Climate Monitoring & Assessment and Climate Adaptation – 2021-2022

*[NOTE: make sure to edit **pre**- or **post**- in the text above, to tell the reader whether this logic and action plan is in preparation for your quarterly progress meeting or has been updated based on discussion at the quarterly progress meeting.]*

Long-term Target: (the metric for success of Outcome)
Two-year Target: (increment of metric for success)

Instructions: Before your quarterly progress meeting, provide the status of individual actions in the table below using this color key.
Action has been completed or is moving forward as planned.
Action has encountered minor obstacles.
Action has not been taken or has encountered a serious barrier.

Additional instructions for completing or updating your logic and action plan can be found on ChesapeakeDecisions.

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
What is impacting our ability to achieve our outcome?	*What current efforts are addressing this factor?*	*What further efforts or information are needed to fully address this factor?*	*What actions are essential (to help fill this gap) to achieve our outcome?*	*What will we measure or observe to determine progress in filling identified gap?*	*How and when do we expect these actions to address the identified gap? How might that affect our work going forward?*	*What did we learn from taking this action? How will this lesson impact our work?*
Outcome: Monitoring & Assessment						
Monitoring & Assessment: Scientific Capabilities. The scientific capabilities to estimate, project, model and monitor	Development of climate change indicators on Chesapeake Progress.	Need scientific capability to monitor climate and other stressors simultaneously; need	1.1, 1.2, 1.3, 1.4, 1.5		Development of climate change indicators will depend on the quality of	

ecosystem changes and impacts as a result of climate change are complex and resource intensive. Additionally, impacts are exacerbated by non-climate stressors (e.g., land-subsidence, land use change, growth and development). Appropriate science and modeling of climate and non-climate related stressors are necessary for Chesapeake Bay Program partners to properly address climate impacts during policy planning and adaptation efforts.	Development of the climate change TMDL model.	to ensure that long-term monitoring networks include key parameters to assess climate change impacts and coincide with monitoring other stressors when feasible; need to sustain and support long-term monitoring networks (e.g., CBP Monitoring Network, Sediment Elevation Table Marsh Studies); need adequate downscaled climate modeling data and data to develop and test models; need continued efforts to understand thresholds of climate stressors on water quality, fisheries, and habitats, interaction of multiple stressors, and quantification of co-benefits.			supporting data, the added value of the indicators for helping to understand and explain management successes, and the priorities and resources of the CBP Partnership. CRWG is planning to develop 1-2 new climate change indicators during 2021-2022.	
Monitoring & Assessment: Geographic Extent/Variability of the Watershed. The impacts of climate change will be varied across the Watershed. It is important to not limit the focus of the management strategy to coastal issues alone but to recognize the wide range of monitoring, assessment and adaptation	Scientific data collection at DE, MD, VA NERRS sites to gain a better understanding of what is happening at the reserve level and how that can be applied to the Bay as a whole.	Need methods aimed to improve data consistency and comparability among regions and sectors.	1.6, 1.7		Currently, the CRWG does not have adequate resources to tackle both Bay and watershed climate change assessment needs across workgroups simultaneously.	

needs throughout the region. However, the variability of the ecosystem within the Bay proper and the larger watershed presents challenges in data consistency and comparability among regions and sectors.	Healthy Watersheds is incorporating climate metrics and vulnerability into their Healthy Watersheds Assessment.				Need partner support.	
Monitoring & Assessment: Complexity of the Monitoring Program. A monitoring program to detect ecosystem change and inform program and project response is a complex undertaking. Developing an acceptable monitoring approach for the watershed will be complex, and there are clear budgetary challenges associated with such long-term monitoring.	Data collected by NOAA Chesapeake Bay Sentinel Site Cooperative (CBSSC) and satellite office, CBP Monitoring Network. The Integrated Monitoring Network Workgroup is looking into developing a STAC proposal to evaluate new technologies and new partners to enhance monitoring capacity—key climate parameters in connection with climate change indicators should be considered.	Need to identify and connect climate resilience science needs for adaptation decision-making with monitoring needs; need institution capacity to develop and perform long-term monitoring to detect ecosystem change and a steady funding source for such efforts; need to evaluate alternative monitoring strategies, such as use of satellite data.	2.3, 2.7		CRWG has the capacity to provide information on science needs related to climate stressors that can be considered and integrated in monitoring networks by the Integrated Monitoring Network Workgroup.	

