| **Application for Federal Assistance SF-424** | | | |
|---|---|---|---|
| 1.Type of Submission:<br><br>☐ Preapplication<br>☑ Application<br>☐ Changed/Corrected Application | 2.Type of Application:<br><br>☑ New<br>☐ Continuation<br>☐ Revision | * If Revision, select appropriate letter(s):<br><br>* Other (Specify): | |
| 3.Date Received: | 2021-02-01 15:18:22 | 4.Applicant Identifier: | |
| 5a. Federal Entity Identifier: | NC2021-1700 | 5b.Federal Award identifier: | |
| **State use Only:** | | | |
| 6.Date Received by State: | | 7.State Application Identifier: | |
| **8. APPLICANT INFORMATION:** | | | |
| a.Legal Name: | City of Hampton, Virginia | | |
| b. Employer/Taxpayer Identification Number(EIN/TIN): | 54-6001336 | c. Organizational DUNS: | 066019902 |
| **d. Address:** | | | |
| Street1: | 22 Lincoln Street | | |
| Street2: | | | |
| City: | Hampton | | |
| County/Parish: | | | |
| State: | VA | | |
| Province: | | | |
| Country: | United States | | |
| Zip / Postal Code: | 23669-3522 | | |
| **e. Organizational Unit:** | | | |
| Department Name: | | Division Name: | |
| **f. Name and Contact information of person to be contacted on matters involving this application:** | | | |
| Prefix: | Mr. | First Name: | Bruce |
| Middle Name: | | | |
| Last name: | Sturk | | |
| Suffix: | | | |
| Title: | Director of Federal Facilities Support | | |
| Organization Affiliation: | City of Hampton | | |
| Telephone Number: | (757) 727-6102 | Fax Number: | 757-728-3037 |
| Email: | bsturk@hampton.gov | | |

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| **Application for Federal Assistance SF-424** |
| **9. Type of Applicant 1: Select Applicant Type:** |
| C: City or Township Government |
| **Type of Applicant 2: Select Applicant Type:** |
| |
| **Type of Applicant 3: Select Applicant Type:** |
| |
| **Other (specify):** |
| **10.Name of Federal Agency:** |
| Office of Economic Adjustment |
| **11. Catalog of federal Domestic Assistance Number:** |
| 12.610 |
| **CFDA Title:** |
| 12.610 Community Economic Adjustment Assistance for Compatible Use and Joint Land Use Studies |
| **12. Funding Opportunity Number:** |
| |
| **Title:** |
| |
| **13. Competition Identification Number:** |
| |
| **Title:** |
| |
| **14. Areas Affected by Project (Cities, Counties, States, etc.):** |
| Joint Base Langley-Eustis (Langley AFB), City of Hampton, City of Poquoson, NASA Langley Research Center |
| **15. Descriptive Title of Applicant's Project:** |
| West JBLE-Langley ECF Stormwater and Environmental Due-Diligence |
| **Attach supporting documents as specified in agency instructions.:** |
| |

| | | | |
|---|---|---|---|
| **16. Congressional Districts Of:** | | | |
| a. Applicant | Virginia 2nd Congressional District | b. Program/Project | Virginia 2nd Congressional District |
| **Attach an additional list of Program/Project Congressional Districts if needed.** | | | |
| | | | |
| **17. Proposed Project:** | | | |
| a. Start Date: | 2021-04-01 | b. End Date: | 2021-12-31 |
| **18. estimated Funding ($):** | | | |
| a.Federal: | $156,033 | | |
| b. Applicant: | $17,337 | | |
| c. State: | $0 | | |
| d. Local: | $0 | | |
| e. Other: | $0 | | |
| f. Program Income: | $0 | | |
| g. TOTAL | $173,370 | | |
| **19. Is Application Subject to Review By State Under Executive Order 1372 Process?:** | | | |
| ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on<br>☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review<br>☑ c. Program is not covered by E.O. 12372. | | | |
| **20. Is the Applicant Delinquent on Any Federal Debt? (If "Yes", provide explanation in attachment.)** | | | |
| ☐ Yes | | ☑ No | |
| **21.By signing this application, I certify** (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001) | | | |
| ☑ ** I AGREE | | | |
| ** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions. | | | |
| **Authorized Representative:** | | | |
| Prefix: | | First Name: | Mary |
| Middle Name: | | | |
| Last name: | Bunting | | |
| Suffix: | | | |
| Title: | City Manager | | |
| Organization Affiliation: City of Hampton | | | |
| Telephone Number: | 757-727-6370 | Fax Number: | 757-728-3037 |
| Email: | mbunting@hampton.gov | | |
| Signature of the Authorized Representative: | | Date Signed: | |

## Application Narrative

Use this section to describe the proposed project and justify the need for financial assistance. The Narrative should include the following sections, in the following order: Application Abstract; Introduction/Background; Need for Assistance; Project Goals and Objectives Related to OEA Mission; Results or Benefits Expected; Approach & Timeline; and Deliverables/Products. Each section is limited to 1,000 words, unless otherwise noted. Appendices, charts, maps and other illustrative materials may be attached to further describe the proposal.

### Key Personnel

| Name | Title | Email | Resume |
|---|---|---|---|
| Bruce Sturk | Director Federal Facilities Support | bsturk@hampton.gov | Download |

### Contractor Services

Does this grant require use of contractor services?

Yes

| Contractor Name | Description | Start Date | End Date | Scope of Work |
|---|---|---|---|---|

### Sub Recipient

Do you anticipate awards to any sub recipients?

No

### Deliverables Instructions

Identify tangible products and/or other projected work program accomplishments Examples include, but are not limited to, Joint Land Use Study Final Report; Base Redevelopment Plan and Homeless Assistance Submission; Infrastructure Analysis and Recommended Improvements; Defense Industry Supply Chain Map; or Growth Management Plan

### Grant Deliverable List

| Name | Description | Deliverable Date |
|---|---|---|
| West JBLE-Langley ECF Stormwater and Environmental Study | | 12/31/2021 |

### Goals related to OEA mission instructions

Assist state and local governments to address and prevent the encroachment of civilian communities from impairing the operational utility of military installations, Preserve and protect the public health, safety, and general welfare of those living near an active military installation, Protect and preserve military readiness and defense capabilities while supporting continued community economic development, Enhance civilian and military communication and collaboration, Increase public awareness of the military missions

Goals related to the OEA mission

CAGE Code: 32SP8

Grant Introduction/Background

The intent of the project and this supplemental task is directly related to recommendations from the Hampton-Langley Joint Land Use Study (JLUS) completed in August 2010 and Hampton Langley Air Force Base Joint Land Use Study Addendum completed in August 2018. These studies identified the need for a new route to a new Entry Control Facility (ECF) (e.g., Transportation Implementation Action 24 – “Add a new route to a new base entry gate”). The new route is not only intended to provide a new means of access to/from the installation but also designed to be flood-secure, and thus enhancing the installation’s resiliency to the potential impact of significant rainfall or flooding events. The OEA approved funding for the ECF project in August 2019 and this follow-on phase directly supports the ECF analysis and overall JLUS Implementation and Military Installation Resilience efforts in support of Joint Base Langley-Eustis.

Need for Assistance

As a part of the JBLE-Langley ECF Alternatives Analysis project, JBLE-Langley AFB, the City of Hampton, NASA Langley Research Center (LaRC), and other project stakeholders have begun to strongly consider a site located along Commander Shepard Boulevard and north of the airfield. Based on several conversations with City of Hampton, JBLE-Langley AFB, and NASA LaRC staff, it was determined that the subject site has a relatively complex and integrated stormwater drainage system that is of interest to all parties. It was also noted that this system extends across Commander Shepard Boulevard to the west and as far south as the Southwest Branch of the Back River. This supplemental stormwater and environmental due diligence task will provide the opportunity to assess the existing system as well as investigate preliminary stormwater treatment technique alternatives. The primary end goal of the JBLE-Langley ECF Alternatives Analysis Stormwater and Environmental Due Diligence task is to significantly enhance the level of confidence in the site being considered for the preferred COA alternative (i.e., new route to a new ECF) can be permitted by the approving regulatory agencies and can still retain the amount of developable area necessary to support the required facilities, functions, and mission of the new ECF. It is anticipated that the supplemental West JBLE-Langley ECF Stormwater and Environmental Due-Diligence task will be performed under the existing City of Hampton Civil Engineering Design and Related Architectural, Environmental, and Consultation Studies and Services Contract.

Grant Abstract

The intent of the project and this supplemental task are directly related to recommendations from the Hampton-Langley Joint Land Use Study (JLUS) completed in August 2010 and Hampton-Langley Air Force Base Joint Land Use Study Addendum completed in August 2018. These studies identified the need for a new route to a new Entry Control Facility (ECF) (e.g., Transportation Implementation Action 24 – “Add a new route to a new base entry gate”). The new route is not only intended to provide a new means of access to/from the installation but also designed to be flood-secure, and thus enhancing the installation’s resiliency to the potential impact of significant rainfall or flooding events.

In addition to the focus on resiliency to naturally occurring events that could impact operations and/or the mission, JBLE-Langley is anticipating a significant level of development and increases in personnel on the north side of the base (i.e., North Base Planning District Area) in the next five (5) to seven (7) years. This expected growth will have a notable impact on traffic operations at the existing West Gate located along N Armistead Avenue, as well as internally to the base along select roadways and intersections not currently designed to support the anticipated increase in traffic volumes. The issue of introducing more traffic at the West Gate is further magnified by the fact that the gate is located within the runway clear zone (CZ). Based on several conversations with City of Hampton, JBLE-Langley, and NASA LaRC staff, it was determined that the subject site has a relatively complex and integrated stormwater drainage system that is of interest to all parties. It was also noted that this system extends across Commander Shepard Boulevard to the west and as far south at the Southwest Branch of the Back River. This supplemental stormwater and environmental due diligence task will provide the opportunity to assess the existing system as well as investigate preliminary stormwater treatment technique alternatives.

