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Minimize the impact of invasive species	9.2	Increase early detection, monitoring, and rapid response programs. Rapid response should be adaptive and include activities such as 1) assessing and mapping Estuary-wide distribution of key invasive species; 2) improving the Calflora website and expanding it to include wetland species and to increase citizen reporting of species; 3) working with professional divers associations and training them to detect new invasive species while cleaning boat bottoms; 4) increasing scientific monitoring to measure the number of new species coming into the region; and 5) increasing citizen science monitoring.	Identify 3-4 funding sources for early detection, monitoring, and rapid response, by 2021.	25	SFEP	Karen McDowell karen.mcdowell@sfestuary.org
Minimize the impact of invasive species	9.3	Implement eradication and control programs with priority given to species detected early, species that have a chance of being eradicated, and species that have extensive impacts on habitats important to the health of the estuarine ecosystem. Research and test pilot control measures for key invasive species.	Reduce acreage of key invasive species. Ongoing until 2021.	95	SFEP	Karen McDowell karen.mcdowell@sfestuary.org
Minimize the impact of invasive species	9.4	Provide adequate specificity in permit language requirements for restoration projects to include non-native plant monitoring requirements where appropriate; add language about non-native plant monitoring requirements were lacking. Confirm that Best Management Practices are shared for invasive species where they exist (for example:	Increase the number of permits with improved invasive	50	SCC	Karen McDowell karen.mcdowell@sfestuary.org

		Invasive Spartina Project Best Management Practices 2016). Confirm that “percent cover” requirements in permits are appropriate to individual invasive species.	spartina requirements			
Increase carbon sequestration through wetland restoration, creation, and management	11.1	Work with agencies and willing private landowners to identify appropriate sites and funding sources, and to plan and implement projects that create managed and tidal wetlands on former agricultural lands in the Suisun and Delta region.	Convert 3,000 acres to wetlands in the Suisun and Delta region.	76	CA Department of Water Resources, Delta Conservancy	James Muller james.muller@sfestuary.org
Increase carbon sequestration through wetland restoration, creation, and management	11.2	Continue to conduct applied research to better understand atmospheric carbon sequestration and storage fluxes in wetlands in the Bay and Delta. Work within reference systems and utilize scenario testing to inform management and restoration approaches. Quantify greenhouse gas emissions (CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>x</sub> ) from different types of wetlands and different management regimes.	Complete and publish several (1-3) applied research studies on carbon sequestration, as a product of specific restoration and management approaches.	100	CA Department of Water Resources, SF Bay NERR	James Muller james.muller@sfestuary.org
Increase carbon sequestration through wetland restoration, creation, and management	11.3	Support the carbon market by completing relevant offset protocols for wetlands and by developing reference sites and standard carbon monitoring and accounting practices that reduce reporting costs for participants.	Completion of relevant offset protocols.	100	CA Department of Water Resources, Delta Conservancy, SF Bay NERR	James Muller james.muller@sfestuary.org
Restore watershed connections to the Estuary to improve habitat, flood protection and water quality	12.4	Secure funding in conjunction with partners to complete designs and construction documents. Obtain necessary permits and approvals for selected sites.	Initiate implementation phase of two projects.	100	SFEP	Heidi Nutters heidi.nutters@sfestuary.org
Manage sediment on a regional scale and advance beneficial reuse	13.4b	Advance understanding of how the creation of sandy beaches and their replenishment provides multiple benefits in terms of ecosystem health, shoreline erosion control, and sea level rise adaptation. Create (or enhance an existing) monitoring tool to identify potential sites for sandy beach	Identify pilot project location, coarse grain sediment source(s), funds	0	SFBJV	Adrien Baudrimont adrien.baudrimont@sfestuary.org

