

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

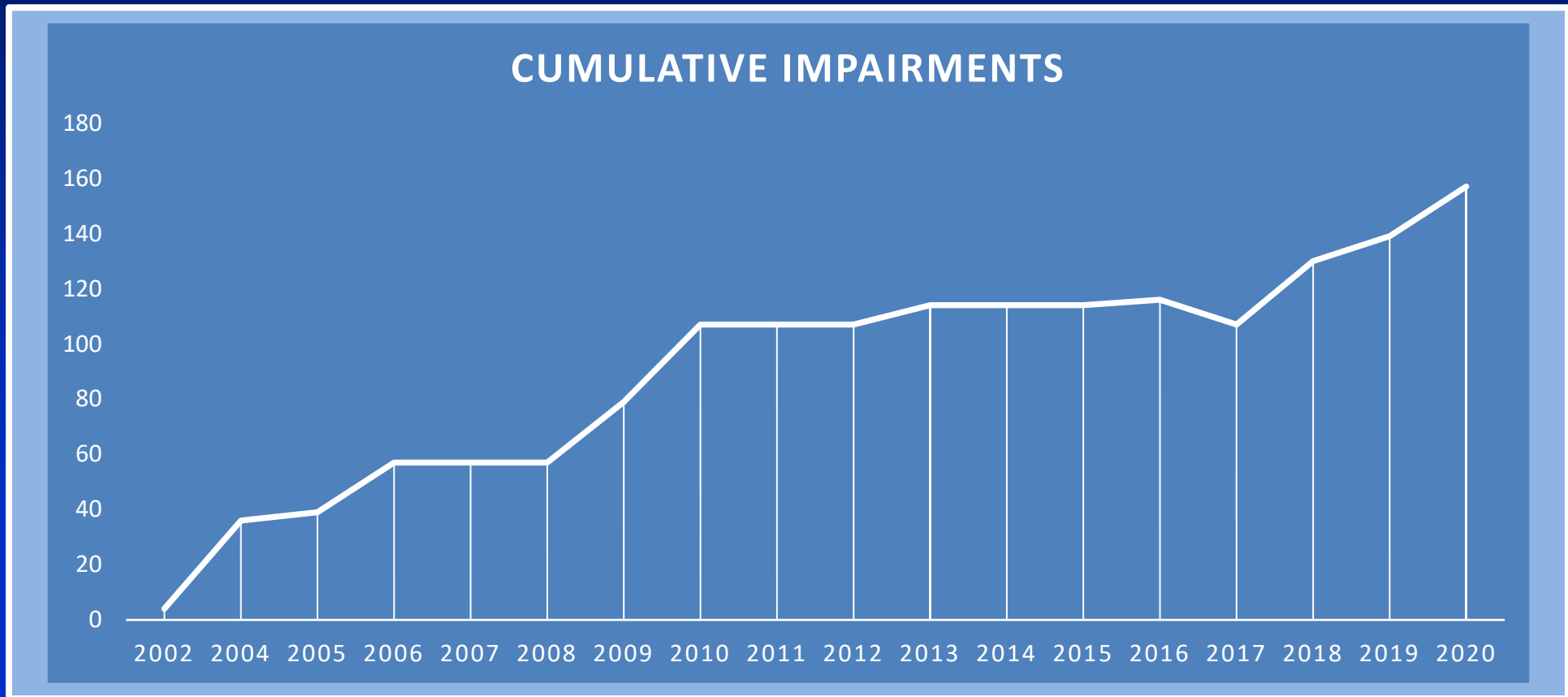




Background

