

FLORIDA KEYS NATIONAL MARINE SANCTUARY
Water Quality Protection Program Steering Committee
August 14, 2014
Marathon Government Center
Marathon, FL
DRAFT MINUTES

Steering Committee Members Present

Jennifer Derby, EPA Region IV (Co-Chair)
Jon Iglehart, FDEP (Co-Chair)
Charlie Causey, Florida Keys Environmental Fund
Sandra Walters, SWC, Inc. citizen representative maritime interests of the Florida Keys
Billy Causey, NOAA Southeast Region of National Marine Sanctuaries
Carol Mitchell, South Florida Natural Resources Center, Everglades National Park
Andrea Leal, Florida Keys Mosquito District
Chris Bergh, The Nature Conservancy, Vice-Chair of Sanctuary Advisory Council
John Hunt (for Gil McRae), FWC Fish and Wildlife Research Institute
Chris Eggleston (for Nancy Finley), FWS Florida Keys National Wildlife Refuge Complex
Commissioner George Neugent, Monroe County Board of County Commissioners
Don Hubbs, Florida Keys Aqueduct Authority
Andrea Leal, Florida Keys Mosquito Control District
Mike Forster, Islamorada, Village of Islands
Rebecca Jetton, Florida Department of Economic Opportunity, Florida Keys Critical Area

Management Committee Members Present

Sean Morton, NOAA Florida Keys National Marine Sanctuary
Gus Rios, Florida Department of Environmental Protection
Steve Blackburn, EPA Region IV
Scott Donahue, NOAA Florida Keys National Marine Sanctuary
George Garrett, City of Marathon

I. Call Meeting to Order (Chair, Jennifer Derby)

Opening Remarks, Jennifer Derby, EPA
Review and Adopt Agenda, Chair

Ms. Jennifer Derby reviewed the agenda and noted that there will be slight changes to the agenda because a small group of citizens made a request in advance to present to the committee. A member of the group will give a short presentation after the wastewater updates, which will be followed by public comment on wastewater issues. Jennifer would like to discuss membership at the end of the day. No other items were noted.

Approve minutes from February 12, 2014 meeting
Commissioner Neugent moved to approve the minutes of the February meeting. This motion was seconded by Jon Iglehart. No objections were noted. Motion was passed.

II. Update on Wastewater Projects in Monroe County

Monroe County, Representatives of Municipalities, and Key Largo Wastewater Treatment District. (Kevin Wilson, Zully Hemeyer, Margaret Blank, Greg Tindle)

Mr. Kevin Wilson provided an update on the status of wastewater projects, including the connection report. To view his presentation, visit http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html. Mr. Wilson noted that at the meeting, Mike Forster was representing Greg Tindle and Zully Hemeyer was representing the City of Marathon.

Mr. Wilson stated that Monroe County and the Florida Keys Aqueduct Authority (FKAA) are partners in the Cudjoe Regional Wastewater Treatment Plant project. At this time, the collection systems for this project have been installed on all islands and the treatment plant should be operational by 2015. Kevin showed slides to illustrate the progress made on building the plant. The clarifiers, the reactors, chemical tanks are basically finished. Huge progress is being made by Don Hubbs and his contractors. The connection report summary slide was presented. Kevin announced that the Key Largo Wastewater Treatment District (KLWTD) approved the hire of Paul Christian as the interim general manager to replace Margaret Blank, who is leaving the position. KLWTD has an online reporting tool. Paul sends his regrets because he could not attend the meeting today due to other commitments. Key Largo Wastewater Treatment District has started the use of code enforcement gently to bring people on board.

Ms. Zully Hemeyer expressed that the City of Marathon appreciated the opportunity to participate in the WQPP. The city is committed to water quality improvements and is showing progress. Properties that are not connected are in code. The city looks forward to completing the projects that are slated at this time. Zully expressed gratitude for support from FDEP, the county and other local governments.

Council Member Mike Forster explained that he is here on behalf of Greg Tindle. The residents of North Plantation Key have been given notice by Islamorada to connect if they have not done so. Code enforcement will be used if needed. Islamorada has completed the connection to the Key Largo plant and has begun sending effluent to the plant. They are still on schedule for project construction and expect to reach completion by the middle of next summer.

Kevin concluded by thanking wastewater project leaders and WQPP steering committee members for supporting these efforts. When the projects are complete, a billion dollars will have been spent to bring sewers to the Keys. He thanked everyone at the state, local and federal levels for their cooperation on this program.

III. Public Comments

Ms. Jan Edelstein

Ms. Jan Edelstein introduced herself and stated that she is part of an informal citizen's group that is focused on the back end operations of the Cudjoe Regional Wastewater Treatment System. They are concerned about the disposal of the effluent once it has been treated by the plant, not concerned about the front end, which has the gravity/grinder situation. She thanked everyone on

the committee for their vision and persistence in getting to this point. She commends committee members and their predecessors for their work in water quality.

Ms. Edelstein stated that getting the wastewater treated to AWT for the Cudjoe region is very important, but the question her group raises is what to do with the water after it is treated. This is a chance to finish this job well. She emphasized that the treatment plant is slated to inject its effluent into four shallow water injection wells. Wastewater from such shallow wells can rise toward the surface in the Florida Keys. The waters of the Keys require very low nutrient loading. To address nutrient loading, the state legislature passed legislation that required advanced wastewater treatment standards for the Florida Keys and set low nutrient standards. If a plant design capacity is 1 million gallons (mgd) per day or more, then deepwell injection is required. According to the legislation, if the capacity is less than 1 mgd, "Monroe County shall be required as part of the operation permit application to provide reasonable assurance that operation of the well will not cause or contribute to a violation of surface waters standards." This law also empowers DEP and states that DEP shall order the point or method of discharge changed "if it is demonstrated that a discharge, even if...otherwise in compliance..., will contribute to a violation of state water quality standards. She added that shallow water wells are not okay up to a million gallons per day and submits that they are suspect even when under a million gallons. Many good graphics illustrate water movement and shallow water injection wells, including those from the book Tropical Connections.

Ms. Edelstein explained the difference from a deep and shallow well using a cross section illustration from the Monroe County Sanitary Master Plan, 2000. The plan points out that because deepwell eliminates all nutrients from surface waters, the idea of requiring deep wells for smaller plants, too, was also considered, but was dropped because it was too expensive. She pointed out that although it is a bit of an exaggeration to say that all nutrients are eliminated from the environment with deepwells, they do keep nutrients out of surface waters according to reports she has read. The costs were thought to be high for this plant because there was the assumption that the well would have to be permitted to a class 1 well--one for hazardous wastes, which is more expensive. At the time, the law required back-up well to be deep wells (if the primary one was deep). Things have changed since then. In 2009, when this plant was permitted, there was no funding available (for two deepwells). Since then, shallow back-up wells have been allowed (although they can only be used 500 hours in 5 years unless special permission granted.)

