

The Life and Times of Septic to Sewer

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OUR NAME IS EASY TO REMEMBER OUR WORK IS HARD TO FORGET.

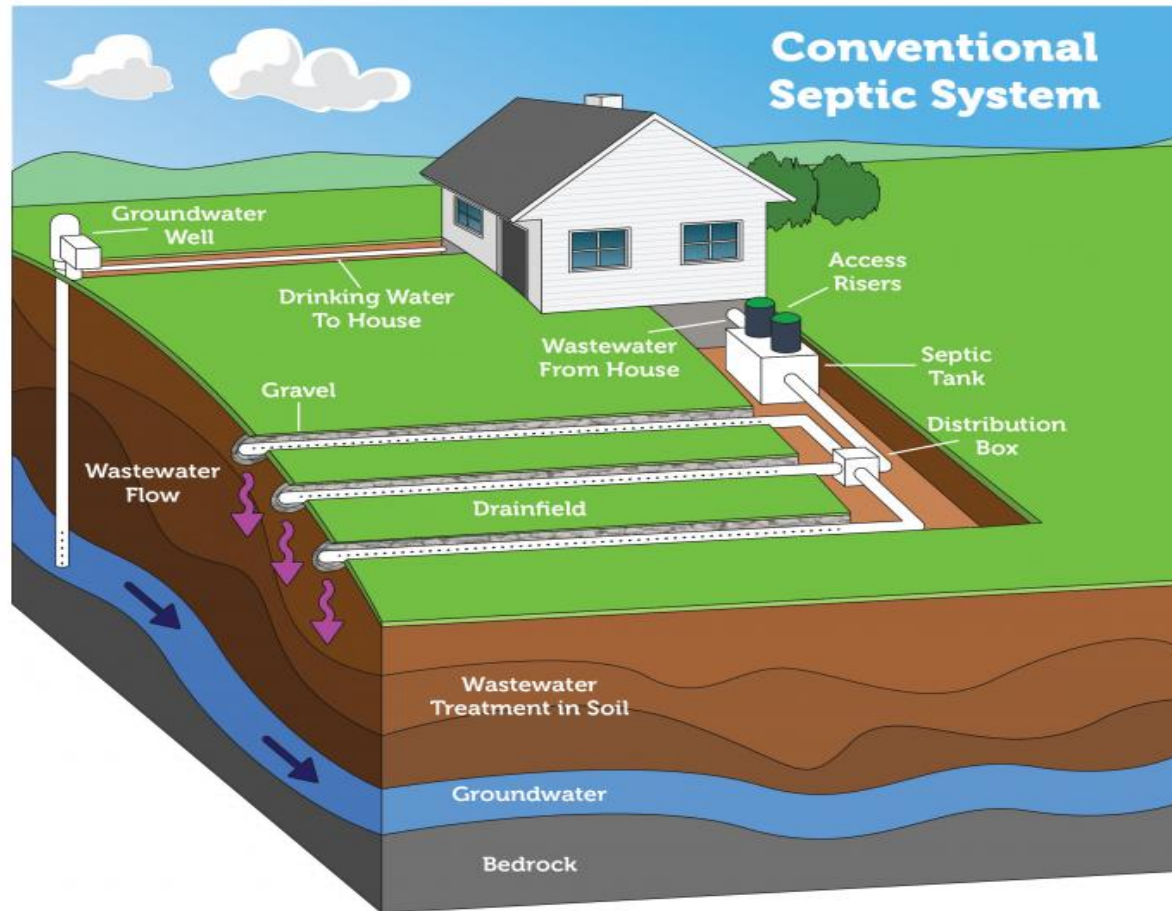
Tallahassee Orlando Miami Jacksonville Tampa Atlanta Washington D.C.

What are Septic/Onsite Systems?

- Wastewater facilities which collect and treat onsite
- Basically => a septic tank/drainfield or package plant
 - Septic tank serves single property (120 GPD per bedroom)
 - Package plant can serve small community (flows up to 0.5 MGD)
- OSTDS defined: sections 373.802, 381.0065, 489.551, Fla. Stat.
 - **“Onsite sewage treatment and disposal system”** means a system that contains a standard subsurface, filled, or mound drainfield system; an aerobic treatment unit; a graywater system tank; a laundry wastewater system tank; a septic tank; a grease interceptor; a pump tank; a solids or effluent pump; a waterless, incinerating, or organic waste-composting toilet; or a sanitary pit privy that is installed or proposed to be installed beyond the building sewer on land of the owner or on other land to which the owner has the legal right to install a system. [The term includes any item placed within, or intended to be used as a part of or in conjunction with, the system.] *This term does not include package sewage treatment facilities and other treatment works regulated under chapter 403.*
- Drainfield defined: section 64E-6.002(18), FAC
 - Drainfield – a system of open-jointed or perforated piping, approved alternative distribution units, or other treatment facilities designed to distribute effluent for filtration, oxidation and absorption by the soil within the zone of aeration.