Water Quality Regulations/Drivers

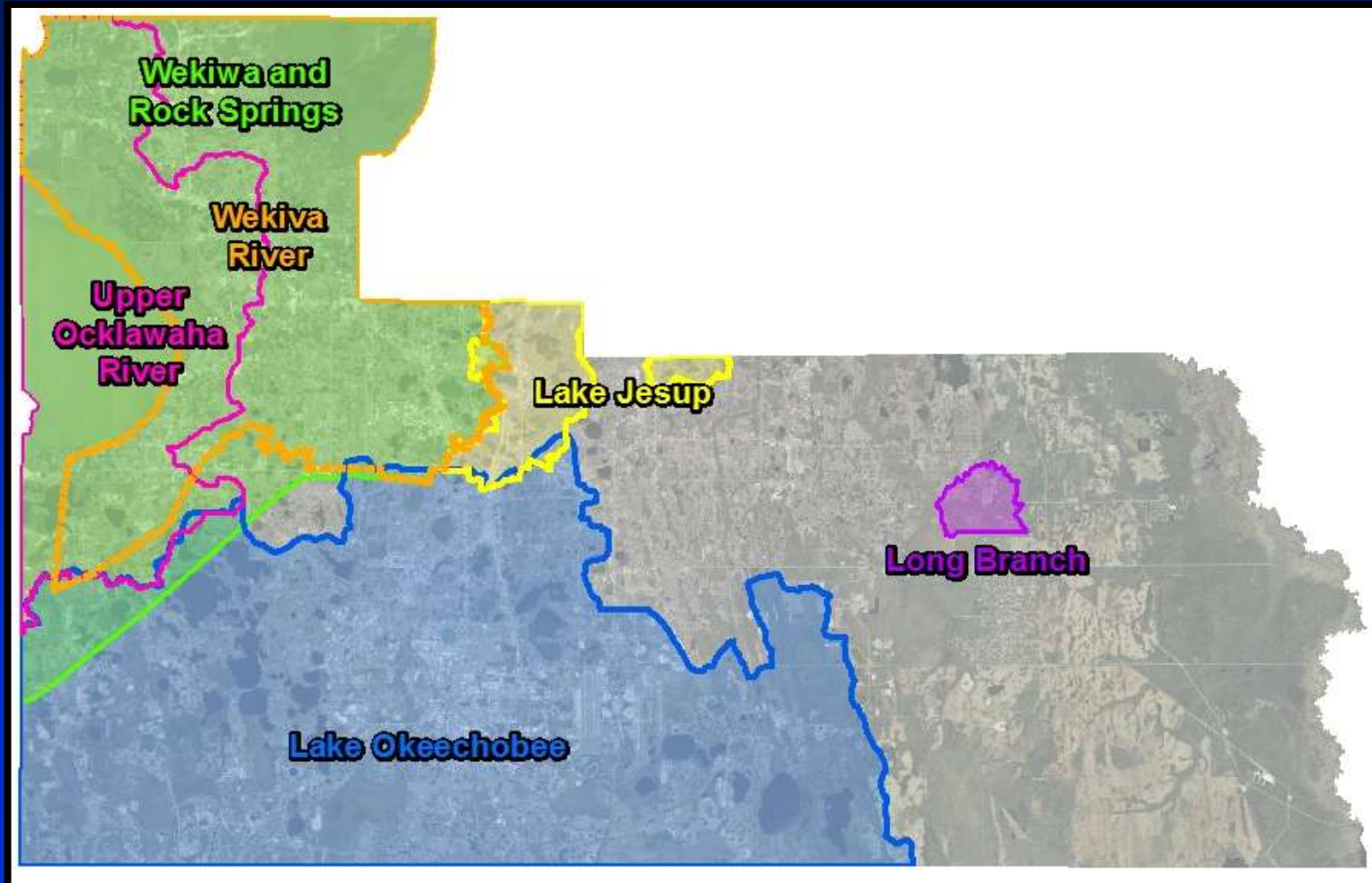
- 154 total impairments (61% are nutrient impairments)





