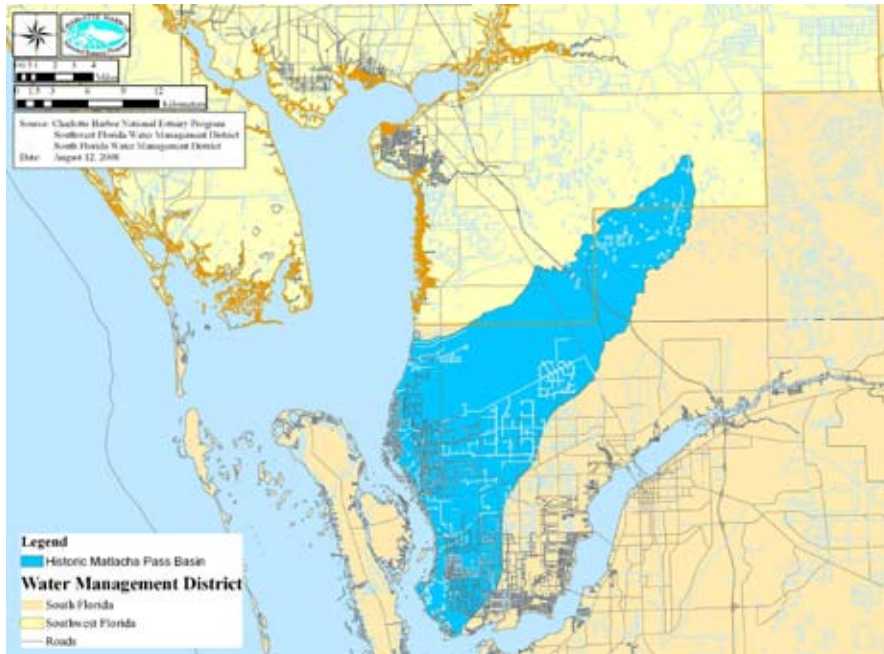


**Cape Coral North Spreader Canal  
Ecosystem Management Agreement Process**

**August 7, 2008 Meeting Report**





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## Executive Summary

The Cape Coral N. Spreader Ecosystem Management Agreement stakeholders group and other participants met on August 7, 2008 at the South Florida Water Management District in Ft. Myers. There were representatives from local, regional and state government and private groups and other interests. The focus of this meeting was on building a shared understanding of the historic, current and possible water flows in the N. Spreader watershed and receiving waters.

The meeting began with a presentation on the Sunshine and Public Records Laws by Mark Lupe, Cape Coral Assistant City Attorney. Members of the Stakeholder Group will need to avoid discussing Group issues with each other outside of a meeting publicly noticed to address these issues and to comply with other requirements outlined in the session. Financial disclosure forms will not be required. The Technical Committee will be considered a “fact-finding” body and will not require public notices.

Kevin Erwin, who was involved in the initial efforts to create the N. Spreader, explained the history of how and why the spreader was built. In the discussion that followed it was acknowledged that the spreader system involved balancing engineering and political realities at the time and that there are mixed assessments of how well it has worked. Oliver Clark, with the City of Cape Coral, showed maps and pictures of the current conditions that focused on the thirteen breeches, including the area where the barrier and boatlift were removed. It was acknowledged that the breeches are impacted by increased flows from the watershed, tidal pulses, varied elevations along the spreader, historic creeks and human activity (cutting mangroves and prop action). There is a desire to know the total flow volumes and the capacity of the system and to apply a business approach that considers costs of options as well as environmental impacts. There also needs to be a determination of how well the spreader system worked in the past and how it can best function in the future.

The Consent Order that created the EMA Stakeholder Group refers to the restoring the historic and predevelopment flows. Jim Beever, who is currently with the Southwest Florida Regional Planning Council and who has been involved with the North Spreader in various capacities, described the historic flows in Matlacha Pass, Charlotte Harbor and the Caloosahatchee River and the related patchwork of equally important habitats. This was supplemented by presentations by Roland Ottolini and Bill Byle from Lee and Charlotte Counties respectively. It was pointed out that water that historically sheet-flowed through the flatwoods in Charlotte County and water that flowed through creeks to the Caloosahatchee is now channeled through Gator Slough to the North Spreader. A key challenge will be to achieve the right, seasonal balance of fresh and salt water in Pass and Harbor.

Roland Ottolini with Lee County and Connie Jarvis with the City of Cape Coral described the data available on current flows and the current and proposed projects that may affect those flows. Here are some points made: 1) In the past, flood protection has sought to move water off as quickly as possible. Now it is recognized that flood plain protection is also very important. It is important to not dewater areas too much in the dry season. 2) Weirs are used to regulate flows and water levels. Water flows north and south of Pine Island Road and to Aquifer Storage and Recovery, ASR, wells need to be balanced.

The presentation on determining future flows was provided by Bob Chamberlain, Chief Environmental Specialist with the SFWMD Coastal Engineering Division. He provided preliminary results of the Southwest Florida Feasibility Study that showed that higher current volume flows from the Gator Slough and lower volumes going to the Caloosahatchee River and Charlotte Harbor as compared to historic flows.

The monthly peaks are different too because water flows more slowly through natural systems. There are three tiers of projects that address water quality and habitat issues as well as flow. These projects will be evaluated using the STELLA model. One of the challenges mentioned in the discussion was determining whether the projects would address environmental benefits adequately so the spreader canal barrier would not have to be replaced. There were also questions about the required timing and funding of projects.

The scheduled discussion of how to define and measure the net ecosystem benefit, NEB was deferred to the next meeting. The next meeting will also seek a better understanding of historic, current and desired water quality in the watershed and receiving waters and the natural resource needs of the receiving waters and other areas.

# Meeting Opening

The facilitators welcomed everyone and provided a brief overview of the Ecosystem Management Agreement process (See Appendix A – Background) and went over the EMA Goals, meeting objectives and agenda. The ground rules in Appendix B were summarized and everyone introduced themselves.

## EMA Goals

- To build a shared understanding of how this natural system has functioned historically, how it functions currently, and how it is likely to function in the future.
- To establish a threshold for “net ecosystem benefit” in terms of volume, timing and quality of flows. This may include a water budget for natural resource, urban and agriculture needs.
- To explore whether a package of projects and funding can be identified that would achieve a net ecosystem benefit (NEB), compared to the reestablishment of the spreader and barrier. As part of this process to determine the cost and effectiveness of a permanent barrier/spreader.
- To explore whether a package of projects and funding can be identified that would achieve predevelopment volume, timing and quality.
- To consider related issues (manatees, boating impacts, property values, etc).

## Objectives

- To build a shared understanding of the historic water flows in the basin and receiving waters and how those have changed over time
- Identify what we know and need to know (questions for the Technical Committee)
- Begin discussion of an approach to determining the NEB threshold
- Plan for subsequent meetings

## Meeting Agenda

- |       |   |
|-------|---|
| 9:00  | Welcome and introductions                             |
| 9:15  | Sunshine briefing                                     |
| 9:30  | History of the North Spreader                         |
| 10:15 | Break   |
| 10:30 | Historic and Predevelopment Flows                     |
| 11:30 | Current flows   |
| 12:00 | Lunch   |
| 12:45 | Current, Planned and Possible Water Projects          |
| 1:30  | Future flows  |
| 2:15  | Break   |
| 2:30  | Initial NEB discussion (Deferred to the next meeting) |
| 3:15  | Next steps  |
| 3:30  | Adjourn   |

# Sunshine and Public Records Law Briefing

David Lupe, attorney for the City of Cape Coral made a presentation on the Sunshine and Public Records Laws (See outline in Appendix B). The Stakeholder Group is subject to these laws because they will make decisions and narrow options on recommendations to the final decision makers for Cape Coral, Lee and Charlotte Counties, DEP, SFWMD and others. The public has a right of access to the meetings and records. These laws are intended to build public confidence in government.

