



**Florida Department of Environmental Protection**

# Florida Water Reuse

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Council of Infrastructure Financing Authorities

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Tampa





# Florida



- The “Sunshine State”
- Third most populous state
- Climate is mild to moderate
- Average rainfall is 53.65 inches per year
- Primary drinking water source is extraction from groundwater



# Definition of Reuse

Florida defines “reuse” as the application of treated wastewater effluent (reclaimed water) for a beneficial purpose.





# Why Reuse in Florida?



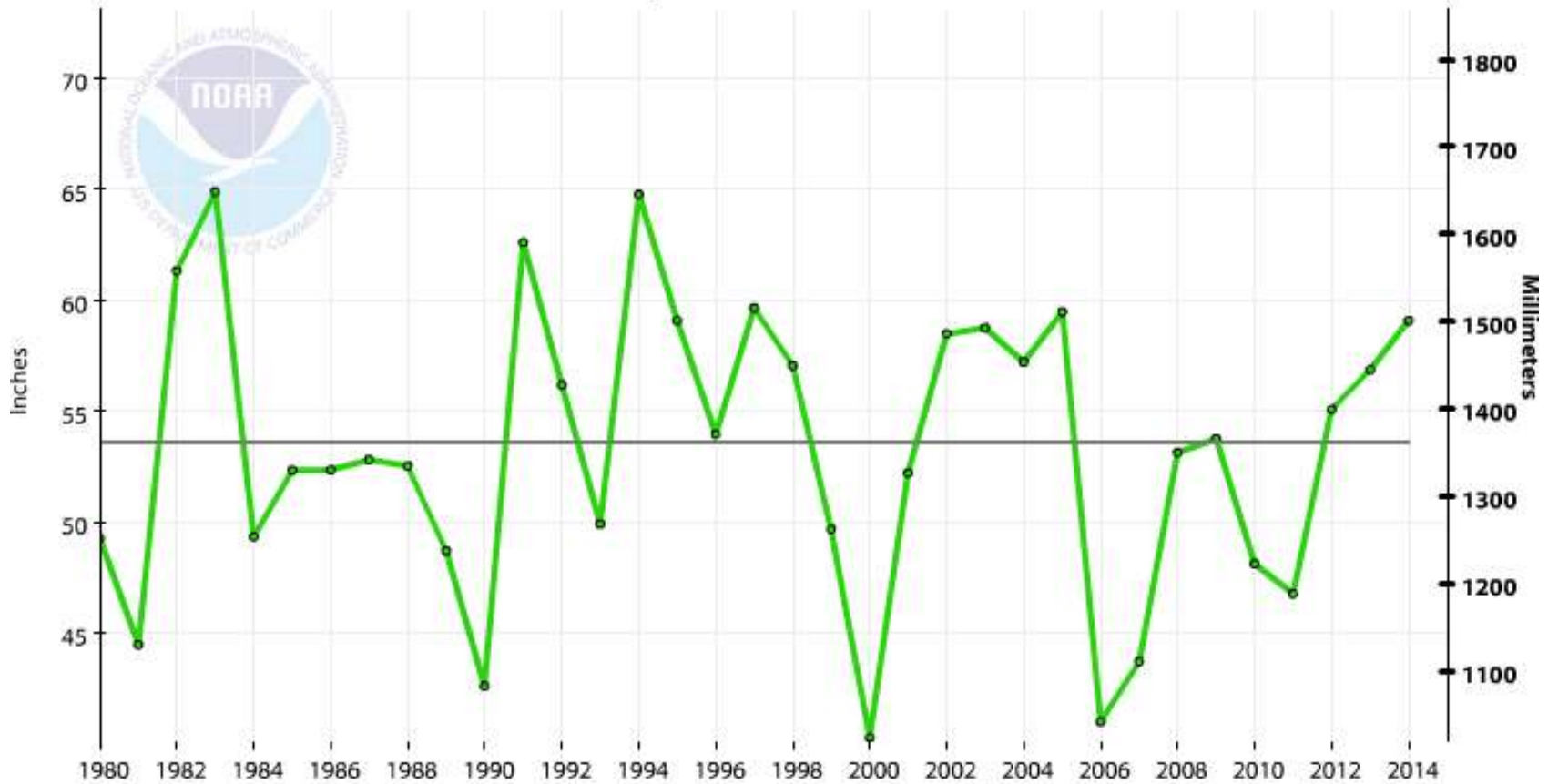
- Average amount of rain per year is extremely variable
- Sandy soils with poor retention qualities
- Seasonal weather, wet during the summer, dry for winter and spring
- Yearly floods have been followed by seasonal droughts



