WATER QUALITY IMPROVEMENT ACTION PLAN - part 1: At a Glance

Action	Activities	Location	Responsible Parties
1 Support a comprehensive and coordinated water quality monitoring and assessment strategy	1.1 Assist with the consistent and efficient collection of technically-sound long-term water quality data throughout the study area, including supporting key programs like the Coastal Charlotte Harbor Water Quality Monitoring Network, partners' long-term fixed stations, and volunteer monitoring programs like the Charlotte Harbor Estuaries Volunteer Monitoring Network, Lee County Pond Watch, and the Cape Coral Canal Watch programs. Work with partners to obtain additional resources, increase efficiencies, and identify and fill sampling gaps.	CHNEP area sampling stations from Lemon Bay to Estero Bay.	CHNEP (Lead), SWFWMD, SFWMD, FDEP (Lead for data sufficiency and QA/QC), FDACS, FWC, CHAP, EBAP, SCCF, Calusa Waterkeeper, FGCU, County and Municipal governments.
	1.2 Support uploading and archiving of data in standard, common public databases, including FDEP's database and the CHNEP Water Atlas.	CHNEP area	CHNEP (Lead for data input to Water Atlas), Water Atlas, SWFWMD, SFWMD, FDEP, FWC, CHAP, EBAP, SCCF, Calusa Waterkeeper, County and Municipal governments.
	1.3 Assess and report water quality status and trends to identify water quality.	CHNEP area	CHNEP (Lead for Water Atlas), FDEP (Lead for TMDL/BMAP), FWC, SWFWMD, SFWMD, County and Municipal governments.
	1.4 Identify, study, and monitor new emerging pollutants of concern and their potential sources.	Targeted areas in the CHNEP area.	CHNEP, Florida Sea Grant UF/IFAS Extension, NOAA, FDEP, FGCU, County and Municipal governments.
2 Develop water quality standards, pollutant limits, and cleanup plans	2.1 Encourage review, development, and implementation of additional water quality criteria and targets, pollutant limits, and cleanup plans that correct impairment, protect aquatic life, and prevent degradation of all surface waters, particularly Outstanding Florida Waters.	All Class I, II, III, and III-L surface waters in the CHNEP area, particularly Outstanding Florida Waters.	FDEP (State of Florida regulatory lead), EPA (federal regulatory lead), CHNEP (NNC development and implementation facilitator), County and Municipal governments, SWFWMD (funding and implementation), SFWMD.

WATER QUALITY IMPROVEMENT ACTION PLAN - part 2: At a Glance

Action	Activities	Location	Responsible Parties
3 Reduce urban stormwater and agricultural runoff pollution	3.1 Support urban BMPs that return freshwater inputs to receiving waters to a more natural pattern of quantity, timing, and distribution that reduce pollutant loadings. Identify locations to install stormwater treatment areas and pursue installation in priority areas. Support new and retrofit projects to increase stormwater retention and reduce pollution loadings. Support development and implementation of green infrastructure practices, including reducing impervious surfaces.	CHNEP area	FDEP (State of Florida regulatory lead), County and Municipal governments (capital improvement projects, adapting comprehensive plans and development codes to facilitate implementation of green infrastructure practices), SWFWMD, SFWMD, UF/IFAS Extension, CHNEP, private sector.
	3.2 Support agricultural BMPs that return freshwater inputs to receiving waters to a more natural pattern of quantity, timing and distribution that reduce pollutant loadings. Support projects to increase retention of agricultural runoff and reduce pollutant loadings, including new and retrofit projects. Encourage implementation of FDACS Agricultural BMPs. Support regional cost-sharing programs and other incentives for implementing Agricultural BMPs.	Watersheds in the CHNEP area, especially areas near impaired waters.	FDEP (State of Florida regulatory lead), FDACS (Agricultural BMPs), SWFWMD-FARMS, SFWMD, UF/IFAS Extension, CHNEP.
4 Reduce wastewater pollution	4.1 Support wastewater treatment to AWT standards, encourage proactive inspection, maintenance, and replacement of failing or underperforming sanitary sewer infrastructure, including reduction of inflow and infiltration. Encourage, expand, and incentivize reuse water, especially AWT wastewater, which is protective of water quality and the natural hydrology in nearby waterways. Reduce discharges of treated wastewater to surface water. Support additional wastewater treatment capacity to prevent overflows and other impacts to wastewater infrastructure and performance due to climate stressors.	CHNEP area	County and Municipal governments (Leads), FDEP, FDOH, SWFWMD, SFWMD, CHNEP.
	4.2 Continue to inventory and map septic systems in the CHNEP area. Support conversion of septic systems to centralized sanitary sewer systems. Support increased sanitary sewer capacity to handle new inflows from conversions. Encourage regular maintenance and inspection of septic systems. Support studies to better understand pollutant loading from septic systems. Encourage evaluation and adoption of new nitrogen-reducing septic system technology.	CHNEP area, especially targeting areas designated as impaired for nutrients or bacterial contamination.	County and Municipal governments (Leads), FDEP, FDOH, CHNEP.
5 Reduce harmful algal blooms	5.1 Support Harmful Algal Bloom (HAB) research and monitoring and measures to reduce their environmental, social, and economic impacts through the identification and reduction of anthropogenic influences.	CHNEP area	FWC (Lead), FDOH, FDEP, Florida Sea Grant, FGCU Marine Sciences, USF, and other academic institutions, Mote Marine Laboratory, CHNEP, SFWMD, Calusa Waterkeepers, and SWFWMD (to potentially monitor water quality and implement source tracking studies).