Conventional Septic System



Please note: Septic systems vary. Diagram is not to scale.

By the Numbers

- Originated in France in 1860s, introduced to US in 1883
- 30% of Florida's population served by OSTDS
- 2.7 million septic systems in operation
- Florida accounts for 12% of U.S. septic systems
- Sewer: 240 million people nationwide served by appx. 14,500 wastewater treatment plants
- Costs:
 - Septic system for 3 bedroom SFR: \$3,000-\$6,000
 - Nitrogen reduction feature: \$10,000-\$15,000*
 - Periodic inspection and pumping: \$250-\$400 every 3-5 years
 - Decommissioning: \$1,000-\$2,000
- Typical system life: 20-40 years depending on use and maintenance

* New septic systems on lots < 1 acre permitted in some spring sensitive areas (PFAs/priority focus areas) required to be nitrogen reducing by 2016 Florida Springs and Aquifer Protection Act, Part VIII, Chapter 373, Fla. Stat.

OSTDS Disadvantages

- Ongoing maintenance and inspection responsibility
- Initial/ongoing costs may be less than sewer but substantial
- Reduces usable land area
 - Precludes parking, building expansion, trees/shrubs, pools and other features
- Heavy rainfall can cause system backup
- May limit development potential, setback requirements
- Limits on flow and type of waste – bleach, drain cleaner may kill beneficial bacteria
- Potential for public health and environmental harms



OSTDS Disadvantages: Septic System Failure

- **Common Causes**

- Using too much water/rainfall
- Tree root intrusion
- Improper design/construction (ex. improper ventilation, lid failure)
- Lack of maintenance

- **Consequences**

- Contamination of drinking water and recreational surface water
- Pathogens: bacteria, parasites, viruses (hepatitis A, polio, viral gastroenteritis)
- Nitrogen/nitrate pollution

- **Failure Signs**

- Bright green, spongy grass on the drainfield
- Excessive weed or algae growth in nearby shore waters
- Unpleasant odors, pooling water or muddy soil near system
- Soil/water testing indicate biological contamination

