FACERS
Florida Association of County Engineers & Road Superintendents

Road to Compliance: Florida's New Stormwater Rules in Action

Understanding Key Changes and Impacts to Drainage and Roadway Projects

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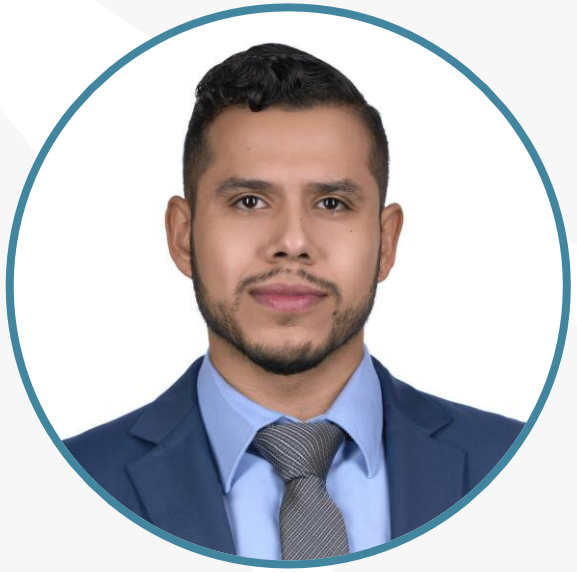
Agenda

- Overview of Rule Changes
- Case Studies
- Key Findings

Presenting Today

Scott Weeks, PE
Project Manager



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Stormwater Engineer

Victor Gallo, PE
Stormwater Engineer

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Stormwater Rule Revisions

- SB 7040, Ratification of FDEP Rules Relating to Stormwater - Effective June 28, 2024
- Environmental Resource Permitting (ERP) Chapter 62-330 F.A.C.
- ERP Applicant's Handbook Volume I
- ERP Performance Standards Implementation December 28, 2025 Deadline

Overview of Key Changes

Performance-Based Stormwater Treatment

Operation and Maintenance Requirements

Increased Treatment Options

Dam Safety

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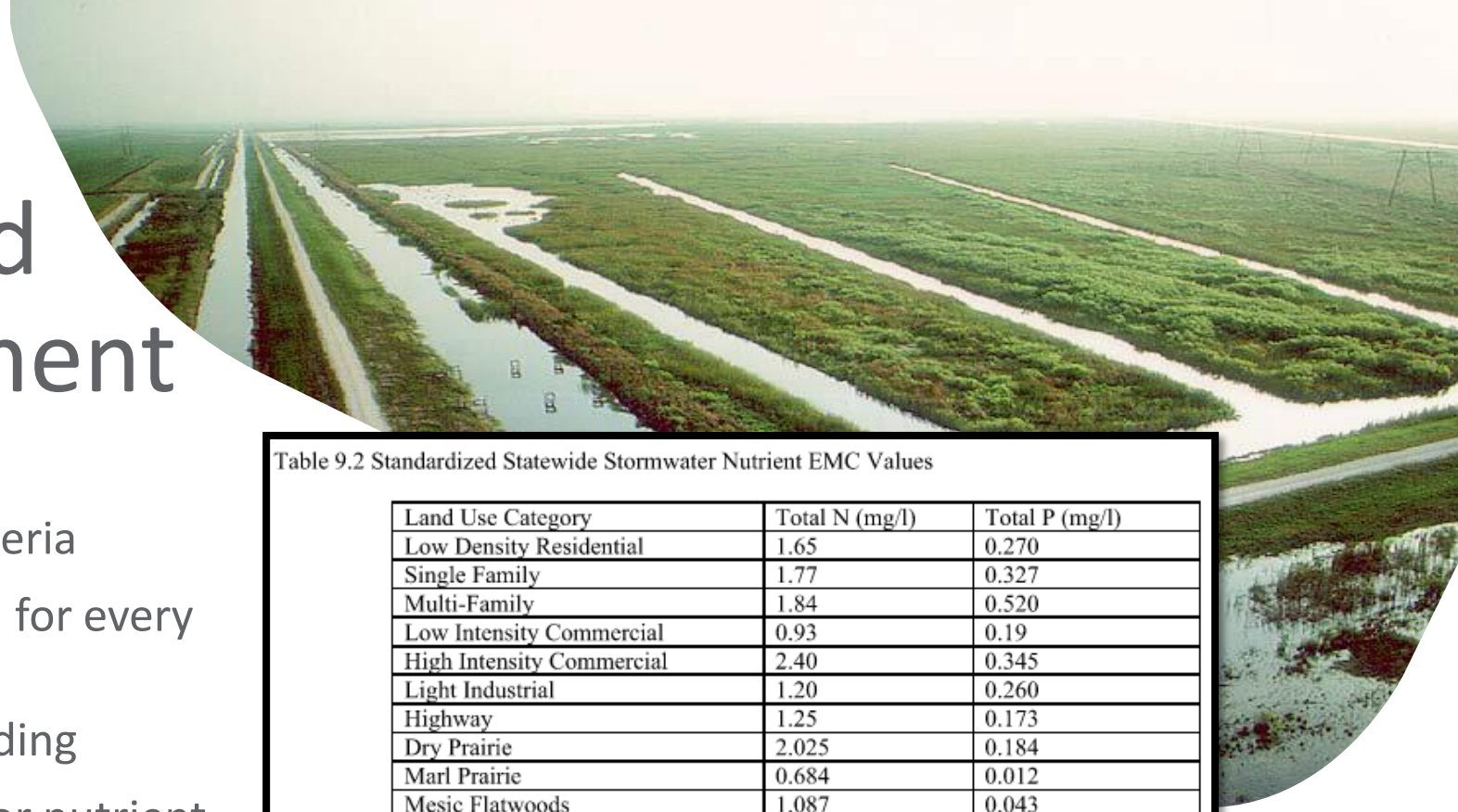
Performance-Based Stormwater Treatment



- Change from current presumptive criteria
- Nutrient loading calculations required for every project (pre- and post-development)
- Based on average annual nutrient loading
- New minimum treatment standards for nutrient reduction (TN/TP) from post-developed site
- Site/watershed specific requirements
- Flexible treatment options – can be onsite or offsite, within the same watershed

