#### **Public Works Department**

# Reams Road / Ficquette Road Work Session

February 11, 2025



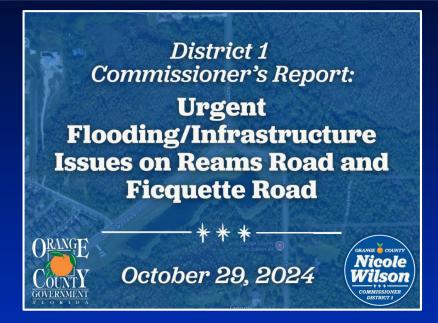
#### **Presentation Outline**

- Recap of October 29, 2024 Commissioner's Report
- Historical Flooding in Area
- Infrastructure Improvements and Schedule
- Potential Interim Strategies
- Summary
- Board Direction



# Recap of October 29, 2024 Commissioner's Report

- Raised concerns over the flooding at the Summerlake Blvd and Ficquette Road intersection and along portions of Reams Road.
- Concerned that the wetlands surrounding Lake Hancock, Ficquette Road, and Reams Road areas staging higher due to development encroachment.

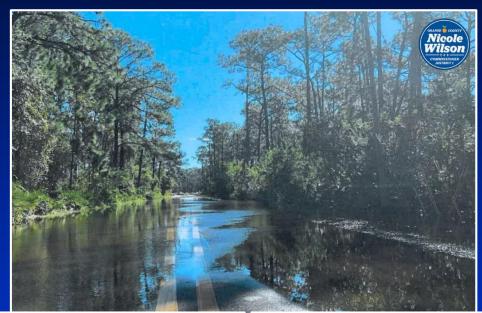


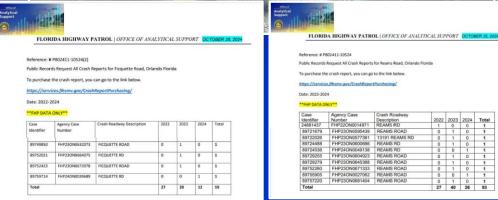




# Recap of October 29, 2024 Commissioner's Report

- Safety concerns due to flooding:
  - -Residences isolated by flooding
  - Center median tubes was removed to allow cars to ride centerline, not safe for vehicles to pass in opposite directions
  - Road striping underwater and difficult to see
- Safety concerns along busy roads:
  - Increased development and construction
  - -Street racing







# Recap of October 29, 2024 Commissioner's Report

■ Board direction was to request a work session to address the consideration of a temporary suspension of the comprehensive plan text and map amendments, rezonings, and special exceptions in the affected area, with the emphasis for staff to contribute some options for a construction activity moratorium except for construction of required affiliated infrastructure needs.

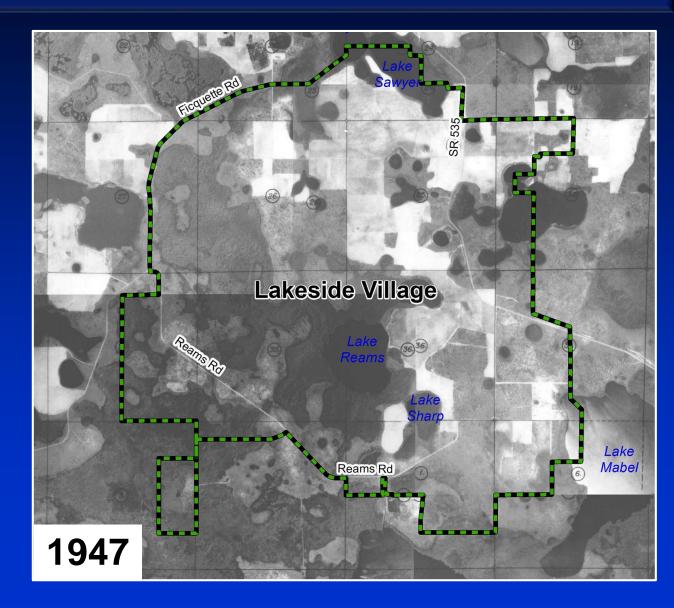


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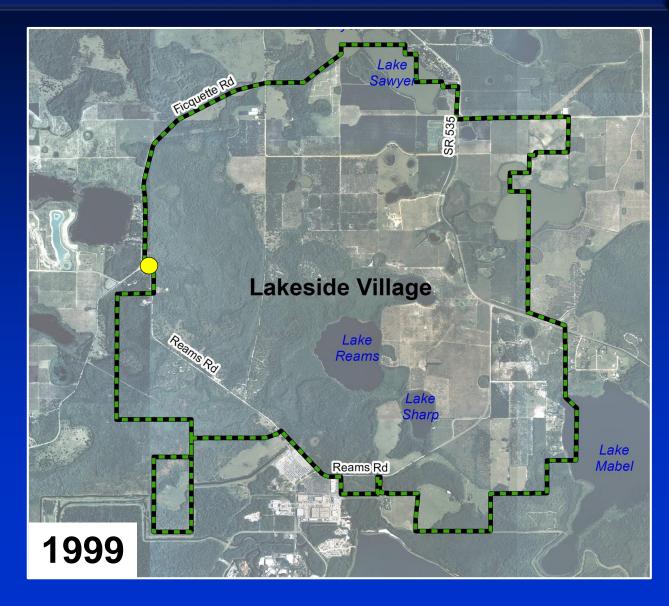


- Area of flooding concern
   located within the Horizon West –
   Lakeside Village boundary
  - Road has been around since the 1940s