Drainfield Failure



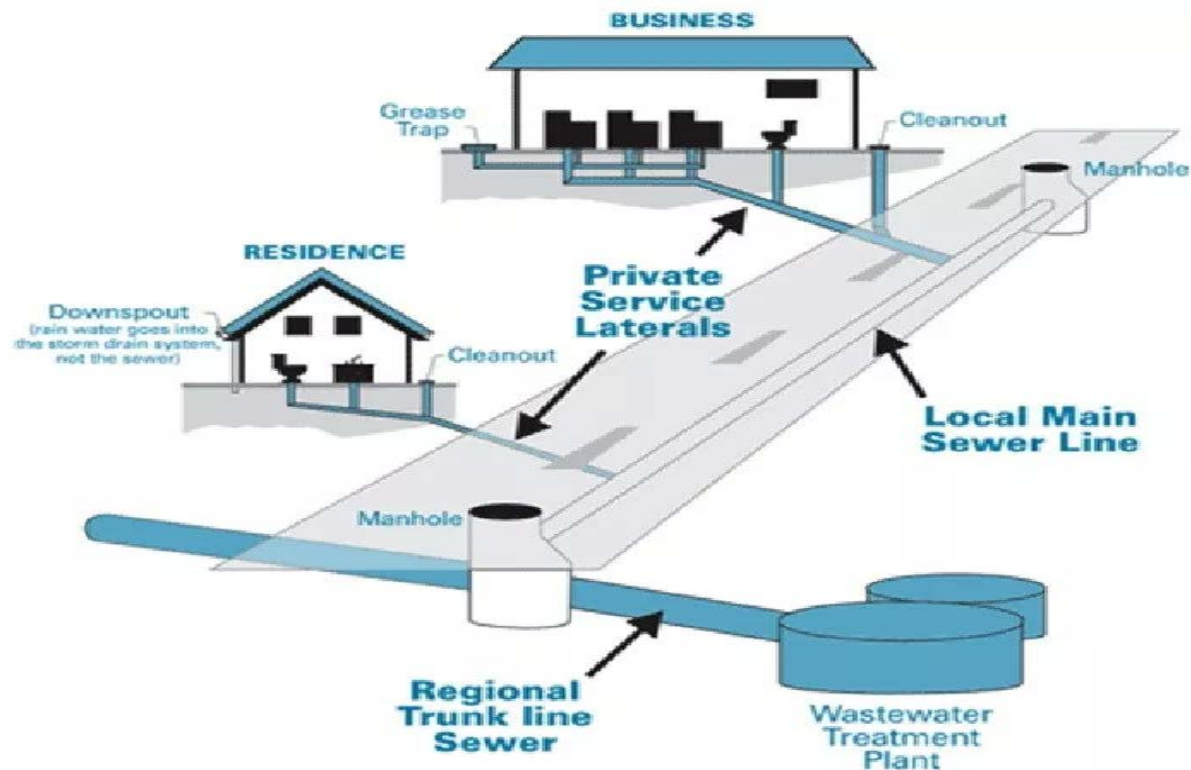
Septic Tank Displacement



Septic tank on Vilano Beach, St. Augustine after Hurricane Matthew



Ending/Reversing Proliferation of OSTDS: Conversion to Central Sewer Systems



Advantages of Sewer

- Avoids disadvantages of septic, i.e. eliminates landowner maintenance responsibilities and costs
- Proponents say safer for the environment
 - Lower potential for surface and groundwater contamination
 - Avoid aiding another Red Tide
 - "The question is not that they do or don't. The question is how big of an impact is it to the algae bloom?"
 - University of Florida professor Ed Phlips
 - See Amy Sherman, What role do septic tanks play in Florida's algae bloom? PolitiFact Florida (2018), <https://www.politifact.com/florida/article/2018/aug/20/what-role-do-septic-tanks-play-algae-bloom-crisis/>

Central Systems – Local Government Ownership

- Advantages:
 - Local control over rates
 - Better service quality/more reliable
 - Accountability to customers
 - System can earn profit which may be expended for other purposes (ex. millage reduction). City of Pompano v. Oltman, 389 So.2d 283 (Fla. 4th DCA 1980)
- Disadvantages:
 - Local control over rates, i.e. rate-setting responsibility
 - Sewer systems also subject to failure
- HB 141 would have required
 - Written notice of spills, names/numbers of authorities responsible for plant oversight
 - Penalty up to \$2/gallon of sewage released



How Conversion Initiatives Start

- Local governing board determination
 - Environmental & public health concerns
 - Increase rate base => lower costs for all users through economies of scale, raise net revenues
- Landowner request/petition process
- Bond covenants
 - Local government issues bonds to acquire system
 - Bond covenants require mandatory connection
- Statute requires conversion in a given area
 - E.g. FL § 380.0555(10)(b): “Franklin County and the municipalities within it shall, within 60 days after a sewerage system is available for use, notify all owners and users of onsite sewage disposal systems of the availability of such a system and that **connection is required** within 180 days of the notice. Failure to connect to an available system within the time prescribed shall be a misdemeanor of the second degree....”



General Conversion Steps

- Development
 - Determination to convert
 - Plan of finance and cost estimate
 - Mandatory connection ordinance
 - Notices
- Financing
 - Implement plan of finance
 - Assessment process – notice and public hearing
 - Bond issue/loan
 - Validation if required or to resolve challenge/controversy
- Construction
 - Assessment collection
- Project completion
 - Enforcement of mandatory connection/decommissioning septic
 - Cost/assessment true-up
 - Apply grant funding to buy down cost



Availability and Mandatory Connection

- Make central sewer available by:
 - Acquiring or constructing system for unserved area
 - Extend system facilities into unserved area
- Adopt mandatory connection ordinance
 - § 153.12, Fla. Stat. – counties may, upon construction of a sewage disposal system and the financing of such a system by the issuance of sewer revenue bonds, require that each abutting lot or parcel connect to such sewer
 - § 153.62, Fla. Stat. – county sewer districts authorized to regulate use of sewers and prohibit use of septic tanks
 - § 180.01, Fla. Stat. – cities may establish a utility service area and prescribe reasonable regulations requiring all persons to connect with sewerage system
 - § 381.00655, Fla. Stat. – owner of OSTDS must connect to publicly owned or investor owned system upon availability



