanghella, EIT

Mailing Address (1): P.O. Box 1858

Mailing Address (2): Public Works Engineering

City: Suffolk **State:** VA **Zip:** 23439

Telephone Number: (757) 514-7675 **Cell Phone Number:** (757) 266-7924

Email Address: mfanghella@suffolkva.us

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

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.
- **X** 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.
- **X** 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): Suffolk, Virginia

NFIP Community Identification Number (CID#): (See appendix F 510156

Is Project Located in an NFIP Participating Community? **X** Yes □ No

Is Project Located in a Special Flood Hazard Area? **X** Yes □ No

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

Flood Insurance Rate Map Number(s) (If Applicable): 5101560227E

Total Cost of Project: $ 72,881.36

Total Amount Requested: $ 65,593.22

Appendix C: Scoring Criteria for Studies

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

Applicant Name:	**City of Suffolk, Virginia**	
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	**X**
No	Not eligible for consideration	
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	
No	Eligible for consideration for studies, capacity building, and planning only	**X**
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	**N/A**
No	Not eligible for consideration	
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	
No	Eligible for consideration	**X**
5. Has the applicant provided evidence of an ability to provide the required matching funds?		
Yes	Eligible for consideration	**X**
No	Not eligible for consideration	
N/A	Match not required	

Studies Eligible for Consideration	X Yes ☐ No

Applicant Name:	City of Suffolk, Virginia

Scoring Information

Criterion	Point Value	Points Awarded
6. Eligible Studies (Select all that apply)		
Revising 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.	**30**	
Creating tools or applications to identify, aggregate, or display information on flood risk or creating a crowd-sourced mapping platform that gathers data points about real-time flooding. This could include a locally or regionally based web-based mapping product that allows local residents to better understand their flood risk.	**15**	
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).	**35**	**35**
Studies and Data Collection of Statewide and Regional Significance. Funding of studies of statewide and regional significance and proposals will be considered for the following types of studies:		
☐ Updating precipitation data and IDF information (rain intensity, duration, frequency estimates) including such data at a sub-state or regional scale on a periodic basis.	**45**	
☐ Regional relative sea level rise projections for use in determining future impacts.	**45**	
☐ Vulnerability analysis either statewide or regionally to state transportation, water supply, water treatment, impounding structures, or other significant and vital infrastructure from flooding.	**45**	**45**
☐ Flash flood studies and modeling in riverine regions of the state.	**45**	
☐ Statewide or regional stream gauge monitoring to include expansion of existing gauge networks.	**45**	

☐ New or updated delineations of areas of recurrent flooding, stormwater flooding, and storm surge vulnerability in coastal areas that include projections for future conditions based on sea level rise, more intense rainfall events, or other relevant flood risk factors.	**45**	
☐ Regional flood studies in riverine communities that may include watershed-scale evaluation, updated estimates of rainfall intensity, or other information.	**50**	
☐ Regional hydrologic and hydraulic studies of floodplains.	**45**	
☐ Studies of potential land use strategies that could be implemented by a local government to reduce or mitigate damage from coastal or riverine flooding.	**40**	
☐ Other proposals that will significantly improve protection from flooding on a statewide or regional basis	**35**	
7. Is the study 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 study 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 study 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**
Total Points		**98**

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

City of Suffolk – Department of Public Works
2022 Virginia Community Flood Preparedness Fund Grant Round 3
Finney Outfall to Nansemond River Drainage Study

Part IV

A. Scope of Work Narrative – Studies

The City of Suffolk, Virginia is submitting this grant application to Round 3 of the 2022 Virginia Community Flood Preparedness Fund (CFPF) in the Study category. Specifically, the City is requesting funding to support a study of the drainage system and area that is downstream of the Finney Outfall and ultimately discharges to the Nansemond River. Currently, this area experiences flooding after significant rain events, which impacts critical infrastructure, historic resources, and nature-based resources which are valued and treasured by the citizens of Suffolk.