Table 9.2 Standardized Statewide Stormwater Nutrient EMC Values

Land Use Category	Total N (mg/l)	Total P (mg/l)
Low Density Residential	1.65	0.270
Single Family	1.77	0.327
Multi-Family	1.84	0.520
Low Intensity Commercial	0.93	0.19
High Intensity Commercial	2.40	0.345
Light Industrial	1.20	0.260
Highway	1.25	0.173
Dry Prairie	2.025	0.184
Marl Prairie	0.684	0.012
Mesic Flatwoods	1.087	0.043
Ruderal/Upland Pine	1.694	0.162
Scrubby Flatwoods	1.155	0.027
Upland Hardwood	1.042	0.346
Upland Mixed Forest	0.606	1.166
Wet Flatwoods	1.213	0.021
Wet Prairie	1.095	0.015
Xeric Scrub	1.596	0.156
Rangeland/parkland	1.150	0.055
General Agricultural	2.29	0.381
Pasture	3.03	0.593
Citrus	2.11	0.180
Row Crops	2.50	0.577

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Important Definitions

- **HUC-12**
  - Smallest watershed boundary determined by USGS
  - Replaces WBID scale in old rule
- **Impaired Water**
  - Water body or segment that does not meet water quality standards set forth in Ch. 62-302 and 62-4 F.A.C. (e.g. water bodies on Verified Impaired list, TMDL, Alternative Restoration Plan)
- **Outstanding Florida Water (OFW)**
  - Designated worthy of special protection because of its natural attributes
- **Redevelopment**
  - Existing commercial, industrial, institutional, roadway, or residential land use
  - Not previously permitted
  - Reduction in impervious area
  - Not increasing land-use intensity (based on EMC values)

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Stormwater Treatment Requirements

Project Scenario	Required Nutrient Reduction %			Required TSS Reduction %
	TP	TN	Additional Criteria	
All Sites	80	55	Post ≤ Pre	80
Impaired Waters	80	80	Post ≤ Pre, and net improvement for the pollutants of concern	80
OFW	90	80	Post ≤ Pre	95
Impaired + OFW	95	95	Post ≤ Pre, and net improvement for the pollutants of concern	95
Redevelopment*	80	45	N/A	80
Redevelopment + Impaired	80	45	and net improvement for the pollutants of concern	80
Redevelopment + OFW	90	60	N/A	95
Redevelopment + Impaired + OFW	90	60	and net improvement for the pollutants of concern	95

* Redevelopment sites <1 acre are exempt if not discharging to an OFW or nutrient-impaired water, and if they reduce impervious area or pollutant loading

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Determine Required Treatment Efficiency

1. Impairment Assessment
2. OFW Assessment
3. Nutrient Loading Assessment
4. Required BMP Efficiency Rate

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Updated O&M Requirements

- O&M plan required
  - Exception for MS4 O&M entities
- Cost estimate for O&M is required for all stormwater systems
  - Exception for 10/2 self-certification
- Applicant must certify financial capability to provide O&M in perpetuity
- Qualified inspector or registered professional required
  - Exception for MS4 O&M entities

Table 12-1: Inspection Frequencies for common BMPs

TYPE OF SYSTEM	INSPECTION FREQUENCY
Dry Retention basins	Once every 3 years
Exfiltration trenches	Once every 2 Years
Underground retention	Once every Year
Sand or Media Filters	Once every Year
Underdrain System	Once every 2 Years
Underground vault/chambers	Once every Year
Pump Systems	Twice every Year
Swales (treatment)	Once every 3 years
Wet Detention systems	Once every 3 years
Wet Detention systems with littoral zones	Once every 2 years
Vegetated Natural Buffers	Once every 5 years
Manufactured Devices	As manufacturer recommends in specifications, minimum once every year
Dam Systems	Once every Year
All other	Once every Year

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Exemptions

Exemptions – Grandfathering

- All current grandfathered activities and exemptions
- Minor modifications to existing permits
- Modifications to existing permits solely to bring the previously permitted system into compliance with its existing permit
- Unexpired conceptual, general, or individual permits issued prior to the effective date of rule revisions (June 28, 2024)
- New permits to construct and operate future phases of an unexpired conceptual permit
- General or individual permit applications deemed complete on or before **December 28, 2025**

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Exemptions – Grandfathering

Stormwater Management and Design Plans

- Projects for which stormwater management plans were submitted to a local or other government agency before January 1, 2024:
  - As part of a local building permit or application for a site plan or subdivision plat approval

    OR
  - An approved regional stormwater management system
- Stormwater management systems constructed in accordance with a binding ecosystem management agreement executed before January 1, 2024
- PUD final development plans approved before January 1, 2024 are exempt until October 1, 2034
- Approved DRIs with a development order issued before January 1, 2024 are exempt until October 1, 2044

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Exemptions – Public Transportation Projects

- Exemptions per 62-330.051
- Individual ERP prior to June 28, 2024 – modifications solely for public safety or design changes that do not increase impervious area by more than 10%
- Permit modifications before June 28, 2029 for ponds that were sized and permitted for future public transportation projects
- PD&E completed prior to June 28, 2026
- Were in the design or construction phase (per FDOT PD&E manual) as of June 28, 2024
- Projects commencing PD&E study phase after June 28, 2024 must meet the new requirements