Additionally, based on a preliminary review of background environmental material it is anticipated that wetlands and waters (e.g., streams, creeks, etc.) are likely present on the subject site. To address this potential concern and/or to pre-emptively verify the extent of these environmental considerations, this task will involve conducting a wetland delineation of the site that will be confirmed with the USACE to accurately identify the boundaries, extents and types of wetlands and waters on the potential future ECF location. Utilizing the results of the wetland delineation, the project team will develop an updated Course of Action (COA) concept. The updated concept will focus on avoiding and minimizing wetland impacts to the maximum extent practicable while still supporting all defined mission essential functions of the proposed ECF, in order to reduce the required permitting effort, time/regulatory review duration, and compensatory mitigation costs. This information will be taken into account as a part of the JBLE-Langley ECF preferred COA evaluation and refinement process.

## Results or Benefits Expected

Will provide additional detailed stormwater and wetland delineation information in support of the JBLE-Langley ECF Alternatives Analysis project, JBLE-Langley AFB, the City of Hampton, NASA Langley Research Center (LaRC), which was a specific recommendation from the 2018 amended JLUS. The JBLE-Langley ECF Alternatives Analysis project, JBLE-Langley AFB, the City of Hampton, NASA Langley Research Center (LaRC), specifically recommends a detailed stormwater and wetland delineation data be compiled as a compendium to the report to assist in detailed programing and design work for the proposed JBLE-Langley West Gate relocation from the active Clear Zone.

## Approach and Timeline

Project study will include field work site survey's, soil sampling, existing stormwater plans review, wetlands delineations etc. Contingent upon grant award it is anticipated the scope of work/tasks would begin on or about April 1, 2021 and be completed December 31, 2021.

## Scope of Work/Work Program

Task 1 – Project Management and Coordination This task consists of the time required to administer the project addressing contract matters; internal project coordination; coordination with the City of Hampton, JBLE-Langley AFB, the Virginia Department of Transportation (VDOT), NASA LaRC, York County, City of Poquoson and other identified stakeholders; supervision and general quality control; and project management responsibilities consisting of project organization and

scheduling for the project. Conference calls will be conducted with the City of Hampton and/or JBLE-Langley AFB Project Managers and/or installation leadership as needed. The CONSULTANT will develop and submit monthly progress reports to the City of Hampton. Task 1 Deliverables  Progress reports to accompany invoices  Weekly project coordination calls.

Task 2 – Kickoff Meeting / Project In-Brief The CONSULTANT will facilitate a project kickoff meeting with representatives from the City of Hampton, JBLE-Langley AFB, NASA LaRC, VDOT, and/or others as invited by JBLE-Langley AFB to provide a general background regarding project history, project intent and/or objectives, study protocols, project approach, design standards and criteria, project deliverables, and schedule. Key objectives of the kickoff meeting will be to: • Engage JBLE-Langley AFB planning, engineering, and environmental staff • Communicate project scope of work, approach, and schedule • Discuss existing conditions and potential stormwater and/or environmental issues or constraints related to the preferred proposed ECF location • Establish study Goals and Objectives • Identity Data Collection Needs • Identify project stakeholders for Study Work Group and/or Technical Advisory roles The CONSULTANT will work closely with JBLE-Langley AFB staff to develop an appropriate inventory of participants, to include project team members and project stakeholders, as well as technical advisory group members. At a minimum we anticipate including representatives from the JBLE-Langley 633rd Civil Engineer Squadron (CES), select JBLE-Langley Installation Commands, Security Forces staff, Anti-Terrorism Force Protection (AFTP) Office, City of Hampton, NASA LaRC, and VDOT. Once project stakeholder involvement and/or commitment is confirmed, the CONSULTANT will conduct an In-Brief to these individuals to review the project scope of work, project intent and objectives, data collection activities and outcomes, collect information concerning future projects, storm surge and/or historic flooding data, as well as present findings from the Environmental Overview that was conducted as a part of the initial development of alternative courses of action (COAs). From this group of project team members, a Study Work Group (SWG) or Stakeholders will be established with representatives appointed by JBLE-Langley to serve as a guiding body over the course of the project. In addition to the core project team members, the SWG members will act as a sounding board for findings and recommendations regarding the permitting, developability, and constructability of a new ECF on the north site location.

Task 2 Deliverables  Draft and Final agenda for the In-Brief meeting  Attendance at the In-Brief meeting by up to five (5) CONSULTANT Team members. Summary of In-Brief meeting – organized in meeting minute format  Draft and Final agenda for the In-Brief meeting.

Task 3 – Field Data Collection, Inventory, Investigation, and Condition Assessment To aid in building and developing a hydraulic and hydrological model to determine the existing and proposed stormwater conditions, the CONSULTANT will perform field data collection and inventory of the stormwater structures within the onsite drainage area (see Figure 1). The CONSUTLANT will utilize the VGIN LiDAR data for offsite drainage which will contribute to the tail water conditions of the discharge system associated with the Back River.

As part of Task 3, the CONSULTANT will perform the following tasks:

Subtask 3.1 – Field Data Collection and Inventory  Stormwater infrastructure data consisting of pipe inverts, pipe sizes, curb inlet inverts, outfall inverts, and yard inlet inverts, within the watershed study area will be collected as necessary for completion of hydraulic modeling as defined in Task 5. Invert elevations in some areas will be limited to structures at the upstream end and downstream end of individual drainage systems that require hydraulic modeling.

The CONSULTANT will inventory the above-ground, accessible stormwater assets in the project area (Figure 1), estimated at 238 structures plus a 15% allowance for unmapped features for a total of 275 structures, using high accuracy-grade GPS equipment.  Using existing GIS base map information provided by the City, the CONSULTANT will visit each known, observable structure and collect the spatial location (X,Y,Z) of the rim of the structure. When pipes are visible in a structure, the CONSULTANT will follow the pipe direction to identify connecting structures (i.e., if it is readily visible and accessible) and check against known structures in the database. Structures buried, hidden, or otherwise unreasonably difficult to locate will not be inventoried  If additional structures are located while in the field, these will also be inventoried and recorded as new

features within the database. Structures along public easements will also be collected

The CONSULTANT teams will remove covers and perform “measure downs” to the bottom of the structure, as well as each pipe within the structure. Where visible, the CONSULTANT will verify size and material of each pipe in the structure. Structure inventories will be limited to “top-side” observations only and pictures will be taken and attached to the features  The following assumptions are made in the data collection of stormwater inventory: a. The CONSULTANT assumes that structures will be cleaned by the City of Hampton prior to teams conducting the inventory. b. The CONSULTANT will not remove covers that are broken, jammed, or otherwise inaccessible. c. The CONSULTANT will keep a running list of assets that are inaccessible and will provide this information to the City Project Manager and/or his designated representative on a weekly basis. This list will also include structures that have not been cleaned, are filled with water, or are otherwise not able to be inventoried to the specifications of the project. The CONSULTANT relies on the City Project Manager and/or his designated representative to initialize a resolution d. Inaccessibility will be judged at the time the field crew is at the structure and pictures will be taken to document that fact. Factors that make a structure inaccessible are items like, but not limited to, paved over, behind locked gates, fences, or doors, or otherwise not safe to access e. Attribution that is proposed in the data model, but not available during the field inventory, (e.g., pipe inverts are flooded or covered in sediment/debris), will not be collected. Any information not able to be collected will be documented along with the reason why it was not collected f. If a structure is deemed unsafe to access due to traffic volumes, the CONSULTANT will note the issue and will work with City staff to obtain record drawings or other data that may contain the necessary information as this scope of services does not include maintenance of traffic.

The CONSULTANT will also inform any delays in the schedule caused due to the inaccessibility of the stormwater structure(s) h. The structure of this scope and fee proposal assumes multiple assets can be visited each day. The CONSULTANT will coordinate in advance with the City, JBLE-Langley, and/or NASA LaRC for efficient assessments; the CONSULTANT will notify the City if extensive coordination or traffic control delays are encountered, which are not anticipated by this scope and fee proposal i. The data provided to the City will not be sealed by a licensed surveyor and is not to be used for engineering, construction, or other use that requires sealed survey plans. Estimated, approximate accuracy will be 3-centimeters (cm) horizontal and 6-cm vertical based on the equipment specifications, but variable or unfavorable field conditions may lead to accuracies outside of these tolerances

Subtask 3.2 – Field Investigation  Field investigations of the problem areas identified in Subtask 3.1 will also be performed during this subtask  The CONSULTANT will also assess accessible stormwater outfalls within the limits of field review and note any observed unstable channel banks or general areas of significant erosion. Any GPS points taken during this assessment will be considered part of the GPS collection points described above  During the field assessment portion, the CONSULTANT will conduct a review of visually apparent conditions of the City’s drainage easements, right-of-way, and other City owned property within the limits of the field review area. The purpose of this visual observation is to seek potential ideas for opportunities to increase stormwater storage or water quality treatment by certain techniques such as widening existing open channels or constructing stormwater wetlands.  During field assessment efforts the CONSULTANT will obtain photos of significant observed existing structures, channels and outfalls, and will provide this data to the City.

