

Meeting Minutes  
**WATER QUALITY PROTECTION PROGRAM CANAL  
RESTORATION ADVISORY SUBCOMMITTEE**  
October 18, 2013

9:00 am – 12:20 pm  
Marathon Government Center, Board Meeting Room  
2798 Overseas Highway, Marathon, FL 33050

**Member and Advisory Attendees:** Gus Rios - FDEP; Mayor George Neugent - Monroe County; Susan Sprunt - Islamorada; Commissioner John DeNeale - Key Colony Beach; George Garrett - Marathon; Alison Higgins – Key West (on phone); Skip Haring - Layton; Charlie Causey – WQPP SC Member; John Hunt – FWC (FWRI).

**Members not in Attendance:** Billy Causey – FKNMS NOAA.

**Advisory:** Rhonda Haag – Monroe County and Wendy Blondin – AMEC.

**Guest Speaker:** Michael Forster – Councilman Islamorada

1. **Introduction and Approval of the September 27, 2013 Meeting Minutes.** Gus Rios called the meeting to order at 9:05 am. Charlie Causey requested the correction of him as a member not an advisor. With that correction **Susan Sprunt moved** that the Minutes from the September 27<sup>th</sup> meeting be approved and Chip Haring seconded, all **approved**.

Gus Rios reviewed the agenda for this meeting and items that would be discussed. Gus pointed out that during Public Comments item each person from the Public has 3 minutes to speak and encouraged the public to keep to the 3 minute time frame. Gus asked members of the public who wished to speak to sign the Public Comment form at the entrance of the meeting room, so that we have a record of who was speaking.

2. **Legal Update from the County:** Rhonda Haag and Wendy Blondin will be meeting with the legal department to discuss various issues and will report back to the group at a later date.
3. **Public Comments #1:**
  - (A) Curtis Brown – Whispering Pines subdivision. Whispering Pines is selected for the Pumping technology. The intention is to install two pumps to bring in clean water from the bay. By introducing clean water and increasing water flows, it is the hope to improve the water quality in the canal system. He met with as many of the home owners and members of the home owners association as he could. He discussed the pump process but is concerned with the cost of the system. The people at the meeting were familiar with weed gates, air curtains, and with the propeller system to keep weeds out. Mr. Brown said the home owners have a weed problem and not a water quality problem. He feels that if they can't keep the weeds out that the canals will still continue to have a water quality problem. At the home owners meeting no one was familiar with a pump operation at any location. There is no experience with a pump system. They reviewed the size and depth of the canal and determined that with pumps about 145,000 gallons of water will be moving in on 6 hours and out of the canal on 6 hours. The pump system will be put in with two 6.2 Horse Power pumps at 800 gallons a minute, 96,000 gal. per hour which is about 40% of what the tide moves. With the new pumps they estimated that they are doing about 40% of water

movement. He anticipated that it would cost \$986 a month. He pointed out that each participating home owner may be responsible for about \$31.00 dues for the cost of electricity to operate the two pumps or \$1.00 per day. He pointed out that this may be more expensive than other system being considered. The home owners have asked to be differed on their decision until they obtain more information on the specifics on the enhancement of the two pumps in the canal.

