

Utilities Department

Work Session Septic Tank Workgroup

February 22, 2022



Presentation Outline

- **Background**
- **Proposed Workgroup Plan**
- **Stakeholders**
- **Preliminary Schedule**
- **Summary**



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Background

- **A Workgroup has been created to address septic tanks**
 - BCC and advisory board members identified the need
 - Complex issue involving multiple departments
 - Alternative solutions are expensive and affect many stakeholders
- **Septic tanks provide safe, cost-effective wastewater treatment**
 - Used in rural areas or where centralized sewer systems are not available
 - Should be located a safe distance from water bodies

Background

▪ Septic Tank Systems

– On-site sewage treatment and disposal system

– Collect wastewater in a water tight tank

- Solids settle to the bottom
- Liquid (effluent) exits the tank to a drain field

– Drain field

- Spreads effluent into unsaturated soil where it is filtered and treated
- Water is discharged into the groundwater
- Some nutrients remain in the treated water



Background

- **Natural water quality can be impaired by nutrients**
 - Phosphorous
 - Nitrogen
- **Excess nutrients cause overabundance of algae**
 - Reduce diversity of plants and animals
 - Cause fish kills

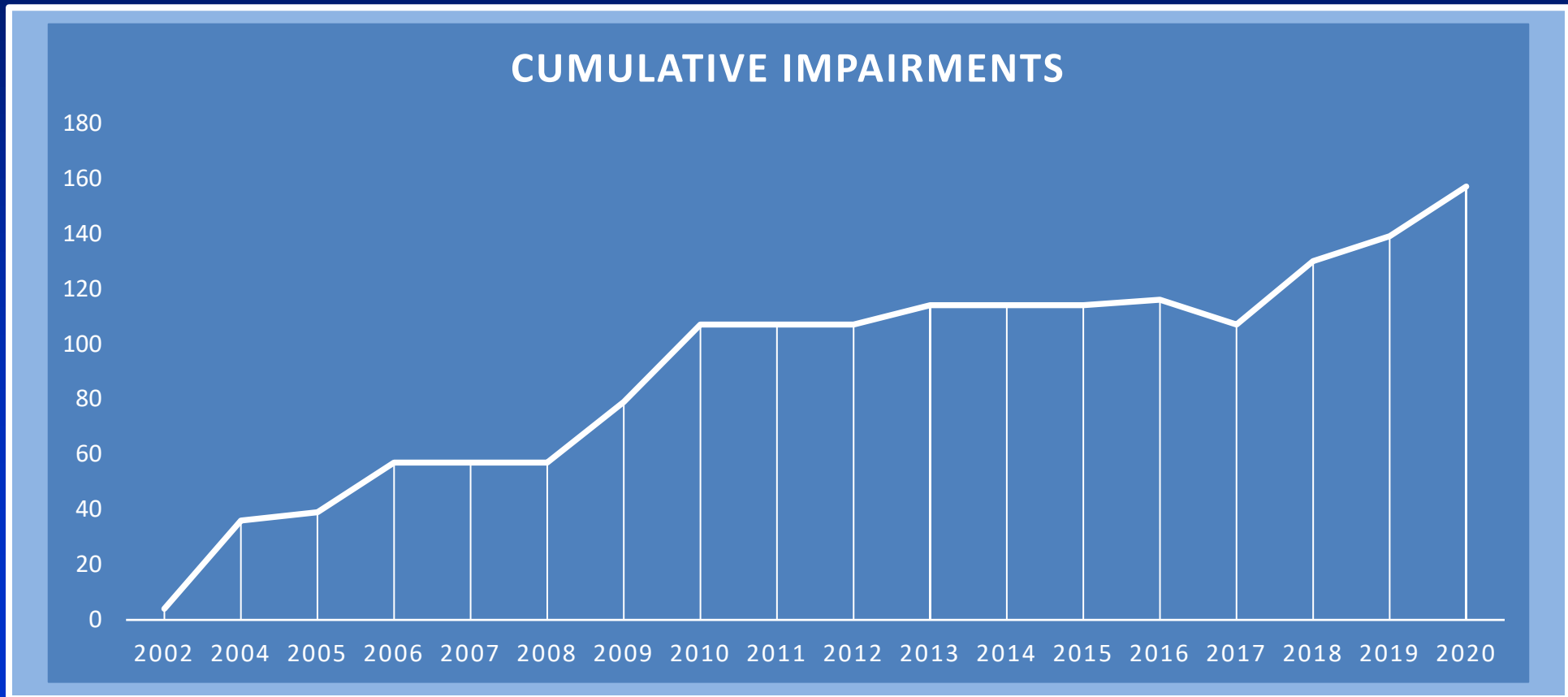




Background

Water Quality Regulations/Drivers

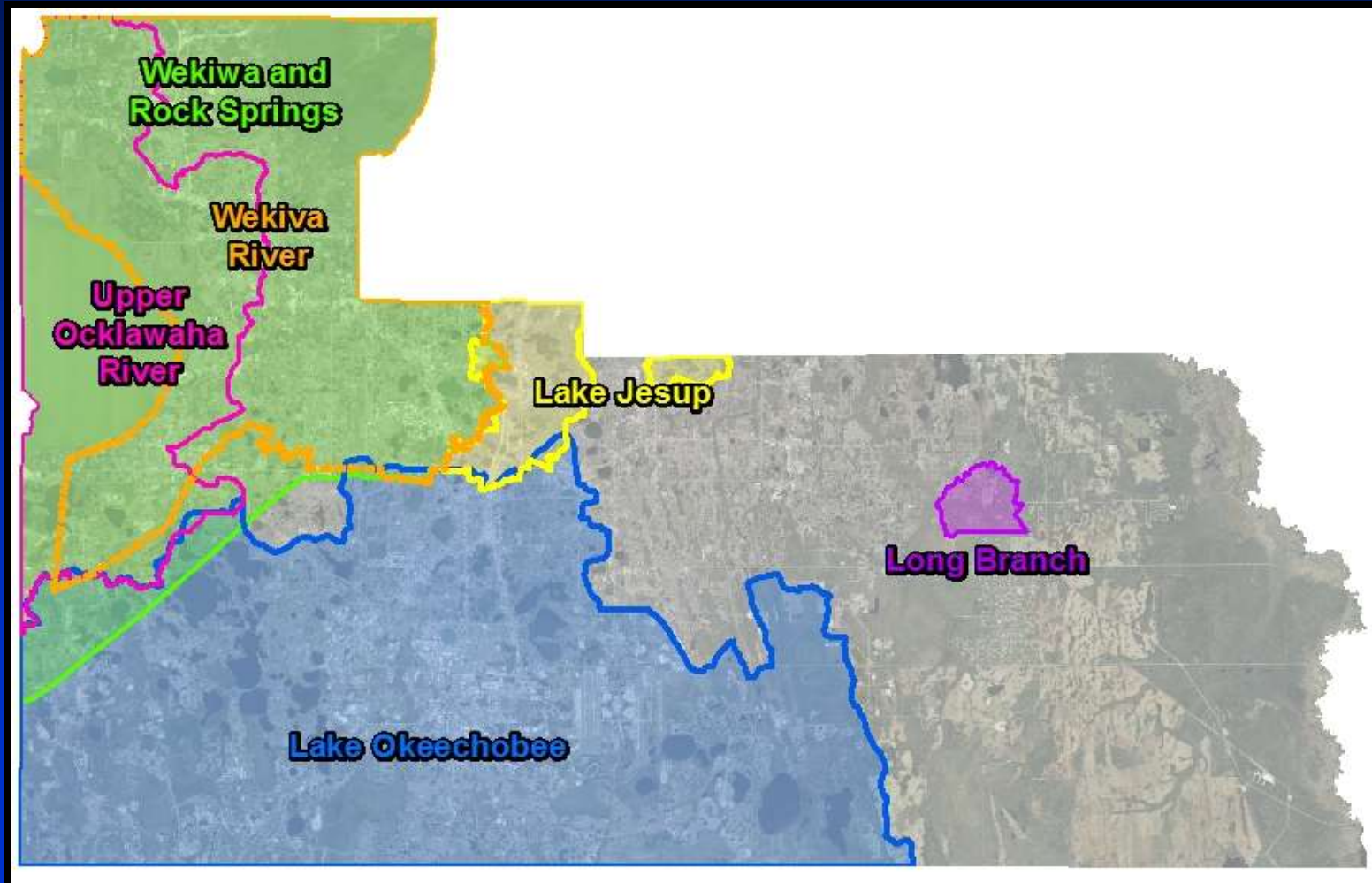
- 154 total impairments (61% are nutrient impairments)