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Roadway Case Studies

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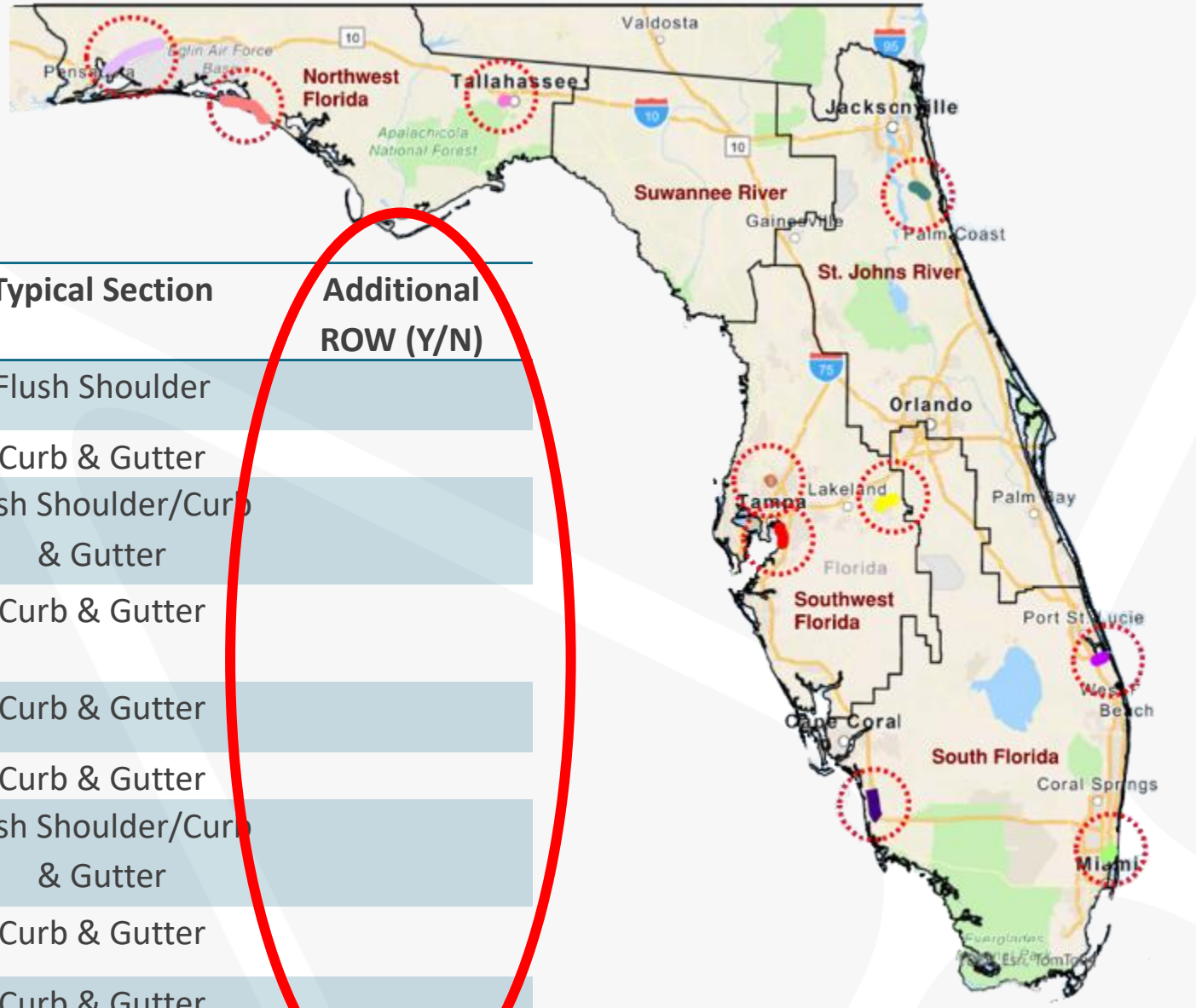
10 Case Studies Evaluated Statewide

Project	FDOT District	Water Management District	Typical Section	Additional ROW (Y/N)
I-10	D3	NWFWMD	Flush Shoulder	
SR 544	D1	SWFWMD	Curb & Gutter	
SR 45	D7	SWFWMD	Flush Shoulder/Curb & Gutter	
SR 45 at SR 54	D7	SWFWMD	Curb & Gutter	
Cove Road	D4	SFWMD	Curb & Gutter	
SR 16	D2	SJRWMD	Curb & Gutter	
US 98	D3	NWFWMD	Flush Shoulder/Curb & Gutter	
I-95	D6	SFWMD	Curb & Gutter	
SR 20	D3	NWFWMD	Curb & Gutter	
I-75	D1	SFWMD	Flush Shoulder	



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Case Studies: Comparison to Current Rules

Will I need more **ROW…?**

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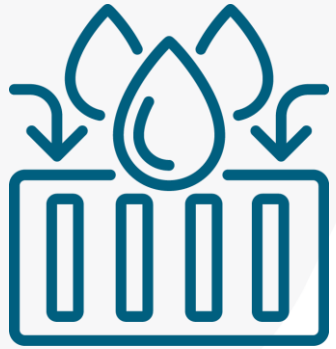
Treatment Options

Traditional BMPs

Low Impact Design/ Green Stormwater Infrastructure

Regional Ponds

Off-site Compensation/ Treatment



Alternative Designs

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New BMPs

- **Vegetated Filter Strip (VFS) – Rural Typical Section Case Study**
  - Front slope of a ditch
  - Applicable in flushed shoulder typical sections only
  - Newly adopted by FDEP in A.H. Vol. 1
- **Split Pond (Treatment Train) – Urban Typical Section Case Study**
  - Optimized Hybrid of a Wet Pond and Dry Retention BMP
  - Wet Pond used primarily for attenuation
  - Maximize wet pond for treatment (42.9%TN, 79.9% TP)
- **Side Bank Filters – Retrofit Case Study**
  - Uses traditional “treatment volume” as *retention with filtration*
  - Can use native or select soils (depending on site)
  - Included in 2026 FDOT Drainage Manual
  - FDOTs Underdrain Standard Detail updated (Index 440-001)

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Case Studies: Rural Typical Section

- 4 of the 10 case studies
- More pre-treatment opportunities within ROW
  - VFS and Swales
- Facilitates meeting nutrient reduction standards of new rule
- Ponds may only be needed for attenuation
  - Dependent on downstream ambient water quality