- a. Wendy Blondin pointed out that the hydraulic design basis is very preliminary; there are a lot of calculations that will be looked at as far as tidal and timing and things like that. Without going into the specifics there will be well reviewed hydraulic calculations for the pumping system. Also her email to Curtis also mentioned that AMEC was recommending solar power for the operations of the pumps to eliminate the electric costs. She pointed out that solar power has maintenance cost, so it is not the cheapest technology.
  - b. Curtis Brown did note that the solar power was going to be used but he did point out the solar power panels on Pigeon Key and was concerned about the size of the solar panels. He felt that this would be a billboard that will affect the neighborhood.
  - c. Wendy Blondin explained that the solar panels can be mounted on poles and defray the size and total electrical cost. It is a pumping system and is not the cheapest technology. But she stressed that given the long length of the canal this technique should be evaluated. This system will be cycled with the tidal cycle.
  - d. John Deneale pointed out that the pump system would not be running 24 hours a day.
- (B) Barry Wray – FKEC. Mr. Wray handed the committee members a document labeled “Florida Keys Environmental Coalition in Collaboration with the Florida Keys Community College, October 2013, cleaning the FL Keys Canals with Filter Feeder habitats, Proposal for Monroe County Pilot Program. He discussed the program and encouraged the subcommittee to seriously consider this alternate technology as a process to be used during this technology selection process.
- (C) Patrick Rice – FKCC. Dr. Rice also explained the system in pretty extensive detail and reiterated Barry Wray’s encouragement of allowing the subcommittee to seriously consider this process. He gave a scientific background and explained what he felt were major advantages using this technology.
- (D) Terry Peters – Treasure Harbor, Islamorada MM 86. Their subdivision was instrumental in starting an aeration system in 2005. A company by the name of Vertex came in and set up the system in the Harbor. They have six lines going out from four compressors into the harbor and have been operational since 2005. They were running water test but by 2007 – 2008 they could not afford to continue the water testing. The home owners were successful in bringing the water quality up to 4 parts per million. Mr. Peters said the problem is that the canal is a horse shoe shaped harbor and down at the very end of the canal seagrass comes in during the summer time, it settles and it is a deterrent for water oxygen quality. What has been proposed by the Vertex Corporation is that they would like to put an air curtain at the entrance way of the harbor and that will prevent the influx of seagrass. This should help to increase the dissolved oxygen (DO) concentration to 4 parts per million. Vertex said they could put an air current in along with four more compressors and additional units of the aeration system for \$10,000.00. Our current cost for electricity is \$200.00 per month. The aeration curtain only really needs to run during the summer time when we have a south southeast wind that brings in the seagrass. This additional design would allow the DO in the harbor to come in above 4 parts per million. He came to plead his case for additional funding to get Vertex on-board which would be a benefit for the harbor and the community to obtain clean water.

#### 4. Update on the October 16<sup>th</sup> BOCC meeting:

Rhonda Haag discussed the meeting with the BOCC and presented the schematic of the "Top 15 Canals Evaluated for Canal Demonstration Projects with the Identified Top Ranked 5 Canals Shown in Yellow Highlight." The County Commission approved the following:

Rank Order #1:

1. # 266 Big Pine Doctor's Arm – Weed Barrier
2. #266 Big Pine Doctor's Arm – Organic Removal
3. #459 Geiger Boca Chica Ocean Shores – Culvert Installation
4. #286 Big Pine Whispering Pines – Pumping
5. # 29 Key Largo Sexton Cove Estates – Back filling

Rank Order #2:

6. #290 Big Pine - Organic Removal
7. #277 Big Pine Tropical Bay - Culvert Installation

The County Commission set a 90 day time limit for the home owners to grant their approval. If the home owners do not have their approval to the County in 90 days then the county will move on to the next canal on the topped ranked canals. This time limit to the home owners is due to the EPA monitoring grant time limits.

Rhonda thanked Mayor George Neugent for leading the charge.

Wendy Blondin said that they are getting home owner letters stating that they support this project. She feels that they are well into this process.

Rhonda acknowledged that they have six projects and she is hoping to work out the issues on Geiger Key even though it is Navy property. She wants to meet with the attorney next week so that the letters can be created and sent to the home owners, this will start the clock ticking. So she hopes to go to the board in January with a list of projects to be reviewed.

Rhonda congratulated Tropical Bay (#277) for being so organized and did an outstanding job of presenting the information and showed their home owner participation.

Rhonda brought up the question, from the commission, of why the subcommittee did not pick just a weed barrier project and she could not answer that. So she posed the question to the subcommittee of whether they would like to consider this additional project. Is there a canal that would work for just a weed barrier?

John Hunt expressed interest in having a single weed barrier technology so that it could be evaluated. So that it could be determined what can be accomplished with just a single technology. What we do not know is how much a weed barrier alone would change the water quality going forward.

Charlie Causey felt that the weed barrier technology is the cheapest way to help some of the canals. Maybe smaller canals that can't afford to do the higher technology it may be a weed barrier is the only way to go. To have an example of what a weed barrier will and won't do would be beneficial for this subcommittee. So if the home owners have this data of what a weed barrier can accomplish, then perhaps 40% of canal enhancements might be on board for a weed barrier project.

John Hunt further pointed out that what he is hearing is that the County Commissioners could potentially be receptive to adding another canal project if it is a weed barrier by itself and relatively inexpensive. Rhonda Haag thought that seemed to be the feeling at the Commission meeting.

