14-23-4005 CBG 9001
Modification Number 1

to

Department of Natural Resources
Memorandum of Understanding

entered into this 2nd day of November, 2023.

between the

State of Maryland

Department of Natural Resources

Chesapeake and Coastal Service

and

Mayor and Council of Rockville
111 Maryland Avenue
Rockville, MD 20850
Federal Tax ID: 52-6001573
Unique Entity Identifier (UEI) #: XZGJXFPKJ9E7
hereinafter ("Contractor").

Pursuant to the terms of the Contract, dated January 13th, between the State of Maryland acting through the Department of Natural Resources, Chesapeake and Coastal Service and the Mayor and Council of Rockville regarding provision of assistance in conducting the City of Rockville's current condition's analysis and development of the 2D flood prediction model, the Contract is amended to incorporate the following changes. The purpose of this Modification is to provide a no-cost extension to the end date of the Contract to June 30, 2025 and to modify the Scope of Work.

In the event of any conflict or incongruity between the provisions of this amendment and any of the provisions of said Contract as heretofore amended, the provisions of this amendment shall in all respects govern and control.

ARTICLE I - SCOPE OF WORK

The Scope of Work of this Contract is modified per Exhibit A.

ARTICLE II - COMPENSATION AND METHOD OF PAYMENT

The budget of this Contract shall not be modified. No additional funds are being provided to the Contractor.

ARTICLE III – TERM

The term of this Memorandum shall be from January 1, 2023 through June 30, 2025. No work may be initiated under this Modification until it has been fully executed by all parties and the Contractor has been instructed to proceed by the Department.

IN WITNESS WHEREOF, the parties have executed this Amendment by causing the same to be signed on the day and year first above written. This document may be executed in multiple counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. Signatures, including notary signatures, provided by electronic means including, by way of example and not of limitation, facsimile, Adobe, PDF, and sent by electronic mail, or via an electronic signature program, shall be deemed to be original signatures.

WITNESS

Sara Taylor-Ferrell
Print Name: Sara Taylor Ferrell
City Clerk/DCO

CONTRACTOR

By Barack Matite
Barack Matite, Acting City Manager
City of Rockville
Date: 10/24/2023

WITNESS
DEPARTMENT OF NATURAL RESOURCES

Stanley Pratt
Print Name: Stanley Pratt
Chesapeake and Coastal Service

STATE OF MARYLAND

Christine Conn
By
Christine Conn, Director

Date: 11/2/2023

Reviewed for Legal Sufficiency by
the Office of the City Attorney

Nicholas Dumais
Nicholas Dumais
Senior Assistant City Attorney

The Scope of Work is revised as noted below:

EXHIBIT A

Objective #5	**City of Rockville Flood Resiliency Master plan**
Budget Summary for this Objective:	EPA Share: $75,000.00 Non-Federal Share: $325,000.00 TOTAL: $400,000.00
Narrative Summary of Outputs for this Objective:	On September 1, 2021, Tropical Storm Ida hovered over Rockville, recording 2.56" of rainfall during the peak 30-minute period, with a total of 2.97" rainfall in only 45 minutes. This resulted in unprecedented flash flooding in parts of Rockville. Using linear interpolation between the NOAA 200-year and 500-year storms for that duration puts Ida at a 327-year, 30-minute duration storm event. The storm impacted scores of properties, including rendering uninhabitable the bottom floors of two high-rise apartment buildings. Tragically, this storm also resulted in one fatality. While Rockville has seen an increasing number of larger intensity and shorter duration storm events that elicit a myriad of property owner questions and complaints about nuisance flooding, nothing in City history has compared to this event. The aftermath of Ida has made it clear that Rockville has potentially fatal issues with its current stormwater management and conveyance infrastructure. The City of Rockville Flood Resiliency Master Plan will evaluate current stormwater management system capacity and flood impacts; identify current flood hazard areas; forecast potential impacts due to a range of climate change projections; develop a stakeholder informed project prioritization tool based on risk tolerance; develop feasibility level designs to help mitigate current and projected flood impacts; and implement high priority projects. A critical component of this Master Plan effort is to also ensure that flood resiliency projects are identified and