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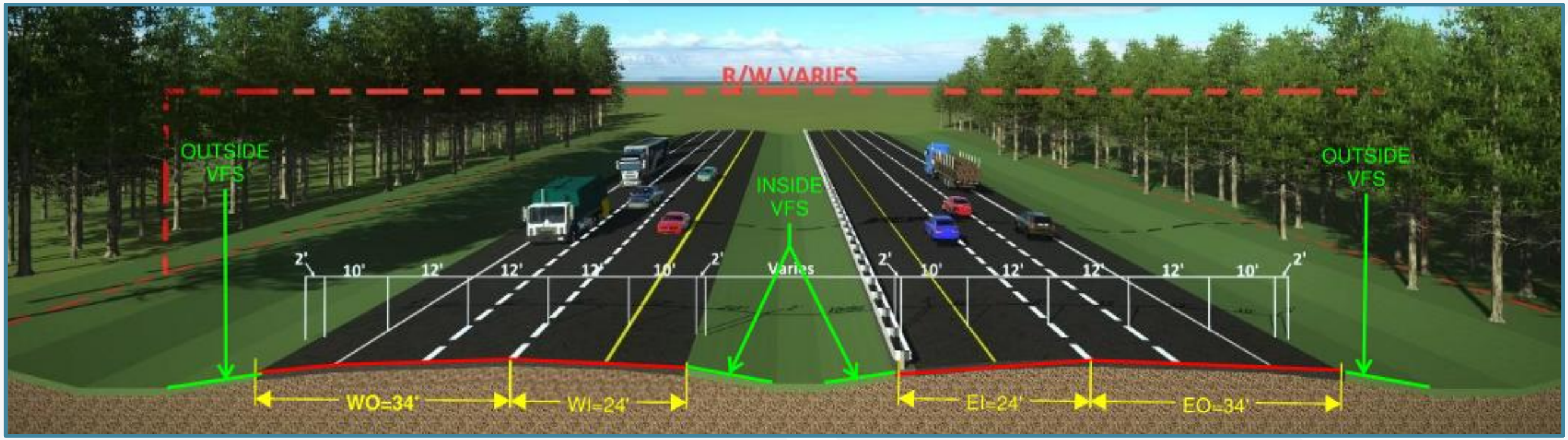
Vegetated Filter Strip (VFS)



Case Study of Real Project in D1

Roadway Nutrient Loading	→	85% TN; 85% TP VFS	→	38% TN; 38% TP Swale	→	43% TN; 80% TP Pond (Attenuation)	→	95% TN 98% TP

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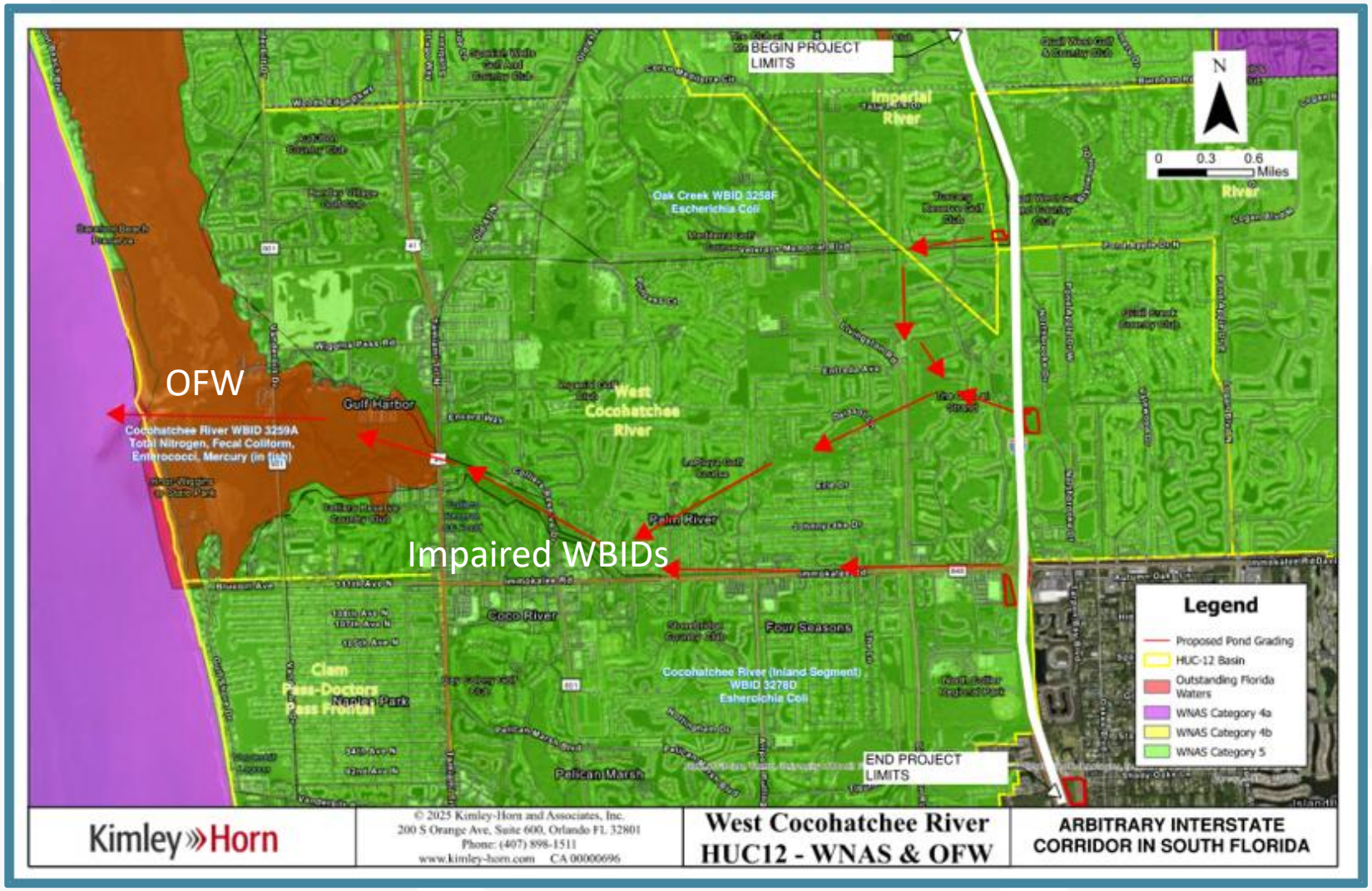
Rural Typical Section

- OFW + Impaired Water
- 95% TN & 95% TP Reduction Required



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Case Studies: Urban Typical Section