		creation or replenishment projects, choose pilot project sites, and track progress. Provide information about the benefits of sandy beaches to regulators and the restoration community.	for implementation , and begin implementation			
Demonstrate how natural habitats and nature-based shoreline infrastructure can provide increased resiliency to changes in the Estuary environment.	14.4a	Construct pilot projects to test and refine natural and nature-based approaches to resilience by applying the guidelines developed in Task 14-3. These pilot projects will build on design and adaptation steps established by projects such as the Oro Loma Horizontal Levee project, the San Rafael Oyster/Eelgrass Living Shoreline Project, and the Aramburu Island Beach Restoration Project. Like these projects, the Task 14-4 pilots will address a specific hypothesis, evaluate the performance of multi-benefit restoration design elements, and budget for monitoring, evaluation, and subsequent design refinement. Results from the pilot projects will be incorporated into a revised version of the guidelines developed in Task 14-3.	Identify, design, permit, and implement three additional pilot projects in the Bay.	65	SFEP	Adrien Baudrimont adrien.baudrimont@sfestuary.org
Demonstrate how natural habitats and nature-based shoreline infrastructure can provide increased resiliency to changes in the Estuary environment.	14.4b	Construct pilot projects to test and refine natural and nature-based approaches to resilience by applying the guidelines developed in Task 14-3. These pilot projects will build on design and adaptation steps established by projects such as the Oro Loma Horizontal Levee project, the San Rafael Oyster/Eelgrass Living Shoreline Project, and the Aramburu Island Beach Restoration Project. Like these projects, the Task 14-4 pilots will address a specific hypothesis, evaluate the performance of multi-benefit restoration design elements, and budget for monitoring, evaluation, and subsequent design refinement. Results from the pilot projects will be incorporated into a revised version of the guidelines developed in Task 14-3.	Update best practices guidelines.	5	SFEP	Adrien Baudrimont adrien.baudrimont@sfestuary.org
Advance natural resource protection while increasing resiliency of shoreline communities in the Bay Area	15.3	Support local government efforts to develop shoreline vulnerability assessments that include assessment of natural resources as an asset category.	Complete vulnerability assessments for all nine Bay Area counties.	100	BARC	Heidi Nutters heidi.nutters@sfestuary.org
Integrate natural resource protection into state and local government hazard	16.2	Provide technical assistance to Bay Area cities and counties including guidance, case studies, and suggested approaches for integrating natural resource protection into hazard mitigation planning. Facilitate completion of hazard	Complete 30 Bay Area city or county hazard mitigation plans	5	ABAG	Natasha Dunn natasha.dunn@sfestuary.org

mitigation, response, and recovery planning		mitigation plans (emphasizing the co-benefits of integration with climate adaptation plans) that include specific actions to protect natural resources. Plans should take into account the contribution of natural resources to reduce hazard impacts and increased resiliency.	that include natural resources as an asset category.			
Integrate natural resource protection into state and local government hazard mitigation, response, and recovery planning	16.3	Provide information and technical assistance to Bay Area cities and counties on how to include natural resource considerations in disaster recovery planning. Facilitate completion of Disaster Recovery Plans that include "Recovery Support Functions" (RSFs) for natural resources as described in the Federal Emergency Management Association's National Disaster Recovery Framework (FEMA's NDRF).	Complete ten local (city or county) Disaster Recovery Plans that include FEMA's NDRF RSFs for natural resources.	10	ABAG	Natasha Dunn natasha.dunn@sfestuary.org
Improve regulatory review, permitting, and monitoring processes for multi-benefit climate adaptation projects	17.2b	Analyze current San Francisco Bay Conservation and Development Commission (BCDC) policies governing fill in the Bay in light of sea level rise and the need for adaptation strategies, and revise as necessary.	Revised BCDC policies.	100	BCDC	Natasha Dunn, natasha.dunn@sfestuary.org
Improve regulatory review, permitting, and monitoring processes for multi-benefit climate adaptation projects	17.3b	Analyze current San Francisco Bay Regional Water Quality Control Board regulations and policies governing the permitting of multi-benefit projects designed to address sea level rise. Develop findings, alternatives, and recommendations to support the Board's evaluation of baylands climate adaptation projects. Address concerns about balancing long-term wetlands protection, restoration, and enhancement against short terms losses in ecosystem function.	Revised policies as necessary.	60	SFBRWQCB	Natasha Dunn, natasha.dunn@sfestuary.org
Decrease raw sewage discharges into the Estuary	26.4b	Develop a mobile app for boaters to report broken pumpouts, and for marinas to report pumpout use and operational status; pilot a mobile pumpout program for marinas and recreational boaters in the Oakland Estuary. Install 10 new dockside pumpout systems in marinas to increase the size and availability of the pumpout network.	Install 10 new pumpouts.	50	SFEP	James Muller james.muller@sfestuary.org
Implement Total Maximum Daily Load projects in the Estuary	27.3b	Address the Guadalupe River mercury TMDL by implementing RMP monitoring of mercury loads during flood conditions, and by undertaking remediation projects within the Almaden Quicksilver County Park.	Complete remediation projects.	100	SFBRWQCB, SFEP	James Muller james.muller@sfestuary.org