# Why Reuse in Florida?

Florida, Precipitation, January-December

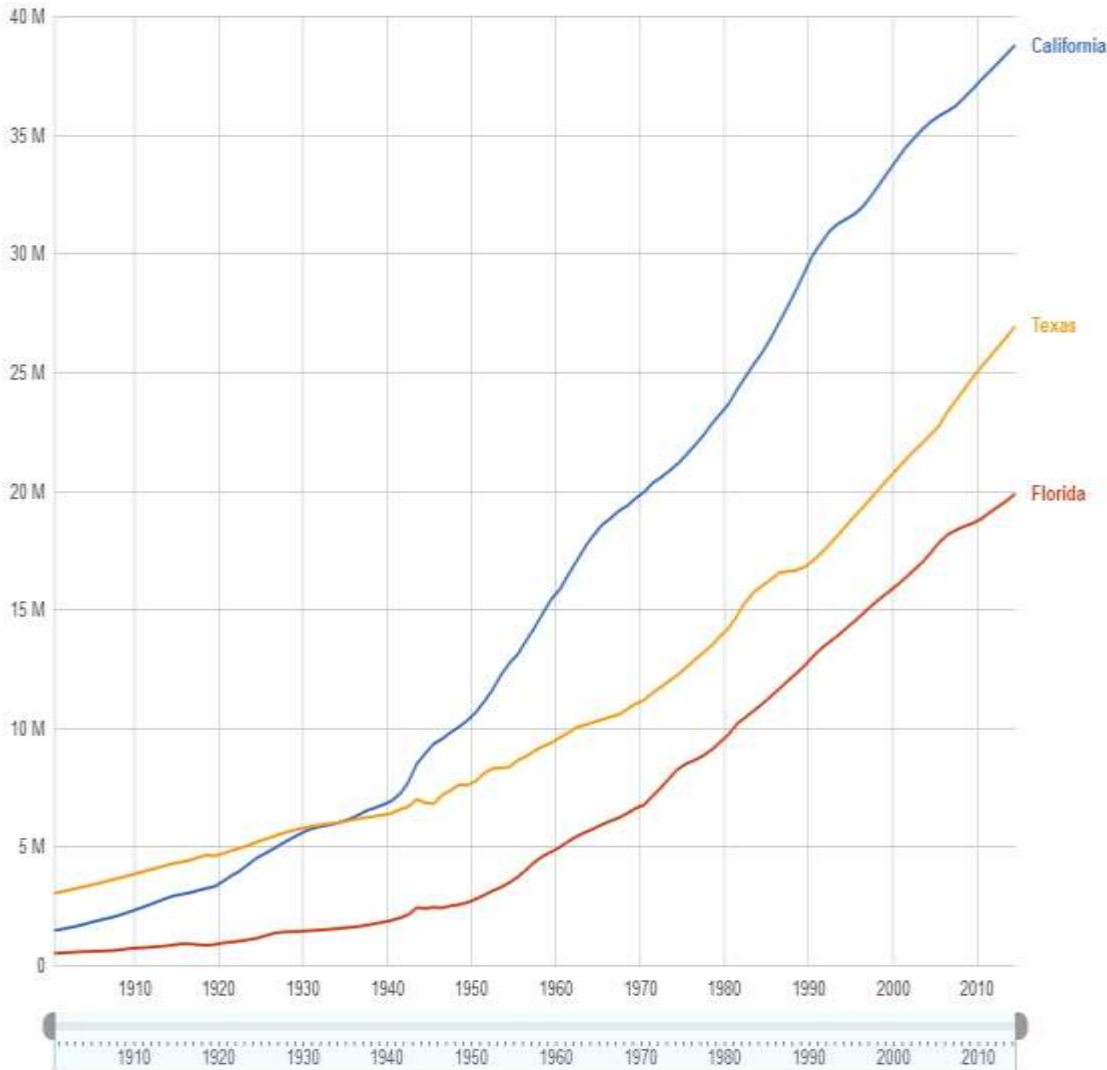
— 1901-2000 Avg: 53.65" — Precip



Source: National Oceanic and Atmospheric Administration



# Why Reuse in Florida?



- Rapid, linear population growth
- More than 80% of the State population is within 20 miles of the coast
- Increase in demand in confined areas has led to water shortages
- Need for new water supplies

