













## --Policy, Programmatic, and Organizational Activities--




































**ONE WATER VISION:** Achieve and build upon the water protection goals in the Comprehensive Plan, lay the groundwork for sustained input of resources to support the One Water plan, and establish formal mechanisms for regular public input into One Water visioning and the water quality program.











### PATHWAYS TO THE VISION

	<p>Through research and public feedback, identify and evaluate the feasibility of aspirational water-related goals and policies in the Comprehensive Plan and put them on the pathway to becoming actionable.</p>
	<p>Support sustainable, perpetually funded habitat conservation and land acquisition programs such as Conservation Charlotte.</p>
	<p>Establish a permanent public-private and public-public partnership consortium integrating tourism, economic development, community development, and the private sector to identify opportunities for joint water protection activities.</p>
	<p>Promote and expand ecotourism programs to drive attention to the county's unique natural resources and help drive management priorities for ecosystem preservation.</p>
	<p>Build organizational capacity to efficiently implement the many facets of this plan.</p>
	<p>Consolidate and organize department resilience-related activities to create cohesive climate change risk/adaptation hub</p>
	<p>Establish formal mechanisms for regular public and interagency input into One Water visioning and the water quality program.</p>
	<p>Establish comprehensive citizen science initiatives to facilitate stewardship, education, and information exchange between the county and our residents. Build these initiatives in support of primary education initiatives.</p>
	<p>Create formal communication pathways between county stakeholders and the water quality program</p>
	<p>Where applicable, align county water management activities with regional water protection initiatives, supporting other agencies and local governments'</p>

	activities which result in reduced pollution impacts to the Peace, Myakka, Caloosahatchee River basins, and Charlotte Harbor and Lemon Bay.
 	Further regional climate resiliency communication and coordination

### CURRENT VISION TASKS

Categories	Task	Anticipated Regional Benefits
	As a component of the proposed citizen science program, initiate a comprehensive stewardship marketing campaign to better inform the public of the part they play in maintaining a healthy water system from house to harbor.	   
	Establish Environmental Analyst, Technician, and Programs Coordinator positions to assist with reporting, prioritization, analysis, and recommendations associated with the county water quality program.	   
	Prioritize green stormwater infrastructure (GSI) implementation at county properties, to serve as demonstration measures for private and residential development and be held as a benchmark in the county for integration of comprehensive water management/ treatment processes.	   
	Evaluate the need, feasibility, cost/benefit, and authority to alter the current fertilizer ordinance based on recent research regarding timing and duration of fertilizer bans.	   
	Establish water program steering and collaboration board comprised of residents, representatives from local government entities, and water-related commercial interests.	   
	Implement Comp Plan FLU Policy 2.3.2 by formalizing collaborative efforts with the regional water protection agencies through the implementation of Charlotte County Water Improvement Workgroup.	   
	Support and participate in the development of a statewide One Water coalition.	   

Categories	Task	Anticipated Regional Benefits
	Create central online water resource education hub to provide information to the public on water management considerations in the region as well as address frequently asked questions/concerns posed to county departments.	   
	Support and assist in the renewal of Conservation Charlotte.	   

### Associated Plans, Ordinances, and Mandates

- Charlotte County Comprehensive Plan
- Board of County Commissioners Strategic Plan
- Charlotte County Code of Ordinances
- Charlotte County Watershed Master Plan
- Charlotte County Vulnerability Assessment
- Charlotte County Conservation Plan
- [SWFWMD Surface Water Improvement and Management Plan](#)
- [Charlotte Harbor Aquatic Preserves Management Plan](#)
- [CHNEP Comprehensive Conservation and Management Plan](#)
- [USACE Lake Okeechobee System Operating Manual](#)
- [UF/IFAS Florida Sea Grant \(Charlotte County\)](#)
- Charlotte Harbor Environmental Center Cedar Point Nature Center and Educational Activities

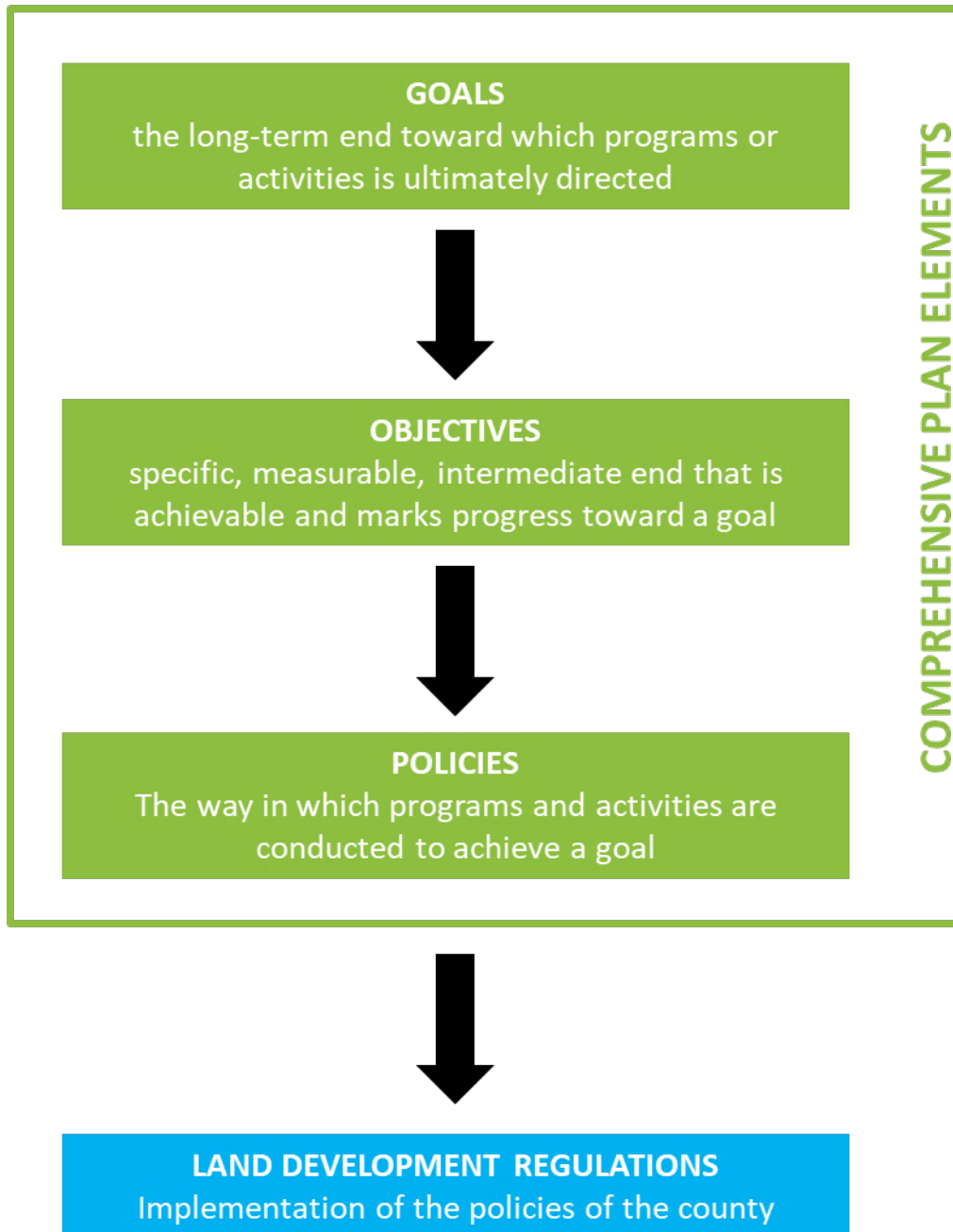
This section focuses on the processes and practices the county currently employs to guide overall water protection and management strategies, and seeks to lay the groundwork to:

- Systematically evaluate current county programmatic goals related to water protection and form a roadmap for prioritizing and executing on those goals yet to be implemented.
- Increase attention on the extensive natural systems present in the county and Charlotte Harbor, in order to continue supporting ecotourism as a major economic driver while establishing mechanisms to assure the natural environs of the county remain attractive to ecotourism.
- Build strategies furthering public education and participation in water protection activities, including county planning processes.