Ms. Edelstein pointed out that as good as AWT is, it is not good enough for Keys waters because of the nutrients that remain in the water after treatment and because of the standards that have been set by the state in the plant's treatment permit. She showed two bar graphs comparing the DEP water quality standards with AWT standards for Phosphorus and Nitrogen for both single samples and annual averages. According the graph, the AWT permitted levels exceed the DEP water standards for nitrogen and phosphorus for both annual limits and single sample limits. This effluent is still nutrient rich when compared to natural waters and this is why it should not be disposed of in a shallow well where it is going to end up in surface waters. There is no doubt that this entire effort to sewer the Keys is important in reducing nutrients in Keys waters and that getting the Cudjoe system online will reduce nutrients as a whole to the Lower Keys. But, the system will collect wastewater from several Keys and bring it together for treatment in one place. So, while the effluent may be less nutrient rich than what came out of septic tanks, it is being

concentrated in one place. Ms. Edelstein showed graphs that compare the ramp-up effluent flows projected for daily peak and maximum per month. She noted that steady state is reached in these projections fairly quickly over time—around 2018-2019, which is the reason a deepwell is called for in this project. She spoke with County Administrator Roman Gastesi yesterday. He assured her that funding is there and that using it will not mean the loss of funding for other projects such as parks, etc. The money is there when the commissioners decide to fund it. The technology is also there to fund a deepwell. She also believes that the political will is there, too. But, the commissioners need to hear from the experts on water quality in the Florida Keys National Marine Sanctuary and this committee. She asks that the committee tell them that a deepwell is necessary and is necessary now for this project. She has heard suggestions to monitor the situation with wells, but is concerned that once the problem appears, from what she has read, it might be too late. She doesn't know how long it takes to permit, build and test a deepwell, but it has got to take some time. She is here today to ask the committee to weigh in on the need for a deepwell. She thanked everyone.

Captain Bill Wickers

Captain Wickers introduced himself. He has lived in the Keys his whole life—67 years. He was on the original sanctuary advisory council board that created the sanctuary. His biggest concern then is the same today and that is the quality of water. He has been a charter captain for 45 years and has watched the tremendous decline in the reefs and Gulf as far as coral cover. Since he was in high school and community college, he has seen hundreds of coral heads that were 200-300 years old die. The reefs used to be covered with corals. He has seen the fish and corals go downhill. His biggest concern is focusing on the getting the water quality straightened out. Right now in the sanctuary program, the focus is on fishermen—on taking from them. They are not the problem. If you don't get the water straightened out, you will have a nasty dead reef. He is glad that he came here today because he can see for himself that a lot of improvements are going on here instead of what he just reads in the paper. Key West went on deepwell and did wonderful thing down there. He thinks it would be foolish to take a chance in the Cudjoe area. This county has to protect the environment. If we expect people to clean up pollution north of us, pollution coming from other areas, then we have to do what we can here to clean up. He has seen studies saying that our local pollution is only 10-15% of the total. Even so, by trying to save money today, you are gambling with the future. The economy of this county is tied to the water quality. If there is any chance this sewage can seep back up and get into local waters, don't take it. Instead, do things right.

Mr. Bill Hunter

This is the third time he has tried to attend this meeting. He is honored to be here. He lives on Sugarloaf Key, one island west of Cudjoe. He is not a scientist, an engineer or an accountant, but is a resident. His neighbors asked him to come and speak to the committee today. They wanted him to start off by saying thank you to the state for giving the money to get this started. If you look at the votes in the county to get the sales tax increase, his area was the highest in support. They want to see this done and done right. The first question about the treatment plant was that it was going to be next to the landfill. Most people thought this was a good idea for other reasons, until they started to read about shallow wells and what happens with shallow wells. He was wondering about the issue, so he spoke to Mr. Hambright at the library. Mr. Hambright provided some articles about the history of that site. It had been in existence since 1968 and several

articles take to task what was then thought to be acceptable practices for managing a dump. Some of the people in the room are old enough to know what the word dump means and you know that best practices 45 years ago were don't ask, don't tell. Since then, there hasn't been a lot of enthusiasm for digging around and finding what is in what *used to be* a dump. He went to the county website and looked up the Environmental Assessment for this project. By in large, the document is supportive of the fact that the wells and the plant are going to be located next to a landfill because it solves a lot of other issues. But, what it doesn't seem to do is to take a look at what is going to happen to what is in the ground with shallow water injection. He found out that the county has test wells and they monitor what comes out of those wells a few times of year. He wasn't able to get the results, but has a list of what they test for. He is concerned that if they are testing for these things, then there is a good chance that these things are in that ground and could percolate out with shallow wells. Politicians, accountants, engineers and others have been debating the numbers on a spreadsheet. It might be time for scientists to stand up and say that this is not a normal site. This is a dump site and it might be time to look at what will happen with shallow wells at this site. If that has been done already, he certainly apologizes for taking the committees' time. He has not been able to find any evidence of a study and is looking to the science in this room to help out with this issue.

Jennifer thanked everyone for the time and effort people put in to giving their comments. She knows that a few people traveled today.

Discussion on Cudjoe Wastewater Well Issue

Billy Causey also thanked the commenters for their comments today. This committee has been working on water quality issues for 25 years and it gets down to biological, ecological, engineering and geological questions. Not all of the schematics that have been published and shown here today apply to the Lower Keys geology. He lives near the fishing lodge in Big Pine Key and near there is where the Key Largo limestone surface rock plunges beneath the oolitic limestone and in Cudjoe Key, this oolite layer is thick and sits on top of the Key Largo limestone. Water movement will be confined to some degree by the oolitic layer on the surface. He isn't sure exactly what will happen but won't be similar to Marathon or Key Largo. He does know that monitoring wells will be sampled and adjustments can be made, if needed. He is not sure that this water will bubble up to the surface. He thinks the oolite will keep it spread out under the rock for a distance.

John Hunt thinks that it is good to ask about water movement from shallow wells that are cased to 80 feet and poured to 120 feet. There is no doubt that the geology is fundamentally different in the Lower Keys than where Jeff Chanton conducted his studies in the Long Key area. The well in his experiment was cased to 60 and dug to 90 feet in Key Largo limestone. Because of the possible differences in the two limestone rocks, asking how water movement might be different is a valid question in this situation. Specifically, with regards to the role of the Miami oolite in terms of altering how the effluent from this plant would respond moving through the ground water and whether that movement is substantially different than what would be expected in Key Largo limestone. He doesn't know the answer, but it might be useful to know.

Ms. Edelstein added that the law's requirement for the permit applicant to provide these reasonable assurances and there is nothing in the application that provides such an analysis on

the hydrogeology. She has met with FKAA and they say they are relying on the one million gallon per day standard, which is a legal question. She agrees that we want to know what will happen here; the application doesn't provide that information.

