

**MEMORANDUM**  
**Weeks Bay Watershed Management Plan**

TO: File

FROM: Mike Eubanks

DATE: April 5, 2017

SUBJECT: Stakeholders Working Group Meeting #9

DISTRIBUTION: MBNEP, BCSWCD, Thompson Team, Stakeholders Working Group

1. The meeting was conducted on April 5, 2017, at the Baldwin County Highway Department in the Conference Room, between 8:30 and 10:45 AM. Copies of the agenda, draft implementation recommendations, and meeting attendees are attached. Bob Higgins initiated the meeting with opening remarks, welcomed new SWG members Kim Burmeister (Fairhope) and Scott Bankester (Loxley), and had everyone introduce themselves. He asked if there were any comments or changes to the last meeting minutes (January 18, 2017). There were no responses so the previous minutes were approved. Bob brought to everyone's attention in the handout the list of Weeks Bay Watershed Management Plan Draft Implementation Recommendations (same as emailed to SWG on March 31st) which were to be discussed and the focus of this SWG meeting.
2. Mike Eubanks reported the overall project status. The team is approaching the finish line and hope to have the draft report within 1-2 months. There are a few gaps being filled in at the time being.
  - a. There is a scheduled meeting with NEP on April 11<sup>th</sup> to discuss the overall report format and how much information needs to be covered in the report.
  - b. The SWAT model is completed. Mike reminded the group that the model is meant to measure water quality in the watershed. It uses water quality parameters from 2011 as a baseline and projects the parameters for 2040 based on projected land use changes.
  - c. The point of the WMP is to receive site-specific recommendations within the watershed from the SWG.
  - d. The timeframe for the final WMP is June-July. A public meeting is to be held before then to introduce the plan and search for other ways to implement.
3. Bob started by discussing the first item on the recommendations list: "1. Establish a Watershed Management Plan Implementation Team." Bob asked the SWG to consider two things for each recommendation: 1) who should be responsible once the plan is complete for implementation of the watershed measures, and 2) what needs to be in place for it to happen?
4. Mike Eubanks discussed "2. Develop Inter-governmental County/Municipal Water Management Mechanism."
  - a. He started by reminding the group of one of the main take aways from the March 2016 workshop, which was increased dialog between governmental entities for long range planning.
  - b. The inter-governmental entity could be either an informal group with periodic meetings (sort of like the informal municipality/county planner meetings that have been held over the past several months), or something more formal such as a watershed management authority, as authorized under Alabama law (such as the Choctawhatchee, Pea, and Yellow Rivers Watershed Management Authority).

- c. The hope is to establish an inter-governmental watershed coordination group to meet on a regular basis. Bob asked the group to think about ways to make this happen.
  - d. At this time, it appears that the municipalities and county would be the appropriate lead for this recommendation and that the monthly municipality/county planners meetings should continue.
5. John Carlton reviewed the recommendations to “3. Address Federal/State/County/Municipality Regulations.”
  - a. By constructing the regulatory matrix, John pointed out to the group that no two municipalities are the same. Yet, it was determined from the March 2016 workshop that some level of consistency in regulations or approach is desirable.
  - b. The team is searching for areas where there is lack of regulations. John heavily emphasized the need for feedback.
  - c. When discussing item 3 (a), John stated that there are some FEMA regulations that address some requirements concerning post construction stormwater but nothing to treat water quality impacts during development.
  - d. Items 3 (a) and (c) - (g) all address municipality and county regulations regarding coordination for water quality and flood issues, and the municipality/county group would be the logical “homeroom” for these recommendations.
  - e. Item 3 (b) dealing with agricultural regulations is likely a controversial issue and would be dealt with best at the local level through the Baldwin County Soil and Water Conservation District (BCSWCD). The BCSWCD would be the best “homeroom” for this recommendation.
6. Following John’s review, Bob recapped and asked the group for feedback.
  - a. Dick Sute expressed his concern for identification of an authority (at the county level) to control water quality/quantity going beyond the “tipping point”. He stated the need to remediate instead of mitigate.
  - b. Sam Covert agreed there needs to be someone at the county level, like Leslie Gahagan does for the City of Foley, who “owns it” because nothing is long-lasting without an institution. There needs to be something set up to enforce.
  - c. Mike Shelton stated that the newly formed municipality/county planner coordination group is a step in the right direction for overview of development and agriculture within the watershed. He added that his position at the Weeks Bay Reserve was handled for several years through the BCSWCD, which could certainly be an appropriate “homeroom” for a watershed environmental coordinator position.
  - d. Miriam Boutwell asked whether Baldwin County has a delegated employee for code enforcement – nobody present was sure but suspected not.
  - e. Christopher Grant pointed out that, based on discussion, there are two different WMP follow-up groups needed: 1) a planning group through the county, and 2) an environmental-based group.
  - f. Emery Baya stated that based on historical trends over the past 10 years in Baldwin County would indicate that the WMP would do better to focus on incentivizing actions rather than increasing regulations.
  - g. Kim Burmeister mentioned Cowpen Creek detention pond (aka Winn Dixie pond) as an example of city/county cooperation in design/construction/operation of a regional-type stormwater detention pond.
  - h. Roberta Swann asked about the county’s attitude on having a Watershed Management and Stormwater Coordinator. There are already lots of different groups but need a coordination group