## Questions and Answers

- What about Technical Committee members talking to other people on the Technical Committee? This is not a problem.
- What if two stakeholders or more are at city council meetings? Can we discuss the projects in the EMA? It is okay if the topic is in the public notice of the council meeting. Stakeholder representatives and alternates can speak at a meeting but they cannot talk to other stakeholders and alternates. (Stakeholders may always talk to their own alternates.)
- I am staff to several organizations that have noticed meetings. Can we notice that we will talk about EMA issues? Yes.
- How many from each group will vote? One.
- What if people have financial interest in a decision? There must be a direct pecuniary interest like a connection to the contractor being chosen for a project.
- Can Pete talk to Oliver? Yes, Oliver is not on the Stakeholder group.
- Are we covered by the conflict of interest laws? Yes but financial disclosure forms are not needed.
- Do Commissioners have a conflict of interest if they own property in the area? No, it must be a direct, not general impact.

## History of the North Spreader

### Kevin L. Erwin's Presentation

Kevin was with the Department of Environmental Regulation, DER, when the concept of the spreader was developed. He said he was one of those who did environmental assessments in the State based on Environmental Legislation passed in the 1970s. Before that you could dredge and fill anywhere. At the time, Gulf American Corporation, GAC, was developing Cape Coral by dredging and filling. Historically this area was seventy percent wetlands. GAC was developing out toward the pass on sovereign lands of the State and selling them to people around the country and world. Kevin said he asked Governor Rubin Askew for and got a cease and desist order. GAC filed for bankruptcy, the largest in the state's history. The court appointed business leaders to run the company. There was hate mail from all over the world. People had been paying for their hoped-for retirement lots without having titles. GAC had land all over Florida and the country. The State drew a line in the sand where development had to stop. Florida was growing rapidly. EPA and DER took action to stop new canals to protect Matlacha Pass. They had to decide what to do with Gator Slough. The goal was to get water from Highway 41 off as fast as possible.

Kevin said it was his idea to have the spreader canal and create a sheet flow that would be more like the historical flows. If he had been able to do this, he would have preferred to have the spreader canal located

further upland, to mimic sheetflow approaching the coast, rather than in the mangroves. GAC was fined one million as a result of its dredging and filling, and the money dedicated to maintaining the spreader system. He commented that is hard to believe that it has taken 30 years to get to this point – he always thought the spreader system and the thinking behind it would have to be revisited before now. There has always been a need to deal with septic tanks and control the flows. This was to be a Band-Aid. There wasn't a model. DER didn't have jurisdiction over freshwater wetlands. DER didn't have the support or rules needed for action. We knew there would be blowouts that would be need to be repaired.

Kevin's presentation included photographs and diagrams. They found ways to create the eco-park and restore hundreds of acres but much more needs to be done. He also showed the location of boatlifts to provide access to residents on canals.

### Questions and Answers

- Was the one million dollar fine to be used to maintain the spreader? Who was supposed to do it? Yes and it was to be done by DER (Now DEP).
- I was told that the water level in the canal was supposed to be 14 and someone else said it should be 16.” Which is it? I don't remember.
- Do spreaders work? There was another spreader build that I opposed it because it impacted a quality wetland. In Cape Coral the area had already had canals. The canal and barrier would have been better if it was built on more solid ground. I couldn't push it more upland because this land already had homeowners who objected.
- Did the spreader hold water? No. There was a lot of work being done by Lee and Charlotte Counties and it was clear that the wall wouldn't hold up to the increased pressure.
- What about the tidal affect? That would be minimal.
- Did EPA stay involved? Yes they were active and backed the state. USACE was in charge of the Clean Water Act and opposed EPA. They didn't recognize the need for the Clean Water Act. We had a stakeholder group and we were trying to reduce the number of lawsuits.
- Were other uses designated? There were other projects that did not have the issues Cape Coral had.
- Jim Beaver reported that he helped direct the stakeholder committee that included DER, Cape Coral, the Department of Natural Resources, DNR, and others. Repair of the breeches was paid for from the interest on the \$1 million. The money was also used for research on water quality and sampling in the canals and pass. 1984-88 breeches were repaired. Many breeches were created by human action where there were natural connections. Jim Beaver moved from DER to DNR. He suggested talking to Gordon Romeis about the breeches.
- What is the history of the breach restoration activities? DEP has a record. There was a project in 2001. Gordon has the information. There were water quality efforts too.
- What would be a mean elevation of the spreader? There is not an even elevation. There are wetlands, uplands, mangroves, etc. There was never really an impoundment. It was tidally connected. There was some water treatment in the mangroves. Some solids settled in the spreader canal.
- The spreader was the best thing that could be done at the time. There is a question about how you get sheet flow through the wetland. Bonita Bay has some flow.
- Does anyone know the residual value of the trust fund? Yes. At the last meeting it was said that there is \$700,000 plus \$1000 interest. Eli Fleishauer will check on the amount.

## **Oliver Clark's Presentation on Current Conditions**

Oliver with the City of Cape Coral, started by showing an aerial photograph of the area along the N. Spreader that will be covered in the helicopter tour. He showed photographs from breach 13 at the boat lift going north. The power point presentation can be seen by going to: <http://www.dep.state.fl.us/south/TMDL/tmdl.htm>. Breach 13 widened 20' in 6 weeks and was 17-20' deep. There was flow through 6 acres of Mangrove. David Scott, a mangrove expert inspected the area. There was shoaling and sediment in the canal related to breaches 12 and 13. The barrier was removed primarily to reduce flow through the mangroves. Now the flow goes through the channel. Breach 8, 7 and 4 were shown. Some water moves toward Charlotte Harbor. Breach 1A is one of the larger ones. There was a question about the abandoned GAC canals on the map that are west of the spreader canal. There is tidal action in these canals. Breach 1B is new and occurred even with the breach around the barrier.

### Questions and Answers

- What kind of human activity contributed to the breaches? Some breaches may not have had human impacts. Others were created by people to create a quick way for a small boat to get to the pass. In some cases one can see where chainsaws were used. People take in 18' boats and use gill nets for mullet. There is an area about 4' high with pine and palm habitat. There are a multitude of low areas. There has been illegal human activity to make a bad situation worse. People come from the canal and from the pass.
- What caused the last breach? It may be from tidal action.
- Is there a problem with melaleuca intrusion in the wetlands? Yes.
- What dredging going on? The dredging was part of removal of the barrier and cleaning up the shoaling.
- How is the breach around the barrier being treated? We are hopeful that this will fill in and heal itself.
- What is the depth of the spreader canal? Nine feet with some shallow areas.
- Where is the dredged material going? It is going to a collection area.
- We may want to look at the change in flow that may have influenced the new breach 1B. A recent Cape Coral project should have reduced the flow.
- We can have high tides that could have created the breach from the seaward side. Stormwater is important but we must consider tidal dynamics.
- Breach 1B influenced by tide, flow, season, etc. What is happening with the dead trees and clear land? It there a lack of flow. The dead trees are melaleuca. The water is lower and allows the exotics to move in.
- The spreader was a quick fix for criminals who were taking state lands. We know what is wrong with this. If spreader was the wrong solution we don't need to talk more about it.

