

# PINELLAS COUNTY'S STORMWATER MANUAL PEER REVIEW

**FSA 2024 ANNUAL CONFERENCE**

**Presented By**

Alex DeYoung & Kevin McAndrew

JUNE 13, 2024



# MEET THE SPEAKERS



## **Alex DeYoung, PE, LEED GA, ENV SP**

### **Project Manager, Site/Civil Engineering**

Alex DeYoung is a Professional Engineer and project manager at VHB with a specialization in site and civil engineering. She brings a wealth of knowledge in stormwater and utility design, permitting, and construction oversight, primarily for public sector and institutional projects. She has a BS in Civil Engineering from Florida State University and is a licensed Professional Engineer in Florida, an Envision Sustainability Professional, and a LEED Green Associate. Prior to working at VHB, she worked for the Southwest Florida Water Management District reviewing ERP permits and implementing State stormwater standards.



## **Kevin McAndrew, RLA, AICP, LEED AP**

### **Director of Building & Development Review Services & Code Enforcement**

Kevin McAndrew, RLA, AICP, CFM, LEED AP is the Director of Building and Development Review Services (BDRS) for Pinellas County regulating the unincorporated areas of the County. Previously Mr. McAndrew served as the General Manager of Development Services for the City of Sarasota. He is a registered landscape architect, certified planner, certified floodplain manager, LEED accredited professional with extensive civil engineering training. Prior to relocating to Florida several years ago, Mr. McAndrew had a multi-decade career as a Partner of a multi-disciplinary engineering firm where he managed the Civil Engineering, Site Development & Planning group for diversified projects in both the private and public sectors in the NY metro-area.

# HISTORY OF PINELLAS COUNTY STORMWATER MANUAL

**2017**

## Set Standards

- Adopted Stormwater Manual
- Pollutant load-based standards

**2017-2020**

## Implementation

- Standards applied
- Feedback collected

**2021**

## Manual Update

- Manual updated based on feedback/peer review by others

**2023**

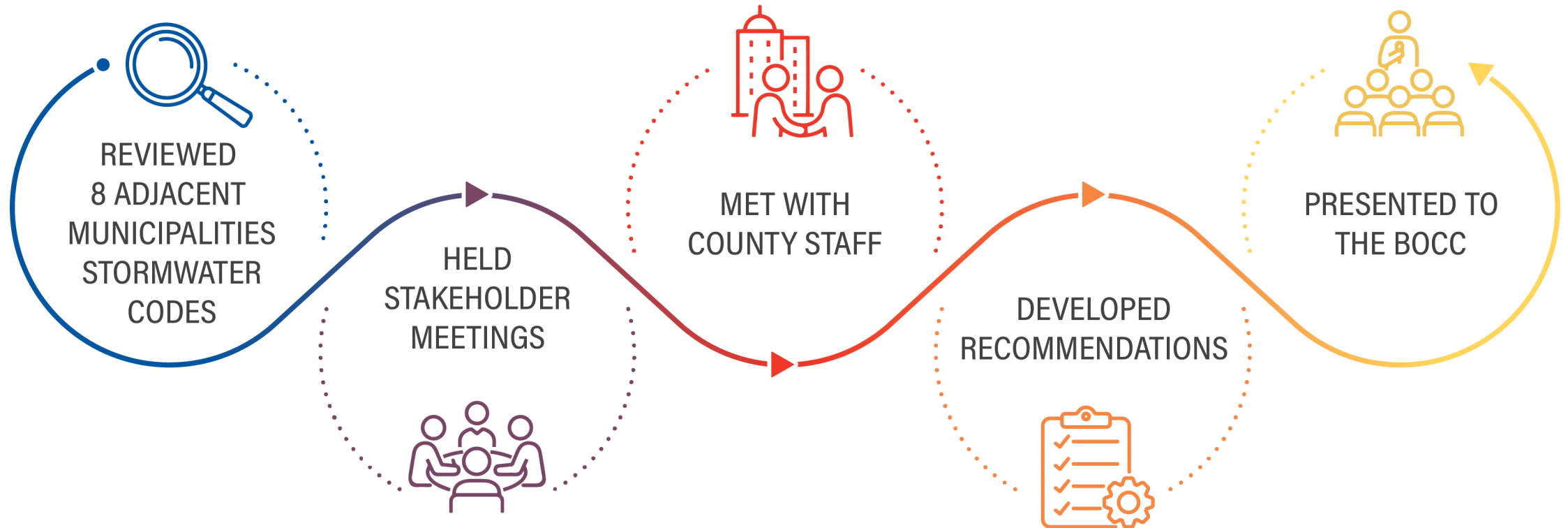
- Peer Review took place
- Public Works and DRS worked to advance the recommendations and create code thresholds

