BIENNIAL STRATEGY REVIEW SYSTEM Chesapeake Bay Program



Climate Resiliency Workgroup (CRWG) Logic and Action Plan: Post-Quarterly Progress Meeting

Climate Monitoring & Assessment and Climate Adaptation - 2023-2024

[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?
		Outcom	e: Monitoring &	Assessment		
Monitoring & Assessment: Scientific Capabilities. The scientific capabilities to estimate, project, model and monitor 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	Development of climate change indicators on Chesapeake Progress ITAT Tidal Trends Analyses; Bay Trends Interactive Map Rising Water Temperature STAC Workshop Marsh Migration Model Synthesis Application of the climate change TMDL model	Need scientific capability to monitor and assess climate and other stressors simultaneously; need 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);	1.1; 1.2; 1.3; 1.4; 1.5; 1.6; 1.7	Progress in integrating available data into updating and refining prioritized climate change indicators - identification of data sources, development of methodologies, building partnerships with data providers and analysts.	Development of climate change indicators will depend on the quality of 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 focusing on the prioritized climate change indicators from discussions with the Management Board.	

planning and adaptation efforts.	EPA Request for Applications to support BMP climate resilience research Multi-stressor/ habitat risk analyses/ living resources research	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.				
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 needs throughout the region. However, the variability of the ecosystem within the Bay proper and the larger watershed presents challenges in data consistency and	Scientific data collection by jurisdictions, USGS, NOAA, and other organizations Healthy Watersheds climate vulnerability metrics VIMS marsh migration model comparisons and decision framework to address variability	Need methods aimed to improve data consistency and comparability among regions and sectors.	1.2; 1.4; 1.5; 1.6	To be determined through cross-workgroup discussions.	The CRWG does not have adequate resources to simultaneously address both Bay and watershed climate change needs. Currently, there are resources for coastal marshes. The workgroup plans to provide advisory support for watershed-related GIT-funded projects. Overarching partnership support is needed to address this factor.	

comparability among						
regions and sectors.						
Monitoring &	Data collected	Need to identify and	1.7; 2.5	To be	Identification and	
Assessment: Complexity	by NOAA, USGS,	connect climate	, -	determined	eventual	
of the Monitoring	CBP Monitoring	resilience science		through cross-	implementation of	
Program. A monitoring	Network, and	needs for		workgroup	long-term	
program to detect	jurisdictions.	adaptation decision-		discussions.	monitoring of	
ecosystem change and	_	making with			parameters	
inform program and	Completion of,	monitoring needs;			associated with	
project response is a	"Enhancing the	need institution			climate change-	
complex undertaking.	Chesapeake Bay	capacity to develop			related stressors	
Developing an	Program	and perform long-			and impacts of	
acceptable monitoring	Monitoring	term monitoring to			concern.	
approach for the	Networks: A	detect ecosystem				
watershed will be	Report to the	change and a steady				
complex, and there are	Principals' Staff	funding source for				
clear budgetary	Committee."	such efforts; need to				
challenges associated	Outlines various	evaluate alternative				
with such long-term	climate-related	monitoring				
monitoring.	monitoring and	strategies, such as				
	assessment	use of satellite data.				
	needs.					
			.	••		
Adamstation Code by Idea	N.A l		Outcome: Adapta	1	Cartina a tha	
Adaptation: Stakeholder	Marsh	Need collective	2.1; 2.2; 2.3	Increase in	Continuous - the	
Engagement. Although	Adaptation	agreement; need		activities that	incorporation of	
there is	Project	better		engage with	stakeholder input	
acknowledgement that	Callabarations	understanding of		different	and needs around	
climate change and	Collaborations	stakeholder climate resilience and		stakeholder	changing climate conditions helps	
adaptation need to be addressed, there is a lack	with Strategic Engagement	adaptation decision-		groups in climate	align science	
of understanding or	Team to	making needs; need		resilience and	application in	
agreement from	connect climate	facilitation in		adaptation	supporting	
stakeholders on what it	science and	connecting the		discussions	adaptation efforts.	
means to be resilient or	resilience	science across the		resulting in the	adaptation choits.	
what constitutes	projects with	different		application of		
resiliency, including what	stakeholders.	stakeholder groups		climate science		
kind of actions support		to support decision-				
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an adaptive	Local	making; need		in decision-		
management approach.	Government	stakeholder support		making.		
Lack of appropriate	Advisory	in implementing		making.		
stakeholder engagement	Committee	recommendations;				
jeopardizes acceptance	climate	need willingness to				
of choices made about	resilience-	discuss managed				
action plans and	focused forum	retreat as an option.				
implementation	topics.	retreat as an option.				
strategies, introducing	topics.					
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.						
Adaptation: Capacity.	Marsh	Knowledge of types	2.2; 2.4; 2.5;	Increase in	We need increases	
There is a general lack of	Adaptation	of technical	2.6	technical	in people/staff	
capacity to fill research	· ·	assistance/expertise	2.0		working directly on	
gaps and translate the	Project	needed by		experts assisting with project	climate change	
science and incorporate	Climate	jurisdictions.		proposals,	initiatives to	
meaningful change into	Resiliency	jurisuictions.		design, and	adequately	
plans, programs,	Workgroup	Guidance on how to		implementation.	address this gap.	
processes or projects	meetings and	strengthen project		implementation.	While there has	
across the entire CBP	advisory	proposals for		Increased	been an increase in	
partnership. Although	support on	funding.		success in	funding for	
building that capacity is	projects.	Turiulig.		getting	restoration under	
paramount, it can be	projects.	Technical experts to		resilience	resilience themes,	
time consuming and		incorporate climate		research and	there is a shortage	
costly, considering the		change science in		restoration	in people that can	
resource constraints		project design.		projects funded.	prepare the grant	
faced by governments		project design.		projects fullueu.	proposals and	
raced by governments					hi ohosais aiiu	