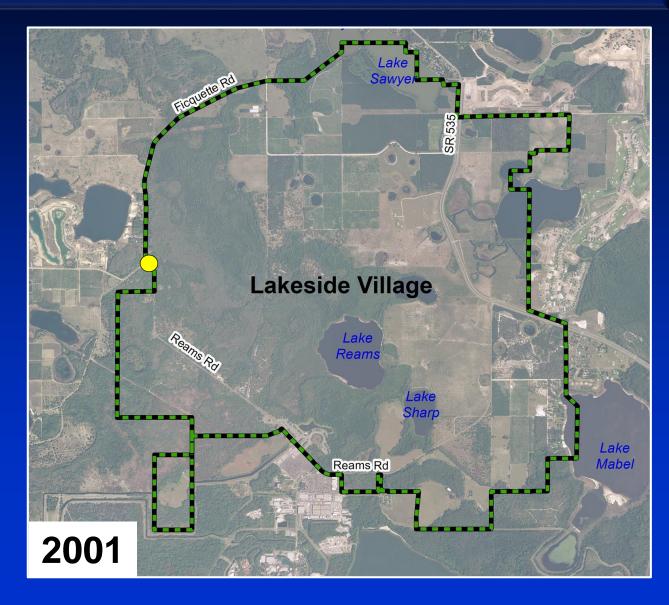


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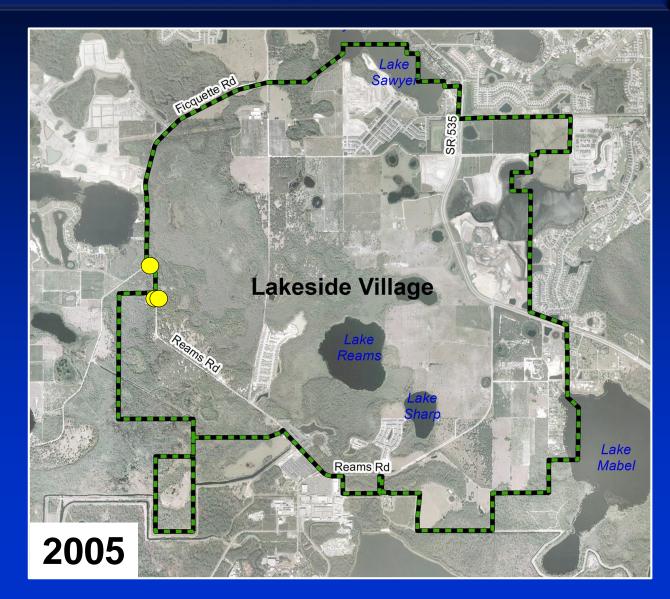


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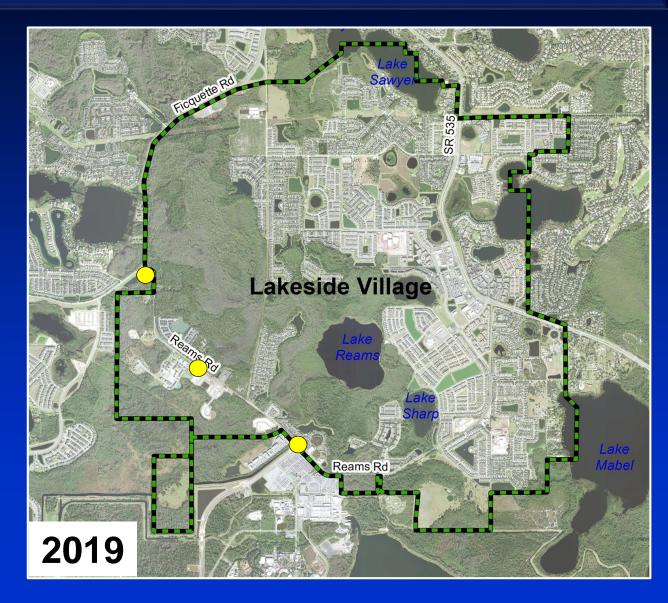


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  - County staff indicated Reams Rd/Ficquette Rd/Summerlake Blvd flooded prior to 2000
  - Development started in 2000
  - Flooding reported to 311
    - 2000-2006: Minor development



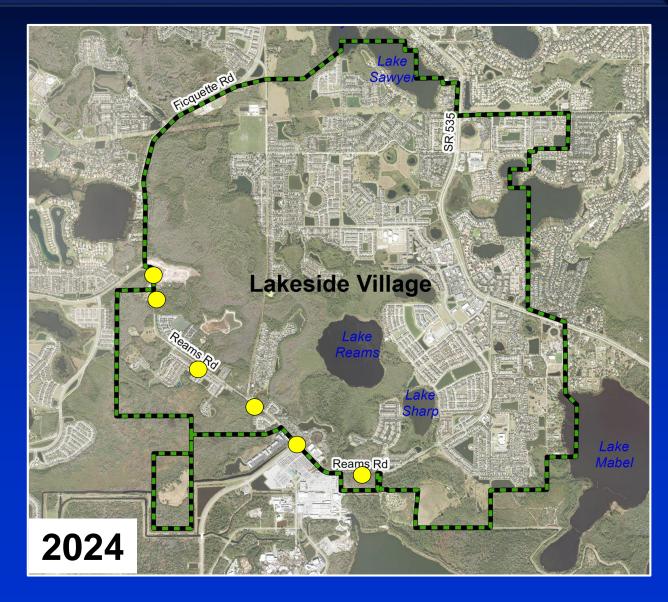


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  - Development started in 2000
  - Flooding reported to 311
    - 2000-2006: Minor development
    - 2007-2019: Major development



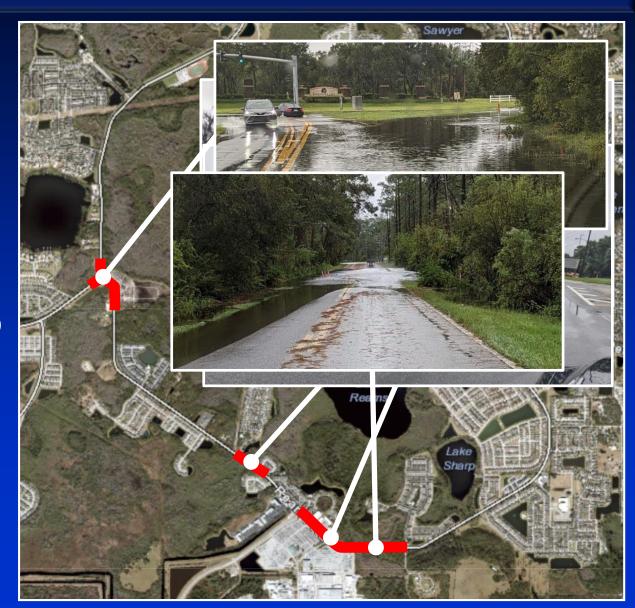


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     prior to 2000
  - Development started in 2000
  - Flooding reported to 311
    - 2000-2006: Minor development
    - 2007-2019: Major development
    - 2020-2024





