

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

Florida SouthWestern College

Lifelong Learning

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# Introduction

- Authors' backgrounds, motivation
  - Disclaimers
  - Sources
- What brought YOU here?
- Agenda: 4 Premises > 5 Elements > 10 Actions
  - Please hold questions until the end
  - Discussion

Paper available online <http://www.ecopapak.org/wq/ideas.htm>

# Underlying Principles

## (1) The health of our estuaries is an economic and lifestyle necessity

- Where most of our fish are born and raised,
- Where wildlife thrives,
- Where locals and tourists recreate
- Where we derive much of our aesthetic enjoyment
- Local marine and seafood industries and tourism rely heavily on healthy estuaries.
- Value of our waterfront property is dependent on pristine waterways



# Underlying Principles

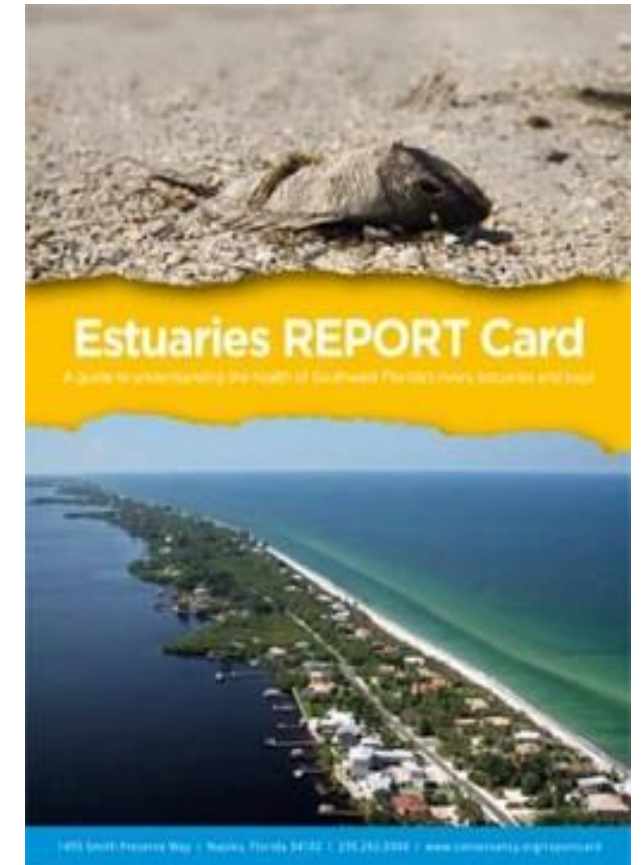
(2) We have a water quality crisis in the making

## Evidence of Impairment

- Conservancy of Southwest Florida 2017 Estuary Report Card
- CHNEP 2018 water quality status reports
- November 2018, FDEP State's Impaired Waters Rule Draft Assessment
- Filamentous algae blooms

