

**Silver Springs Basin Management Action Plan Meeting  
May 23, 2013 – Technical Discussion on BMAP Boundary**

**Marion County Growth Services  
2710 East Silver Springs Blvd, Ocala, Florida  
Meeting Notes**

**Opening Remarks, Introductions & Meeting Goals – Shane Williams and Mary Paulic**

This meeting will begin with further discussion about the BMAP boundary, and increasing understanding of nitrate movement within the springshed. Updates from various stakeholder organizations will be given in the afternoon. Please plan to share updates.

**BMAP Management Area – Charlie Gauthier & Mary Paulic**

Mr. Gauthier opened by “framing” the conversation with these questions and concepts.

- What should be the boundary?
- What are the other, nearby BMAPs? Focus Areas are closer in near the spring; more vulnerable areas. We’re looking to avoid additional nutrients within the spring.
- Agricultural BMPs should be looked at as preventable measures.
- Public works projects are remediation projects.
- FDEP is actively working with Wakulla Springs in a similar process. The most important part of the process is, “What are we going to do about it”.

Ms. Paulic gave a recap of the purpose for the BMAP. A TMDL nitrate target of 0.35 mg/l has been set for the Silver Springs Group, but the average monthly nitrate concentration is currently as high as 1.69mg/l for the smaller springs.

21 different potentiometric surface maps were evaluated to develop the proposed BMAP Management Area.

- There is variability in total areas depending upon the season and rainfall during the time it was created and the analyst that created it.
- Maps are developed twice per year, and we see variability even within the same year (typically 4-6 miles can be seen over a year).
- The dynamic boundary complicates issues.
- In past meetings, it was discussed that we could tie the boundary to landmarks that are less likely to change, which would create a BMAP Management Area.

Based on the proposed BMAP Management Area:

- The northern boundary is SR-26, the western boundary is I-75, the eastern boundary is made up of several local roads and the Ocklawaha River; southern is SR-44.

- To the north, Santa Fe Lake stays in Santa Fe system, which has a BMAP. Orange Lake is included because of known interconnections with groundwater through a sink hole. Orange Lake has only a TP TMDL.
- Staying away from Rodman because it's not part of this management area.
- At SR 20 and north, more local roads, difficult to draw.
- Western Boundary- I-75 makes a good boundary for political and mgmt. issues. Marion Oaks lying outside mgmt. area may be part of the Gum Springs springshed. Need further checking.
- On the eastern boundary near Orange Lake are many unnamed, small lakes, located largely in Putnam County.
- Preliminary review of data for these lakes looked at seasonal averages of alkalinity, calcium and conductivity. If high values for these analytes, one would expect groundwater interactions. They are generally low, by comparison, Lochloossa Lake is higher for all 3. May be more confined aquifer in this area. DEP is looking more closely at the lakes in this area.
- To the south, the proposed area avoids Lake Harris and Upper Ocklawaha BMAPS, but needs more discussion. There may be contributions from Lake Griffin to Silver Springs and. SJRWMD is modeling this area. Lake Griffin has a TMDL for TP and is included in the Upper Ocklawaha BMAP. Total nitrogen is also being monitored as a pollutant load reduction goal (PLRG). There has been substantial improvement since 1996 (4.5 mg/l to 2.6 mg/L Total Nitrogen). Ms. Paulic feels that it is sufficiently covered by other mgmt. plans.
- Overall the proposed BMAP Management Area covers about 1,000 mi<sup>2</sup>. This is less than maximum extents, but an extra 200 mi<sup>2</sup> will be picked up in other BMAPS.
- In addition to previously defined stakeholders the management area now includes all of The Villages, some of Lake and Sumter County, Alachua, and other small cities.
- Focus Areas will be developed based on scientific data. For example: one option is areas where overburden is 50 ft or less. There will be further discussion on the focus area(s) as more data are collected.

Q&A- The majority of questions were answered by FDEP or other agency staff.