Discussion among the group was to determine which project should be considered that would allow for just a weed barrier. The committee mutually felt, using the approved selection criteria that the next canal project to be considered is Rank Order #2, # 288 Big Pine Hollerich Subdivision between Hollerich and Hibiscus Drives.

**John Hunt made a motion** that the subcommittee recommend canal # 288 be presented to the County Commission to be considered as an added project because it will provide technology of a weed barrier only canal. George Garrett seconded the motion and **all approved**.

## 5. Village of Islamorada Selection of Canal Demonstration Project:

Gus Rios recognized Councilman Michael Forster from the Village of Islamorada thanking him for his attendance and participation.

Wendy Blondin summarized that Islamorada has gone through the same process as unincorporated Monroe County looking at their canals and ranking them for selection of demonstration project. Susan Sprunt handed out a packet which reflects the results of this process. The packets contained (1) two page document titled "Islamorada Poor Water Quality Canals; (2) a packet of 5 tables selecting canals in demonstrating a specific technology (Weed Barriers, Culverts, Pumping, Organic Removal, and Backfilling) and which were selected; (3) a packet of satellite pictures of various selected canals considered for these projects.

Wendy further explained that Islamorada originally has 62 canals, 16 of those had poor water quality, they used the same ranking process that the subcommittee used and this was approved at the last meeting. Wendy looked at all the technologies and the village has set aside \$100,000. So there are a limited number of projects that can be worked on, however she wanted the subcommittee to know that if additional funding is available in the future, that these canals also be considered. There is a possibility that some home owners may help funding canal enhancement projects.

Wendy reviewed the packets and described the following ranking for the Village of Islamorada:

Rank Order #1:

1. # 148 Mate-Lido Beach – Weed Barriers, Lower Matecumbe Key
2. # 157 Lower Matecumbe – Culverts, Lower Matecumbe Key
3. # 120 Indian Waterways – Pumping, Plantation Key
4. # 148 Mate-Lido Beach – Organic Removal, Lower Matecumbe Key
5. # 116 Tropical Atlantic Shores – Backfilling, Plantation Key

Rank Order # 2:

6. # 137 Treasure Harbor Sec. 1 – Weed Barriers, Plantation Key

Wendy Blondin would like for the subcommittee to review this criteria and possibly move the Rank Order #2 for canal #137 up to Rank Order #1 and place canal #148 to Rank Order #2. The Rank Order #1 does not have a home owners association involved. The other reasons are that Vertex has stepped forward and will provide additional funding for an aeration curtain as well as upgrading their aeration system as described by (D) Terry Peters, Public Comment #1.

Wendy expressed that the aerators are not part of the of the master plan technology and she has been against them from what she has seen however this project would allow an evaluation of what a more robust aeration system could do and to evaluate whether this technology might be able to be optimized

in other canal systems in the future. It will be helpful to know what can be done with an aeration system. By adding the weed barrier it will be a combination of weed barrier and a robust aeration system.

John Hunt pointed out given the demonstration ranking score and changing the ranking we would be going across treatments and the subcommittee is being requested to bump one canal above another canal. Wendy did not rank the canal aeration factor. By selecting # 137, it is potentially bringing something different to the demonstration project.

The subcommittee discussed the various issues of the two canals and their rankings. Charlie Causey felt that the opportunity to evaluate another technology could be valuable in considering future alternative technologies. The aeration component is a technology that we currently do not have as a demonstration project of Islamorada and the County as a whole.

Gus Rios pointed out that there are a lot of aeration systems out there. DEP has permitted some aeration systems however there are problems with aerators in canals. The State has questions about using aeration technology. When it shuts off then you have the same condition that you had before and in some cases you have fish and other things that come in and can get trapped. So Gus's question is should the subcommittee include aeration into the master plan? Wendy said in 2003 aeration was part of the master plan, but since the demonstration projects needed to take a more aggressive path five technologies were selected.

Gus pointed out one other issue with any technology that needs to be looked at is long term maintenance with the system. The County has seen a lot of these systems get started and then they are shut down. Then the original investment is lost because the water quality of the canal goes back to the way it was originally. That is why we have created a master plan and part of the master plan is to look at technologies that are feasible. To implement these different technologies and determine how much they will cost in the real world.