Chris Bergh agrees with Billy Causey that the Cudjoe area has a different geological substratum. As relatively impermeable as Miami oolite is, this rock is still permeable and is not monolithic. There are fissures and caverns that are cause for concern because no one really knows. Monitoring wells might be located near the plant, but if the effluent surfaced, it might be miles away. It is too complicated to know and too complicated to monitor, effectively. He is saying this as a resident of Big Pine who will be served by this system and as an environmental advocate. He has nothing but the most respect for all the agencies, organizations involved—the planners, permitters, etc. He is not going to say that TNC will oppose this, but he is worried about it and thinks everyone should be worried about it.

Sandy Walters added that it is a tough question because a deepwell costs a lot of money. She remembers that Key West went through the same debate and recalls Dr. Kruczynski saying that deepwell injection was excessive because of the high level of AWT that was being applied. Despite that statement, the citizens of Key West very strongly spoke and said that they didn't care if that was the case. They wanted deepwell injection because they didn't want to worry about what might occur in the future. The issue that was brought up here today that she had not thought about previously is the potential movement of the groundwater itself. If this were just an issue of injecting clean water into clean water, she would still be on the fence. She definitely sees a concern in this situation and if it is not been addressed in the permit applications, a closer look should be taken. It will delay things and a deepwell will require more money to install. The deepwell is working in Key Largo and the engineers who have designed them in Key West and Key Largo have the experience already.

Sandy doesn't know if this group or a subgroup of this group can take a position on this topic. If so, the group could consider making a strong recommendation that this project be reevaluated. From the safety standpoint, the citizens that are being served by this system want to see an extra step taken. She agrees with most of the people here. It concerns her to use a number rather than the science to make this decision.

Charles Causey noted that one of the things that hasn't been addressed yet are the difference in geology mentioned by scientists here today, which seem to be hugely important in this process. At one time, Islamorada considered shallow well injections, but after months of debate, they decided it would be best to use the Key Largo treatment plant and that was a wise decision. It cost more, but the money was well spent. The science should be the determining factor in how things are done, not the money. When the Keys are finished being receiving sewers, a billion dollars will have been spent and this project will be 175 to 200 million dollars. If the costs for deep over shallow well injection only amounts to about 3% more (5-6 million) of the total cost, then it is minor in the big picture. There are no guarantees that upwelling will not occur, even if it is not probable. Not putting in a deepwell is taking a chance with the economy of the county, which is based on water quality. If grave doubts exist about the science showing no upwelling, then 3% is a small cost for an insurance policy.

George Neugent doesn't want to belabor the amount of time and effort that has been put into water quality. In fact, the county commission based on our request has put up 5 million for canal demonstration projects, along with money from Islamorada for their canal projects. Water quality is an interest that this committee has and has had for 25 years. Water quality is recognized as the life blood of the Keys and means so much to us for so many different reasons. He has heard numerous people say that they are lay people and he agrees that that looking toward the subject-matter smart people in this matter is what should be done. He still has a lot of trust in his government, especially in the Florida Department of Environment Protection. They want good water quality, too. He recognizes that mistakes are made from time to time. He sees here an interest in starting a process to research this information. The rules are known in terms of what the state says when a deepwell injection is required. The Board of County Commissioners recognizes its role with their FCAA partner, and there is an interest, but he doesn't see the immediate urgency to start drilling a deepwell tomorrow. He knows with the permitting process how long a deepwell will take. He thinks there is plenty of time based on the information that the Executive Director Kirk Zuelch has told him regarding the time it takes to hook up and begin pumping. There is a process in place here. The FCAA, FDEP, EPA and the WQPP each play a role. Today, this starts the process and discussion to make a determination of what to do ultimately. He thinks this committee cares greatly about water quality and will research this and do the right thing at the end of the day.

George Garrett explained how thing evolved to this point from his perspective. At one time, he was in charge of developing the Wastewater Master Plan for the county, roughly in 2000. He was also in charge of the project that developed the standard. At the time, the standard did not deal with the issue of what surrounded a shallow well. It simply said that discharge between 10,000 and 1 million could use a shallow well (encased to 60 feet, down to 90 feet). He thinks what has been suggested is to look at this more closely as a generality. He thinks having a 750,000 gallon well and studying whether it should be shallow or deep somewhere in the Keys is the wrong approach. The time spent trying to figure out whether or not to put it down a shallow or deepwell is a waste of time. Instead, conduct a broad study to determine how well the shallow wells work in the two geologies in the Keys and then change the standard accordingly. This needs to be done and someone needs to make this determination, whether it is the FCAA or a municipality. There have been enough problems deciding if we are going to get this project done or not. There should be something determinate in the law to allow the administrator to understand in terms of construction where they need to go. Right now, as he understands it, this project meets the standard of the law (except for the questions on how the geology surrounding the plant handles the effluent). They shouldn't have such questions. His suggestion is to conduct a study; if that is what is decided, then change the law to make construction compatible.

Billy Causey added more background information. He recalls that the last time the Technical Advisory Committee met was to discuss deepwell in Key West. Many people, including scientists and managers, attended. Many were in support of a well down to 3300 feet beneath the boulder zone, but not all. This instance is a different scenario. He pointed out that as a greater capacity is reached in the Cudjoe system, there will be a need for a backup system. He sees nothing wrong with looking to the future to make the backup system a deepwell and starting the permitting for that. What is there now is already implemented. This makes fiscal sense to him. He believes that it is true that as they reach the million gallon level, they will need to have

something (a deepwell) ready to go. He knows that Commissioner Neugent has been looking for RESTORE Act funds. Billy has made his recommendations on the Deepwell Horizon settlement that water quality in the Florida Keys be one of the top five projects. There is time to look for sources of funding. He thinks looking at the requirement to have a backup system might mean a deepwell investment of 5-6 million. This approach might help get the committee past this discussion right now.

George Neugent noted that they are looking for funding because it is nice to have found money or a windfall to avoid using hard-earned tax dollars on the issue. But, money is not the issue as Mr. Causey mentioned, this issue is doing the right thing. He would like to direct a request to Gus Rios, FDEP. (As explained earlier, Gus is not permitted to answer that question at this time.) This question is along the lines of what Mr. Hunter brought up in terms of the effects of migrating water due to lighter specific gravity water in the vicinity of the plant. He knows the area around the plant has been monitored and is not asking for an answer at this time, but thinks it would be relevant to know what has been learned from the monitoring wells.

Mr. Bill Wickers would like to mention that as part of the sanctuary plan, this program (the WQPP) was put in place. The central part of the program was to get the Keys and Key West off of the septic system and outfalls of raw sewage, which used to exist in Key West. This may not have occurred if the sanctuary program had not conducted the studies that showed better wastewater treatment was needed and released a plan that showed what needed to be done. He recalls that at that time, it was recognized that AWT and deepwell injection wells were needed. It was recognized that this community had to do its part, especially if it expected the state or federal government to clean up places such as the Everglades, the West coast and Miami. How can we convince others to do what they need to do unless we ourselves go the extra mile to do the right thing? Things that were right then are still right now. Now is not the time to gamble. Right now, the fishermen are getting a lot of flak with regards to the sanctuary, yet fishermen haven't even had access to the reef for 17 years and it is still going downhill. The reasons for declines are declines in water quality.