### **What else do you need to know?**

- I want to know the total volume of water in the system and the capacity of the system?
- Can we take a business approach to this and decide if we need to control the flows or rebuild the spreader [barrier and wall]. Cost needs to be considered.
- Was there a survey? There was a 1993 survey. What were the changes in elevation? Was there a berm or was it at grade. The original design was based on existing conditions and politics. We need elevations to do a spreader [wall].

- Kevin didn't say it doesn't work, he said it needs maintenance. Other engineers on the job say that it did work.
- Need the tidal volumes and depths in the canals.
- How effective was the spreader system in the past, present and future?
- Are the breeches occurring in the same places? They happen where there were activities. We saw the same spots in the 80s. It would blow out around the plugs that were put in. Removing the barrier will change the internal flows.
- If this is the best we have to offer and we have a storm event we have a problem. If we leave it open what is the time frame for action?

## **Historic and Predevelopment Flows**

### **Jim Beever's Presentation**

Jim Beever with the Southwest Florida Regional Planning Council began his presentation by stating that this part of Florida was not above water until about 6000 years ago. The elevation differences seen today are old marine terraces. The historic cover was a mixture of upland pine, forested wetlands, and marshes. There was not a lot of flow to Matlacha Pass from creek systems. Much of the historic flow ended up as creeks flowing to the Caloosahatchee River. Much of Southwest Florida is very flat. There are hydric pine flatwoods growing over wetland under-story. This is a tropical hydrology but people have tried to deal with as if it is a temperate system, which it is not. There is a tropical wet season, "the monsoons." The main driver of hydrology is precipitation.

Historically, people tried to get the water off the land as quickly as possible. The upland soils are sandy and nutrient poor. Freshwater did not pick up much in the way of nutrients. High water quality is a natural occurrence with freshwater flowways naturally low in nutrients. Naturally occurring plants pick up what nutrients there are and turn them into biomass. The relative proportion of freshwater wetland to saltwater is high. What we do with the freshwater wetlands will determine what happens in the saltwater wetlands. Sheet flow is the natural path of delivery. What was in people's minds when they designed the spreader?

The estuary is a mixture of fresh and saltwater and it needs the freshwater. There is no such thing as water lost to tide; the estuarine system needs the right amount of freshwater. Southwest Florida a patchwork of equally important habitats defined by elevation, soil, fire and linked by the thread of water. Typically, one square mile will have seventy depressional wetlands. Historically everyone tried to get rid of the water, in part to have a low water table that does not interfere with septic tanks. More recently, there has been more interest in retaining water for human use.

Babcock-Webb water was historically distributed, mostly to the Caloosahatchee River. Now berms and channels redirect the water to the Gator Slough. Now there is anywhere from 2/3 more to double the amount of water in Gator Slough than historically.

No matter how much you try to balance, you will exceed your flows at some point

### **Roland Ottolini's Presentation**

Roland with Charlotte County Natural Resources stated that much of the historic flows went to Charlotte Harbor and the Caloosahatchee River. We don't actually have a model of historic flow ways, but one

could get a good estimate by looking at the areas that are still preserved in the CARL lands. They could be used to get an idea of what the discharge rates were.

The current system for Lee County has been dynamically modeled. This is primarily a surface water model. The size of the watershed is large

### Questions and Answers

- Are there current projects or plans to divert plans back east?
- “Grand Central” around US 41 – may reflect historic behavior of the system as well.
- Modeling has been done for SW FL Feasibility Study using the MIKE 11 model. It shows flows to the Caloosahatchee River and Charlotte Harbor.
- The STELLA (point flows) model can be used to describe responses to changed conditions from new projects.
- When were other basins connected?

### **Bill Byle’s Presentation**

Bill, an environmental specialist with Charlotte County, reported studying a Charlotte County 2003 map and DOT maps and going out and inspecting the redirection of water from north of Gator Slough including the Babcock-Webb tract, down along US Highway 41, back and forth, and finally directed to Gator Slough, through Heron’s Glenn, other areas. The Charlotte Harbor National Estuary Program has been comparing current and historic basins and can provide the files. There are stormwaters that would historically have gone to Charlotte County and now flow to Lee County. Are these flows the responsibility of SWFWMD? Should we be looking to SFWMD for funds to fix this?

Historic flows to the coast have been changed drastically – all we have now are estimates of what they could have been. The North Spreader Canal cuts through about 12 sub-basins. We expect that there were sheet flows historically. When the water got this close to the coast it went through creeks.

### **Summary Questions and Comments on historic flow.**

- If the breaches are occurring repeatedly in the same places, is the water trying to recreate historic tidal creeks?
- You have to look at soil types when you think about sheet flows. Soils west of the spreader system are predominantly organic soils. We may not be able to maintain sheet flow over organic soils without the water forming creeks.
- We have a historic situation with a large number of basins that flowed to Charlotte Harbor and the Caloosahatchee River. It is largely sheet flow that develops into rivulets and then creeks.
- We need to increase flow into some of the creeks.
- When we shift water away from one place we need to look at downstream impacts.
- We need to look at rehydration of some areas.
- We need to look at the historic creeks and how to restore them. Don’t mess with “mother nature.”
- There is a need to see how the historic flows will affect the sea grasses and fish.
- What is the amount of fresh water that flows out to the pass? The key question is about how it mixes with the salt water.

- Our task is to make it as good as we can. We have to acknowledge that we have property rights and will have more development. We may not want to waste time trying to get where we will never get.
- On Babcock Ranch we set an aspirational goal that we know we won't meet. We may be able to set aside some storage in the basin. We need to look at the whole watershed.

## **Current Flows and Projects**

Note – There are lists of Cape Coral, Lee County and SFWMD projects in Appendices ???

### **Roland Ottolini Presentation**

Roland is with the Lee County and showed a number of photos and maps. One map indicated the basin divide between flows that go to the Pass and the River. It is not a fixed line. It may vary depending on the location and intensity of rainfall. The future land use map indicates mostly residential with some commercial uses. There is a preserve on the north side of the basin.

Cape Coral did some weir enhancements on Gator Slough and there are a number of Lee County projects shown. Cape Coral raised weirs along burnt store road. Historically people channeled waterways and tried to get rid of the water as quickly as possible. Flood protection when it is at its best is flood plain preservation not just drainage projects. We need to design to predevelopment flow rates and assure that we don't dewater areas in the dry season. It may be possible to convey water to creeks and to the Caloosahatchee River and away from the Spreader Canal. We can do environmental weirs. We have a flow way extension that is a shallow conveyance to Gator Slough.

It is challenging to restore flows with existing roads and development. New projects can't flood people out. We are trying to put in culverts on Burnt Store Road, which is an evacuation route without changing the water level.