Fish resiliency

Lesson of Indian River Lagoon

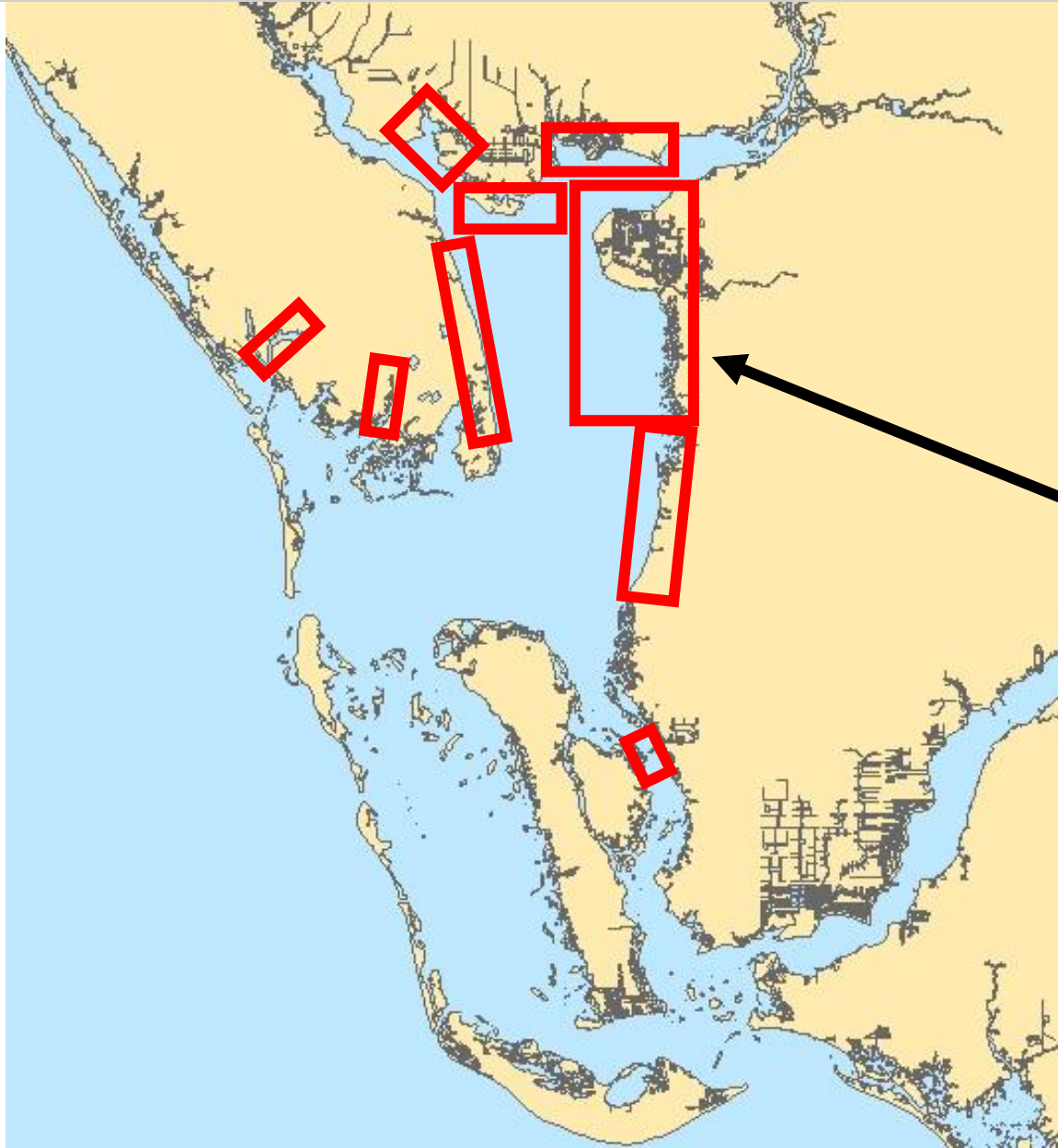


# FWC observations of Filamentous algae blooms



Until recently we thought Charlotte Harbor was immune to these water quality problems

New locations (in red) where large algae outbreaks are now occurring (2012-present)



Green Filamentous Algae

# Indian River Lagoon

- Guacamole bloom
- Stuart Florida summer 2018
- St. Lucie estuary near Roosevelt bridge
- Southern end of Indian River Lagoon



## Underlying Principles

(3) We know the basic causes and solutions to our water quality problems

**Causes: Excess nutrients from human activities**

- **Wastewater and stormwater runoff**
- **Climate change** also contributes to harmful algae blooms
  - via warming waters
  - intensifying rainfall

The **solutions** to estuary water quality problems:

- **monitor and report** nutrient levels in all waterways
- **manage wastewater and stormwater** to keep nutrients below prescribed levels
- Reverse global warming



# Underlying Principles

(4) We have insufficient local capabilities to manage the health of our waterways

## Structure

- County organization separates water quality responsibilities into two departments: Utilities, concerned with wastewater treatment, and Public Works, concerned with stormwater management.
- Nowhere in the county government is there a mission to safeguard the estuaries. Nobody is assigned responsibility for managing the health of our estuaries or adjoining waterways