Background

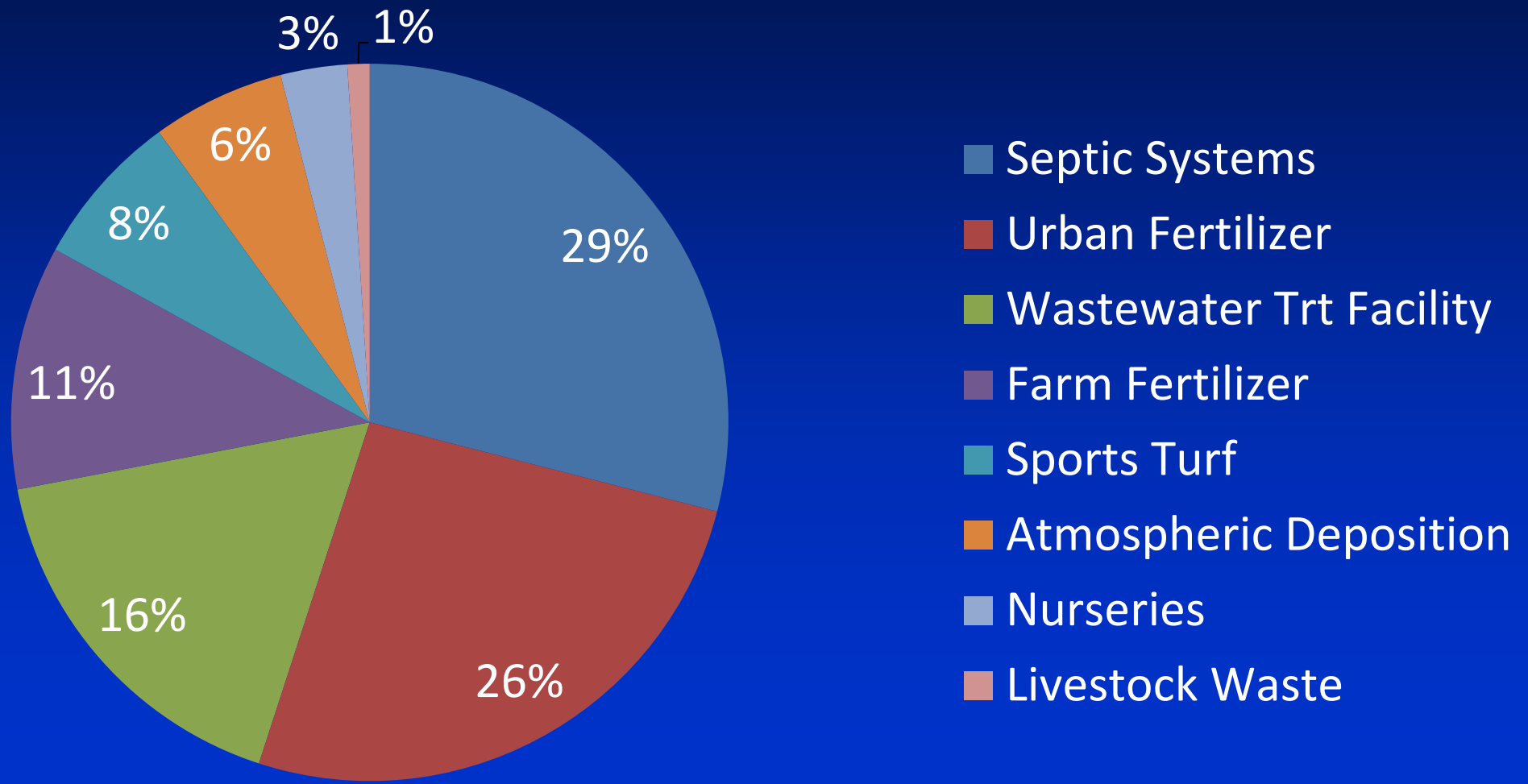
Basin Management Action Plans (BMAPs) in Orange County





