Wastewater Feasibility Study for the Protection of Gemini Springs

July 14, 2021

Presentation Overview

Brief History of the Project

- Florida Springs and Aquifer Protection Act
- OSTDS Remediation Plan Requirements
- PFA for Gemini Springs

Project Alternatives

- Decentralized
- Centralized

Financial Analysis

- Financial Model
- Anticipated Costs
- Potential Grants

Grant Analysis

- Decentralized
- Centralized

Next Steps

- Direction from City Council
- Submit Report to FDEP

Florida Springs and Aquifer Protection Act

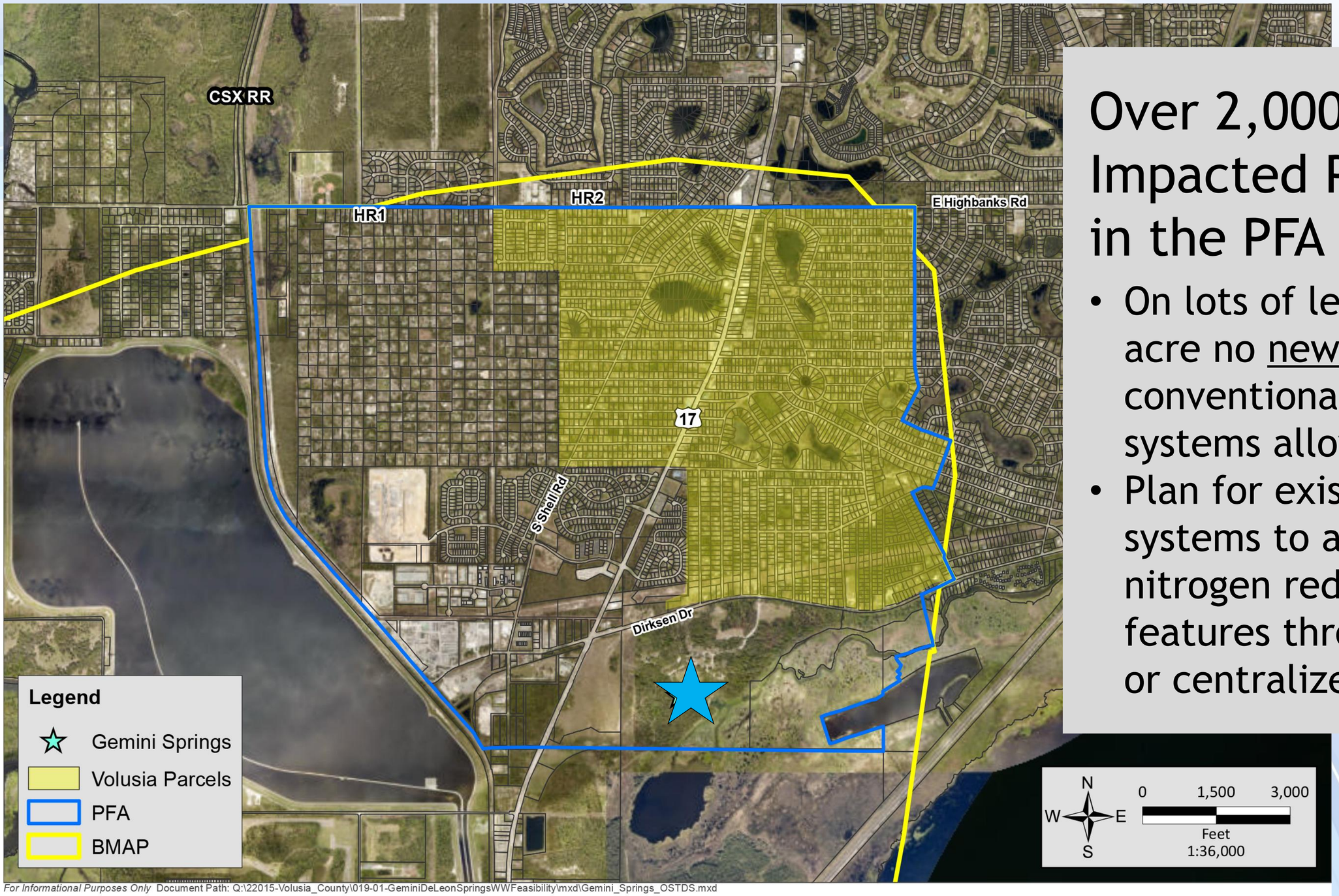
- Passed by State Legislature in 2016
- Requirements of the Act
  - TMDLs must be established for first magnitude springs by December 2018
  - Priority Focus Areas (PFAs) are the *area* where a *spring* is likely to be most adversely impacted by activities established for Outstanding Florida Springs