**2024**

- BoCC approval
- Manual Updates adopted



# PROJECT PROCESS



# INITIAL STUDY RECOMMENDATIONS

## EXEMPTIONS

- Exemption for Reduction in Impervious Area
- Exemption for Single-Family, Duplex, or Triplex

## FLEXIBILITIES

- Administrative Reduction for Nutrient Removal (Large Sites)
- Compensatory Treatment & Payment-in-Lieu (Water Quality Credit Program)

## INCENTIVES

- Administrative reduction for Large Sites with Enhanced Landscaping
- Density and Intensity Bonus Performance-Based Incentive
- Parking Reduction Performance-Based Incentive
- Private Stormwater Facility Retrofit & Enhancement

## TECHNICAL UPDATES

- Small Site / Large Site Criteria
- Exfiltration Vaults and Chamber Design Standards
- Vertical Wall Requirements
- Stormwater Management System Area Definitions
- Discharge into County Systems
- Infiltration in Routing Modeling

## ADAPTIVE FEEDBACK PROCESS

- Voluntary Feedback in Review Process
- Third Party Review
- Review and update of the Stormwater Manual



Immediate













Code Update



Future  
(Further Research)

# RECOMMENDATION EVALUATION

VHB Recommendations Table	Immediate	Code Update	Further Research
<b>EXEMPTIONS</b>			
Small Site Exemptions for Reduction in Impervious			
Residential Exemption			
<b>FLEXIBILITIES</b>			
Specify Allowed Adjustment of Nutrient Requirements			
Compensatory Treatment or Payment-In-Lieu			X
<b>INCENTIVES</b>			
Reduction in Stormwater Criteria			
Density & Intensity Bonus			X
Parking Requirement Reduction		X	
Private Stormwater Facility Retrofit and Enhancement			X
<b>TECHNICAL UPDATES</b>			
Large-Site, Small-Site Criteria			
Stone Aggregate Void Space			
Reduction in Site Acreage allowed for Rational Method			
Vertical Wall Requirements for Retention/Detention Facilities		X	
Defining Master Stormwater Systems Areas		X	
Defining Discharge into County Systems		X	
Infiltration in Routing Modeling			
<b>ADAPTIVE FEEDBACK PROCESS</b>			
Incorporate Voluntary Feedback in Review Process			
Contract third-party reviewers			
Review and Update of Stormwater Manual	X		

# IMPLEMENTED CHANGES

## EXEMPTIONS

### Exemption for Reduction in Impervious Area

Sites less than one acre will qualify for a treatment requirement exemption if:

- **Reducing the existing impervious area** by at least 10%.
- Presumptive treatment criteria of 0.5" for dry ponds and 1" for wet ponds over the entire site are provided.
- The design includes elements of green infrastructure within the 10% reduction area. Green infrastructure includes: Bioswales, pervious pavement, rain gardens, tree boxes, or other BMPs.
- Only eligible for this exemption once.

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**Single-Family, Duplex, or Triplex residential** developments are exempt from stormwater treatment and attenuation standards if:

- They are not part of a larger plan of development, OR
- They do not exceed 10,000 SF of impervious area, OR
- The impervious area does not exceed 25% of the site acreage for sites larger than one acre.

# IMPLEMENTED CHANGES

## FLEXIBILITIES

### **Administrative Adjustments for small and large sites (redefined):**

- Up to 10% reduction in nutrient removal requirements
  - Demonstrate the system meets net improvement
  - Provides a minimum of presumptive criteria (0.5" for dry ponds and 1" for wet ponds)
  - Project incorporates a minimum of 2 types of Green Infrastructure on site.
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### **Administrative Adjustments for large sites:**

- Up to 20% reduction in nutrient removal
- Provide an additional 20% landscape area above code minimum
- The design includes elements of green infrastructure within the additional landscape area. Green infrastructure includes: Bioswales, pervious pavement, rain gardens, tree boxes, or other BMPs.
- It shall be no less than net improvement.