- 6 of the 10 case studies
- Lacks pre-treatment opportunities within ROW
- Ponds are often solely responsible for nutrient reduction
    - Dry ponds tend to perform well
    - Wet ponds are limited per Appendix O efficiencies
- Requires more creative solutions
    - Does not always mean more ROW
    - Optimize before expanding
- Consider compensatory or regional treatment approaches

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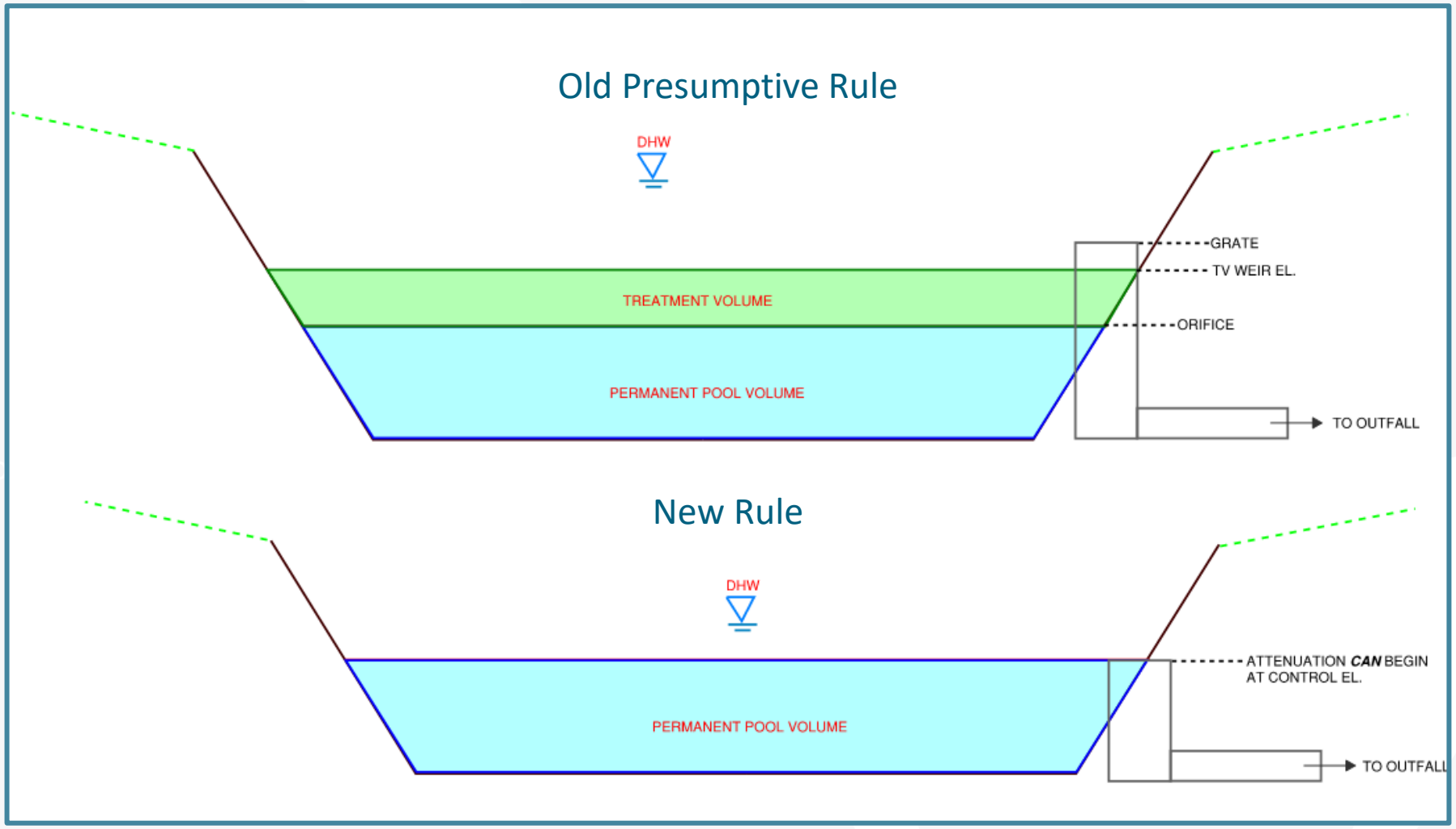
No First Flush Treatment Volume = Extra Storage Volume



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Limitations of Traditional BMPs

BMP	TP Reduction	TN Reduction
Wet Detention Pond	79.9%	42.9%
Littoral Zones	10%	10%
Floating Wetlands	12% with 5% cover	12% with 5% cover
Baffle Boxes (2nd gen)	15.50%	19.05%
Baffle Boxes Plus Filter Media	Media Mix Efficiency	Media Mix Efficiency