## Process

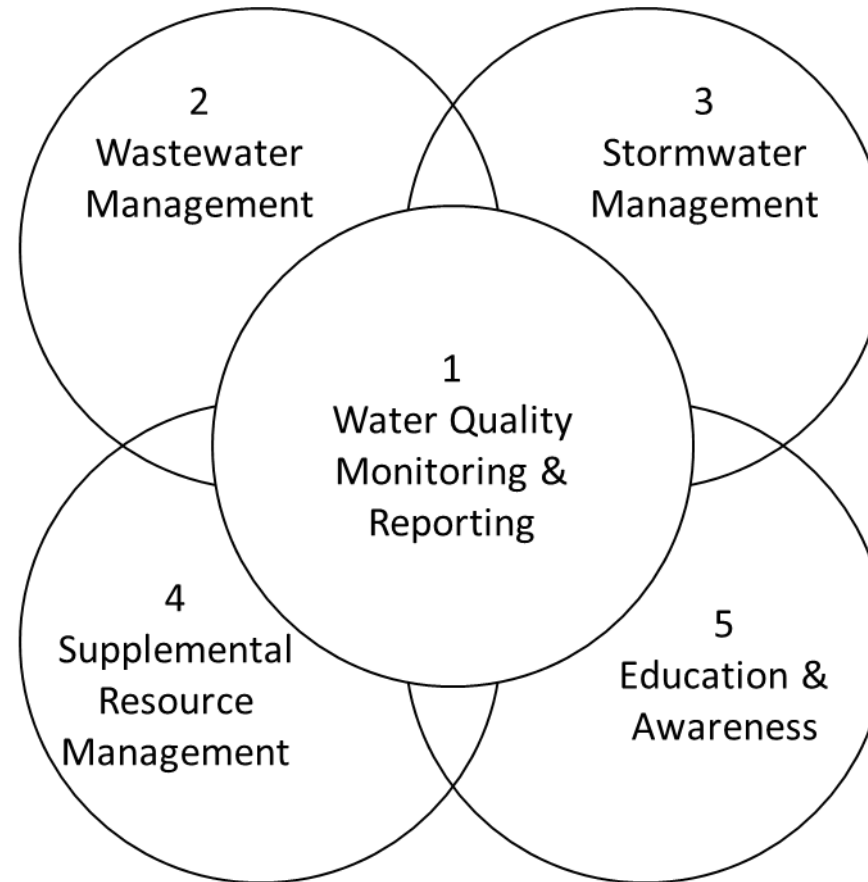
Suffering from two important unheeded recommendations:

- 2015 offer by the CHNEP to help expand water quality monitoring
- 2016 study by Florida Atlantic University recommended that the county do 2 things:
  - manage water quality to meet state standards and
  - create a comprehensive water quality monitoring and reporting program.

# Review of Underlying Premises

- the health of our estuaries is an economic and lifestyle necessity
- we have a water quality crisis in the making
- we know the basic causes and solutions to our water quality problems
- we have insufficient local capabilities to manage the health of our waterways

# Effective management of our waterways and water quality requires five essential elements



## Suggested actions

- (1) Acknowledge publicly that we have water quality problems in the county

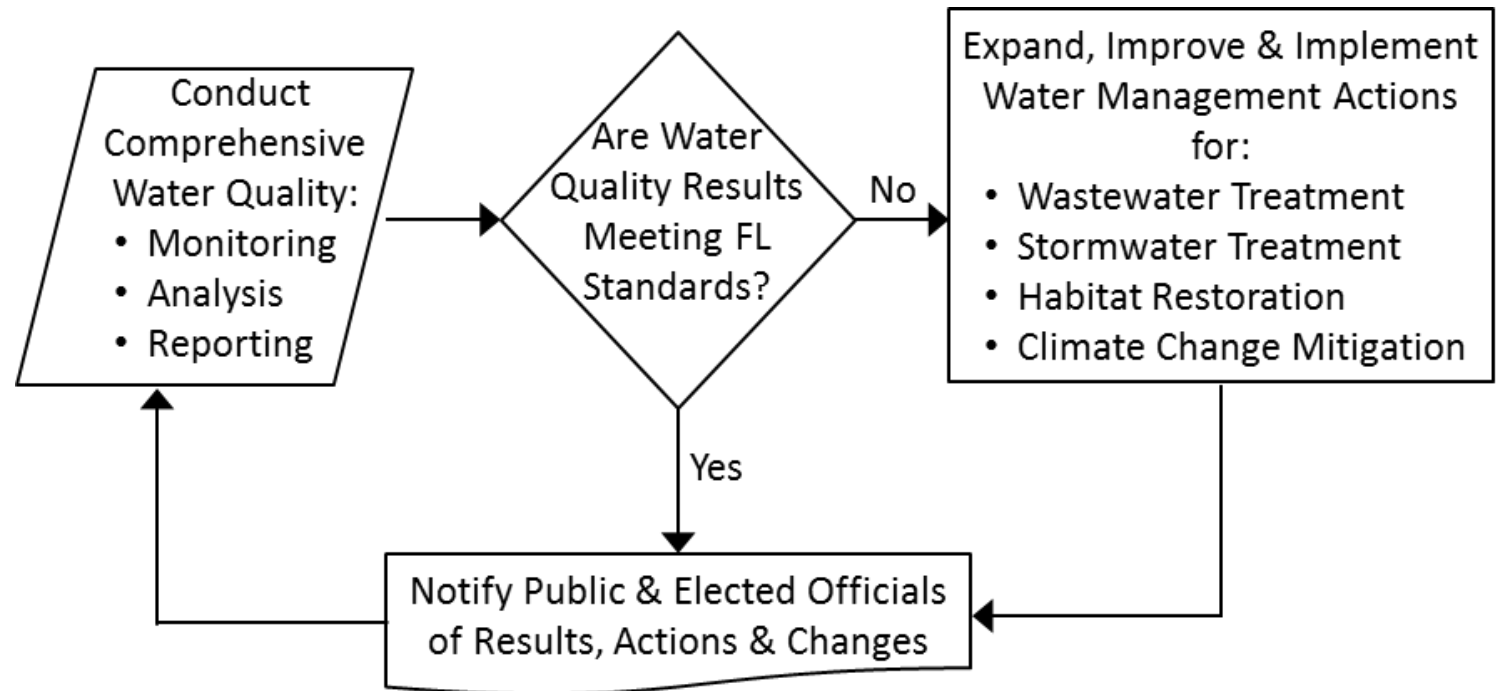
### Three-part public statement:

#### Ethical responsibility

- 1) Describe our estuary 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
- 3) Commit the county to creating a comprehensive and effective program with a 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

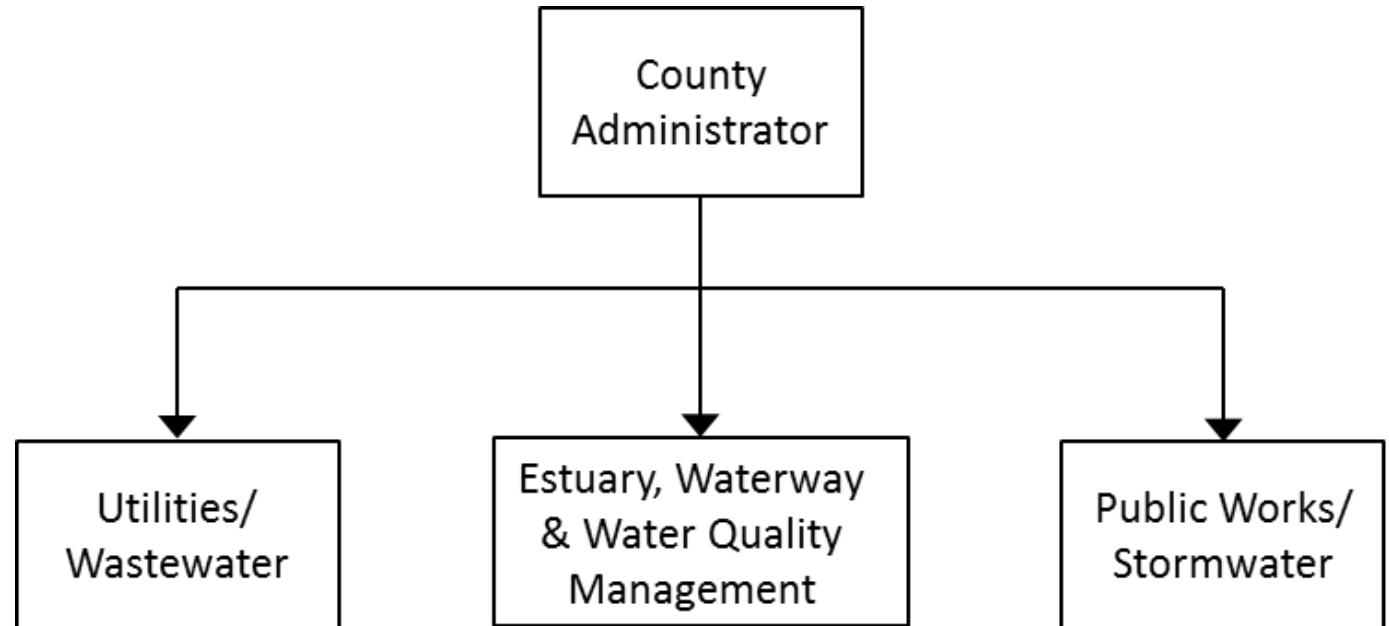
## Suggested Action (2) Manage local waters to meet state water quality standards