Background

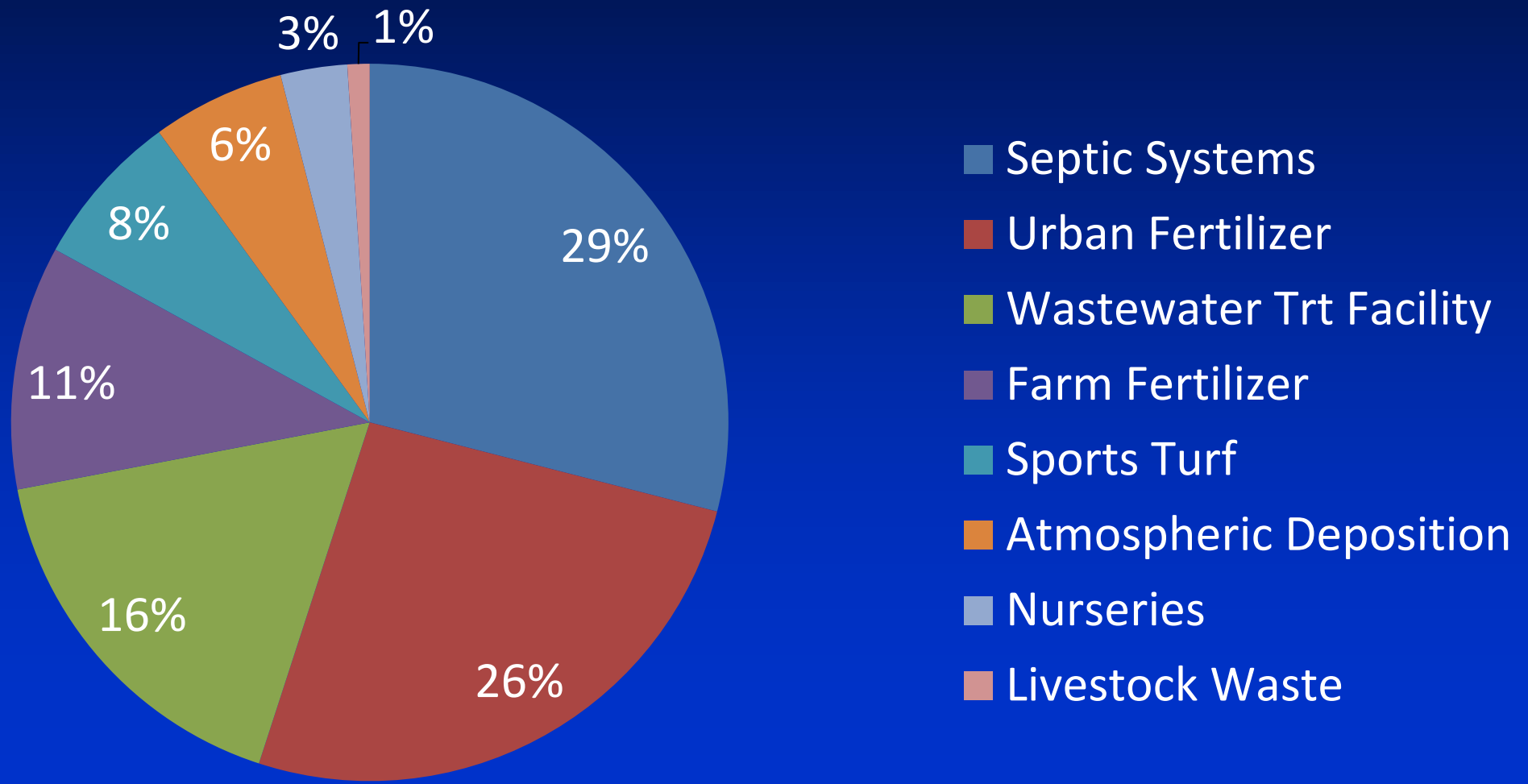
- Basin Management Action Plans (BMAPs) in Orange County





