

**WATER QUALITY PROTECTION PROGRAM
CANAL RESTORATION ADVISORY
SUBCOMMITTEE MINUTES
Meeting Date: January 11, 2017, Time: 9 AM**

Monroe County Government Center, BOCC Room, 2798 Overseas Highway, Marathon, FL 33050

MEETING AGENDA

In attendance: Gus Rios, FDEP, Susan Sprunt - Islamorada, Jerry Ellis – Key Colony Beach, Billy Causey, NOAA, Rhonda Haag, Monroe County, George Neugent, Monroe County, Charlie Causey, Dr. Jim Fourqurean, FIU, Greg Corning , AMEC, George Garrett, Marathon, Skip Haring, Layton, Shelley Kruger UF Monroe Extension Service, Mike Roberts and Rich Jones, Monroe County. **ATTENDED BY PHONE:** Kelly Shotts and Kevin Owen – NOAA Fisheries Protected Resources Division (PRD), Dr. Briceno– FIU, Joanne Delaney – FKNMS, Maria Bezanilla– ARMY Corps of Engineers, Mike McDaniels and Barbara Powel – Dept. of Economic Opportunity. - Steven Blackburn, USEPA – **PRESENTERS/SPEAKERS:** Greg Corning, AMEC and Julie Espy, FDEP. **NOT IN ATTENDANCE:** John Hunt, FWC and Alison Higgins, Key West

Call to order, Review of the Agenda and Approval of the October 28, 2016 Meeting Minutes – Gus Rios Neugent approval, Sprunt second.

9:12 AM Opening Public Comment – **None.**

9:12 AM **Canal Restoration Project Update, Greg Corning, AMEC**

Village of Islamorada:

Canal 145 – public/private partnership. Currently working on federal permitting.

Canal 148 – Funded \$50,000 from DEP – Hard deadline of June 2017

Village \$128,000 application process with allocation in the spring.

Top 10 canals ranked in Islamorada – 142 in Plantation Key.

Monroe County:

Multiple projects

Canal 190 – air curtain project \$700,000 to remove muck, after completion of removal, weed gate failed. Weed compromises the county investment. Permitting process – bids coming in on Jan. 26. DEP provided \$100,000 hard deadline, June 17

Canal 83 – Rock Harbor Key Largo – issues with temporary staging area. 1.5 million contract. Pending signing an approval. Dec. 7 was pre-construction meeting to move forward. Funding – paid through \$2 million from county.

48, 59, 79, 80 – Key Largo – Augmented Aeration Projects – Permitting issues – macro, open environment. Selection committee will evaluate the proposals, QUESTION HAAG– Does anyone want to be on the committee to review them? RIOS – Suggested pre-application meeting to go over scope of the project . Include federal, DEP, and Water Management District. HAAG - Selection of contractor. Truly research projects. Want to chat with the DEP to make sure that the projects can even be permitted. No need to follow through if it won't get permitted. RIOS – Informal comments on what can happen with an open body of water with tidal exchange. Once there is a contract, we need to make sure any specific permitting requirements are considered. CORNING – The meeting can showcase the technology. JULIE – Website: Can help with technical review and research new technologies. ELLIS – Key Colony Beach has a canal that would be ideal for this type of study. We would love to have this canal participate. No boat traffic, deep canal with opening,

not totally plugged, but considered plugged. It would be worth looking at. Between 14th Street and 15th Circle. CORNING – Back to slide: Next is funding commitment from homeowners. HAAG – All future projects need to find a funding mechanism. Need to work out a formula. These projects are true research projects. I would be hesitant to ask the residents to contribute funding for these since we don't know if they will work. Will go in front of commission to ask about this.

Canal 75 – Backfilling – new project – site access obtains. No O&M long term. Working on design permitting at the moment.

Canal 278 – Big Pine Key – Eden Pines. Original project. Long complex canal with one mouth. Homeowner concerns and access issues with Fish and Wildlife. AMEC has evaluated several technologies. Recommended directional wells, gravity to circulate water through aquifer. Working on a flow through – Eden Pines people in the audience “worth a try,” “it's still really bad in the back of the canal.”