### Questions and Answers

- Are there water quality monitoring points? Yes on all the creeks.
- What are the water quality conditions in the canals?
- How much of the SFWMD involves gator slough? Not much.
- Some development was done before flow rates were set. We need to look at what can be retrofitted without buying houses. We need alternatives.
- Are there flow stations on the canals? Yes. The city has numbers from the MIKE 11.
- Where is the water going today? We don't know and it is hard to know because of tidal dynamics and we won't know in the timeframe of this project.
- We need to look at water quality in the pass in 2004 and currently.
- There are three sources of data: Charlotte Harbor has been doing water quality monitoring since '88, the Charlotte Harbor Aquatic Preserve has a 24 hr data logger, and has monitored sea grasses since '99 and Cape Coral has data for canals and periodically for the Pass.

### **Connie Jarvis' Presentation**

Connie is with the City of Cape Coral, showed that there are 18 basins in canal system on a map that shows

flows. In the 1990s Cape Coral put in weir improvements with bladders that are adjustable. Weir 19 has manual flaps. Later it will be electronic and it will be a model for other weir improvements. There is an Aquifer Storage and Recovery, ASR, system with 6 wells. Three exploratory wells are being drilled. Four pumps will move 9 MGD.

There was a question about how is canal water treated? We have to show that water quality is satisfactory as required by permit. It has to be treated. Cape Coral Utilities has Reverse Osmosis and WICC plants. See the service area maps. There are stormwater projects to replace and upgrade and clean stormwater basins. There are projects for swale creation and maintenance.

### Questions and Answers

- Is SFWMD looking at permitting? Yes one for supply and one for irrigation (960 MG)
- Cape Coral has minimum flow levels more than volumes.
- Does the City have plans for water quality?
- How do we calculate ASR with the land use to estimate flows?
- People north of Pine Is Rd are concerned that pumping water south is bringing down their canal levels. We are working to get water from Gator Slough to the canals.
- There are two systems. Pumping in the freshwater system is providing irrigation water. Canals are considered retention water.
- What do grates do? Water sets in the swales and then flows through the grates to canals.
- What about arsenic? There is a drinking water standard that has been lowered from 50 to 10. It doesn't apply to ASR water.
- It would be nice to have stage ratings.
- Do all canals north of Pine Island Road connect to the N Spreader? Yes, except one little canal.
- I have looked at permits and projects north of Pine Island Road and they list the Caloosahatchee River as their watershed.
- The transfer stations seek to optimize dual use demand north and south.
- There is water moving south for irrigation purposes.

## **Future flows**

### **Bob Chamberlain's Presentation**

Bob is the Chief Environmental Specialist with the SFWMD Coastal Engineering Division. He began his presentation with an overview of the SW FL Feasibility Study, SWFFS that includes Cape Coral N Spreader watershed and areas to further south to Big Cypress. The USACE and WMD engineers have developed models for the SWFFS. They have daily flows and average flows for 9 years. The SWFFS are designed to help restore SW Florida in a way similar to the Comprehensive Everglades Restoration Project, CERP. There are projects in several counties.

There are flows going to the Matlacha Pass and the Caloosahatchee River that Roland has covered. The MIKE II model shows flows from Zimel Canal North including the natural systems. There are 2000 and 2050 base maps in Charlotte County with flows by month. There is a projection of future land use in 2050 with local government and agriculture uses. Beber population growth projections were used. The

STELLA model can be used to show the impacts of projects. This shows how natural flows have been transferred. There are 116 watersheds. Transect 2 is our area. Current and future flows are higher than natural flows. Charlotte harbor is getting less water and the Pass is getting more. The historic model is based on the old basin. The basin had changed. Comp plans show zoning not whether there are houses on the lots.

### Questions, Answers and Comments

- Did the canals change the system? Yes. There are also changes because of increases in impervious surfaces and changes in vegetative conditions.
- Modeled lines have different purposes than actual lines.
- There are some seasonal fluctuations historically that has been lost in the current and projected conditions.
- Transect 2b if for the area south of Pine Island Road.
- The model for Gator Slough indicates volumes greater than the natural system flows. This shows project impacts.
- Could we say that the difference is how much water we need to store?
- Average daily flow to the Coast shows peaks and lows.
- Why are the peaks different for different months? When you manage water you may have a lag in the impact. Natural systems put water out slowly. The initiation and duration may change.
- The SWFFS was a super collaborative project with 40-50 public and private partners.
- CERP had a restoration coordination team and came up with projects in an Access database. These were used for the feasibility study. We talked to Charlotte and Lee County. The SWFRPC worked on land acquisition. These projects are to improve water quality and habitat as well as flow. We have prioritized projects in 3 tiers. Some projects have already been implemented without being federally approved.
- Benefits Activity Tracking, BATS, is being used.
- Projects in Yucca Penn have components that intercept water from Gator Slough and hold it on the surface (2 feet deep).
- We can print a list of projects for the next meeting.
- There is a 220A filter marsh. We want to take the top off flows and use the marsh to clean the water.
- We may want switches that can move water south to the Caloosahatchee River. Some of these creeks run too dry and impact fish and habitats.
- Water needs to be moved into the proper watersheds.
- When you have better hydrology on a flatlands and it helps with exotic plant control. This has benefits for listed species and fisheries. There needs to be a blend of fresh and salt water.
- Who will take the lead? The SWFFS is done by the USACE and the SFWMD. There is a project implementation report on the DEP web site. There are many agencies that will review the report. Funding will be put in as a WERTA bill. The FWC has management areas here. Lee County and the SFWMD want to support needed improvements. Charlotte County wants rewatering of the flatwoods.
- This is where we need to be going. We need to use these areas for retention and filtering. If we can accomplish these, what else do we need to do for the N Spreader? We can bring the projected system closer to the natural system. You can have a plan for the Matlacha Pass and the Aquatic Preserve State Park. You can also address other issues including nutrient management and stormwater management in Cape Coral and other communities putting water into the spreader

system.

- If we stop fertilizing and extend sewers, etc. do we still need to put the barrier back?
- We may want to rethink the Cape Coral shoreline. There are management options to achieving the purpose of the spreader. If we have other ways to address environmental problems of development we may not need to put the barrier back. It may involve major lifestyle decisions in Cape Coral.
- Can there be a management plan for distribution of water?
- Looking at 2a shows the need to reduce flows North of Pine Island Road. What can we do differently? Can we have a retention pond every so many lots have, more swales, etc. Another place did a stormwater water management plan with an area-wide storage facility that became a popular park rather than retention on each property. This can change both water quantity and quality.
- We need a workable plan and buy-in for gradual implementation. Some things may take many years.
- What about the build out to 2050? Could we have improvements as we go? We can implement standards and make land use decisions.
- Can we have a NEB without changing the increased flow resulting from the barrier removal? This is a difficult question. We need to determine the impact of removing the barrier.
- We will need a short and long-term component of our plan.
- Some things will take 10 years other things can be done in the short-term.

### **What do you need from the technical team?**

These are some of the questions raised by the group:

- What is the possibility of getting STELLA outputs for yellow creek? We have those and we can do some comparisons.
- What is the impact of the new flows from the barrier removal compared to flow from multiple breeches?
- Are we going to change the hydroperiod of the existing marsh?
- What improvements are needed on the creeks to move more water to the Caloosahatchee River?
- Can there be hydraulic modeling of the flushing system of the spreader waterway?
- It would be good to look at the pass and conditions there.
- What are the flows we want to achieve?