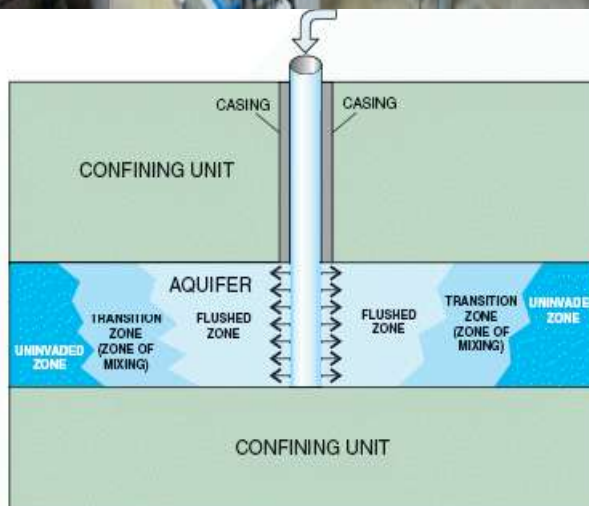
Data from U.S. Census Bureau Last updated: Jul 24, 2015



# Need for New Water Supplies



- Reuse of reclaimed water
- Conservation
- Desalination plants
- Reservoir storage
- Aquifer storage and recovery





# Institutional Requirements

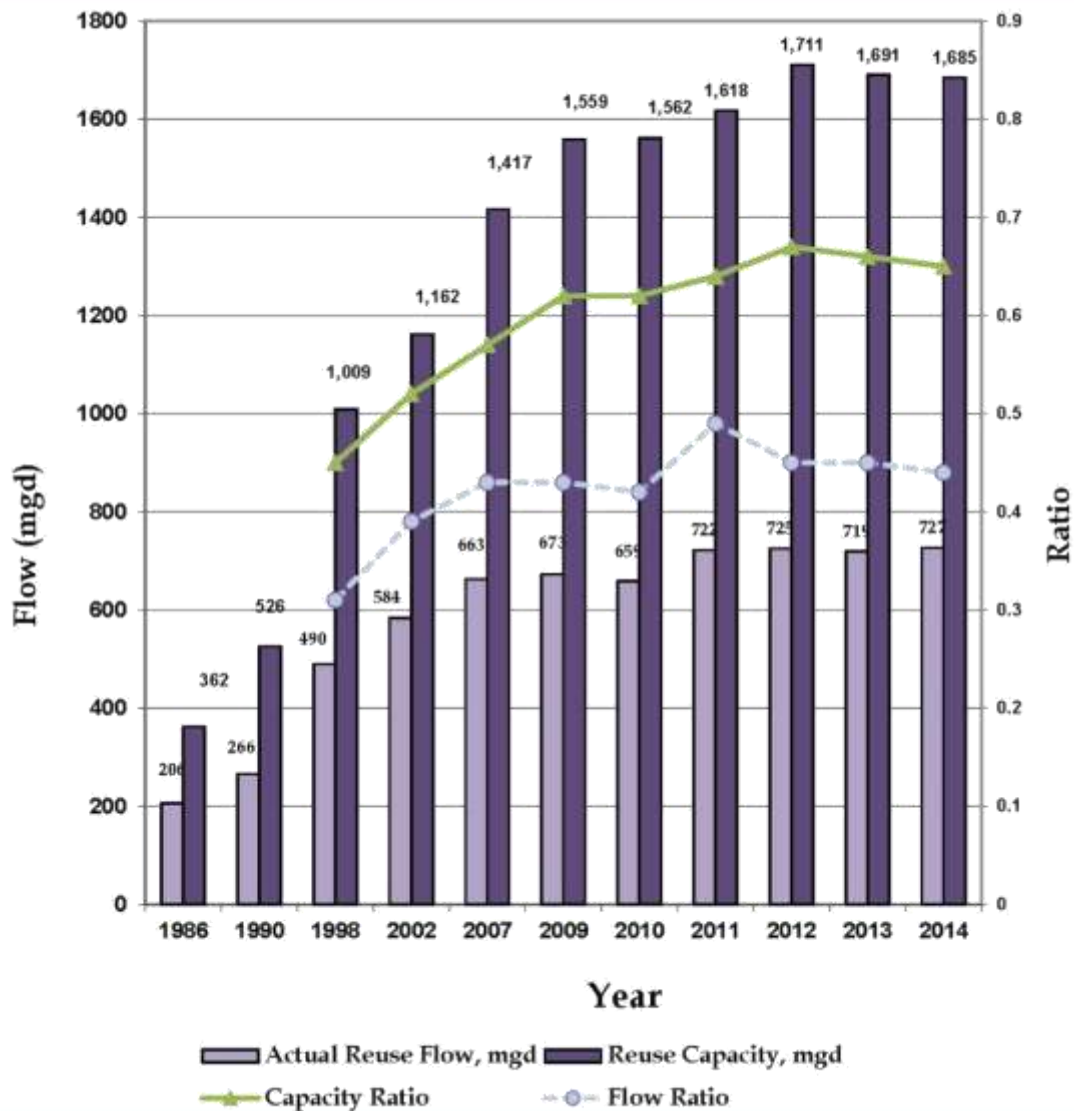


- For water consumptive use permitting, recycling of water is required, Chapter 62-40 of the Florida Administrative Code.
- Otherwise, the reuse of reclaimed water is encouraged, but not necessarily required per Section 403.064 of the Florida Statute.