Background

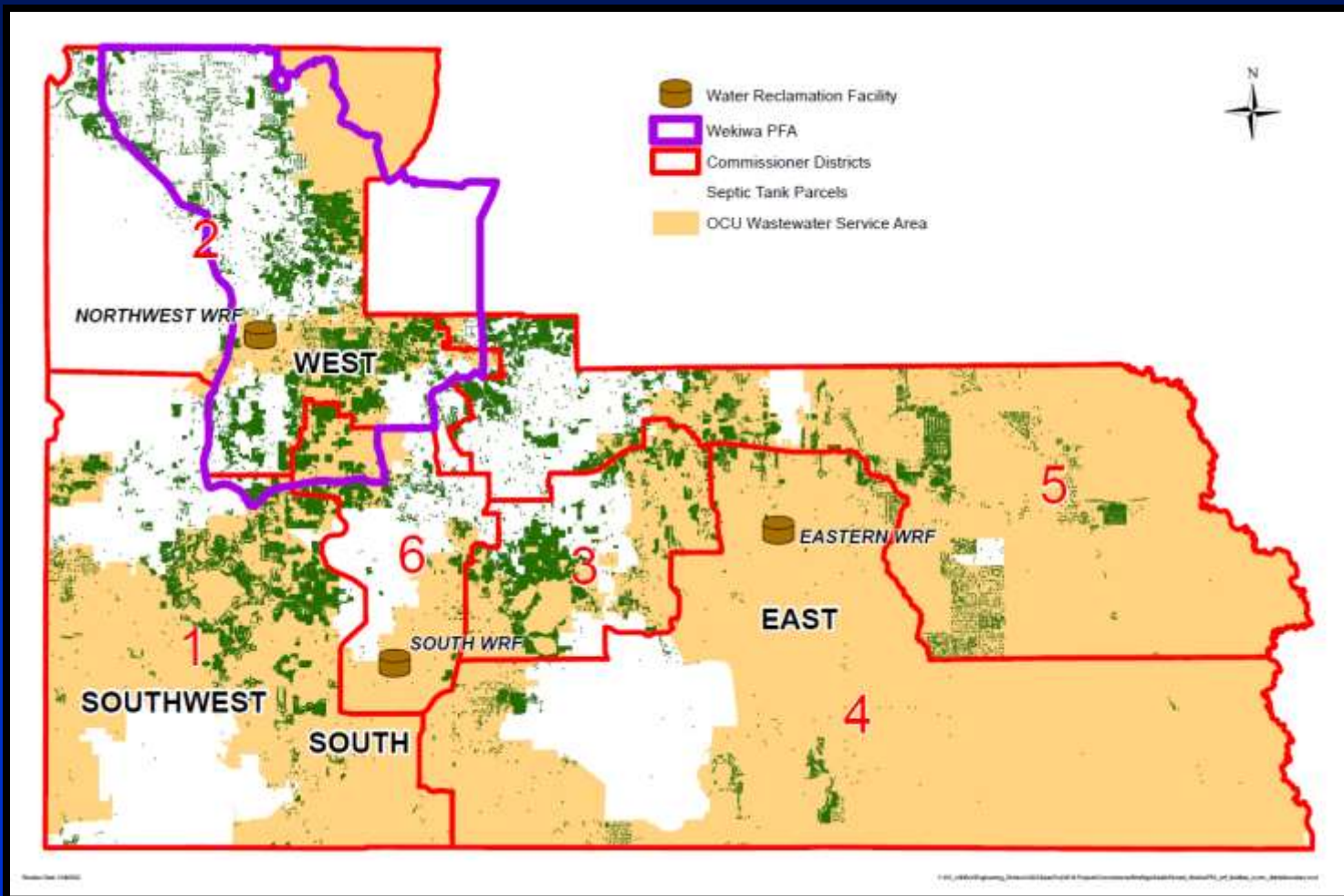
Wekiwa and Rock Springs Sources of Nitrogen





Background

Septic Tank Parcels in Orange County



District	Orange County	OCU	OCU & Wekiwa PFA
1	17,666	15,933	824
2	28,669	13,562	13,011
3	14,595	10,480	0
4	3,681	3,573	0
5	19,081	8,514	187
6	8,519	7,579	3,740
Total	92,211	59,641	17,762



Background

- **Wekiwa Spring and Rock Springs BMAP**
 - Adopted by FDEP
 - Creates Priority Focus Area (PFA) boundary
 - Targets septic tanks in lots under one acre
 - 100% reduction plan by Year 15
- **The Workgroup will address septic tanks outside the Wekiwa PFA**
 - Many conventional septic tanks do not impact water quality
 - E.g., large lots or non-vulnerable areas



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Proposed Workgroup Plan

▪ Traditional Staff Roles and Responsibilities

–Utilities Department

- Connections to central sewer service

–Public Works Department

- Review location of drain fields and setbacks from water bodies and potable water wells

–PEDS/EPD

- Protection of our water bodies, reviewing setbacks (from lakes, rivers, wetlands), septic upgrade programs, groundwater vulnerability analysis, pollutant source identification

–FDOH/FDEP

- Permitting of septic tanks (technical review of systems and treatment performance)



Proposed Workgroup Plan

▪ Current Utilities Projects

- Wekiwa Spring BMAP Sewer Feasibility Study (\$0.50M FDEP Grant)
- Wekiwa Springs Retrofit Program (\$83.82M, 1,453 septic tanks)
- Pine Hills Septic to Sewer Project (\$8.58M, 155 septic tanks)