- to implement. Dealing with the watershed also affects something else the county has to manage. Therefore, there needs to be an overall authority at the county level that deals with these issues.
7. Emery Baya transitioned the group to “4. Address Stormwater Management and Flooding.”
    - a. He began by discussing Latif Kalin’s SWAT model. The model is geared towards agriculture and urbanization. Based on the model, urbanization is not the biggest threat in the watershed. Agriculture is currently driving the majority of sediment and nutrient loadings in the system.
    - b. He then summarized the county’s GSSHA flood model developed by John Curry, which does a good job addressing water quantity issues such as flooding, but does not have a water quality component. He added that most existing stormwater ponds are designed only for stormwater flow detention, without any consideration for improving downstream water quality.
    - c. John Carlton explained that future land use prediction of increased urbanization in the watershed is the result of conversion of primarily agriculture land into developed residential/business land uses that typically have less fertilizer application and reduced erosion rates than the historic agricultural lands. The intention is to use the SWAT model to focus on where the major sources of sediment and nutrient loads are generated and how to remediate. Long-term agricultural lands have contributed significantly to increased nitrogen level in the shallow groundwater that ultimately flows into the surface water streams (an estimated 30%-90% of the loading at the subwatershed level).
    - d. Emery – focus needs to be on getting funding for BMP’s, volunteers, and training to run the county flood model to address the flooding problem areas and to run the model with the 2040 land use forecasts, and to utilize the SWAT model to incentivize agricultural BMP’s and development LID practices. Bob Higgins added that there is a \$10,000 need for county employees to learn how to run the county flood model.
    - e. Consensus was that the appropriate “homeroom” for this recommendation would be the municipality/county planner coordination group.
  8. John Carlton also covered the next two items, “5. Encourage Increased Agriculture BMP’s” and “6. Address Watershed Water Quality Issues.”
    - a. John summarized that encouragement of farmers’ use of BMP’s aimed to exclude livestock from streams and wetlands, use of precision agriculture, use of cover crops in winter, etc. would help address sediment, nutrient, and pathogen loading in watershed streams.
    - b. Bacterial pathogens are still an issue, although the exact sources are not quantified – wildlife, livestock, human, pets. It is likely a combination of all these sources but due to the large size of the watershed, more site specific pathogen field sampling would be beneficial to pinpointing the sources and designing of the appropriate remedial treatment.
    - c. Mike Shelton pointed out that prior studies also show there is no one point source of pathogens entering the streams of the watershed. All samples are high in fecal coliform and it is a long-term issue.
    - d. Sediment and nutrient (nitrogen and phosphorus) are issues within the watershed. The Weeks Bay Watershed is so large, there is a need to focus in to the subwatershed level to see impacts, which is where the SWAT model can be useful in finding hotspots.
    - e. Sod farms continue to be an important unquantified issue. There needs to be a scientific assessment to better understand runoff issues and address the problem.
    - f. These two recommendations would best be served in the BCSWCD “homeroom”.
  9. Tim Thibaut summarized the “7. Address Environment/Habitat Issues”.