Outcome: Adaptation						
Adaptation: Stakeholder Engagement. Although there is acknowledgement that climate change and adaptation need to be addressed, there is a lack of understanding or agreement from stakeholders on what it means to be resilient or what constitutes resiliency, including what kind of actions support an adaptive management approach. Lack of appropriate stakeholder engagement jeopardizes acceptance of choices made about action plans and implementation strategies, introducing additional levels of social discord in an already complex environmental-economic-social landscape. There are also different types of stakeholders, and in many cases, they have different goals making it challenging to have adequate resources to facilitate meaningful connections across all stakeholder groups.	Worked with Local Government Advisory Committee on forum that developed recommendations for local governments on what they can do to act more deliberately in addressing flooding issues from changing climate conditions. Collaborating with CBP Local Engagement Team on identifying climate change-related local engagement needs and resources.	Need collective agreement; need better understanding of stakeholder climate resilience and adaptation decision-making needs; need facilitation in connecting the science across the different stakeholder groups to support decision-making; need stakeholder support in implementing recommendations; need willingness to discuss managed retreat as an option	2.1, 2.4, 2.5		Limited CRWG staff resources makes it difficult to make progress on this this factor.	
Adaptation: Capacity. There is a general lack of capacity to fill research gaps and translate the science and incorporate meaningful change into plans, programs, processes or projects across the entire CBP partnership. Although building that capacity is paramount, it can be time consuming and	Development of a Chesapeake Bay climate resilience implementation progress tracker for tidal and non-tidal areas.	Knowledge of types of technical assistance/expertise needed by jurisdictions.	2.2, 2.3, 2.6			

costly, considering the resource constraints faced by governments and organizations and the variability in adaptation approaches.						
Adaptation: Authority. Governments' and institutions' ability to respond to climate change is also limited by legislative, policy, regulatory and other authorities.	Individual jurisdictional incorporation of climate narrative (or voluntary numerical target) into WIPs III. States and communities around the Chesapeake Bay are taking steps to prepare or maintain their climate change adaptation or sustainability plans.	Need knowledge of institutional/regulatory barriers; need incorporation of climate change considerations across programs.	1.5, 2.9			Outside current CRWG staff capacity
Adaptation: Guidance. There is a need to translate existing science into guidance for the CBP, as well as stakeholders, to use to develop adaptation plans and to measure efficacy of response to climate change impacts. The nature of on-the-ground implementation often requires a level of certainty or methods to address uncertainty related to climate change effects on key factors (e.g., hydrology, water quality, temperature, precipitation, sea level rise,	Ongoing research and models, tools and metric development by CBP partners.	Need development of clear tools and guidance to develop plans and efficacy of response; lack of extensive information (or information dissemination) on the costs of climate change impacts in specific areas, or the cost savings and ecosystem benefits represented by specific mitigation or adaptation measures.	2.1, 2.2, 1.5, 1.6			

coastal erosion rates). Additionally, there is variability in institutional responses on how to address climate change impacts making it challenging to develop guidance that can be applied consistently across all watershed jurisdictions.						
Adaptation: Collaboration. The many and diverse stakeholders and organizations that make up the Bay Program are a strength, but it also causes collaboration challenges that must be addressed in order to maximize resources and provide strategic adaptation approaches across the watershed.	The Climate Resiliency Workgroup meets monthly to discuss a variety of climate topics and provide a forum for information-sharing to encourage collaboration.	Need to achieve strategic collaboration across the other goals in the Chesapeake Bay Watershed Agreement that maximizes resources and connects science to inform decision-making; need consensus on strategic adaptation approaches that fit the impact and area of concern	2.6, 2.7, 2.8, 2.9			

Key: Rows shaded in blue have been identified as primary actions for the Climate Resiliency Workgroup (CRWG) for the next 2 years and includes a mix of Chesapeake Bay Program and CRWG member priorities. Actions with bolded text indicate the primary actions that the core CRWG members identified that they are most interested in making progress on during the next two years. Rows shaded in white are secondary actions and progress will be dependent on the availability of staff and workgroup members.