▪ Current Projects by PEDS

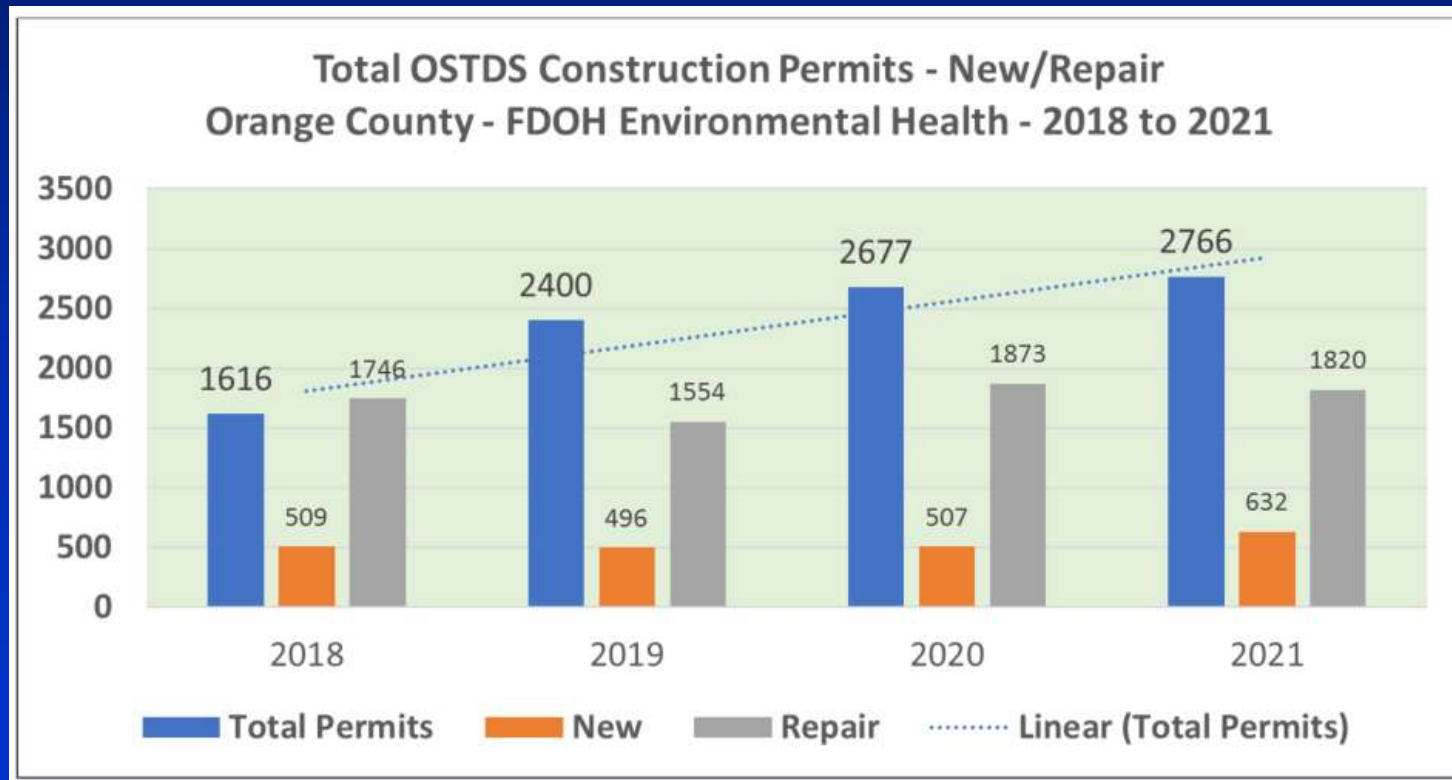
- Groundwater vulnerability analysis
- Voluntary septic system upgrade pilot program