Wendy Blondin wants to point out that this canal is unique, the current system in Treasure Harbor has been maintained marvelously and you will not have a chance to put in a system in a community where it has had such a success. She felt that in this instance it might be worth going outside the ranking order. The home owners have the data, they have a company willing to step up to the plate and do even better and provide funding. So the point in taking on this canal was adding the twist of aeration and a weed barrier combination. This really relates to a basin technology.

**Charlie Causey made a motion** to move the # 137 Plantation Key – Treasure Harbor Sec. 1 from Ranking Order # 2 to Ranking Order # 1 and move the current Ranking Order # 1 # 148 Lower Matecumbe Key – Mate-Lido Beach to Ranking Order # 2, George Garrett seconded the motion.

John Hunt explained that we are providing a recommendation to the Islamorada City Council which they can use as part of their deliberation to make their choice. He did have some questions: (1) Islamorada has committed \$100,000 to this pilot project in general? So that is part of their pre-commitment. Yes. So Terry Peters is asking for \$10,000 for the Treasure Harbor Sec. 1 which leaves \$90,000 to do other projects. We want to recognize the criteria but here is a special case, he wanted more discussion regarding the value of this project.

**George Garrett wants to add an amendment to the motion** in that if there is money left over lets go ahead and start working on the what is now Ranking Order # 2 #148 Lower Matecumbe Key – Mate-Lido Beach.

Gus Rios clarified that the proposal would be to put a weed barrier at the entrance of the canal and that Vertex would enhance the current aerator system. Islamorada is bringing up their projects to the subcommittee requesting approval.

John Hunt asked what additional information is gained by making this decision that we do not have already. Wendy Blondin explained the added benefit was to evaluate the effectiveness of an aeration system that is more robustly designed through standard engineering. And we are not getting this information from the county wide demonstration.

**John Hunt made a motion** to approve all the Islamorada highlighted Rankings Order #1 from Table 1, Table 2, Table 3, Table 4 and Table 5 as stated about however to move the # 137 Plantation Key – Treasure Harbor Sec. 1 from Ranking Order # 2 to Ranking Order # 1 and move the current Ranking Order # 1 # 148 Lower Matecumbe Key – Mate-Lido Beach to Ranking Order # 2, (within the weed barrier technology). And if there is additional funding after the Ranking Order # 137, then canal # 148 is also funded. George Garrett seconded the motion. **All approved.**

**Quest Speaker: Councilman Michael Forster for Islamorada.**

Michael Forster explained that this effort is a collective criterion. This aeration technology is to benefit the entire county. Islamorada came up with the money so that they would show whether another technology would work. Islamorada hired Wendy Blondin and AMEC because they wanted to follow suite with Monroe County. A question he voiced was if there is any money left over (\$100,000 the Village of Islamorada contributed), that canal # 157 Lower Matecumbe – for a culvert be considered. Wendy Blondin stated that there would not be enough money to do a culvert, however there may be enough funds to complete a second weed barrier at canal # 148.

Michael Forster also wanted to point out that these projects have been met with a real positive perspective in the community.

**6. DEP WQPP Funding:**

Wendy Blondin handed out a letter, dated 10/17/2013, addressed to Mr. Roman Gastesi, County Administrator, Monroe County (Florida Keys), Subject: Proposal To Perform Culvert Design and Permitting and Sediment Characterization To Assist In Implementation Of The Monroe County Canal Restoration Demonstration Projects AMEC Proposal Number: 13PROP0010.0033.

Gus Rios requested that Wendy bring a proposal for the \$100,000 that DEP could fund. He reviewed the DEP funding criteria for this fiscal year money. They want to make sure we can move forward as fast as possible. That these funds will be used for a demonstration project that is part of the Master Plan that AMEC created and support the County Wide projects. They want to make sure that the project is consistent with the County and the Master Plan projects. The funding shall have an effect on the water quality, like water flow; reduce the input of debris, etc. Also the projects have to gain acceptance of the community and the home owners. It is very important that we have a partner in the community such as a home owners association. The project should have an ease of permitting. A big consideration is a project we can get done and the money spent by June 30<sup>th</sup>, 2014.