	implemented in an equitable manner, by completing a holistic and comprehensive evaluation of the entire City's stormwater system and potential flood risk areas. This subaward will **help formalize modeling parameters and documentation requirements, develop a stakeholder engagement plan, and perform desktop and field survey data review and collection which should be completed by June 30, 2025.** ~~help offset the cost of the current condition's analysis and development of the 2D flood prediction model, which should be completed by 12/31/2023. The entire Flood Resiliency Master Plan will be completed by 12/31/2024.~~
Description of Objective:	1) What is the ultimate goal of the project? ● Develop an accurate and updateable hydrologic and hydraulic (H&H) model for the entire City of Rockville. ● Identify areas of flood vulnerability and assess impacts for existing conditions and a range of future climate scenarios. ● Gain community buy-in on project prioritization criteria and risk tolerance levels across the varying model scenarios. ● Identify systematic changes needed to effectively implement flood resiliency goals (ordinance changes, staff resources, etc.). ● Identify priority projects that equitably improve flood resiliency in the City and meet other project prioritization goals. ● Develop Flood Resiliency action framework and begin to fund/implement framework, including prioritized flood mitigation projects and other systematic City changes. 2) What will be accomplished during the current grant cycle? ●———**During this grant cycle the project will formalize modeling parameters and documentation requirements, develop a stakeholder engagement plan, and perform desktop and field survey data review and collection.** ~~During this grant cycle the project will develop an accurate and updateable H&H model, and identify corresponding areas of flood vulnerability. This will include an assessment of impacts for existing conditions and a range of future climate scenarios.~~
Tasks Under this Objective:	**1. Formalize modeling parameters and documentation requirements. Document parameters and methodologies for the hydrologic and hydraulic (H&H) modeling that will be used to identify areas at risk of flooding. Hydrologic and hydraulic methodologies shall be based on industry standards, project demands, and City input, including but not limited to the following:**

	a. Agreement on hydrologic and hydraulic methods and model framework **b. Number and selection of calibration and verification storms** **c. Number of design storms to be included** **d. Minimum size of pipe to be included in the hydraulic model** **e. Basis and selection of which stormwater facilities to include in the model** **f. Areas to be modeled in 2D and assumptions** **g. Desired level of service for the system** **h. Climate change scenarios to be modeled** **i. Preliminary riverine areas to be included in the model (currently riverine floodplains with contributing drainage area less than 1 square mile are not mapped)** **2. Develop a Stakeholder Engagement Plan. This plan is intended to build a community and stakeholder engagement process that ensures successful achievement of the City's Master Plan goals including developing consensus around a definition of "flooding" in the City of Rockville, identification of risk tolerance goals, and project prioritization criteria and tools. Great care will be taken through this plan to engage residents and property owners in neighborhoods throughout the City to help identify and rank project prioritization criteria in an equitable manner. See the DEIJ outcomes section below for more details.** **The City envisions three (3) phases of public engagement. Phase 1 is designed to educate stakeholders on flooding, provide examples of how other jurisdictions are addressing the problem (for example case studies highlighting other jurisdictions' definition of flooding, description of the conditions under which it implements projects, prioritization criteria, etc.), identifies preliminary definitions of flooding, risk tolerance descriptions and project prioritization criteria. Phase 2 presents the findings from the flood model and allows stakeholders to apply the preliminary risk tolerance description (when is flooding a problem, etc.), and project prioritization criteria to the model and see the impact. Phase 2 will modify Phase 1 findings based on this model interaction. Phase 3 will develop the plan for ongoing outreach to promote the findings/programs of the Flood Resiliency Master Plan.** **3. Perform desktop and field survey data review and collection. Desktop data to be collected is expected to include but may not limited to:**