Proposed Workgroup Plan

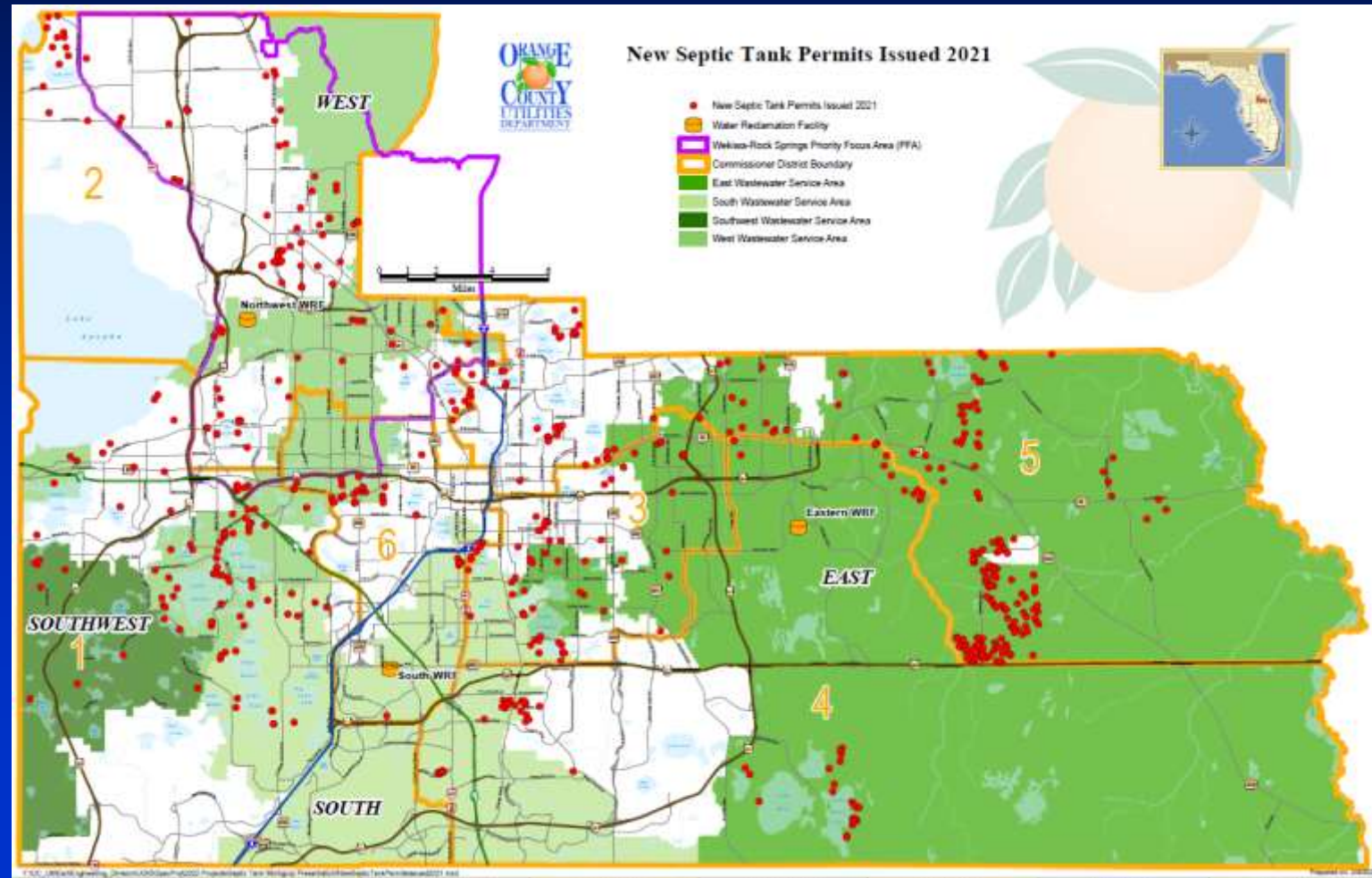
- Annual Septic Tank Permits
 - FDOH (Countywide including other wastewater service areas)





Proposed Workgroup Plan

▪ New Septic Tank Permits in 2021 (632 Countywide)



District	Orange County	OCU	OCU & Wekiwa PFA
1	99	87	3
2	110	28	16
3	63	47	0
4	93	92	0
5	230	197	0
6	37	31	0
Total	632	482	19



Proposed Workgroup Plan

▪ Goals/Scope

- Reduce conventional septic systems in the urban service area and vulnerable areas
 - Connect development to centralized sewer or advanced septic systems
- Reduce future financial liabilities
- Increase collaboration among departments
- Increase public awareness and education
- Propose changes to County policies and regulations



Proposed Workgroup Plan

▪ Challenges

- Over 92,000 conventional septic tanks
- Removing nutrients from water bodies is expensive
- Community acceptance of septic tank alternatives
- Distance to existing sewer infrastructure and cost to connect

▪ Some conventional septic tanks are appropriate

- Rural and non-vulnerable areas
- Low density development



Proposed Workgroup Plan

■ Proposed Workgroup Structure

Subgroup A

- New Development Connections to Central Sewer

Subgroup B

- Septic to Sewer Connections

Subgroup C

- Existing Septic Tank Upgrades

Subgroup D

- New Septic Tank Standards and Permitting



Proposed Workgroup Plan

Workgroup Team Members

- Utilities Department (Leads Subgroups A and B)
- PEDS Department (Leads Subgroup C)
- Public Works Department (Leads Subgroup D)
- County Attorney's Office
- Florida Department of Health (FDOH)