Wendy presented her proposal to the subcommittee. She explained that her proposal is a culvert design and permit. The culvert that AMEC selected was third in line under Culvert Installation from the

“Top 15 Canals Evaluated for Cana Demonstration Projects with the Identified Top Ranked 5 Canals Shown in Yellow Highlight” document.

Task 1 is canal #472 Geiger – Geiger Mobile Homes Subdivision, culvert installation. The reason that this canal is being considered is that the culvert would be a straight shot across Boca Chica Road. The home owners are very interested and ready to go. She stressed that this is not install but the design. The design assumes the data collection, the survey, geotechnical investigation, the hydraulic modeling, anything known at this time to be needed for the permit package. This will probably be the first project permitted. This project allows AMEC to get with the new group of the permitting team and start the process. This will also include the sensitive surveys and wetland surveys required for the permit. The Task 1 total is \$77,000.00.

Charlie Causey questioned why canal # 472, Ranking 3<sup>rd</sup> in line under the Culver Installation why not the 1<sup>st</sup> in line # 459, or second in line # 277? Wendy Blondin and Rhonda Haag both emphasized that the County Commission has already approved the funding for those two canals.

Task 2 is collecting sediment characterization data in two canals. The two canals selected are # 266 Big Pine Doctor’s Arm Subdivision and canal # 290 Big Pine between Avenue I and Avenue J. These two canals are proposed for organic removal. In order to complete the Organic Removal projects the engineers required three samples/profiles. These samples will be collected at three different locations along each canal. AMEC will have a barge that will collect samples down 8 to 10 feet. This will allow them to take discreet samples for total organic content analysis so that it is clear what needs to be removed and targeted volumes determined by final design. The Task 2 total is \$ 23,000.00.

Charlie Causey recommended completing Task 2 first before Task 1. Wendy agreed. Task 2 will also allow the subcommittee to have a better understanding of the Organic Removal cost of those two canals. Susan Sprunt asked if this information is sight specific or can it be used all across the county? Wendy said that this information is very beneficial but each canal will have to be sampled.

Charlie Causey discussed the six modalities: Weed Barrier, Organic Removal, Culvert Installation, Pumping, Backfilling and now Aeration. Which of these systems is most expensive? Wendy Blondin stated that Backfilling is most expensive and so far Organic Removal is next in line. He would like to know the cost of Backfilling and Organic Removal as soon as possible. Wendy informed the subcommittee that, from an engineering point of view they have the least knowledge about Organic Removal. There will have to be profiling on Backfilling to fine tune the volume and methodology but they know the approximate cost. Organic Removal technology is the biggest unknown because of the vertical information and dewatering system design.

John Hunt asked if this fits the DEP criteria. Gus Rios said yes that it does fit their criteria. This type of project is pretty conventional. These projects would provide water quality improvement and it will be one of the technologies and is one of the canals that have been selected in the Master Plan.

The subcommittee reviewed the culvert satellite view and discussed its location and that the culvert will be crossing a County road. Wendy stressed that the bottom line is that with the DEP funding AMEC can continue the research on the culvert so that it is ready to be built. Gus Rios stated that there were a bunch of projects that would qualify. But the issue with the DEP funding is that we need to move forward. DEP can provide an agreement. But we still need to have a funding agreement which will take about a month. Gus stressed that these two projects need to move as quickly as possible because the funds are from legislature and will go away at the end of the fiscal year.

**John Hunt made a motion** to support these two projects and George Neugent seconded. **All approved.**

## **7. Water Quality Monitoring:**

Gus Rios stated that Steve Blackburn – USEPA has been out due to the Federal shut-down and wants to also talk with the other consultants. County wide we have \$300,000.00 and eight canal projects have been selected but these funds may not cover them all. Plus the Village of Islamorada will have review and select some canal projects at the Council meeting November 14<sup>th</sup>.

Gus posed a question to the subcommittee on what should the criteria be? We need to ask Steve how many canals are included and then commit funding to the monitoring of the technologies. John Hunt felt that the subcommittee should request a plan to do the appropriate monitoring for all eight canal projects. Gus Rios suggested the FIU EPA group write a formal scope of work that will include all eight canal projects to be monitored. John Hunt is recommending that FIU EPA group design an appropriate monitoring plan for all eight of the selected canal projects for a span of two years that gives us the before and after control impact approach and give the subcommittee what it will do and how it will be completed, etc.