## Background

### Comprehensive Plan and Ordinances

The Comprehensive Plan is an integral component of the One Water Program, as it is the foundation for local planning and land use decision-making. Within its pages are over 90 Goals, Objectives, and Policies related to water and wetland protection. Development in the county must be consistent with both the Comprehensive Plan and Land Development Regulations within the Code of Ordinances.



According to state statute, the Comprehensive Plan is reviewed and revised every 7 years; the last full review and updates occurred in 2022. The review process involves multiple visioning sessions with citizens and stakeholders as well as public hearings. The Plan is meant to serve as guidance to staff on how the community wants to see growth managed in the county; as such, strong public participation in the review process is critical.

The Comprehensive Plan itself does not regulate or enforce growth management policies; rather, it guides the development of land development regulations and programs that are enforceable. Multiple Goals, Objectives, and Policies have not been implemented and as of this writing are more aspirational in nature. Table 7 discusses water-related elements of the Comprehensive Plan not fully implemented; additional discussion on these topics is presented later in this section. Attachment A provides a full list of water-related Comprehensive Plan measures (as of July 2024).

**TABLE 7: Aspirational or Partially Enacted Water-Related Comprehensive Plan Elements**

Comp Plan Element	Current Status	Implementation Gaps and Recommendations
<p>Water quality and quantity (multiple elements-see ENV 1.4, SWM 2.1.2, 3.1, 4.1, and 4.2, WSW 5.2 in Appendix A)</p>	<p>A countywide canal/stream monitoring program was initiated in July 2022. This One Water Plan is the first iteration of a planning document written specifically to comprehensively address water quality/management needs in the county. The recently ratified statewide stormwater rule significantly improves water quality protection from stormwater runoff and reduces the need for local measures to bridge the gap that existed in the previous rule.</p> <p>As for groundwater protection, aquifer recharge protection policies are already in place to maintain very low density and intensity in these areas to protect groundwater resources.</p>	<p>Continued sources of funding will be needed to develop and implement remediation strategies for impaired waters identified through the new monitoring program. In addition, more coordination, research, and funding is needed to implement certain guidelines, e.g. prioritizing non-chemical control of mosquitoes and vegetation, and land acquisition to protect surface waters.</p> <p>The county may need to review land development regulations, such as for lot coverage, runoff from urban areas, residential landscapes, and agricultural lands, as well as criteria of non-residential uses to further prevent contamination of groundwater resources.</p>
<p>Conservation Lands (FLU Policy 2.1.1): <i>The County shall protect conservation lands in public and private ownership and assure the protection of large-scale conservation areas across the County. The planning principles that guide the decisions regarding the identification and protection of these conservation areas include:</i></p> <ol style="list-style-type: none"> <li>1. <i>Protect native biological diversity.</i></li> <li>2. <i>Protect viable portions of natural plant communities.</i></li> <li>3. <i>Link conservation lands.</i></li> <li>4. <i>Allow for natural flooding, prescribed fires and other natural land management tools.</i></li> </ol>	<p>Conservation Charlotte, the county’s principal vehicle for land acquisition for preservation, was established in 2006. The county’s Community Services Department implements a maintenance program for all county-owned conservation lands, with management protocols in place to control invasive species and promote healthy ecosystems.</p>	<p>Much of the available funds for Conservation Charlotte was exhausted in 2008, and requires reauthorization for continued funding. There continues to be a sizeable gap between funding availability and market value of lands under consideration for acquisition. As such, the county should consider enhanced incentivization/regulatory programs similar to those described in Appendix XX, Programmatic Recommendations, As well as modification of the county’s existing TDU program to encourage residential development rights to be removed from environmentally sensitive areas.</p>

Comp Plan Element	Current Status	Implementation Gaps and Recommendations
<p>Charlotte Harbor Management Plan (FLU Policy 2.3.2):</p> <p><i>The County shall require all development approvals, Future Land Use Map amendments and rezoning actions to be consistent with the provisions of the Charlotte Harbor Aquatic Preserves Management Plan (February 2017), which provides goals to protect and enhance the ecological integrity of the aquatic preserves; restore areas to their natural condition; encourage sustainable use and foster active stewardship by engaging local communities in the protection of aquatic preserves; and improve management effectiveness through a process based on sound science, consistent evaluation, and continual reassessment. Charlotte Harbor Surface Water Improvement and Management (SWIM) Plan Update November 2020), which focuses on water quality, hydrologic alterations, and the natural system.</i></p>	<p>Natural resource protection has been established in the County’s Comprehensive Plan to require that the review of rezoning requests and FLUM amendments include:</p> <ul style="list-style-type: none"> <li>-Preserve, protect, and reduce threats to wading bird nesting areas;</li> <li>- Preserve natural habitats within the CHAP watershed in order to maintain or restore water quality and natural resources within CHAP;</li> <li>- Support efforts to restore and protect natural freshwater inflows to the fullest extent possible;</li> <li>- Support projects such as septic tank retrofitting and connection to sewer systems, stormwater treatment upgrades, reduction of impervious surfaces within the watershed;</li> <li>-Assure communication with related state agencies regarding proposed development measures that might impact the Aquatic Preserves.</li> </ul>	<p>The county may need to create specific policies and land development regulations to implement its recommendations.</p> <p>Currently, the extent to which the county can create or enhance development-related mandates in support of the regional aquatic management plans are hindered by the implementation of Senate Bill 250. That said, the county can still work towards developing more robust incentivization measures to help achieve the protection/preservation goals of CHAP and the SFWMD SWIM program. In addition, the review process for FLU Map amendments and rezoning actions should be amended to assure CHAP and other regional offices for relevant state agencies are notified.</p>