EPA Grant – will fill in data gaps. Look at costs moving forward. \$28,000 unfunded for conceptual designs.

Permitting update: PRD biological opinion for canal restoration program

No issues as of yet with NOAA and FKNMS. Biological opinion from PRD (Fed) needs to move through. KELLY – unreachable on phone – send comments after the meeting. Organic removal in culverts, weed barrier was taken out. Needs to be done on a case-by-case basis. Biological opinion can be used for other projects will save time and money. C. CAUSEY – Questions the fact that we have not done this type of study. Contacted FIU to monitor post construction. Need to look at data over time. The data is there past the mouths of the basins. Ongoing cost going forward, corporately looking at it, we need to find the answers in an upfront study. How is this affecting inshore water quality before taking on asking the citizens for the money? Best bang for the buck. How much nutrient loads are going out of the canals? RIOS – We will be discussing these studies in the future. The primary purpose of the Canal Demonstration projects was to improve water quality in the canals themselves. Canal waters that are connected to open waters are subject to the Class III water quality standards of the Florida Administrative Code (for recreation and a healthy population of fish and wildlife) B. CAUSEY – These canals are ranked because there are some really bad canals out there. If children cannot swim in the canal because it's unsafe, then it needs to be looked at. There is harm being done there. 1977, canal went anaerobic at that time, and everything died. It's never recovered from then. Research needs to be done, but it's more than just nutrients, there are other health issues that need to be considered. NEUGENT – To what degree do the canals contribute to the halo around the island, what is getting out of the canals, or does the stagnate layer contribute to that. B. CAUSEY – Little Venice was first to test it via cesspit removal. It's a combination of both – disrupted the whole area. Waste water will reduce it, canal waters will reduce it, and then shoreline. NEUGENT – Rain effect? Hydraulics of rainwater could force polluted water out of the canal. B. CAUSEY – It will take a lot of time to see the effects of the wastewater systems to see a difference. MARIA – PRD Review – I sent a private 145 and 148 and 190 combined it and they are currently reviewing it. Haven't heard back yet, sent Dec. 22. CORNING – 148 and 190 have a deadline and it is on an expedited process.

9:50 AM **November 14, BOCC Special Meeting Update – Rhonda Haag and Greg Corning**

RESTORE and Stewardship Act funding allocations – HAAG - these funds will be applied to canal restoration programs \$1 million over 15 years. Many cost well over the million. These are project funds, does not include planning, administration, program costs, etc.

Long-term funding mechanism for future projects.

HAAG - MSBU's for operation & maintenance for the demo projects – taxing unit for canals with restoration projects already. Air curtains and culverts. Approval moving forward for these canals for the residents to pay

operation costs. Only for demonstration projects that are complete. Hiring AMEC to help do neighborhood meetings to reach out to the residents who live on the canals in the next couple of months. Each pays the same equally on the cost of operations and maintenance, not based on value of the house divided by the number of people living on the canal. Limited funds – commissioners want to ensure that the residents want it, and will need to provide a financial contribution to the construction cost, the 100 percent of the maintenance moving forward. No Name canal - \$24 million for restoration – unfortunately canals like this may never be able to be restored. We have to concentrate on the affordable. Needs a source to help pay for day-to-day expenses, will talk to county administrator about that.