and organizations and the variability in adaptation approaches.					manage and implement the projects.	
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	Need knowledge of institutional/ regulatory barriers; need incorporation of climate change considerations across programs.	1.4; 2.7	Increase use of climate change science to inform legislative, policy, regulatory, and other authorities.	This factor is outside the capacity of the CRWG. Addressing this factor will rely on the entire CBP Partnership.	
	Chesapeake Bay are taking steps to prepare or maintain their climate change adaptation or sustainability plans.					
Adaptation: Guidance. There is a need to translate existing science into guidance for the CBP, as well as stakeholders, for use in developing adaptation plans and measuring the 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	Ongoing research and models, tools and metric development by CBP partners. Marsh Migration Data Synthesis project Marsh Resilience workshops (Sea	Need development of clear tools and guidance to develop plans and assess 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	2.1; 2.3; 1.2	Increase in projects that result in guidance.	There is a continuous need for climate adaptation guidance.	

related to climate change effects on key factors (e.g., hydrology, water quality, temperature, precipitation, sea level rise, 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.	Grant, EPA- ORD, Marsh Adaptation Project)	specific mitigation or adaptation measures.				
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. Collaborative, cross- workgroup projects.	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	2.4; 2.5; 2.6; 2.7	Bringing in new partners within the workgroup to expand perspectives and expertise in addressing the climate adaptation outcome. Increase in collaboration across workgroups.	There is a continuous need for adaptation collaboration.	

