

# Ideas for Enhancing Charlotte County's Management of Our Exceptional Estuaries, Waterways and Water Quality – Now

## Summary



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This Summary provides a citizen-friendly synopsis of the discussion paper titled “Ideas for Enhancing Charlotte County’s Management of Our Exceptional Estuaries, Waterways and Water Quality – Now”. The purpose of the discussion paper is to provide ideas for improving the county’s capabilities for restoring and safeguarding our invaluable estuaries and waterways before irreparable damage occurs. It is intended to alert and inform local community members about our water quality crisis in the making, as well as start discussions and encourage actions which protect and restore our waterways. Charlotte County is a special place with a water-based lifestyle but it is changing rapidly. Correcting our water quality problems now and planning for future growth are essential for our economy and waterways over the long-term. The full discussion paper is available at <http://www.ecopapak.org/wq/ideas.htm>.

**The discussion paper is built on four underlying principles. First, the health of our estuaries is an economic and lifestyle necessity.** The estuaries are where most of our fish are born and raised, where wildlife thrives, where locals and tourists recreate and where we derive much of our aesthetic enjoyment. Our local marine and seafood industries and tourism rely heavily on healthy estuaries. And, the value of our waterfront property is dependent on pristine waterways. Details of the extraordinary value of these waterways to our local economy and well-being are provided in the full document.

**Second, we have a water quality crisis in the making.** Recent water quality reports by several agencies raised awareness that the health of our estuaries is at a tipping point. These reports are corroborated by increasing sightings of filamentous algae blooms by local FWC fisheries and FDEP seagrass researchers. The gravity of the situation is highlighted by analysis of data

describing fishery resiliency to environmental disturbances. Data shows that fishery populations can recover, in time, from red tide, cold spells and hurricanes. However, they are not able to thrive in chronic, severe water quality stresses, such as algae blooms fueled by excess nutrients. Once an estuary is severely degraded, such as recently occurred in the Indian River Lagoon in Melbourne, Florida, the damage cannot be reversed in a timely or affordable way – if ever.

**Third, we know the basic causes and solutions to our water quality problems.** The excess nutrients that cause most of our water quality problems come from human activities – from inadequately managed wastewater and stormwater runoff. Climate change also contributes to harmful algae blooms via warming waters, intensifying rainfall and storms and higher tides. The solutions to water quality problems are not complicated: monitor and report nutrient levels in all waterways, manage wastewater and stormwater to keep nutrients below prescribed levels, and mitigate climate change impacts.

**Fourth, we have insufficient local capabilities to manage the health of our waterways.** The existing county organizational structure separates water quality responsibilities into two departments: Utilities, concerned with wastewater treatment, and Public Works, concerned with stormwater management. This county structure makes comprehensive protection of our important water resources challenging to achieve. The county has been contending with water quality issues for several decades. Documented water quality concerns and responses are summarized in the Chronology in Appendix B of the discussion paper. Two important unheeded recommendations are: 1) a 2015 offer by the Charlotte Harbor National Estuary Program to help expand water quality monitoring; and 2) a 2016 study by Florida Atlantic University for the county that recommended that the county do 2 things: manage water quality to meet state standards and create a comprehensive water quality monitoring and reporting program.

**Effective management of our waterways and water quality includes five essential elements,** as shown in the figure below:



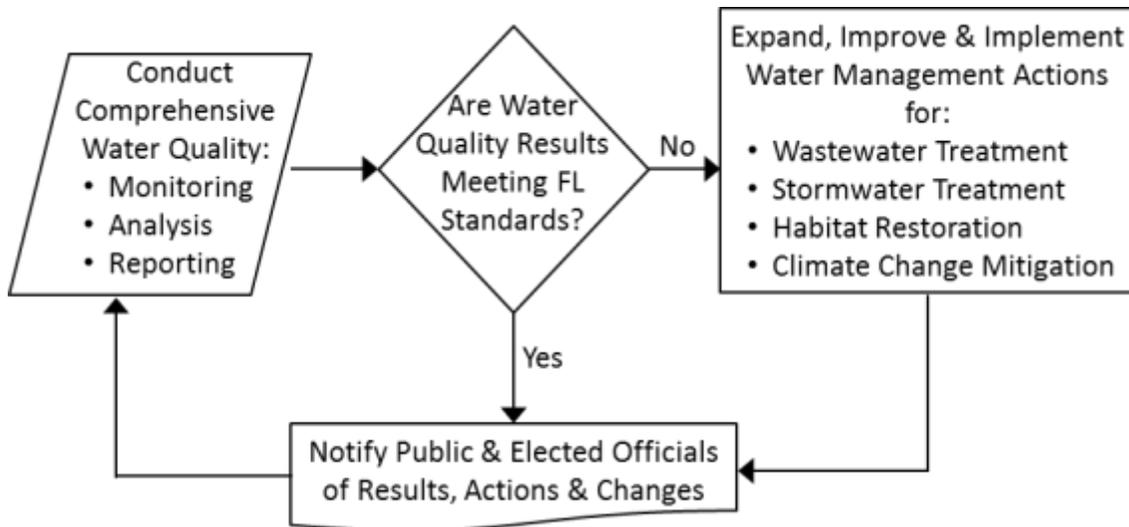
- **Water quality monitoring and reporting** is the central element upon which all other effective water resource actions depend. The monitoring program must be well designed and supported. Collecting accurate water quality data and presenting it in a understandable and timely manner allows both healthy and disturbed conditions to be identified – which helps direct limited funds and efforts towards the most critical and cost-effective solutions.
- **Wastewater management** for the county’s growing populations is critical. The county’s current population is about 185,000 and it is expected to increase by 35% over the next 25 years. Most people (93%) live near the water, many are on problematic septic systems, and sea level has been rising about 1” per decade and is projected to continue at least at that rate. These factors contribute to wastewater being one of the main sources of nutrients delivered to our estuaries and waterways. As a community, we have the opportunity to upgrade existing wastewater treatment systems now and develop creative solutions which accommodate future community growth before irreversible damage to our waterways occurs.
- **Stormwater management** for existing and new urban areas is also essential. Stormwater runoff from impervious surfaces such as roads, parking lots and roofs is a major source of nutrients delivered to our waterways. The county platted lots are currently 40% built out, with most of the development occurring near or adjacent to waterways. As the area of impervious surfaces increases, the volume and velocity of runoff water increases, allowing it to carry more sediment and nutrients to receiving waters. In addition, rainfall patterns are becoming more intense and coasts are being inundated more frequently as our climate continues to change. Again, we have the opportunity to upgrade existing stormwater management systems and begin creative, forward-thinking solutions to accommodate our future 60% growth.
- **Supplemental resource management programs** include a vast variety of projects carried out to maintain and restore water and habitat – on land, in water, for plants, for animals. The 2 main goals of these programs are to: 1) retain and infiltrate rainwater to slow runoff and capture pollutants; and 2) create native upland, wetland and submerged habitats to support diverse biological communities – all while mitigating climate change.
- **Education and awareness** are important at all levels of our community from elected officials to public employees to citizens – to increase our understanding of complex water quality problems and solutions. Better understanding of important water quality issues is necessary to cultivate community support for projects and activities that must be accomplished. The goal is to provide accurate, understandable information about the problems, impacts, causes and solutions.

**Ten suggested actions are presented in the discussion paper, including:**

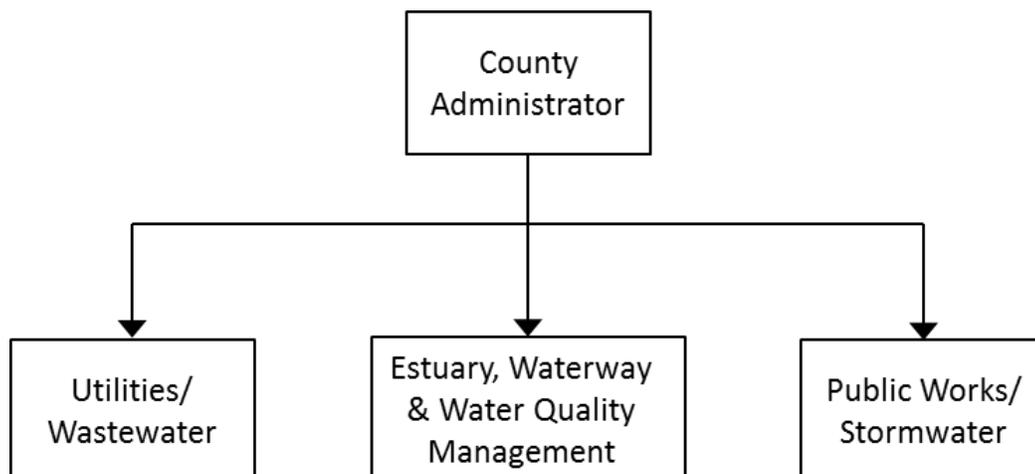
1. **Acknowledge publicly that we have water quality problems in the county.** The county has an ethical responsibility to inform its citizens about the values of our local water resources and extent of our current water quality issues. An appropriate three-part public statement should: 1) describe our water quality problems and their harmful impacts on our economy and

lifestyles; 2) explain the relevant history of the county’s awareness of our water quality problems; and 3) commit the county to creating a comprehensive and effective program for managing our estuaries, waterways and water quality – before irreversible damage occurs.

**2. Manage local waters to meet state water quality standards.** The county should use existing state water quality standards as our local water quality goals, along with a data-based decision process, as shown in the diagram below. This would create a science-based approach and decision-making process that leads us most effectively towards achieving our healthy, sustainable estuaries.