Background

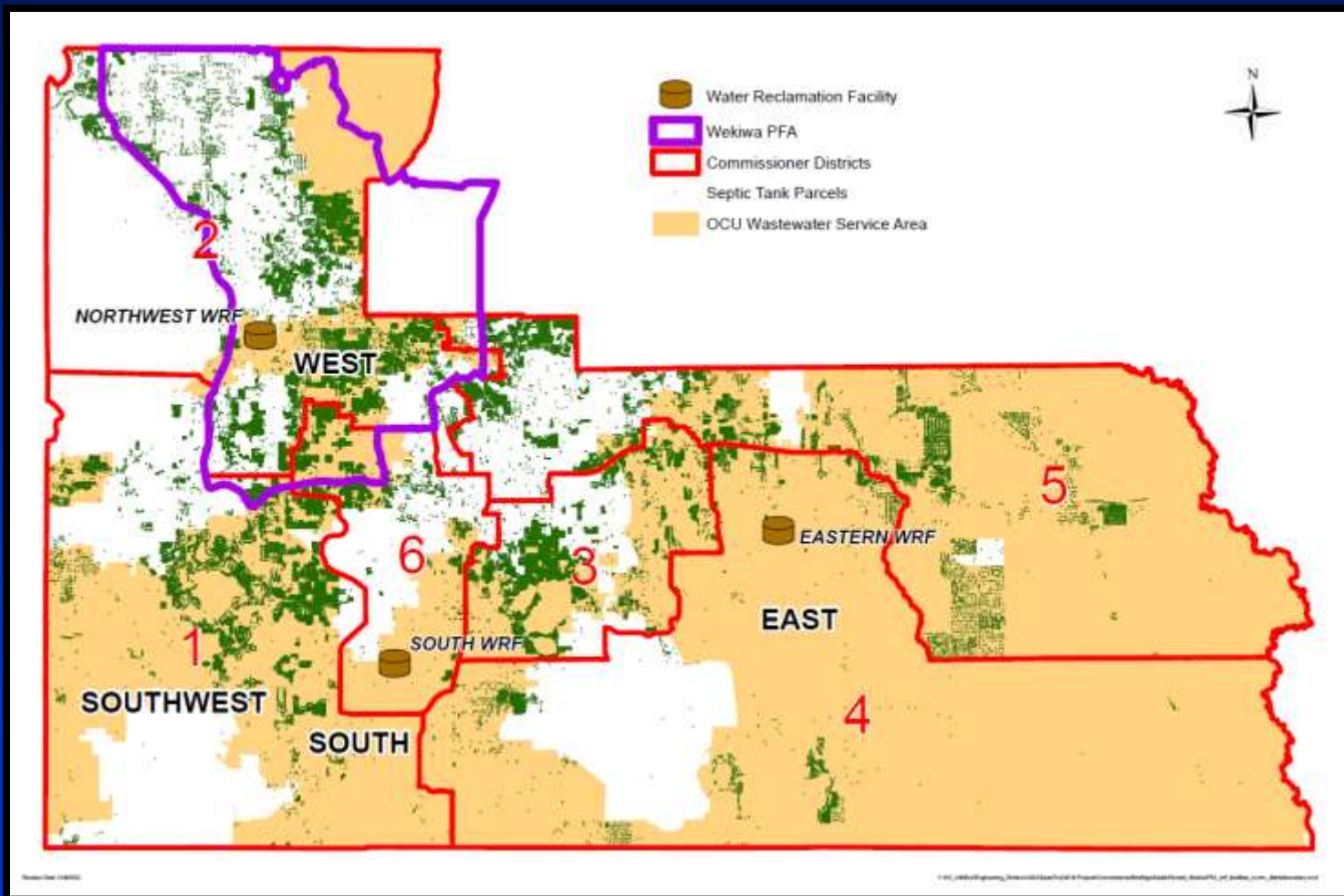
Wekiwa and Rock Springs Sources of Nitrogen