- Hurricane Ian (Sept 2022)
  - **−9.4** inches in West Orange County
  - -Less than 100-year storm in this area
  - -Major roadway flooding
  - -Reams Rd closed from 9/28/2022 to 10/13/2022 (16 days) between Center Dr to Newmarket Dr
    - Only time during the past 20 years that this roadway was closed.
    - -\$180k roadway repairs





- Hurricane Milton (Oct 2024)
  - -10.9 inches in West Orange County
  - -Comparable to a 100-year storm in this area
  - -Ficquette Rd Right Turn Lane was impacted
  - -Reams Rd remained open
  - Roadway repairs were not warranted





- Affects on the area
  - As a result of the road closure,
     commuters detoured around the
     affected area
  - Longest detour spanning approx.9 miles
    - Closure affected an estimated 30k trips/day





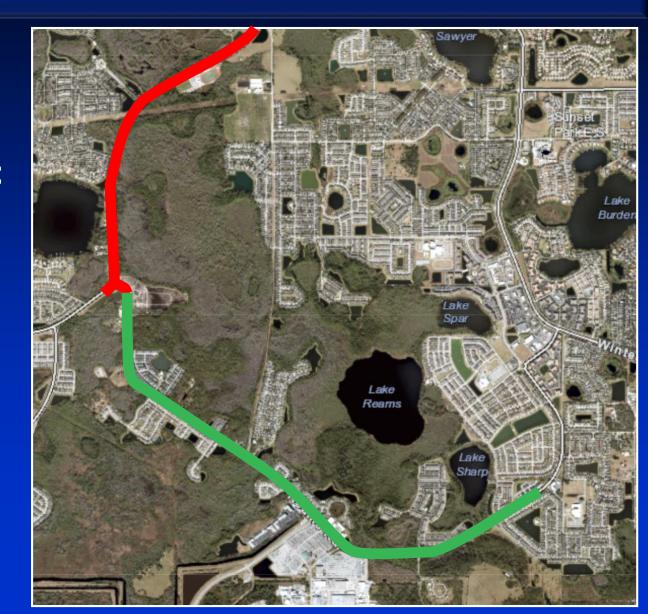
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# Infrastructure Improvement Projects

- The highlighted segments will be widened to enhance the corridor's level of service, traffic operations, safety, and flood management.
  - Ficquette Rd Improvements (South of Ingelnook Dr to South of Summerlake Park Blvd)
  - Reams Rd Improvements (Summerlake Park Blvd to Taborfield Ave)

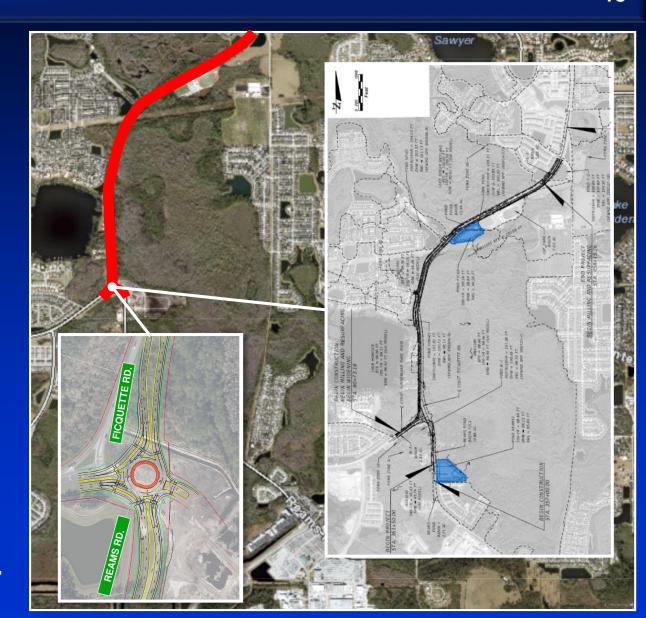




# Infrastructure Improvement Projects

#### Ficquette Road Project

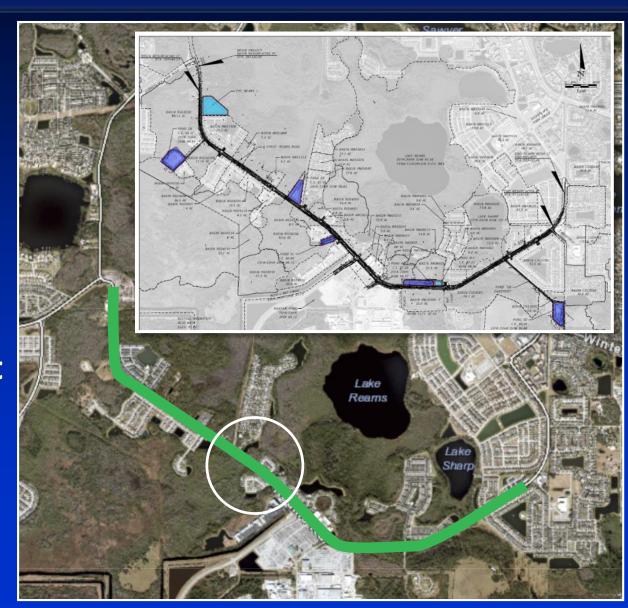
- -2-Lanes to 4-Lanes
- -10' multi-use trail and 5' sidewalk
- Road to be constructed above100-year flood elevation
- 2 Additional ponds designed to accommodate 100-year storm event
- Includes intersection improvements at Ficquette Rd, Summerlake Park Blvd, and Reams Rd
- -Construction cost = \$28.6M (funded)





# Infrastructure Improvement Projects

- Reams Road Project
  - -2-Lanes to 4-Lanes
  - -14' Multi-Use Trail and 5' Sidewalk
  - -Road to be constructed above100-year flood elevation
  - -7 Additional ponds designed to accommodate 100-year storm event
  - Bridge design south of GreenbankBlvd recently initiated
  - -Construction cost = approx. \$80.2M
    (funded)