1. Type of Study and Details of the Study

This Finney Outfall to Nansemond River Drainage Study will address both current and future flooding of the City's drainage system from the Finney Outfall to the drainage system's confluence with the Nansemond River. The Finney Outfall drains stormwater from a 109-acre, highly developed, urban drainage area in the heart of Downtown Suffolk, an area of the city that was built predominantly in the late 1800's and early 1900's. Downstream of the Finney Outfall, the drainage system flows approximately 2,700 feet in a predominantly northward direction to its confluence with the Nansemond River. The drainage system from the Finney Outfall to the Nansemond River consists primarily of open channel flow with a series of culvert crossings at various points. Several critical infrastructure points and community assets suffer from the impacts of flooding through this area. Within this 2,700-foot flow path there is a culvert pipe crossing underneath an active railroad bed which serves a double-track railroad for CSX Transportation, two culvert crossings underneath the Suffolk Seaboard Coastline Trail, and a culvert crossing underneath E. Constance Road (U.S. 58 Business). This flow path also passes the Suffolk Seaboard Station Railroad Museum and the Cedar Hill Cemetery. There have been slope failures along the drainage system adjacent to the cemetery due to the flooding, which prompted the need for emergency repairs. Furthermore, the flooding along this system impacts critical infrastructure including utility infrastructure and road closures due to flooding of E. Constance Road (U.S. 58 Business) which is a major thoroughfare through the City and entrance point for traveling into or out of the City to connect eastern Hampton Roads localities (Chesapeake, Virginia Beach, Norfolk). The flooding also impacts the Suffolk Seaboard Coastline Trail and has slowed City plans to expand this nature-based community asset. Finally, the flow path's end point at its confluence with the Nansemond River is tidally influenced which also increases flooding impacts. In addition to the current flooding issues in the study area, this area is also expected to be negatively impacted by the effects of climate change including sea level rise and more intense storm events.

The City of Suffolk is seeking CFPF grant funding to develop a study of the Finney Outfall to Nansemond River Drainage Area and has contracted the engineering consultant Timmons Group to develop the hydraulic and hydrologic study. The H&H study will include a drainage analysis of the existing storm sewer system utilizing City GIS, additional data provided, and field survey data. The analysis will include storm piping, water quantity conveyance, and storage calculations of the drainage area with detailed analysis along the study area. The analysis shall be conducted in PCSWMM with 1D pipes and storages to start and convert portions as needed from a 1-D analysis to a 2-D analysis that includes overland flow and ponding as needed. The drainage analysis will be based on the 25-yr design storm as well as two (2) other more extreme design storm events which will be paired with two (2) tailwater elevations representing current day MHW and another forward looking option as agreed upon with the City. These more extreme design storms and forward looking tailwater options will enable the City to consider the impacts of climate-change and its consequences and base decision making for potential improvements in this drainage area using the best available science and data. Once the results of

this analysis are reviewed, the City will select two (2) design storm/tailwater scenarios to use to identify potential modifications to the system to relieve flooding.

Once the City receives notification of award of grant funding, the City will provide Timmons Group with the Notice to Proceed for The Finney Outfall to Nansemond River Drainage. The approximate time for completion of the drainage study is 23 weeks. Potential modifications and projects identified by this study would be included in the City of Suffolk Resilience Plan, which is currently under development.

2. Benefit of the Study to Community Resilience

The Finney Outfall to Nansemond River Drainage Study will increase community resilience by identifying the cause of the flooding and recommend potential flood reduction projects to reduce both current and future flooding. Reduced flooding in this area would also reduce the impact of flooding on utility infrastructure within the study corridor as well as historic and cherished community assets and alleviate the roadway flooding that occurs on E. Constance Road, all of which would result in increased community resilience.

Furthermore, the median household income in the study area is $63,386, which is less than 80% of the median household income for the City of Suffolk of $79,899, as identified by Census.gov from 2016 – 2020 data. Hence, the study area meets the definition of a "low-income geographic area" as defined by the *2022 Virginia Community Flood Preparedness Fund Round 3 Grant Manual*. The adaptation and protection efforts identified by this study will work to enhance equity throughout the project area which is a key Commonwealth Resilience Planning Principle.

Finally, the proposed study will protect historic and community assets and prioritize nature-based solutions to the maximum extent practical. The project study corridor is home to The Suffolk Seaboard Station Railroad Museum, The Suffolk Seaboard Coastline Trail, and Cedar Hill Cemetery. The Cedar Hill Cemetery is a 25-acre, public cemetery dating back to 1802 and it has been designated as a historic cemetery and a national historic district. The cemetery has suffered from slope failures due to the flooding and drainage issues within the study area. Similarly, the City has additional plans for the expansion and enhancement of the Suffolk Seaboard Coastline Trail; however, these plans are paused due to the impacts of flooding on the trail within the study area. It is the City's intent that proposed improvements within this area will incorporate nature-based solutions to preserve the natural habitat and community resilience in this area.