Comp Plan Element	Current Status	Implementation Gaps and Recommendations
<p>Public Water System Wellhead Protection (FLU 2.3.5):</p> <p><i>The County shall evaluate the effects of development on wellheads for all proposed land uses within delineated cones of influence for all central potable water supply wellheads used for public consumption (FLUM Series Map #7). Where a cone of influence is not determined, all proposed development within 1,500 feet of the wellhead will be evaluated. Land uses in which hazardous materials, such as petroleum products, chemical or biological wastes, are produced or stored are not permitted to adversely impact groundwater resources. Landfills, wastewater treatment facilities, or feedlots/concentrated animal facilities are prohibited.</i></p>	<p>Implementation of this measure is in place (see County Code Section 3-9-90: Wellhead Protection Area) as part of development application review processes, though proximity to wellhead is utilized as part of the review, rather than establishing a cone of influence.</p>	<p>An investigation may be needed to evaluate the effect of development on wellheads for all proposed land uses within delineated cones of influence for all central potable water supply wellheads used for public consumption. Appendix A provides examples of ordinances enacted in other jurisdictions to address this issue. Section 3-9-90 may then need to be revised to reflect recommendations from that investigation.</p>
<p>Green Design at the Site Planning Scale (FLU 2.4.4)</p> <p><i>The County shall consider introducing green design concepts into the site plan review and approval process through amendments to the Code of Laws and Ordinances within one year of the effective date of this comprehensive plan that will:</i></p> <ol style="list-style-type: none"> <li><i>1. Create incentives and remove obstacles to allow a mix of uses on development sites.</i></li> <li><i>2. Provide incentives to reduce conventional energy consumption.</i></li> <li><i>3. Reduce fertilizers in urban landscapes.</i></li> <li><i>4. Require Florida Friendly Landscaping.</i></li> <li><i>5. Encourage a connected street network.</i></li> </ol>	<p>The county instituted a fertilizer ordinance in 2008 (amended 2011) limiting fertilizer application rate and timing, notwithstanding certain exemptions.</p>	<p>Apart from implementation of the fertilizer ordinance, the measures listed here have either been partially implemented, or not at all. In addition, statutory rules create multiple difficulties in attempting to address violations related to ordinances such as fertilizer usage restrictions.</p> <p>The county may thus need to create a mixture policies and land development regulations, incentives, and programs to introduce and implement green design concepts into the review of land use changes and rezonings as well as the site plan review and approve process for any new development and redevelopment. In addition, the County should create land development regulations/ incentives for runoff mitigation at the building scale. Implementation of such a</p>

Comp Plan Element	Current Status	Implementation Gaps and Recommendations
<p>6. Minimize air pollution through the inclusion of multimodal transportation systems and a mixture of land uses.</p> <p>7. Protect water quality and supply, and minimize water consumption.</p>		<p>measure can start with updates to the county facilities design manual, mandating incorporation of green infrastructure design. Appendix XX describes low impact/ green infrastructure design manuals employed by other jurisdictions. Note Senate Bill 250 may prohibit the county from executing measures regulating private development regulations until 2026 at the earliest.</p>
<p><i>Sea level rise and climate adaptation (FLU 2.4.7): The County shall require all development and redevelopment to be in compliance with the Florida Building Code, as may be amended, and FEMA regulations and requirements to minimize impacts or damage from coastal erosion, 100-year floods, tidal surges from hurricanes and coastal storms, and a projected year 2050, year 2080, and year 2100, sea level rise, as shown on FLUM Series Map #15, based on the Federal Emergency Management Agency’s Community Rating System for future condition requirements for coastal communities, 2017 manual, Section 404.</i></p> <p><i>FLU Policy 2.4.8: Long-term Strategy to Address the Effects of Climate Change The County shall explore and consider adopting policies determined necessary and appropriate to implement the recommendations regarding inundation protection, accommodation, avoidance, and relocation of impacts from erosion, inland flood, storm surges, and wildfires based on applicable Florida Statutes, "Integrating Hazard Mitigation into MPO Long Range</i></p>	<p>Per statutory requirements, tidal surge and coastal storm flooding vulnerability assessments are being assembled for the county, with a project completion date of Fall 2025. In addition, the in-development Watershed Master Plan will further identify portions of the county at greatest risk of flooding from storm events, and will recommend mechanisms to mitigate flood impacts in those areas. Completion of the Watershed Master Plan will result in additional credits towards the county’s National Flood Insurance Program’s rating; higher ratings assigned to a local jurisdiction results in greater discounts to flood insurance premiums for the residents of that jurisdiction.</p> <p>In 2024, the County adopted revisions to 3-9-50, Manasota and Sandpiper Key Zoning District Overlay to add new definitions of “freeboard” and including the definition of “Height, building or structure”. This ultimately permitted construction of housing with a taller footprint, allowing for those structures to be more elevated and thus making them more resilient to impacts from future flood events.</p>	<p>As predicted in coastal flood risk models and demonstrated in recent major storm events such as Hurricanes Helene and Milton, many of the county’s coastal communities are at ongoing significant risk of destructive flooding due to coastal storm surge. In some locales, sea level rise has caused multiple residential homes constructed just above mean sea level to now be threatened by nuisance flooding during king tide events.</p> <p>The county will thus need to explore and consider creating and adopting specific policies, land development regulations, and programs to address how to minimize impacts or damage from coastal erosion, 100-year floods, and tidal surges from hurricanes and coastal storms, especially for historic communities developed well before modern base elevation requirements.</p>

Comp Plan Element	Current Status	Implementation Gaps and Recommendations
<i>Transportation Planning" initiated by the Department of Economic Opportunity, and "Best Practices Guidebook" prepared by Florida State University.</i>		

The county Code of Ordinances, in combination with land development regulations, comprise the full suite of the county's enforceable water management measures. Some regulatory requirements are dictated by federal, state or regional water management districts; in some cases, these requirements are cited in lieu of county-specific mandates. In addition, the state legislature has occasionally passed statutes temporarily or permanently preempting Charlotte County's authority to enforce certain rules and zoning requirements or pass rules more restrictive than state requirements. For example:

- In 2023, the state issued a moratorium on adding or amending any ordinances or permit requirements that may be construed as “burdensome” to development; the moratorium was scheduled to lift in the fall 2024 but has since been extended to fall 2026.
- In 2024, the legislature ratified revised statewide stormwater rules, altering stormwater treatment standards to mandate minimum removal requirements of nitrogen and phosphorus based on the location and impairment status of the watershed, as well as the nature of the development activity. Included in this law is language preventing local governments from enacting measures more restrictive than the state rule and exempts single-family homes from many of the treatment requirements.
- The Bert Harris Act allows a property owner to receive compensation if a government entity enacts an ordinance or zoning amendment that can be considered an “inordinate burden” on the owner's ability to use their property. For example, in certain cases an entity that purchases property for a specific allowable use may file a claim under this Act if the local governing authority changes zoning rules to disallow that use after the property has been purchased.

Given the state's continued issuance of local government preemption measures, establishing codes and ordinances mandating water treatment and management above and beyond those minimum requirements dictated by the state and water management districts may be difficult at best. As such, investment should be made to research and evaluate the feasibility of implementing incentivization measures focusing on green infrastructure on commercial properties and water distribution/perviousness on residential properties. Examples of possible measures could include:

- Property tax discount or cost-share rebates for landowners for implementing certain water management BMPs on their property, including maintaining a certain percentage of natural pervious land cover on their property, using pervious pavers for driveways and sidewalks, and distributing stormwater runoff from roofs and other pervious surfaces to multiple locations on the property to reduce volume and velocity of runoff exiting the property.
- Accelerated permit review and fee discount for commercial development/redevelopment that implements stormwater management systems exceeding the mandates described in the current stormwater rule. For redevelopment activities, the stormwater management system would need to meet treatment requirements assigned to new construction. Similarly, consider leveraging the county TDU program to incentivize development designs which maximize green infrastructure and vegetated buffers near waterways and wetlands.
- “One Water Steward” program highlighting businesses with a demonstrated commitment to exceeding minimum stormwater treatment and management requirements during and after construction.