Proposed Workgroup Plan

Subgroup A – New Development Connections to Central Sewer

– Objectives/Scope

- Define connection requirements in
 - Urban Service Area
 - Rural Service Area
 - Existing Lots
 - Vulnerable Areas
- Determine connection requirements by zoning designation
- Draft updates to Orange County Code & Comprehensive Plan



Proposed Workgroup Plan

Subgroup A – New Development Connections to Central Sewer

–Policy Considerations

- Cost and affordability of new development
- Effect on infill lots
- Distance to existing sewer infrastructure
- Zoning and use of new development



Proposed Workgroup Plan

Subgroup B – Septic to Sewer Connections

– Objectives

- Connect as many septic tanks in vulnerable areas as possible
- Pursue funding assistance
- Identify feasibility to connect
- Identify areas to extend sewer infrastructure for future connections
- Educate the community



Proposed Workgroup Plan

Subgroup B – Septic to Sewer Connections

–Connection Options



Typical Septic System



Conventional Gravity Sewer



DWTS



STEP System



Grinder Systems



Proposed Workgroup Plan

Subgroup B – Septic to Sewer Connections

– Policy Considerations

- Funding
- MSBU requirement (67% of property owners)
- Incentives to connect

– Costs

- Capital (up to \$60,000 per lot)
- Monthly sewer bill (\$48.59 per month)



Proposed Workgroup Plan

Subgroup B – Septic to Sewer Connections

– Funding Challenges

- **Current projects totaling over \$92M within the Wekiwa PFA (1,608 septic tanks)**
 - Up to 25% funding from the County
 - Up to 12.5% funding from homeowners
 - More than 62.5% funding from federal/state agencies
- **Over 40,000 septic tanks in OCU service area outside the Wekiwa PFA**
 - \$2.4 billion to connect to gravity sewer
 - State funding is limited and no specific BMAP requirement to connect to sewer or upgrade
 - How soon and how many we connect could be affected by funding
 - Feasibility study for vulnerable areas will be needed



Proposed Workgroup Plan

Subgroup C – Existing Septic Tank Upgrades

–Objectives/Scope

- Conduct modeling to identify vulnerable areas
- Identify areas where upgrade may be required
- Identify standards for upgrading systems
- Identify funding sources to incentivize homeowners to upgrade
- Recommend policy changes



Proposed Workgroup Plan

Subgroup C – Existing Septic Tank Upgrades

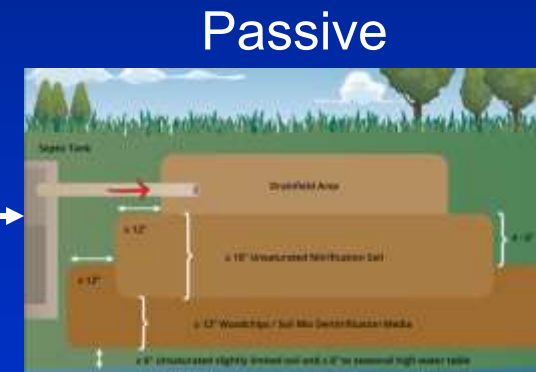
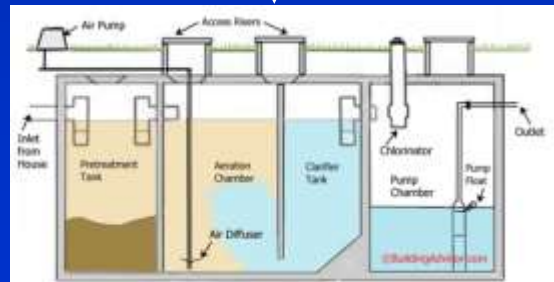
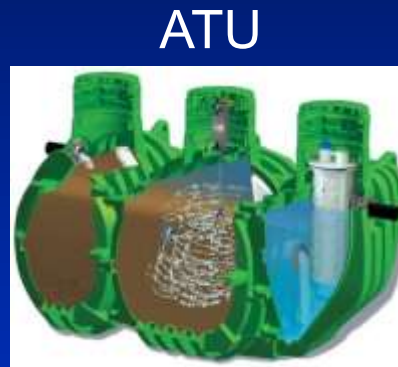
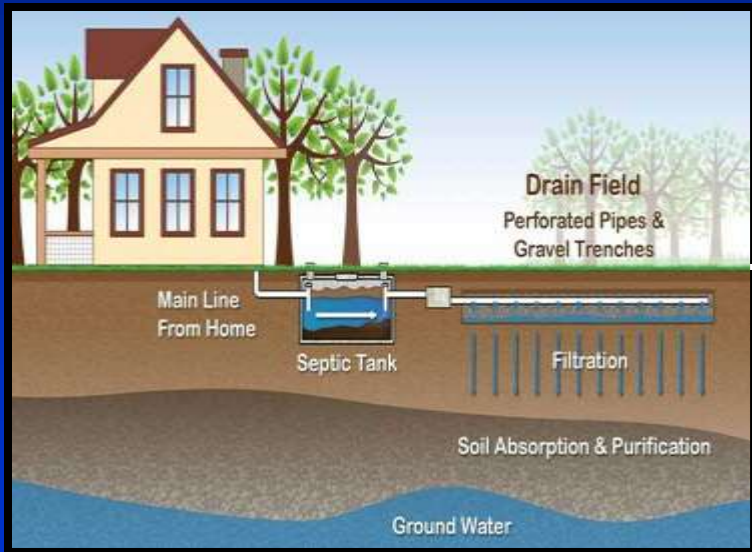
- **Policy Considerations**
 - Consider it as a strategy for meeting TMDL/BMAP requirements
 - Prioritize areas for upgrades
 - Timing for implementation
 - Consider incentivizing upgrades
 - Effect on septic tank industry and property owners
 - FDOH/FDEP operating agreement