## **Next Steps and Closing**

### **What topics do we need to talk next time?**

- We may want one whole meeting on water quality.
- We should look at the impacts of the flow on Matlacha Pass, ground water, etc,
- Also look at the things we can do to improve water quality.
- Put the issues together and plan a 2-day meeting. We need background. (The facilitators asked for a show of hands and 16 were OK with a 2-day meeting.)
- Water quality may involve canals, the Matlacha Pass and Cape Coral. Do you want charts and data? Yes
- Look at what the Stakeholder Group has to do and what can be sent to the Technical Committee.
- Look at the Counties' and City's data and see where the problems are and where we need to focus our projects.
- Take water in the order of where it comes from.
- We talked about getting sensors to measure new flows after removal of the barrier. Cape Coral will

be doing some monitoring. The technical committee will take this up.

- If Cape Coral can capture water coming in and use it, we don't have a water quality problem. We want to restore some systems. We need to talk more about quantity of water. We want to know the historic levels.
- We need to set a target for water quality based on the historic conditions or the conditions in the habitat. Charlotte Harbor Aquatic Preserve has done considerable work on this.
- Look at how water quality affects sea creatures.
- The NEB assumptions and questions were briefly presented and deferred to the next meeting

# Appendix A – Process Background

## THE CAPE CORAL NORTH SPREADER ECOSYSTEM MANAGEMENT AGREEMENT PROCESS

In the 1970's the Florida Department of Environmental Resources (a predecessor of today's Department of Environmental Protection, or FDEP), required General Development Corporation, principal developer of the area that would become the city of Cape Coral, to cease dredging canals through the mangrove fringe as part of its residential developments, and to install a system to collect and treat water from areas it had already developed. This system became known as the North Spreader. It consists of a seven-mile long canal, roughly parallel to the coast, with a western "spreader" berm, a barrier to flow near the southern end, and a boatlift at the barrier. The spreader collected water from the developed area and canals and distributes it in an even "sheet flow" through the mangrove fringe to its west, in order to filter it before it reached Matlacha Pass and the larger Charlotte Harbor ecosystem. This system, and some of the legal obligations that flowed from the state's enforcement action against GAC (described in a document known as a Consent Order 15), were inherited by the City of Cape Coral.

Over time, as development in the North Spreader watershed increased and as water from other areas was redirected to it, a number of breaches (thirteen by 2008) developed in the western spreader wall of the canal. The largest breach developed around the western edge of the boatlift. An aerial assessment of the North Spreader in July 2006 by FDEP showed accelerated growth of several of the breaches into the tidal wetlands to the west. FDEP therefore undertook enforcement action against the City of Cape Coral to remedy the situation.

In discussions with FDEP in 2007, the City initially planned to address the large breach around the current barrier and boat lift by building a new, better engineered, storm water barrier and lift north of the current location. In subsequent discussions, however, Cape Coral argued, and FDEP agreed, that relocation of the barrier and lift was unlikely to address the underlying problems with the spreader. These resulted largely from the greater volumes of water directed to the spreader as a result of development since the 1970s, and as a result of the hydrologic connection of neighboring basins to the area served by the spreader. Relocation, they believed, would simply lead to greater hydrologic pressure north of the new structure, and result in additional breaches in the western spreader wall, with corresponding additional damage to tidal wetlands and mangroves.

Cape Coral and FDEP therefore agreed to amend the consent order to undertake an Ecosystem Management Agreement Process, as described in Florida Statutes. The EMA process allows a state agency and a regulated party to convene the full range of stakeholders affected by a potential enforcement issue, and to jointly develop with them a package of measures or projects that collectively provide a **net ecosystem benefit** – an outcome better for the environment – when compared with the results of conventional enforcement action. To arrest further erosion damage to the tidal wetlands while the EMA process is underway, the amended consent order also provided for the potentially temporary removal of the existing barrier and lift. If the EMA process did not reach agreement on measures that would provide a better outcome for the environment, Cape Coral would be required to rebuild the barrier.

An initial version of this amendment to the consent order was adopted in early 2008, and subsequently challenged by petitioners, including individuals, citizen and environmental organizations, and Lee County. The petitioners were concerned that removing the stormwater barrier would allow large amounts

of freshwater into Matlacha Pass at a single point, potentially causing more harm, in their view, than the breaches in the spreader wall. They also believed safeguards should be included in the consent order to ensure that the barrier would be rebuilt if agreement on NEBs were not reached through the EMA process. After further discussions between Cape Coral, FDEP and the petitioners, all agreed to a second amendment of the consent order that allows the EMA process to go forward, and that provides strong assurances that Cape Coral will rebuild the barrier and boat lift if no package of measures can be found that would provide a net ecosystem benefit. If Cape Coral is required to rebuild the structures, the City will not have any obligation to undertake the design and construction of any other work along the spreader canal.

The stakeholder group will meet for twelve months. It includes representatives of local, regional, state and federal governmental agencies, citizen and environmental groups, and communities affected by the North Spreader. The stakeholders bring very different initial perspectives on the wisdom of removing the barrier and on the best approach to solving the problems. They share, however, a commitment to working together to find the best solutions for the problems of the North Spreader and the ecosystems it was intended to protect.

If, at the end of twelve months they do not reach consensus on a package of realistic measures that they believe would provide a greater ecosystem benefit than rebuilding the barrier and boatlift, then Cape Coral will be required to rebuild the barrier and boatlift. If the group does reach consensus, the city and other stakeholders will proceed with implementation of the alternative measures.

# Appendix B – Meeting Packet

## STAKEHOLDER GROUP GROUNDRULES

### I. AN APPROACH TO CONSENSUS

Consensus is a process, an attitude and an outcome. Consensus processes have the potential of producing better quality, more informed and better-supported outcomes.

As a **process**, consensus is a problem-solving approach in which all members:

- Jointly share, clarify and distinguish their concerns;
- Educate each other on substantive issues;
- Jointly develop alternatives to address concerns; and then
- Seek to adopt recommendations everyone can embrace or at least live with.

In a consensus process, members should be able to honestly say:

- I believe that other members understand my point of view;
- I believe I understand other members' points of view; and
- Whether or not I prefer this decision, I support it because it was arrived at openly and fairly, because provides a good and acceptable way to solve the problems we are addressing, and because it is the best solution we can achieve at this time.

Consensus as an **attitude** means that each member commits to work toward agreements that meet their own and other member needs and interests so that all can support the outcome.

Consensus as an **outcome** means that agreement on decisions is reached by all members after a process of active problem solving. In a consensus outcome, the level of enthusiasm for the agreement may not be the same among all members on any issue, but on balance all should be able to live with the overall package. Levels of consensus on an outcome can include a mix of:

- Participants who strongly support the solution;
- Participants who can “live with” the solution; and
- Some participants who do not support the solution but agree not to veto it.

### II. PARTICIPATION

#### A. Stakeholders Group

The Amendment to the Consent Order reads, “The City (Cape Coral) shall initiate the EMA process by proposing a broad-based team of stakeholders (Stakeholders Group) including federal, state and local regulatory agencies with jurisdiction over the affected area, other governmental entities, environmental groups, citizen groups including not-for-profit organizations concerned with water quality, fishing and the environment that request to participate and others for Department approval. (See the initial list of stakeholders in Appendix A.) The City shall work with the Stakeholders Group to develop a report that contains a list of recommended projects that will result in a net environmental benefit to the Charlotte Harbor Preserve, Sate park, Matlacha Pass Aquatic Preserve and Charlotte

Harbor Aquatic Preserve (receiving waters).”