John Hunt clarified that here are the list of approved canal projects and here is the list of canals project that will soon be approved. Making a plan as if all canal projects have been approved and if they are not approved the subcommittee will let them know. Susan Sprunt pointed out the following nine canals should be considered for the monitoring program and everyone agreed:

### **Unincorporated Monroe County:**

Rank Order #1:

1. # 266 Big Pine Doctor's Arm – Weed Barrier
2. #266 Big Pine Doctor's Arm – Organic Removal
3. #459 Geiger Boca Chica Ocean Shores – Culvert Installation
4. #286 Big Pine Whispering Pines – Pumping
5. # 29 Key largo Sexton Cove Estates – Back filling

Rank Order #2:

6. #288 Big Pine Hollerich Subdivision – Weed Barrier
7. #290 Big Pine - Organic Removal
8. #277 Big Pine Tropical Bay - Culvert Installation

### **Village of Islamorada:**

Rank Order #1:

1. # 137 Treasure Harbor Sec. 1 – Weed Barrier, Plantation Key

Rank Order # 2:

2. # 148 Mate-Lido Beach – Weed Barrier, Lower Matecumbe Key

## **8. Outreach Update:**

Rhonda Haag mentioned that the subcommittee was in the paper several times. Mayor George Neugent was on the radio as well, so we have had a lot of positive coverage this week. Gus Rios thanked the County for putting up the Canal Restoration website. He felt it was really a great way to distribute the information. Gus suggested adding a link to the FIU website, so that the community can stay abreast of the water quality monitoring.

## 9. Public Comment #2:

- (A) Patrick Rice – FKCC. Dr. Rice thanked everyone for letting him discuss the system in pretty extensive detail and reiterated how this system could help the canal restoration projects. He encouraged the subcommittee to consider bio-filtration. He is coming to the subcommittee in the hope that this technology be considered.
- a. George Garrett felt that scientists need to evaluate this technology and John Hunt agreed.
  - b. John Hunt suggested that they need to bring a proposal. This will allow the approach to be completely evaluated in a scientific process. That way there is a review process and then it will be determined how it works and where it works. He would be very supportive of that kind of process. That would mean going to the Water Quality and Steering Committee not this subcommittee. John felt that this technology needs to be evaluated.
  - c. Gus Rios reaffirmed that the Water Quality Protection program has a technical advisory committee. They are the technical scientific body that provides technical support and advice to the Water Quality Protection Program Steering Committee. So whenever we have projects of an intellectual value then it needs to be researched. This body will look at it and recommend to the Steering Committee. Gus recommended submitting this technology to the Technical Advisory Committee for their review.
- (B) Barry Wray – FKEC. Thanked the subcommittee and reiterated how the bio-filtration technology could be a canal restoration project. He hopes that there may be an opportunity for this technology in the future.

## 10. Next meeting date, place, and agenda topics:

Gus Rios discussed the topics for next meeting:

- Water Quality monitoring
- Permitting, determine who may be on the subcommittee and expedite the process.
- A letter has been written asking the various agency representatives from the Water Quality Steering Committee representative requesting support.

George Neugent recommended Monroe County to write a letter that endorses these projects and committed \$5,000,000.00 and include this letter with Gus's letter.

George Neugent felt that it might help to have everyone on the subcommittee sign the letter. Gus felt that was a good idea for Monroe County and the municipalities to write a letter of support for these projects. George also felt that it would be helpful for each municipality to endorse the canals restoration projects as well. Everyone agreed.

George Garrett mentioned that the Keys Restoration funding has been taken away and should be returned. Gus Rios feels that this subject is related to State and Federal mitigation and should be handled at the Water Quality Steering Committee level not by this subcommittee.

Next meeting was tentatively scheduled for Friday December 13<sup>th</sup>, 2013 at the Monroe County BOCC meeting room from 9:00 am to 12:00 pm. It was mentioned that the meeting date/time and location were subject to change depending on the availability of the subcommittee members and the FIU investigators. Meeting adjourned at 12:22 pm.

**Note:** Update (10/28/13). Rhonda sent an e-mail to the subcommittee members informing them that the meeting date and location had changed to December 12, at 10:00 AM, at the Murray Nelson Government Building in Key Largo.