  - Onsite Sewage Treatment and Disposal Systems (OSTDS) Remediation Plan required for areas where septic systems have greater than 20% contribution to the nutrient load in the Priority Focus Area
- OSTDS/Septic systems were determined to contribute more than 40% of the nutrient load to Gemini Springs

OSTDS Remediation Plan Requirements

- Evaluation of credible scientific information on the effects of nitrogen on springs and spring systems
- **Options for repair, upgrade, replacement, drain field modification, the addition of effective nitrogen-reducing features, connection to a central sewer system, or other action**
- **Cost-effective and financially feasible projects necessary to reduce the nutrient impacts from OSTDS**
- A priority ranking for each project for funding contingent on appropriations in the General Appropriations Act
- A public education plan to provide area residents with reliable, understandable information about OSTDS and springs

Priority Focus Area (PFA) Requirements and Septic Systems



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Over 2,000 Impacted Parcels in the PFA

- On lots of less than 1-acre no <u>new</u> conventional septic systems allowed
- Plan for existing septic systems to add nitrogen reducing features through ATUs or centralized sewer

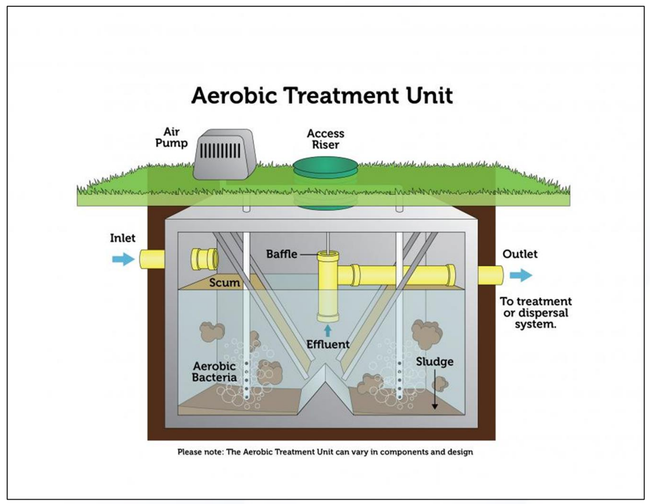
Gemini BMAP Timeline

- BMAP implementation is intended to be a 20-year process with defined cumulative nitrogen reduction milestones
  - 5-year - 30%
  - 10- year - 80%
  - 15-year - 100%
- TMDL concentration level to be met no later than the 20-year goal with a total reduction requirement of 14,270 lbs-N/year

Nitrogen Removal 2018 – 2023	Nitrogen Removal 2023 – 2028	Nitrogen Removal 2028 – 2033	Total Nitrogen Removal by 2038
4,281 lbs	7,135 lbs	2,854 lbs	14,270 lbs

