Collier County Comprehensive Watershed Improvement Plan

Agency Stakeholder Pre-Application Meeting
September 5, 2019
2:00- 4:00 pm

MEETING SUMMARY MEMO

Meeting Purpose:
Coordination with regulatory agencies to discuss environmental and hydrological impacts to vegetation communities

Participants
Florida Fish and Wildlife Conservation Commission (FWC)
Dan Mitchell, Jessica Spickler, Christina Kontos
Florida Forestry Service (FFS)
Mike Knight, Michael Weston
United States Fish and Wildlife Service (USFWS)
Kim Dryden
Collier County:
Gary McAlpin
Earth Tech Environmental (ETE)
Jeremy Sterk and Andrew McCauley
Taylor Engineering (Taylor)
John Loper, David Stites, Jenna Phillips

Introduction
- Participants, meeting objectives, project overview

Presentation – Project Description
- Taylor Engineering staff gave a short Introduction to the Collier County Comprehensive Watershed Improvement Plan and a detailed review of the hydrologic and environmental analysis.

Discussion/Notes
- Reviewed vegetation community analysis – merged FNAI and FLUCCS datasets. Polygons of 32 acres or more, used for characterization of vegetation hydrology, accounts for more than 15,000 acres of the 22,000+ acres of the project north of US41. To scale project effects, Taylor's approach compares the Mike Deuver vegetation community hydrologic statistic ranges to the same statistics from each vegetation community. Kim stated that this differs from the USACE project which identifies % change only.

- Box and whisker plots of community elevations – non-parametric method that approximates 1.5 standard deviations to identify potential outliers. Key communities assessed: pine flatwood, hydric pine, cypress-pine cabbage palm, cypress
    - Vegetation community elevation graphs did not include locations within the PSRP.
- Mr. Weston noted that there is a lot of flow from NW to SE in area where Sabal Palm Road turns into Triple G Loop
    - John noted that Triple G Loop is addressed in model with conveyance way through the 2D model which does show water flow. However, model does not show big change with project.
    - The Taylor Engineering model includes the berm (and breaches in the berm) around old abandoned farm fields
    - Water tends to stack up on north berm and flows into abandoned farm fields, collecting in area north of six L's. model has simulated what happens with water that collects to north east of six L's.
    - FFS also stated that they are not clear on what to do with Wiggins areas (abandoned files north of 6Ls) with both projects – will conduct observations in future.
- The FWS and FWC are interested in the more southerly portion of the Flowway extent where fire destroyed a small grouping of RCW nests.
- Kim D. asked if any natural flows currently go into six L's john said that there are flowways, but they are not natural, they are pipes. During summer when not planting, they allow flow through riserboard weirs on pipes that go underneath the berms.
- Corps and CWIP model show water stacking up along east berm. Kim noted that existing flowways could be used by county to manage additional flow. Gary indicated that Collier County does not want to move water through or receive water from within Six L's, due to the potential for nutrients and other chemicals to enter the project water as it moves through the farms.
- Kim D.: noted federally permitted manatee refugee in east branch of Henderson creek (passive refuge/spring) within trailer park area east of 951. She said that she would need to know if more water will be discharged from the project into that area. John indicated that CWIP plans to use culverts under 41 and will stay away from discharges that would affect the manatee refuge. John L. indicated that Taylor would to verify/confirm this. He noted that the model includes the control structure located in same vicinity and use the flows through that structure in the existing condition as the basis for assessing increased discharges with the project. Current modeling results indicate no increased flows to Henderson Creek due to project.
- Kim noted Taylor has done a lot to prove no impacts. She requested that we assess hydrologic performance of an RCW forage habitat map developed by Mike Knight and Monica Fowles Otherwise, approach is fine.
- Dan Mitchell asked whether we will add to or bolster existing berm along right angle of south flow-way extent. Gary indicated that the current analyses do not suggest a need for changes but retrofitting or additional engineering to rebuild berms can be performed as needed. Berms are covered with vegetation and pines and appear stable. Monitoring wells located throughout the area and changes will detect hydrologic changes and provide a basis for identification of adaptive management actions.

