Frost Protection, Ag Withdrawals and Solar Farms
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Rural Development Council
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Topics to cover today

• Recap of what we covered last year
• What EPD has done to address some of these challenges
• Challenges we will face moving forward
• What has been done to get ahead of these challenges
• Ways that you all can help us address these challenges
CONCEPT VS. REALITY

This is the side you see on the news
CONCEPT VS. REALITY

This is what you don’t see.
One challenge we face is the large size of these sites.
Inaccessibility to maintenance once solar panels are installed.
Inaccessibility to maintenance once solar panels are installed.
Failure to properly design, install and maintain BMPs causing significant sediment release and impacts to state waters.
Further impacts to the Broad River in Elbert County which leads to Clark Hill Lake
Update: This site was awarded 135 million dollars in a Federal Clean Water Act lawsuit.
Significant sediment release and impacts to state waters between the solar farm and the lake
• The NPDES Permit GAR100001 for construction activities requires that any site that is going to disturb more than 50 acres at one time get approval from EPD prior to commencing the construction activity.

• EPD has established additional review criteria and specific design components for large scale solar projects.
WHAT EPD HAS DONE TO ADDRESS SOME OF THESE CHALLENGES

Review Criteria Summary:

- The applicant’s previous compliance history
- The technical justification to disturb over 50 acres at one time
- The total disturbed acreage
- Soil types on site
- Topography
- Any State Waters within 200 feet of the site
- Any Impaired Stream Segments on the property or within one (1) linear mile upstream of and within the same watershed
- Proximity to sensitive areas such as drinking water intakes, marshes, and trout streams, etc.
Specific Design Components:

- Disturbance should be segmented using naturally existing land characteristics or drainage basins. In most cases, no more than 400 acres should be disturbed at any one time.

- The following three (3) additional BMPs must be incorporated:
  - Increase all temporary sediment basins and retrofitted stormwater management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.
  - Conduct inspections and prepare a seven (7) day letter during the intermediate grading and drainage BMP phase and during the final BMP phase of the project by the design professional who prepared the Plan in accordance with Part IV.A.5. of the permit. (Note: This needs to be done for each segment of the Site.)
  - Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in the Georgia Stormwater Management Manual known as the Blue Book or an equivalent or more stringent design manual.
  - One more BMP must be incorporated from a list of 6 possible additional BMPs.
Specific Design Components:

- The Construction Schedule must be developed to ensure the completion of all land disturbance (including trenching, foundation installation, and superstructure installation) and the establishment of at minimum, temporary stabilization on all disturbed acreage before the installation of solar panels can be completed.

- The schedule must include the Site’s intent to:
  - Establish, at minimum, temporary stabilization for the entire project before the installation of panels, OR
  - Establish, at minimum, temporary stabilization on each segment of the site before the installation of panels and the commencement of the next segment.

- For solar farm projects, solar panels are to be considered impervious areas when determining the calculations and the post-construction impervious area shall be calculated as 70% of the square footage of the solar panels.
Solar site establishing vegetative cover before solar panel installation
CHALLENGES MOVING FORWARD

• Inflation Reduction Act Tax incentive of 30% until 2032. This has provided solar companies a big incentive to expedite solar siting.

• Increased number of out of state/country contractors not familiar with Georgia’s regulations and various ecosystems.

• The total acres disturbed in the next five years for solar development is estimated to be between 50,000 and 100,000 acres.

• EPD does not currently have enough staff to keep up with the projected increased workload to ensure compliance at these sites.
• The Georgia Utility Scale Solar Siting Initiative Partnership was created to develop a comprehensive guidance document regarding Best Management Practices for solar development in Georgia.

• The Partnership is made up of the following organizations:
  • Georgia Wildlife Federation, Georgia Department of Natural Resources, US Fish and Wildlife Service, Georgia Environmental Protection Division, The Nature Conservancy in Georgia, Georgia Conservancy, Tall Timbers Research Station and Land Conservancy, The Orianne Society, Renewable Energy Wildlife Institute, Quail Forever, The National Wild Turkey Federation, Turner Foundation, Georgia Power Company, Green Power EMC, Georgia Transmission Corporation

• Collaboratively, we developed a document called “Best Management Practices for Siting and Design of Responsible Solar Development in Georgia”.

• We have scheduled a BMP conference/workshop in September to meet with members of the solar industry to go over this guidance document in order to engage with them earlier in the process.