Co-chair Derby announced that she appreciated all comments and there will be another public comment period in the afternoon.

IV. Canal Restoration Advisory Subcommittee (Gus Rios, Greg Corning, AMEC)

Gus Rios chairs the canal restoration subcommittee. He introduced Greg Corning with AMEC, consultants for the county and Islamorada Village of Islands on the canal demonstration projects. AMEC has been doing a great job. The development of the Canal Master Management Plan was discussed at the last WQPP meeting. Right now, Islamorada and the county have money to proceed with some projects, which doesn't mean that the work won't extend to more canals in the future as more funding becomes available. Seven projects in the county have been selected and Islamorada has selected 10 canals total. Susan Sprunt can provide details on Islamorada canals as needed.

Greg Corning gave a presentation on the progress being made on the canal restoration demonstration projects. This presentation may be viewed by visiting http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html.

He explained that DEP funded two major tasks in 2013/2014—sediment characterization (for organic removal) in two canals and the design and permit of a culvert on Geiger Key (to connect two dead-end canals). In terms of the sediment characterization of organic material, AMEC learned there was much more organic matter that had to be removed than originally detected with their first survey method, which didn't pick up the full depth of the material. The results of laboratory testing will determine how the organic matter will be disposed of and the effectiveness of using a polymer to bind matter in the dewatering process (to reduce total volume). AMEC is considering different disposal options, including using a landfill in Miami-Dade County, which is an expensive option. They are also considering restoration projects and other options for disposal.

Mr. Corning described the process for designing and permitting of the Geiger Key culvert project, which involved coordinating with the different permitting agencies. A final design was submitted and all permits were received within 35 days. This was a very fast turnaround time for a permit issue. It was made possible primarily because an interagency permitting team was formed to deal with the demonstration project permits, which was done at the request of the steering committee at the suggestion of the canal restoration subcommittee. Future permits may not be issues so readily due to different technologies involved. All deliverables for this grant were submitted on time and within budget. A few weeks ago, the canal restoration subcommittee voted to select construction of the Geiger Key culvert project for 2014/2015 FDEP funding. It has not received county funding, but will go before the BOCC in September to get approval from the county to move forward.

Greg also provided an update on the rest of the canal restoration projects. AMEC expects to begin preliminary design and permitting in August/September and October. He noted that each restoration technology is being tested, but a single technology may not result in complete restoration of that canal. He noted that in some canals they were getting a minus 6 feet of organic matter in the canals. The Monroe County Comprehensive Plan language prohibits maintenance dredging to below - 6 feet mean low water, so an amendment to address this issue is currently underway.

Islamorada Village of Islands is moving forward with weed barrier/air curtain installation and aerator upgrade in Treasure Harbor canal on Plantation Key and the weed barrier in Key Mate-Lido Beach canal on Lower Matecumbe Key. Islamorada has identified a total of 10 demonstration canals, even though funding is available for these two canals at this time. The final design on the two canals has been done, which includes reviewing FIU benthic survey data. AMEC selected a contractor (VERTEX) to complete the construction. Islamorada has contracted VERTEX for two years to maintain the aeration system. Applications for permits were submitted on August 1, 2014 and they just received notice from the state that the project will be exempt from permitting. The applications are currently being reviewed by the Army Corps and Florida Keys National Marine Sanctuary.

In the near future, AMEC will be working on the Geiger Key culvert using FDEP funds, expediting permitting of other projects and identifying additional sources of funds for more restorations. Greg announced that Monroe County was awarded the EPA Grant for Citizen Canal

Water Quality Monitoring and Education to implement best management practices identified in the Canal Management Master Plan.

Chris Bergh mentioned that he was excited about this work and happy that progress was being made in canal restoration. Chris asked about the material being removed and whether it could be used as fill elsewhere if it were clean or contained somehow. He also suggested considering using the organic matter (contained) to fill-in canals that were dredged too deep. Greg explained that AMEC was working with the county to determine the best methods for disposal and considering those kinds of options. Gus Rios mentioned some of the possibilities for disposal that are being examined. Landfills are expensive and there may be alternatives depending on the nature of the organic matter/sediments.

Jennifer Derby noted Chris's suggestions for some possible uses for the materials. She pointed out that EPA regulates the disposal of materials that meet ocean water quality criteria in offshore sites and wondered whether the option of barging materials offshore was considered, including a comparison of the costs with other disposal methods. Jennifer added that permits would be issued through the division that she and Steve work in--EPA's Oceans and Coastal Protection division and that she and Steve could assist, if needed. Greg agreed that this idea should be evaluated. Rebecca Jetton added that although she doesn't know what the transportation costs would be, this fill may be useful in a place Bone Valley in Polk County where the phosphate mines are located.

Gus Rios added that economics does play a role when they look at the different options. He added that canal restoration is a team effort. The county has provided 5 million for the demonstration projects and Islamorada has committed 100k. EPA funded the Canal Management Master Plan that is being used to design the restoration project. This has been truly a team effort and has involved every single government entity, including the cities of Marathon, Layton and Key Colony Beach. FWC and the sanctuary are also involved in the canal restoration subcommittee being represented respectively by John Hunt and Billy Causey.

Jon Iglehart commended the team for the accomplishment of obtaining the permits needed for these projects in 35 days. This short time frame was accomplished because the subcommittee made a concerted effort to reach out to the permitting agencies for consultation in advance of submitting the application. This pre-application approach worked well. He thanked the subcommittee for their work and for doing a great job. Gus explained that a "permitting" team comprised of permit staff from the different agencies was formed and coordinated through the canal restoration subcommittee. The WQPP steering committee sent a letter to each agency asking for a point of contact person for this permitting team. Because FDEP is a member of the subcommittee, its sister agency, the Water Management District, was asked to process the permit. Gus announced that the US Army Corps permit contact was going to be leaving his position and that another person may need to be appointed. Billy Causey stated that Jo-Ellen Darcy, Assistant Secretary of the Army for Civil Works, is aware of this effort since the a small group from the canal subcommittee presented at a meeting of the US South Florida Ecosystem Restoration Task Force a few months ago.

Public Comment (continued)

Deb Curlee, a resident of Cudjoe Key, provided a public comment on the deepwell issue. She explained that she has had a hard time envisioning a million gallons of water per day. The closest she could come is to think of an Olympic size pool, which is 660,000 gallons of water. Every single day this amount or close to this amount of water will be going into a shallow well. Where is that water going to go? That water is fresh and she wonders about the salinity balance with that much fresh water going into the shallow well every single day. What is going to happen to the salinity balance?

V. Canal Monitoring Results (Henry Briceño)

Dr. Briceño provided a presentation about water quality in the restoration demonstration canals. This presentation is available by visiting

http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html.