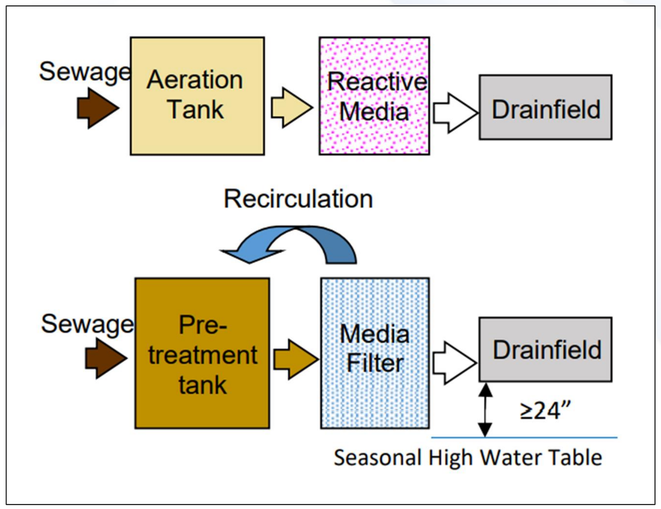
Decentralized Technologies

- Conventional septic systems cannot be used for lots less than one acre in the PFA for new homes or businesses with new septic systems and for existing systems when replacement is required unless sewer will be available within five years.
- Advanced Treatment Alternatives
  - Aerobic Treatment Units
  - Performance-Based Treatment System
  - In-Ground Nitrogen Reducing Biofilter (INRB)



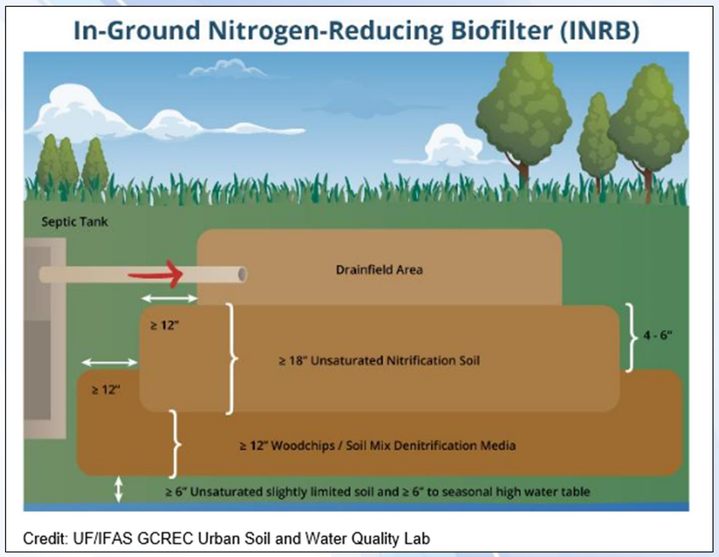
Aerobic Treatment Units

Average 65% N Removal



Performance-Based Treatment Units

Average 65-85% N Removal



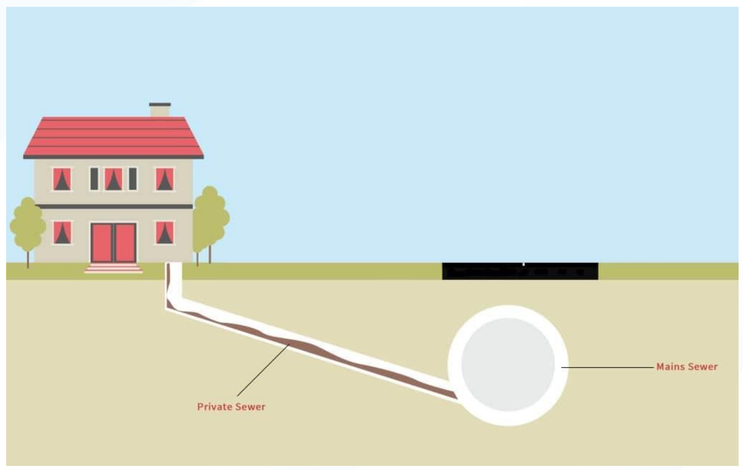
Average 65% N Removal

Centralized Technologies

- Conventional septic systems cannot be used for lots less than one acre in the PFA for new homes or businesses with new septic systems and for existing systems when replacement is required unless sewer will be available within five years.

Central Sewer Alternatives

Average 95% Nitrogen Removal



Gravity

Low Pressure

Vacuum

Planned Approach

- Narrowing Strategy - Install Just a Sewer System, Not Water
  - Reasoning
    - There are no FDEP grants to install water systems
    - Cost of construction has skyrocketed
    - Installation of water systems will impact roads
    - BMAP requirements are focused on nutrient reduction from Septic
    - Does appear to be a full commitment from the community to mandate water hookup