• As solar farms evolve and new, effective BMPs become available, the document will be updated. The document will be located on DNRs website.
• On July 1, 2003, House Bill 285 became affective. This Bill initiated an $80 per acre fee associated with construction activities as defined by the Erosion and Sedimentation Act of 1975 (E&S Act), The Georgia Water Quality Control Act (Water Quality Act) as well as the rules associated with both Acts. The intent of this Bill was to use the funds provided by these fees for erosion and sediment control programs on both the state and local level. In accordance with the Water Quality Act, in areas where there is a Local Issuing Authority (LIA), half of these fees ($40/acre) are to be paid directly to the LIA.

• For at lest the next five years, Georgia should see an increase of between 600,000 to 1.2 million dollars per year in revenue generated from these fees (assuming 10,000-20,000 acres per year at $60/acre). Local Governments will see an increase of 200,000 to 400,000 dollars per year (assuming 10,000-20,000 acres per year at $20/acre)

• The $60/acre and $20/acre figure was derived assuming that half of these site will be in areas with an LIA.

• This money goes into the Georgia General Fund and must be reappropriated by the legislature. We will need your help ensuring that this money is appropriated to EPD so that we can hire the addition staff necessary to keep up with the surge of solar farm development that is coming.

• You can also work with local governments to ensure the money they collect goes to the intended purpose.
Below are the Land Disturbance fees collected over the last five years for reference:

FY 2019: $1,699,288
FY 2020: $1,825,106
FY 2021: $1,923,221
FY 2022: $2,317,127
FY 2023: $2,496,681
TOGETHER WE CAN MAKE THIS CONCEPT A REALITY
Agricultural Water Withdrawal

August 29, 2023
Rural Development Council
Ania Truszczynski
1. Background on agricultural water withdrawal permitting and southwest Georgia.
2. Frost protection permitting in southwest Georgia.
   A. Background
   B. Stakeholder process
   C. EPD’s updated frost protection permitting framework.
3. How the Habitat Conservation Plan fits in.
1. BACKGROUND – FLINT RIVER BASIN

- From Hartsfield-Jackson International Airport in Atlanta to the most southwestern corner of Georgia
- Subarea 4 of the ACF basin – south of Dooly County, area of significant hydraulic connection between the Flint River and its tributaries with the Florian aquifer
- Small portions of Chattahoochee, Ochlockonee, and Suwannee River Basins are included in Subarea 4
1. BACKGROUND – TIMELINE

- Agricultural water withdrawal permitting – 1988
- Water withdrawal permitting moratorium – 1999
- Flint river drought protection act – 2000
- Flint River Basin Regional Water Development and Conservation Plan – 2006
- Original Regional Water Plans for Upper & Lower Flint – 2011
- Water withdrawal permitting suspension – 2012
- Florida v. Georgia – 2013
- First update of the RWP for Upper & Lower Flint – 2017
- Seed Grant: Water Supply Alternatives for Agricultural Surface Water Irrigators in Ichawaynochaway Sub-Basin – 2017
- Florida v. Georgia – 2021
- Agricultural Water Source Conversion for Streamflow Resilience (ASU and EPD ARPA grant) – 2022
- Second update of the RWP for Upper & Lower Flint – 2023
2. BACKGROUND – FROST PROTECTION

• In recent years, various types of citrus, blueberries, and other berry crops have emerged as attractive commodities for some farmers in southwest Georgia.

• These crops cannot be successfully cultivated without frost protection, which can require the application of large amounts of water directly onto plants to protect them during freezing temperatures.

• Water withdrawal permits are required for large amounts of water (100,000 gallons per day or more).

• Frost protection permits are not currently an option for farmers in the lower Flint River Basin (FRB) because of the permitting suspension implemented since July 2012.
2.A. BACKGROUND – FROST PROTECTION

- EPD has been evaluating various options for agriculture water withdrawal permitting in the lower FRB.
- Because the use would be limited to the traditional recharge season and limited in quantity, frost protection permits are anticipated to have a negligible effect on flows in the lower Flint River Basin.
  - Frost protection is needed as temperatures reach 35 degrees Fahrenheit.
  - Frost protection permits are anticipated to be used exclusively during the recharge season (October 15 – April 15).
  - Frost protection permits are used only a few days each year.
- As a result, frost protection permits appear to be a reasonable step in re-evaluating the permitting approach for agricultural water withdrawals in the FRB.
2.B. STAKEHOLDER SUMMARY – TARGETED OUTREACH

- EPD solicited targeted and broad feedback on the proposed permitting framework.
- EPD shared information about the proposed frost protection permitting framework with:
  - Georgia Farm Bureau
  - Georgia Agribusiness Council
  - Georgia Fruit and Vegetable Growers Association
  - Georgia Association of Groundwater Professionals
  - All Georgia State Senators and Georgia House Representatives whose districts include a portion of the suspension area
  - The Commissioner of the Georgia Department of Agriculture
  - The GA-FIT Advisory Board
• Frost protection permitting was discussed at both the Upper and Lower Flint Regional Water Planning Council meetings, which occurred on June 9 and June 15, respectively.