## Conservation and Land Acquisition

As described in the Stormwater section of this document, one of the impediments to increasing our stormwater management and treatment capabilities centers on the relative lack of available public land to construct such features. Often, construction projects mandating development of new water treatment structures (such as road expansions) require the county to acquire privately-owned land from willing sellers. Many areas of the county were platted long before current stormwater management requirements were established, and enhancing water treatment in these areas will likely require acquisition of properties to serve as water detention/filtration basins. As many of these platted lots and other vacant lands are transformed from natural water detention areas to sources of impervious surface runoff, acquiring and preserving natural lands to serve as habitat for displaced organisms, diversion/relief from upstream runoff for downstream entities, and natural treatment of deposition and pollutants in runoff becomes more critical.

In 2006, Charlotte County taxpayers approved a \$77-million tax referendum to acquire lands via the Conservation Charlotte Program. Funding is accrued through annual ad valorem taxes assessed through 2027. Much of the funds in this program were used early to purchase large tracts of preserve lands and were mostly exhausted by 2008. This created a gap in available funding to take advantage of new acquisition opportunities until at least 2027. While external funding opportunities for property acquisition are available from time to time, they not always align with the window of time which a targeted property might become available for acquisition. Further complicating the acquisition process is properties most desirable for conservation may also be valued by the private sector as a potential development opportunity, often resulting in acquisition costs far exceeding market value. The need for a consistently available, nimble funding mechanism (both internal and external) is apparent and should be considered a high priority for the One Charlotte, One Water program.

The Charlotte County's Community Services Department is evaluating options for a new iteration of the Conservation Charlotte program after 2027. This One Water program seeks to support this effort by:

- Advocating for increased resource support to acquire properties as needed throughout the life of the program, with mechanisms in place to ensure continued funding and capability to quickly act on acquisition opportunities.
- Expanding the program criteria to include acquisition (or establishment of permanent easements) of areas for conservation and/or habitat enhancement that can serve as water quality protection/treatment areas, water diversion for flood relief, and tidal/ coastal storm surge mitigation features (such as mangrove stands).

## Sea Level Rise and Flood Vulnerability Adaptation

Over the last several years, Charlotte County has received stark reminders of the dangers inherent to large-scale flood events and tidal surges. Hurricane Ian brought historic levels of rain to the region in September 2022, causing multi-day flood events, submerged interstates, and breached water control structures. In 2023, Hurricane Idalia generated tidal surges in Port Charlotte and Punta Gorda at levels not seen for at least the last 20 years. The following year, Hurricanes Helene and Milton brought surges far eclipsing Idalia's impacts, pushing harbor and tidal river water into low-lying areas of the county and causing extensive flooding and destruction of our coastal communities. Combined with observed accelerated rates of sea level rise in the Gulf of Mexico and increased annual average temperatures creating the risk for a greater volume of more intense storm events, coastal communities need to identify high-risk areas and determine adaptation and protection strategies now. Recognizing this, the state enacted 380.093, F.S., requiring communities to create a Vulnerability Assessment for their jurisdiction. In 2022, Charlotte County commissioned the development of a storm surge model and visualization tool known as ACUNE. As of this writing, the county has begun developing the

Vulnerability Assessment, using the ACUNE output as guidance. In addition, the county took steps to increase their National Flood Insurance Program Community Rating System score by commissioning development of a Watershed Master Plan in 2023, which is designed to identify communities at high risk of storm-induced flooding and recommend adaptation strategies to mitigate said risk. Although the overarching goals of both efforts are similar, the methodology and requirements guiding them differ.

Multiple jurisdictions in the region are developing their own Vulnerability Assessments, including the cities of Punta Gorda and North Port, Sarasota County, DeSoto County, and Lee County. Additionally, FDEP recently completed a Statewide Vulnerability Assessment. Each of these efforts involve creating a predictive model, resulting in the possibility of conflicting information being created in areas where two jurisdictions meet or overlap. To help mitigate this, Charlotte County has maintained communication with these jurisdictions to exchange data and discuss their respective findings. That said, creating a formal coalition of local governments could have helped facilitate coordinating this effort among these jurisdictions and reduced the potential for creating conflicting conclusions.

Coordination and collaboration across jurisdictional boundaries are needed now more than ever, and Charlotte County should lead the way in working with our local partners to establish a regional compact. The benefits to doing so extend beyond information sharing; as capital needs rise and capital costs skyrocket, counties will be competing ever more for external funding support, whether through competitive grants or state appropriations requests. Local governments should thus look for ways to regionalize efforts and identify projects that benefit communities beyond their borders. Examples of prospective efforts include:

- Regionalized aquatic biological debris removal: During the red tide bloom of 2018–2019, coastal counties utilized contractors for removal of the vast volume of biological debris that accumulated on public beaches and in local waterways. Funding for much of these activities was provided by a state reimbursement grant. Unfortunately, competition ensued for the services of the few qualified debris removal companies, and the areas with the highest volume of debris needing removal were prioritized by those companies (as they were primarily compensated on a per-ton basis). Working with FDEP to establish and fund a regional biological debris removal program should mitigate issues like this in the future, as such agreements can build in requirements for contractors to address each participating county. In addition, eliminating the need for individual county contracts should reduce staff time needed to administer the program, as most facets of contract management (apart from debris removal tracking) should be reduced if not outright eliminated.
- Sarasota County is seeking opportunities to alleviate flooding issues experienced by certain sections of North Port; one such proposal involves restoring natural hydrologic patterns in the Big Slough basin, just north of the city. Currently, multiple relic drainage ditches in that region quickly drain the surrounding landscape, increasing the rate at which the constrained Big Slough/Myakkahatchee system reaches capacity in North Port. This exacerbates the potential for flooding in portions of the city, which then risks increased introduction of pollutants into the water before it can drain out. Restoring the hydrology north of North Port should help increase drainage capacity in the system. In theory, this should reduce potential volume of pollutants discharged into the Myakka River just upstream of Charlotte Harbor; as such, Charlotte County should consider supporting such a project for the benefit of the region.

## Resources Considerations and Funding Sources

Many recommendations in this plan will require substantial investment, in both financial and personnel resources, to manage many of these investments once completed. Achieving most of these goals is going to require a balance of external funding support, supplemented with a commitment by the county to provide the necessary resources for O&M of those projects/programs. Among the challenges to this lies in the land use makeup and demographics of Charlotte County itself; as a predominantly “bedroom” community, much of our population relies on fixed incomes and as such any increase in their cost of living creates substantial concern as to how they will be able to accommodate that additional financial burden. Combined with increasing costs beyond the county’s control (such as inflationary trends in goods and services), any upward adjustment to taxation rates is understandably met with public demands to justify the necessity of such increases while proving that no other viable funding alternative exists. In addition, legislative-mandated taxation rate caps are in place, limiting homestead properties to a 3% rate (which comprises a significant portion of the county) and non-homestead properties to 10%. State limits on impact fee increases (no more than 12.5% in a given year, and 50% over a 4-year period) restrict opportunities to leverage these revenue streams as mechanisms for funding water management projects.

Recognizing this, the following sections describe considerations for funding or financial incentivization mechanisms for implementing aspects of this plan, including the pros and cons of each.