- Use existing state water quality standards as our local water quality goals
- Science, data-based decision process
- Leads us to achieving our healthy, sustainable estuaries



## Suggested action (3) Create an overall county waterways and water quality management function

- New office 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.
- Must be given the adequate authority, expertise, resources and support needed to achieve this mission



## Suggested Action (4) Create a broad county water quality monitoring and reporting program

- First task for new office
- Central element needed to effectively manage our estuaries, waterways and water quality (data/science based process – driven by state standards)
- Collect from **all our waterways**, analyze, interpret, 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
- In house, outsource options

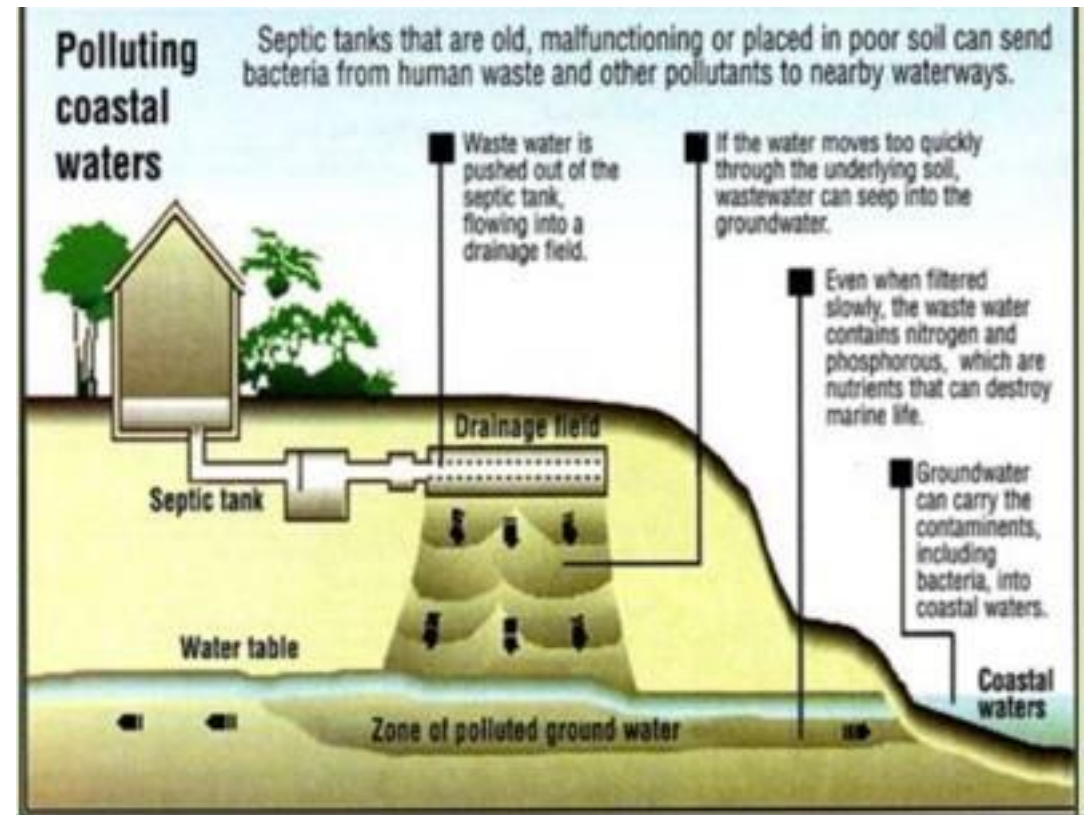
## Suggested Action (5) Focus county efforts on removing high nutrients from wastewater and stormwater

- Primary sources of pollutants
- Whatever it takes to achieve standards in the estuaries and other waterways
- The recommended comprehensive monitoring and reporting program can be used to measure the success of these projects at meeting water quality standards
- Retrofit existing infrastructure and forward thinking planning future development