3. Qualifications

The Finney Outfall to Nansemond River Drainage Study and the CFPF grant award will be managed by the City of Suffolk Public Works Engineering Division. Public Works Engineering staff members have a strong knowledge of the City's stormwater system, work with flooding and drainage concerns within the city on a daily basis, and lead resiliency initiatives in the City. Furthermore, two staff members are in training to earn their Certified Floodplain Manager (CFM) Certifications. The City's contracted consultant, Timmons Group, will conduct this study under the direction of the consultant's Senior Project Manager who is a licensed Professional Engineer (P.E.) in the Commonwealth of Virginia and a Certified Floodplain Manager (CFM), as recognized by the Association of State Floodplain Managers. Timmons group has previous experience and demonstrated success in developing drainage studies for the City of Suffolk and for other localities in the region.

4. Objectives of the Study and Regional Resilience

The objectives of this study include:

- Identifying the cause(s) of the flooding in this area
- Identifying potential flood protection and flood reduction projects within this area
- Reduce flooding of critical infrastructure: including utility infrastructure and E. Constance Road and historic and natural assets including Cedar Hill Cemetery, Suffolk Seaboard Station Railroad Museum, and Suffolk Seaboard Coastline Trail.

The City of Suffolk Public Works Department will vet the potential flood protection projects identified as part of this study. Agreed upon solutions would be incorporated into the City-wide Resilience Plan which is currently under development. Funding for further design and construction of identified projects and modifications to the drainage system would be sought after through inclusion in the City's Capital Improvement Plan (CIP) as well as potential grant programs such as Virginia Department of Conservation and Recreation Community Flood Preparedness Fund, the Federal Emergency Management Building Resilient Infrastructure and Communities Grant, and Virginia Department of Transportation funding sources.

While this study impacts only a portion of Suffolk, it supports an identified regional need for coastal resiliency and resilient infrastructure. E. Constance Road (U.S. 58 Business) is a major arterial road within the City and serves as a significant entrance point into the city from the East. More importantly, E. Constance Road is a connector road to Sentara Obici Hospital and eastern Hampton Roads cities (Chesapeake, Norfolk, Virginia Beach), and is identified as a Hurricane Evacuation Route by the Virginia Department of Emergency Management. E. Constance Road was identified as a point of interest in the Master Thoroughfare Plan included in Chapter 6 of the 2026 City of Suffolk Comprehensive Plan and experiences an Annual Average Daily Traffic Volume (AADT) of 16,000 vehicles per the 2019 Virginia Department of Transportation Daily Traffic Volume Estimates. This study will also result in more resilient utility infrastructure and identify opportunities to reduce the impacts of flooding on utility infrastructure within the study corridor.

Throughout the rest of Hampton Roads and the Commonwealth of Virginia, many communities face challenges of infrastructure flooding and tidal influence coupled with sea level rise. The proposed study may provide best practices that could be used as case studies in other settings of this type, while also providing a framework for studies focused on targeted infrastructure flood resilience problems. The City is an active participant on several Hampton Roads Planning District Commission (HRPDC) Committees including The Coastal Resiliency Committee, The Regional Stormwater Workgroup, and The Regional Environmental Committee, the Hampton Roads Transportation Planning Organization (HRTPO) and its subcommittees. City staff are willing to share the results and findings of this study with peers and colleagues from other localities to use as a template for studies in their communities, if they see a benefit and/or need.

5. Statewide Context

The study funded by this grant will improve Virginia's flood protection and prevention capabilities, from a transferability and statewide context. Communities across the Commonwealth face the challenges of infrastructure flooding and tidal influence coupled with sea level rise. The proposed study may provide best practices that could be used as case studies in other settings of this type, while also providing a framework for studies focused on targeted infrastructure flood resilience problems.

D. Budget Narrative – All Grant Categories

The median household income in the study area of zip code 23434 is $63,386, which is less than 80% of the median household income of $79,899 for the City of Suffolk, as identified by Census.gov from 2016 – 2020 data. Hence, the study area meets the definition of a "low-income geographic area" as defined by the *2022 Virginia Community Flood Preparedness Fund Round 3 Grant Manual*. As a result, the City of Suffolk is requesting funding support for 90% of the proposed Finney Outfall to Nansemond River Drainage Study.

The total cost for the proposed study is $72,881.36 According to the guidance outlined in the DCR 2022 Round 3 Grant Manual for the Virginia Community Flood Preparedness Fund, grant matching requirements for the Flood Prevention and Protection studies that are located in and serve a low-income geographic area are eligible for a Fund 90% / Match 10% ratio. Therefore, the City respectfully requests financial assistance from the Fund in the amount of $65,593.22 and the City is committing to fund the remaining $7,288.14 via the Stormwater Utility Fund from the Professional Services line of the annual operating budget for Public Works Engineering. Evidence of the City of Suffolk's ability to obtain these funds to partially fund the proposed study is found on Page 243 of the City of Suffolk FY 2021-2022 Adopted Operating and Capital Budget, which can be found on the City website at the following link: https://www.suffolkva.us/DocumentCenter/View/5717/FY-2021-2022-Adopted-Operating-and-Capital-Budget A summary of the financial costs for the proposed study is shown in Table 1, below.