Subtask 3.3 – Condition Assessment  Condition assessments with photographs will be completed as part of the inventory process and will be stored within the database as a snapshot in time of the asset. Where applicable, the CONSULTANT will use existing standards such as MACP protocols to assess structures  Condition assessments will be limited to the stormwater structure’s ability to perform its function. Condition assessments will not give any indication of surrounding infrastructure such as roadways or sidewalks. For example, the condition assessment of a culvert will be limited to the culvert itself and will not give any indication of the roadway above it.  Condition assessments will be limited to visual observable components of the asset from the top of the structure. Structure entry will not be performed as part of this task. The checklists will be recorded in digital format and attached within the structure inventory database

Subtask 3.4 – GIS Database Management and Compilation  The CONSULTANT will compile the collected data into an Esri

File Geodatabase consistent with the City's current GIS. The attribution approved and shown in Table 1 will be provided along with collected stormwater features. The CONSULTANT will spatially "adjust" and transfer attributes as applicable to pipe segments that intersect with the collected structures and provide this information to the City.

Task 3 Deliverables GIS point feature class of stormwater facilities identified in the field Digital photos of existing infrastructure taken during field work Technical Memorandum of the procedure followed Digital copy of each checklist in Adobe PDF format for review. Following review, final assessment checklists will be provided in digital format.

Task 4 – Topographic Survey To aid with the development of the hydraulic and hydrological model, the CONSULTANT will also perform a topographic survey of the two primary ditches and associated culverts (see Figure 2) that convey the flow from the drainage area where the proposed ECF will be located to the Back River. The CONSULTANT will perform the following services as part of the topographic survey: Horizontal Control – The horizontal datum for this project will be referenced to the Virginia State Plane Coordinate System, South Zone, North American Datum of 1983 (NAD 1983/2011). Measurements will be based on the U.S. Survey foot. Vertical Control – The vertical datum will be referenced to the North American Vertical Datum of 1988 (NAVD 88) U.S. Survey Feet. Benchmarks will be verified for accuracy. Topographic Mapping – Planimetric and topographic mapping will be captured throughout the project limits. Base mapping will be provided 2D in Autocad digital format at a scale of 1"=25'. The topographic survey will include, but is not limited to: o Existing paved surfaces (including pavement markings) o Existing Buildings – type of structure, number of stories, building number, footprint, slab and finished floor o Elevations located at the front door (if within the project limits) o Edge of pavement, edge of concrete, edge of gravel, curb and/or gutter, valley gutters, gutter pan, etc.

Task 4 Deliverables 2D Autocad Survey File (.dwg) 3D Autocad DTM File (.dwg, .xml)

*Note: Geospatial data collected and used for this MIRR will be provided to the OLDCC in either the Esri File Geodatabase format (*.gdb) or Esri Shapefile format (*.shp). Data should be readable within standard GIS software and it should be limited to the project study area. All geospatial data will include metadata in either the ISO 19139 Metadata Implementation Specification style or the Spatial Data Standards for Facilities, Infrastructure, and Environment-Metadata (SDSFIE-M) style. Metadata records for each dataset will include the minimum required information per metadata style written within the organization's preferred metadata editor software. JBLE and the City of Hampton shall confirm that all GIS data is publicly releasable prior to delivery.

Task 5 – Wetland Delineation Assistance The CONSULTANT will conduct a wetland delineation of the ±75 acre project area.

Subtask 5.1 – Wetland Delineation The CONSULTANT will perform a wetland delineation on the subject property. The subject property consists of approximately +75 acres and is identified by City of Hampton PINs 6000848, 6000850, 6000851, 6000853, 6000854, 6000855, 6000857, and 6000858. The delineation will be conducted in general accordance with the methods outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and Atlantic and Gulf Coastal Plain Regional Supplement. The CONSULTANT will review the following background materials previously collected, compiled, and referenced as a part of the JBLE-Langley ECF Alternatives Analysis Environmental Overview task: topographic maps, aerial photography, National Wetland Inventory (NWI) Maps, Natural Resources Conservation Service soil survey data and available LiDAR. The CONSULTANT will conduct a site visit to the subject property and determine the location of wetlands and WOUS. Following the background material review, the CONSULTANT will conduct site visits limited to one (1) team of two (2) people for up to 3 days to determine the location of wetlands and WOUS. Data regarding site soils, vegetation and hydrology will be observed at representative data locations (Data Points) and recorded utilizing the applicable USACE Regional Supplement Data Forms. The outer limits of wetlands and WOUS boundaries located within the delineation limits will be flagged and numbered. The CONSULTANT will then prepare an exhibit depicting the approximate location, size, and type of wetlands and WOUS located on the project site.

Subtask 5.2 – USACE Wetland Confirmation Site Visit Upon completion of the fieldwork, a wetland delineation package will be

prepared for submittal to the City of Hampton and USACE. The wetland delineation package will contain the following items: P re-application and/or Jurisdictional Waters Determination Request Form for signature by the respective landowner(s)/applicant(s) Wetland delineation summary utilizing the USACE form which provides a summary of site information, data reviewed and findings of wetlands and uplands Wetland delineation exhibit(s) Summary table of Wetlands and other WOUS USACE data forms Following completion of the wetland delineation package and review by the City of Hampton, JBLE-Langley-AFB, NASA LaRC, and select technical advisory group (TAG) members, the CONSULTANT will coordinate with the USACE for confirmation of the wetland delineation. Based on experience with similar projects, it is anticipated that the USACE will require 1 day to confirm the wetland delineation. One (1) CONSULTANT representative will accompany the USACE representative on the one-day site visit. One (1) round of comments on mapping or data will be addressed, after which the CONSULTANT will request a Preliminary Jurisdictional Determination (PJD).

In Virginia, a PJD can serve to confirm the wetland delineation and can typically be used for permitting purposes. However, it is recommended that an Approved Jurisdictional Determination (AJD) be prepared if isolated wetlands are located on site and proposed to be impacted by the project. At this time, an AJD is not anticipated nor recommended and is excluded from this scope of work. Should the requirement arise and AJD can be prepared as an additional service. Access to the project site will be coordinated by the CONSULTANT with respective installation (i.e., JBLE-Langley AFB and/or NASA LaRC) points of contact. Task 5 Deliverables PDF of the wetland delineation figure PDF of the USACE wetland delineation package.

Task 6 – Hydrology and Hydraulics Assessment. For the identified drainage areas onsite and offsite shown in Figure 1, the CONSULTANT will conduct the following hydrological and hydraulic assessment:

Subtask 6.1 – Existing Conditions Utilizing the data gathered in Tasks 3 and 4, the CONSULTANT will develop a Hydrologic and Hydraulic (H/H) stormwater model to evaluate the stormwater sub-system contributing to the drainage area onsite The CONSULTANT will use EPA’s Storm Water Management Model (SWMM) software for onsite analysis and USACE HEC-RAS for drainage area offsite to determine tail water conditions The CONSULTANT will run the H/H model for the 10-, 25-, 50- and 100-year 24-hour 3rd Quartile Huff Distribution rainfall o The models will also be run in conjunction with 1.5 ft, 3.0 ft, and 4.5 ft sea level rise 10-year model will be completed in combination with the Mean High Water (MHW) elevation at Sewells Point (or closer) as the downstream outfall condition Outfall conditions for the 25-, 50-, and 100-year storm event will be determined using available FEMA Flood Insurance Study (FIS) data All model output data consisting of node water surface elevations and link flow rates will be provided to the City of Hampton after the model has been calibrated and finalized.

Sub Task 6.2 – Proposed Conditions During the process of building the H/H model, the CONSULTANT will identify potential drainage system improvements within the observed and modeled problem areas with the drainage areas The CONSULTANT will also determine the additional stormwater that will be contributed as a result of the proposed ECF, and will provide/identify potential solutions to mitigate downstream flooding. Proposed condition model runs will be performed with 25-, 50-, and 100-year storm events in conjunction with 1.5 ft, 3.0 ft, and 4.5 ft sea level rise The CONSULTANT will develop and analyze up to three (3) Courses of Action (COAs) for the agreed upon analysis scenarios focusing on critical problem areas identified within the H/H model which may address stormwater quantity and the associated flooding The CONSULTANT recommended improvements may consist of both structural and nonstructural controls to address the stormwater quantity and quality problems identified within the onsite drainage area The recommended improvements will also consist of options for improving stormwater conveyance and reduce flood impacts.

Assumptions

Task 3 and Task 4 of this scope will perform topographic survey and GIS data collection only within the City of Hampton limits. The City of Hampton will assist the CONSULTANT with coordination and obtaining the stormwater conveyance data from NASA LaRC and JBLE-Langley AFB properties in GIS Shapefile format The purpose of the model will be to identify major pipe systems that need to be improved to reduce rainfall or tidal flooding within the study area Existing culverts smaller than 12 inches in diameter will not be modeled. Smaller secondary pipes such as 12 inches in-diameter will not be evaluated in the

model developed in this task  Tidal outfall boundary conditions will be coordinated with the TAG to provide greater consistency with the results.  The selection of the modeled drainage basins necessary for this hydraulic model will be approved by the TAG and/or project stakeholder before proceeding with detailed analyses.  The models will not consider the rainfall or tidal storm surge impacts on the drainage network created by tropical or extratropical coastal storms within the limits of the study area nor will future conditions be modeled with any additional height added to MHW at the drainage system boundary conditions.  The SWMM model will be constructed for three (3) scenarios: o 2020 existing land use (to be provided by the City of Hampton) o Future land use (e.g., 2035 of 2040) based on the existing comprehensive plan without proposed drainage improvements (to be provided by the City of Hampton) o Future land use (e.g., 2035 or 2040) based on the existing comprehensive plan with suggested drainage improvements. The modeling results will depict flood flows and water surface elevations over time through the system and will quantify water surface elevations resulting from the design rainfall events applied to the watershed for these three (3) scenarios. Up to three (3) Course of Action (COA) alternative improvement packages shall be modeled in the aggregate (scenarios); separate models will not be constructed for each possible solution.