Note: BMP Limitations refer to maximum nutrient reduction per Appendix O

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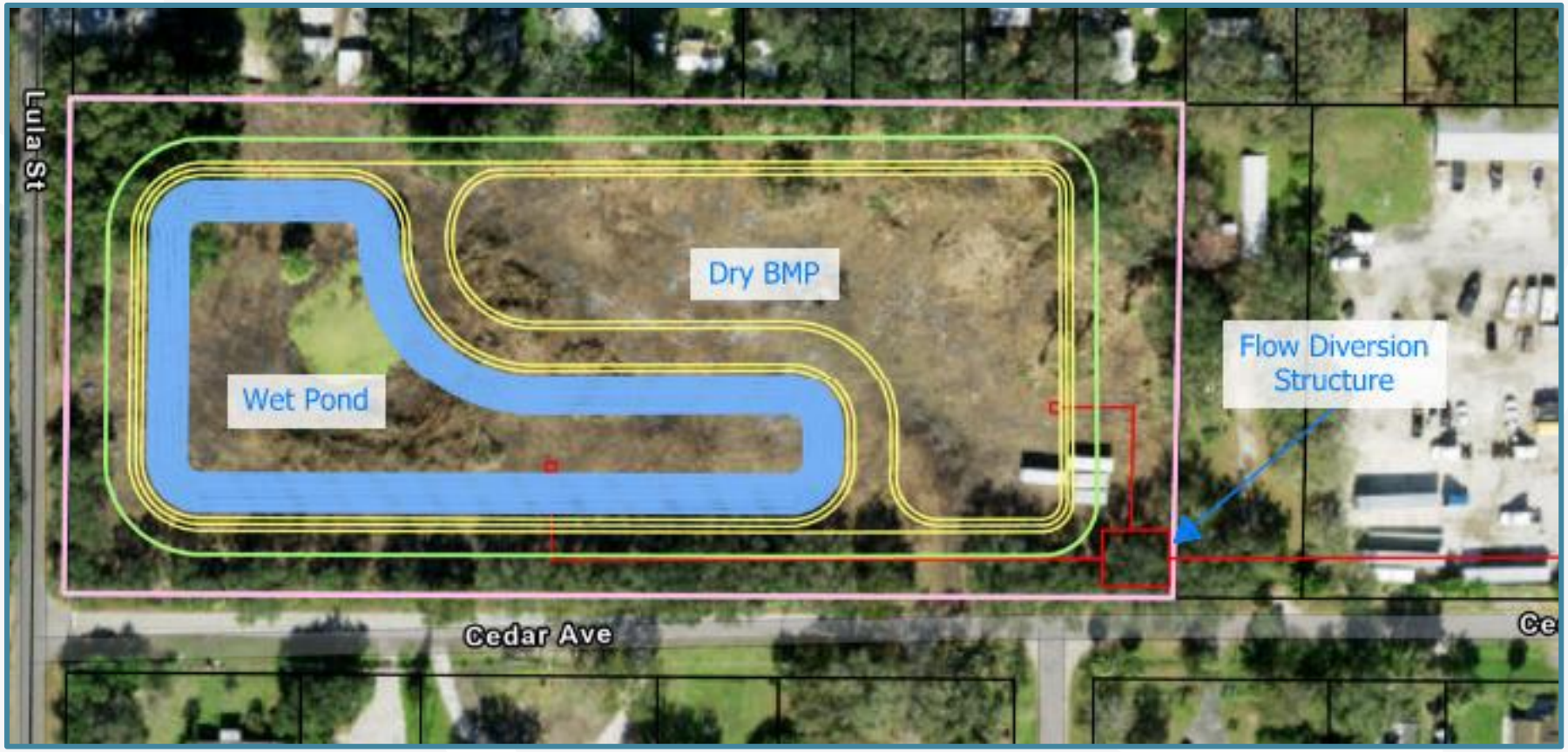
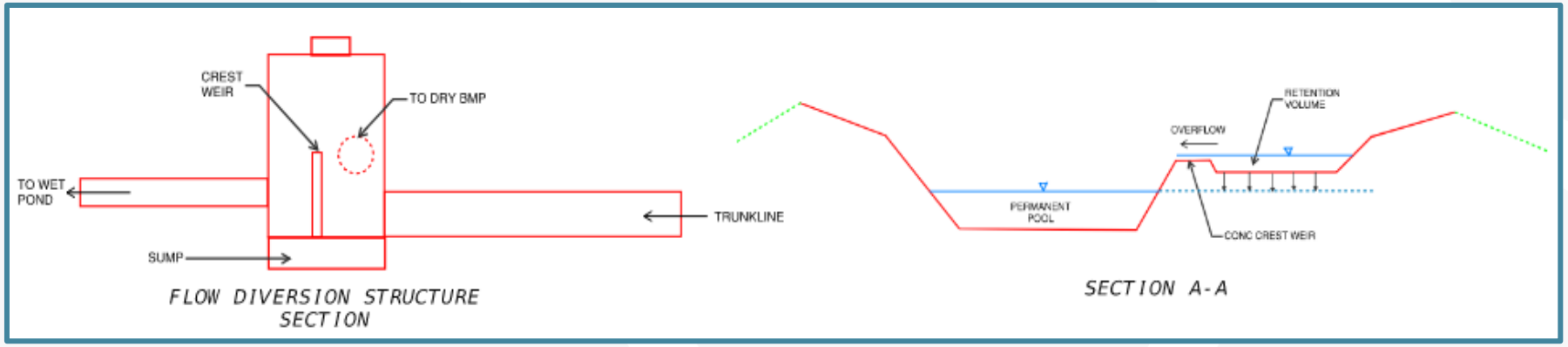
Split Pond





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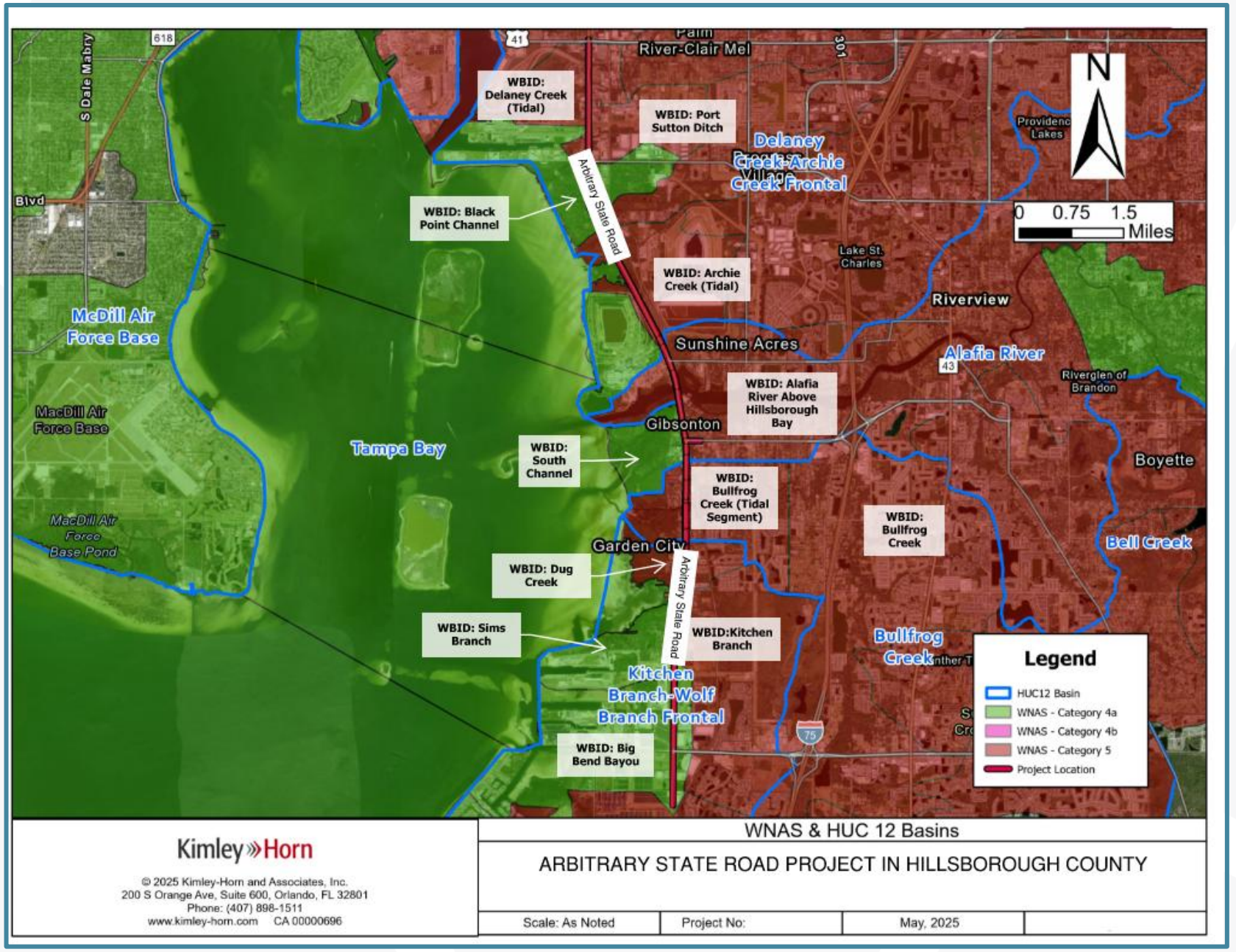
Urban Typical Section