Proposed Workgroup Plan

Subgroup C – Existing Septic Tank Upgrades

– Upgrade Options





Proposed Workgroup Plan

Subgroup C – Existing Septic Tank Upgrades

–Costs

- **Installation**

- New conventional (\$10,000–\$15,000) – 20+ years
- New passive (\$15,000–\$20,000) – Up to 20 years
- New ATU (\$20,000–\$25,000) – 20+ years (less for electrical/mechanical components)
- Upgrade existing (\$10,000–\$25,000)
 - FDEP Incentive – Wekiwa PFA (\$7,000)

- **Operation and maintenance (\$100–\$600+/year)**



Proposed Workgroup Plan

Subgroup D – New Septic Tank Standards and Permitting

–Objectives/Scope

- Implement advanced septic system requirements for vulnerable areas
- Identify changes to Orange County Code & Comprehensive Plan
- Reach agreement with FDOH for implementation of County requirements
- Prepare Countywide plan review flow chart
- Develop staff review standards for advanced septic systems



Proposed Workgroup Plan

Subgroup D – New Septic Tank Standards and Permitting

–Policy Considerations

- Specify requirements of advanced septic systems
- Define certification, inspection, monitoring, and maintenance requirements
- Define criteria for variances, exceptions, and exemptions



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Stakeholders

- **Policy Makers (Orange County BCC)**
- **State Agencies (FDEP, FDOH, SJRWMD, SFWMD)**
- **Municipalities**
- **Septic Tank Industry (equipment vendors, installers, maintenance entities)**
- **Development Industry (residential, commercial, contractors, builders, engineers, attorneys)**
- **Homeowners**



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Preliminary Schedule

- **Technical Studies**
 - Vulnerability Assessment Study (Complete Summer 2022)
 - Wekiwa Spring BMAP Sewer Feasibility Study (Complete Spring 2023)
- **BCC Work Sessions (Summer/Fall 2022)**
- **BCC Public Hearings for Ordinance Updates (Spring/Summer 2023)**
- **Capital Projects**
 - Wekiwa Springs Septic to Sewer Retrofit Program (2022–2030)
 - Pine Hills Septic to Sewer Project (2022–2026)
 - Projects outside the Wekiwa PFA (TBD)





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Summary

▪ Workgroup

- Created to address septic tanks impacting water quality
- Complex issue with many stakeholders

▪ Septic Tanks

- Provide safe, effective sewer treatment in appropriate locations
- Targeted by state agencies in the Wekiwa PFA
- Future financial liability in vulnerable areas
 - Cost of connection to sewer or upgrades is high
 - State funding mostly for the Wekiwa PFA



Summary

- **Four Subgroups**

- New development, septic to sewer connections, septic tank upgrades, and proposed standards for upgrades
- Future workshops by subgroups

- **Specific Policies for Orange County**

- Groundwater and surface water vulnerability assessment is critical
- Alternative solutions will be developed
- Policies may affect many stakeholders

Utilities Department

Work Session Septic Tank Workgroup

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