Monitoring & Assessment Actions – 2021 - 2022					
Action #	Description	Performance Target(s)	Responsible Party (or Parties)/Point of Contacts	Geographic Location	Expected Timeline
Management Approach 1: Assess past and future trends of climate change in the Chesapeake Bay and watershed in connection with the goals in the Chesapeake Bay Watershed Agreement					
1.1	Assess utility of climate change indicators in tracking climate resilience for water quality, living resources, habitats, and public infrastructure and determine strategy for updating prioritized indicators	a. Evaluate the usefulness of existing (on Chesapeake Progress) and proposed climate change indicators with corresponding workgroups, STAR, and the Management Board to prioritize development and updates. Archive indicators that are not included in prioritization decisions. b. Develop a climate change indicator framework document that outlines implementation strategies for the prioritized indicators. Identify prospective cross-workgroup pathways connecting physical change (e.g., sea level rise, increased precipitation, warming temperatures) with ecological and community impacts to inform adaptation/resilience strategies related to the Chesapeake Bay Watershed Agreement outcomes. Include considerations for DEIJ application. Determine time periods for updating.	a. Julie Reichert-Nguyen (NOAA/CRWG), STAT staffer, Kathryn Barnhart (U.S. EPA/Status and Trends Workgroup), and relevant workgroups b. Julie Reichert-Nguyen (NOAA/CRWG), STAR staffer, and summer intern (NOAA)	Bay/ watershed-wide or place-based	CRWG does not have the capacity to maintain all existing and proposed climate change indicators. Updating indicators will rely on available data and assistance from other workgroups/ agencies.
1.2	Coordinate the development of climate change indicators in connection with clear management	a. Coordinate the development of a Bay Water Temperature Change Indicator (previously identified as a cross-workgroup priority) in connection with fisheries management.	a. Julie Reichert-Nguyen (NOAA/CRWG) and Bruce Vogt (NOAA/Fisheries GIT), Collaborator(s): Peter Tango (USGS/STAR),	Bay/ watershed-wide or place-based	CRWG plans to assist with the development 1-2 new climate

	objectives with corresponding workgroups to inform climate resilience activities related to ecological and community impacts	b. Continue exploring collaboration with USGS to connect their stream temperature compilation project with updating the stream temperature indicator for use in the Healthy Watersheds Assessment involving brook trout habitat and the identification of potential resilience factors. c. Support the proposed 2021 STAC Workshop, "Rising Watershed and Bay Water Temperatures—Ecological Implications for Ecosystem Processes Influencing Stream, River, and Estuarine Health." Compile water temperature data sources and host cross-workgroup discussion on the utility of water temperature change indicators in connection to fisheries and habitats. d. Explore data needs for developing a wetland loss and/or marsh migration indicator(s) related to sea level rise (see action 1.3).	Rebecca Murphy (UMCES/ITAT) b. Renee Thompson (USGS/Healthy Watersheds) and Julie Reichert-Nguyen (NOAA/CRWG) Collaborator(s): John Clune (USGS) c. Lead(s): Rebecca Hanmer (Forestry WG), Rich Batiuk, (CoastWise Partners), and Nora Jackson (CRC/Forestry WG) CRWG Support: Julie Reichert-Nguyen (NOAA), STAR staffer, Katie Brownson (USFS/CRWG) Other Workgroup Support: Scott Phillips (USGS/STAR), Bruce Vogt (NOAA/Fisheries GIT), Renee Thompson (USGS/Healthy Watersheds), and Bill Dennison (UMCES/STAC) d. See action 1.3		change indicators (2021-2022). Development of new indicators will depend on the quality of supporting data, cross-workgroup involvement, and the priorities and resources of the CBP Partnership.
Management Approach 2: Fill critical data and research gaps and improve understanding of climate change impacts and implications for selected outcomes in the Chesapeake Bay Watershed Agreement					