- Impaired Water
- 80% TN & 80% TP Reduction Required



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WNAS & HUC 12 Basins

ARBITRARY STATE ROAD PROJECT IN HILLSBOROUGH COUNTY

Scale: As Noted	Project No:	May, 2025	

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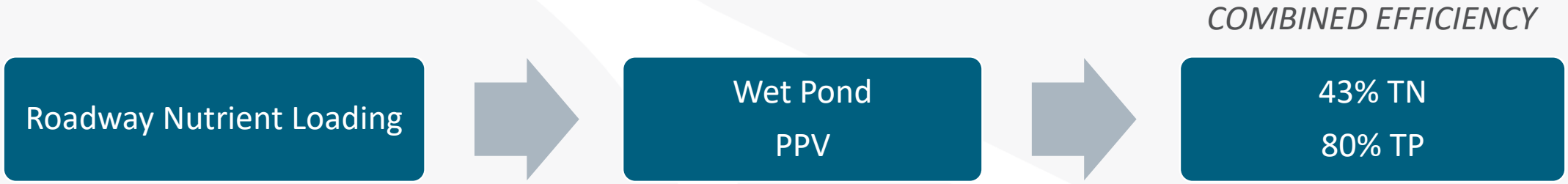
Case Study: Split BMP Treatment Train

Traditional Wet Pond: Limited by Appendix O



Split BMP: Case Study of Real Project in D7

Same Footprint, **More** Nutrient Removal!

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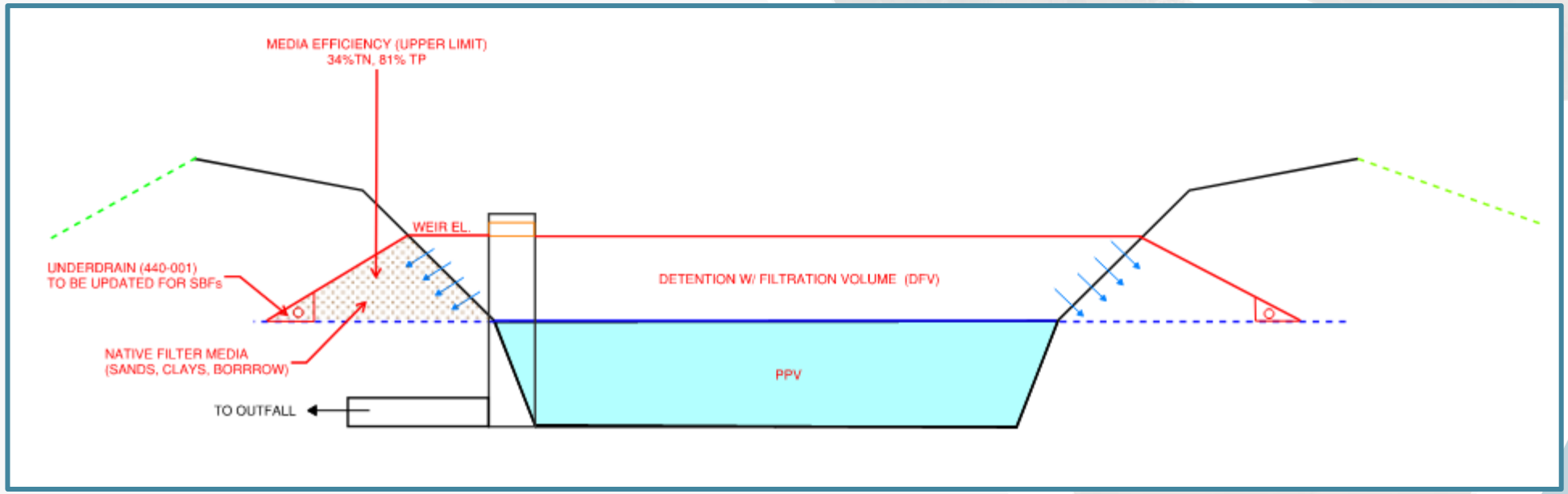
Retrofit Case Study: Side Bank Filters (SBF)

- Used in 5 of the 10 case studies
  - In one case, the SBFs plus PPVs met criteria for the entire project
- Retrofit first flush treatment volume to retention with filtration
  - Side Bank Filter BMP (per FDOT 2026 Drainage Manual)