Challenges to Mandatory Connection

- Taking/inverse condemnation – property owner deprived of the value of the septic system
- Equal Protection - equal protection of the laws and the right to the full use of their property
- Substantive Due Process – mandatory connection ordinance is irrational and therefore violates substantive due process
- Appellants unsuccessfully argued that because their well water was “safe and pure” the mandatory connection was irrational as to them
 - Stern v. Halligan, 158 F.3d 729, 731 (3d Cir. 1998)



Challenges to Mandatory Connection

- District of Columbia v. Brooke, 214 US 138 (1909)
 - Plaintiff argued that the penalty tax she was made to pay was unconstitutional because she had her own private system that worked
 - However, the Court held that the use of police power, which is one of the most essential powers, did not result in a taking that required compensation
 - It is a necessary regulation for the public good
 - Also, although her system worked and may have even been more efficient than the sewer system, allowing her not to comply would have made it a legislative impossibility to create a functioning drainage system for the District



Challenges to Mandatory Connection

- Hutchinson v Valdosta, 227 US 303 (1913)
 - Forced connection not a taking, a valid exercise of police power
 - Although the Supreme Court posited that there was "no necessity on account of health or sanitary conditions" to require a sewer connection to the owner's land, *id.* at 305, and even noted the possibility that the construction of a sewer line might pose interim health hazards, the Court upheld the sewer connection requirement as a constitutional exercise of police power.
 - "It is the commonest exercise of the police power of a state or city to provide for a system of sewers, and to compel property owners to connect therewith." *Id.* at 949-50



Not a taking, a legitimate use of police powers

- Police power is legitimately used if in furtherance of a public good
 - If so, property rights yield to that public good
 - Protection of environmentally sensitive areas and pollution prevention are legitimate concerns within the police power.
 - See Graham v. Estuary Properties, Inc., 399 So. 2d 1374, 1381 (1981) (“Onsite facilities bring unnecessary risks of water contamination and other environmental concerns.”)



Challenges to Mandatory Connection

- No requirement for individualized determination of sanitation risk
 - "Municipal governments are not required to gamble against public health risks. To protect the public health, as well as to promote public safety, a legislative body may adopt 'the most conservative course which science and engineering offer.'" City of Nokomis v. Sullivan, 153 N.E.2d 48, 51 (Ill. 1958) (quoting Queenside Hills Realty Co. v. Saxl, 328 U.S. 80, 83, 66 S.Ct. 850 (1946)).



Florida Cases Involving Mandatory Connection

- Keys Citizens for Responsible Government, Inc. v. Florida Keys Aqueduct Authority, 795 So.2d 940 (Fla. 2001)
 - The Authority filed a complaint to validate bonds that would be used to finance sewer projects
 - Bonds repaid by fees from users through mandatory connection
 - The Court upheld mandatory connection requirement
 - The Legislature gave the Authority the power to initiate mandatory connections and prohibit the use of septic tanks and other sanitary structures, provided notice was properly given

Florida Cases Involving Mandatory Connection

- Schrader v. Florida Keys Aqueduct Authority, 840 So.2d 1050 (Fla. 2003)
 - Similar to the prior case, the Authority filed a complaint to validate bonds that would be financed by a sewage system
 - A citizen appealed the ruling stating that because the applicable section only pertains to areas of critical state concern, this special law was unconstitutionally passed as a general law, and the mandatory connection ordinances are unenforceable for the same reason
 - The Court affirmed the lower court's ruling in favor of the Authority that this was a valid general law because the environmental impact of these ordinances exceeds the boundary of the County

Major Conversion Cost Components

1. Plant capacity to serve additional customers
2. Neighborhood facilities
 - Transmission/collection mains and lines
 - Lift stations
 - Pumps
3. Onsite facilities (ex. meters, service laterals)
4. Decommissioning of existing facilities*

* Costs typically paid directly by landowner, no local government involvement



Funding Conversion Initiatives

- Cost spreading/sharing
 - Utility system revenues
 - General fund
- Isolate costs to benefitted properties
 - Contributions in aid of construction
 - Special assessments
 - Capacity component in lieu of impact fee
 - Neighborhood facilities component
 - Betterment fees
 - Impact fees