- Kim: RCW clusters to the south of core area is no longer there, completely gone due to fire. Chopping and planting has been completed by FFS.
- Kim: 2 RCW preserves located near manatee PUD and trailer park area
- Kim: Corps just funded FWS to conduct bat study – meeting next week to set up study plan. Cannot determine for sure that bats prefer cypress over flatwoods – however, no comprehensive study and data yet. Kim to assume that forested areas with cavities must be protected as they are good for bats and like open areas for foraging and not likely to adversely affect the species. She recommended that we support the identified changes to the habitats based on the use of the habitat by the species; indicate why the changes are beneficial or benign.
- David question: What does the forest service think is the origin of the cypress pine cabbage palm and what might be the community trajectory with the project. Mike Weston indicated that a combination of changes in hydrology and burn history have caused the assemblage. Historically, it was the interface between cypress and pine flatwood, upon which cabbage palm and pine have encroached. Mike Weston indicated Avg rainy year this year but doesn't have nearly the cabbage palm seedlings that they typically observe. Areas like the Flowway extent will have more water in them, and that will cut down on ability of pine to remain in those areas. Need to ground truth flatwoods next to winding cypress – determine why developer didn't extend development in that area?
- Mike Weston: RCWs will forage in cypress on edge of flatwoods. If those areas convert to more cypress – how will that impact RCWs? Mike W to provide map lat/long of fire break from 2018 or verify that we have the most up to date map.
- Jessica appreciated the presentation of the stage duration curves with the vertical axis as water elevation above or below ground and horizontal axis as days of the year (1-365).
- Core hydration area will include a hydroperiod of 10 months or more and additional 8 inches wet season water depths. Mike Weston requested that we look at spring (March-May) water levels to provide assurances on 'fire blanket' in those dry months.
- Flatwoods on the west side of the project (next to Collier Blvd) show elevated dry season groundwater. Group discussed potential reasons for this, including the likelihood that the residential development (reduced ET) and water management approach (keeping stormwater ponds at relatively high levels for aesthetics or irrigation use) elevates groundwater to the east of the development boundaries. FFS: In area of ID 271 and 249 pine flatwoods burned during fire; nothing is left of those habitat patches.
- FFS: Pine flatwoods 228 and 234 did survive fire and need to be maintained as pine flatwoods.
- Kim mentioned that she has a map of tropical vegetation stands, much smaller areas than 32+ acre areas in analysis.
- Mike Weston: In areas where caprock close to surface (not picked up in soils data) is behavior different in hydrology? Does water go down quicker or slower? Jeremy noted caprock just east of Triple G loop within hydric pine. Depth of wells as shallow as 2 to 2.5 feet where caprock was present. Well located at location 32 to represent that area.
- Mike Weston specific interest in area where following wells located: 26, 36, 31, 27, 37, 38. FFS spent lots of effort on exotics treatment in this area and plans to do aerial spray, as Melaleuca still coming back

- Kim to provide map of area where they plan to recruit RCW. Kim wants to conclude little to no effect from county project – then focus on long-term management and monitoring plan (in the event that we are wrong). Then Jessica to identify what would be required for monitoring and adaptive management strategies. Plan will ID how to know when we have an anomaly – especially with high variability in rainfall year over year.
    - Vegetation transects performed annually, groundwater data daily and downloaded quarterly.
    - Hydrology being downloaded to excel spreadsheets, next download in 2 to 3 weeks. Data collected and graphs generated but need to add topo survey to compare surface water and ground elevation comparisons.
    - Need to discuss practicality of storing data for long term access and use.
- How long post construction will county plan to monitor – RESTORE requires total of 10-year project duration (so approximately 3 years of monitoring post implementation) but this timeframe very preliminary. Subject to change.
- Will provide hydrology results for potential RCW foraging areas – then meet again to review/discuss.
- Project is on fast track to completing conceptual permit application and need to outline draft adaptive management plan.
- Taylor to send PDF presentation to participants and include on county website.
- Mike Weston: Increased hydroperiod could increase seed transport in core hydration area, a potential concern for *Melaleuca* management.