• EPD hosted a stakeholder meeting on Wednesday, June 21 in Albany, Georgia.

• Written comments were accepted through June 30, 2023.

• Following the stakeholder meeting in Albany, a citrus farmer in Lee County invited EPD staff to view the irrigation infrastructure at his farm and offered to provide more information about citrus’s water needs. EPD visited the farm on July 12. Representatives from GFB, GAC, GFVGA, GDA, Georgia Association of Groundwater Professionals, and UGA Extension also attended.

• EPD also visited a blueberry farm on July 12 to view the irrigation infrastructure and learn more about blueberry’s water needs.
EPD received 27 substantive comments from 13 commenters. The comments generally focused on:

- The opportunity to explore frost protection permitting in the red and yellow zones;
- Who should be eligible to participate in the permitting program (existing permit holders only, everyone, etc.);
- Whether dedicated wells for frost protection were necessary, or whether a farmer could use a single well for both frost protection and production;
- Whether variable rate motors should be allowable;
- Whether telemetry should be required; and
- Whether surface water should be an allowable water source for frost protection.
Thanks to the robust feedback received, EPD is prepared to start accepting applications for frost protection permits for water withdrawals from the Floridan aquifer for withdrawals in the green zone of the suspension area starting September 1, 2023.

Farmers in the yellow and red zones of the suspension area should submit Letters of Interest to EPD. EPD staff will begin reviewing and evaluating the Letters of Interest to determine the potential impact in the yellow and red zones from frost protection permitting. EPD staff will work with stakeholders throughout this review process.
2.C. EPD’S UPDATED PROPOSED PERMITTING FRAMEWORK

- For Floridan aquifer water withdrawals, frost protection permitting should occur in the green zones, as defined by the 2006 FRB Plan.
  - EPD will evaluate the feasibility and impact of frost protection permitting in the yellow and red zones and solicit information about interest in frost protection permits in the yellow and red zones.
  - Farmers interested in frost protection permits for property in the yellow and red zones should submit a Letter of Interest to the EPD Tifton Office.
2.C. EPD’S UPDATED PROPOSED PERMITTING FRAMEWORK

- Surface water should not be used for frost protection permits. However, EPD understands that some landowners in the Flint River Basin are hydrogeologically challenged with respect to groundwater availability. In those areas of those known challenges, EPD will consider proposed well-to-pond frost protection systems on a case-by-case basis.
2.C. EPD’S UPDATED PROPOSED PERMITTING FRAMEWORK

- Anyone in the eligible area (green zone, FRB, and areas under permitting suspension outside of the FRB) can apply for a frost protection permit.
2.C. EPD’S UPDATED PROPOSED PERMITTING FRAMEWORK

• EPD prescribed telemetry equipment to monitor air temperature and the timing and volume of water withdrawn should be required for all frost protection permits. The cost of installing a meter will be on the farmer, however EPD will install the telemetry unit with no cost to the permittee for one-time or ongoing costs.
• On a case-by-case basis, wells could be used for both frost protection and production, and variable rate motors may be accepted.
• EPD received significant detailed information about the water needs of citrus and blueberries for frost protection and production, as well as the physical configurations of frost protection and production irrigation systems for those crops. EPD determined that the production water use was very low, that requiring separate wells could result in significant increases in costs without commensurate environmental benefits, and that telemetry could be used to get good data on water usage.
3. HOW THE HABITAT CONSERVATION PLAN FITS IN.

- The suspension was intended to **protect existing users** and **the water resource**. EPD was to evaluate the suspension annually, with future modifications possible depending on the condition of the water resource.

- The Habitat Conservation Plan provides a comprehensive way of revising the suspension and developing an informed and defensible water management approach, particularly for drought.

- The development of a Habitat Conservation Plan includes technical activities that will provide important information about capacity; where capacity exists, new and expanded permits could be considered.

- Farmers in the area have experienced five different permitting regimes in the last 40 years. The process of developing the Habitat Conservation Plan will be engage stakeholders and be important for making a practical water management program that can **provide farmers with regulatory certainty** and **protect the water resource**.
Questions?

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