All match funding will be used towards consultant work to complete the study, along with the $7,288.14 of contributed City funds. In addition to the direct funding included as a match, the City of Suffolk also commits to managing all aspects of project management using existing qualified staff A detailed breakdown of how the proposed funding for the proposed Finney Outfall to Nansemond River Drainage Study will be used is shown in Table 2, below. Furthermore, signed documentation from the City Manager authorizing the request for funding is included with this application.

Table 1. Costs for Finney Outfall to Nansemond River Drainage Study

Flood Prevention and Protection Studies in Low-Income Geographic Areas Fund 90% / Match 10%			
Item	**Total**	**Request from Grant Fund**	**Match**
Finney Outfall to Nansemond River Drainage Study	$ 72,881.36	$ 65,593.22	$ 7,288.14
Total Project Cost:			
Amount of funds requested from the Fund			**$ 65,593.22**
Amount of contribution by City			$ 7,288.14

Table 2. Detailed Breakdown of Proposed Funding Costs.

TASK/LABOR CLASSIFICATION	SENIOR PROJECT MANAGER	SENIOR PROJECT ENGINEER / PROJECT MANAGER	SENIOR DESIGNER	PROJECT ENGINEER II	CLERICAL	TOTAL HOURS
Services						
1. Records Review & Site Visit	7	14	16	28	0	65
2. Perform Drainage Analysis	34	84	82	110	0	310
3. Recommend Mitigation Measures	8	16	24	32	2	82
TOTAL HOURS EACH CLASSIFICATION	49	114	122	170	2	457
CLASSIFICATION RATES	$195.00	$160.00	$125.00	$115.00	$80.00	
Total Labor - Design Services	$ 9,555.00	$ 18,240.00	$ 15,250.00	$ 19,550.00	$ 160.00	**$ 62,755.00**
Topographic Survey Allowance (not to exceed)						**$10,000**
Total - Basic Services						**$ 72,755.00**
Direct Expense						$ 72,755.00
	216	Mileage @ $0.585			$ 126.36	
TOTAL DIRECT EXPENSE					**$ 126.36**	
TOTAL FEE NOT TO EXCEED					**$72,881.36**	
Amount Covered with funds from CFPF					**$65,593.22**	

Attachments:

Link to the current floodplain ordinance:

Unified Development Ordinance Article 4- Sec. 31-416.2- Floodplain Overlay District
https://library.municode.com/va/suffolk/codes/unified_development_ordinance?nodeId=SUFFOLK_UNIFIED_DEVELOPMENT_ORDINANCE_ART4ZO_S31-416.2FLOVDIF

Unified Development Ordinance Appendix B- B-15- Flood Prevention Plan
https://library.municode.com/va/suffolk/codes/unified_development_ordinance?nodeId=SUFFOLK_UNIFIED_DEVELOPMENT_ORDINANCE_APXBSURE_B-15FLPRPL

A link to the current hazard mitigation plan:

2017 Hampton Roads Hazard Mitigation Plan and Appendices
https://www.hrpdcva.gov/library/view/620/2017-hampton-roads-hazard-mitigation-plan-and-appendices/

A link to the current comprehensive plan:

City of Suffolk, Virginia 2026 Comprehensive Plan
https://www.suffolkva.us/DocumentCenter/View/890/2026-Comprehensive-Plan-PDF

Social vulnerability index score from ADAPT VBA's Virginia Vulnerability Viewer:
According to ADAPT VA's Virginia Vulnerability Viewer, the focus area of this study received a score of Moderate Social Vulnerability.