Planned Approach

- Narrowing Strategy - Implementing a Centralized System
  - Reasoning
    - ATU’s are too expensive to individual homeowner
    - ATU’s will not reduce the nutrient load to Gemini Springs as required by FDEP
    - Centralized System is most cost effective and reliable system long-term
    - Any new technologies, as they come along during implementation, can be piloted and tested with FDEP approval

Planned Approach

- Vacuum Sewer System
  - The BEST centralized system for this project is the Vacuum Sewer System
- Reasoning
  - Vacuum System is cheaper to implement, has the same performance as a conventional centralized system, and less burden on the current infrastructure
  - Proven Technology

Planned Approach

- Value to Residents
  - Greater use of your land
  - DOH data reveals within the PFA 47 homes per year are replacing leach fields
  - Over the next 20 years, most if not all systems will have to be replaced

State Level Expectations of Local Effort

- Shovel-Ready Projects Preferred
- Connection Commitments
  - SJRWMD requirements
  - FDEP expectations
- Local government financial commitment
  - SJRWMD Cost Share requirements
  - FDEP Springs dollars

Financial Model

- Septic to Sewer Financial Model
  - Dynamic financial model to evaluate feasibility of central sewer construction and operations
  - Multi-year analysis including debt repayment scenarios based on project life cycle
- $54 million septic to sewer program
  - 5-year construction program
  - Volusia County Utilities administration
    - debt issuance
    - operations

Financial Analysis

- Considerations
  - All available grants will be pursued but no grants are guaranteed
  - This is a long-term issue - residents in the PFA on less than an acre will be required to make a change at some point
- Assumptions
  - We must have a minimum of 75% external grant dollars for a program to move forward
  - We must have a dedicated (25%) local funding source to match grant dollars
  - Some form of mandatory connection is essential to optimize grant potential and secure elements of certain local sources

Anticipated Monthly Cost to Homeowners

Monthly Requirement	Monthly Cost
Wastewater Bill	$47.69
Collection System Assessment	$28*
Total	$75.69

*Based on $5,000 non-ad valorem assessment (if $5,000 paid upfront, then no monthly assessment); amount includes $3,000 allowance for onsite lateral and septic tank removal.

