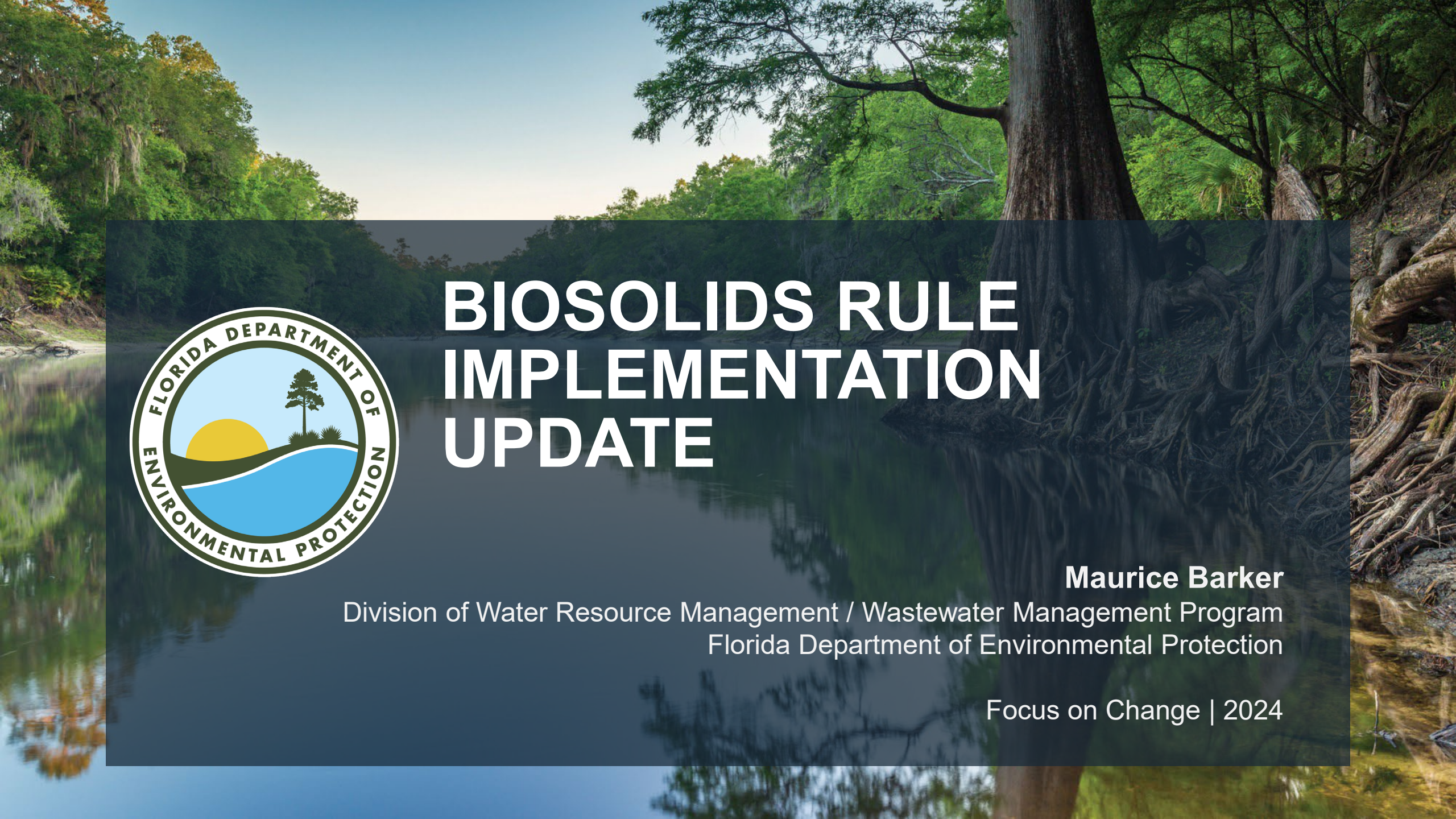

BIOSOLIDS RULE IMPLEMENTATION UPDATE

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Focus on Change | 2024

AGENDA

- Review of the 2021 revisions to the biosolids regulations.
- Key implementation items.
- Future.
- Questions.

REVIEW OF 2021 BIOSOLIDS REQUIREMENTS

Biosolids Rule Implementation Update

2021 RULE PROVISIONS

- New prohibition on land application on soils with a seasonal high-water table (SHWT) within six inches of the soil surface or depth of biosolids placement.
- Requires site enrollment in a Florida Department of Agriculture and Consumer Services (DACS) Best Management Practices (BMP) program.
- Facilities must monitor for water extractable phosphorus (WEP).
- Nutrient management plans (NMPs) shall include a nitrogen (N) based rate for each zone and a phosphorus (P) based rate; neither rate can be exceeded.
- Septage application rates.
- Revised method to determine allowed application rates that accounts for biosolids P solubility and the soil phosphorus storage capacity index.
- New soil fertility testing requirements; annual monitoring.
- Ground water monitoring; surface water monitoring.
- All sites and facilities were required to comply with the new rule by June 21, 2023.