The Stakeholders Group will build a mutual understanding of the situation, identify, evaluate, prioritize and seek consensus on projects to be included in the EMA. They will be supported by the facilitation team and Stakeholders Group staff and consultants.

### **B. Designated Representatives and Alternates**

Each governmental entity or non-governmental group that is a member of the Stakeholders Group shall designate a single representative and an alternate to formally represent them in deliberations, consensus testing or decision-making as appropriate. These persons shall be designated in writing to the facilitators. Alternates will be expected to attend all Stakeholders Group meetings to remain sufficiently informed to participate effectively.

### **C. Other Participants**

Others may participate with the stakeholder group in discussions and deliberations. These may include:

- Other interested agencies or governmental entities;
- Individuals or groups interested in the issues under discussion;
- Staff and constituents of governmental or non-governmental groups represented on the stakeholder group;

Only designated representatives or alternates will be involved in the consensus testing. Representatives may consult with the other participants prior to consensus testing.

### **D. Contact List**

A contact list will be maintained for distribution of materials and information related to the process. The list will include Stakeholder Group members, other participants, and any member of the public who requests to be placed on the list.

### **E. Technical Committee**

The Stakeholders Group shall appoint a Technical Committee to gather and analyze information, and provide the technical foundation for evaluation of alternatives. A Technical Lead will help the Committee develop and implement an integrated plan for its work.

### **F. Subcommittees**

The Stakeholders Group may designate other subcommittees as it finds useful in furthering its work.

### **G. Facilitators and Support**

The Florida Conflict Resolution Consortium facilitation team will work with agency staff, consultants and others to manage the EMA process, design agendas, prepare meeting materials and provide

reports.

### **III. DISCUSSION AND CONSENSUS-TESTING**

#### **A. Inclusive Dialogue**

Stakeholders Group discussions will be designed to ensure that all perspectives have an opportunity to be heard and discussed. Other participants will be given frequent opportunities for input at the discretion of the facilitators.

#### **B. Discussion Guidelines**

Members and participants recognize that others involved in the EMA process represent a variety of differing perspectives. To promote open discussion of difficult issues, members will be asked to abide by the following guidelines.

- Expect and respect differing perspectives.
- Listen to understand. Listening does not necessarily indicate agreement.
- Offer ideas for discussion. This indicates a desire to explore the idea, not necessarily support for it.
- Clarify your assumptions
- Ask questions.
- Seek solutions that work for everyone.
- Speak one at a time and in the order established by the facilitators
- Say everything that needs to be said, concisely.
- Focus on issues, not personalities.

#### **B. Consensus-Testing**

At various points in the process, the Stakeholders Group will use the following scale to evaluate individual ideas, groups of ideas, or drafts. Such evaluation will not constitute a formal decision – just a gauge of the group’s current reaction to the ideas under consideration.

- Wholehearted support. This is what I would do.
- Support, although it may not be what I would prefer.
- Minor reservations. I can probably support this, but I would like some clarification or refinements.
- Major reservations. I cannot support this without major changes.

## **IV. DECISION-MAKING**

### **A. Consensus Draft Development**

Draft recommendations may be developed in the full group or in subcommittees. Subcommittees may meet between Stakeholders Group meetings in publicly noticed sessions to develop initial draft recommendations.

Stakeholders Group members may be asked to individually rate the acceptability of each initial draft recommendation using a consensus testing scale. Full group review and discussion of the rated recommendations will follow.

The drafters of the recommendations (a subcommittee or the full group) will then be asked to address concerns and suggestions expressed during the full group review in redrafting and refining the draft recommendations.

Steps 2 and 3 may be repeated as necessary to produce more generally acceptable options. Unless they agree otherwise, the Stakeholders Group will have at least two opportunities in the full group to discuss and evaluate any option, and to seek to refine it for greater acceptability.

Re-drafted recommendations will ultimately be compiled into a single text for the Stakeholders Group's review and refinement. Unless they agree otherwise, the Stakeholders Group will have at least two opportunities in the full group to discuss and evaluate draft report, and to seek to refine it for greater acceptability.

### **B. Ninth Month Continuation**

The Stakeholder Group is required by the consent order to decide at the ninth month in the process whether it appears "reasonably probable that the Stakeholder Group will be able to develop a Report with recommended projects that will result in a net environmental benefit." If there is not a consensus to proceed then the EMA process will end and the City of Cape Coral will proceed to construct a permanent barrier and boatlift.

### **C. Consensus Final Report**

Once a draft final report has been developed using the process outlined in IV (A) above, Stakeholders Group members will be asked to rate the report as a whole. The consent order requires consensus of the stakeholders for adoption of the final report. Consensus on the final report shall be understood as a rating of "2" or higher on the following scale by each member (or alternate) of the Stakeholder Group present at the final meeting.

4. Wholehearted support. This is what I would prefer.
3. I can support the proposed measures, although they may not be what I would prefer.
2. I do not fully agree with the proposed measures, although I may believe they have some or even a great deal of value, and I need to register my disagreement. However, I do not choose to block the decision.
2. I do not agree with the proposed measures, and I feel I must block their adoption.

Note: if there is not a consensus to proceed then the EMA process will end and the City of Cape Coral will proceed to construct a permanent barrier and boatlift.

## **V. OPEN MEETINGS**

The EMA process will be conducted as an open public advisory process consistent with applicable law. All meetings of the Stakeholder Group and its subcommittees will be noticed. The public will be afforded opportunities for comment and input throughout the process.

## OVERVIEW OF SUNSHINE AND PUBLIC RECORDS LAW

Mark E. Lupe, Assistant City Attorney  
City of Cape Coral

### Sunshine Law and Public Records

- Florida Statutes, Chapter 286, the “Sunshine Law” protects the public from “closed door” decision making and provides a right of access to public meetings.
- Florida Statutes, Chapter 119, the “Public Records Law,” creates a right of public access to non-exempt records made or received in connection with official business of a public body.

### Sunshine Law, It requires:

- All meetings of public boards or commissions must be open meetings.
- Reasonable notice of meetings must be given.
- Minutes of meetings must be kept.

— Florida Statute Chapter 286 applies to all meetings of “any board or commission of any state agency or authority.”

### Meetings

- Must be open to the public; no right to public participation
- Include any discussions or deliberations, *formal or casual*, between two or more Board members about a matter on which the Board might foreseeable take action
- Include workshops, telephone conversations, e-mail communications, seeing each other at the grocery store and use of liaisons (daisy chaining)

### Reasonable Notice of Meetings

- Reasonable notice is ample notice given to the public and press, which reasonably and timely conveys all information necessary to enable them to choose to attend.
- Reasonable” depends upon situation’s circumstances.
- Meeting may not be held at facility/location inaccessible to public or which discriminates due to presence of physical barriers.
- AG opinion for non-emergency meetings not less than 48 hours notice should be given

### Meeting Record

- Minutes must be recorded and open to public inspection.
- Minutes need not be verbatim-- summary of meeting’s events is sufficient.
- Sound recordings may be used in addition to written minutes, but if used, must be retained.