Task 6 Deliverables  DRAFT Hydrology and Hydraulics Technical Memorandum  FINAL Hydrology and Hydraulics Technical Memorandum  DRAFT AND FINAL Technical Memorandums will include implementable recommendations for improving stormwater conveyance and mitigating flood risk/impact for the proposed ECF North Site.

Task 7 – Project Team Meetings, Work Sessions, Presentations, and Out-Brief The CONSULTANT will facilitate and/or attend (i.e., virtually unless determined otherwise due to COVID-19 restrictions) the following work sessions and presentations:  Four (4) Stakeholder/Study Work Group Meetings o Work Session # 1 – Kickoff/Project In-Brief Meeting o Work Session # 2 – Enviro nmental Constraints and Existing Conditions Findings o Work Session # 3 – Preferred COAs Review o Work Session # 4 – DRA FT Report Findings and Recommendations • Five (5) Technical Advisory Group (TAG) Meetings o Work Session # 1 – Environ mental Constraints and Existing Conditions Findings o Work Session # 2 – Flooding and Sea Level Rise Scenario Review and Approval o Work Session # 3 – North Site COA Alternatives Review accounting for supplemental Stormwater and Environmental considerations o Work Session # 4 – Updated Preferred COA Review and Recommendations o Work Session # 5 – DRAFT Report Findings and Recommendations • One (1) Public Information Meetings o Public Information Meeting # 1 – Fi ndings, Updated ECF Preferred COA Development and Evaluation, Stormwater and Wetland Mitigation Recommendations, and Next Steps • One (1) Out-Brief o FINAL Out-Brief Presentation to JBLE-Langley ECF Stormwater and Environmental Due Diligence Project Team and Installation Leadership.

Task 7 Deliverables  Draft and final agendas for the Study/Stakeholder Work Group meetings  Draft and final agendas for the Technical Advisory Group meetings. Summaries (meeting minute format) following each meeting  Summary of Input/Comments from each of the Presentation Meetings and/or the FINAL Out-Brief.

Schedule/Timeline

The CONSULTANT will provide the defined scope of services as expeditiously as practicable according to the mutually agreed upon schedule/work plan. The table below reflects a general timeline of the project phases and associated tasks.

Task 1 – Project Management and Coordination On-going APR21 – DEC21

Task 2 – Kickoff Meeting / Project In-Brief APR21

Task 3 – Field Data Collection, Inventory, Investigation, and Condition Assessment APR21 – JUN21

Task 4 – Topographic Survey APR21 – JUN21

Task 5 – Wetland Delineation Assistance MAY21 – JUL21

Task 6 – Hydrology and Hydraulics Assessment AUG21 – NOV21

Task 7 – Project Team Meetings, Work Sessions, Presentations, and Out-Brief On-going APR21 – DEC21

Please attach any additional supporting documents (PDF Only)

**JBLE-Langley_ECF_Stormwater_and_Environmental_Due-Diligence_SOW_FINAL_19JAN21.pdf**
975.7 KB - 02/01/2021 19:54

Total Files: 1

## Budget

Budget Justification Files

Please upload the budget justification for this grant application. ***PDF Files Only***

### Salary and Fringe

| Position | OEA Salary | Non-Federal Salary | OEA Fringe | Non-Federal Fringe | Total Salary | Total Fringe | Total |
|---|---|---|---|---|---|---|---|

### Total Personnel

| | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|
| Total Salaries + Fringe Benefits | $0 | $0 | $0 |

### Travel

| Description | Local/Out-of-Area | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|---|

### Equipment

| Description | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|

### Supplies

| Description | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|

### Other Costs

| Description | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|

### Subtotal Operations

| | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|
| SUBTOTAL OPERATIONS | $0 | $0 | $0 |

### Contractual

| Description | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|
| West JBLE-Langley ECF Alternatives Analysis – Stormwater and Environmental Due Diligence | $156,033 | $17,337 | $173,370 |
| | $156,033 | $17,337 | $173,370 |

**Total Direct Costs**

| | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|
| Total Direct Costs | $156,033 | $17,337 | $173,370 |

**Indirect**

| Description | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|

**Grand Total**

| | OEA Funds | Non-Federal Funds | Total |
|---|---|---|---|
| Grand Total | $156,033 | $17,337 | $173,370 |

# BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

## Section A - Budget Summary

| Grant Program Function or Activity (a) | Catalog of Federal Domestic Assistance Number (b) | Estimated Unobligated Funds | | New or Revised Budget | | |
|---|---|---|---|---|---|---|
| | | Federal (c) | Non-Federal (d) | Federal (e) | Non-Federal (f) | Total (g) |
| **1. Implementation** | 12.610 | $0.00 | $0.00 | $156,033.00 | $17,337.00 | **$173,370.00** |
| **2.** | | $0.00 | $0.00 | $0.00 | $0.00 | **$0.00** |
| **3.** | | $0.00 | $0.00 | $0.00 | $0.00 | **$0.00** |
| **4.** | | $0.00 | $0.00 | $0.00 | $0.00 | **$0.00** |
| **5. Totals** | | **$0.00** | **$0.00** | **$156,033.00** | **$17,337.00** | **$173,370.00** |

## Section B - Budget Categories

| 6. Object Class Categories | GRANT PROGRAM, FUNCTION OR ACTIVITY | | | | |
|---|---|---|---|---|---|
| | Federal Grant Program, Function or Activity (1) | Non Federal Grant Program, Function or Activity (2) | (3) | (4) | Total (5) |
| **a. Personnel** | $0.00 | $0.00 | | | **$0.00** |
| **b. Fringe Benefits** | $0.00 | $0.00 | | | **$0.00** |
| **c. Travel** | $0.00 | $0.00 | | | **$0.00** |
| **d. Equipment** | $0.00 | $0.00 | | | **$0.00** |
| **e. Supplies** | $0.00 | $0.00 | | | **$0.00** |
| **f. Contractual** | $156,033.00 | $17,337.00 | | | **$173,370.00** |
| **g. Construction** | $0.00 | $0.00 | | | **$0.00** |
| **h. Other** | $0.00 | $0.00 | | | **$0.00** |
| **i. Total Direct Charges (sum of 6a-6h)** | $156,033.00 | $17,337.00 | | | **$173,370.00** |
| **j. Indirect Charges** | $0.00 | $0.00 | | | **$0.00** |
| **k. TOTALS (sum of 6i and 6j)** | **$156,033.00** | **$17,337.00** | | | **$173,370.00** |
| | | | | | |
| **7. Program Income** | **$0.00** | **$0.00** | | | **$0.00** |

## Section C - Non-Federal Resources

| (a) Grant Program | (b) Applicant | (c) State | (d) Other Sources | (e) TOTALS |
|---|---|---|---|---|
| **8. City of Hampton** | $17,337.00 | $0.00 | $0.00 | **$17,337.00** |
| **9.** | $0.00 | $0.00 | $0.00 | **$0.00** |
| **10.** | $0.00 | $0.00 | $0.00 | **$0.00** |
| **11.** | $0.00 | $0.00 | $0.00 | **$0.00** |
| **12. TOTAL (sum of lines 8-11)** | **$17,337.00** | **$0.00** | **$0.00** | **$17,337.00** |

## Section D - Forecasted Cash Needs

| | Total for 1st Year | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
|---|---|---|---|---|---|
| **13. Federal** | $156,033.00 | $39,000.00 | $39,000.00 | $39,000.00 | $39,033.00 |
| **14. Non-Federal** | $17,337.00 | $4,334.00 | $4,334.00 | $4,334.00 | $4,335.00 |
| **15. TOTAL (sum of lines 13 and 14)** | **$173,370.00** | **$43,334.00** | **$43,334.00** | **$43,334.00** | **$43,368.00** |

## Section E - Budget Estimates of Federal Funds Needed for Balance of The Project

| (a) Grant Program | FUTURE FUNDING PERIODS (YEARS) SECTION | | | |
|---|---|---|---|---|
| | (b) First | (c) Second | (d) Third | (e) Fourth $ |
| **16.** | $0.00 | $0.00 | $0.00 | $0.00 |
| **17.** | $0.00 | $0.00 | $0.00 | $0.00 |
| **18.** | $0.00 | $0.00 | $0.00 | $0.00 |
| **19.** | $0.00 | $0.00 | $0.00 | $0.00 |
| **20. TOTAL (sum of lines 16 - 19)** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |

## Section F - Other Budget Information

| | |
|---|---|
| **21. Direct Charges:** | **22. Indirect Charges:** |
| **23. Remarks:** | |

# CITY OF HAMPTON

## West JBLE-Langley AFB ECF
## Stormwater and Environmental Due-Diligence

**Project Title**: **West JBLE-Langley ECF Stormwater and Environmental Due-Diligence**

**Background and Project Description**:

The intent of the project and this supplemental task is directly related to recommendations from the *Hampton-Langley Joint Land Use Study (JLUS)* completed in August 2010 and *Hampton-Langley Air Force Base Joint Land Use Study Addendum* completed in August 2018. These studies identified the need for a new route to a new Entry Control Facility (ECF) (e.g., Transportation Implementation Action 24 – "Add a new route to a new base entry gate"). The new route is not only intended to provide a new means of access to/from the installation but also designed to be flood-secure, and thus enhancing the installation's resiliency to the potential impact of significant rainfall or flooding events.