Dr. Briceño opened by thanking members of the community who live in the canal neighborhoods in which he and his science team are working. The neighbors have been very helpful in watching the equipment and allowing them to store it temporarily on their property. The study they are conducting is examining changes in water quality that may accompany each of the methodologies being applied to the demonstration canals. For each canal that receives a restoration method, a control canal that receives no treatment is also studied. The methods include weed barriers, organic removal, pumping, culvert installation, backfilling and a combination of weed barrier and organic removal. With these methods, several results might be expected including reduction of organic matter load, reduction in benthic flux, reduction of bottom water hypoxia, increase water exchange and flushing and improved circulation. These results will in turn effect changes in bacterial populations, mixing rates, benthic community and other ways that can be and will be measured using water sampling analyses. He and his team samples for 15 different variables, including *Enterococci* bacteria and they sample at different depths in order to create depth profiles for oxygen, salinity and other parameters. Each canal in the study will be characterized using these data, which also includes diurnal or 24 hour sampling of salinity, temperature, turbidity, and other selected parameters.

Dr. Briceño also discussed canal water quality in comparison to sanctuary water quality. A table comparing certain parameters in sampled canals with known water quality data collected throughout the sanctuary combined over the years showed that chemical derivatives of sulfur, phosphorus, nitrogen were elevated and dissolved oxygen was reduced in canals in comparison to sanctuary waters. Some canals showed high levels of *Enterococci* in comparison to sanctuary waters. He will ask a colleague of his at NOAA to conduct further analyses on these samples to determine the origin of the bacterium since it can be present in wastes from domestic pets, birds and humans. Salinity data show that some canals have low salinities, which means waters from these canals have low circulation with inshore sanctuary waters. Other canals show high salinities, probably due to evaporation within the canal and low circulation. They are refining their methodologies and will be conducting a second round of sampling. In a few months, they will provide characterization of each canal and continue further comparisons.

Charles Causey asked about algal blooms and whether they are occurring near canal entrances or nearby. He doesn't think canal blooms would be the same kinds as the blooms occurring elsewhere in the Keys. Dr. Briceño responded that the canals may be contributing to the halo

effect, which appears around the islands within 500 feet of shore. When his team used to monitor the Southwest Shelf, they found some areas that almost always had bloom conditions. In the Keys, 4 micrograms per liter of chlorophyll is a nasty bloom, but in other areas further north it is not considered much. The blooms that develop in the north central Florida Bay eventually move through the cuts in the Keys from the bayside to the Oceanside. There is a great deal of communication between bodies of water. Even the Dry Tortugas is affected by waters originating elsewhere.

Dr. Briceño clarified the difference between fecal coliform and *Enterococci* in terms of sampling for the presence of human waste. He explained that fecal coliform is associated with fecal matter originating from different organisms and from soil, which makes this parameter not all that useful. Fecal coliform is not harmful itself, but is an indicator of the more nasty bacteria, which are more expensive to test for. EPA now recommends using *Enterococci* instead of fecal coliform.

VI. Florida Bay Sponge Restoration (Mark Butler, Old Dominion University)

Dr. Mark Butler thanked the committee for the opportunity to discuss sponges and their role in the Florida Keys ecology. Dr. Butler gave a presentation on Sponge Die-offs in the Florida Keys, which is available at http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html.

At a public forum held earlier this week, Dr. Butler and his colleagues gave presentations to inform people about how they can help with sponge restoration. He has studied lobsters in the Florida Keys for about the last 30 years and studied sponges for the past 20 years. Many things are going on his lab right now to study sponge genetics, sponge ecology and biodiversity, sponge contribution to water quality and what the loss of sponges means for underwater soundscapes. Increasingly, people have become more concern about nearshore waters and Florida Bay, including sponges. Roughly about 30 percent of the seafloor is hardbottom areas, which are dominated by sponges. He and his team monitor about 30 of the 60 species that exist. Sponges range in size and are very important to other species.

The loss of sponges in Florida Bay has affected a variety of organisms, including commercial species. Spiny lobsters use sponges as shelter when young. A commercial sponge fishery exists in the Florida Keys, but landings today are only 2-5% of what they were in 1900. This fishery declined with sponge disease and later with the introduction of commercial sponges in the 1950s. Dr. Butler and his team have conducted sponge surveys throughout the Keys to determine abundance (2002 to 2007). Over the years, a series of blooms with soupy green water has caused losses in the sponge community. Scientists sampled post-bloom to determine the impacts on sponges from the 2007 Florida Bay bloom, which resulted in the loss of sponges in numbers and in terms of diversity in one large area of Florida Bay (near the middle/upper Keys). This loss caused cascading impacts on the ecosystem, including impacts on spiny lobsters and fly-fishing.

Sponges are the most abundant and important filter-feeders in Florida Bay and the Keys. These organisms feed on bacteria-sized particles, removing them from seawater with 75-95% efficiency. Two loggerhead sponges can filter-feed an Olympic sized swimming pool in one day. It has been calculated the time it takes for the sponge community to filter Florida Bay has been

reduced significantly because of the numbers and diversity of sponges lost in the blooms around 1991. Sponges are extremely efficient at removing bacteria and other dissolved organic matter, except under conditions when bloom organism concentrations are high. Even though they are good filter-feeders, sponges can't keep up with a dense bloom. If cells counts reach about 5 million cells per kiloliter, they die. Sponge mortality means the loss structural complexity and the loss of habitat for lobster and for the organisms that live within the sponge.

Many inhabitants (toadfish, snapping shrimp) of the sponge and hard-bottom community make distinct sounds under the water. Some science is emerging that shows fishes and invertebrates (including crabs, perhaps lobsters) are cuing in on these sounds to find nursery habitats. Research is being conducted by his team on this right now. Some studies conducted by his team and by others indicate that sponges may recover naturally in some cases, but full recovery could take decades for several reasons. Sponge larvae cannot move far because of its short life span of a day or less. Because of these poor dispersal capabilities, sponges may have a difficult time recolonizing such a large vacant area (where the blooms/die-offs occurred in Florida Bay).

Dr. Butler and his science team examined survival and growth in sponge transplants in order to restore sponge communities in Florida Bay. The study involved both whole vs. cuttings of sponges and included un-manipulated nearby control sites. Phase I involved examining growth rates, survival rates and other measures using three species. Phase II involved looking at the same parameters using additional sponge species. After 4 years, survival of transplants in the wild has been about 60-65%, even when using cuttings. In areas where sponges are virtually absent, they grow very fast—presumably because they have an ample food supply. In areas with numerous sponges, the food supply is shared, limiting sponge growth (resulting in reduced growth rate that was evident in the past before sponge die-off). Sponge transplants that are whole were observed to reproduce in their new environment in a relatively short period. Sponge cuttings also reproduced, but they had to grow first, so it took longer for them to reproduce.