# Infrastructure Improvement Schedules

#### Ficquette Rd and Reams Rd Project Projected Schedules







# Infrastructure Improvement Schedules

#### Why did the Ficquette Rd design schedule get pushed back 1.5 YRS?

- Coordination with Orange County Utilities
  - Minimized wetland and floodplain impacts related to their infrastructure
  - Adjusted plans for utility relocation to the median
- Redesign Landscape Plans
  - Select appropriate tree species so both tree and utilities can co-exist
- Updated plans to reflect recent driveway connections and the new Fire Station
- Restarted the 404 permit with the Army Corp of Engineers (ACOE)
  - Judge ruled to revoked the State 404 Permit delegation from FDEP and give back to ACOE
  - Permit has been submitted and pending approval
  - Construction schedule will depend on permit approval



# Infrastructure Improvement Schedules

# Why did the Reams Rd design and construction schedule get pushed back 2.75 YRS?

- Added walls to avoid impacts on conservation easements in lieu of fill slope
  - Redesigned approx. ½ mile of roadway to avoid relocating utility lines
  - Added a new traffic signal at Newmarket Drive
  - Evaluated options for muck encounter (surcharge, excavation, or bridge design)
- Redesign Roadway Plans to incorporate bridge design in lieu of at grade design
- Coordination with Duke Transmission line relocation
- Restarted the 404 permit with the Army Corp of Engineers (ACOE)
  - Judge ruled to revoked the State 404 Permit delegation from FDEP and give back to ACOE
  - Permit has been submitted and pending approval
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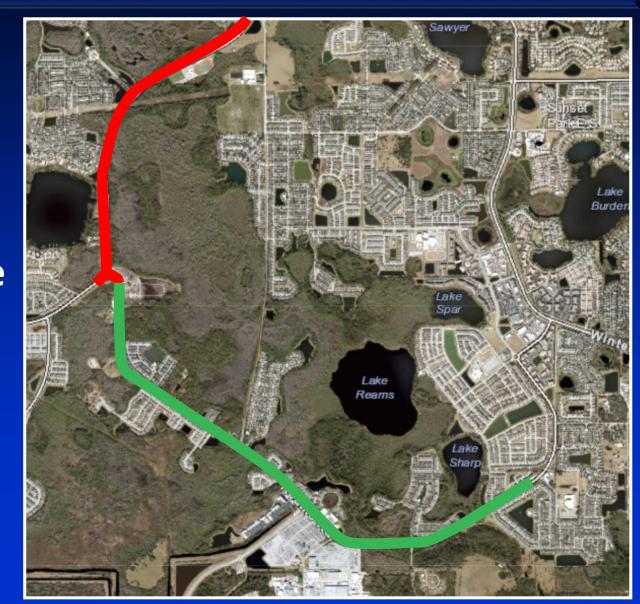


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- As staff moves forward to have the projects completed by 2029, potential interim strategies have been evaluated
- To ensure their effectiveness, we must first understand the history of this area



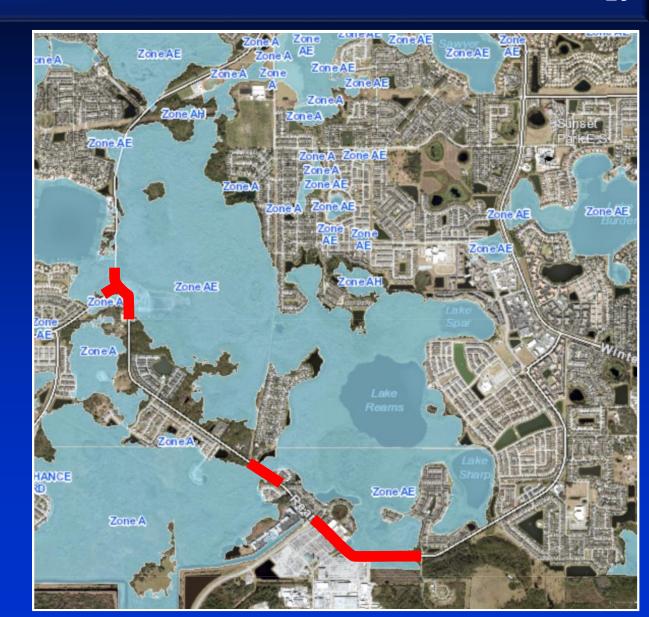


- Why do these roadways flood?
  - Roadways were constructed prior to our modern stormwater design standards
    - Road was originally a dirt road with shallow ditch systems that was in existence since the 1940s
    - Constructed to convey stormwater to the receiving wetlands and lakes
    - When the system is overwhelmed, the roadway would serve as a large conveyance system



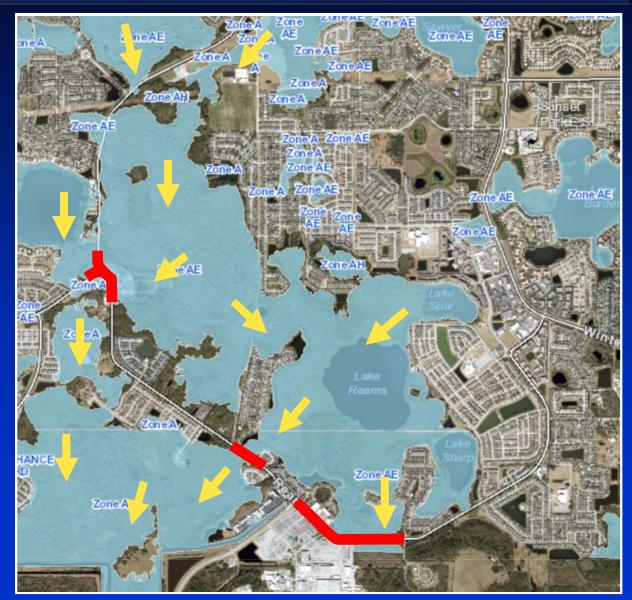


- Why do these roadways flood?
  - Existing roadway elevation within100 year floodplain