1.3	**Increase capacity to better understand sea level rise impacts to coastal marsh habitats and their ecosystem services**	**a. Support the Habitat GIT's FY20 GIT-funding project, "Synthesizing shoreline, sea level rise, and marsh migration data to inform wetland restoration targeting" and explore use of the synthesis product to inform decision-making for coastal adaptation (see action 2.2).** **b. Identify and invite subject matter experts and project leads (e.g., USGS Coastal Habitat Team, NOAA Sea Level Rise Viewer Team, Delaware Bay Tetra Tech team, VIMS), to present information on forecasting approaches to assess sea level rise impacts to coastal habitats and relevant ecosystem services research. Discuss possible connections and application to inform climate resilience decision-making.**	**a. Technical Lead: Kevin DuBois (DOD/Wetland WG/CRWG)** **Co-lead: Julie Reichert-Nguyen (NOAA/CRWG)** **Support: STAR staffer, Taryn Sudol (MD Sea Grant/CRWG), Jackie Specht (TNC/CRWG), Nicole Carlozo (MDNR/CRWG), Peter Claggett (USGS/ LUWG), Labeeb Ahmed (GIS Team), Megan Ossmann (CRC/Wetland WG)** **Contractor: VIMS** **b. Julie Reichert-Nguyen (NOAA/CRWG), STAR staffers, Collaborator(s): Joel Carr (USGS)**	**Placed-based (target area – Middle Peninsula, VA)**	**2021-2022**
1.4	Increase capacity to better understand increased precipitation and warming temperature on submerged aquatic vegetation (SAV)	a. Provide advisory support for the FY20 STAR GIT-funded project, "Modeling climate impacts on submerged aquatic vegetation (SAV) in the Chesapeake Bay," when needed. Explore use of model results in supporting climate adaptation decisions (see action 2.2).	a. Technical Lead: Becky Golden (MDNR/SAV Workgroup) Support: Brooke Landry (MDNR/SAV WG) and Julie Reichert-Nguyen		2021-2022

			(CRWG), Joel Carr (USGS) Contractor: VIMS		
1.5	Coordinate with the Modeling Workgroup and the Water Quality Goal Implementation Team (WQGIT) to support the application of TMDL climate change projections	a. Review climate model narrative language and provide suggestions on the language for easier interpretation. b. Meet with Modeling Workgroup and WQGIT to identify where assistance from CRWG will be needed to prepare the application of the TMDL climate change model projections for 2025.	CRWG: Mark Bennett (USGS), STAR staffer, Julie Reichert-Nguyen (NOAA) Modeling Workgroup: Dave Montali (TetraTech), Lew Linker (U.S. EPA) WQGIT: Lucinda Power (U.S. EPA), Ed Dunne (DOEE)	Bay/ watershed-wide	a. Needed before September 2021 b. 2021-2022
1.6	Support the WQGIT on BMP climate resilience assessments needed to update Watershed Implementation Plans	a. Coordinate with WQGIT in identifying BMPs where climate change research is most needed. b. Review Virginia Tech BMP Climate Resilience Assessment Report (STAC and NOAA-funded; focuses on urban, ag, and natural BMPs) and Chesapeake Stormwater Network/Urban Stormwater Workgroup's urban stormwater BMP climate resilience assessments. c. Host cross-workgroup meeting to present and discuss findings from above assessments (b) and identify next steps related to developing a research agenda framework for climate change BMPs where there are information gaps and adaptation strategies for Watershed Implementation Plans where information exists.	CRWG: Julie Reichert-Nguyen (NOAA), STAR staffer, and Mark Bennett (USGS) STAC: Kurt Stephenson (Virginia Tech) WQGIT: Ed Dunne (DOEE), Lucinda Power (U.S. EPA), and David Wood (CSN/Urban Stormwater Workgroup) Modeling Workgroup: Lew Linker (U.S. EPA)	All jurisdictions	2021-2022

		d. Work with the Management Board to identify alternative options (e.g., jurisdictional help) in supporting a BMP climate change research agenda.	and Dave Montali (TetraTech) Contractor: Zach Easton and Jeremy Hanson (Virginia Tech)		
1.7	Support efforts of STAR to promote use of climate science data in existing tools and building collaborative data partnerships (EnviroAtlas/ Ecosystem Services)	a. Explore collaborative opportunities with existing tools, such as EnviroAtlas and EJ screening, to use climate resilience-related data from the Chesapeake Bay Data and Mapping Portal to inform actions involving the Chesapeake Bay Program priorities, including ecosystem services, diversity, equity, inclusion, and justice (DEIJ). Data available at: at https://data-chesbay.opendata.arcgis.com/search?tags=Climate% 20Resiliency	a. Bill Jenkins and Bo Williams (U.S. EPA/Ecosystem Services Team), STAR staffer		Limited CRWG staff resources to support this action in 2-year timeframe