HYDROLOGIC RESTORATION ACTION PLAN: At a Glance

Action	Activities	Location	Responsible Parties
1 Conduct data collection, modeling, and analyses to supprt hydrologic restoration	1.1 Review existing data collection and identify gaps. Conduct data collection, modeling, and analyses of historical, current, and projected hydrologic conditions to identify needs and guide hydrologic restoration, including: • water budget modeling including projected supply demands and natural system needs; • estuary mixing models; • impacts of manmade barriers to historic flows; • relationship between reservoir and downstream resources; and • integrated surface-groundwater models that consider climate change.	CHNEP area	SWFWMD and SFWMD (Leads, except for examining impacts of manmade barriers to historical flows), CHNEP, County and Municipal Governments, FDEP, USGS, Research Institutions, Conservation NGOs.
2 Increase fresh surface water and groundwater availability to support healthy ecosystems	2.1 Participate in development, reevaluation, and implementation of scientifically sound freshwater Minimum Flows and Levels (MFLs) for surface water and groundwater resources that consider climate stressors and recovery strategies to meet MFLs in order to prevent degradation of natural systems.	CHNEP area, focusing on minimum aquifer levels for the Floridan Aquifer System and minimum flows for waterways, as needed.	SWFWMD and SFWMD (leads), FDEP (regulatory lead), USACE, County and Municipal Governments, Water Utilities, CHNEP.
	2.2 Increase aquifer recharge by supporting local plans and codes that decrease impervious surfaces; incorporate green infrastructure practices; protect recharge and wellfield areas; and protect and restore wetlands.	CHNEP area	County and Municipal Governments, SWFWMD, SFWMD, UF/IFAS Extension, CHNEP, FDEP, USACE, private sector.
	2.3 Encourage conservation and efficient water use and promote aquifer recharge through construction of green infrastructure projects where appropriate, adoption of agricultural irrigation BMPs, and promotion of alternative water supply sources including increased appropriate reuse of treated wastewater.	CHNEP area	County and Municipal Governments, SWFWMD, SFWMD, FDACS, UF/IFAS Extension, Water Utilities, FDEP, CHNEP, USDA, private sector.
3 Protect and restore natural flow regimes	3.1 Support integrated and coordinated watershed management planning to protect headwaters, restore flowways and floodplains, and reestablish historical flow direction, volume, and timing to receiving waters. Incorporate anticipated future climate stressors into flow regime restoration.	CHNEP area	FDEP (State of Florida regulatory lead), EPA (federal regulatory lead), SWFWMD and SFWMD (implementation facilitators), USACE, County and Municipal Governments, FDACS, CHNEP, private sector.
	3.2 Support implementation of projects to reestablish and protect wetlands and hydrologic watersheds, including Everglades restoration, Lake Hancock shoreline restoration, and other projects to build or remediate flowways, barriers, and water storage that mimic and restore natural flow conditions necessary to support healthy ecosystem function and account for anticipated climate change stressors.	CHNEP area	CHNEP (implementation facilitator), FDEP, County and Municipal Governments, SWFWMD, SFWMD, USACE, FWC, USFWS, USDI (NPS, other USDI), USDA, FDOT, NGOs, FDACS, Private sector.