Where does Alachua Sink drain?	We (FDEP) believe more to the north and west toward Santa Fe and Suwannee.
Is CR 315 the northern Boundary?	Yes. CR 315 S to 114 <sup>th</sup> St
Comment. Some flow but very low in Orange Lake. Very thin overburden in N Marion.	
Why deviate from TMDL boundary for BMAP?	The TMDL evaluation was not an official area; was just used to capture landuses. It was a known area that Marion County was already using for planning purposes and it was always the intent to better define a BMAP area.
There is greater significance for using the 100yr travel zone than just previous planning.	The 100 yr travel zone is based on a model, which is an assumption that groundwater flows uniformly. We know that groundwater doesn't move uniformly, so to

	protect the spring, we need to look outside of the 100 yr zone. The idea is to develop a consensus driven BMAP. This doesn't mean that we won't emphasize projects in 100 yr zone. But it won't be the boundary.
Barbra Vergara- DSV consulting would like to meet outside of this meeting. There is a Portion of Adena Springs property that has never had ground water movement directed toward Silver, but is within the proposed delineation. Following roadways may be good, but is not always merited. Could be significant properties that are divided and could make management of those properties difficult. There is not adequate information to deviate from 100 yr capture zone which was the basis for the TMDL.	
In response, Charles Gautier requested to have a presentation before the entire group. This can be facilitated for a different date.	
Roadways as delineation are a concern.	
Withlacochee and Gum Slough, are they going to be included?	There is another spring that's the headwater of Gum Slough
What method has been used to identify stakeholders	You are a stakeholder. Anyone can come to these meetings and FDEP has tried to identify stakeholder agencies.
Are there additional meetings outside of this with stakeholders?	We have discussions as part of the group. We aren't having outside discussions between agencies. (LATER CLARFICATION: There are discussions being held between agencies to discuss science, gather data and identify potential projects, but decisions will be made as part of the group).
On east boundary, Lake Bryant isn't included but is impaired.	L. Bryant could be included if it is shown to have a groundwater connection with Silver.
Why is Trudy Phelps map larger than 1,000 yr travel time?	That is a question for USGS. But, the map is an agency publication; was not created solely for the Phelps study.
If you have data that shows high nitrogen input outside of focus area, can that be included?	Yes. That inventory data becomes a tool in setting the focus area.
Comment: The basin boundary doesn't really impact agriculture because Adena will have to provide a nutrient management plan and implement BMPs independent of the BMAP.	
Are you saying that wherever the line is, Adena is going to be exempt?	Clarification- BMP implementation is not an exemption.
Lake County does not have conduit flow to Silver Springs. Having jurisdictions outside of the known area is not effective. Prioritize focus on areas that have more impact. Lake County is participating in the Wekiva BMAP.	Clarification that in the studies where an effort is made to determine the age of water coming from the spring, the values are an average. Just a small portion of Lake is in the Management Area. Since there is an overlap of BMAPs, Lake's current projects in the Upper Ocklawaha will probably be helpful.
Comment: It is costly and time consuming to include small city jurisdictions that are not directly impacted.	
Taxpayers are going to pay, and it's cheaper to prevent pollution than to clean it up.	
Are you going to discuss future growth? CRA allows for imminent domain and will force	Future growth is part of the BMAP process.

development on State Property. Building on state land will impact nutrient loads.	
Who is paying for projects?	Remediation projects are paid for primarily through local governments and their funding sources. State and federal money is also potentially available.
Comment that the model information is based on uniform flow and landforms. Supports this boundary area.	
At CRA meeting, Rick Michaels indicated that DEP had been contacted.	May have been a different department. We can talk to others in the county to see what is planned.
Comment: every cell in the model has different aquifer characteristics. So it's not really a uniform flow model.	There is a need to acknowledge conduit flow and the models don't directly address this.
Clarify that a conduit isn't directly connected to the spring. Just because you can't explore it as a scuba diver doesn't mean it's not a conduit	
Comment: No agency meetings behind the scenes? Would hope that meetings are happening between agencies. Concern that the majority of flow is now south and west rather than north and south as previously thought. Concern that this process is politically motivated and agencies are shifting responsibilities.	
What complications were being alluded to during the comments about road designations?	Roads were used because they provide a more permanent geographic reference. Roads may not always closely follow groundwater movement. It could be a problem for property owners in the area if roads split property.
Marion County as a whole shouldn't be imposing additional restrictions on areas that aren't impacting the springs. It needs to be solid and defensible.	The proposed area is based on evaluating all different potentiometric delineations. The BMAP management area was established by relying on physical features such as road systems within those delineations.
Comment: Follow the science that we have. Don't adjust for political or socioeconomic reasons.	Projects will be focused where the intensive activities or contributions occur. If you fall within the extremities, your contribution may be to just make sure that you don't add to the issue.
Comment: Everyone in the room is interested in seeing positive changes in the springs. We're all part of the same team.	
Small municipalities don't have funds available for these projects. Be careful not to aggressively require them to meet a specific limit. Make sure that treatments address real inputs.	Before any requirements are made, stakeholders bring to the table what they are able to contribute to the solution.
Being familiar with these TMDLs, is there is a blanket requirement that applies to all participants? It needs to be based on what is available. Ensure no overburdening of small municipalities.	In some cases a blanket approach works, in others it does not. Wakulla has a more uniform geology than Marion. Science is a process where you are continually learning. A delineation that was set yesterday may not be relevant today. You've done a good job of using new and historic data to set the boundaries and the process will be