### *Funding Opportunities*

Many of the recommendations contained herein can be initiated through external funding, effectively “kickstarting” the implementation of the process. However, grants are not going to be the sole solution to expanding water management and protection measures because few grants allow funding for ongoing maintenance necessary to ensure the perpetuation of much of the projects described herein. Operations, maintenance, or perpetuation of programs will likely require support via taxation-based measures. There is already precedence for this in the county; for example, Conservation Charlotte was enacted in 2006 via referendum, and the county’s water quality monitoring program is funded via an annual allocation from the county stormwater MSBUs.

**Table 8** below describes some of the more consistently available options for obtaining funding for water-related projects. Note grant programs tend to be dynamic; available funding can vary significantly from year to year, some programs will expire or not be renewed, and new grant programs will be created. It is helpful to have a set of priority projects available each year and an awareness of grant deadlines to that each project can be compared to the available grant opportunities each year.

**Table 8. Options for Available Funding for Water-Related Projects**

Funding Source	Administering Entity	Types of Work Funded	Considerations
RESTORE/RECOVER	US Treasury Department	Coastal Flood Protection and Infrastructure, Natural Resources and Ecosystems, State Parks and Tourism, and Infrastructure and Economic Development	Projects must be selected via a public engagement process to ensure community involvement and support
EPA Section 319	EPA/DEP	Nonpoint source protection and restoration	Funded by EPA and administered by DEP

Funding Source	Administering Entity	Types of Work Funded	Considerations
Water Infrastructure Finance and Innovation Act	EPA	Provides long-term, low-cost loans for significant water infrastructure projects	Projects typically need to cost \$20 million or more to be eligible for WIFIA assistance
State Revolving Fund	FDEP	Low-interest loans to local governments to plan, design, and build or upgrade wastewater, stormwater, and nonpoint source pollution prevention projects	Varies by fund type
Water Quality Improvement Grant Program	FDEP	Water quality	This Program covers multiple grants that vary from year to year
Resilient Florida Grant Program	FDEP	Mostly for protection against threats such as flooding	Planning grants are fully grant funded and Implementation grants are up to 50 percent
Florida Department of Economic Opportunity Grants	Self	FDEO administers several types of grants	Varies by program
State Appropriations Requests	Florida Legislature	Wide range	Requires sponsorship
Cooperative Funding Initiative	SWFWMD/SFWMD	This program allows local governments to share costs for projects that assist in creating sustainable water resources, provide flood protection and enhance conservation efforts	Annual application process with highly variable funding.
Gulf of Mexico Alliance	Self	Research and mitigation, with emphasis on community education/interaction	Funding is provided by partnered corporations, and as such funding priorities vary with each corporation.
Mitigation	FDEM/FEMA	Multiple grants primarily aimed at flood protection	Varies by grant type
Community Development Block Grant	HUD/FDEO	Develop viable urban communities by providing decent housing and a suitable living environment and expanding economic opportunities	Varies by grant type
Natural Resources Conservation Services Grants	Natural Resources Conservation Services	A variety of grants and programs aimed at promoting conservation and improving natural resources.	Varies by grant type
Hazard Mitigation Grant Program	Federal Emergency Management Agency	Provides funding for mitigation projects to reduce disaster risk	Rolling application process

Funding Source	Administering Entity	Types of Work Funded	Considerations
Partnership grants	Coastal and Heartland National Estuary Program	Offers grants to Florida citizens, organizations, businesses, government agencies, schools, colleges and universities who are implementing activities that support the objectives outlined in the Comprehensive Conservation and Management Plan (CCMP) to protect and improve the ecological integrity of the greater Charlotte Harbor watershed	Projects vary greatly in scope and scale, and are usually funded in cooperation with other sources
National Coastal Wetlands Conservation Grants Program	United States Fish and Wildlife Service	Provides grants to protect, restore, and enhance coastal wetlands	Can also be used to acquire property or easements
HUD grants	U.S. Department of Housing and Urban Development	Varies by year	Green and Resilient Retrofit Program (GRRP) Elements is an example from FY23
Conservation Charlotte	Charlotte County BOCC	Acquisition of land for conservation/preservation	Referendum required for continuance past its expiration
Funding allocation through applicable MSBU/MSTU budgets	Charlotte County BOCC	Any work that benefits the county's stormwater system and helps meet NPDES MS4 requirements	Limited to activities directly relevant to county's stormwater system; cannot be used areas outside of the county's stormwater management jurisdiction

Based on the needs identified in this document and the current trends in grant funding for the programs identified in the table above, there are three grant programs in particular that should be a focus in the short term. The first is the Resilient Florida Grant Program. The County can apply for an Adaptation Plan grant – which does not require a local match contribution – to follow the completion of its Vulnerability Assessment. The Adaptation Plan would allow the County to develop additional conceptual alternatives to address resiliency issues, followed by design and permitting. Those projects would then be well-positioned for an Implementation Grant. Although design and permitting can be covered under the Implementation Grant, the current scoring puts projects that have not been through design and permitting at enough of a disadvantage that it is difficult to obtain grant funding for that phase for this increasingly competitive grant.

The Cooperative Funding Initiative through SWFWMD and SFWMD (mostly SWFWMD based on the respective coverages of the County) is another promising grant program for the County. In SWFWMD's Cooperative Funding Initiative, the normal pathway for funding related to flooding, water quality, or natural systems begins with a planning process known as a Watershed Management Plan (WMP) or Surface Water Resource Assessment (SWRA). The County has not participated in this program as strongly as others in the past, and SWFWMD staff have indicated receptiveness to increased participation by the County in the program. Once the County has completed WMPs or SWRAs, they can then apply for funding for construction dollars for projects recommended in those planning efforts.

The County continues to participate in the Hazard Mitigation Grant Program. Funding for that program can vary by year and can depend on monies allocated by state for post-disaster recovery. There is often a significant lag between the disaster and when the funding becomes available. With the County and state significantly impacted by multiple hurricanes and tropical events over the past several years, there should be increased funding available over the next few years.

### *Cost-Mitigation Partnerships*

In addition to seeking funding support from our citizens and external entities, the county should partner with external entities to enact the recommendations described in this document. Partnerships bring subject matter expertise from outside the county, while providing an opportunity to share the burden of project management among multiple groups. For these partnerships to be successful, however, the county must bring resources to bear, though that does not have to be purely financial in nature. Examples of recent county-entity partnerships include:

- In 2024, the Florida Fish and Wildlife Conservation Commission (FWC) received approximately \$100,000 to rehabilitate the Snapper Creek corridor, one of the few remaining natural streams in the Port Charlotte region. FWC staff applied for and received the funding and will provide management and oversight of the project. Charlotte County joined as a partner and has provided matching support via county staff to identify project boundaries, assist with identifying project areas that overlap with private property boundaries, and work with FWC to interface with and obtain access permissions from private property owners as needed. Much of the on-the-ground field effort has been executed by participants in our county internship program, leveraging future professionals in the natural sciences to generate valuable information for this effort while giving them resume-building experiences to become future leaders in this field.
- In 2023, FDEP declared portions of Charlotte County and the City of Punta Gorda as impaired for excessive fecal indicator bacteria. In response, a consortium of local citizen groups initiated a citizen monitoring project in the impaired area, with the goal to identify the extent and sources of the impairment. To support the program, the county contributed laboratory analytical support for samples collected by the group, pending them acquiring grant funding to support the effort (which has since been secured). This cooperative effort allowed the group to begin sampling as soon as possible, while giving the county and city a seat at the table as stakeholders in the process. In addition, some of the citizens involved in the effort leveraged their professional connections to bring the University of Miami into the program, giving the county another source of subject matter experts to provide insight and guidance on sampling and assessment strategies. Another benefit to this partnership is that it allowed the county to expand its internship opportunities to University of Miami students, who will now bring their expertise and research interests to Charlotte Harbor.
- A consortium of research scientists with the University of Florida is seeking funding from the National Science Foundation (NSF) to analyze nutrient fluctuations and hot spots in our canal system. Through this arrangement, the research staff will manage the project and maintain responsibility for grant reporting requirements, while the county provides logistical and coordination support for canal access, instrumentation installation, and neighborhood communications. Given the importance of this effort and the current lack of certainty that it will be funded, the county is taking advantage of the opportunity by collecting samples and water surveys now for the researchers to analyze and provide initial feedback on possible areas of concern (this also provides supporting evidence further justifying the need for this project). If NSF chooses not to fund this effort, the county will seek support elsewhere because this research is critical to determining specific management options for these canals.

These are just a few of many opportunities available to leverage outside groups in helping us understand the dynamics of our watershed, identify areas of concern, and work together to address them. To maximize the county's ability to take advantage of these opportunities, developing a formalized water improvement partnership and innovation hub should be considered because this will allow for a portal to more easily attract willing partners to assist with research and restoration priorities. The next section will describe this concept in more detail.

### *Ecotourism and Economic Development Opportunities*

For decades, Charlotte Harbor and the County has benefited from the presence of vast stretches of natural coastline and wildlife management areas. Through a combination of forward-thinking preservation in the 1970s and slow population growth relative to neighboring counties, much of the immediate coastline surrounding the harbor consists of relatively uninterrupted stands of mangroves, tidal ponds, and shallow estuarine habitat supporting a diverse array of aquatic life. The harbor contains natural wonders like the endangered smalltooth sawfish and world-renown sportfishing opportunities. Sportfishing has long been credited as an economic driver in this predominantly bedroom community, but opportunities exist to establish Charlotte County's reputation as a haven for the natural world and to experience Florida wildlife while still being convenient to nearby travel, entertainment, and recreational opportunities.

Establishing an ecotourism and water economy promotional program as an element of the One Water advisory panel consisting of representatives from sportfishing, boating/marinas, nature tours, and local tourism and economic development bureaus can provide multiple benefits:

- Positioning ecotourism as a principal focus for economic development in the county will by placing continued focus on maintaining healthy waters, controlling harmful discharges, and implementing measures described in this plan. That is, maintaining a vibrant ecotourism program ensures the vitality of the One Water initiative.
- Growing the ecotourism industry brings additional revenue to local businesses, which may offer an opportunity to assign some portion of tax revenue from these activities to support many of the measures in this plan, along with other environmental protection activities.

Charlotte County is also well positioned to support developing an innovation hub to further the research and restoration needs of Charlotte Harbor, Lemon Bay, and the freshwaters that feed them. This would consist of three principal components:

- **Research and Community Engagement Assistantship:** Building on recent successes by Charlotte County in growing their water quality internship program and encouraging research partnerships with local universities and agencies, create a one-stop hub for advertising local research and communication needs. The county can help research efforts by assisting with funding needs, identifying candidate project areas, and providing staff support in conducting facets of data collection and community outreach as needed. Projects will be identified and prioritized based on input from local consortiums, participatory interests with other potential partners, and the recommendations of this plan.
- **Pilot Project and Entrepreneurial Support Center:** The county frequently receives inquiries from new and established business wanting to expand their markets into our region or demonstrating the efficacy of their new water improvement technology. The county can take advantage of this by working with the proposing business to pilot their technologies in our waters while demonstrating Charlotte County as an ideal place to establish commercial roots and tap into a readily available workforce from our community and university system. To

encourage participation, the county can assist in identifying and submitting funding requests and with navigating permit requirements and other regulatory approvals necessary for project implementation.

- **Water Improvement and Community Collaborative Interface:** As mentioned elsewhere in the Plan, Charlotte County is home to a vibrant collective of concerned citizens wanting to “do their part” to identify and address sources of impairments to our waters. Similarly, numerous established organizations have reached out to the county to identify actions they can take to improve our watersheds. A mechanism by which these groups, in partnership with the county, can more easily coordinate each other is needed, which will in turn accelerate the rate at which meaningful watershed improvements can happen at the local level.

## Agency Coordination and Collaboration

Much of the impetus driving the development of this Plan centers around our community’s desire to protect Charlotte Harbor and Lemon Bay; indeed, the opening sections of this document describe the health of these systems as the barometer to be used to determine how effective our water protection efforts are. However, Charlotte Harbor and Lemon Bay do not “belong” to Charlotte County, nor are our activities the sole factor affecting the health of these waters. This estuary system is managed by a consortium of regional, state, and federal agencies. Together, they work toward identifying measures to improve and remediate impacts originating from Charlotte County and the many anthropogenic activities along the Peace, Myakka, and Caloosahatchee Rivers. **Table 9** outlines the various agencies and their role/regions of authority in protecting Charlotte Harbor and Lemon Bay. Links to the plans guiding efforts described in the table may be found at the beginning of this section.

**TABLE 9: Regional Water Management/Protection Agencies**

PUBLIC AGENCY	REGION	ROLE IN CHARLOTTE HARBOR/ LEMON BAY
SWFWMD	Surface and ground waters in the Peace and Myakka River Basins, Charlotte Harbor, and Lemon Bay	Regulate groundwater withdrawals and stormwater management components of construction permits; establish minimum flows and levels for aquifers and streams; and implement the Surface Water Improvement and Management Plan (SWIM) for Charlotte Harbor and Lemon Bay watersheds.
SFWMD	Caloosahatchee River and estuary system	Similar regulatory functions as SWFWMD for the Caloosahatchee River basin; coordinate with US Army Corps of Engineers in their management of Lake Okeechobee water levels.
FDEP	All sovereign submerged lands	Permitting authority for activities impacting sovereign submerged lands; freshwater HAB and illicit spill response/enforcement.
Charlotte Harbor Aquatic Preserves (FDEP)	Charlotte Harbor, Lemon Bay, Gasparilla Sound, Cape Haze,	Implement and support monitoring, protection, and restoration strategies;

PUBLIC AGENCY	REGION	ROLE IN CHARLOTTE HARBOR/ LEMON BAY
	Pine Island Sound, and Matlacha Pass	implement measures of their management plan.
Coastal & Heartland National Estuary Partnership (CHNEP)	Charlotte Harbor, Lemon Bay, Dona and Roberts Bay, Estero Bay, the Caloosahatchee Estuary, and all river basins contributing drainage to them	Coordinate stakeholders and undertake projects to implement measures of the Partnership’s management plan; provide funding and staff support to promote habitat protection and enhancement, water quality monitoring and improvement, hydrological restoration, enhanced resiliency, and collaborations across multiple jurisdictions.
Florida Fish and Wildlife Conservation Commission (Charlotte County Office)	All sovereign submerged lands	Implement Fisheries Independent Monitoring Program; coordinate habitat research and restoration projects.
Florida Sea Grant (Charlotte County Office)	Charlotte Harbor/Lemon Bay	Develop, implement, and evaluate a comprehensive marine and coastal Extension program in Charlotte County that measures and addresses community needs. This includes but is not limited to managing citizen science and environmental stewardship programs focused on aquatic flora, fauna and the environmental factors impacting them.