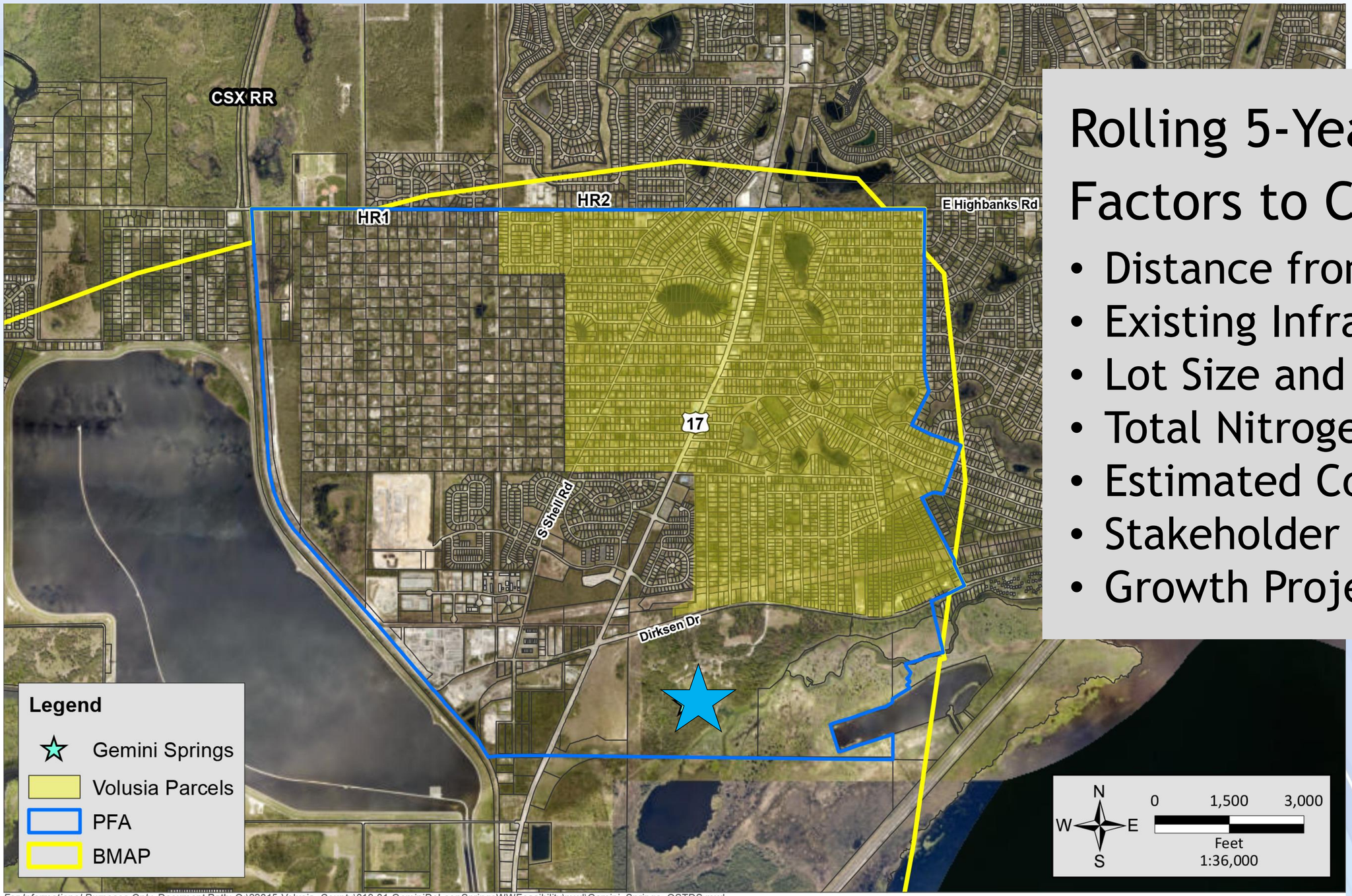
Utility Rates in the Area

Comparison of Monthly Wastewater Bills (July 2021)

Flat sewer rate based on 5,000 gallons monthly usage

	5,000 Gallons
Volusia County / DeBary	**$47.69**
Deltona	$112.55
DeLand	$48.56
Orange City	$65.11

Criteria Used to Assess Potential Project Areas



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Rolling 5-Year Plan Factors to Consider

- Distance from Spring
- Existing Infrastructure
- Lot Size and Density
- Total Nitrogen Load
- Estimated Cost
- Stakeholder Input
- Growth Projections

Potential Grant Funding Sources

Name	Funding Source	Eligible Projects	General Description	Requirements
Springs Grant	FDEP	Centralized sewer improvements, septic to sewer	Funding allocated for projects associated with nitrogen reduction in the BMAPs of springs identified in the FSAPA	Annual application process through FDEP or WMD
SRJWMD Cost Share	SJRWMD	Centralized sewer improvements, septic to sewer	Funding for projects that assist in creating sustainable water resources, provide flood protection and enhance conservation efforts. Funding may be available for local governments, agricultural interests and other entities.	Annual application process through WMD
Water Quality Grants	FDEP	Homeowner side improvements associates with S2S	Provides up to a 50% matching grant to local governmental entities for wastewater and stormwater improvements, including septic conversion and remediation.	Annual application process through FDEP
S2S Connection Grant	FDEP	Homeowner side improvements associates with S2S	Provides funding for homeowner side costs of septic to sewer projects in the springs areas as well as some cost offsets for ATUs required in springs areas.	Application process through FDEP
Legislative Appropriation	State Legislature (Administered by FDEP)	Wastewater improvements including septic to sewer	Provides funding for specifically identified projects requested through specific legislative offices and approved through the legislative process. Must be approved by the Governor.	Requires request from local gov’t to state during legislative process.
ARPA	State, County and City	Wastewater improvements including septic to sewer	Funding allocations to state and local governments with wastewater as an eligible area of expenditure	Determined by Treasury

Next Steps – Council Guidance and Concurrence

Obtain concurrence on:

- Acceptable internal funding approach
- Mandatory connection
- Grant percentage and on pursuit of grant dollars in support of prioritized projects
- Submitting report to FDEP

Questions or Comments

If you have questions or comments, please call or email

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