	stakeholder driven.
What happened to the Lower Ocklawaha BMAP? Why wasn't it ever created?	BMAPS depend on the sequence of TMDLs being set. TMDLs were started in 2002, but many have not yet been adopted. There was consensus that activities in Upper Ocklawaha would help Lower. It's in flux. There are 3 lists of impaired waters.

### Nitrate Source Topic 3: Load Inventory and Estimate – Rick Hicks

Rick Hicks presented an approach that FDEP is taking for the Wakulla Springs BMAP to help refine loads within the specific area. A similar approach may work for Silver Springs, and Mr. Hicks showed preliminary results from that effort.

- Spreadsheet/GIS tool similar to what other counties and Del Botcher have done. Very basic and straightforward.
- Multiple study areas were considered and from that, an area to be modeled was identified. The area was broken into categories based on 3 levels of confinement-confined, semiconfined/perforated and unconfined. This was determined by differences in recharge rates.
- Identified sources of nitrogen within the model area using specific databases (FDEP WAFR, DOH and tax parcel data, census, Dept of Ag, ground-truthing, aerial photography, landuse maps, literature review, sales data for fertilizer)
- Determined inputs to the land surface within the springshed based on nitrogen sources. Analyzed data from 2002-2012. An input is what goes on ground; a load gets to the aquifer.
- Estimated attenuation- primarily from literature review.
- Estimated recharge rates as percentage of total groundwater contribution by calculating the amount of nitrogen contributed within each confinement category (i.e. X amount of N from specific category within each of the 3 confinement areas).
- Applying the approach to Silver
  - Setup- Verify land use coverage in GIS; define areas to evaluate; estimate N loads by source category and time – refine categories (specifically farms); Characterize hydrogeology (recharge potential and confinement)
  - Recharge potential- began by separating recharge rates into 5 categories in Marion because > 20 in/yr in some places, but then refined to 3 recharge categories: high-medium-low.
  - Note: Just because an area isn't confined, doesn't always mean water is percolating in. Sometimes, they're discharge areas. There's a whole lot of work to do. FDEP is interested in input and feedback on sources and loads.

### Q&A

How do you use fertilizer sales information?	Looked at fertilizer sales within the county
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	(FDACS information) and land uses within the county that would use fertilizer. Assigned source based on agronomic rates for the specific land use. Recognize that we're talking in general terms.
Agronomic rates would probably be a better indicator in case sales occur outside of the county.	Don't know yet, but that could be considered.
Do you use IFAS rates?	Yes, those are agronomic rates. Still need to refine. FDEP staff visited Marion County horse farms with staff. FDEP will use all literature reviews available.
Will this be a refinement of the work that Marion County has already done, i.e. WRAMS?	Yes, we will use that. FDEP is not trying to "build a better mousetrap".
Comment: WRAMS was more water supply oriented. The work was adopted into County Ordinances and the Land Development Code, which is being refined.	
Where does source identification take us in BMAP Development since there are no load allocations?	The tool will be used to identify biggest bang for the buck. In other words a tool for developing focus areas.
Comment: There are other tools available. Watershed Assessment Model is a more robust spatial tool.	A lot of tools are available, most take similar approaches.
Comment: recommend that you talk to producers to better define actual fertilizer application rates. Ag is serious business, and fertilizer is a business decision.	
Is there a Mobile Irrigation Lab (MIL) in Marion County?	MIL is better for row crops. We don't have a lot of row crops here.
Are you looking at reclaimed for nutrients?	Yes, our model does take that into account.