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

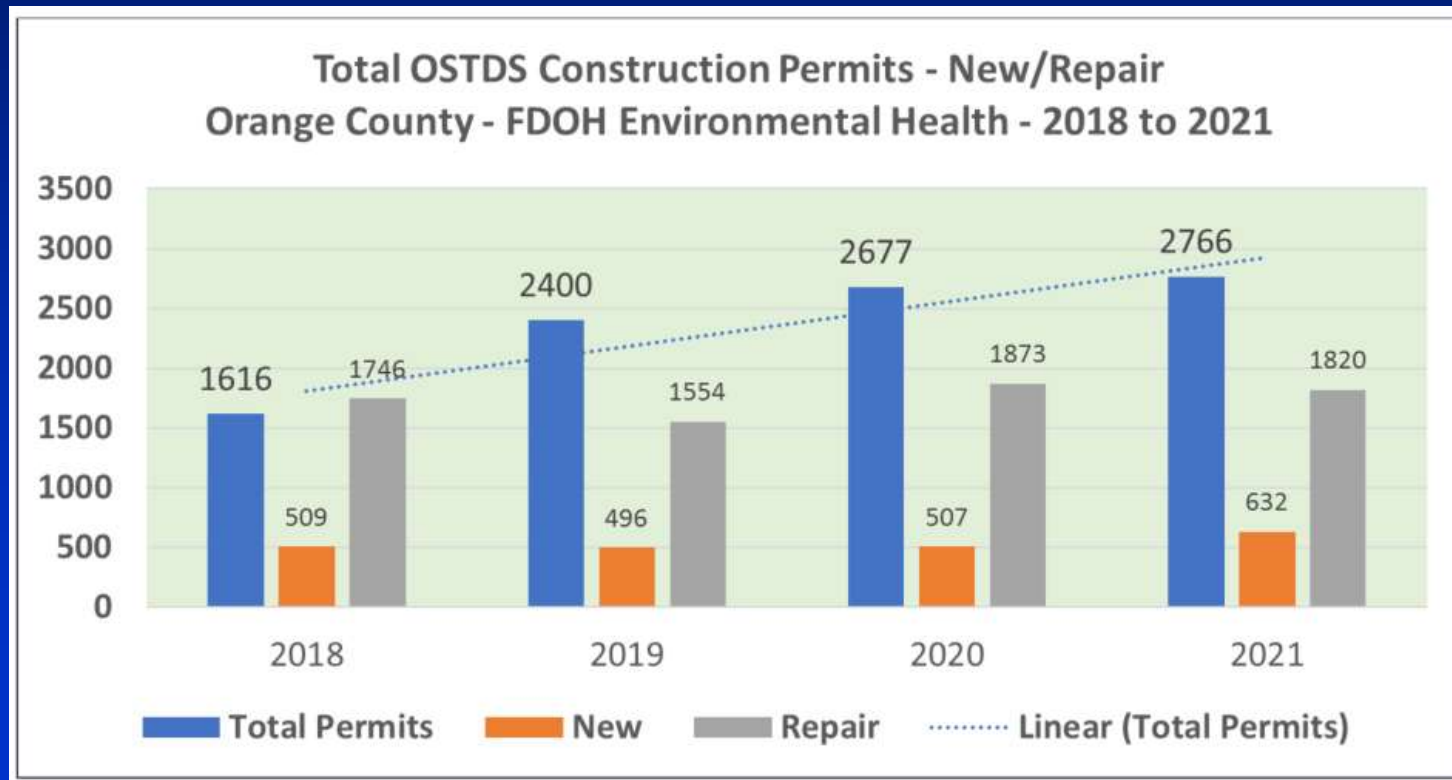
- Groundwater vulnerability analysis
- Voluntary septic system upgrade pilot program