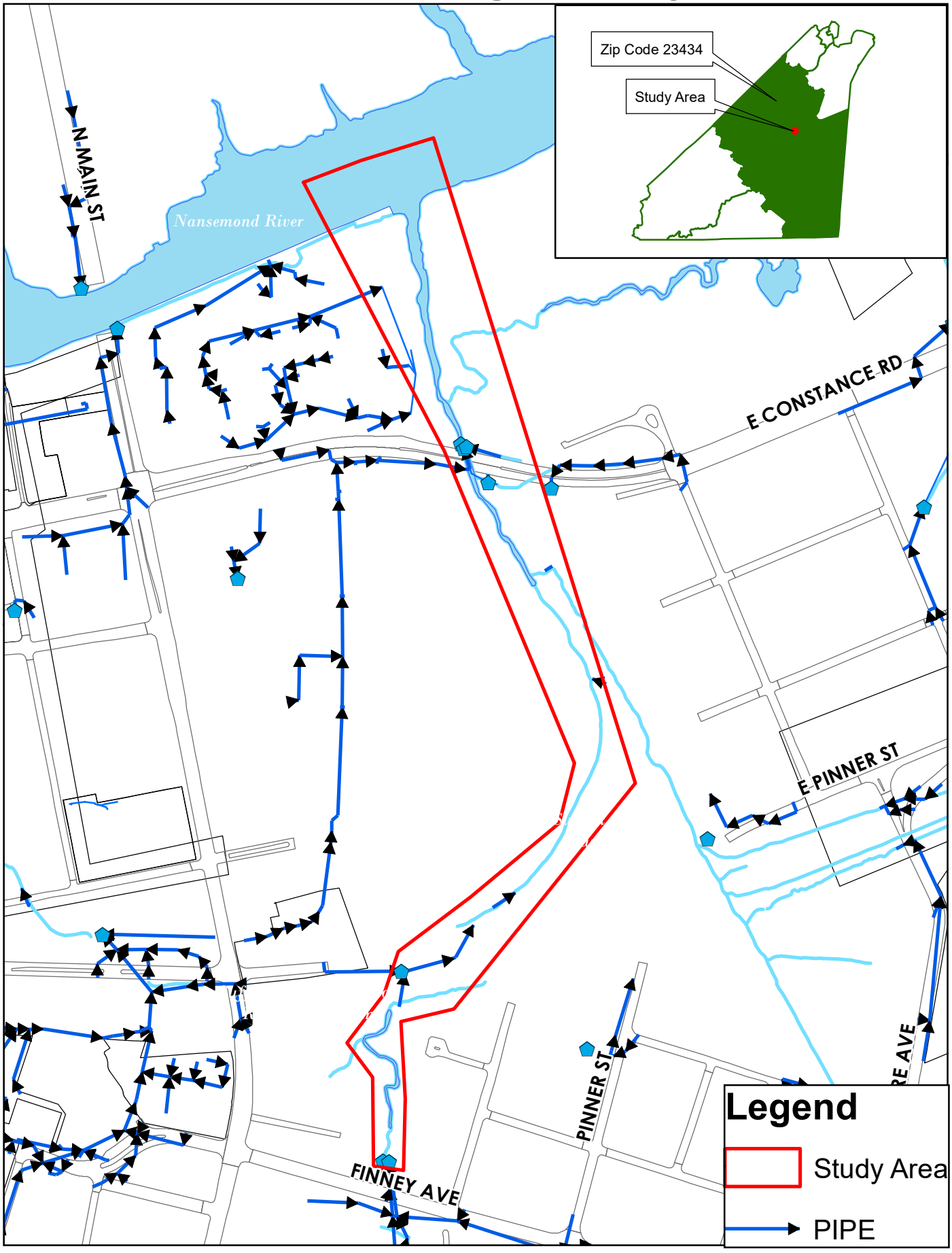
Flooding of E. Constance Road (U.S. 58 Business) during Hurricane Sandy in October 2012. Photo is looking eastbound towards Chesapeake.