Action ## Description Performance Target(s) Responsible Party (or Parties) / Point of Contacts Management Approach 1: Assess past and future trends of climate change in the Chesapeake Bay Watershed Agreement 1.1 Coordinate updates a for the Average a Jamileh Soueidan (CRC/CRWG Staffer); Change climate change indicators on Chesapeake Progress Description (Change climate indicators on Chesapeake Progress to better align with current climate change indicator efforts. 1.2 Coordinate the development of prioritized climate change indicators in connection with current climate change indicators on prioritized climate change indicators in connection with clear management objectives with corresponding workgroups and natural resource outcomes of the progress and support to develop and maintain the indicator(s). Review and consider recommendations from the change indicators (CRC/CRTAT); corresponding conditions and providers/analysts (e.g., NOAA, ITAT) to assess feasibility of approaches and support to develop and maintain the indicator(s). Review and consider recommendations from the change in the Chesapeake Bay watershed in Cocation in the Chesapeake Bay watershed Agreement Change in the Chesapeake Bay watershed agreement (CRC/CRWG Staffer); Staffer); Status and Trends Workgroup); Mike Kolian (U.S. EPA/Status and Trends Workgroup); Mike Kolian (U.S. EPA/Status and Trends Workgroup); Mike Kolian (U.S. EPA/Status and Trends Workgroup); Mike Kolian (U.S. EPA) in the Change indicators will rely on other agencies. These updates are expected to be finished by Summer 2023. 1.2 Coordinate the development of discussions to identify user case scenarios on how best to incorporate living resource— related outcome needs (e.g., fish habitat, SAV) when developing Support: Peter Tango (USGS/STAR); Change climate change indicators will depend on the quality of supporting data, Cross-workgroup involvement, and support to develop and maintain the indicator(s). Review and consider (CRC/CRVIAT); Cross-workgroup involvement, and support		Monitoring & Assessment Actions – 2023 - 2024								
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Contacts Contacts		Description	Performance Target(s)	(or Parties)/ Point of	Location	Timeline				
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clear management objectives with the Bay Water Temperature torseponding corresponding workgroups and natural resource outcomes ITAT) to assess feasibility of develop and maintain the indicator(s). Review and consider in dicator(s). Review and consider in dicator(s). Review and consider in dicators objectives with the Bay Water Temperature and consider in the page indicators and consider in the change indicator. Breck Sullivan (USGS/STAR); Change indicators and consider indicator. Breck Sullivan (USGS/STAR); Change indicators and consider indicator. Breck Sullivan (USGS/STAR); Change indicators during 2024. Development of new indicators in the change indicators and consider indicators and consider indicators in the change indicators in the change indicator indicators in the change indicator in the change indicator indicators in the change indicator in the ch		change indicators in	incorporate living resource-	Jamileh Soueidan	discussions)	development of				
objectives with the Bay Water Temperature Tango (USGS/STAR); during 2023- corresponding Change climate change indicator. workgroups and Meet with potential data (USGS/STAR Development of natural resource providers/analysts (e.g., NOAA, outcomes ITAT) to assess feasibility of approaches and support to develop and maintain the indicator(s). Review and consider (UMCES/ITAT); during 2023- 2024. Development of new indicators will depend on the quality of supporting data, cross-workgroup		connection with	related outcome needs (e.g., fish	(CRC/CRWG staffer);		1-2 climate				
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natural resource providers/analysts (e.g., NOAA, outcomes ITAT) to assess feasibility of approaches and support to develop and maintain the indicator(s). Review and consider (UMCES/ITAT); new indicators will depend on the quality of supporting data, cross-workgroup		corresponding	Change climate change indicator.	Breck Sullivan		2024.				
outcomes ITAT) to assess feasibility of Gunnerson will depend on approaches and support to develop and maintain the indicator(s). Review and consider (UMCES/ITAT); will depend on the quality of supporting data, cross-workgroup		workgroups and	Meet with potential data	(USGS/STAR		Development of				
approaches and support to (CRC/STAR Staffer); the quality of develop and maintain the indicator(s). Review and consider (UMCES/ITAT); the quality of supporting data, cross-workgroup		natural resource	providers/analysts (e.g., NOAA,	coordinator); Alex		new indicators				
develop and maintain the Rebecca Murphy indicator(s). Review and consider (UMCES/ITAT); supporting data, cross-workgroup		outcomes	ITAT) to assess feasibility of	Gunnerson		will depend on				
indicator(s). Review and consider (UMCES/ITAT); cross-workgroup			approaches and support to	(CRC/STAR Staffer);		the quality of				
indicator(s). Review and consider (UMCES/ITAT); cross-workgroup			develop and maintain the	Rebecca Murphy		supporting data,				
recommendations from the Brooke Landry involvement, and			indicator(s). Review and consider	(UMCES/ITAT);		cross-workgroup				
			recommendations from the	Brooke Landry		involvement, and				