# IMPLEMENTED CHANGES

## TECHNICAL UPDATES

**Exfiltration vault and chamber design standards** adjusted to allow for 30% of total stone aggregate volume or 80% of the measured testing lab values for the aggregate to be counted towards volume (attenuation) calculations above seasonal high-water elevation.

- The engineer must submit a material report on the proposed stone material.
  - When utilizing an underground exfiltration system, inspections are required every two years.
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### **Infiltration in Routing Modeling**

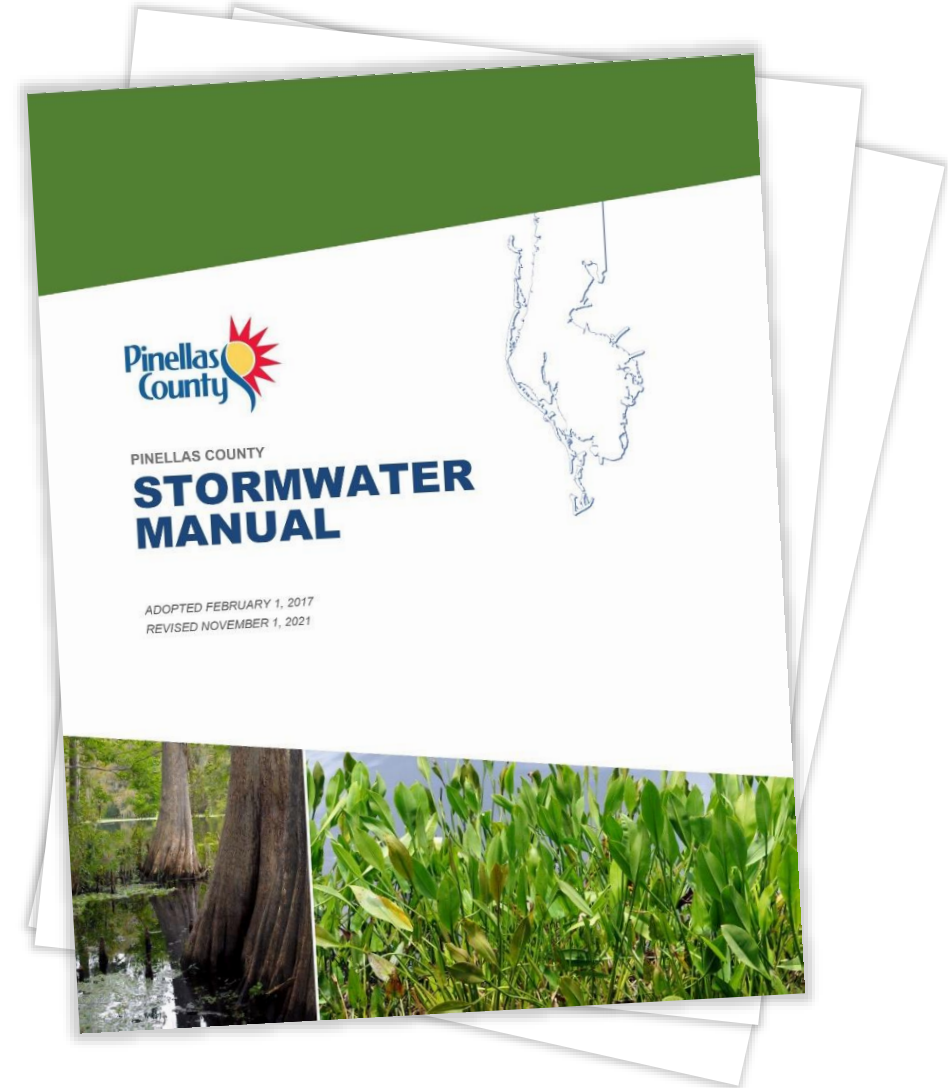
- Percolation can be used in attenuation routing models for sites under 5 acres but shall be reduced by 10 percent for each foot the water table rises above the elevation 10 feet below the bottom of the basin or bottom of the drain field.
  - After adjustment for water table elevation, the maximum allowable percolation rate is 1.5 feet/hour.
  - DRI test should not be done during the dry season with additional Geotech requires.
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### **Reduction in Site Acreage allowed for Rational Method from 10 to 1 acre.**

- Encourage the use of stormwater routing software to improve the model's accuracy.

# FINAL OUTCOME

- Updated Pinellas County Stormwater Manual effective April 23, 2024.



# Questions?