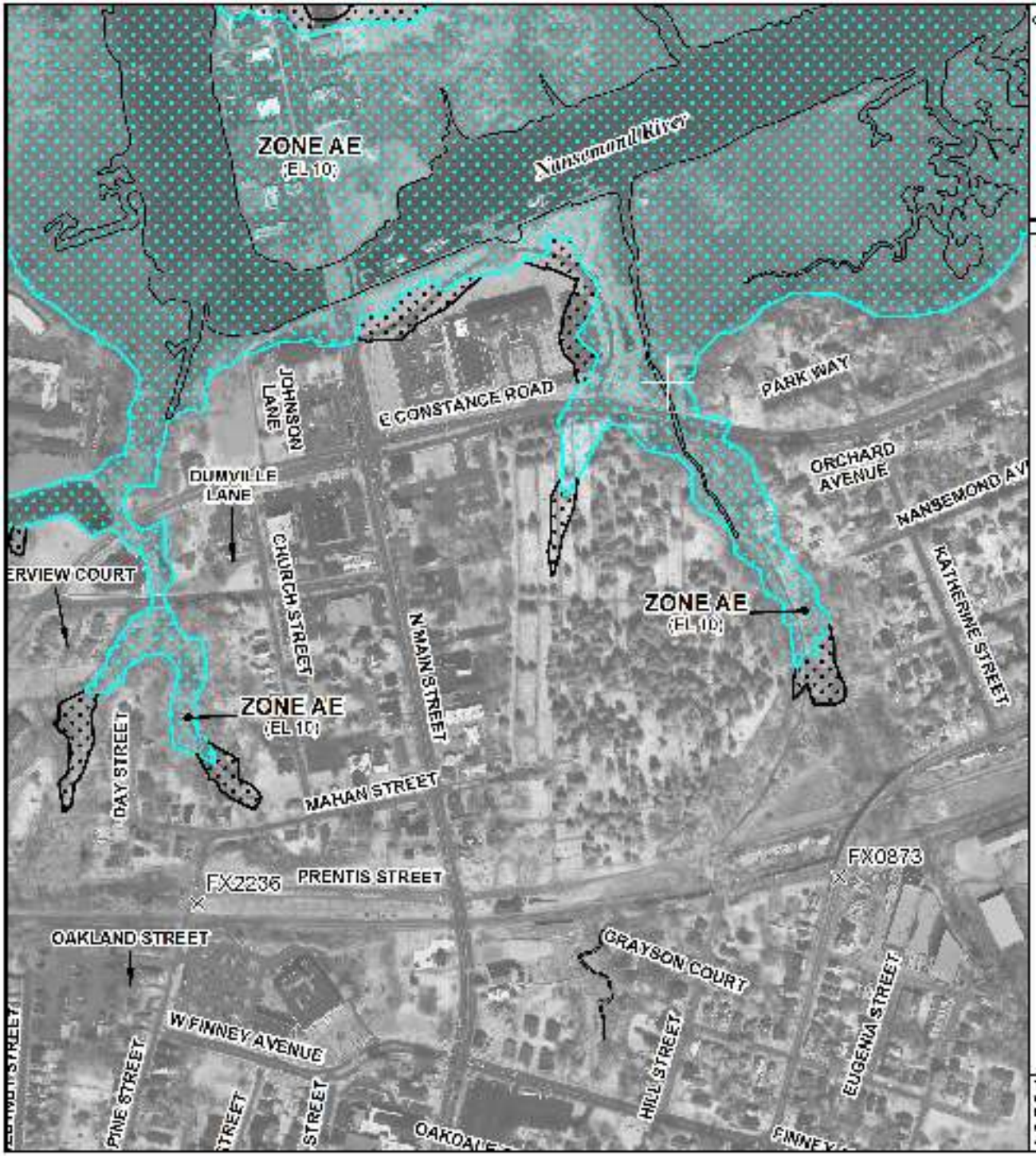
Flooding of E. Constance Road (U.S. 58 Business) during Hurricane Sandy in October 2012. Photo is looking westbound towards intersection with N. Main Street (U.S. 32/U.S. 460 Business)

Flooding of E. Constance Road (U.S. 58 Business) during Hurricane Sandy in October 2012. Photo is looking westbound towards intersection with N. Main Street (U.S. 32/U.S. 460 Business)

Overbank Flooding of open channel drainage system in the area downstream of Finney Outfall in a rain event on November 12, 2020. Photo is looking downstream towards CSX Railroad, the Suffolk Seaboard Coastline Trail, and the historic Cedar Hill Cemetery. This event also related in flooded utility infrastructure.

Finney Outfall to Nansemond River Drainage Study Area





call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 F

150 0 150

PANEL 0227E

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
SUFFOLK,
VIRGINIA
INDEPENDENT CITY

PANEL 227 OF 390

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
SUFFOLK, CITY OF	510156	0227	E

MAP NUMBER
5101560227E

MAP REVISED
AUGUST 3, 2015

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the NFHL FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://www.fema.gov/

WORK ORDER NUMBER ?

RE: Finney Outfall to Nansemond River Drainage Study

CONTRACT: Agreement between the City of Suffolk (the "City") and Timmons Group (the "Consultant") For Engineering Services.

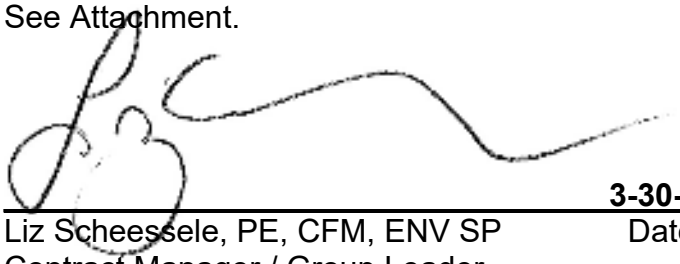
All work to be performed in accordance with the terms, limitations, and conditions of said agreement.