		Rising Water Temperature STAC	(MDNR/SAV		the priorities and	
		Workshop report.	Workgroup); Justin		resources of the	
			Shapiro		CBP Partnership.	
			(CRC/Fisheries GIT)			
		b. In coordination with Healthy				
		Watersheds GIT, Brook Trout	b. Renee Thompson			
		Workgroup, Stream Health	(USGS/Healthy			
		Workgroup, and Forestry	Watersheds);			
		Workgroup, facilitate cross-	Stephen Faulkner			
		workgroup discussions on a	(USGS/Brook Trout			
		stream temperature climate	Workgroup); Jamileh			
		change indicator related to	Soueidan			
		climate resilience factors of	(CRC/CRWG staffer);			
		interest (e.g., forest cover, brook	STAR Support; John			
		trout habitat). Explore	Clune (USGS); Alison			
		integration of the USGS's stream	Santoro			
		temperature compilation project	(MDNR/Stream			
		and trends to support indicator	Health Workgroup);			
		development and potential	Taylor Woods			
		options for climate change	(USGS)			
		metrics that could be				
		incorporated in the Healthy				
		Watersheds Assessment 2.0.				
_		critical data and research gaps and i	•	of climate change	impacts and	
		mes in the Chesapeake Bay Waters		a Diagoni based	- F-II 2022	
1.3	Increase capacity to	a. Review recommendations	a. Julie Reichert-	a. Placed-based	a. Fall 2023	
	better understand	from the Habitat GIT's FY20 GIT-	Nguyen	coastal areas		
	sea level rise effects	funding project, "Synthesizing	(NOAA/CRWG),			
	on coastal marsh	shoreline, sea level rise, and	Jamileh Soueidan			
	habitats and their	marsh migration data to inform	(CRC/CRWG Staffer)			
	ecosystem services	wetland restoration targeting"	Molly Mitchell			
		and explore use of the synthesis	(VIMS/CRWG);			
		product to inform decision-	Nicole Carlozo			