In addition to the focus on resiliency to naturally occurring events that could impact operations and/or the mission, JBLE-Langley is anticipating a significant level of development and increases in personnel on the north side of the base (i.e., North Base area) in the next five (5) to seven (7) years. This expected growth will have a notable impact on traffic operations at the existing West Gate located along N. Armistead Avenue, as well as internally to the base along select roadways and intersections not currently designed to support the anticipated increase in traffic volumes. The issue of introducing more traffic at the West Gate is further magnified by the fact that the gate is located within the runway clear zone (CZ).

With the expected increase in traffic volume demand traveling to/from the North Base area combined with the fact that the existing West Gate facility is located within the CZ, a key component of the proposed Alternatives Analysis includes an evaluation and identification of a new and/or improved alternate route as well as a preferred new ECF concept to best serve future operations, accessibility, safety, and physical security.

As a part of the JBLE-Langley ECF Alternatives Analysis project, JBLE-Langley AFB, the City of Hampton, NASA Langley Research Center (LaRC), and other project stakeholders have begun to strongly consider a site located along Commander Shepard Boulevard and north of the airfield. Based on several conversations with City of Hampton, JBLE-Langley AFB, and NASA LaRC staff, it was determined that the subject site has a relatively complex and integrated stormwater drainage system that is of interest to all parties. It was also noted that this system extends across Commander Shepard Boulevard to the west and as far south as the Southwest Branch of the Back River. This supplemental stormwater and environmental due diligence task will provide the opportunity to assess the existing system as well as investigate preliminary stormwater treatment technique alternatives.

Additionally, based on a preliminary review of background environmental material it is anticipated that wetlands and waters of the United States (WOUS) are likely present on the subject site. To address this potential concern and/or to pre-emptively verify the extent of these environmental considerations, this task will involve conducting a wetland delineation of the site that will be confirmed with the USACE to accurately identify the boundaries, extents and types of wetlands and waters on the potential future ECF location. Utilizing the results of the wetland delineation, the project team will develop an updated preferred Course of Action (COA) concept. The updated concept will focus on avoiding and minimizing wetland impacts to the maximum extent practicable while still supporting all defined mission essential functions of the proposed ECF, in order to reduce the required permitting effort, time/regulatory review duration, and compensatory mitigation costs. This information will be taken into account as a part of the JBLE-Langley ECF alternatives evaluation process.

As a part of JBLE-Langley ECF Alternatives Analysis, this task will continue the involvement of a working group of project stakeholders (e.g., JBLE-Langley AFB, City of Hampton, NASA LaRC, Virginia Department of Transportation (VDOT), York County, City of Poquoson, etc.) who are expected to provide input on various alternatives under consideration and serve as liaisons to their respective agencies by sharing general and technical information about the alternatives, findings, and project status over the life of the project.

The primary end goal of the *West JBLE-Langley ECF Alternatives Analysis Stormwater and Environmental Due Diligence* task is to significantly enhance the level of confidence in the site being considered for the preferred COA alternative (i.e., new route to a new ECF) can be permitted by the approving regulatory agencies and can still retain the amount of developable area necessary to support the required facilities, functions, and mission of the new ECF.

It is anticipated that the supplemental *West JBLE-Langley ECF Stormwater and Environmental Due-Diligence* task will be performed under the existing City of Hampton Civil Engineering Design and Related Architectural, Environmental, and Consultation Studies and Services Contract.

## Scope of Services

### Task 1 – Project Management and Coordination

This task consists of the time required to administer the project addressing contract matters; internal project coordination; coordination with the City of Hampton, JBLE-Langley AFB, the Virginia Department of Transportation (VDOT), NASA LaRC, York County, City of Poquoson and other identified stakeholders; supervision and general quality control; and project management responsibilities consisting of project organization and scheduling for the project. Conference calls will be conducted with the City of Hampton and/or JBLE-Langley AFB Project Managers and/or installation leadership as needed. The CONSULTANT will develop and submit monthly progress reports to the City of Hampton.

### Task 1 Deliverables

- Progress reports to accompany invoices
- Weekly project coordination calls

**Task 2 – Kickoff Meeting / Project In-Brief**

The CONSULTANT will facilitate a project kickoff meeting with representatives from the City of Hampton, JBLE-Langley AFB, NASA LaRC, VDOT, and/or others as invited by JBLE-Langley AFB to provide a general background regarding project history, project intent and/or objectives, study protocols, project approach, design standards and criteria, project deliverables, and schedule. Key objectives of the kickoff meeting will be to:

- Engage JBLE-Langley AFB planning, engineering, and environmental staff
- Communicate project scope of work, approach, and schedule
- Discuss existing conditions and potential stormwater and/or environmental issues or constraints related to the preferred proposed ECF location
- Establish study Goals and Objectives
- Identity Data Collection Needs
- Identify project stakeholders for Study Work Group and/or Technical Advisory roles

The CONSULTANT will work closely with JBLE-Langley AFB staff to develop an appropriate inventory of participants, to include project team members and project stakeholders, as well as technical advisory group members. At a minimum we anticipate including representatives from the JBLE-Langley 633rd Civil Engineer Squadron (CES), select JBLE-Langley Installation Commands, Security Forces staff, Anti-Terrorism Force Protection (AFTP) Office, City of Hampton, NASA LaRC, and VDOT.

Once project stakeholder involvement and/or commitment is confirmed, the CONSULTANT will conduct an In-Brief to these individuals to review the project scope of work, project intent and objectives, data collection activities and outcomes, collect information concerning future projects, storm surge and/or historic flooding data, as well as present findings from the Environmental Overview that was conducted as a part of the initial development of alternative courses of action (COAs). From this group of project team members, a Study Work Group (SWG) or Stakeholders will be established with representatives appointed by JBLE-Langley to serve as a guiding body over the course of the project. In addition to the core project team members, the SWG members will act as a sounding board for findings and recommendations regarding the permitting, developability, and constructability of a new ECF on the north site location.

**Task 2 Deliverables**

- Draft and Final agenda for the In-Brief meeting
- Attendance at the In-Brief meeting by up to five (5) CONSULTANT Team members
- Summary of In-Brief meeting – organized in meeting minute format
- Draft and Final agenda for the In-Brief meeting

**Task 3 – Field Data Collection, Inventory, Investigation, and Condition Assessment**

To aid in building and developing a hydraulic and hydrological model to determine the existing and proposed stormwater conditions, the CONSULTANT will perform field data collection and inventory of the stormwater structures within the onsite drainage area (see **Figure 1**). The CONSULTLANT will utilize the VGIN LiDAR data for offsite drainage which will contribute to the tail water conditions of the discharge system associated with the Back River.

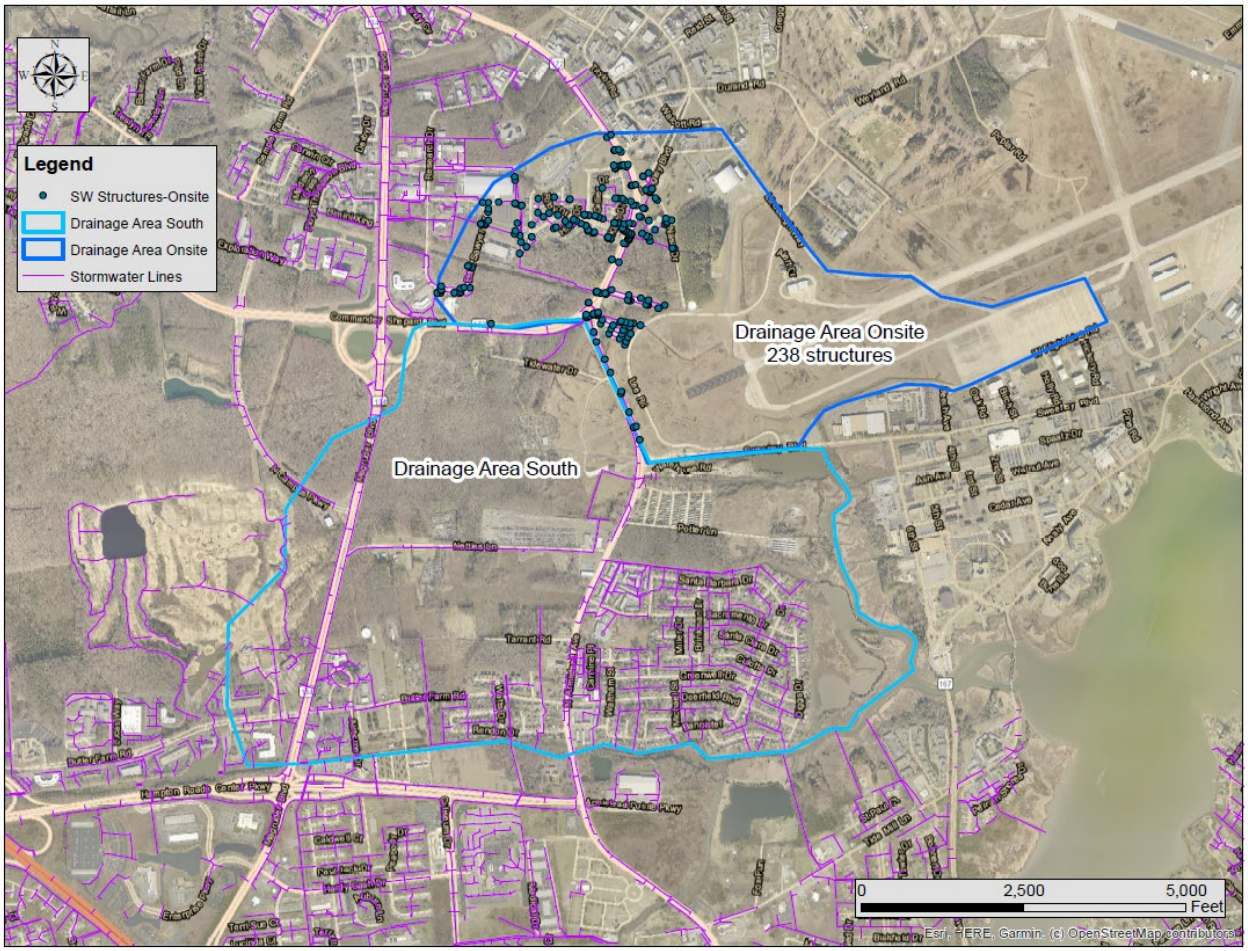


**Figure 1: Approximate Location of Stormwater Structures to be Mapped**

As part of **Task 3**, the CONSULTANT will perform the following tasks:

**Subtask 3.1 – Field Data Collection and Inventory**

- Stormwater infrastructure data consisting of pipe inverts, pipe sizes, curb inlet inverts, outfall inverts, and yard inlet inverts, within the watershed study area will be collected as necessary for completion of hydraulic modeling as defined in **Task 5**. Invert elevations in some areas will be limited to structures at the upstream end and downstream end of individual drainage systems that require hydraulic modeling

- The CONSULTANT will inventory the above-ground, accessible stormwater assets in the project area (**Figure 1**), estimated at 238 structures plus a 15% allowance for unmapped features for a total of 275 structures, using high accuracy-grade GPS equipment.
- Using existing GIS base map information provided by the City, the CONSULTANT will visit each known, observable structure and collect the spatial location (X,Y,Z) of the rim of the structure. When pipes are visible in a structure, the CONSULTANT will follow the pipe direction to identify connecting structures (i.e., if it is readily visible and accessible) and check against known structures in the database. Structures buried, hidden, or otherwise unreasonably difficult to locate will not be inventoried
- If additional structures are located while in the field, these will also be inventoried and recorded as new features within the database. Structures along public easements will also be collected
- The CONSULTANT teams will remove covers and perform "measure downs" to the bottom of the structure, as well as each pipe within the structure. Where visible, the CONSULTANT will verify size and material of each pipe in the structure. Structure inventories will be limited to "top-side" observations only and pictures will be taken and attached to the features
- The following assumptions are made in the data collection of stormwater inventory:
    a. The CONSULTANT assumes that structures will be cleaned by the City of Hampton prior to teams conducting the inventory.
    b. The CONSULTANT will not remove covers that are broken, jammed, or otherwise inaccessible.
    c. The CONSULTANT will keep a running list of assets that are inaccessible and will provide this information to the City Project Manager and/or his designated representative on a weekly basis. This list will also include structures that have not been cleaned, are filled with water, or are otherwise not able to be inventoried to the specifications of the project. The CONSULTANT relies on the City Project Manager and/or his designated representative to initialize a resolution
    d. Inaccessibility will be judged at the time the field crew is at the structure and pictures will be taken to document that fact. Factors that make a structure inaccessible are items like, but not limited to, paved over, behind locked gates, fences, or doors, or otherwise not safe to access
    e. Attribution that is proposed in the data model, but not available during the field inventory, (e.g., pipe inverts are flooded or covered in sediment/debris), will not be collected. Any information not able to be collected will be documented along with the reason why it was not collected
    f. If a structure is deemed unsafe to access due to traffic volumes, the CONSULTANT will note the issue and will work with City staff to obtain record drawings or other data that may contain the necessary information as this scope of services does not include maintenance of traffic

g. The CONSULTANT will also inform any delays in the schedule caused due to the inaccessibility of the stormwater structure(s)

h. The structure of this scope and fee proposal assumes multiple assets can be visited each day. The CONSULTANT will coordinate in advance with the City, JBLE-Langley, and/or NASA LaRC for efficient assessments; the CONSULTANT will notify the City if extensive coordination or traffic control delays are encountered, which are not anticipated by this scope and fee proposal

i. The data provided to the City will not be sealed by a licensed surveyor and is not to be used for engineering, construction, or other use that requires sealed survey plans. Estimated, approximate accuracy will be 3-centimeters (cm) horizontal and 6-cm vertical based on the equipment specifications, but variable or unfavorable field conditions may lead to accuracies outside of these tolerances

**Subtask 3.2 – Field Investigation**

- Field investigations of the problem areas identified in **Subtask 3.1** will also be performed during this subtask
- The CONSULTANT will also assess accessible stormwater outfalls within the limits of field review and note any observed unstable channel banks or general areas of significant erosion. Any GPS points taken during this assessment will be considered part of the GPS collection points described above
- During the field assessment portion, the CONSULTANT will conduct a review of visually apparent conditions of the City's drainage easements, right-of-way, and other City owned property within the limits of the field review area. The purpose of this visual observation is to seek potential ideas for opportunities to increase stormwater storage or water quality treatment by certain techniques such as widening existing open channels or constructing stormwater wetlands.
- During field assessment efforts the CONSULTANT will obtain photos of significant observed existing structures, channels and outfalls, and will provide this data to the City.

**Subtask 3.3 – Condition Assessment**

- Condition assessments with photographs will be completed as part of the inventory process and will be stored within the database as a snapshot in time of the asset. Where applicable, the CONSULTANT will use existing standards such as MACP protocols to assess structures
- Condition assessments will be limited to the stormwater structure's ability to perform its function. Condition assessments will not give any indication of surrounding infrastructure such as roadways or sidewalks. For example, the condition assessment of a culvert will be limited to the culvert itself and will not give any indication of the roadway above it.
- Condition assessments will be limited to visual observable components of the asset from the top of the structure. Structure entry will not be performed as part of this task. The checklists will be recorded in digital format and attached within the structure inventory database

**Subtask 3.4 – GIS Database Management and Compilation**

- The CONSULTANT will compile the collected data into an Esri File Geodatabase consistent with the City's current GIS. The attribution approved and shown in **Table 1** will be provided along with collected stormwater features. The CONSULTANT will spatially "adjust" and transfer attributes as applicable to pipe segments that intersect with the collected structures and provide this information to the City

**Task 3 Deliverables**

- GIS point feature class of stormwater facilities identified in the field
- Digital photos of existing infrastructure taken during field work
- Technical Memorandum of the procedure followed
- Digital copy of each checklist in Adobe PDF format for review. Following review, final assessment checklists will be provided in digital format

**Task 4 – Topographic Survey**

To aid with the development of the hydraulic and hydrological model, the CONSULTANT will also perform a topographic survey of the two primary ditches and associated culverts (see **Figure 2**) that convey the flow from the drainage area where the proposed ECF will be located to the Back River.

The CONSULTANT will perform the following services as part of the topographic survey:

- Horizontal Control – The horizontal datum for this project will be referenced to the Virginia State Plane Coordinate System, South Zone, North American Datum of 1983 (NAD 1983/2011). Measurements will be based on the U.S. Survey foot.
- Vertical Control – The vertical datum will be referenced to the North American Vertical Datum of 1988 (NAVD 88) U.S. Survey Feet. Benchmarks will be verified for accuracy.
- Topographic Mapping – Planimetric and topographic mapping will be captured throughout the project limits. Base mapping will be provided 2D in Autocad digital format at a scale of 1"=25'. The topographic survey will include, but is not limited to:
    - Existing paved surfaces (including pavement markings)
    - Existing Buildings – type of structure, number of stories, building number, footprint, slab and finished floor
    - Elevations located at the front door (if within the project limits)
    - Edge of pavement, edge of concrete, edge of gravel, curb and/or gutter, valley gutters, gutter pan, etc.