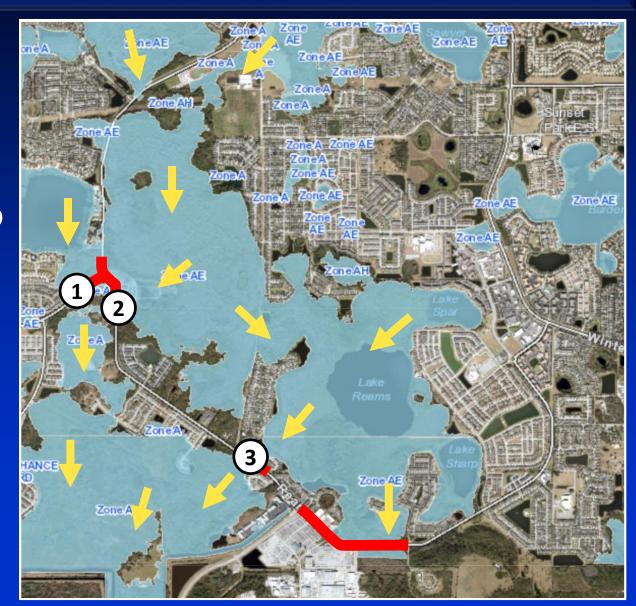


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  - -Water naturally flows from North to South





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  - -Cross-drains at three key locations (Locations 1 thru 3)





- Why do these roadways flood?
  - Existing roadway elevation within100 year floodplain
  - Water naturally flows from North toSouth
  - -Cross-drains at three key locations (Locations 1 thru 3)
  - –Location 4 over tops the road





- Why do these roadways flood?
  - Area is part of larger Reedy CreekDrainage Basin
  - Stormwater runoff coming from north of Reams Rd flows into the basin and passes through the Central Florida Tourism Oversight District (CFTOD)'s Control Structure (CS) located within their property



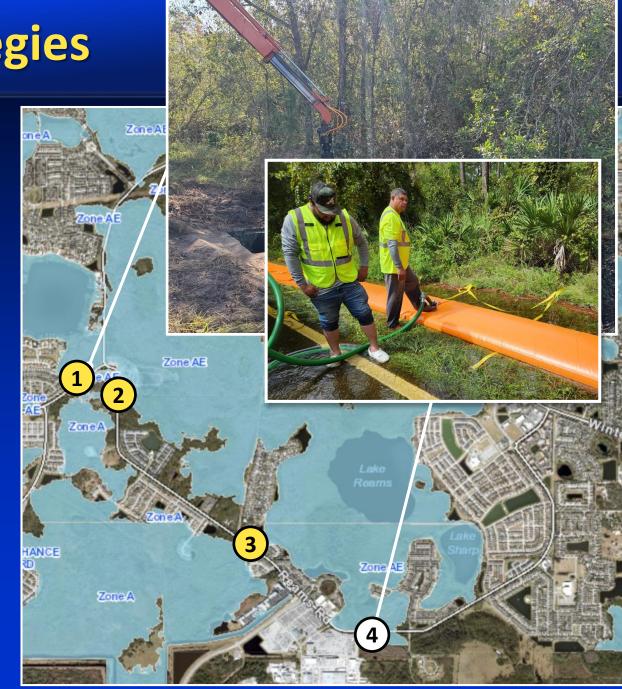


- During this 4 year gap (2025 to 2029), staff identified four strategies to address potential flooding risks:
  - -Strategy 1: Pre-Storm Preparation and Enhanced Maintenance Activities
  - -Strategy 2: Add Additional Asphalt Overlay to a Portion of Reams Rd
  - -Strategy 3: Direction to County Engineer to implement more stringent development standards
  - -Strategy 4: Development Moratorium (option of partial or full)



#### Strategy 1

- Establish policies and procedures to deploy flood protection measures ahead of a major storm event
  - Existing cross-drains at locations 1 thru
     3 have been added to Priority List for more frequent inspections and prestorm clearing
  - Flood management devices, ie.TigerDam





#### Strategy 1

- -Implementation:
  - Quick to implement
    - On-going and ahead of a major storm event
  - No significant additional cost for labor
    - Will utilize County staff
  - Cost will come from renting or procuring Tiger Dam
    - Approx. \$200k to purchase
    - Investigating grant funding opportunities
  - Benefit of ensuring cross-drains are flowing at maximum capacity to reduce staging and quicken recovery



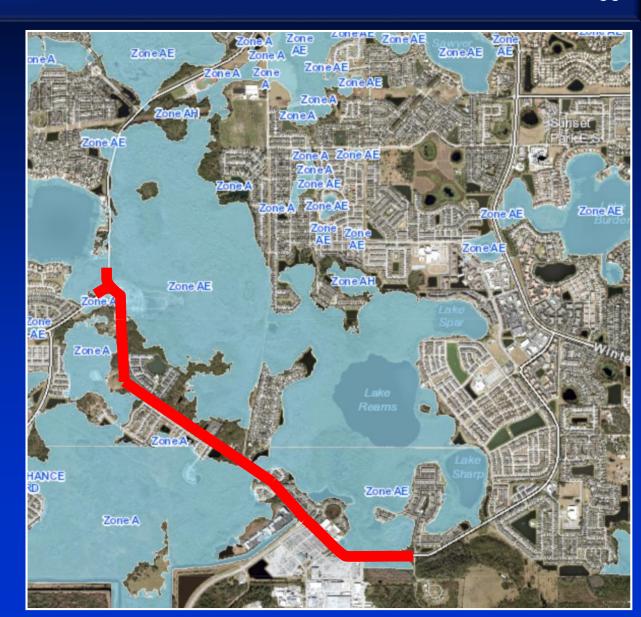


- Strategy 1: Storm Preparation and Enhanced Maintenance Activities
- Strategy 2: Add additional asphalt overlay to a portion of Reams Rd
- Strategy 3: Direction to County Engineer to implement more stringent development standards (w/ options)
- Strategy 4: Development Moratorium (option of partial or full)