SCOPE OF WORK: The "Consultant" shall provide drainage investigations in accordance with the attached Scope of Work.

SCHEDULE OF WORK: The "Consultant" shall complete the work within twenty-three (23) from execution of this work order.

COMPENSATION: The "Consultant" shall be paid in accordance with the referenced contract, a fee not to exceed $ 72,881.36. See Attachment.

SUBMITTED:



3-30-22

Liz Scheessele, PE, CFM, ENV SP — Date
Contract Manager / Group Leader
Timmons Group

APPROVED: _____

City of Suffolk — Date

_____

Finney Outfall to Nansemond River Drainage Study

PROJECT DESCRIPTION

The City of Suffolk is interested in addressing current and future flooding along a stretch of the drainage system from the Finney outfall to the confluence with Nansemond River. This area currently experiences flooding which results in flooded infrastructure, including neighboring utilities infrastructure and an adjacent historic cemetery. The figure below shows the area of interest in yellow.

There have been slope failures along the system adjacent to the cemetery. Emergency repairs have been made and a design is underway for additional stabilization.

At the downstream end, there is tidal influence that also impacts system capacity and water levels.

In addition to the current issues along this area of interest, the area is expected to experience impacts related to climate change – such as sea level rise and more intense storm events.

Future hydraulics will also be impacted by drainage improvements in the upstream watershed. Several years ago, the City tasked Timmons Group to develop a Master Plan for drainage improvements for the Finney (Oldetown) drainage area, which is just upstream of the area of interest, to alleviate flooding and relocate the aging storm sewer network into the right-of-way. The initial phase of recommended improvements from that study are about to begin the design stage. Though these improvements are designed to alleviate flooding from the current 10-year design storm, it is important to the City to identify and mitigate impacts to the area of interest for larger storm events and also take into consideration rising water levels in the Nansemond River.

The Consultant shall review available data, provide site observations, perform analysis services to identify problematic stormwater items, and recommend revisions to the network to help alleviate future flooding problems.

SCOPE OF SERVICES

1. Records Review & Site Visit and Supplemental Survey
2. Perform Drainage Analysis
3. Recommend Mitigation Measures

The project schedule is for a period of twenty-three (23) weeks. The project milestones are:

Notice to Proceed	
Records Review, Site Visit, and Survey	10 weeks
Perform Existing Conditions Drainage Analysis	4 weeks
Interim Meeting	1 week
Develop Modification Options	4 weeks
Review Meeting	1 week
Prepare Informal Writeup	3 weeks

The Scope of detailed engineering services provided are grouped into the following:

- Basic Services
- Reimbursable Expenses

<u>Reference Information</u>

The following information has been or will be made available to Timmons Group and will be used as a reference for the work provided in this proposal:

- Historic flooding data - Information on flooding locations, dates, and extents within the study
- City of Suffolk GIS
- Plan documentation if available
- Data on the storm system (ditch and culverts) throughout the project area including:
    - Size/cross section dimensions
    - Length
    - Material
    - Invert Elevations

The following is a detailed discussion of the services proposed:

BASIC SERVICES

1) Records Review, Site Visit, and Survey

The Consultant will review existing record documents and discuss with City operations staff any recurring flooding or maintenance issues. The Consultant shall perform a site investigation of the project site to gather observations. Observations will include, but are not limited to, apparent right of way (ROW) and private property

drainage patterns within the vicinity of the potential recommended alignments, typical ditch segment cross sections, visible encroachments and obstructions, system connectivity and inventory data to supplement provided data sources, and general condition assessment. Observations may extend to the boundaries of the contributing drainage area for verification purposes.

The Consultant shall review previous work done within the drainage area including:

- Downstream of Outfall Impact Analysis task from Oldetown – Pinner Street Drainage & Utility Improvements task order (assumed complete)
- Cedar Hill Stream Restoration Concept Plan
- Cedar Hill Slope Stabilization design work (ongoing)
- Train Station Basin BMP Improvements – assuming H&H calcs complete

Based on this and City-provided data, the Consultant shall identify additional topographic survey needs to support the analysis. The Consultant shall perform supplemental topographic survey as needed, up to the allotment that has been incorporated into the fee proposal.