BOCC motion requesting staff to conduct a scientific peer-reviewed study to determine the effects of impaired canal waters on nearshore waters. HAAG – Reviewed Agenda Item Summary for the January 18 BOCC Meeting related including a discussion, direction and status report on the BOCC motion made on 11/14/16 during the BOCC Canal Special Meeting requesting staff to conduct a scientific peer-reviewed study to determine the effects of impaired canal waters on nearshore waters. Need input on how to move forward with this. RIOS – nearshore water consensus is pollution is coming from both Keys land-based sources (wastewater and storm water) and from far-field sources such as Gulf and Everglades, and sometimes not directly related to land in the Keys. Database shows there are local pollutants, nutrients. 50 yards – canal monitoring program is set up to look at if water quality is affecting canals, and stations extended to 50 yards, and further offshore. FOURQUIREAN – All the water is the same. Impossible task to figure out where exactly the nutrients are coming from – two sources, waste water, and decomposing organic debris -seaweed. The canal waters have an impact on the entire sanctuary. B. CAUSEY – Proposals and research should be vetted through the Water Quality Protection Program (WQPP) technical advisory and steering committee. We need really solid information and good for the public to hear the discussion of the scientific information. Dr. Bill Kruczinki back down for Gulf impacts. We need to understand if it is or isn't working. FOURQUIREAN – Charlie is asking for cost/benefit impacts of entire nearshore community. C. CAUSEY – We might end up with a program financially that does not do 100 percent of what we would like to do, maybe something we can take a process of what steering committee recommendations are.

B. CAUSEY – proposed a motion – subcommittee recommends that requests for proposals or RFP research proposals for the investigation of the impact of canal restoration impact be vetted by the WQPP Steering Committee before going to commissioners. RIOS – Clarification on motion: Water Quality Protection Program steering committee should review scope of work of the scientific peer-reviewed scientific study requested by the BOCC. GARRETT – Second. Discussion – RIOS – We need to define what the scope of work is. Nearshore waters is a general term. Canal program monitoring is a demonstration of technologies for improving water quality in canals, followed by monitoring. It doesn't answer if the canals are having an effect on waters outside the canals – nearshore, or beyond to the reef. Studies can be costly. The Little Venice Monitoring study cost \$100,000 a year to study before and after effects of replacing septic tanks with of wastewater collection systems and advanced wastewater treatments. HAAG – This could be a couple million. RIOS – Can AMEC or another consultant put together a scope of work? HAAG – Master planning, AMEC, construction – AMEC and Tech-something. Number of firms responded. FOURQUIREAN – Millions of dollars for Army Corps of Engineers years ago and no one is even talking about it. Tracer study in – to model the entire system won't work well because of wind movement and bottom dwelling. Quantify movement out of canals, but there won't be a cost effective model to answer the question B. Causey proposed. Wastewater tracer model worked, but not for canal water. DELANEY via phone – recommendation to take a step backwards, we need to know what is that the commissioners need to know about canal restoration and nearshore waters and what will be done with this