#### Strategy 2

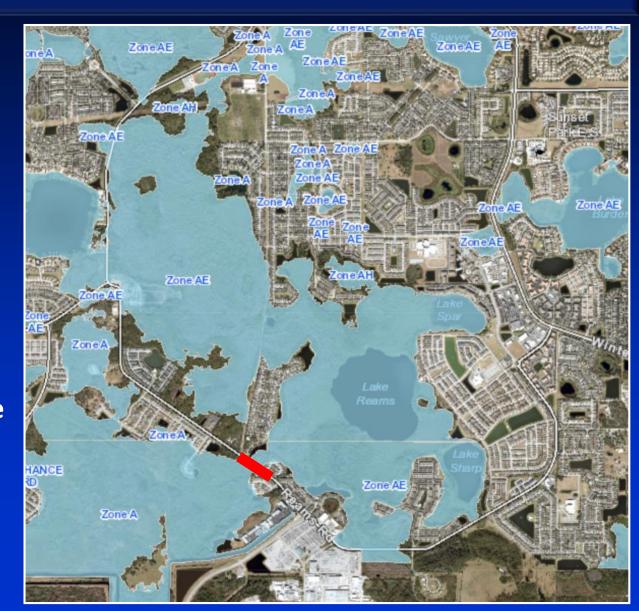
- Evaluated the opportunity to construct a temporary asphalt overlay to raise the road:
  - Ran the stormwater model
  - Requires a min. of 10" to raise the road above the 100 YR storm elevation
    - Expensive and not quick to implement (~\$14M)
    - Require additional easements to tie down to existing elevation and permits for stormwater and wetland impacts
    - A throw away project





#### Strategy 2

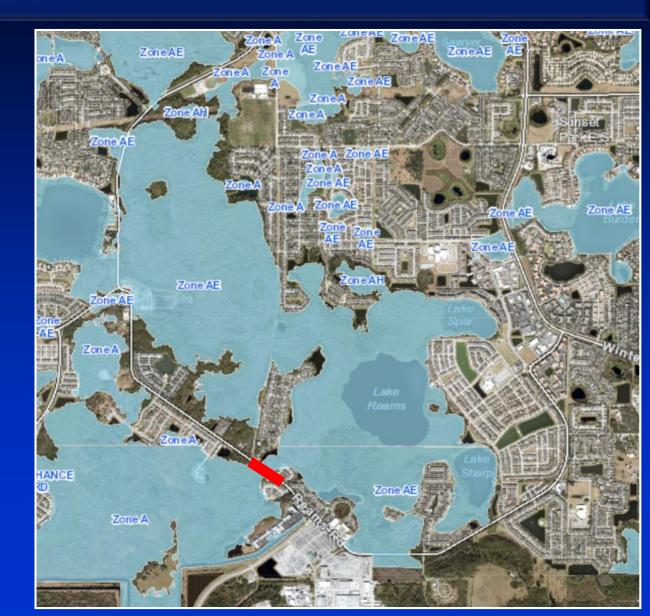
- Evaluated the opportunity to construct a temporary asphalt overlay to raise the road:
  - Investigated the maximum thickness allowable without additional design, easements, and permits requirement
  - Concluded a 3" asphalt overlay will have the benefit raising a portion road above the 50 YR /72HR storm elevation (10.9" of rain)





### Strategy 2

- -Implementation:
  - Quick to implement
    - Aim to be completed prior to the hurricane season
  - Approximately \$140k
  - Reduce the likelihood of flooding during medium intensity storm at the key location identified in RED

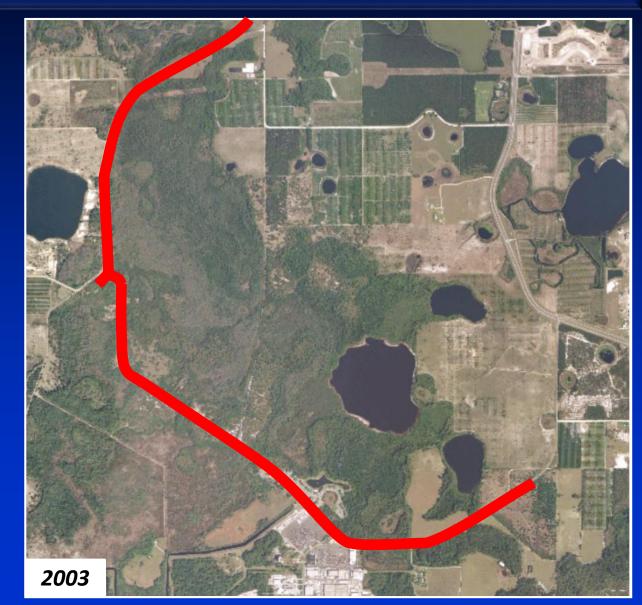




- Strategy 1: Storm Preparation and Enhanced Maintenance Activities
- Strategy 2: Add additional asphalt overlay to a portion of Reams Rd
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- Significant development activity has occurred in the last 20 years
- All development was approved consistent with Orange County's land development regulation
  - -Stormwater Management
  - -Floodplain Management
  - -Wetland



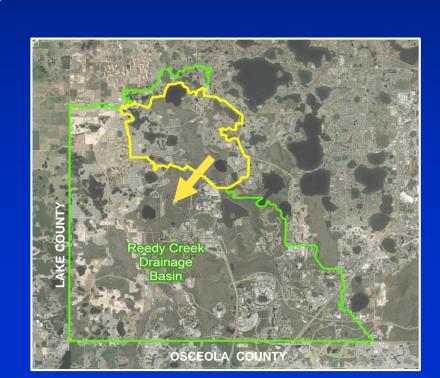


#### **Stormwater Management**

- **Ch. 34: Subdivision Regulations** 
  - Rate of discharge: Post ≤ Pre-development
  - Design Storm:
    - 10 YR / 24 HR storm for secondary stormwater systems
    - 25 YR / 24 HR storm for primary stormwater systems
    - 100 YR / 24 HR storm for landlocked basin, floodplain impacts, or high recharge Type A soils
    - Sec. 34-247(b) <u>The design frequency for major drainage systems may be increased if deemed necessary by the county engineer to protect upstream or downstream properties or to comply with other regulations.</u>
- Approval of County permits does not mean they have approval from other regulatory agencies