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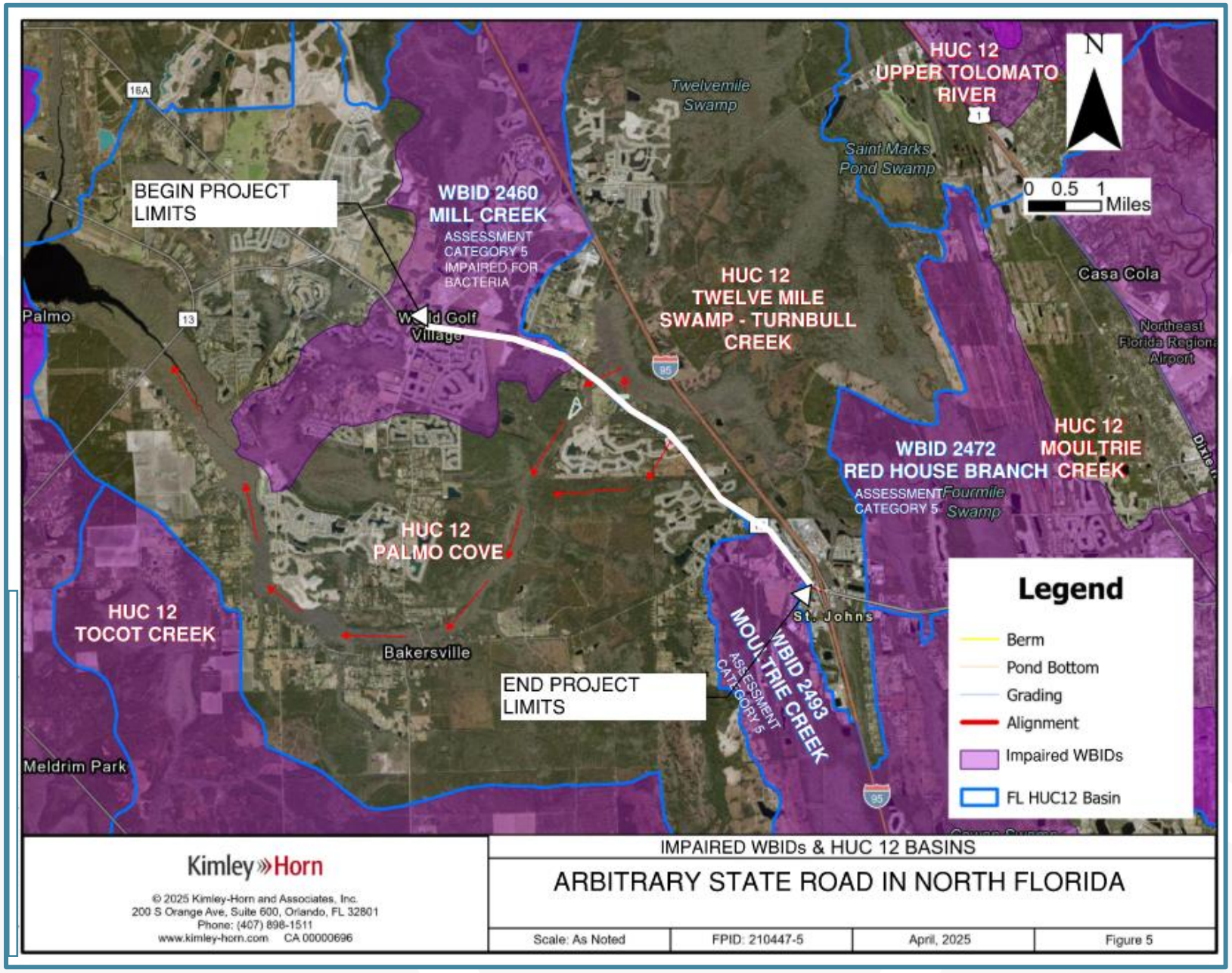
Side Bank Filter

- 55% TN & 80% TP Reduction Required



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Case Studies Summary

- **Only 2 of the 10 evaluated projects** needed additional ROW to meet 95% nutrient reduction
- **New rule DOES NOT *always* mean more right-of-way!**
  - Take advantage of ALL available BMPs within ROW
  - Optimize before expanding
  - Be aware of new BMPs and FDOT Standard Plans, Drainage Manual, and tools
- **Include drainage considerations early!**
  - Typical section selection *can* dictate the nutrient reduction success of a project

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What does this mean for you?

The stormwater rule changes will affect all projects moving forward, unless exempt or grandfathered

- **Understand what is required**
  - Be informed
    - New rule has many nuances, exceptions, deadlines
  - Learn the new tools
    - Appendix O, Revised FDOT Drainage Manual
    - New BMPs, alternatives, expanded toolbox
  - Flexibility
- **Agency Coordination is Crucial**
  - Early stages of design
  - New alternative designs
- **Construction & Maintenance Costs**
  - "$1M to remove 1 pound of Nitrogen or to construct more road?"
  - O&M costs estimated required during permitting
  - Inspection frequency and documentation

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What does this mean for you?

- Feasibility, Planning, Preliminary Engineering, and Design (SR 417)
  - Consider impacts to bottom line – costs/budgeting/schedule
  - Consider future needs
- Stormwater Master Plans (Port Orange)
  - Include enough engineering to identify Water Quality component
  - Consider approach to WQ by HUC-12
  - Ranking and prioritization of projects
- Typical Sections (SR 70)
  - Ambient Water Quality Assessment
  - Swales for pre-treatment, ponds for attenuation

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Answering Your Questions!

- **Will studies done under the old rule need to be updated to meet the requirements of the new rule?**
  - Not if they meet grandfathering criteria
- **What are some creative treatment options to meet the new criteria?**
  - New BMPs – FDOT Drainage Manual Table 5-1
  - Alternative designs
  - Offsite compensation (within same HUC-12)
- **How does the new rule affect different types of projects?**
  - Local drainage improvement projects
- **Are exemptions still granted under the new rule?**
  - Yes!
- **How are impairments for non-nutrient parameters considered (e.g silver and lead)?**
  - Discuss with the permitting agency. Refer to rule and FDEP flowchart.

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