information. Expert in the room is telling us all that this is an almost impossible task study. What is the information the commissioners are trying to get to? What is the ending? What if it only comes back that its impact only reaches 50 yards offshore, then what happens? HAAG – We need to present options for what we recommend. RIOS – Input from us needs to define specific scope. NEUGENT – If the impossibility is there economically and scientifically, we have been tasked by EPA that we will be in TMDL if the pollutant water issue isn't taken care of for Florida waters. Property value is affected. How do we push forward with this and I don't want to get caught up in studies. Residents and EPA are telling us to address it. FOURQUREAN – scientific proof that canal water affects water outside the canal, but not how far the reach is. Impossible to say gunk on canal or wastewater is how much is due to either one, but both are contributors to water quality. RIOS – read HAAG sent motion from County Commission meeting on Jan. 18, 2017. This motion intended to include the benefits brought on by canal restoration and wastewater. We need to move forward. Residents need to know that tax dollars are being spent wisely. ESPY – Original FKRAD goal was to address nutrients from wastewater. At end of the day, if RAD isn't being reached via just moving to sewers, other projects will be needed, like canal restoration. NEUGENT – political issue. Need to eliminate the wiggle room, but colleagues are picking parks – feel good issues seem to take importance over the environmental issues. This issue needs to take precedence. RIOS – We know the degraded water from canals is going into nearshore waters with outgoing tide. Talking about scope of work regarding the motion. Peer review study - It is a broad term. Talking about dollars and cents, need to make sure the scope of work is specific. We know there is an impact, do we need to know how far it goes, and it is hard to connect this ambitious and difficult task. It could embark us on an expensive study. HENRY Briceno via phone – complicated problem that will not be able to resolve today. Use this motion to take into consideration to charge the task to the tax – so many technical issues here. CORNING – Study by EPA grant by FIU should be answered by these studies. RAD – moves forward to show it is done within a certain time. RIOS – Canal Monitoring Program isn't complete yet, so it may be prudent to wait until the FIU Canal Monitoring Program is complete and report available, and already paid for by EPA, this will help define the scope of work. Completion of monitoring and inclusion of data in AMEC's Canal Master Plan and then also use information from the RAD update at the end of the year. HAAG – We want to wait for the FIU monitoring results? RIOS – May be more cost effective than initiating a scope of work without benefit of complete studies which will be done at the end of this year. SHELLY – Literature review could answer some of the activity and a place to start. FOURQUREAN – Literature review is already done specifically of degradation in nearshore waters, not specifically from degraded canals. HENRY – Each monitoring program has specific questions that are being answered. Some data is there, but apples to pineapples, these are not the same thing. What is the scope of study that will answer these specific questions because it wasn't asked to begin with. C. CAUSEY – tracers to see breathe of canal nutrients? Would this be enough to see the influence of the canals? FOURQUREAN – each canal is unique so it would only work for individual case study canal, not a complete scope of entire Keys. C. CAUSEY – trend analysis of halo? B. CAUSEY – Tracers reach seven hours to offshore. 18 hours to reach open water on one study. RIOS – Opinion: We have enough evidence through papers that poor water canal water effects nearshore waters. Nutrients are there and they are having a negative impact. FOURQUREAN – We do not have to have an impact all the way to the reef for the EPA. RIOS – Class 3 water in canals, degrading process beyond background conditions, it isn't meeting the standards. FOURQUREAN – Begin with the white paper, then restrict comments to what we know now. Starting from scratch is not effective when this has already been done. C. CAUSEY – Can tracer show how far it goes out? X number of dollars for this project, this is about money. CORNING – Tracer study – one way is

to put in on the RAD program for dissolved oxygen and not as impaired in nearshore waters. To pick canals, are we looking at them in a bigger picture, or a specific canal. HAAG – Money we will be getting cannot be used for this. Maybe sustainability funds, but there is no money available for a research project other than maybe \$75,000. RIOS – After calling the question, Subcommittee reached consensus and Motion carries for vetting the scope of work through the WQPP steering committee. Remember white paper, the bi-annual report for Water Quality Protection and that can be a big part of the scope of work, and county can task somebody to look into it now. The literature review for one. Complicated to figure out if we are looking at nearshore water or whole scope of the sanctuary. NEUGENT – add canals to Reasonable Assurance Document to address over a period of time. RIOS – RAD is an agreement between stakeholders, than once the projects are in there they become a mandate. ESPY – At the end of the day, whoever implements them needs to follow through because it would become a mandate. Updates should be done every year, but has been working on a five year cycle. This year is the update. A million dollars a year can be used for the projects. NEUGENT – need to continue perusing funds from elsewhere. Leverage money might attract more money. We took \$7 million to do this, and for that to continue, we need to be nudging DEP and EPA. HAAG – 300 canals are poor or fair - \$700 million – 700 years to restore these canals. ESPY – data is different from what she is looking out. She will walk committee through assessment and how to prioritize.

Subcommittee motion passed:

- Monroe County shall prepare a Scope of Work for the scientific peer-reviewed study to determine the effects of impaired canals waters and sewers on nearshore waters and vet through the Florida Keys National Marine Sanctuary Water Quality Protection Program Steering Committee, technical advisory committee, and management committee for input prior to moving forward with the study.