Dr. Butler and his team will be receiving funding from EPA for a special study, Phase III of the Sponge Restoration Project. They are very happy about this study, which will focus on the effects of sponge biodiversity on planktonic communities and water quality. The filtering capabilities, soundscapes and other parameters of sponges will also be documented. He thanked the agencies, primarily federal, that have funded their research over the years since 2000 and acknowledged that some early funding came from the state through Florida Wildlife Research Institute (now FWC Fish and Wildlife Research Institute). The amount of money spent on sponge restoration since 2000 has averaged about only 24k per year. Restoration work looks promising in terms of the positive impacts seen on the environment and more could be done with more funds. Dr. Butler offered to provide Sponge restoration bumper stickers (produced with his personal funds) to increase awareness.

Discussion/Questions

Billy Causey mentioned that there concerns from people about the commercial sponge fishers and potential impacts on large scale filtration. Dr. Butler noted studies have indicated that the biomass of commercial sponges comprises less than 5% of the total biomass for sponges. In another study, they assessed the sponge fishery and the results are available in a publically funded document. In this study, they found that spongers were very good at getting only legal

sponges and didn't have that much impact on the commercial sponges in the area. His opinion based on the data is that the sponge fishery is a non-issue compared to the blooms and water quality.

Charles Causey thinks this presentation plus what is known about sponges indicates that sponges may be the most important ingredient physically that can be added to improve water quality in the Keys. Millions of sponges have been lost over the years, but with the tight funding, growing what we need doesn't seem to be feasible. If we can't cure the blooms, which we haven't seemed to do, then we may need to grow more sponges. A massive amount of sponge restoration needs to be funded to keep water quality where we want it to be. Billy Causey agrees with Charles on this and suggested that RESTORE funds might be an option. These blooms do move through the cuts from Florida Bay to the ocean side. If we determine that sponge restoration is a big part of the answer to water quality, then that type of project should be funded in a large way.

Chris Bergh asked if the science team had examined the next step in restoration. With coral restoration success, coral scientists were able to ramp up the effort and establish multiple nurseries. Dr. Butler explained that it took four years to understand the recruitment scenario. They have learned how fast and how easily sponges can grow, but what they don't know is the biodiversity effect and the direct effect of sponges in Florida Bay on dissolved organic matter and water quality. This work will be carried out in the next few years. His team has probably moved close to 10,000 sponges and they haven't damaged the original stocks. Other places spend millions on restoration, for example, oysters in Chesapeake Bay. Something similar can be done as Charlie mentioned, but if the blooms are strong enough, it will kill the sponges. These organisms can forestall blooms at some moderate levels. He added that some sponges might be lost to blooms, but it could be argued that restoration should proceed just like it does with replanting trees and corals, even knowing that losses can occur. This is a cost benefit question that might need to be asked and evaluated.

Commissioner Neugent wanted to retract his earlier statement that money isn't an issue with the deepwell injection. He made this comment in regards to comments made by George Garrett. Commissioner Neugent would like the subject smart people to make the determination whether or not there is an impact and where that threshold should be placed. Some people have said a deepwell should be required for 200,000 gallons per day of effluent. How many plants would be needed in Monroe if we make the threshold lower? The money could add up and turn into real money.

Chris Bergh suggested that this group is saying let's get these people together. Many of the people who have concerns are lay people and their thoughts need to be expressed to the experts who are just as concerned about water quality as everyone else. This is why it is important to know when deepwell injection is required and when it is not.

Billy Causey added that this project has been underway and it is two years too late to practically make such changes. It would set things back and he feels this project needs to move forward. The effluent water is AWT.

Commissioner Neugent wants to know what it costs to go to the next level of reverse osmosis and then pumping it to the aquifer in Florida City.

Sandy Walters pointed out that the only communities that are doing that kind of thing are in Southern California. She agrees that this is highly treated effluent, but what caught her attention is what is underneath that landfill and then putting 750,000 gallons per day at a point source injected into that hydrogeology. She wants to know what is in there and how it will be affected. If the burden of proof is on the applicant to demonstrate that that is not an issue, then it needs to be studied. She wouldn't have made that argument with Key West, but she knows what has gone into landfills here. In Key West, she has had consultants look into what it would take to clean up property near the landfill for redevelopment purposes. The consultants said that since no one knows what went into the landfills, it was not even close to being economically feasible to touch these properties. In the Cudjoe case, she wants to get the hydro-geologists involved to look at the groundwater data that are available.

George Neugent agrees with Sandy, but noted that there seems to be a sense of urgency on the part of some people to build this well tomorrow. He thinks this discussion starts the process where this information is gained and they learn what is in the landfill and if, in fact, it will be affected in some way. Sandy spoke to the public commenters who were here earlier today and they are envisioning what you said—to continue down the path that they are on and begin to build the well since it takes two years to get the permit. Sandy reiterated the point that was made earlier about what happens when the gallons per day meet and exceed the standard. In terms of the threshold issue, she doesn't think that a scientist would say that there is a real significant difference between 999,000 gallons as compared to 1 million gallons. She thinks it is the data involved and the hydrogeology and wanting to be certain that the analyses are in place to provide the understanding needed for this project.

John Hunt stated that the discussion then revolves around how the Water Quality Protection Program steering committee fits in to this process. In his view, the WQPP could bring information, including hydrogeological information, into this process on a multi-year time frame. He doesn't see the WQPP becoming involved in the application process. Special studies with conservative tracers could be conducted show the movement of water. Earlier studies conducted with tracers were given as the reasons a deepwell is needed. These were done in the Key Largo limestone without the overlay of the Miami oolite. There is no reason this program can't prioritize some of these projects to bring more information about oolite. This is the role of the program in his view, rather than this group of people coming to a conclusion to influence the direction of a permit. These kinds of projects could be a priority in the next round of special studies funding to begin building information that is usable.

Chris Bergh doesn't know what such studies would cost, but a desktop study might be conducted based on the current information available. Such a study could be done with a smaller amount of money and might be the right step to get this study underway. John Hunt mentioned that he heard from Mr. Hunter with a list of variables that are being tested for in the monitoring wells and this information should be part of the synthesis. These data should provide an indication of the heavy metals that may or may not be present. The committee could at some point request a

presentation on this topic if it is something that the committee wants to know and be more involved with over time.

Lunch

VII. FKNMS Regulatory Review Update (Sean Morton)

Sanctuary Superintendent Sean Morton summarized the water quality document that the WQPP management committee and sanctuary have been developing to address water quality concerns raised by the public during the sanctuary's public scoping process for the marine zoning and regulatory review that is underway. This document summarizes what is known, what has been done, and what is planned for each water quality issue raised and will become the water quality section of the draft EIS being developed for the sanctuary's marine zoning and regulatory review. It will also serve as a predecessor to fact sheets on water quality topics, which can be posted to the FKNMS website. The draft was developed with input from the WQPP management committee and has primarily been Nancy Diersing's project.