	Geographic Information System (GIS) base layers (roads, buildings, parcels, impervious cover, etc.); aerial photography; topographic data (Digital Elevation Model (DEM) and contours); soils data; previous flood studies; stormwater pond plans; storm drain structures; development as-built plans, bridge data and surveys; rainfall data; zoning or land use data; stream layers (where available); other hydrologic and hydraulic studies and models, inspection/maintenance records (where available) from the City's Operations and Maintenance division, and historical flood and flow data. 4. **Collect field survey data needed to populate the model. There are over 12,000 storm drain structures in the City's inventory, and it is not anticipated that every structure will be included in the modeling efforts for the project. Based on the model parameters identified earlier in the project, field crews will collect needed survey data on existing storm drain lines and structures in the City. Information to be gathered includes but is not limited to, location, size, shape, material, and elevation of the existing infrastructure.** ~~1) Develop Current Conditions hydrologic and hydraulic (H&H) model. Subtasks include: (1) Desktop data collection including GIS data, record drawings, previous flood studies, historical rainfall and flood data, etc.; (2) Conduct field survey to collect vertical/horizontal data for selected storm drain structures; and (3) Develop Current Conditions H&H model including selected storm drain structures and stormwater facilities. Task to largely be completed by City contractor in close coordination with City staff. Task to be completed by Fall 2023.~~ ~~2) Identify and incorporate climate precipitation projection scenarios into the Current Conditions model (four scenarios). City staff to identify climate scenarios and City contractor to incorporate into Current Conditions model. Task to be completed by Fall 2023.~~ ~~3) Analyze model results to develop list of current/predicted flood impacted areas and preliminary assessment of impacts. Outputs from the model will look at both hydrologic (e.g. surface ponding/flooding) and hydraulic (e.g. storm drain and/or open channel capacity) issues. This task to be completed by City contractor in close coordination with City staff. Task to be completed by December 2023.~~
Specific Outputs for this Objective	<u>Programmatic</u>

	● **One technical memorandum outlining model parameters completed by fall 2024.** ● **One draft and one final Stakeholder Engagement Plan completed by fall 2024.** ● **Updated GIS dataset representing the results of the desktop and field data gathering effort. To be completed by June 30th, 2025.** ● **One QAPP submitted to DNR and EPA at least 45 days prior to the initiation of data collection or compilation.** ~~● One Current Conditions model completed using current rainfall scenarios, to be completed by Fall 2023.~~ ~~● Four climate precipitation projection scenarios included in the model, to be completed by Fall 2023.~~ ~~● One list of current/predicted flood impacted areas and preliminary assessment of impacts, including hydrologic (ponding/flooding) and hydraulic (storm drain/channel capacity) issues. To be completed by December 2023.~~ <u>Administrative</u> ● Progress reports submitted to the CBIG Manager by April 15, 2023, July 15, 2023, October 15, 2023, **January 15, 2024, April 15, 2024, July 15, 2024, October 15, 2024, January 15, 2025, April 15, 2025, June 30, 2025 ~~and December 31, 2023~~.**
Outcomes for this Objective:	<u>*2014 Chesapeake Bay Watershed Agreement* Goals and Outcomes:</u> Water Quality Goal Watershed Implementation Plan (WIP) Outcomes Climate Resiliency Goal Adaptation Outcome Stewardship Goal
DEIJ Outcomes for this Objective:	A critical objective of this project is to ensure that flood mitigation projects are implemented in an equitable, transparent, and consistent manner. By extending this Master Plan study effort throughout the entire City limits, this project will allow Rockville to comprehensively identify potential stormwater-related flooding issues and their severity. This will allow all potential projects to be identified and assessed on equal footing. Using a complete analysis and transparent prioritization process will help support the equitable implementation of flood resilience projects throughout the city instead of focusing only on the areas with the loudest complaints.