- Additional stormwater review are conducted through SFWMD and CFTOD
- SFWMD reviews the proposed development per F.A.C. 62-330 discharge criteria, or criteria established by local agency or special drainage district
- CFTOD's Resolution No. 378 (adopted Aug. 1999)
  - CFTOD will accept surface water discharge from
     Orange County not to exceed a discharge rate of
     13 CSM for a 50 YR/72 HR storm
  - -Stricter than Orange County's Code which bases the discharge rate on various design storm events
    - Can yield a discharge rate greater than 13 CSM





- What does 13 CSM mean?
  - -13 cubic feet per second per square mile
  - Equivalent to the discharge of 2 standard rain barrels (13 cubic feet) per second for every square mile
  - -VERY low flow





### Strategy 3

- The Board to direct the CountyEngineer to require:
  - An increase in the design frequency for major drainage systems to protect upstream or downstream properties
  - Capping the stormwater discharge rate into CFTOD system to 13 CSM for new projects within the Reedy Creek Sub-Basin identified in YELLOW





- What are the cost associated with Strategies 1-3?
  - Strategies 1-2: Approx. \$340k implement
  - Strategy 3: New development will see an increase in cost since it would require larger stormwater ponds to manage and store more water on-site. Cost will be site specific.
- What are the benefits associated with Strategies 1-3?
  - Strategies 1-2: Allows nearly 30,000 daily drivers through this corridor by minimizing risk of flooding, keeping these roads open, and improving safety of the public
  - Strategy 3: Provides a path forward for new development while minimizing the potential adverse impacts on the surrounding areas.
  - Strategies 1-3:
    - Addresses the health, safety, and welfare concerns of the public
    - Quick to implement



- Strategy 1: Storm Preparation and Enhanced Maintenance Activities
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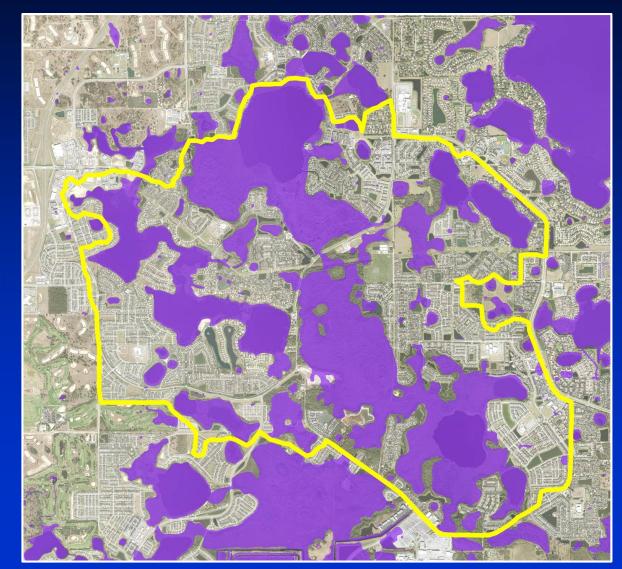


- What is a Moratorium on Development?
  - An ordinance to temporarily pause specific land development approvals/permits in a designated area to provide time to address specific issues impacting the area
- What would a moratorium attempt to accomplish?
  - To minimize further flooding and environmental impacts associated with new development
- How would a moratorium interact with current regulations and on-going studies?
  - Wetland Code
  - Floodplain Code
  - Stormwater Studies



### Wetland/Surface Water Regs.

- Wetland impacts associated with existing development were permitted under the old Wetland Code (eff. 1987)
- Code updated in 2023; eff. June 2024
- New criteria pertaining to water storage:
  - Requires applicants to mitigate for storage loss from wetland and surface water impacts during design
  - 100-foot upland buffer requirement provides more storage than old 25-foot buffer





### Floodplain Management Regs.

- CH. 19 Floodplain Code was updated in Sept. 2021
- Fill within the floodplain requires compensating storage (cup-for-cup)
- FEMA reviews development for potential impacts to the floodplain pursuant to 44CFR 60.3(b)(3), (c), (d) and 65.12





### **Stormwater Updates**

- Reedy Creek Basin Study
  - The basin study will provide a stormwater model to establish a baseline, which will assist in the design of stormwater infrastructure for future developments
  - Final model submission Late 2025
- Rainfall Intensity Study
  - Evaluated available rainfall data to identify spatial and frequency trends
  - Determine if those trends should be considered in County's design storm analysis
  - Scheduled to be completed Mid 2025
- Countywide Vulnerability Study
  - Will identify risk to critical assets for multiple flood scenarios
  - Scheduled to be completed by Fall 2025



#### **Stormwater Updates**

- Drainage Manual
  - Manual will incorporate the results of the Reedy Creek Basin, Rainfall Intensity, and County Vulnerability Studies
  - Assess the feasibility of implementing stricter criteria for areas identified as high-risk due to flooding
  - Incorporate the new Stormwater Rule Update (SB 7040 F.A.C. 62-330) which will potentially increase stormwater system design requirement
  - Requires policy discussion, Code update, and public hearings
  - Anticipated Completion Late 2026



#### Strategy 4

- -Moratorium Options in the Reedy Creek Sub-Basin:
  - Option 1 (less severe): No wetland and floodplain impacts in the Reedy Creek Sub-Basin until the construction of Reams Rd is completed (mid 2029) or until more stringent stormwater Code modifications get adopted (late 2026), whichever occurs first
  - Option 2 (more severe): No <u>development approvals / permits</u> in the Reedy Creek Sub-Basin until the construction of Reams Rd is completed (mid 2029) or until more stringent stormwater Code modifications get adopted (late 2026), whichever occurs first





#### Strategy 4

- -What is required for a Moratorium Ordinance?
  - Prohibition of a specifically defined use
  - Public Purpose/Reason (rational nexus required)
  - A defined duration
  - Enforcement provisions
  - Legal Authority
  - Public Hearings (PZC and BCC)



#### **Moratorium Benefits**

- Public Safety
  - Limits new strain on an already impacted area and seeks to prevent future harm
  - Prevents new developments from being affected by potential flooding issues
- Improved Infrastructure Planning
  - Provides time for comprehensive studies to understand the existing flooding issues regarding drainage deficiencies, watershed impacts, and stormwater system limitations
- Legal and Political Safeguards
  - Reduces the risk of future lawsuits from developers or homeowners affected by insufficient flood mitigation or infrastructure



#### **Moratorium Risks**

- Legal Challenges
  - Property owners could argue the moratorium constitutes a taking of their property under the 5<sup>th</sup> Amendment
  - Property Owners could argue the moratorium places an inordinate burden on the use or economic viability of their property under the Bert J. Harris Jr. Act
- Economic Impacts
  - Negative effect on County (once development is paused, property tax revenue, impact fees, and other development-related fees will decrease)
  - Negative effects on development community (lost wages/revenue for contractors, suppliers, real estate professionals, etc.)