b. In coordination with the Wetland Workgroup, facilitate discussions on methods to quantify current and projected coastal wetland losses from sea level rise and wetland gains from marsh migration and approaches being used to connect with ecosystem services (e.g., habitat for living resources of interest, shoreline protection, coastal flooding reduction). Invite researchers to present on relevant work to foster discussion and increase understanding on the state of science. 1.4 Coordinate with the Water Quality Gol Implementation Workgroup and the Water Quality Gol Implementation and popplication of tTMDL climate change projections 1.5 In coordinator with the worth of softer application of tTMDL climate change projections 1.6 In coordinator with the wetand Workgroup, Jeremy Lanson (CRC/CRWG); Peter Clagsett (USGS/CRWG), Lew Lanson (CRC/CWG); Peter Clagsett (USGS/CRWG), Lew Land Use Workgroup; VIMS workgroup, Workgroup, Jeremy Hanson (CRC/WGIT); STAR Support; additional CRWG members to be identified later based on request			making for coastal adaptation	(MDNR/CRWG);			
b. In coordination with the Wetland Workgroup, facilitate discussions on methods to quantify current and projected coastal wetland gains from marsh migration and approaches being used to connect with ecosystem services (e.g., habitat for living resources of interest, shoreline protection, coastal flooding reduction). Invite a researchers to present on relevant work to foster discussion and increase understanding on the state of science. 1.4 Coordinate with the Modeling Workgroup and the Water Quality Goal Implementation Team (WQGIT) to support the application of TMDL climate change projections b. In coordinate with the Wetland Workgroup, facilitate discussion son methods to quantify current and projected (NOAV/CRWG); watershed-wide or place-based (depends on methodology) (KCP/CRWG staffer); watershed-wide or place-based (depends on methodology) (KCP/CRWG); Meding workgroups and methodology) (KCP/CRWG); Neil Ganju (USGS); Labeb Ahmed (USGS/CRWG); Peter Claggett (USGS/) Land Use Workgroup; Wetland Workgroup; VIMS Mark Bennett (USGS/CRWG), Lew Wide Water Quality Goal Implementation Team (MQGIT) to support the application of TMDL climate change projections Depends on the availability of other on methodology) More Group; Wetland Workgroup; VIMS Mark Bennett (USGS/CRWG), Lew Wide Workgroup, Jereny Modeling Workgroup and Water Quality Water Quality Modeling Workgroup and Water Quality Mark Bennett (USGS/CRWG), Lew Wide Workgroup, Jereny Modeling Workgroup and Water Quality Mark Bennett (USGS/CRWG), Lew Wide Water Quality Modeling Workgroup and Water Quality Mark Bennett (USGS/CRWG), Lew Wide Water Quality Mark Bennett (USGS/CRWG), Lew Wide Water Quality Modeling Workgroup and Water Quality Mark Bennett Modeling Workgroup and Workgroup and Workgroup and Workgroup and Water Quality Mark Bennett Modeling Workgroup and			,				
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Wetland Workgroup, facilitate discussions on methods to quantify current and projected coastal wetland losses from sea level rise and wetland gains from marsh migration and approaches being used to connect with ecosystem services (e.g., habitat for living resources of interest, shoreline protection, coastal flooding reduction). Invite researchers to present on relevant work to foster discussion and increase understanding on the state of Science. 1.4 Coordinate with the Modeling Workgroup and the Water Quality Gil and plication of TML climate change projections Depends on the availability of other workgroups and researchers. Discussions ongoing throughout (RC/CRWG); Neil Ganju (USGS); (RWG); Neil Ganju (U							
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1.4 Coordinate with the Modeling workgroup and the Water Quality Goal Implementation Team (WQGIT) to support the application of TMDL climate change projections A. Provide advisory support to the Modeling Workgroup and the Water Quality GIT on the application of the TMDL climate change projections A. Provide advisory support to the Modeling Workgroup and USGS/CRWG), Lew Linker (EPA/ Modeling Workgroup and Workgroup), Jeremy Hanson (CRC/WQGIT); STAR Support; additional CRWG members to projections A. Provide advisory support to the Modeling Wide Wide Tequests from Modeling Workgroup and Workgroup), Jeremy GIT.				Wetland			
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Water Quality Goal Implementation Change model projections and Support the application of TMDL Climate Climate Change projections and Support; additional Climate change projections Supports to be identified later		Modeling	the Modeling Workgroup and	(USGS/CRWG), Lew	wide	requests from	
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1.5	Improve understanding of best management practices (BMP) responses to climate change conditions	a. Provide advisory support on EPA Request for Applications (RFA) related to BMP climate resilience research. Supports action in the Executive Council Climate Change Directive Workplan.	CRWG: Mark Bennett (USGS), Julie Reichert-Nguyen (NOAA) WQGIT: Ed Dunne (DOEE), Jeremy Hanson (CRC), Lucinda Power (EPA); Modeling Workgroup: Lew Linker (U.S. EPA)	Bay/ watershed- wide	Depends on the timeline of RFA and requests from EPA.		
1.6	Increase capacity in understanding multiple climate and other co-occurring environmental stressors on living resources	a. Assess a multi-stressor index for key fish species (e.g., striped bass) that includes marine heat waves and dissolved oxygen based on recommendations expressed during the Rising Water Temperature STAC workshop.	a. Julie Reichert- Nguyen (NOAA/CRWG); Jamileh Soueidan (CRC/CRWG staffer); Bruce Vogt (NCBO/Fisheries GIT) Support: NOAA Chesapeake Bay Office; NOAA Satellite Office Hypoxia Collaborative	a. Bay-wide	a. FY23-FY24		
		b. Provide opportunities during workgroup meetings to increase understanding on the state of science related to the use of biological communities (e.g., inland fish, macroinvertebrates)	b. Jamileh Soueidan (CRC/CRWG staffer); STAR support; CRWG member - TBD	b. Watershed	b. FY24		