**3. Create an overall county waterways and water quality management function.** This new function would be identified by its mission – to restore our estuaries and waterways to state water quality standards, and then preserve the waterways for the long-term community and economic good. It is important that this new office be given the adequate authority, expertise, resources and support needed to achieve this mission.



**4. Create a broad county water quality monitoring and reporting program.** As shown in the diagram in Action 2 above, this is the central element needed to effectively manage our estuaries, waterways and water quality. The monitoring and reporting program would collect, analyze, evaluate and report representative water quality data to decisions makers and the public so that it can be used to direct management actions towards the priority locations and problems needed to protect and restore waterways.

**5. Focus county efforts on removing high nutrients from wastewater and stormwater.** We must reduce the primary sources of pollutants, using the most expedient and efficient means possible.

**6. Initiate a variety of county complementary resource management programs.** In addition to wastewater treatment and stormwater management, adequate reduction of pollutants to our waterways will require an assortment of smaller, widely distributed projects throughout the county. Such programs include native landscaping, waterfront vegetation, fertilizer ordinances, habitat preservation and restoration, and shellfish restoration, as well as projects that mitigate and adapt to climate change impacts.

**7. Pursue county actions to adapt to and mitigate climate change.** Warming water is the third cause of increased algae blooms, after excess nutrients from wastewater and stormwater runoff. A variety of options are described in the full discussion paper, including the suggestion that the county include *Adaptive Mitigation* in the 2021 Comprehensive Plan update. *Adaptive mitigation* would help residents adapt to rising seas and the other threats from climate change, and help draw down excess carbon in the atmosphere which contributes to global warming.

**8. Create a county education and awareness campaign for water resource issues.** An effective education campaign would help county residents, employees and elected officials understand the urgency of our water quality issues, and why corrective actions are vital to our economy and lifestyles. Better awareness helps us manage change more easily because we tend to accept change more readily once we understand why it is needed and what the benefits are. Once local residents understand how improving our wastewater treatment, stormwater management and supplemental projects will benefit our economy and life-styles, they will respond more positively and support needed changes more readily.

**9. Engage with strategic allies and partners.** Partnering with capable, like-minded allies can help us restore our waterways and save costs. We can share expertise and resources, leading to smarter operations and investment decisions. The county's water quality management activities could be strengthened by partnerships with FDEP's Charlotte Harbor Aquatic Preserves, Coastal and Heartland National Estuary Partnership and SWFWMD's Surface Water Improvement and Management Program. A county office of estuaries, waterways and water quality management should seek formal alliances with these organizations as strategic partners, working together to achieve the common mission of restoring and preserving our estuaries and waterways.

**10. Manage county organizational change with the help of consultants.** Creating a local waterways and water quality function and/or office would require changes to the county organizational structure. Organizational changes can be challenging, but experts are trained in managing these changes with the least disruption and most success. Because of the importance of creating an effective local water resource management program, as well as the risks and costs of not succeeding, investing in change management consultants to help guide the process is essential.

**Conclusions from the discussion paper include:**

- Charlotte County has a water-dependent economy and lifestyle and it is changing rapidly.
- Our estuaries have impaired water quality and we must begin changes as soon as possible.
- The causes of our water quality problems are wastewater, stormwater and climate change.
- Our current county structure lacks a comprehensive waterways management function.
- Effective waterways and water quality management includes 5 key elements.
- State water quality standards should be used as local water quality goals.
- An effective approach for restoring our waterways would be to create a comprehensive county water resource management program and/or office.

**The most critical actions which should be implemented as soon as possible include:**

**1. We must acknowledge our water quality crisis exists and commit to action.** Better understanding of options, costs and benefits of needed wastewater, stormwater and supplemental projects, and urban planning will foster necessary support for future funding decisions and potential organizational changes.

**2. We must create a county waterway and water quality management program.** The mission of the new county program and/or office would be to restore our estuaries and waterways to state water quality standards, and then preserve the waterways for our long-term community and economic good. The office would coordinate actions relating to water quality monitoring/reporting, wastewater treatment, stormwater management, education and awareness and supplemental resource management projects.

**3. We should seek assistance from organizational development experts.** Creating a new local waterways and water quality management program would require some changes to existing county organizational structure. It would be cost-effective and wise for the county to invest in expert assistance from professional organizational development consultants when creating a comprehensive waterways and water quality management program.

The ideas in the discussion paper are presented with a sense of urgency. If our water quality continues to degrade, impacts to our residents, fish and wildlife, and economy will become increasingly more dramatic, if not irreversible. The purpose of the discussion paper is to encourage open dialogue between local citizens, staff and elected officials about steps towards restoring and sustaining our exceptional waterways, using a creative combination of educational activities, restoration projects and planning – which can only be successful when the community works together.