

Captiva Community Panel Meeting

South Seas Resort
2:00 p.m. December 8, 2015



Captiva Island Conceptual Central Sewer System

Florida Governmental Utility Authority

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Captiva Island – Conceptual Central Sewer System

- Captiva Island’s northern area is served wastewater collection, transmission, and treatment by permitted WWTPs, including the FGUA South Seas WWTP and three (3) other “package plants”
- FGUA evaluated the potential for a central sewer system of pipelines, pump stations & treatment plant serving entire island
- Elimination/reduction of septic tanks will greatly reduce adverse effects to the environment

Captiva Island

- The FGUA sewer service area is located at north end of island, encompassing South Seas Plantation Resort.
- Three (3) existing WWTP package plants are located at Sunset Captiva, Captiva Shores, and Tween Waters Inn.
- Central and southern areas of island are on septic tanks.



Conceptual Central Sewer System - Options

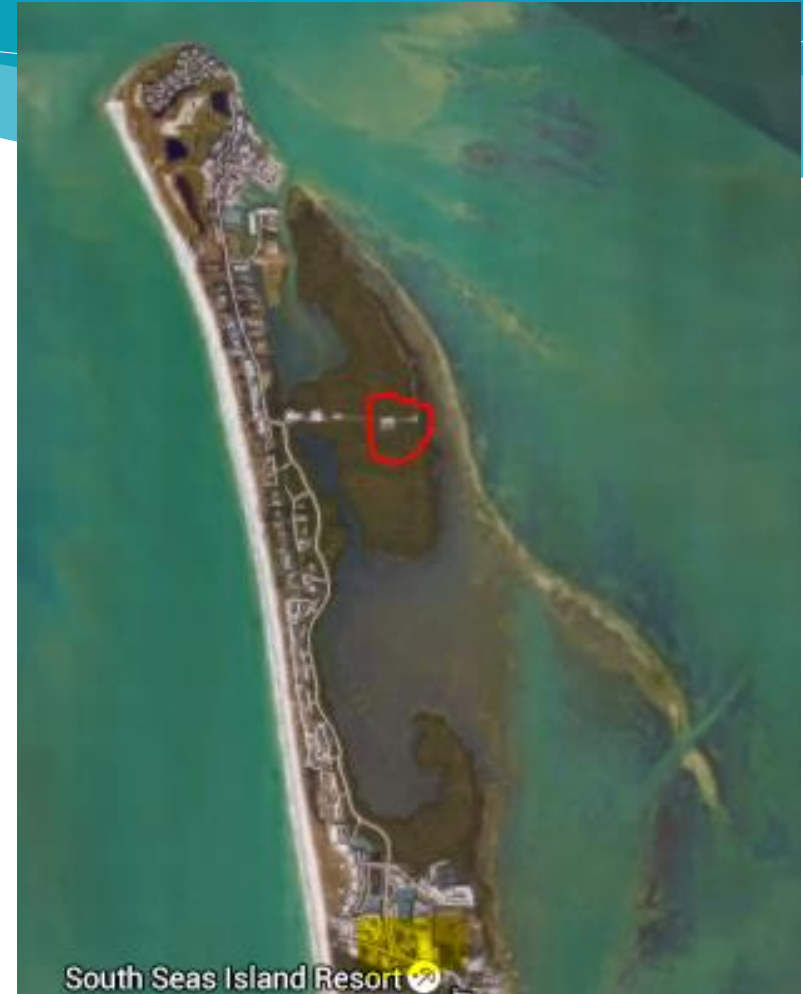
Options for new central sewer system

- Expand existing FGUA South Seas WWTP
- Design and construct new WWTP(s)
- Consider partnering opportunities w City of Sanibel
- Other...

Conceptual Central Sewer System – FGUA South Seas

FGUA Service Area for WW service is the South Seas Plantation Resort located at north end of Captiva Island.

WWTP is circled in red.



Conceptual Central Sewer System Expanded FGUA South Seas WWTP



Conceptual Central Sewer System - Components

Components and options for wastewater collection, transmission, and treatment

- Conventional gravity sewers, manholes, and lift (pump) stations
- Low pressure grinder pump systems (not considered)
- Vacuum sewer systems (southern segment) to minimize initial project capital cost, reduce impact to the community, and shorten the construction time
- Must consider overall cost, permit-ability, ease of construction, and operational requirements

Conceptual Central Sewer System – new WWTP

New WWTP should be located in central area to the unserved properties to minimize infrastructure needed

- Site on or near land that is undeveloped or of similar land use
- Effluent disposal may require injection well and combination of storage tankage, infiltration basin, and/or spray field
- Consider potential combined benefits with existing WWTPs

Conceptual Central Sewer System - Challenges

- Roadway corridors (about 4 mi), narrow right of way will require well planned traffic control to minimize community disruption
- Potentially high construction restoration costs
- Sandy soils with high ground water table
- Remote location in Lee County for supply of workers & materials
- Design, permitting, and construction must address environmental interests and issues

Captiva Island – Aquatic Preserve



Local Contact:

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Conceptual Central Sewer System - Estimated WW Flows

Estimated WW flows exclude the FGUA South Seas service area:

All residential, including Southern area	123,000 gpd
Central area, non-residential	13,900 gpd
Northern area, non-residential	<u>28,595 gpd</u>
Total estimated WW flow, AADF	165,495 gpd
Total equivalent dwelling units *	637

* Non-residential converted to ERC's at 250 gpd per dwelling unit

Conceptual Central Sewer System – Segment Areas



Conceptual Central Sewer System – Est. Cost per Unit

Estimated project cost*	\$15 M
No. of units	637
Total cost per unit	\$23,500

*Includes \$4.1M for WWTP and effluent disposal systems and 25% contingency construction costs. Excludes major land acquisition or environmental mitigation costs.

Note: AACEi Class 4 estimate has scope definition 1% to 15% complete and accuracy range of -40% to +80%.

Conceptual Central Sewer System Further Evaluation

- Regulatory input (FDEP, USACE, DOH, SFWMD, etc.) wastewater permitting, wetland impact & mitigation, septic tanks
- Design criteria to meet Lee County Utilities standards and county land development code requirements, with specific study of what if any deviations would be allowed
- Utility Owner O&M responsibility for the Vacuum System collection chambers which may need to be located well within private properties

Conceptual Central Sewer System – Further Evaluation

- Reclaimed water use as environmental benefit
- Life cycle costing for alternatives evaluation
- Nature and extent of community involvement program
- Interconnection of FGUA South Seas WWTP effluent disposal system to provide flexibility
- Other...

Conceptual Central Sewer System - Summary

IN SUMMARY...

- Central sewer system presents very unique and critical challenges for design, permitting, & especially construction
- Central sewer system would consist of new WWTP and combination of gravity sewers & vacuum sewers
- Est. cost for new WWTP & collection system is \$15M, or \$23,500 per unit
- Many items require further evaluation

FGUA South Seas WWTP Overview of Capacity & Treatment Process

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QUESTIONS / DISCUSSION

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