Funding Conversion Initiatives

- Grants (principal forgiveness) thru state/federal loan program
 - USDA Rural Utilities Service
 - FDEP State Revolving Fund
 - Small Community Sewer Construction Assistance Program (sections 403.8532, 403.1835 and 403.1838, Fla. Stat.)
 - State budget appropriations
 - Chapter 216, Fla. Stat.
 - Local Funding Initiative Request submitted for fiscal year
 - Example appropriations FY 2019-20
 - \$500,000 Brevard County Septic to Sewer Conversion for 1,019 Homes
 - \$500,000 Indian River County North Sebastian Septic to Sewer Phase II
 - \$500,000 Pinellas County Lofty Pines Septic to Sewer
 - \$400,000 South Daytona Septic to Sewer Conversion Project
 - \$350,000 St. Augustine – West Augustine Septic to Sewer, W. 5th St.
- Combination of funding sources



Financing the Conversion Initiative

- Bond issue – revenue or general obligation
- Bank loan: smaller projects (< \$10,000,000); lower financing costs
- State/federal lending programs
 - EPA/FDEP State Revolving Fund Loan Program
 - USDA Rural Development Loan and Grant Program
- Each typically involves:
 - Loan secured by net revenues of utility system
 - Bondholder covenants
 - No free service
 - Rate sufficiency
 - Limitations on future debt
 - Mandatory connection
 - Up to 20-30 year repayment schedule



State Revolving Fund Loans

- EPA/state financing programs for water & wastewater
 - Clean Water State Revolving Fund (CWSRF)
 - Clean Water Act, 33 U.S.C. §§ 1251-1387
 - Drinking Water State Revolving Fund (DWSRF)
 - 42 U.S.C. § 300f
- Low interest loans and grants
- Programs receive federal appropriation each year
- EPA provides funding, states match 20%
- States administer both programs with EPA oversight