Reduce trash input into the Estuary	30.2	Review trash reduction tracking metrics, currently being developed by the Bay Area stormwater permittees, for use in the next State of the Estuary Report.	Develop a metric for inclusion in the next report.	60	SFEP	Darcie Luce darcie.luce@sfestuary.org
Foster support for resource protection and restoration by providing Estuary-oriented public access and recreational opportunities compatible with wildlife	31.1	Develop and distribute educational materials and maps to boaters and various partners that identify areas where shorebirds, waterfowl, and harbor seals forage, rest, and roost; these materials will help eliminate or minimize intrusion.	Work with stakeholders to develop region-specific maps, signs, and other educational materials; identify two appropriate mechanisms for distributing materials to boaters two to three times per year.	100	CA State Parks' Division of Boating and Waterways, ABAG, SFEP	James Muller james.muller@sfestuary.org
Foster support for resource protection and restoration by providing Estuary-oriented public access and recreational opportunities compatible with wildlife	31.2	Add to the San Francisco Bay Trail, closing critical gaps in the main alignment (the "spine") that links the shoreline of all nine Bay Area counties, while avoiding adverse effects on sensitive resources and wildlife	Add 40 miles of new trail segments to the Bay Trail spine.	12.5	ABAG	James Muller james.muller@sfestuary.org
Foster support for resource protection and restoration by providing Estuary-oriented public access and recreational opportunities compatible with wildlife	31.3	Add to the San Francisco Bay Area Water Trail, creating or enhancing high quality public water access every three miles, and paddle-in camping opportunities every eight miles. Access should be designed to avoid adverse impacts to sensitive resources and wildlife.	Complete six new or enhanced San Francisco Bay Area Water Trail sites, including two new or enhanced kayak-in campgrounds.	100	ABAG	James Muller james.muller@sfestuary.org

Champion and implement the CCMP	32.1	Educate and engage targeted audiences in Estuary protection and restoration. Expand communication avenues for the San Francisco Estuary Partnership, including social media presence. Provide educational materials to boaters and boating facilities. Leverage existing programs to support public outreach efforts on the CCMP.	Provide communication materials to public audiences one to three times annually.	95	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.2a	Educate the regional community by hosting the biennial State of the Estuary conference, supporting the biennial Bay-Delta Science Conference, and supporting ESTUARY NEWS magazine.	Estuary NEWS (ongoing to 2021)	95	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.2b	Educate the regional community by hosting the biennial State of the Estuary conference, supporting the biennial Bay-Delta Science Conference, and supporting ESTUARY NEWS magazine.	State of the Estuary Conferences in 2017, 2019, and 2021	90	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.3b	On a five-year cycle, provide current information about the health status of the Estuary through an updated State of the Estuary Report. Continue to gather data for current indicators, and develop new indicators that provide needed information regarding Estuary health and align with actions in the CCMP.	Update State of the Estuary Report.	100	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.4a	Create and implement an online CCMP reporting process to track progress being made on each of the CCMP actions and provide compiled reporting information twice per year. Update the CCMP on a five-year cycle based on assessed progress and updated scientific information in the State of the Estuary Report, and in response to emerging issues.	Report on CCMP progress twice per year (ongoing from 2017-2021)	95	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.4b	Create and implement an online CCMP reporting process to track progress being made on each of the CCMP actions and provide compiled reporting information twice per year. Update the CCMP on a five-year cycle based on assessed progress and updated scientific information in the State of the Estuary Report, and in response to emerging issues.	Initiate CCMP update.	100	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org
Champion and implement the CCMP	32.5	Engage local community organizations in implementing the CCMP. Share information with, and coordinate, professionals and community members working to protect local watersheds through the Bay Area Watershed Network (BAWN). Secure funds to promote community-based	Maintain the BAWN webpage and email newsgroup, and host or co-host	95	SFEP	Caitlin Sweeney caitlin.sweeney@sfestuary.org