Adaptation Actions – 2021 - 2022					
Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
Management Approach 1: Improve knowledge and capacity to implement and track priority adaptation actions in connection with the goals in the Chesapeake Bay Watershed Agreement					
2.1	**Develop an approach to track climate resilience progress**	**a. Rescope STAR FY19 GIT-Funded project, "Bay-wide Climate Resilience Scorecard for Watershed Communities." Connect with adaptation-related implementation case studies and identify successes and barriers.**	**a. GIT-Funded Technical Lead: Julie Reichert-Nguyen (NOAA/CRWG) Support: STAR Staffer, Elizabeth Andrews (William & Mary/CRWG), Jim George (MDE/CRWG), Tuana**	**Coastal and Inland locations in Bay/ watershed**	**2021**

			Phillips (DEIJ Workgroup) Contractor: RAND Corp./MARISA		
2.2	**Assist with capacity-building activities that support the implementation of priority climate adaptation actions**	**a. Identify and convene discussions on priority adaptation actions, successful resilient designs, obstacles, gaps in information, lessons learned, and innovative solutions (e.g., flood mitigation using natural infrastructure). Connect scientific information from research partners with decision-making needs of natural resource managers and CBP workgroups.** **b. Identify federal, state and nongovernmental partners who are providing technical and financial assistance for adaptation projects and connect these groups to local governments and communities pursuing climate adaptation planning and implementation.** **c. Explore funding avenue to create a citable document/decision matrix that consolidates guidance on best practices for siting, selecting, and/or constructing nature-based adaptation projects. Incorporate decision making frameworks from Monitoring and Assessment actions (e.g., 1.3, 1.4, 1.6, and 1.7).** **d. Define goals of potential adaptation workshops/trainings and explore potential funding avenues, partner sponsorship, or**	**CRWG: Nicole Carlozo (MDNR), Jason Dubow (MDP), Jim George (MDE), Kevin DuBois (DOD), Jackie Specht (TNC), Katie Brownson (USFS/CRWG), Taryn Sudol (MD Sea Grant) Julie Reichert-Nguyen (NOAA), STAR staffers**	**TBD**	**2021-2022**

		leveraging existing regional/local conferences, forums, or workshops.			
2.3	Identify blue carbon science and monitoring needs to apply existing blue carbon crediting protocols to support climate resilience activities	a. Explore opportunities (e.g., internships, STAC workshop, GIT-funding, etc.) to assess available blue carbon information and identify science gaps in applying existing blue carbon crediting protocols for wetland and SAV restoration projects in Chesapeake Bay. b. Connect blue carbon science review with groups engaging in implementing financing approaches.	a. Mentors: Molly Mitchell (VIMS/CRWG) and Julie Herman (VIMS) Co-Mentor: Julie Reichert-Nguyen (NOAA/CRWG) Support: CRC C-stREAM Summer Intern b. Kristin Saunders (Budget and Finance Workgroup)		2021
Management Approach 2: Undertake public and stakeholder engagement to increase understanding of climate change impacts to inform and support adaptation					
2.4	**Coordinate with the CBP Communications and Local Engagement Team to help with the climate resiliency outcome actions related to communications/ outreach and/or local engagement**	**a. Identify CRWG communication and local engagement needs and incorporate them into the Local Engagement Needs and Resources spreadsheet.** **b. Work with Communications and Local Engagement Team on developing strategies to facilitate and connect the science with communication and local stakeholder needs related to the priority adaptation actions identified in Action 2.2 and past forums (e.g., LGAC Workforce Development and Flood forums).**	**CBP Communications: Rachel Felver (Alliance for the Chesapeake Bay) and Marisa Baldine (CRC)** **Local Engagement Team: Laura Cattell Noll (Alliance for the Chesapeake Bay)**		**Limited CRWG staff resources to support local engagement needs**