2) Perform Drainage Analysis

The Consultant will perform a drainage analysis of the existing storm sewer system utilizing City GIS, the data provided, and field observation data. The analysis will include storm piping, water quantity conveyance, and storage calculations of the drainage area with detailed analysis along the area of interest as shown in the figure described in the Project Description. The analysis shall be conducted in PCSWMM with 1D pipes and storages to start and convert potions as needed from a 1-D analysis to a 2-D analysis that includes overland flow and ponding as needed. The drainage analysis will be based on the 25-yr (as a surrogate for a current 10-yr) as well as 2 other more extreme design storm events of the City's choosing paired with two (2) tailwater elevations representing current day MHW and another forward-looking option as agreed upon with the City.

Once the no action scenarios have been developed and presented, the Consultant and the City shall select two (2) design storm / tailwater scenarios to use to identify potential modifications to the system to relieve flooding.

The Consultant shall attend up to two (2) meetings with the City: one (1) to present the existing conditions and initial improvement alternatives and the other one (1) to present final improvement options. There will be no formal written deliverable at this point. However, working documents and graphics will be prepared as needed to support the meeting(s).

3) Recommend Mitigation Measures

An informal brief write-up shall be prepared and submitted electronically that summaries the analyses and the resulting recommendations.

The write-up will include:

- Project description
- Drainage analysis methodology, assumptions, and results
- Proposed system recommendations for the selected storm events
- Associated budgetary construction cost estimates

DELIVERABLES

Task 1 – none
Task 2 – Working Documents for Existing Conditions review meeting
Task 3 – Informal Write-up, provided electronically.

REIMBURSABLE EXPENSES

A. Mileage

The Consultant will perform up to three (3) round trips between the Consultant and Owner's offices or project site during the investigations estimated at 72 miles each.

The following additional services are not deemed necessary at this time and are therefore not included in the current scope of services. If, during the course of the work, the Owner requests additional services be performed, the Consultant will provide the services through a contract modification.

ADDITIONAL SERVICES

1. Topographic survey services, beyond the allotment included
2. Easement acquisition plats
3. Additional meetings other than those identified
4. Submittals other than those listed
5. Public relation efforts and Private Property Coordination
6. Permitting efforts
7. Traffic Control
8. Environmental services
9. Design Services
10. Subsurface utility location
11. Construction Services

CITY OF SUFFOLK
Agreement for Engineering Services
Finney Outfall to Nansemond River Drainage Study
Work Order No. ?
2022 RATES

Timmons Group
2901 S Lynnhaven Rd Ste 200
Virginia Beach, Va. 23452
March 30, 2022

TASK/LABOR CLASSIFICATION	SENIOR PROJECT MANAGER	SENIOR PROJECT ENGINEER / PROJECT MANAGER	SENIOR DESIGNER	PROJECT ENGINEER II	CLERICAL	TOTAL HOURS	TASK FEE
Services							
Basic Services							
1. Records Review & Site Visit	7	14	16	28		65	$8,825
2. Perform Drainage Analysis	34	84	82	110	0	310	$42,970
3. Recommend Mitigation Measures	8	16	24	32	2	82	$10,960
TOTAL HOURS EACH CLASSIFICATION	49	114	122	170	2	457	
CLASSIFICATION RATES	$195.00	$160.00	$125.00	$115.00	$80.00		
Total Labor - Design Services	$9,555.00	$18,240.00	$15,250.00	$19,550.00	$160.00		**$62,755.00**
Topographic Survey Allowance (not to exceed)							**$10,000.00**

Total - Basic Services				**$72,755.00**
DIRECT EXPENSE				$72,755.00
	216	Mileage @ $0.585	$126.36	
TOTAL DIRECT EXPENSE			**$126.36**	
TOTAL FEE NOT TO EXCEED			**$72,881.36**	

Commonwealth of Virginia

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

2022 Round 3 CFPF Grant Application #1 City of Suffolk CID510156

1 message

Matthew M. Fanghella <mfanghella@suffolkva.us> Wed, Apr 6, 2022 at 4:55 PM
To: "cfpf@dcr.virginia.gov" <cfpf@dcr.virginia.gov>
Cc: "Heather W. Baggett" <hbaggett@suffolkva.us>, "Erin M. Rountree" <erountree@suffolkva.us>

Good afternoon,

Please find attached the first of 2 applications from the City of Suffolk for the Round 3 2022 CFPF Grant Funding, ahead of the 4/8 deadline.

The City is requesting funding for the Finney Outfall to Nansemond River Drainage Area Study. Additionally, may you please confirm the receipt of this correspondence and this application?

Thank you,

Matt Fanghella, EIT

Civil Engineer II – Stormwater

City of Suffolk – Public Works Engineering

757-514-7675 office

757-266-7924 cell

mfanghella@suffolkva.us

CID510156_CityofSuffolk_CFPF-1.pdf
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