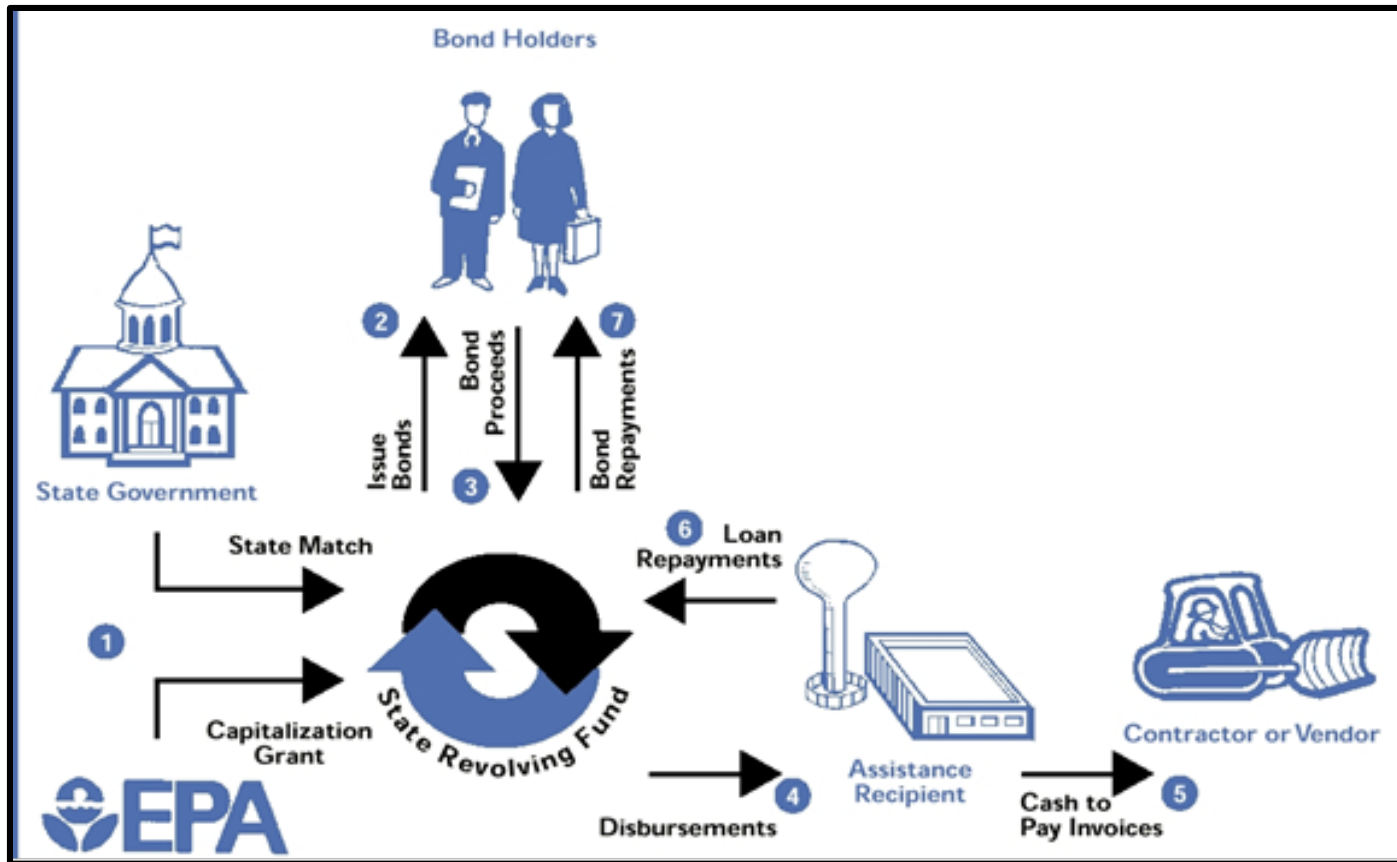


State Revolving Fund Loans

- FDEP administers SRF loan program in Florida
 - CWSRF - wastewater, stormwater, nonpoint pollution prevention projects
 - DWSRF - water projects
 - Loans secured by system revenues and/or special assessments
- FDEP info re SRF: <https://floridadep.gov/wra/srf> ; funding sources: <https://floridadep.gov/wra/wra/highlights/water-project-funding-sources>
- EPA info:
 - <https://www.epa.gov/cwsrf>
 - <https://www.epa.gov/drinkingwatersrf>



SRF Flow of Funds



USDA Water & Waste Disposal Loan & Grant Program

- Similar to SRF program but:
 - Administered directly by USDA
 - Primarily for rural areas with population limits
- Low interest loans and grants
- Extended application process
- Requires interim/construction loan backed by USDA
Requires validation under Chapter 75, Fla. Stat.
- 7 CFR Parts 1780 & 1782
- <https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program>



Fostering Community Acceptance for Conversion

- Deferred payment
 - Voluntary agreement by which landowner elects to defer payment until sale/transfer of property
- Deferred connection
 - Allow continued use of existing OSTDS for extended period; local option waiver of mandatory connection authorized by § 381.00655(2)
- No acceleration of assessment upon sale/transfer of property
- Partner cost sharing
- Contribute to costs/buy down
 - Ex. Repaving funded by general fund revenues
 - Future grants reduce cost
- Supplemental community project
 - Ex. water line extension; drainage; park/recreational facilities



Compelling Connection Thru Fee Imposition

- Pinellas County v. State, 776 So.2d 262 (Fla. 2001) (“[W]here a governmental entity provides access to traditional utility services, this Court has not hesitated to uphold local ordinances imposing mandatory fees, regardless of whether an individual customer actually uses or desires the service.”)
- Stone v. Town of Mexico Beach, 348 So.2d 40 (Fla. 1st DCA 1977) (mandatory flat rate for garbage service, regardless of use, was not contrary to constitutional standards)
- State v. City of Miami Springs, 245 So.2d 80 (Fla.1971) (a flat rate for sewer charges for all single family residences, unrelated to actual use, was not unreasonable, arbitrary or in conflict with state or federal constitutions or law)
- Riviera Beach v. Martinique 2 Owners Ass'n., 596 So.2d 1164 (Fla. 4th DCA 1992) (solid waste removal ordinance applied to unoccupied condominiums without regard to actual use)
- Town of Redington Shores v. Redington Towers, Inc., 354 So.2d 942 (Fla. 2d DCA 1978) (mandatory sewer charges against unoccupied property applied from the date the sewer main was available to be used, and sewage charges were reasonably related to the value of service rendered either as actually consumed or as readily available)

Compelling Connection Thru Litigation

- § 381.00655, Fla. Stat.
 - 1 year notice of availability
 - Connection required within 365 days of notice
- Options for:
 - Prepayment of connection charges
 - Payment plans for financial hardship
 - Waiver



Case Study



Questions

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