- a. Based on the landscape scale of the wetland quality, the edges of the watershed are in poor condition and the mainstream of the river is in relatively good condition.
  - b. Approaching landowners and developers to help incorporate buffers might be the only way to preserve suffering areas.
  - c. Strategic land acquisition, conservation easements, and purchase of development rights are good methods to protect valuable land resources within the watershed. The Weeks Bay Reserve and Weeks Bay Foundation serve a key role in implementation of this recommendation, hence either or both of these entities would be the best “homeroom”.
10. Scott Jackson gave an overview of the section “8. Address Coastal Erosion and Sea Level Rise Issues.”
- a. The team has compared photos of the watershed from the 1950’s to see changes of the shoreline over time.
  - b. Sea level rise is the main concern from the observation of change overtime – 6.5 inch rise at Dauphin Island gage since 1966.
  - c. Want public to have better understanding along with planners and county.
  - d. Habitat has changed and adjusted to sea level rise but it is starting to change so fast that the habitat cannot keep up.
  - e. It is important to identify sites (parcel level analysis) for conservation purposes to mitigate sea level rise and build marshes to reduce net loss.
11. Mike Eubanks wrapped up the discussion of Implementation Recommendations and briefly discussed the last two items, “9. Develop Appropriate Monitoring and Adaptive Management Mechanisms” and “10. Continue Stakeholder and General Public Outreach Education.”
12. The meeting came to a close as Bob Higgins announced the next steps to follow:
- a. Refine implementation recommendations based on feedback from SWG.
  - b. Set meeting with agricultural subgroup to address recommendations related to agriculture land uses.
  - c. Contractor team put Draft WBWMP Report together for SWG briefing.
  - d. Schedule public meeting to present finding of Draft Report.
  - e. Contractor team prepare Final WBWMP Report.

Prepared by  
Courtney Harkness and Mike Eubanks

Attachments:

- a. Stakeholders Working Group Meeting Agenda
- b. Weeks Bay WMP Draft Implementation Recommendations
- c. List of Attendees



# Weeks Bay Stakeholder Work Group

Baldwin County Highway Department Conference Room, 3<sup>rd</sup> Floor

Baldwin County Central Annex II/Regions Bank Building

8:30 – 10:30 am April 5, 2017

## **AGENDA**

1. Welcome/Opening Remarks/Approval of Minutes
2. Overall project status – Mike Eubanks
3. Draft WMP Implementation Recommendations
  - a. WMP Implementation Team
  - b. Intergovernmental Coordination Mechanism
  - c. Federal/State/County/Municipality Regulations
  - d. Stormwater Management and Flooding
  - e. Agricultural BMPs
  - f. Water Quality Issues
  - g. Environment/Habitat Issues
  - h. Coastal Erosion and Sea Level Rise Issues
  - i. Monitoring and Adaptive Management
  - j. Other
4. Roundtable discussion
5. Next steps