#### **Moratorium Risks**

- Community Reputation
  - This will be Orange County's 3<sup>rd</sup> suspension on development in 9 months, which can make the County appear hostile to development and discourage future investment
- Unintended Consequences and Other Considerations
  - Costs tend to rise over time; what will the price of development be post-moratorium?
  - Money and resources County may have to expend defending legal challenges
  - What happens to the construction projects that are already underway?
  - Is the duration of the moratorium reasonable considering what County seeks to achieve?
    - It may take 2 years to complete the Drainage Manual, but how long will it take to address the findings?

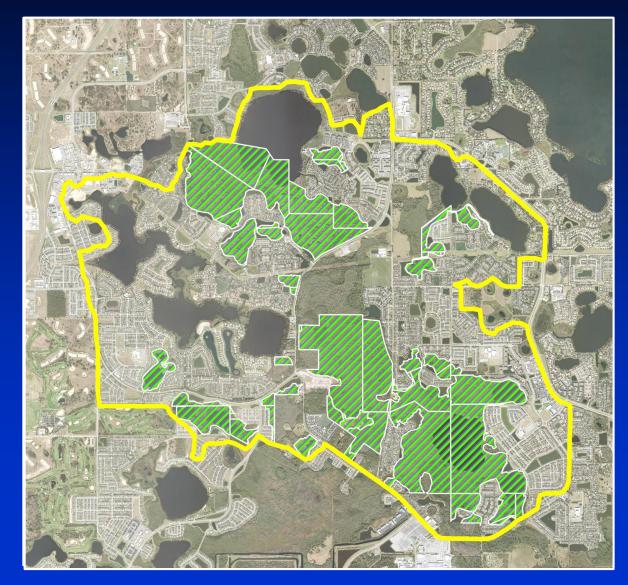


#### **Moratorium Risks**

- Unintended Consequences and Other Considerations
  - Are there factors beyond what the County has jurisdiction to regulate with a moratorium that contribute to the problem of flooding in the area?
    - Failing infrastructure or over-construction in other jurisdictions
    - Weather patterns beyond our control (frequency of hurricanes and significant storm events)
    - Suspending development approvals and permits will not abate the current flooding issues since permits/approvals do not cause the flooding, it is the actual construction/moving of dirt that does.
  - Limited applicability

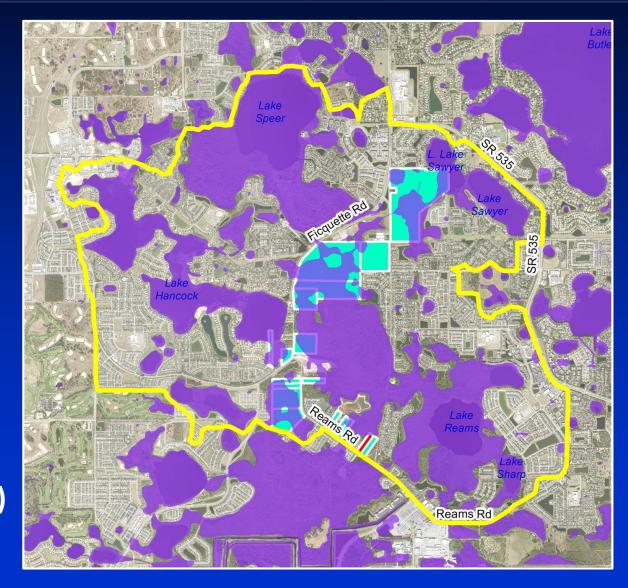


- Many of the undeveloped parcels are already protected via conservation easements
- ~1,843 ac protected via conservation easements
  - Sec. 713.B of the Orange County Charter:
     Action by the Board to change the
     disposition of any County Protected Lands
     (e.g., conservation easements) and must
     be approved by a supermajority vote
  - Non-County-owned lands seeking development rights for a conservation area must obtain Board approval





- Moratorium could be applicable within the Reedy Creek Sub-Basin identified in YELLOW
- 19 remaining parcels potentially available for development:
  - 18 Undeveloped parcels (BLUE)
    - Total: ~474 AC
    - Require Board approval for land use entitlements
    - New Wetland and Floodplain Regs apply
  - 1 Parcel in the Development Process (RED)
    - Moratorium would not apply to this parcel





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- Board requested Work Session due to recent flooding events along Reams Rd and Ficquette Rd
- Reams Rd has a history of flooding
- Major roadway projects should address flooding and public safety concerns and is projected to be completed by Mid 2029
- Several interim infrastructure and land development strategies are possible to provide relief
- Any moratorium should be temporary, may have risk, and may have limited applicability



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### **Board Direction**

- Strategies 1 & 2 are being implemented or in the process of being implemented
  - 1. Pre-Storm Preparation and Enhanced Maintenance Activities
  - 2. Add additional asphalt overlay to a portion of Reams Rd
- Requesting Board direction on Strategies:
  - 3. Direction to County Engineer
    - To cap the stormwater discharge rate into CFTOD's drainage basin at 13 CSM for new projects
    - No cost, immediate impact to new development applications, limited amount of new development
    - Would need to be in place until earlier of drainage manual update (2026) or completion of road projects (2029)
  - 4. Moratorium (partial or full)
    - Option 1 Limited to wetland/floodplain impacts
    - Option 2 No development permits allowed
    - No direct cost, risk of legal challenge, major impact on new development, years until solution implemented

- Low cost
- Improved flow and recovery
- Reduced risk of roadway flooding
- Should be complete by lateSummer 2025