FISH, WILDLIFE, & HABITAT RESTORATION PLAN: At a Glance

Action	Activities	Location	Responsible Parties
1 Protect, restore, and monitor estuarine habitats	1.1 Protect and restore beneficial submerged aquatic vegetation, including seagrasses, oysters, and coastal wetlands, to manage and enhance ecosystem services.	CHNEP area	CHNEP, County and Municipal Governments, FDEP, SWFWMD, SFWMD, FWC, USFWS, NOAA, USACE, J.N. "Ding" Darling NWR Complex, Land Conservation NGOs.
	1.2 Research and promote best management practices for tidal creeks, rivers, canals, dredged channels, and stormwater conveyances that support habitats and native aquatic life.	CHNEP area	County and Municipal Governments, SWFWMD, SFWMD, FDEP, FDACS, FWC, WCIND, USACE, USFWS, NOAA, UF/IFAS, Reseach Institutions, NGO neighborhood groups.
2 Protect, restore, and monitor environmentally sensitive lands and waterways including critical habitat areas	2.1 Encourage and support the permanent conservation of environmentally sensitive lands and critical habitat areas through land acquisition and conservation easements held in perpetuity, including freshwater wetlands, flowways, corridors, and uplands adjacent to coastal habitats necessary for habitat resilience and migration.	CHNEP area with a focus on protecting habitats and migration corridors as recommended by HRNP.	County and Municipal Governments, Florida Forever, SWFWMD, SFWMD, Land Conservation NGOs, FWC, USFWS, NOAA, FDACS, FDEP, USDA-NRCS.
	2.2 Encourage management of public lands and and private lands with public conservation easements to protect, restore, and create native plant and animal communities, including eradication of invasive exotic species, prescribed fire, and other appropriate management activities.	CHNEP area with a focus on protecting habitats and migration corridors as recommended by HRNP.	County and Municipal Governments, FDEP, Land Conservation NGOs, Land owners, FWC, USFWS, SWFWMD, SFWMD, FDACS, FDEP, USDA-NRCS.
3 Assess and promote the benefits of land, waterway, and estuary protection and habitat restoration	3.1 Assist in assessing and promoting the economic, social, and environmental benefits of land protection and habitat restoration, including as a response to climate stressors.	CHNEP area	CHNEP, Land Conservation NGOs, NOAA, Colleges and Universities, SFWRPC, FDEO, County Visitors Bureaus, County Land Conservation Programs.

PUBLIC ENGAGEMENT ACTION PLAN: At a Glance

Action	Activities	Location	Responsible Parties
1 Promote environmental literacy, awareness, and stewardship through expanded education and engagement opportunities for the general public	1.1 Support programs, events, presentations, and educational content that focus on key messages communicated in readily understandable language related to protection and restoration of estuaries and watersheds, including water quality, hydrology, habitat, and wildlife issues.	CHNEP area	CHNEP
	1.2 Provide CHNEP volunteers with activities to participate in research, monitoring, and restoration.	CHNEP area	CHNEP
2 Expand reach of education and engagement opportunities to new target audiences	2.1 Engage businesses and other priority stakeholders in estuary and watershed protection activities and educational programs.	CHNEP area	CHNEP
	2.2 Engage underrepresented and underserved communities in estuary and watershed protection activities and educational programs.	Underrepresented and underserved communities in the CHNEP area.	CHNEP
3 Strengthen non-profit partner collaboration in education and engagement programs	3.1 Build and supprt capacity of non-profit and community partners to educate and engage volunteers in outreach and activities that further CCMP implementation.	CHNEP area	CHNEP, TNC, local land trusts, Sanibel Sea School, National Audubon, Audubon of Florida, Charlotte Harbor Environmental Center, SCCF, Calusa Waterkeeper, Colleges and Universities.
4 Increase outreach to policymakers to enhance understanding and support for CCMP implementation	4.1 Provide regular updates to policymakers showcasing use of best available science and examples of success to reinforce the relationship between land use, water resource management decisions, environment, economy, and community.	CHNEP area	CHNEP