The management committee divided water quality topics into 15 major categories and provided information, including where to find more information, for each category. The following categories appear in this document: water quality monitoring research, water quality standards and criteria, sewage treatment and stormwater runoff, canal restoration, mooring fields/liveaboards/pumpouts, safe beaches, large vessel discharges, law enforcement for water quality, Everglades restoration/ Florida Bay, turbidity, Gulf of Mexico and Mississippi River impacts, mosquito control, endocrine disruptors, marine debris and climate change and ocean chemistry. This document was circulated to the agencies as it was being developed and will be provided to the Sanctuary Advisory Council in October. The sanctuary is still open to taking input from the committee on the document and from the SAC. The council will be wrapping up their initial input before the sanctuary moves into developing a draft EIS with the range of alternatives, which will come back before the public. There is one issue that has risen through this process and that is addressing gray water discharges from cruise ships. The entire sanctuary is a no discharge, but there is a specific exception for gray water. One alternative will look at these discharges. There might be some other modifications in terms of enforcement of MSD regulations and other similar things. Many people were interested in this topic and will involve outreach and education and this might result in having more public input at the WQPP meetings. They would like to have a draft EIS out for review by the summer of 2015.

Discussion

Jon Iglehart asked for more specifics about the impacts of jet skis on fishing. Sean explained that a lot of the issue revolves around user conflicts on the flats—especially in Key West where jet ski tours run all day long around the island and in February, they cross the flats where the tarpon fishermen are fishing. Tarpon fishers want it quiet. Fish can be scared away by the noise and activity. This issue popped up during scoping at the Key West meeting. Jon pointed out that the driver for this issue was the user conflict. Sean pointed out that jet skis have impacts because they can go into very shallow water where enforcement is not that feasible due to boat size issues. George Neugent added that economic impacts take place because jet skis chase the tarpon fishermen away and the fishermen are contributing to the local economy. Sean explained that law enforcement is very expensive and is a function of state and federal appropriations. With

limited funds and resources, coordination is important and educating everyone on whom should be contacted for the different issues. It is also important to educate the Coast Guard, which has a turnover in people, on the importance of their role in protecting the sanctuary's resources.

Charles Causey has fished in the Key West area and he agrees that it is hard to fish in some areas because the jet skis disturb the fishery. He thinks that law enforcement is one of the most important things the sanctuary has to address right now. He sees a lack of knowledge about navigating in the Keys sometimes in locals and often in people who trailer their boat down here to use it. As the volume of people increases, more enforcement is needed. In 1998, it was estimated that at least 43 on-the-water officers and 6 administrators were needed to enforce the rules. He thinks there are fewer officers today. He feels to have an effective management plan, law enforcement will have to be "beefed" up. He doesn't know where the letter to Dan Basta on this topic stands. The sanctuary may need to engage in partnerships with other entities. Sean noted that an entire SAC meeting was devoted to the topic of law enforcement and that asking Dan Basta for more money for law enforcement is not the way to approach this issue. People who are concerned should contact a member of Congress. So far, no one has contacted their Congressional representatives on this issue. He strongly encourages people to do so if this is what they want to see.

Lunch

VIII. EPA Grant Awards / Budget Update (Steven Blackburn)

Steve Blackburn gave an update on the budget for 2013-2014. The two-page summary with the budget was projected onto the screen and provided in hard copy. It may be viewed at: http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html.

Steve reviewed the budget for the South Florida projects, which includes EPA staffing, travel, working capital funds, monitoring of seagrass, corals and water quality, special studies/waterways and data management. All three monitoring programs, special studies and data management received increases in funding this year and are doing extra work with those funds. This extra money was awarded from EPA headquarters due to the efforts of Jennifer Derby and others. Education is part of the mission the WQPP is charged with and the data website received more money to update the website. Special studies funding will go toward canal restoration and outreach, sponge restoration in Florida Bay and effects of exposure to mosquito pesticides. Other budget items include the REMAP project with ENP (in Everglades Ecosystem Assessment Program), an Interagency Agreement (IAG) with Everglades National Park for consultants on the lawsuits associated with the Everglades, IAG with the US Army Corps of Engineers, contribution to the Science and Ecosystem Support Division (SESD). EPA has one regulatory person, Ron Miedema, who is based in South Florida. Jon Iglehart wanted make sure that everyone knew and recognized that the extra funding (\$300k) provided this year was due to Jennifer's efforts. Jennifer pointed out that it was a team effort on EPA's part.

Chris Bergh is curious about some of the funds and why some appropriated funding (\$34, 395) goes back to EPA to support the SESD (the EPA lab in Athens). Jennifer stated that this is a requirement from EPA to pay these support funds to SESD. She informed everyone that it is

possible to make a request to the SESD for scientific assistance. John Hunt noted that this approach has not worked well in the past. Jennifer explained that it is possible to take a different approach. Her division in EPA can specify an exact study and submit it as part of a work plan to SESD. The proposal would have to compete with others in EPA. She added that EPA is trying to guard the South Florida's funding and to educate others in EPA about South Florida issues. Jennifer confirmed and added that EPA has specific areas of expertise that might be considered if this approach is taken. John Hunt stated then that the management committee should to give the idea of making a specific information request to SESD some thought. If a need were identified, Jennifer added that she and Steve would try to get it through the process. Chris Bergh suggested that the SESD people may be able to tackle the endocrine disruptor issue that was initiated by Martin Moe.

The idea of whether or not to require a match for special studies was briefly discussed. If a match is required, the study funded may be the one with the match, not necessarily the one that is desired. They could also consider giving matches preference, but not making them a requirement.

In terms of the 2015 budget, the President's budget and the house had the request for 1.4 million and the Senate requested 1.7 million above the House recommendation.

Waterways film series has been allocated \$4,400 in the EPA 2014 budget, but it has not been awarded at this time. Recently, *Waterways* has produced an episode on marine debris and safe beaches. Some agency contacts for *Waterways* have moved to other positions. Sean Morton explained that Alan Scott, Everglades National Park, and Mary Tagliareni, FKNMS, have been working on *Waterways* since the personnel were lost. Carol Mitchell stated that Everglades National Park has a person who can administer the program as they have had in the past. Sean added that Mary Tagliareni and Alan Scott can communicate with Steve Blackburn on next steps. Chris Bergh added that he thinks it is a cool and interesting program, but needs to be updated with the times. The communicators might want to think about how people receive information in today's world. Sean agrees that having 2 to 5 minute quick issues that are more web friendly for the next evolution. This could be an agenda item for the next meeting where it can be discussed more thoroughly.

Steve explained that they did not receive any RFPs for a special study priority topics-- endocrine disruptors and alternative techniques for canal restoration. John Hunt stated that the alternative techniques for canal restoration priority would provide funds to test alternate technologies for canal water quality. People with such technologies were sent this announcement for funding, but chose not to apply.