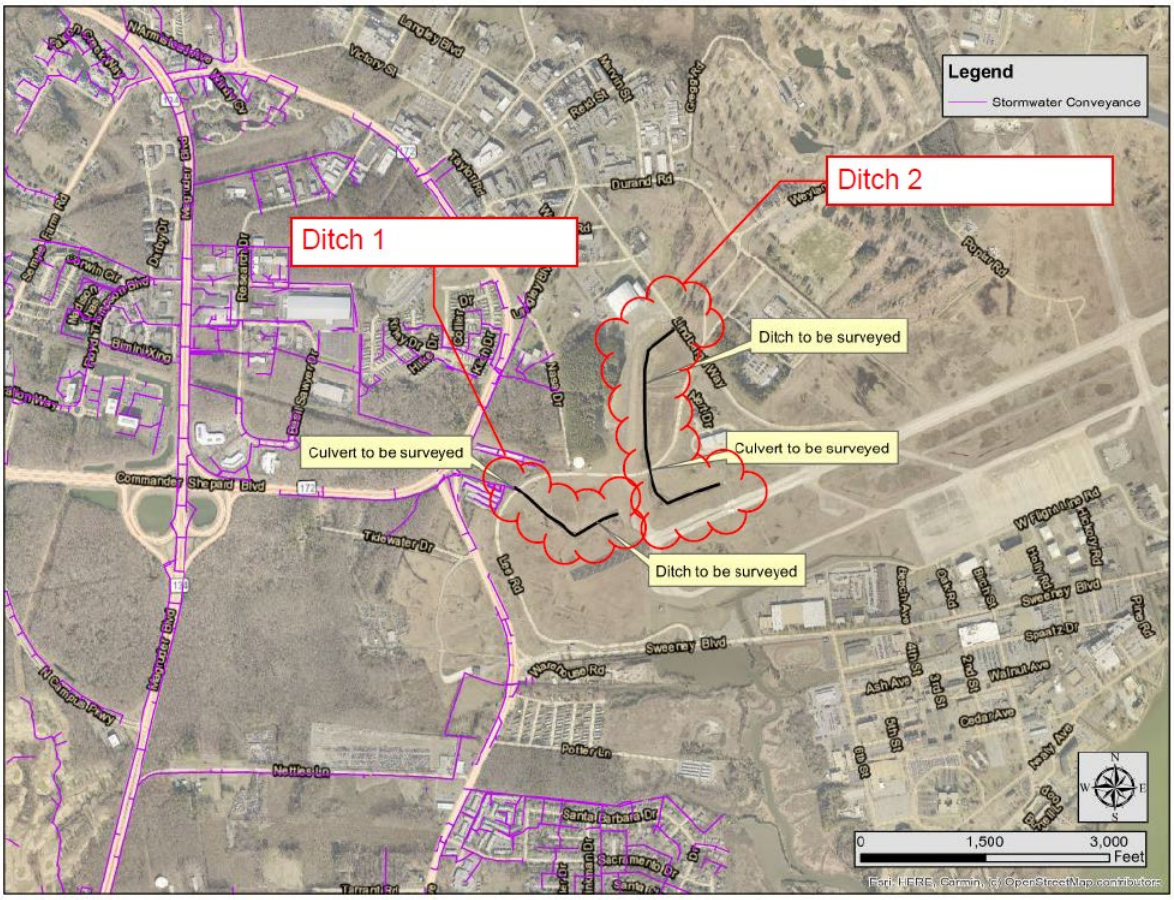


**Figure 2: Stormwater Conveyance Ditches and Culverts to be Surveyed**

- Sidewalks, driveways, ramps, concrete swales
- Delineate gravel, concrete, asphalt and dirt driveways and parking areas (including pavement markings)
- Ditches – top of bank, toe of slope, centerline of ditch, swales, top of water
- Storm drain facilities (closed) – rims, inverts, and pipe sizes
- Storm drain facilities (open) – inverts and pipe sizes, culverts, headwalls
- Gravity sanitary sewer – rims, inverts and pipe sizes
- Force mains - valves and any other above ground appurtenances
- Water mains – valves, meters, hydrants and any other above ground appurtenances
- Gas mains – valves and any other visible above ground appurtenances
- Ditch Cross Sections @ 50’ Intervals
- Underground telephone and T.V. – pedestals and any other visible above ground appurtenances

- Underground electric – any visible above ground appurtenances
- Utility poles – type of service and pole number
- Overhead wires – type of service
- Tree lines – large wooded areas, drip lines, ornamental landscaping limits, walls
- Single trees – 8-inch caliper and larger (type and actual caliper), if not in wooded area
- Wetland Flags

**Task 4 Deliverables**

- 2D Autocad Survey File (.dwg)
- 3D Autocad DTM File (.dwg, .xml)

**Task 5 – Wetland Delineation Assistance**

The CONSULTANT will conduct a wetland delineation of the ±75 acre project area. The delineation limits are shown in red in **Figure 3** below.


**Figure 3: Approximate Wetland Delineation limits**

**Subtask 5.1 – Wetland Delineation**

The CONSULTANT will perform a wetland delineation on the subject property. The subject property consists of approximately ±75 acres and is identified by City of Hampton PINs 6000848, 6000850, 6000851, 6000853, 6000854, 6000855, 6000857, and 6000858. The delineation will be conducted in general accordance with the methods outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and Atlantic and Gulf Coastal Plain Regional Supplement. The CONSULTANT will review the following background materials previously collected, compiled, and referenced as a part of the JBLE-Langley ECF Alternatives Analysis Environmental Overview task: topographic maps, aerial photography, National Wetland Inventory (NWI) Maps, Natural Resources Conservation Service soil survey data and available LiDAR. The CONSULTANT will conduct a site visit to the subject property and determine the location of wetlands and WOUS. Following the background material review, the CONSULTANT will conduct site visits limited to one (1) team of two (2) people for up to 3 days to determine the location of wetlands and WOUS. Data regarding site soils, vegetation and hydrology will be observed at representative data locations (Data Points) and recorded utilizing the applicable USACE Regional Supplement Data Forms. The outer limits of wetlands and WOUS boundaries located within the delineation limits will be flagged and numbered. The CONSULTANT will then prepare an exhibit depicting the approximate location, size, and type of wetlands and WOUS located on the project site.

**Subtask 5.2 – USACE Wetland Confirmation Site Visit**

Upon completion of the fieldwork, a wetland delineation package will be prepared for submittal to the City of Hampton and USACE. The wetland delineation package will contain the following items:

- Pre-application and/or Jurisdictional Waters Determination Request Form for signature by the respective landowner(s)/applicant(s)
- Wetland delineation summary utilizing the USACE form which provides a summary of site information, data reviewed and findings of wetlands and uplands
- Wetland delineation exhibit(s)
- Summary table of Wetlands and other WOUS
- USACE data forms

Following completion of the wetland delineation package and review by the City of Hampton, JBLE-Langley-AFB, NASA LaRC, and select technical advisory group (TAG) members, the CONSULTANT will coordinate with the USACE for confirmation of the wetland delineation. Based on experience with similar projects, it is anticipated that the USACE will require 1 day to confirm the wetland delineation. One (1) CONSULTANT representative will accompany the USACE representative on the one-day site visit. One (1) round of comments on mapping or data will be addressed, after which the CONSULTANT will request a Preliminary Jurisdictional Determination (PJD).

In Virginia, a PJD can serve to confirm the wetland delineation and can typically be used for permitting purposes. However, it is recommended that an Approved Jurisdictional Determination (AJD) be prepared if isolated wetlands are located on site and proposed to be impacted by the project. At this time, an AJD is not anticipated nor recommended and is excluded from this scope of work. Should the requirement arise and AJD can be prepared as an additional service.

Access to the project site will be coordinated by the CONSULTANT with respective installation (i.e., JBLE-Langley AFB and/or NASA LaRC) points of contact.

**Task 5 Deliverables**

- PDF of the wetland delineation figure
- PDF of the USACE wetland delineation package

**Task 6 – Hydrology and Hydraulics Assessment**

For the identified drainage areas onsite and offsite shown in **Figure 1**, the CONSULTANT will conduct the following hydrological and hydraulic assessment:

**Subtask 6.1 – Existing Conditions**

- Utilizing the data gathered in **Tasks 3** and **4**, the CONSULTANT will develop a Hydrologic and Hydraulic (H/H) stormwater model to evaluate the stormwater sub-system contributing to the drainage area onsite
- The CONSULTANT will use EPA's Storm Water Management Model (SWMM) software for onsite analysis and USACE HEC-RAS for drainage area offsite to determine tail water conditions
- The CONSULTANT will run the H/H model for the 10-, 25-, 50- and 100-year 24-hour 3rd Quartile Huff Distribution rainfall
    - The models will also be run in conjunction with 1.5 ft, 3.0 ft, and 4.5 ft sea level rise
- 10-year model will be completed in combination with the Mean High Water (MHW) elevation at Sewells Point (or closer) as the downstream outfall condition
- Outfall conditions for the 25-, 50-, and 100-year storm event will be determined using available FEMA Flood Insurance Study (FIS) data
- All model output data consisting of node water surface elevations and link flow rates will be provided to the City of Hampton after the model has been calibrated and finalized

**Sub Task 6.2 – Proposed Conditions**

- During the process of building the H/H model, the CONSULTANT will identify potential drainage system improvements within the observed and modeled problem areas with the drainage areas
- The CONSULTANT will also determine the additional stormwater that will be contributed as a result of the proposed ECF, and will provide/identify potential solutions to mitigate downstream flooding

- Proposed condition model runs will be performed with 25-, 50-, and 100-year storm events in conjunction with 1.5 ft, 3.0 ft, and 4.5 ft sea level rise
- The CONSULTANT will develop and analyze up to three (3) Courses of Action (COAs) for the agreed upon analysis scenarios focusing on critical problem areas identified within the H/H model which may address stormwater quantity and the associated flooding
- The CONSULTANT recommended improvements may consist of both structural and nonstructural controls to address the stormwater quantity and quality problems identified within the onsite drainage area
- The recommended improvements will also consist of options for improving stormwater conveyance and reduce flood impacts

**Assumptions**

- **Task 3** and **Task 4** of this scope will perform topographic survey and GIS data collection only within the City of Hampton limits.
- The City of Hampton will assist the CONSULTANT with coordination and obtaining the stormwater conveyance data from NASA LaRC and JBLE-Langley AFB properties in GIS Shapefile format
- The purpose of the model will be to identify major pipe systems that need to be improved to reduce rainfall or tidal flooding within the study area
- Existing culverts smaller than 12 inches in diameter will not be modeled. Smaller secondary pipes such as 12 inches in-diameter will not be evaluated in the model developed in this task
- Tidal outfall boundary conditions will be coordinated with the TAG to provide greater consistency with the results.
- The selection of the modeled drainage basins necessary for this hydraulic model will be approved by the TAG and/or project stakeholder before proceeding with detailed analyses.
- The models will not consider the rainfall or tidal storm surge impacts on the drainage network created by tropical or extratropical coastal storms within the limits of the study area nor will future conditions be modeled with any additional height added to MHW at the drainage system boundary conditions.
- The SWMM model will be constructed for three (3) scenarios:
    - 2020 existing land use (to be provided by the City of Hampton)
    - Future land use (e.g., 2035 of 2040) based on the existing comprehensive plan without proposed drainage improvements (to be provided by the City of Hampton)
    - Future land use (e.g., 2035 or 2040) based on the existing comprehensive plan with suggested drainage improvements

- The modeling results will depict flood flows and water surface elevations over time through the system and will quantify water surface elevations resulting from the design rainfall events applied to the watershed for these three (3) scenarios. Up to three (3) Course of Action (COA) alternative improvement packages shall be modeled in the aggregate (scenarios); separate models will not be constructed for each possible solution.