# Weeks Bay Watershed Management Plan Draft Implementation Recommendations

1. Establish a Watershed Management Plan Implementation Team
  - a. Identify leadership and funding
  - b. Agree on an organizational “homeroom” (NEP, NERR, S&WCD, or other)
  - c. Agree on scope: Weeks Bay Watershed or county wide
2. Develop Inter-governmental County/Municipal Water Management Mechanism
  - a. Foster governmental cooperation
    - i. Informal periodic meetings of governmental entities, or
    - ii. Formal watershed management authority, e.g., Choctawhatchee, Pea, and Yellow Rivers Watershed Management Authority (AL Act 91-602)
  - b. Planning and zoning coordination
  - c. Watershed stormwater management
  - d. Model ordinances
3. Address Federal/State/County/Municipality Regulations
  - a. Currently there is a lack of federal and state post construction stormwater management requirements designed to mitigate flooding or water quality impacts associated with development. Such regulations should either be developed or the authority to adopt such regulations delegated to local units of government.
  - b. Currently, agricultural operations are largely exempt from the permitting requirement of the Clean Water Act and there are only water quality related regulations for animal feeding operations. This lack of regulatory oversight complicates efforts to resolve or remediate water quality impacts and impairment associated with agricultural activities. Requirements for development of an agricultural management plan should be developed at the federal or state level for operations documented to be causing or contributing to a water quality standards violation.
  - c. Update municipal wetland/stream protection and LID requirements.
  - d. Improve the inspection, maintenance and reporting for post construction stormwater management facilities. Through inter-governmental communication and cooperation, municipalities and the county should seek to resolve inconsistent construction phase erosion and sediment control and stormwater management ordinances throughout the watershed.
  - e. Through inter-governmental communication and cooperation municipalities and the county should seek to resolve inconsistent post construction stormwater management ordinances throughout the watershed in order to mitigate the potential for downstream flooding and potential water quality impacts. The use of the County-sponsored flood modelling effort is recommended as a baseline.

- f. Through inter-governmental communication and cooperation, municipalities and the county should seek to resolve inconsistent subdivision requirements related to watershed protection (wetland/stream setbacks; postconstruction stormwater management requirements, LID, etc.).
  - g. Develop local (municipalities and/or county) ordinances that require/encourage and incentivize increased use of Low Impact Development (LID) practices for urban development in accordance with the Alabama LID Handbook
4. Address Stormwater Management and Flooding
- a. Baldwin County to regularly run flood prediction models with updated land use forecasts
  - b. Add a county GIS layer on which municipalities can list high potential development projects
  - c. Inventory and inspect HOA owned stormwater detention systems
  - d. Incentivize maintenance of HOA stormwater detention systems
  - e. Consider regional alternatives to multiple HOA systems
5. Encourage Increased Agricultural BMPs
- a. Livestock exclusion from wetlands/streams and protection of riparian buffers along streams
  - b. Increased use of cover crops to decrease soil erosion and nutrient leaching, improve infiltration and increase soil organics
  - c. Improved nutrient management through increased use of precision agriculture application of fertilizer and pesticides; split nitrogen application, etc. in order to reduce the potential for contaminated runoff and leaching
  - d. Identify/Remediate high livestock areas where manure runoff is found to be a source of pathogens associated with water quality issues
6. Address Watershed Water Quality Issues
- a. Identify instream erosional “hot spots” on Fish and Magnolia Rivers (and tributaries) and prioritize and implement stream restoration and bank stabilization to reduce sediment contributions
  - b. Refine SWAT model results to identify and map “critical source areas” (CSAs) at the hydrologic response unit (HRU) level within the subwatersheds having high sediment and nutrient yields/loadings, with goal of remediation of sediment and nutrient “hotspots”.
  - c. Conduct a detailed turbidity source survey in tributaries with frequently elevated turbidity levels (Corn Branch, Pensacola Branch, Baker Branch and Cowpen Creek) to pinpoint sources of excessive turbidity and develop detailed plans to reduce, minimize or eliminate the sources.
  - d. Conduct detailed pathogen source tracking and identification in watersheds with frequent high pathogen levels to distinguish between wildlife, livestock, pets, and human contributions in order to develop detailed plans to remediate pathogen sources.