**Table 10: Charlotte Harbor and Lemon Bay Watershed Management Plans**

Management Plan Name	Managing Entity	Overall Goals and Recommendations
SWIM	SWFWMD	<ul style="list-style-type: none"> <li>• Maintain nitrogen loads from the Peace and Myakka Rivers at or below 2009–2015 average levels (Peace – 2.7 pounds TN per acre per year and 5-year average total TN load of 1,800 tons/year; Myakka – 2.8 pounds TN per acre per year).</li> <li>• Continue implementing hydrologic restoration in the Myakka River watershed.</li> <li>• Participate in ongoing hydrologic restoration of Dona Bay watershed.</li> <li>• Participate in Charlotte Harbor Flatwoods Initiative</li> <li>• Participate in ongoing hydrologic restoration on conservation lands.</li> </ul>

Management Plan Name	Managing Entity	Overall Goals and Recommendations
		<ul style="list-style-type: none"> <li>• Maintain seagrass coverage in Charlotte Harbor and Lemon Bay at 2016 levels (Charlotte Harbor – 20,280 acres; Lemon Bay – 3,223 acres).</li> <li>• Continue to implement natural systems projects throughout the watershed within SWFWMD.</li> </ul>
Charlotte Harbor Aquatic Preserves Management Plan	Charlotte Harbor Aquatic Preserves (CHAP) (FDEP)	<ul style="list-style-type: none"> <li>• Maintain and improve water quality within the CHAP.</li> <li>• Assess the condition of the CHAP’s submerged resources to identify threats to the health of the estuaries.</li> <li>• Preserve, protect, and restore submerged resources within the CHAP.</li> <li>• Assess the condition of the CHAP’s wading and diving bird colonies.</li> <li>• Preserve and protect wading bird nesting islands</li> <li>• Protect and improve the ecological integrity of the CHAP watershed.</li> <li>• Increase public involvement, awareness, and knowledge of the CHAP.</li> <li>• Assist federal, state, and local agencies and organizations in managing public use and access while protecting the natural resources of the CHAP.</li> <li>• Educate the public about the importance of sustainable public use.</li> </ul>
Comprehensive Conservation and Management Plan	Coastal & Heartland National Estuary Partnership (CHNEP)	<ul style="list-style-type: none"> <li>• Undertake and support comprehensive and coordinated water quality monitoring, and projects and programs that reduce pollutants entering waterways.</li> <li>• Undertake and support data-driven watershed planning and hydrologic restoration projects to protect and restore natural flow regimes and provide sufficient fresh surface water and groundwater to natural systems.</li> <li>• Undertake habitat restoration planning to promote the support facilitate permanent acquisition and effective protection and management of critical natural habitats including wildlife dispersal areas, movement and habitat migration corridors, wetlands, flowways, and environmentally sensitive lands and estuarine habitats.</li> <li>• Undertake activities to promote environmental awareness, understanding, and stewardship to the general public, professionals new target audiences, and policymakers as well as strengthen partner collaboration in education and engagement programs.</li> </ul>

## Plan Management, Execution, and Community Input

As illustrated by the volume and variety of recommendations presented in this plan, a significant amount of resources will be needed to achieve the goals described herein. Given how much of this resource investment will likely come from public funding, successful implementation of the plan will require extensive citizen education, communication, and endorsement. As such, this plan recommends the following measures:

- Continue participation in the quarterly West-, Mid-, and South County stormwater MSBU advisory board meetings. The county surface water monitoring program is funded primarily through these stormwater MSBUs, and regular updates on progress, findings, feedback, and changes to the monitoring efforts should continue through these meetings.
- Establish an ecotourism and water economy advisory panel, as described in the previous section. This will provide an outlet for the business community to provide feedback and direction on those facets of the county water management strategy that should be prioritized for the benefit of their operations. Alternatively, this effort could be integrated into the Tourist Development Council as a subcommittee or secondary focus.
- Create a One Water science steering and advisory board consisting of subject matter experts who reside in Charlotte County or work within fields related to water management of the Charlotte Harbor/Lemon Bay watersheds. The goal is to create a two-stage “peer review” process for activities conducted through the One Water Program. This advisory board would serve as the first stage of the review and advisory process, providing prioritization recommendations, review of citizen concerns, and visioning input for long-term program planning. The second stage of peer review would come through participation in the CHNEP Technical Advisory Committee, which consists of representatives of local and state agencies associated with Charlotte Harbor and Lemon Bay. Information on county initiatives are passed to members of this Committee for comment and identification of external resources that could be levied to accomplish the goals of those initiatives.

## Summary of Opportunities and Obstacles



The county’s Comprehensive Plan contains many elements that can contribute toward enhancing water protection, providing a foundational layer of justification for expanding water management activities.



Senate Bill 250 imposed a moratorium on adding or amending any ordinances or permit requirements that may be construed as “burdensome” to development; as of this writing, that moratorium is scheduled to expire in fall 2026. This and other preemption rules limit the extent to which local government can update ordinances or implement certain aspects of the Comprehensive Plan.



Opportunities are available for partnering with entities to implement multiple measures of this plan, but the county will need to commit the necessary resources to ensure the long-term success of those measures. For example, public-private and public-public partnerships are viable options for installing GSI infrastructure and pond enhancement measures, but responsibility for maintenance of these efforts needs to be identified and afforded sufficient resource support.



Charlotte County has a substantial available resource in our citizenry, and their concern for the health of our waters can be leveraged to initiate robust citizen environmental monitoring and improvement programs.

## Vision Task Details

**Task A:** As a component of the proposed citizen science program, initiate comprehensive stewardship marketing campaign to better inform the public of the part they play in maintaining a healthy water system from house to harbor.

**Estimated Development Cost: LOW (<\$100,000).**

**Details and Justification:** As has been described elsewhere in this Plan, Charlotte County's rapid population growth is bringing new and greater economic opportunities to the county alongside increasing stress to our water resources resulting from that growth. One such source of that stress is new residents' general lack of understanding on how they can have a significant influence on the function of our water quality, quantity, and the health of our ecosystem. In addition, new residents may be ill-informed on the various ordinances the county has put in place over the years to mitigate negative anthropogenic impacts to our natural system. The county maintains an active social media presence, which is used to educate and inform all our citizens on these topics; however, additional messaging mediums will need to be utilized in order to assure we are reaching as much of our intended audience as possible.

There is already a substantial volume of print and audiovisual material developed by the state, neighboring counties, and other public and private sectors; as such, much of the cost to implement this task is allocated towards publication fees and staff time to adapt these pre-existing resources to our audience. In addition, multiple county interns are being leveraged to create messaging on special topics of concern to our community, such as fecal indicator bacteria impairments. This is being done with an eye towards informing our residential community while also identifying avenues for reaching the county's younger generations, to build an environmental stewardship mentality at an earlier age.

**Task B:** Establish water data analyst and project manager positions to assist with reporting, prioritization, analysis, and recommendations associated with the county water quality program.