		and biodiversity metrics as	Support: Taylor			
		indicators of resilience to climate	Woods (USGS); Kelly			
		change and land-use stressors.	Maloney (USGS)			
		Invite researchers to present on				
		relevant work.				
1.7	Explore	a. In coordination with the	Brooke Landry	Chesapeake Bay	FY23-FY24	
	opportunities to	Integrated Monitoring Network	(MDNR/SAV			
	support long-term	Workgroup, support discussions	Workgroup), Julie			
	monitoring of	with the SAV Workgroup,	Reichert-Nguyen			
	habitats and aquatic	Fisheries GIT, and Habitat GIT to	(NOAA/CRWG),			
	resources to assess	identify ecosystem, species, and	Breck Sullivan and			
	environmental and	environmental parameters,	Peter Tango			
	ecosystem changes	partners, sampling protocols,	(USGS/STAR			
	to support future	needed resources, optimal sites	Monitoring			
	natural resource	for a potential aquatic resources	Workgroup), Amy			
	management	sentinel site monitoring program	Goldfischer			
	decisions	for nearshore habitats in	(CRC/STAR Staffer),			
		connection with natural resource	Bruce Vogt			
		management needs and climate	(NOAA/Fisheries			
		change and other stressors.	GIT), Habitat GIT -			
		Identify research questions to	TBD			
		seek funding to pilot monitoring				
		concepts.				

		Adaptation Actio	ns – 2023 - 2024			
Action	Description	Performance Target(s)	Responsible Party	Geographic	Expected	Progress Status
#	·		(or Parties)	Location	Timeline	
Manage	ement Approach 1: Imp	rove knowledge and capacity to imp	lement and track prio	rity adaptation	actions in	
connect	ion with the goals in th	e Chesapeake Bay Watershed Agree	ement			
2.1	Support efforts in	a. Plan discussions during CRWG	a. Jackie Specht	a. Bay/	a. FY23-FY24	
	identifying strategies	meetings on how to feasibly track	(TNC/CRWG), Julie	watershed-		
	to track progress in	progress on the Adaptation	Reichert-Nguyen	wide		
	enhancing resiliency	Outcome. Support outreach	(NOAA/CRWG),			
	of the Bay and	efforts to learn how partners	Jamileh Soueidan			
	aquatic ecosystems	(state, federal, local, NGOs, other	(CRC/CRWG			
	from climate change	CBP workgroups) are defining	staffer); STAR			
	impacts and support	resiliency and measuring the	support; academic			
	discussions on	efficacy of their	and jurisdictional			
	setting goals for	programs/actions. Seek and invite	partners			
	Chesapeake Bay	researchers to present on				
	beyond 2025.	approaches to quantify habitat				
		and community resilience to				
		climate change impacts. Connect				
		with CBP's strategic planning				
		discussions for 2025 and beyond.				
		b. Support EPA ORD ROAR project	b. Julie Reichert-	b. Virginia	b. If funded, start	
		- Climate Vulnerability and	Nguyen		of project would	
		Natural Infrastructure Resilience	(NOAA/CRWG);		likely be Summer	
		Effectiveness Assessment (if	Kyle Buck (EPA		2023 and go until	
		funded).	ORD); NOAA		Summer 2025	
			Chesapeake Bay			
			Office			
2.2	Assist with capacity-	a. Continue to support the GIT-	a. CRWG: Nicole	a. TBD - two	a. Fall 2023	
	building activities	funded Marsh Adaptation Project:	Carlozo (MDNR),	regional		
	that support the	1) Synthesize and promote use of	Jackie Specht (TNC),	focus areas		
	implementation,	common resilience and social	Taryn Sudol (MD	(one in		