### Questions from April Meeting – Mary Paulic

What are the rules for handling septage?

Dan Dooley (Environmental Manager, MC DOH) presented a table of the 6 FDOH permitted land application sites in Marion County.

- FDOH permitted sites can take in up to 20,000 G/day, but average 10,000 G/day.
- There are no local or state rules about where the septage can come from.
- Once over the 20,000 G/day, FDEP regulates.
- Septage is treated to a certain level of pathogen reduction then land applied.
- The treatment is mainly to stabilize pH for pathogen reduction only.
- American Pipe and Tank has 4 permitted sites; 3 are existing, one new one is outside of Marion County. They stabilize the solids to class B bio-solids. To obtain Class A, biosolids require an additional 22 hours for pathogen removal.

Is there any well monitoring for the sites?	None for FDEP sites, but they have to meet agronomic application rates for nutrients based on the soils where land
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	application is occurring.
The original question was: will this be addressed in BMAP	Yes as part of Rick Hicks's work.
Are there other treatment options such as applying by airplanes?	No airplanes, but yes, road beds, composting, biosolids to energy. Rule 62-640 FAC governs biosolids.

### Agency updates:

#### Adena Permit Update - Mike Register - SJRWMD:

- Original request 13.2 mgd. Reduced to 5.3 mgd. Had 85 center pivots with 10 wells. Now proposing fewer wells.
- ERP application will be submitted and will address water quality. Their plan will include stormwater ponds for runoff. In Daisy Creek will have to show net improvement.
- SJRWMD issued the 3<sup>rd</sup> RAI on May 17<sup>th</sup>, which included a request for additional site data, modeling and water quality information. The applicant has been working with the District to minimize impacts.

Q&A- The majority of questions were answered by Mike Register

Can they use 24 mgd as long as don't use more than 5 average?	A max amount per day will be set with the permit.
Where did the 24 mgd come from?	We asked them to look at that as a max. We want to know the impact
Were the amounts suggested by IFAS?	Can't speak for them. A representative from Adena in the audience confirmed that the irrigation rates came from IFAS.
Plant city sink holes? How do we know that won't happen here.	SJRWMD will look at max withdrawals and model impacts. The drawdown would occur all within the same property, which is different than in Plant City.
Comment: A value of only 1.3 MG of withdrawals has been cited as available to permit. How do you explain?	We haven't established that. It depends on where the withdrawal occurs, and is one of the reasons SJRWMD is still working with the Applicant. Right now, there is no MFL. Using information in the proposed MFL to address the issue of unacceptable environmental harm. Once it's established, would need a prevention and recovery plan to insure no further reductions such as, recharge projects, well field management.
Problem we're having with that is that if you're talking 24 mgd vs. 1mgd available, it doesn't make sense.	I'm not aware of 1 mgd, but SJRWMD is looking at drawdowns.
Since ag doesn't use all of their CUP, are they only going to be required to report 70%?	SJRWMD is trying to determine what is most appropriate for modeling- use the total allocation or 70% of allocation. Want to make

	sure we're not pushing to AWS if the water is "paper water" not actual use.
What is holding up the MFL?	Mr. Register stated that he is not working on that project.
How do we make sure we don't have commercial units coming in to deplete our water?	Through implementation of CUP permitting.
Is there a way to restrict development to protect our resource?	We are tasked to make sure development protects our environment and planning to make sure that development occurs without harming the resource.
Can you explain ERP process and net betterment?	The applicant is required to calculate pollutant loading from site, then analyze how much they will contribute. That value is the difference that reuse or stormwater must be treated to in order to improve water quality on site. Nutrients N&P are of concern. Sufficient amount of BMPs will demonstrate net improvement. It will be difficult to assess what is "pre" condition.
Will there be monitoring?	That will depend on how much reasonable assurance is given. Would envision some monitoring. Won't know level until know final design.
If the Water Management District is making a new model how can you still authorize permits?	Model isn't insufficient for basin impacts. We're looking for more data to better evaluate localized site impacts. Existing model is sufficient to evaluate localized impacts.