KEY IMPLEMENTATION ITEMS

Biosolids Rule Implementation Update

SEASONAL HIGH-WATER TABLE

- **Section 403.0855, Florida Statutes (F.S.), prohibits land application on soils with an SHWT within six inches of the soil surface or depth of biosolids placement.**
- Primarily affects sites in Southeastern Florida based on SHWT values in previous permit applications submitted 2013-2020.
  - Some old application forms provided SHWT values to exact inches.
  - Some old applications forms just noted “<2 ft” or “0 to 2 ft” for the SHWT since anything less than two feet required piezometers; these permittees will need to update the SHWT values.
- Some site permittees have elected to remove all the acreage with a shallow SHWT.
- The statute allows a permittee to propose a water quality monitoring plan and a NMP that will provide the Florida Department of Environmental Protection (DEP) reasonable assurance that no water quality violations will occur if they apply.

BMP REQUIREMENT

- **Section 403.0855, F.S., requires all permitted biosolids land application sites to be enrolled in the DACS BMP program or be within an agricultural operation enrolled in the program for the applicable commodity type.**

- DACS BMP website: https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices.

- DACS has been working to enroll sites.
  - Some landowners have not attended the enrollment meetings.
  - Some sites don't appear to fall under a specific BMP crop program (silviculture, disposal of mowed clippings, pasture questions, etc.).

WEP MONITORING

- **Facilities must monitor for water extractable phosphorus (WEP) using the "Universal Water Extractable P Test for Manure and Biosolids."**
  - Measures the initial solubility of P in the facility's biosolids.
  - Discharge monitoring report (DMR) parameter B0011 (phosphorus, sludge, water extractable, dry weight (as P) in percent).
  - WEP/Total P = Percent water extractable phosphorus (PWEP); PWEP is needed by sites to prepare new NMPs.
- **Some labs did not initially offer WEP monitoring.**
  - As a "new" method, no labs were certified; DEP recognizes that labs need time to get certified and will accept results until labs are certified.
  - The WEP method is comprised of a water extraction followed by inductively coupled plasms (ICP) analysis of P; labs can get certified for ICP analysis of P.

NMP APPLICATION RATES

- **NMPs must now determine a P-based rate in addition to determining an N-based rate; neither rate can be exceeded.**
  - Seeing lower overall application rates since P-based rates are usually lower.
    - Base P rate in the regulations for pasture is around 17 lbs P/acre/year. At an N-based rate of 240 lbs/acre/year, about 120 lbs P/acre/year would potentially be applied.
    - Sites can use a combination of the biosolids WEP values and the soil phosphorus storage capacity index (CI) values to adjust the P rate to higher levels; many existing sites have negative CI values that do not allow adjusting the P rate.
- **Still working to revise some NMPs, primarily for larger sites.**
  - Some sites claimed “native phosphatic soils” where native phosphatic soils are not known to exist.
  - Some sites may be able to take deeper soil samples for the CI, but the samples can’t go into the SHWT.

SEPTAGE NMP APPLICATION RATES

- **Septage is limited to one of three basic rates.**
  - 40,000 gallons/acre/year if the rate is N-based and no grease.
  - 30,000 gallons/acre/year if the rate is N-based but the septage management facility accepts grease.
  - 12,000 gallons/acre/year if the rate is P-based.

- **Septage rates must be phosphorus-based if the soil phosphorus storage CI is less than zero.**
  - Some septage sites have used the option to test the soil deeper than six inches (but not into the SHWT) to try to get a positive CI.
  - If the CI is less than zero, ground water monitoring will be required at the septage site.

CAPACITY INDEX (CI)

- **The CI is a relative measure of the soil's ability to hold phosphorus.**
  - CI is based on soil fertility testing results for the Mehlich 3 extractions of iron (Fe), aluminum (Al) and P – see the rule definition for the math formula.
  - The University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) laboratory has several soil fertility test analysis options, but the "Phosphorus Index Test" provides soil CI.
- **Most site permitting to date has shown negative CI results for the top six inches of soil for existing septage and biosolids sites.**
  - Some sites have used the rule option to test the soil deeper than six inches (but not into the SHWT) to try to get a positive CI.
  - Deeper sampling cannot go past the SHWT.

GROUND WATER MONITORING

- **Ground water monitoring is required in any of the following situations.**
  - The application rate is 160 lbs of Total N acre/year or more.
  - The application rate is 40 lbs of phosphorus pentoxide (P2O5) acre/year or more.
  - The CI is less than zero (negative); this is the only situation where septage sites will need to conduct ground water monitoring.