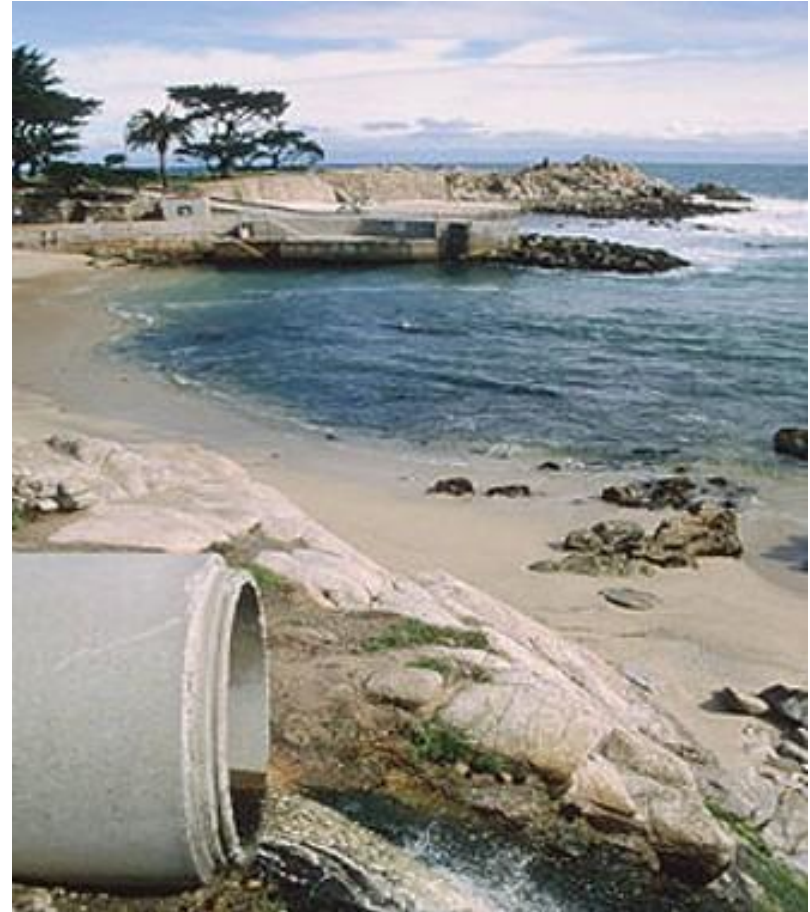
# Wastewater management

- Replace septic systems— on an accelerated schedule.
- Assure wastewater treatment facility discharges to our waterways meet water quality standards (leaks, resiliency)
- Upgrade treatment of reclaimed water before it can be used on residences, golf courses, and other lands where it can run off and pollute waterways



# Stormwater management

- Hold and infiltrate runoff
- Agriculture - capture, store and clean runoff from fields, pasture, feed lots and buildings
- Impending development, NOW is the time to ACT



## Suggested Action (6) Initiate a variety of county complementary resource management programs

- Smaller, widely distributed projects
  - native landscaping
  - waterfront vegetation
  - fertilizer ordinances,
  - habitat preservation and restoration
  - shellfish restoration
- Under direction of a new office of estuaries, waterways and water quality management

## Suggested action (7): Pursue county actions to adapt to and mitigate climate change

- Warming water is the third cause of increased algae blooms
- Florida Friendly Landscaping, preserve native habitats, restore mangroves
- Comprehensive plan opportunity
  - 2021 update must take sea level rise and global warming into account
  - Concept of *Adaptive mitigation* (presented to Beaches and Shores in June 2018) 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
  - Electrical power, Buildings, transportation,

# Suggested Action (8) Create a county education and awareness campaign for water resource issues

- K to Gray
- Audience: Citizens, Elected officials, Staff
- Urgency, corrective actions vital to our economy and lifestyles
- Management of change
- Transparent management process