### Voting

- Votes must be publicly taken
- No secret ballots
- Roll call vote not required
- All members must vote (unless there is, or appears to be, a conflict of interest) and the minutes must so reflect by recording of the vote *or* counting a vote for each member

### Application of the Sunshine Law

- Sunshine Law is broadly construed and exemptions are narrowly construed
- No use of evasive tactics such as  
Circulation of written reports  
Single staff member reporting *to each member* what the other members think re: an issue,  
including information relayed to administrative staff

### **Meetings the Sunshine Law Applies To**

- Gives the public access to meetings of “any board or commission of any state agency or authority or of any agency or authority of any county, municipal corporation, or political subdivision”  
*AND*
- Allows the public to observe each preliminary step leading to the final decision.
- Prevents the Board from creating closed committees that narrow the Board’s decisions.
- Applies to Board appointed committees that make recommendations.

### **Applicability of Sunshine Law to Committees, There are two types of committees:**

- Decision Making Committees become part of the public body’s decision-making process.  
Choose alternatives and direction; narrow or eliminate options for the public body’s  
consideration.

Make decisions by voting.

Make recommendations to the public body directly or through staff.

Applicability of Sunshine Law to Committees

- Fact finding Committees provide a source of community input and factual resources and:  
Have no characteristics of a Decision Making Committee.  
Provide individual input, data and factual findings to staff, as part of staff’s development in its  
advisement to the Board.  
Do not take votes or narrow options.  
Strictly information gathering and reporting.

### **Penalties for Noncompliance**

- Second degree misdemeanor to knowingly violate Sunshine Law
- Removal from position
- Fine of \$500 or less
- Reasonable attorneys’ fees
- Declaratory and injunctive relief
- Action taken at illegal meeting invalid

## **PUBLIC RECORDS LAW**

- Creates a right of access to records made or received in connection with official business of a public body. (*F. S. Chap. 119*)
- Public Records include: All documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of physical form or means of transmission made or received pursuant to law in connection with transaction of official business of the agency.

### **The Public Records Law Applies to:**

- Records developed by the Board, Board Appointed Committees, and employees
- All types of records including written communications, letters, notes and e-mails.

### **Public Records Requests:** Can be made:

- Verbally or in writing,
- By any person and may be anonymous

### **The Board or Board Appointed Committee:**

- **Has a “reasonable” time to respond.**
- **Can charge for the cost of retrieving records if the amount requested is voluminous.**
- **Can charge 15 cents/page.**

### **The Public Records Law does not require:**

- That questions be answered or documents created – applies to existing responsive records
- The creation of records or the provision of records in the format requested
- An explanation of the records.

### **Standards of Conduct Prohibit Public Officials, including Board Appointed Committee Members, from:**

- **Soliciting and Accepting Gifts.** May not solicit or accept anything of value that is based on an understanding that their vote, official action, or judgment would be influenced by such a gift.
- **Accepting Unauthorized Compensation.** May not accept any compensation, payment, or thing of value that is given to influence a vote or other official action.
- **Misusing Their Public Position.** May not corruptly use their official position to obtain a special privilege for themselves or others.
- **Disclosing or Using Certain Information.** May not disclose or use information not available to the public and obtained by reason of their public positions for the personal benefit of themselves or others.
- **Doing business with their agency.** A public official’s agency may not do business with a business entity in which the public official, or their spouse or child own more than a 5% interest.
- **Engaging in Conflicting Employment or Contractual Relationships.** A public official may not be employed or contract with any business entity regulated by or doing business with his or her public agency.

## NORTH SPREADER EMA PROCESS WORK PLAN

**Please note: This work plan is intended as general guide to the sequence of tasks to be undertaken by the Stakeholder Group and the Technical Committee. It will be refined and updated to reflect actual events and developments in the process on a regular basis.**

### July – Organizational Meeting

Stakeholders Group	Technical Committee
Review, refine and adopt groundrules and decision-making guidelines Review, refine and adopt work plan Develop a joint understanding of what the group hopes to achieve Identify and discuss, preliminarily, data and modeling needs	Begin identification of existing information and information gaps for historic, current and build-out conditions Begin collection of information to fill gaps

### August – Natural Systems and hydrology

Stakeholders Group	Technical Committee
Review and discuss presentations to build mutual understanding of natural systems and historic, current and build-out conditions -- identify additional questions for Technical Committee Initial discussion of an approach to defining and evaluating NEB Begin identification of current and potential water quantity projects	Continue preparation of information on historic, current and build-out conditions Begin development of water quantity and quality targets Identify and refine models to be used in project evaluation Develop draft of approach to defining and evaluating NEB

### September – Natural Systems and hydrology (continued), Water Quantity and Quality Targets

Stakeholders Group	Technical Committee
Review and discuss draft description of historic, current and build-out hydrology – identify additional questions for Technical Committee, if needed Review and discuss draft water quantity and quality targets Review and discuss models to be used in evaluating projects Discussion and/or adoption of approach to defining and evaluating NEB	Draft initial description of historic, current and build-out hydrology Continue refinement of models to be used Continue identification of potential projects

### October – Water Quantity and Quality Projects

Stakeholders Group	Technical Committee

If needed, continue discussions of natural systems, water quantity and quality targets, models, and definition of NEBs Begin in-depth review of potential projects Review information on the costs and effectiveness of spreaders	Refine description of historic, current and build out hydrogeology, if needed Analysis as needed to support review of projects
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**November – Water Quantity and Quality Projects (continued)**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Continue in-depth review of potential projects – identify unresolved issues	Analysis as needed to support review of projects

**December – Initial prioritization of Water Quantity and Quality Projects**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Initial prioritization of potential projects -- specify unresolved issues	Analysis as needed to support review of projects

**January– Refine prioritization list of Water Quality and Quantity Projects**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Seek consensus on unresolved issues	Analysis of options for unresolved issues

**February – Initial discussion of probable net ecosystem benefit**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Initial comprehensive discussion of the kinds and degrees of ecosystem benefit likely to be provided by the projects under consideration	Analysis of options for unresolved issues Assess NEB for all projects

**March – Consensus Seeking and Continuation Decision**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
9 month decision whether to proceed Seek consensus on unresolved issues	Analysis of options for unresolved issues

**April – Consensus Seeking on Unresolved Issues**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Consensus seeking on unresolved issues Draft recommendations and report language	Preparation of draft report with supporting data and analysis

**May - Draft Report**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Review, discussion, and refinement of draft report	Refinement of draft report in response to stakeholder group input

**June – Final Consensus Seeking and Decision on the Report**

<b>Stakeholders Group</b>	<b>Technical Committee</b>
Consensus seeking on unresolved issues Finalize recommendations and report language Final decision to adopt the report or require construction of the barrier and boat lift	Finalize report with supporting data and analysis

## SFWMD PROJECTS

A partial list of potential projects submitted by local sponsors to the Caloosahatchee River Watershed Protection Plan that may be relevant to the Cape Coral Spreader Canal

### **Yellow Fever Creek/Gator Slough Transfer Facility**

CRE 64 – Alt 1, Local

Description / Purpose: Construct an interconnect facility to transfer water during high-flow periods from Gator Slough to Yellow Fever Creek

Source: Management Measure description. Additional information from Anura Karuna-Muni, Lee County, by phone, 4/24/08.

Effective Storage Area: None

Change in Flow: Reported by Anura Karuna-Muni as 500 gpm, or 806 ac-ft/yr.

WQ Benefits: Water would be transferred from one basin to another, with no net change in loadings. Using 806 ac-ft/yr and an estimate of 1.27 mg/L for TN and 0.154 mg/L for TP, which is typical of runoff from the Yucca Pens area, the load is calculated as 2784 lb/yr for TN and 338 lb/yr for TP.