		watershed stewardship efforts through a small grants program.	a BAWN annual meeting. Design and implement a small grants program on a biennial schedule. (ongoing until 2021)			
Champion and implement the CCMP	32.6	Identify and expand funds available to partners at all levels to implement the CCMP. This includes tracking, commenting, and sharing information on existing and emerging grant programs, legislation, and other funding mechanisms.	Maintain and distribute matrix of available funding programs. (ongoing until 2021)	95	SFEP, SFBJV	Caitlin Sweeney caitlin.sweeney@sfestuary.org

### All Actions – Average % Complete

Action	%	Action	%	Action	%	Action	%
Action 1: Develop and implement a comprehensive, watershed-scale approach to aquatic resource protection	7	Action 9: Minimize the impact of invasive species	66	Action 17: Improve regulatory review, permitting, and monitoring processes	93	Action 25: Address emerging contaminants	100
Action 2: Establish a regional wetland and stream monitoring program	65	Action 10: Increase the efficacy of terrestrial predator management	8	Action 18: Improve the timing, amount, and duration of freshwater flows critical to Estuary health	88	Action 26: Decrease raw sewage discharges into the Estuary	79
Action 3: Protect, restore and enhance tidal marsh and tidal flat habitat	30	Action 11: Increase carbon sequestration through wetland restoration, creation, and management	92	Action 19: Develop long-term drought plans	87	Action 27: Implement Total Maximum Daily Load projects in the Estuary	100
Action 4: Identify, protect, and create transition zones around the Estuary	100	Action 12: Restore watershed connections to the Estuary to improve habitat, flood protection and water quality	100	Action 20: Increase regional agricultural water use efficiency	62	Action 28: Advance nutrient management in the Estuary	100
Action 5: Protect, restore, and enhance intertidal and subtidal habitats	85	Action 13: Manage sediment on a regional scale and advance beneficial reuse	55	Action 21: Reduce water use for landscaping around the Estuary	65	Action 29: Engage the scientific community in efforts to improve baseline monitoring of ocean acidification	100
Action 6: Maximize habitat benefits of managed wetlands and ponds	48	Action 14: Demonstrate how natural habitats and nature-based shoreline infrastructure can provide increased resiliency to changes in the Estuary	70	Action 22: Expand the use of recycled water	63	Action 30: Reduce trash input into the Estuary	43
Action 7: Conserve and enhance riparian and in-stream habitats throughout the Estuary's watersheds	28	Action 15: Advance natural resource protection while increasing resiliency of shoreline communities	100	Action 23: Integrate water into the updated Plan Bay Area and other regional planning efforts	83	Action 31: Foster support for resource protection and restoration by providing Estuary-oriented public access	71
Action 8: Protect, restore, and enhance seasonal wetlands	23	Action 16: Integrate natural resource protection into state and local government hazard planning	38	Action 24: Manage stormwater with low impact development and green infrastructure	99	Action 32: Champion and implement the CCMP	97