For the next special study round, Steve stated that a review panel with resource managers from outside agencies with no conflicts should be assembled to make the grant decisions. The ranking criteria could be changed and/or points can be assigned accordingly. The evaluation criteria could be improved. Partnerships, letters of support could be included in the applications. Gus Rios pointed out that the priorities for the special studies are set by the WQPP steering committee through the management committee. The Technical Advisory Committee helped with selection of the projects for funding in the past, but hasn't been convened in recent years. It

could be revived, though. Steve is envisioning more of a hybrid model between the Technical committee and the management committee. People who are directly involved potential projects can abstain or drop out as needed.

Steve explained that if the committee wants to create the mechanism for using external reviewers, they would have to initiate that process soon to be ready for next year.

A discussion took place as to whether or not it was necessary to award the \$4000 to *Waterways* for 2014. This money would be going to Everglades National Park as part of the *Waterways* agreement. Chris made a motion to fund this money to *Waterways*. It was seconded by John Hunt. Steve pointed out that this amount of money will not fund one episode, which requires about \$7,500. Chris withdrew his motion noting that everyone understands what the intention is here and people were in agreement with that tact.

IX. NOAA's Harmful Algal Bloom Forecast in Southwest Florida (Beth Dieveney)

Beth Dieveney introduced herself and explained that some colleagues from a NOAA office will be providing details about the release of a new HAB product that will be discussed tomorrow at a public meeting in Marathon to seek input on the distribution and release of this product. Beth introduced Allison Allen, who is the NOAA Ecological Forecasting Portfolio Manager. To view the presentation, visit http://ocean.floridamarine.org/FKNMS_WQPP/pages/wqpp_minutes.html.

Ms. Allen explained that at the meeting tomorrow, she will be seeking input on this product and how it will be distributed. She thanked everyone for letting her call in and speak to the committee. NOAA has had an operating HAB forecast for Southwest Florida since about 2005. The primary audience is state, local officials, researchers, and general public. The forecast focuses on *Karenia brevis*, which can aerosolize and has brevetoxin that causes a suite of impacts on public health and on marine life. Because of the potential impacts to human health, her division started working with the National Weather Service (NWS) to amplify the dissemination of the message using NWS products, specifically through the NWS beach hazards statements. If red tides threaten to affect beaches, this information will be disseminated in the beach hazard statement. Currents, winds, waves and other factors are evaluated as part of this statement.

About 1.5 years ago, the NWS in Tampa started issuing statements when conditions met specific criteria. Before making that change, they worked closely with local stakeholders, including members of the Chambers of Commerce, to determine the language that would be used. They also evaluated how that information was received and made adjustments accordingly. Starting in October of this year, the Miami and Key West NWS offices will be including this information when appropriate. Having all three weather stations issue the same kind of products will complete the coverage of the coast. The red tide blooms generally begin in the Gulf of Mexico and flow southward and can then flow northward along the coast near Miami. Without the coverage provided by Key West and Miami, it seems as if no HABs ever affect these areas. In reality, this perception is related to not having red tide beach hazard statements in these areas. The likelihood of a HAB in these new areas is much less than in waters off of Tampa and the Gulf coast. With the rollout of this new product, she and her colleagues are holding a stakeholder meeting tomorrow in Marathon to seek input on this product. They held a similar meeting in the

Naples area to make sure that this product is not having unintended consequences on businesses or tourism. They are trying to be very sensitive about how they disseminate this information. Beth added that the meeting will be held in this room tomorrow from 9 to noon. Allison offered to have anyone contact her anytime if needed.

X. FKNMS WQPP Website Update (Dave Reed)

Dave Reed, FWC Fish and Wildlife Research Institute, is here today to discuss the redesigned website for WQPP data. This redesign is being done with the extra money provided this year. This new format makes it similar in appearance to the FKNMS website. Dave showed the home page and other pages under development on the site. Daniel Kiermaier (who was not in attendance) manages this website and things can be changed as needed. Steve Blackburn explained that there was only a limited release in advance to the management committee. Dave walked through the basic structure of the website and received comments that he will communicate to the website team in St. Petersburg. A live link to the site can be shared with everyone and Dave can receive feedback via email. In the new website, the monitoring projects are highlighted and the information from the current website page will be transferred over to the new format. Steve Blackburn explained that Dave was here today to share where the website was going, but that people who are interested in the details should be the ones who give it a careful review. A handful of people could provide their comments by the end of August. Volunteers who are willing to help review include: Steve Blackburn, Nancy Diersing. Dave wanted to stress the education and outreach part of this website and connections to other agencies and their programs could be made. Jennifer does like the idea of having the data on the website to provide it to agencies, etc. The data could be available deeper in the site. Steve welcomes any ideas from the committee on their vision of the site. Jon Iglehart thinks that the website should be geared to be viewable on devices used by people when they are visiting the Keys. Data might be good for academia, but is not so important for the audience that we are seeking to reach. Dave jotted down these and the other comments made by committee members regarding the website.

XI. Public Comment Period

Jan Edelstein stated that copies of an article from Tropical Connections book has been provided and passed out to the committee. This article is based on a study conducted by Dr. Paul. He conducted a tracer analysis with a shallow well in the Saddlebunch Keys, which are immediately west of the Cudjoe Regional Service area. She feels that it is important to know the science that is available on this topic. Ms. Edelstein added that if the thinking is that having a deepwell means that Cudjoe regional shouldn't be turned on until that well is done, she doesn't think it has to be that way. Opting for a deepwell doesn't have to mean that Cudjoe regional shouldn't be turned on until the deepwell is complete.

XII. Closing remarks and Next Meeting

Discussion on WQPP membership

Jon Iglehart identified membership as an issue to be addressed and wanted to know how the committee should proceed in regards to the vacant seats. He would like to make sure the representatives are properly identified and known. Jennifer remarked that a representative has been identified for the Key Largo Wastewater Treatment District, but council members are still needed for the South Florida Ecosystem Restoration Task Force and Marathon City Council

seats. George Garrett has been filling in at this time for the City of Marathon since there have been some changes on their city council and that has left a temporary gap. Jon asked if identifying second and thirds after the primary seat holder would be helpful and it was agreed to do so. Jon suggested that Steve take on this task and he agreed. Billy Causey suggested that Shannon Estenoz or someone in her office would be the representative for the Task Force. He would be willing to ask Shannon. Billy thinks it would be really good if the cities that have not been regularly attending could be encouraged to begin attending again. The representative doesn't have to be the mayor. The South Florida Water Management District and Army Corps have not been sending a person to the meetings either. John Hunt pointed out that invitations to join should probably come from the two co-chairs with a note explaining how the program committee is being revitalized. The request would be to delegate a representative and an alternate. Jon Iglehart stated that a letter could be drafted that contains the request for a designated person and their alternate.

George Neugent pointed out that the Mayfield legislation is to be used for sewage projects, but there has been a discussion about changing the legislation so that it addresses water quality projects (since the wastewater projects are winding down).

The suggestion was made to have the next WQSC meeting on February 19, 2015, two days after the SAC meeting. There were no objections to that date. Jennifer encouraged people to let Steve know if they have any additional thoughts on this date.

Meeting adjourned.