In the water-quality spreadsheet, these flows and loads will be subtracted from the North Coastal subregion and added to the Tidal North subregion. The spreadsheet will contain one line for each subregion.

### **Gator Slough, Phase I**

CRE 66 – Alt 2, Local

Description / Purpose: Channel improvements and weir construction

Source: Management Measure description.

Effective Storage Area: None

Change in Flow: None

WQ Benefits: No apparent WQ load reduction.

### **Cape Coral Canal Stormwater Recovery and ASR**

CRE 77 – Alt 2, Local

Description / Purpose: Water storage through construction of ASR wells

Source: Management Measure description.

Effective Storage Area: None

Change in Flow: None presumed at this time.

WQ Benefits: No apparent WQ load reduction.

### **Cape Coral Canal Weir System**

CRE 78 – Alt 2, Local

Description / Purpose: Add weirs to canal system to reduce stormwater discharges

Source: Management Measure description.

Effective Storage Area: Surface area of canal system is estimated at 2800 ac.

Change in Flow: None presumed at this time.

WQ Benefits: No apparent WQ load reduction.

### **Powell Creek Filter Marsh**

CRE 55 – Alt 3, Local

Description / Purpose: Channel improvements to reconnect historic flow paths.

Source: Management Measure description

Effective Storage Area: None

Change in Flow: None presumed at this time.

WQ Benefits: None presumed at this time.



**Popash Creek Preserve**

CRE 62 – Alt 3, Local

Description / Purpose: Hydrologic restoration on conservation site.

Source: Management Measure description. More information needed.

Effective Storage Area: Full site footprint is 300 ac.

Change in Flow: Calculated for evaporation from “restored wetland” (currently 6 in/yr).

WQ Benefits: Calculated using SWFFS reductions for “restored wetland area” (currently 40 lb/ac/yr for TN and 10 lb/ac/yr for TP). Presumes wetland is restored for the full area.

**Cape Coral Stormwater Improvements**

CRE 69 – Alt 3, Local

Description / Purpose: Replace old stormwater inlets to retain first-flush runoff.

Source: Management Measure description

Effective Storage Area: Approx. 1500 ac in Cape Coral east and 18000 ac in Cape Coral west, according to current expansion plan out to about 2015.

Change in Flow: None presumed at this time.

WQ Benefits: Unknown. Need to revise load-reduction rates for stormwater retrofit over large areas. We cannot presume that all of this area is already fully developed.

**Cape Coral Spreader Canals Restoration**

CRE 70 – Alt 3, Local

Description / Purpose: From the SWFFS, repair spreader canal system to prevent stormwater from draining to mangrove wetlands.

Source: Management Measure description

Effective Storage Area: For the SWFFS, this was estimated as a 100-ft strip along about 23 miles of spreader canal.

Change in Flow: None

WQ Benefits: None presumed at this time.

**North Cape Coral Water Quality Treatment Area**

CRE 75 – Alt 3, Local

Description / Purpose: Treat and divert stormwater from North Cape Coral.

Source: Management Measure description references the SWFFS BAT ID 52. However, BAT

ID 52 is only for riverine corridor cleanup; it doesn't include a WQTA, wetland, or STA. This management measure needs to be redefined before it could be included in the CRWPP.

Effective Storage Area: Unknown

Change in Flow: None

WQ Benefits: None

**Cape Coral Utility Expansion Program**

CRE 80 – Alt 3, Local

Description / Purpose: Install centralized sewer system, replace existing septic.

Source: Management Measure description

Effective Storage Area: Approx. 1500 ac in Cape Coral east and 18000 ac in Cape Coral west, according to current expansion plan out to about 2015.

Change in Flow: None

WQ Benefits: Calculated using SWFFS reductions for “central sewer” (currently 2.5 lb/ac/yr for TN and 0.4 lb/ac/yr for TP). (This presumes that the entire area is fully built out with septic.)

## LEE COUNTY PROJECTS AFFECTING FRESH WATER DISCHARGE INTO MATLACHA PASS

### **Project Name: Matlacha Pass Hydrologic Restoration Phase I**

**Project Objective:** Restoration of historical flow ways and base flows; Improving drainage while minimizing flooding downstream of Burnt Store Road and reducing fresh water flow through Gator Slough Canal into Matlacha Pass.

**Expected Completion Date:** December 2008

**Project Budget:** \$1,800,000

### **Project Name: Matlacha Pass Hydrologic Restoration Phase II**

**Project Objective:** Restoration of historical flow ways and improving water quality downstream of Burnt Store Road

**Expected Completion Date:** June 2011

**Project Budget:** \$1,200,000

### **Project Name: Gator Slough/ Yellow Fever Creek Storm Water Transfer Facility**

**Project Objective:** Restoration of historic flows that were disconnected due to development through construction of a storm water facility to transfer water from Gator Slough Canal to Yellow Fever Creek during the time of high flows when water flow over the Gator Slough weir to Matlacha Pass.

**Expected Completion Date:** June 2009

**Project Budget:** \$ 700,000

**Project Name: Gator Slough Channel Improvement** (Also known as Gator Slough/Powell Creek Hydrologic Restoration; Also known as North Fort Myers Surface Water Restoration Project)

**Project Objective:** This project has three components (1) Gator Slough flow way and water quality improvement; (2) Redistribution of Gator Slough/Powell Creek water originating from northern reach (Charlotte County) of Lee County and construction of a filter marsh to improve water quality; (3) Construction of ditch plugs and installation of risers to mimic natural system in the region.

**Expected Completion Date:** June 2009

**Project Budget:** \$2,800,000

## **CITY OF CAPE CORAL PROJECTS**

### **Utility Extension Program (UEP)**

#### **North 3 and North 7 areas, Planning**

**Description/Purpose:** Construction of wastewater collection and transmission facilities to remove domestic sanitary waste from residential and commercial septic systems in the Northwest section of Cape Coral

### **Utility Extension Program (UEP)**

#### **Stormwater Drainage System Improvements, On-going**

**Description/Purpose:** Stormwater drop inlets are upgraded during utility installation. Drainage inlets are changed from “open slot” type to Type C and Type E which feature flow control orifices and elevated grates to prevent “first flush” flows from polluting canals.

### **Weir Improvement Projects**

#### **Weirs, On-going**

**Description/Purpose:** Construction and reconfiguration of existing weirs...

### **Canal Pump Station Operations**

#### **North-South Transfer Station Optimization, On-going**

**Description/Purpose:** Development of procedures for best management and operation of Canal Pump Station at NSTS to maximize freshwater storage in the City’s canal system.

### **Aquifer Storage and Recovery Program**

#### **North-South Transfer Station, In Construction**

**Description/Purpose:** Installation of one (1) Class V injection well for storage and recovery of surplus freshwater. Location allows for use of recovered water for irrigation or to maintain minimum flows during dry season

### **Filter Marsh**

#### **Zemel Property, 00001.0000, Conceptual**

**Description/Purpose:** Approximately 222.3 acre parcel located adjacent to the Gator Slough and potentially available for development as a recreational area, wetlands park and filter marsh for on-land storage of water.

### **Fertilizer Ordinance**

#### **City of Cape Coral, Conceptual**

**Description/Purpose:** Development and implementation of a local fertilizer ordinance limiting the type/application areas/time of use of landscaping fertilizers that adversely impact surface water systems by contributing to nutrient loading during precipitation events