## Possible Topics

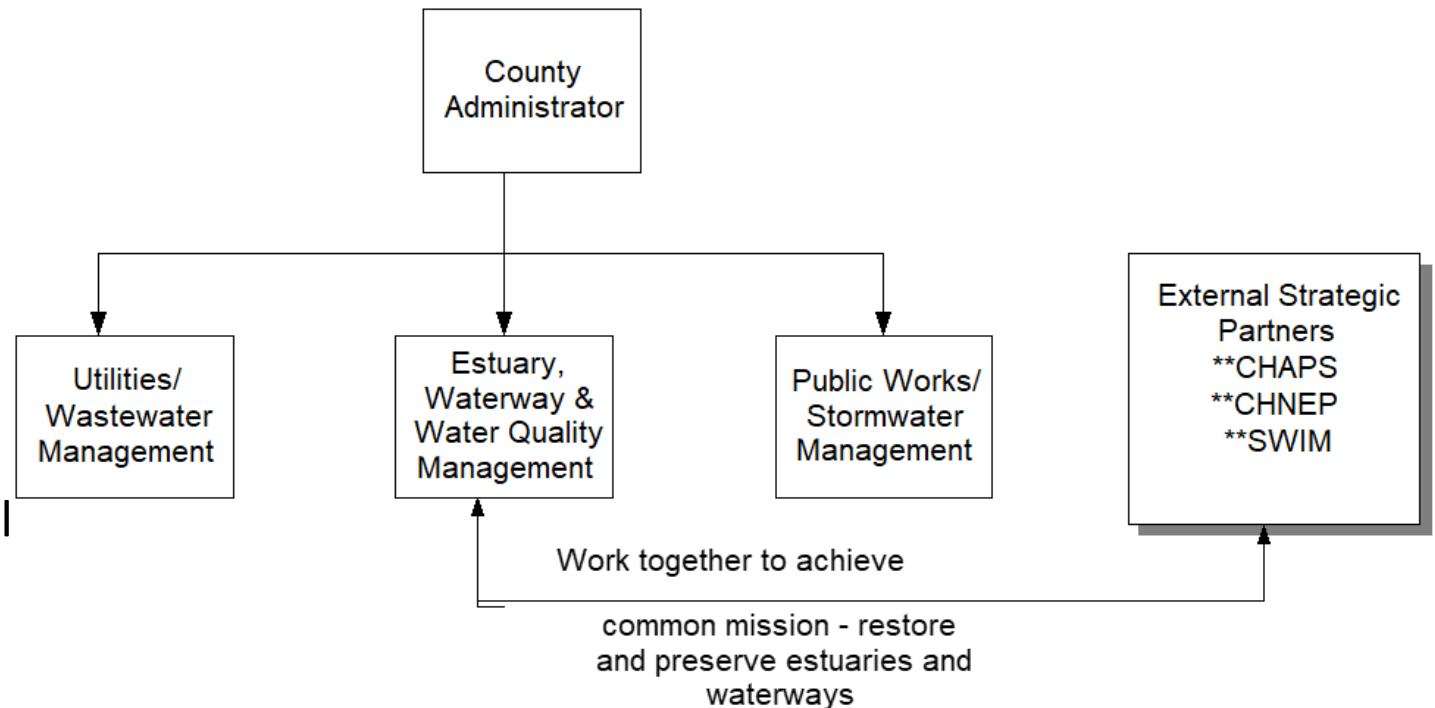
- Estuaries and you – why our economy and lifestyles depend on healthy estuaries
- Water pollution basics – where it comes from and how to reduce it
- History of human impacts to local estuaries – how development put estuaries at risk
- Future human impacts to local estuaries – how to manage future growth to reduce risks
- Water quality monitoring and reporting – why it is so important
- Managing to meet state standards – how it works
- Wastewater and stormwater – understanding projects and budgets
- Retrofitting wastewater and stormwater systems – why it is so important
- Non-native vs. native lawns – why green lawns and exotic palms trees aren't good for waterways and wildlife
- Florida Friendly Landscape Program
- Why mowing and blowing into canals should be taboos

# Suggested Action (9) Engage with strategic allies and partners

- Share expertise and resources
- Smarter operations and investment decisions

## ***Common mission of restoring and preserving our estuaries and waterways:***

- FDEP's Charlotte Harbor Aquatic Preserves
- Coastal and Heartland National Estuary Partnership (CHNEP)
- SWFWMD's Surface Water Improvement and Management (SWIM) program



## Suggested action (10) Manage county organizational change with the help of consultants

- New structure and practices represent major change
- Change is, by human nature, threatening and people/organizations resist change
- 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

# Let's Sum it up

- Charlotte County has a water-dependent economy and lifestyle – which is threatened by our estuary being at a tipping point.
- The county government has neither the structure or processes in place to manage and safeguard the estuaries and adjoining waterways. Change is needed.
- Our suggestion is to change the Structure and the Processes in county Government with the help of an organizational change consultant
- Structure – create function to manage estuary, waterways and water quality
- Process –manage to achieve state standards using 5 essential program elements
- NOW



# Questions, Discussion

Important audience

- Citizens
- Elected officials
- Staff

Discussion >> Actions