			LGAC: Jennifer Starr (Alliance for the Chesapeake Bay) **CRWG: Katie Matta (U.S. EPA Region 3), STAR staffers**		
2.5	Provide climate resilience content for educational modules and local government workshops	a. Work with existing Chesapeake Bay educational network to provide data, information, and topical experts in support of targeted engagement related to climate change impacts. b. Provide information for the educational modules being developed by the Local Leadership Workgroup. c. Provide support to the GIT Funded Project "Planning for Clean Water: Local Government Workshops." Incorporate climate resilience considerations.	Local Leadership Workgroup (Lead): Laura Cattell Noll (Alliance for the Chesapeake Bay) CRWG (Review Support): Katie Matta (EPA Region 3), Julie Reichert-Nguyen (NOAA), STAR staffer		2021-2022
Management Approach 3: Address the institutional capacity of the Chesapeake Bay Program to prepare for and respond to climate change					
2.6	Consult on cross-GIT climate change projects	a. Provide advisory support for the Habitat GIT's FY19 GIT-Funded project, "Targeted Local Outreach for Green Infrastructure in Vulnerable Areas." b. Provide advisory support for the Fisheries GIT's FY20 GIT-funded project, "Forage Indicator Development – Using Environmental Drivers to Assess Forage Statues." Connect with efforts to develop a Bay water temperature change indicator related to warming temperature effects on abundance.	a. Technical Lead (Habitat GIT): Chris Guy and Dan Murphy (FWS) Coordinating: Briana Yancy (CRC/Diversity Workgroup Support: Julie Reichert-Nguyen (NOAA/CRWG), Lauren Taneyhill (NOAA) and STAR staffer	a. Cambridge, MD, West Point, VA, and Williamsport, PA b. Bay-wide c. NA d. Watershed-wide	a. 2021 b-d. 2022

		c. Provide advisory support for the Stewardship GIT's FY20 GIT-funded project, "Chesapeake Bay Program Social Science Assessment and Integration Road Map Development." d. Provide support to the Urban Stormwater Workgroup where needed from an advisory capacity involving the application of information from the Intensity, Duration, Frequency (IDF) curve FY19 GIT-funded project to address climate impacts due to precipitation changes. e. Explore opportunities with the Forestry Workgroup and DEIJ Team to connect the change in high temperature extremes indicator with the tree canopy indicator efforts. Incorporate a DEIJ component related to building resilience for underserved communities. f. Review additional climate-related requests by CBP workgroups for CRWG assistance and re-prioritize actions where needed.	b. Mandy Bromilow (NOAA/Fisheries GIT) c. Amy Hayden (UMCES) d. Norm Goulet (VA Northern Regional Commission/USWG), Lew Linker (EPA, Modeling Workgroup), STAR staffer e. Sally Claggett and Julie Mawhorter (USFS), Katie Brownson (USFS/CRWG), and Julie Reichert-Nguyen (NOAA/CRWG) a-f. CRWG subject matter experts when available		
2.7	Utilize the Chesapeake Bay Program's SRS process to conduct a biennial review of the Climate Resiliency Workgroup and assess priorities	a. Develop a workgroup charter that describes workgroup's role, membership contributions, participation benefits, and operating principles – how best the workgroup can support climate resilience outcomes and other workgroup outcomes and within the watershed and member organizations. b. SRS Support – Develop Climate Resiliency Workgroup work plan, logic table and update management strategies to determine the	Julie Reichert-Nguyen (NOAA/CRWG), Mark Bennett (USGS/CRWG), and STAR staffers		2021-2022

		workgroup approach and actions for the next two years. c. Prepare document of high priority science needs to disseminate among groups. Where applicable, connect science needs with monitoring needs in coordination with the Integrated Monitoring Network Workgroup. d. Work with the Management Board to identify opportunities with their organizations and other government agencies to support CBP climate-related activities outside the current CRWG capacity. e. Develop approach to prioritize climate-related requests from CBP workgroups for CRWG assistance.			
2.8	CRWG membership and meetings	a. Distribute survey to workgroup members to understand their climate related interests and expertise to identify opportunities and gaps in membership to support Monitoring and Assessment and Adaptation Outcomes and cross-workgroup climate-related projects. b. Seek to expand workgroup membership to include more federal partners where there are likely to be more funding opportunities. c. Organize and facilitate CRWG meetings. Work with members to identify the best structure for meetings to effectively make progress on CRWG actions.	Julie Reichert-Nguyen (NOAA/CRWG), Mark Bennett (USGS/CRWG), and STAR staffers		2021

2.9	Prepare for new federal and state climate initiatives and emerging issues related to the Chesapeake Bay climate resilience needs	a. Support PSC Climate Action Team to draft climate activities for EC Directive. b. Federal Office Directors (FOD) communicate with CRWG on new administration climate policy and direction. c. Develop process to document emerging climate change issues provided by FOD and state partners.	a. Mark Bennett (USGS/CRWG) b. FOD: Lee McDonnell (U.S. EPA), Scott Phillips (USGS), and Sean Corson (NOAA) c. Mark Bennett (USGS/CRWG), Julie Reichert-Nguyen (NOAA/CRWG), and STAR staffers		2021-2022