Proposed Workgroup Plan

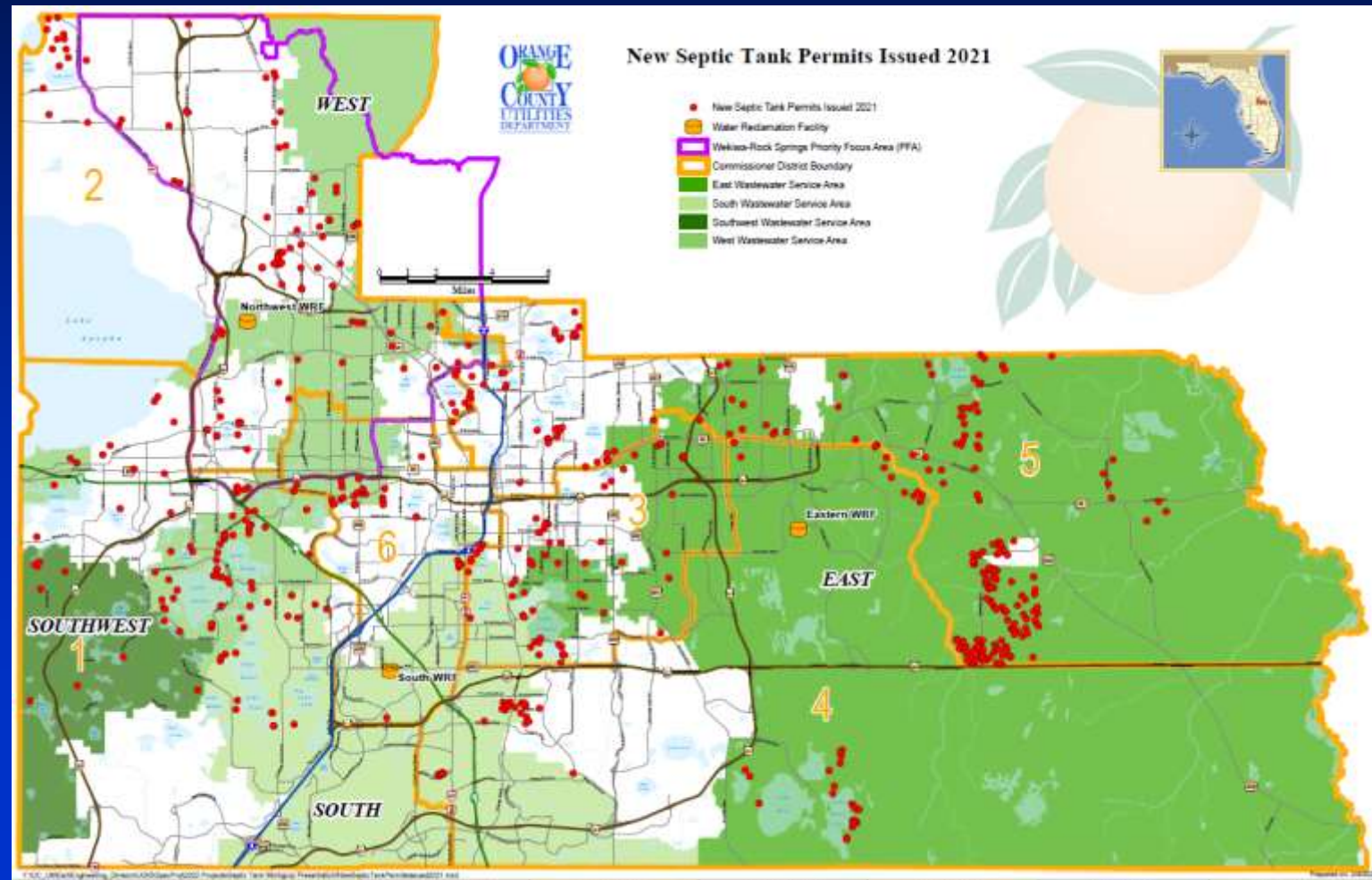
- Annual Septic Tank Permits
 - FDOH (Countywide including other wastewater service areas)





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

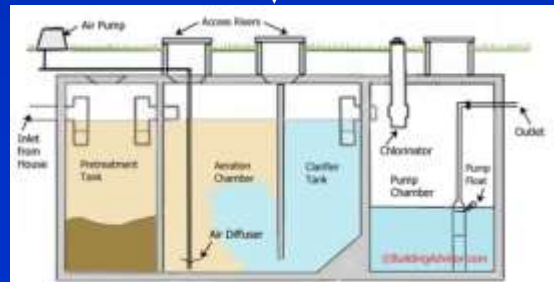
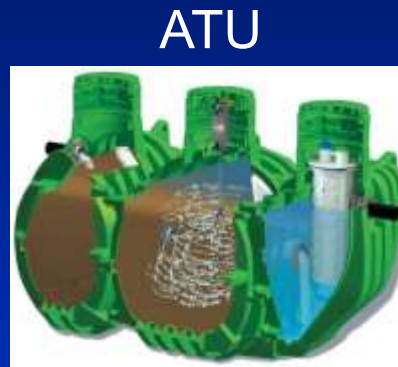
- **Policy Considerations**
 - Consider it as a strategy for meeting TMDL/BMAP requirements
 - Prioritize areas for upgrades
 - Timing for implementation
 - Consider incentivizing upgrades
 - Effect on septic tank industry and property owners
 - FDOH/FDEP operating agreement



Proposed Workgroup Plan

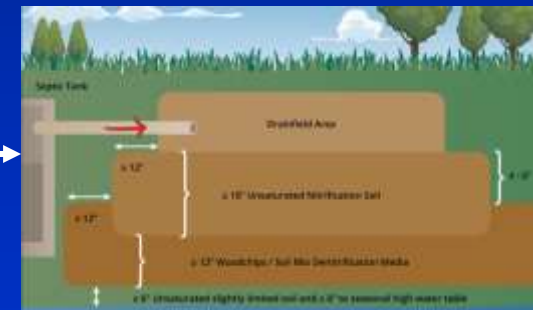
Subgroup C – Existing Septic Tank Upgrades

– Upgrade Options



PBTS

Passive





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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