pairing, and design	vulnerability metrics for selecting	Sea Grant), Julie	Maryland		
of natural	marsh restoration locations and	Reichert-Nguyen	and one in		
infrastructure	measuring success and 2) build	(NOAA), Jamileh	Virginia)		
projects that	partnerships to pursue marsh	Soueidan			
enhance the	restoration and research projects	(CRC/CRWG			
resiliency of the Bay	under the influx of resiliency	staffer), Alex			
and aquatic	funding through alignment of	Gunnerson			
ecosystems from	priorities. Supports action in the	(CRC/STAR staffer);			
coastal climate	Executive Council Climate Change	John Wolf (USGS,			
change impacts	Directive Workplan.	CBP GIS Team);			
		Contractor: Skeo			
	b. Support discussions with				
	stakeholders to understand their	b. Julie Reichert-			
	perspectives and needs related to	Nguyen	b. Bay-wide	b. FY23-FY24	
	siting and design criteria for	(NOAA/CRWG);	(coasts)		
	natural infrastructure projects	Jamileh Soueidan			
	that incorporate climate	(CRC/CRWG			
	resilience considerations (e.g.,	staffer); Jackie			
	marsh migration). Build on	Specht			
	information gathered from the	(TNC/CRWG);			
	Marsh Adaptation Project (see	Wetland			
	action 2.2a)	Workgroup			
	c. Provide advisory support and				
	summarize lessons learned on the	c. Julie Reichert-			
	grant application process for	Nguyen	c. Maryland	c. FY24	
	projects identified through the	(NOAA/CRWG),	and/or		
	CRWG's GIT-funded Marsh	Jamileh Soueidan	Virginia		
	Adaptation Project (see action	(CRC/CRWG			
	2.2a).	Staffer); identified			
		CRWG members			
		from survey			

_		lertake public and stakeholder enga	gement to increase ur	derstanding o	f climate change	
impact	s to inform and support	adaptation				
2.3	Coordinate with the	a. Invite representatives from the	a. CRWG: Jamileh	N/A	a. FY23	
	CBP Strategic	Local Government Advisory	Soueidan			
	Engagement Team	Committee to present on	(CRC/CRWG			
	to help connect the	recommendations from the Local	staffer); LGAC:			
	CRWG science	Government Forum: Integrating	Jennifer Starr			
	support activities	Resilience into Local Planning.	(Alliance for the			
	with community		Chesapeake Bay)			
	resiliency and					
	stakeholder needs	b. Review recommendations from	b. POC: Amy		b. Coordinate	
		the FY20 GIT-funded project,	Handen (UMCES);		with GIT Lead	
		"Chesapeake Bay Program Social	CRWG member;			
		Science Assessment and	STAR staffer			
		Integration Road Map				
		Development" and determine any				
		follow-up actions.				
		c. Consolidate blue carbon	c. Alex Gunnerson		c. FY23	
		crediting/science needs review	(CRC/STAR Staffer),			
		into a shareable document that	Julie Reichert-			
		can be distributed to interested	Nguyen			
		stakeholders.	(NOAA/CRWG),			
			Molly Mitchell			
			(VIMS/CRWG),			
			Jackie Specht,			
			(TNC/CRWG)			
		lress the institutional capacity of the	Chesapeake Bay Prog	gram to prepar	e for and respond to	
climate	e change					
2.4	Consult on cross-GIT	a. Placeholder: Forestry	a. POC: Katie		FY23-FY24	
	climate change	Workgroup's FY22 GIT-Funded	Brownson			
	projects	project, "Optimizing Riparian	(USFS/Forestry			
		Forest Buffer Implementation for	Workgroup/CRWG)			

		climate adaptation and	Support: Jamileh			
		resilience."	Soueidan			
			(CRC/CRWG			
			Staffer); CRWG			
		b. Placeholder: Stream Health	member - TBD			
		Workgroup's FY22 GIT-Funded				
		project, "Literature Review:	b. POC: Alison			
		Building Climate Resilience in	Santoro (Stream			
		Stream Restoration Practices."	Health Workgroup)			
			Support: TBD			
		c. Placeholder: SAV Workgroup's	c. POC: Brooke			
		FY22 GIT-Funded project,	Landry (MDNR/SAV			
		"Determining the local effect of	Workgroup)			
		flow/stormwater runoff on SAV	Support: Julie			
		density and acreage and options	Reichert-Nguyen			
		for targeting watershed BMPs	(NOAA/CRWG);			
		that protect priority SAV areas."	CRWG member -			
			TBD			
2.5	Utilize the	a. Develop a workgroup charter	Julie Reichert-	N/A	a. Summer 2023	
	Chesapeake Bay	that describes the workgroup's	Nguyen			
	Program's SRS	role, membership contributions,	(NOAA/CRWG),			
	process to conduct a	participation benefits, and	Jamileh Soueidan			
	biennial review of	operating principles – how best	(CRC/CRWG			
	the Climate	the workgroup can support	Staffer),			
	Resiliency	climate resilience outcomes and	Mark Bennett			
	Workgroup and	other workgroup outcomes	(USGS/CRWG),			
	assess priorities and	within the watershed and	Jackie Specht			
	identify science	member organizations. Include an	(TNC/CRWG), Alex			
	needs	approach to prioritize climate-	Gunnerson and			
		related requests from the CBP	Amy Goldfischer			
		workgroups for CRWG assistance.	(CRC/STAR			
			staffers), Breck			