- e. Develop a pathogen monitoring program that will support development of a hydrologic model that can be used to predict the occurrence of high levels of bacteria and implement a public advisory system that warns of potential health risks associated with whole body contact recreation during period of elevated bacteria concentrations (similar to use the model used to close waterbodies to oyster harvest).
  - f. Develop an inventory of septic tanks that predate the existing ADPH inventory and design and implement an effort to quantify the contribution of septic tanks to both the pathogen and nutrient loadings within stream segments having water quality issues
  - g. Identify and assess potential water quality impacts associated with biosolids and animal manure application sites throughout the watershed
  - h. Assess impacts of sod farms for runoff timing and volume, and pollutant loadings to streams
7. Address Environment/Habitat Issues
- a. Recommend Strategic Land Acquisition
    - i. Coastal zone tidal areas around Weeks Bay, particularly tidal marshes currently outside of conservation easements
    - ii. Upstream strategic locations and ecologically significant habitats, e.g., locations with habitat or species tracked by the Alabama Natural Heritage Program, subwatershed areas with intact riparian buffers, especially headwater areas.
  - b. Identify and establish demonstration sites for riparian buffers/wetland restoration in watershed areas where degradation is contributing to water quality issues based on wetland and riparian buffer areas rated in the fair to poor condition as part of this WMP evaluation
  - c. Establish invasive species management projects, e.g., cogongrass, Chinese privet, popcorn trees, kudzu, feral hogs
    - i. Public lands
    - ii. Private lands
8. Address Coastal Erosion and Sea Level Rise Issues
- a. Identify specific sites, at the parcel level in the lower reaches of the watershed, that are candidates for construction of living shoreline or other shoreline protection/restoration measures. Suitable sites would typically consist of areas that are exhibiting erosion, or habitat loss. Some of the anticipated impacts of future sea level rise can be mitigated to an extent by construction of living shorelines.
  - b. Promote programs to improve stakeholder awareness of:
    - i. Recorded sea level rise in the greater Mobile Bay area over the last 50 years
    - ii. Sea level rise predictions based on various agencies and models



- iii. Potential effects on infrastructure, residential properties and habitats in the watershed, due to future sea level rise
    - iv. Sea level rise adaptation options
  - c. Implement sea level rise adaptation projects, including but not limited to:
    - i. Identification of specific areas that are most vulnerable to sea level rise
    - ii. Implementation of coastal infrastructure retrofits
    - iii. Development of adaptation and land use plans that account for anticipated future water levels
    - iv. Acquisition of properties for conservation, where aquatic and riparian habitats are allowed to move up-gradient with the increase in sea levels
    - v. Long-term programs to evaluate implemented adaptation measures in the watershed
    - vi. Identify and implement a proactive approach to incorporating coastal resiliency concepts and feedback from evaluation programs, into planning, infrastructure, and future land uses in the watershed
    - vii. Continue and increase investments in coastal green infrastructure projects (such as living shorelines) that will protect shorelines and adapt to changes in sea level
  - d. Assess the current and potential ecological benefit provided by the protection and/or restoration of multiple islands found in the lower reaches of Fish River and Magnolia River.
- 9. Develop Appropriate Monitoring and Adaptive Management Mechanisms
- 10. Continue Stakeholder and General Public Outreach and Education

## **Weeks Bay Watershed Management Plan, Stakeholders Working Group**

### **Meeting, April 5, 2017, List of Attendees**

1. Larry Morris, Baldwin County Soil and Water Conservation District
2. Roberta Swann, MBNEP
3. Christian Miller, MBNEP
4. Seth Peterson, Baldwin County Highway Department
5. Miriam Boutwell, City of Foley
6. Kim Burmeister, City of Fairhope
7. Scott Bankester, Town of Loxley
8. Camilla English, Alabama Department of Public Health
9. Mike Shelton, Weeks Bay Reserve
10. Yael Girard, Weeks Bay Foundation
11. Ronnie Northcutt, Baldwin County Soil and Water Conservation District
12. Gerry McManus, Baldwin County Sewer Service
13. Kenny Pfeiffer, DR Horton
14. Ken Underwood, Homeowner Interest, Magnolia River
15. Teddy King, Homeowner Interest, Magnolia River
16. Dick Sute, Homeowner Interest, Fish River
17. Sam Covert, Homeowner Interest, Fish River
18. Steve Heath, Homeowner Interest, Fish River
19. Mike Eubanks, Thompson Engineering
20. Courtney Harkness, Thompson Engineering
21. John Carlton, Thompson Engineering
22. Christopher Grant, Thompson Engineering
23. Emery Baya, Thompson Engineering
24. Renie Kennemer, Thompson Engineering
25. Bob Higgins, Higgins and Associates
26. Scott Jackson, Ecology and Environment
27. Tim Thibaut, Vittor and Associates