11:00 AM

Success Criteria and Metrics for Canal Restoration

DEP Water Quality Targets and Sampling Methodology, Julie Espy, DEP PowerPoint Presentation

Statewide monitoring and assessment for water quality. Reasonable Assurance Plan started in early 2000s. Ultimate goal is to restore to compliance with the RAD water quality targets. Low dissolved oxygen, primarily in canals. They are combined. Water Quality was determined to be impaired for Nutrients in 1998. WBID – Water body assessment data. In the Keys - RAD targets, and normal standards. Assessments are done: Each WBID has four spots – two in canal, two outside canal. Example would expect greater than 42 percent saturation for compliance with DO Class III standard. If more than 10 percent of the samples are under, then water body is impaired. WBID – Keys – sampling yearly but have to prioritize the data. There are some areas (WIBIDS?) that have no data due to limited resources. Strategic monitoring plan is revised each year, includes data from FIU, from FWC, whatever data are available, so we don't duplicate efforts. Assessment is done within the boundary – when it comes to plan they look at the sources (wastewater, storm water, far-field , atmosphere) and adjust for the sources. Sampling requirements – dep.state.fl.us/water/sas/sop/sops.htm Objective of the RAD monitoring is to see if the ongoing management actions by Stakeholders are actually improving water quality. Some monitoring stations are not included when it is not representative of the water body. Available assistance from FDEP and EPA: Funding from EPA, TMDLgrants funds available. Additionally, can offer monitoring assistance, training for volunteers, etc. Data base – replacing STORET to WIN – new data providers to get on board with WIN and old data providers to move data over. RIOS – this is important so we aren't duplicating data. We are already doing this. NEUGENT – Restore funds, access to lots of money. Been trying to get FWC money and other money,

can you help us out. Eight counties will get a lot of money, and state will get money for general fund, (we are in the 15 counties not disproportionately affected) which we should be using to address water quality issues in the Gulf. Any help with pushback would be appreciated.

Improving benthic communities and more abundant fish populations – Jim Fourqurean, FIU

Looking at imbalance of water quality improvement – on sides on canals, floor of canals, and right outside of canals. Immediate improvement with backfilling of deep canals, restoring circulation works. Muck removal and weed gate response is much slower. Canal 266 on Big Pine Key – muck removal was done in canal with sand top, but outside muck is seeping back in. Muck removal and weed gate didn't work because it's slumping back in from the outside bottom (about 60 percent has filled back it). Outside of mouth needs to be analyzed for future projects. NEUGENT – We can't afford to have another situation like this until this is fixed. RIOS - Canal master plan may have to be updated with this information. BRICENO – Are we collecting the data that needs to assess the compliance? ESPY – What you are doing is sufficient. Five is minimum oxygen. RIOS – Look at categories that were selected to prioritize the projects – water quality, dissolved oxygen, and how thick is the layer at the bottom of the canal. The canal master plan needs adaptive management with new metrics.

- Other Success Criteria: I.e. better water clarity, less seaweed & floating debris and reduced sulfur smell – group discussion.

11:30 AM Water Quality and Benthic Monitoring for Demo Projects– Henry Briceno, Jim Fourqurean, Steven Blackburn

EPA funding update and completion of monitoring reports for the demo projects

Steven Blackburn via phone. RIOS – Can we have a complete report to answer some of the questions before end of federal fiscal year. BLACKBURN – Report will be published this year for demonstration projects. Delay in implementation, so more data may need to be completed after some of the other projects are underway. BRICENO – This won't be final report, just a report of what was measured from one year since the site was completed. BLACKBURN – The funding is there. RIOS - Will we have money after fiscal year ends for the report. BLACKBURN – Yes, the money is there. RIOS – Report as soon as possible, but also with complete data. If sampling is done in Sept. and report by end of year? FOURQUREAN – Yes, we can report on what we have. RIOS – December 2017 we will have reports.

11:45 AM Ranking Methodology for Projects Funded by RESTORE and Stewardship Act - Greg Corning (SLIDE)

Funding limitations – RESTORE local pot, RESTORE Gulf, State Stewardship Act – HAAG next meeting to figure out how to put funding mechanism together.