**Task 6 Deliverables**

- DRAFT Hydrology and Hydraulics Technical Memorandum
- FINAL Hydrology and Hydraulics Technical Memorandum
- DRAFT AND FINAL Technical Memorandums will include implementable recommendations for improving stormwater conveyance and mitigating flood risk/impact for the proposed ECF North Site

**Task 7 – Project Team Meetings, Work Sessions, Presentations, and Out-Brief**

The CONSULTANT will facilitate and/or attend (i.e., virtually unless determined otherwise due to COVID-19 restrictions) the following work sessions and presentations:

- Four (4) Stakeholder/Study Work Group Meetings
  - Work Session # 1 – Kickoff/Project In-Brief Meeting
  - Work Session # 2 – Environmental Constraints and Existing Conditions Findings
  - Work Session # 3 – Preferred COAs Review
  - Work Session # 4 – DRAFT Report Findings and Recommendations
- Five (5) Technical Advisory Group (TAG) Meetings
  - Work Session # 1 – Environmental Constraints and Existing Conditions Findings
  - Work Session # 2 – Flooding and Sea Level Rise Scenario Review and Approval
  - Work Session # 3 – North Site COA Alternatives Review accounting for supplemental Stormwater and Environmental considerations
  - Work Session # 4 – Updated Preferred COA Review and Recommendations
  - Work Session # 5 – DRAFT Report Findings and Recommendations
- One (1) Public Information Meetings
  - Public Information Meeting # 1 – Findings, Updated ECF Preferred COA Development and Evaluation, Stormwater and Wetland Mitigation Recommendations, and Next Steps
- One (1) Out-Brief
  - FINAL Out-Brief Presentation to JBLE-Langley ECF Stormwater and Environmental Due Diligence Project Team and Installation Leadership

**Task 7 Deliverables**

- Draft and final agendas for the Study/Stakeholder Work Group meetings
- Draft and final agendas for the Technical Advisory Group meetings

- Summaries (meeting minute format) following each meeting
- Summary of Input/Comments from each of the Presentation Meetings and/or the FINAL Out-Brief

**Schedule/Timeline**

The CONSULTANT will provide the defined scope of services as expeditiously as practicable according to the mutually agreed upon schedule/work plan. The table below reflects a general timeline of the project phases and associated tasks.

| Scope Task | Tentative Completion Date |
|---|---|
| **JBLE-Langley ECF Stormwater and Env Due Diligence** | **NTP – APRIL 2021** |
| Task 1 – Project Management and Coordination | On-going APR21 – DEC21 |
| Task 2 – Kickoff Meeting / Project In-Brief | APR21 |
| Task 3 – Field Data Collection, Inventory, Investigation, and Condition Assessment | APR21 – JUN21 |
| Task 4 – Topographic Survey | APR21 – JUN21 |
| Task 5 – Wetland Delineation Assistance | MAY21 – JUL21 |
| Task 6 – Hydrology and Hydraulics Assessment | AUG21 – NOV21 |
| Task 7 – Project Team Meetings, Work Sessions, Presentations, and Out-Brief | On-going APR21 – DEC21 |

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**Fee and Expenses**

The CONSULTANT will perform the services described above for the fees listed below. All permitting, application, and similar project fees will be paid directly by the Client.

| Task | Task Description | Fee |
|---|---|---|
| Task 1 | Project Management and Coordination | $6,914 |
| Task 2 | Kickoff Meeting / Project In-Brief | $5,449 |
| Task 3 | Field Data Collection, Inventory, Investigation, and Condition Assessment | $33,159 |
| Task 4 | Topographic Survey | $3,289 |
| Task 5 | Wetland Delineation Assistance | $18,455 |
| Task 6 | Hydrology and Hydraulics Assessment | $63,067 |
| Task 7 | Project Team Meetings, Work Sessions | $30,789 |
| | **Sub-Total Labor** | **$161,122** |
| | **Expenses** | **$12,248** |
| | **Total** | **$173,370** |

**Notes:**

1) The CONSULTANT and the City of Hampton shall take all reasonable efforts to ensure that there will be no duplication of efforts or data collection and that any analysis that occurs inside the fence line will include coordination efforts with JBLE-Langley, NASA LaRC, and the USACE, as well as utilize any and all existing environmental and related planning data.

2) All procurement associated with this project will be in accordance with 2 CFR 200 and all applicable local and state laws and regulations. Cost estimates for the scope of work were prepared by the City of Hampton and utilizing staff and subject matter experts with knowledge and experience in planning, transportation, environmental services, and architecture.

3) It is anticipated that the West JBLE-Langley ECF Stormwater and Environmental Due Diligence that will directly support the ECF Alternatives Analysis project will be performed under the existing City of Hampton Civil Engineering Design and Related Architectural, Environmental, and Consultation Studies and Services Contract.

**West JBLE-Langley ECF Alternatives Analysis – Stormwater and Environmental Due Diligence**

Project costs/fees have been calculated based on man-hour estimates per task and applying the current approved rates per classification of staff anticipated to be assigned to each task associated with Stormwater and Environmental Due Diligence project. The approved rates are for year 3 of the City of Hampton Civil Engineering Design and Related Architectural, Environmental, and Consultation Studies and Services Contract. The man-hour estimates that have been prepared for each task are based on the proposed scope of work (SOW) and our experience with similar projects and/or the level of effort expected to be necessary to complete each respective task. Additionally, the proposed fee per task is also based on experience with similar projects/tasks and our understanding of the smaller support tasks expected to require less effort in comparison to the more critical/larger tasks requiring more effort and fee.

| **Task** | **Fee by Task** |
|---|---|
| Task 1 – Project Management and Coordination | $ 6,914 |
| Task 2 – Kickoff Meeting / Project In-Brief | $ 5,449 |
| Task 3 – Field Data Collection, Inventory, Investigation, and Condition Assessment | $33,159 |
| Task 4 – Topographic Survey | $ 3,289 |
| Task 5 – Wetland Delineation Assistance | $18,455 |
| Task 6 – Hydrology and Hydraulics Assessment | $63,067 |
| Task 7 – Project Team Meetings and Work Sessions | $30,789 |
| Sub-Total | $161,122 |
| | |
| Expenses[1] | $12,248 |
| Total | $173,370 |

[1]Note – Expenses for this task consists of: 1) Subconsultant collecting, preparing, and providing a topographic survey of the site, 2) mileage reimbursement for travel to/from the site for field investigations, 3) Global Positioning System (GPS) equipment rental, 4) wetland delineation field supplies, 5) printing costs associated with providing hard copies of DRAFT and/or FINAL reports.

# BIOGRAPHY

**City of Hampton Virginia**

## Mr. BRUCE R. STURK

Mr. Bruce R. Sturk is the Director of Federal Facilities Support for the City of Hampton, Virginia. He is responsible for leading and directing the City of Hampton's efforts to partner and build relationships with National Aeronautics and Space Administration (NASA) Langley Research Center, Joint Base Langley - Eustis (Langley Air Force Base), Hampton Veterans Affairs Medical Center and other federal organizations. Mr. Sturk's objective is to foster the continued operation, long-term prosperity and growth of Hampton-based federal entities consistent with the City's vision and values. He functions as a member of the Executive Management Team for the City of Hampton and works closely with other senior city staff. Mr. Sturk is the Executive Director for the city council appointed Hampton Federal Area Development Authority board. He also serves as the principle city staff support to the Fort Monroe Authority which is responsible for the activities associated with the closure of Fort Monroe as a result of the 2005 BRAC as well as the Fort Monroe National Monument.

Mr. Sturk retired from the United States Air Force, as a Colonel on November 1, 2006. Colonel (retired) Sturk received his commission from Norwich University, VT, in 1980 where he was a distinguished graduate of the Reserve Officer Training Corps (ROTC) program. Mr. Sturk holds a Bachelor of Arts degree in political science, and an Associate Degree in criminal justice, from Norwich University, Northfield, VT. He also holds a Master of Arts degree in human resource management from Troy State University, Montgomery, AL, as well as a Master of Arts degree in National Security and Strategic Studies from the Naval War College, Newport, RI. Mr. Sturk is a graduate of the Federal Executive Institute, Charlottesville, VA. He is also a graduate of the Hampton Roads Civic Leadership Institute class of 2012 and the Virginia Peninsula Chamber of Commerce LEAD Class of 2018.

Mr. Sturk is a lifetime member of the Air Force Association. He is the President of the Langley Civic Leaders Association and is an Eagle Scout and a lifetime member of the National Eagle Scout Association.

Mr. Sturk is married to the former Mina Ring of Gallatin, Tennessee. The couple has three adult children and four grandchildren.

Current as of September 2020.