- **At 5% Total N and 2.5% Total P, one ton of biosolids will supply about 100 lbs of Total N and 50 lbs of Total P (equivalent to 115 lbs of P2O5).**

SURFACE WATER MONITORING

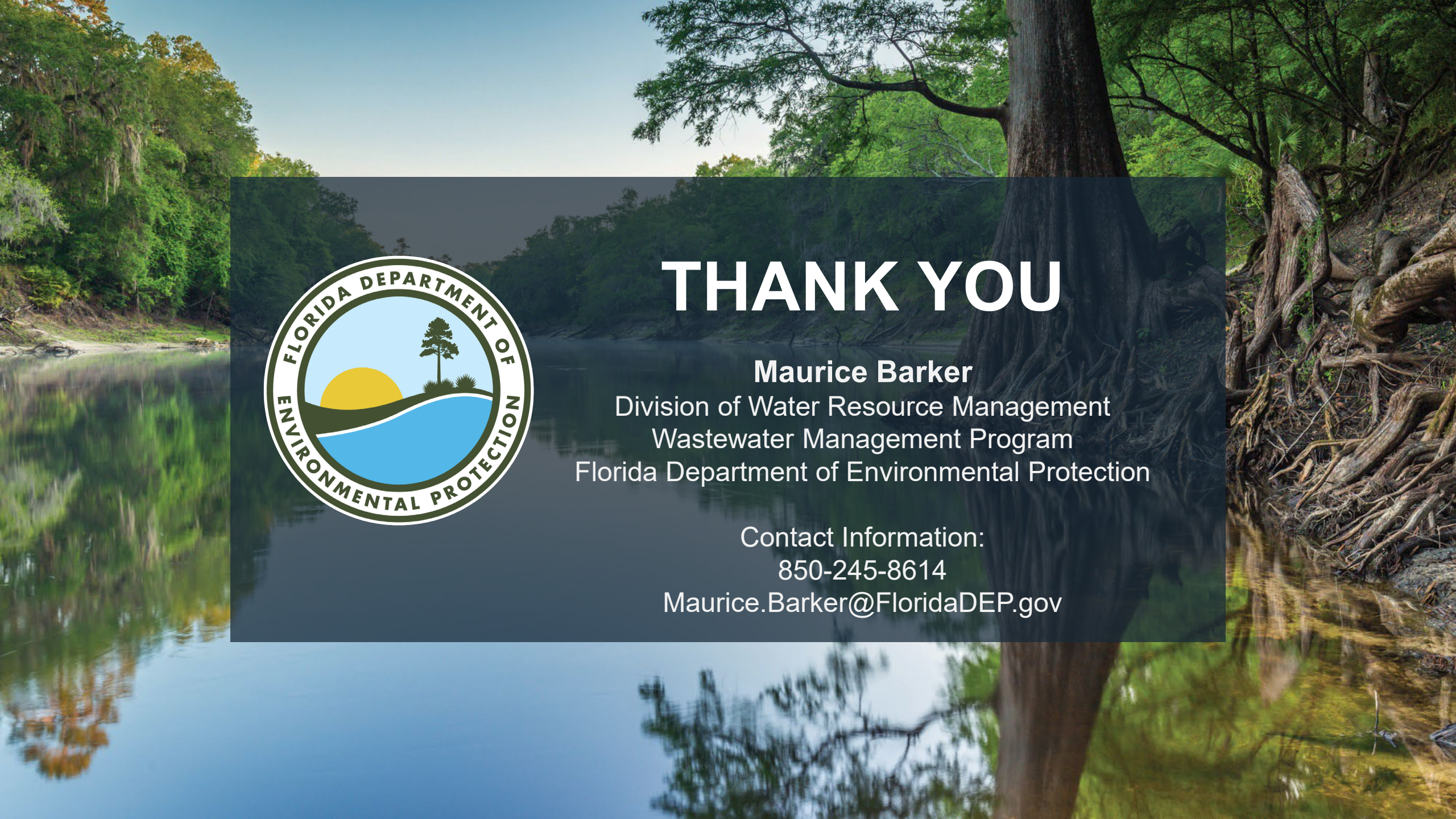
- **Surface water monitoring is required in the following scenario.**
  - The biosolids application zone is bordered or crossed by waters of the state and the application zone is located within 1,000 feet of waters of the state, excluding wetlands.
- **If the permittee is not required to monitor, DEP may conduct monitoring.**
- **DEP is in the process of approving NMPs for sites that will have to implement surface water monitoring.**
- **Expected to reduce allowable acreage at some sites; one site removed the acreage within 1,000 feet of a surface water.**

FUTURE

Biosolids Rule Implementation Update

FUTURE

- As identified in the Statement of Estimated Regulatory Costs for Chapter 62-640, Florida Administrative Code (F.A.C.).
  - Allowed application rates are dropping.
  - Some sites and some small septage management facilities have closed.
  - Interest is increasing in producing Class AA biosolids.
- Need to resolve NMP issues with large sites.
- The U.S. Environmental Protection Agency (EPA) is currently conducting a risk assessment to determine if and what regulations may be needed for per- and polyfluoroalkyl substances (PFAS) in biosolids.



THANK YOU

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