**Estimated Development Cost: MEDIUM (\$100,000-\$1,000,000)**

**Details and Justification:** As discussed earlier in this section, numerous funding sources are available to kick-start the tasks described herein, but human resources will also be needed to shepherd these projects to conclusion, maintain initiatives after they've been established, and compile/deliver timely information on water-related questions and concerns to the Commissioners and citizenry. The majority of the recommendations in this first iteration of the Plan center on pollution assessment and mitigation, and communication/coordination. As such, this Plan recommends establishing three position classes to assist in these efforts:

**Environmental Programs Coordinator-** The many restoration planning and public communication actions described in this Plan will require countless hours of coordination between the county and other agencies, public and private interest groups, and county citizenry. This position will focus on effectively managing these multiple concurrent efforts while assuring consistency in communication. In addition, successful citizen outreach programs require staff time dedicated to

promoting, training, and responding to participants concerns; a portion of this position's FTE will be dedicated to these needs.

**Environmental Analyst-** Given the establishment of the county's water quality monitoring program, this Plan's recommendations to develop multiple water quality restoration strategies, and the growing need to aggregate and interpret water-related data in support of public communication and departmental requests, this technical position will serve to support decision-making and management of data related components of restoration efforts. Responsibilities will include review and oversight of data used in planning projects, developing data-based products to quickly evaluate and communicate water quality trends, and supporting other departments in data evaluation and summary.

**Environmental Technician-** As the county expands its monitoring capabilities and identifies new research needs and concerns, staff will be needed to collect routine and emergency response samples, conduct investigations and inspections, maintain/repair equipment, and problem solve solutions to emerging information needs. Technician positions are field-oriented roles that will fulfill these tasks while also providing support for other departments with similar needs. In the near term, this role will also assist in expanding and maintaining our water quality/flow/elevation monitoring network, inspecting and recalibrating instrumentation as needed.

**Task C:** Prioritize green stormwater infrastructure (GSI) implementation at county properties, to serve as demonstration measures for private and residential development and be held as a benchmark in the county for integration of comprehensive water management/ treatment processes.

**Estimated Development Cost: LOW (<\$100,000)**

**Details and Justification:** The design manual for county facilities currently requires stormwater management plans to meet the base detention and treatment requirements in the state and SWFWMD's ERP permit manuals. In recognition of the need to maximize stormwater treatment capabilities of county properties, adapt to anticipated changes to stormwater management requirements in the updated 2024 stormwater rule, and create opportunities to demonstrate the efficacy of comprehensive stormwater management systems, the county will update the design manual and operation procedures as follows:

1. Develop a menu of options for green infrastructure implementation on county properties as part of both construction and refurbishment activities, prioritizing options that maximize water infiltration, retention, and canopy cover for facilitating evapotranspiration. Construction planning processes will utilize a cost/benefit analysis to determine appropriate measures for achieving minimum infiltration rates.
2. For construction activities centered around expansion of existing facilities, require design strategies that result in, at minimum, no net loss of stormwater attenuation capacity, and minimal to zero loss of pervious land.
3. Outline comprehensive maintenance plan to assure treatment system continues to operate as designed, including determination of responsible parties for assuring maintenance requirements are met.

In addition to the above, routine sampling efforts will be expanded to select facility stormwater systems to evaluate the efficacy of implemented management features and refine future stormwater management system design strategies.

**Task D:** Evaluate the need, feasibility, cost/benefit, and authority to alter or extend the current fertilizer ordinance based on recent research regarding timing and duration of fertilizer bans.

**Estimated Development Cost: LOW (<\$100,000)**


**Details and Justification:** The University of Florida's 2024 report on the effectiveness of seasonal fertilizer restrictions highlighted multiple studies examining the ecological impact of fertilizer bans in Florida, some of which warrant consideration in Charlotte County's current fertilizer ordinance. For example, a review of 30 years' worth of lake data throughout the state indicated that winter fertilizer bans may produce a more positive impact on nutrient levels in aquatic systems than summer bans. Other similar studies showed reduction in phosphorus concentrations in receiving waters after wet season bans were put in place, but little positive impact in Nitrogen concentrations were observed. Given these observations, it would be beneficial to examine the source of nutrients in runoff and stormwater in Charlotte County and determine if a more ecologically beneficial fertilizer management regime might be possible.


**Task E:** Create central online water resource education hub and inter-departmental collaborative to provide information to the public on water management considerations in the region as well as address frequently asked questions/concerns posed to county departments.

**Estimated Development Cost: LOW (<\$100,000)**


**Details and Justification:** In Charlotte County, outreach concerning management and quality of our waters is distributed amongst multiple departments, typically in fulfillment of grant, permit, or other regulatory requirements. As the county's population has grown, so too has the need for education resources to help our citizens better understand typical water management practices in south Florida, indicators of harmful algal blooms, and the benefits of nature-based attenuation of pollution. This is especially important as many of our new residents are not from Florida and thus are unfamiliar with the water management challenges we face. Consider a poll presented to residents at a recent water quality conference:

- When shown a picture of duckweed buildup in a canal system, 55% of respondents stated they could not identify what was shown in the picture, but it appeared toxic. 7% of respondents were certain what they were viewing was toxic.
- Participants were shown pictures of waterways in the county and asked to score the management of the vegetated banks on a scale of 1-5:

	<b>1</b> (Banks are in serious need of revegetation)	<b>28%</b>
	<b>2</b>	<b>4%</b>
	<b>3</b> (I would live on this canal, but I would probably plant more vegetation in my yard)	<b>27%</b>
	<b>4</b>	<b>3%</b>
	<b>5</b> (This is what a waterway and canal banks/yard should look like)	<b>38%</b>

	<b>1</b> (Banks are in serious need of clearing, and I would call the county immediately to address it)	<b>11%</b>
	<b>2</b>	<b>1%</b>
	<b>3</b> (I would live on this canal, but the county should address some aspect of it)	<b>44%</b>
	<b>4</b>	<b>14%</b>
	<b>5</b> (This is what a waterway and canal banks/yard should look like)	<b>30%</b>

	<b>1</b> (Banks are in serious need of clearing, and I would call the county immediately to address it)	<b>4%</b>
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	<b>2</b>	<b>3%</b>
	<b>3</b> (I would live on this canal, but the county should address some aspect of it)	<b>19%</b>
	<b>4</b>	<b>6%</b>
	<b>5</b> (This is what a waterway and canal banks/yard should look like)	<b>69%</b>

Note the audience for this poll were voluntary participants in a water quality conference, and as such these individuals are often more aware of water quality and natural systems issues than the average citizen. Differing viewpoints like those expressed in the poll can have tangible consequences in county operations and budgets, as a less educated citizenry results in more complaints to the county over perceived public health and aesthetic issues that don't necessarily warrant management.

This task seeks to address the above issue and fill our current outreach subject matter gaps by instituting an educational resource hub in conjunction with our regional partners such as Sea Grant and the Coastal and Heartland National Estuary Partnership. Phase 1 of the hub will focus on creating a FAQ library for county staff to use for distribution in response to the most common citizen complaints, especially for those concerns related to algal blooms and waterway maintenance needs. In addition, an interactive HAB identification tool will be created to help concerned citizens better identify the type of algae, vascular plant, or cyanobacteria growing in their waterway, and whether the presence of those may pose a health risk. The goal is to create mechanisms that help citizens understand what situations require intervention by the county, another agency, or if intervention is necessary by any entity at all.