Community Redevelopment Area - Chris Rison - Marion County Planning Department:

- The intent is to create a geographic area where revenues from taxes have to be spent within that area.
- The CRA could partner with other agencies to implement projects.

How many acres is state owned?	State lands make up about 37% of the area.
Are you going to develop state owned lands?	No. if a project is identified that the CRA can participate in, they could do that. Money collected within the CRA boundary has to stay within the CRA.
Are you going to do private partnerships?	The CRA agency determines how the money will be spent from a list of possibilities and priorities within their meetings and hearings. The CRA will last 30 years.
What are some of the possibilities?	We don't have specific plans. We're just setting up the tools.



Are there things that will be allowed?	That is determined by zoning and land use plans. This is to help address issues in the area.
Will you condemn? There are concerns about personal property rights.	That is a tool available to the CRA Agency, but there are strict limitations on how that can be handled.
Comment: The CRA is being put in place to correct issues in the area such as, single lane dirt roads, mobile homes and septic tanks, right on top of the boil.	
Comment: Over 40% of CRA is not blighted.	
In context of a BMAP, portions of the SR 40 stormwater project are on state lands. That is a project that could have been implemented through CRA. If a group wanted to do a nitrate reduction project, they could go to the CRA to help fund it.	
Comment: Seems to take rights away from citizens.	

Pollutant Loading Watershed Management Program - Marion County Stormwater - Gail Mowry:

- Surface water resource assessment report identifies direct loading, infiltration, and perc rates using the SIMPLE model (developed by Jones Edmunds)
- A large portion of the county, particularly in west Marion has already been evaluated. The goal is to identify where issues occur.
- Projects to correct the issues are identified in the Capital Projects Plan for implementation.
- Marion County is moving forward with Bold and Gold, which is a soil amendment to increase nutrient reduction in dry ponds.

Community Public Education Forum - Lisa Saupp - Silver Springs Alliance:

- About 300 people came through the event on May 11, held at Silver Springs.
- Many were people who the Alliance hasn't seen before and who aren't able to be at daytime meetings.
- The information we're all giving is not always as far apart as we think, but we don't understand each other's perceptions.

Final Audience Comments

Can developers look at county ponds to improve nitrate removal? We have stormwater infrastructure that we need to address. Most of what we are addressing are located in subdivisions.	If the information can be used by a developer to improve their plans, that would be available to them. Stormwater is a vehicle not the pollutant source. Marion County has an extensive public education program and will come talk to any stakeholder.
Are these the only meetings going on?	Yes, these are the BMAP meetings. There may be one-on-one meetings with technical staff and different stakeholders, but the decisions are going to be made in these meetings.

Are septic tank users stakeholders?	Decisions regarding septic tanks would be for public officials and may be handled by public ed
Does this format work? Split agenda to formal meeting and updates in afternoon?	There were no replies indicting issues with the format.
Commendation of Marion County on implementation of new technologies.	

#### Final Facilitator/FDEP Comments

- This is a stakeholder driven process, so any decisions will come in front of the group.
- FDEP is open to getting additional comments on specific areas of the basin boundary. Send he comments to Mary Paulic.
- There are various stakeholders in the room; some will have a greater role than others.

#### Next meeting date- June 20 or 23

- At the June Meeting, focus will be on wastewater sources of nitrate, projects completed and in progress, discussion of how data will be collected to incorporate project information into the BMAP, and planning for the Community Meeting
- In the meantime, there may be stakeholder One-on-One Meetings

NOTE: If you cannot make the meeting and would like to have input on the items on the agenda, please email your comments to Mary Paulic at [mary.paulic@dep.state.fl.us](mailto:mary.paulic@dep.state.fl.us). Presentations will be available on the DEP FTP site at: [http://publicfiles.dep.state.fl.us/DEAR/BMAP/Silver\\_springs/](http://publicfiles.dep.state.fl.us/DEAR/BMAP/Silver_springs/)