b. SRS Support – Develop Climate Resiliency Workgroup logic and action table and update management strategies and appendix of partnership climate resilience efforts. Supports action in the Executive Council Climate Change Directive Workplan.	Sullivan (USGS/STAR)	b. Ongoing	
c. Document high priority science needs to disseminate among groups in the Chesapeake Bay Program's Science Needs database. Identify follow-up actions on how the CRWG can support the science recommendations from the Rising Water Temperature STAC workshop and the BMP Climate Uncertainty report.		c. FY23	
d. Evaluate workgroup's role in supporting ocean acidification and blue carbon/carbon sequestration monitoring and assessment needs, in coordination with STAR (refer to Enhancing the Chesapeake Bay Program Monitoring Networks report to the PSC).		d. FY23-FY24	

2.6	CRWG membership,	a. Distribute survey to workgroup	Julie Reichert-	N/A	a. Winter 2023
	meetings, and	members to understand their	Nguyen		
	website	climate related interests and	(NOAA/CRWG),		
		expertise to identify	Jamileh Soueidan		
		opportunities and gaps in	(CRC/CRWG),		
		membership to support the	Mark Bennett		
		Monitoring and Assessment and	(USGS/CRWG),		
		Adaptation Outcomes and cross-	Jackie Specht		
		workgroup climate-related	(TNC/CRWG), Alex		
		projects.	Gunnerson and		
		, ,	Amy Goldfischer		b. Ongoing
		b. Seek to expand workgroup	(STAR staffers)		
		membership to support activities	,		
		and align with resiliency funding			
		opportunities.			
					c. Ongoing
		c. Organize and facilitate CRWG			
		meetings. Work with members to			
		identify topics and structure for			
		meetings to effectively make			
		progress on CRWG actions.			
					d. FY24
		d. Host meetings to identify and			
		discuss gaps in resiliency work			
		(e.g., ghost forests/forest loss,			
		marsh migration tradeoffs,			
		benefits of living shorelines			
		versus hardened shorelines,			
		equitable adaptation) in			
		collaboration with respective			
		workgroups.			e. FY23
		e. Update Climate Resiliency			
		Workgroup's website			

2.7	Prepare for new	a. Federal Office Directors (FOD)	a. FOD: Lee	N/A	a. Ongoing	_
	federal and state	communicate with CRWG on new	McDonnell (U.S.			
	climate initiatives	administration climate policy and	EPA), Mark Bennett			
	and emerging issues	direction.	(USGS), and Sean			
	related to the		Corson (NOAA)			
	Chesapeake Bay					
	climate resilience	b. Develop process to document	b. Mark Bennett		b. FY23	
	needs	emerging climate change issues	(USGS/CRWG), Julie			
		provided by FOD and state	Reichert-Nguyen			
		partners.	(NOAA/CRWG),			
			Jamileh Soueidan			
			(CRC/CRWG staffer)			
		c. Review and coordinate with	c. Julie Reichert-		c. FY23	
		respective groups on the	Nguyen (NOAA),			
		Comprehensive Evaluation of	Bruce Vogt (NOAA),			
		System Response (CESR) STAC	Jamileh Soueidan			
		report in connection with	(CRC/CRWG);			
		nearshore and climate resilience	CRWG member -			
		efforts.	TBD; STAR Support			