Ranking – Top 15 with ease of implementation. Want to modify to include restoration costs to less than \$1.5 million, to not include restoration demonstration projects until the study is concluded, and signed documents from homeowners. Ease of implementation – would need staging area for equipment, ease of permitting (mangroves, seagrasses). Will need to go out in field to look at these things to move forward. SPRUNT - Will funding for unincorporated not include incorporated? CORNING - Master plan includes the entire county. NEUGENT – Restore money – Monroe County Commission is arbiter of the money, the municipalities have always been considered in the distribution of the funding. Municipalities (for Marathon and Islamorada – Key West, Duck Key, Layton, and Key Colony Beach did not have poor quality canals) will need to present projects. County - It is to be shared, but county has already invested a lot of money into securing these funds which will be taken into consideration in the scope of the allocation of these funds. HAAG – Does WIBD fit into this. ESPY – Will work with Greg to help prioritize water quality in general context with definitions of

better targets, but will not make official designations of which need to be done. HAAG – Just look at the poor canals? CORNING – You may have to look at fair due to cost effectiveness. NEUGENT – Project proposal from municipalities will have to be used as leverage. HAAG – This is just how Monroe County will rank it. But, municipalities can use this criteria, too. CORNING – We need an approval to move forward with the ranking methodology. HAAG – This is approved criteria via vote. RIOS – proposed Motion to support this criteria with the amendment of removal of number 1 (Remove Unincorporated Monroe County to include all Monroe County) HAAG - This is for any projects coming up. RESTORE MONEY – needs to talk to Lisa Tennyson for Restore Money. HAAG – This is limiting, and I don't want this to affect municipalities. Needs to eliminate projects under \$1.5 million for county. Canal 383 – Can't move forward without signed access agreements after already starting project. NEUGENT – Recommendation need to come through the steering committee before being presented to the county commission. GARRETT – The whole purpose of the past two years of meetings is to make sure we are all on the same page. RIOS – Member of the public requested to speak before before the Subcommittee vote. Mr. Stewart Schaffer provided public comment – see below. HAAG – We can this at the next meeting? GARRETT moved the amended motion, SPRUNT second – motion passed. We can revisit this as we learn more. Adaptive management.

12:25 P.M. Public Comment

STEWART SCHAFFER – PUBLIC COMMENT – Ease of implementation and ease of permitting – I thought those were there because there were time frames to consider, but this shouldn't be that important for this. WQ summery and ranking – maybe not just one test, but something more scientific under the 2013 plan revisited after the demonstration projects.

COLIN HANNAFORD – PUBLIC COMMENT – First - When we looked at the ranking criteria, the five rankings, orientation of canal – that perimeter should be measured, but points a canal in the wrong direction. If DO is low, but there is two feet of muck, from mangroves, then it is taken out of the equation. There is a fundamental problem in the way the ranking system is working. Mangroves are making us not to be considered. If you have bad canals, if it's low DO it should be considered. Second – Do canals cause detriment to offshore water. Is the problem the canal, if water is coming from fertilizer runoff or weed coming in, then is it the canal, or is it the source of the pollutant? HAAG – AMEC is going back to resample all of the canals with this grant. HANNIFER – Variation of how time, temperature, etc is taken into account. ESPY – DO saturation takes into account the temperature and is a better method. HANNIFER – We need more public input before these motions are passed.

DIRK SMITTS – PUBLIC COMMENT - Canal 59 Key Largo– What is a RAD? RIOS – Reasonable Assurance Document to make sure we are meeting the minimum water quality standards. Monroe County was already making progress, so there is a provision in the state mandate to provide that we are trying to do things to make it better through these demonstration projects. Complication relies on a list of projects we are required to do, like the wastewater, the improvements in canals came later when there was indication that the wastewater was not the only issue. If project is in the RAD it must be completed. . ESPY – That is assurance from the entity that it will get done, but there are accommodations that can be made. RIOS – we can provide the link to the RAD web page. DIRK – Tracer – whatever day it's done, wind, rain, must be done multiple times. Lastly, once the canal is clean, shouldn't it be fixed? Why do we need to spend money to study it?

12:36 PM Adjourn Meeting