	The Master Plan will also include a stakeholder informed, dynamic project prioritization tool to help rank different project implementation scenarios. Great care will be taken to engage residents and property owners in neighborhoods throughout the City to help identify and rank project prioritization criteria. The outreach process in this project also provides an excellent opportunity for continued public education and engagement on other flood and stormwater related topics.
Climate Change Outcomes for this Objective:	The Flood Resiliency Master Plan is the means to plan for and respond to flood impacts caused by climate change. The Master Plan will identify the issues caused by these increasing number of larger intensity and shorter duration storm events, develop feasibility-level potential solutions to help mitigate the impacts, and provide an in-depth stakeholder process to 1) identify appropriate project prioritization criteria and 2) identify the risk tolerance level to initiate City action. It will also result in the identification of flood impacted areas and a project implementation plan to improve flood resilience in the city.
Link to Jurisdiction's WIP Commitment(s)	N/A
Link to Priority Practices and/or Priority Watersheds	Please include the following, as applicable: Priority Practice(s) This project will not implement any practices but may recommend green infrastructure options that could help to address flood hazards and increase climate resiliency. 1) Which priority practice(s) will be implemented in this objective? Implementing the practices identified via this planning process will contribute to Montgomery County's Phase II WIP, of which Rockville is a part, and help meet City MS4 permit requirements. 2) Please provide a short justification as to why the practice(s) is a priority for the location it is to be implemented. The practices growing out of this plan will be a priority because they will help to address both water quality and quantity issues. 3) Which priority strategy(s) will be implemented in this objective? Implementing the strategies identified via this planning process will contribute to Montgomery County's Phase II WIP, of which Rockville is a part, and help meet City MS4 permit requirements. Priority Watershed 1) Which priority watershed will be addressed by this objective?

	Portions of the Watts Branch, Cabin John and Rock Creek Watersheds will be studied via this plan. 2) Watershed considered priority by (please check one): ____ CBP Priority Agricultural Watersheds Map https://www.chesapeakebay.net/what/maps/keyword/agriculture ____ USDA Core 4 __X__ Other (please include a short justification as to why this watershed is considered a priority) This project was selected based on its potential climate resiliency impact. 3) Which priority strategy(s) will be implemented in this objective? Implementing the strategies identified via this planning process will contribute to Montgomery County's Phase II WIP, of which Rockville is a part, and help meet City MS4 permit requirements.
Progress for this Objective	*This section will be left blank in the work plan but will be completed for the progress reports*

1. Progress reports shall be submitted to CBIG Grant Manager Ari Engelberg through the CCS federal funding grants management portal (https://webportalapp.com/sp/home/md_dnr_federal_funding). Each report must document progress toward the achievement of the above stated goals, objectives, and milestones during each quarter and semi-annual time frame. A succinct description of activities shall be reported for each objective listed above. These reports shall also describe difficulties encountered for each activity, any changes in expected deliverable dates, budget changes, or changes in staffing. Each report shall also include an upload of all written deliverables developed during the reporting period.

Period	Date
January 1, 2023 – March 31, 2023	April 15, 2023
January 1, 2023 – June 30, 2023 (semi-annual*)	July 15, 2023
July 1, 2023 – September 30, 2023	October 15, 2023
July 1, 2023 – December 31, 2023 ~~(final*)~~ **(semi-annual*)**	**January 15, 2024** ~~December 31, 2023~~
January 1, 2024- March 30, 2024	**April 15, 2024**
January 1, 2024- June 30, 2024 (semi-annual*)	**July 15, 2024**
July 1, 2024- September 30, 2024	**October 15, 2024**
July 1, 2024- December 31, 2024 (semi-annual*)	**January 15, 2025**
January 1, 2025-March 31, 2025	**April 15, 2025**
January 1, 2025-June 30, 2025 (final*)	**June 30, 2025**

*These reports shall “build” on the information provided during the previous report terms. Please ensure that these reports capture information for the time frame indicated.