# Florida Reuse Flow Capacity





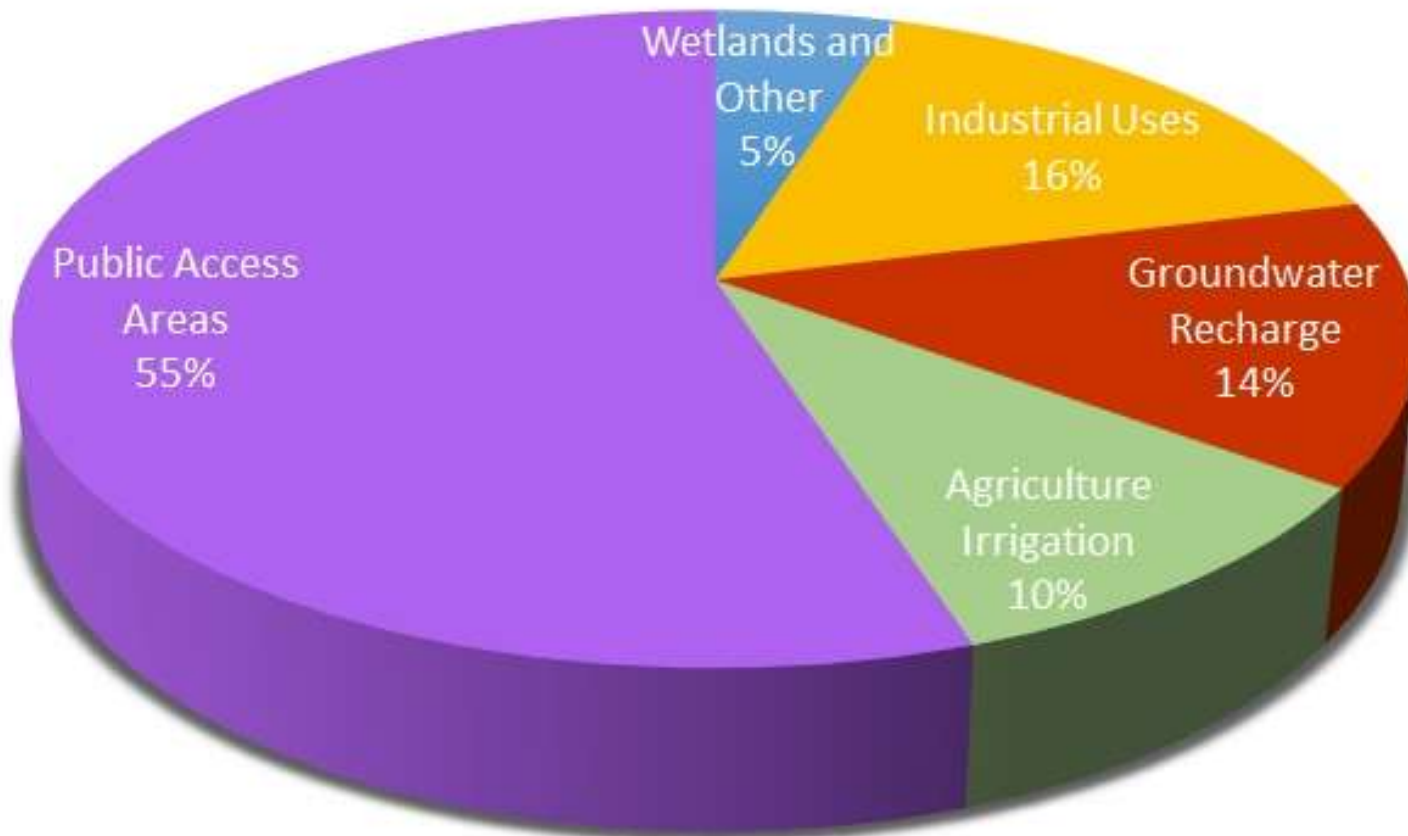
# Florida Reuse Facts, 2014



- 477 wastewater treatment facilities made reuse available
- These facilities had provided 727 mgd of reclaimed water, which is 44% of the total wastewater flow of 1,634 mgd
- Reclaimed water was used to irrigate:
  - 360,329 residences
  - 542 golf courses
  - 987 parks
  - 371 schools



# Reuse Percent Usage





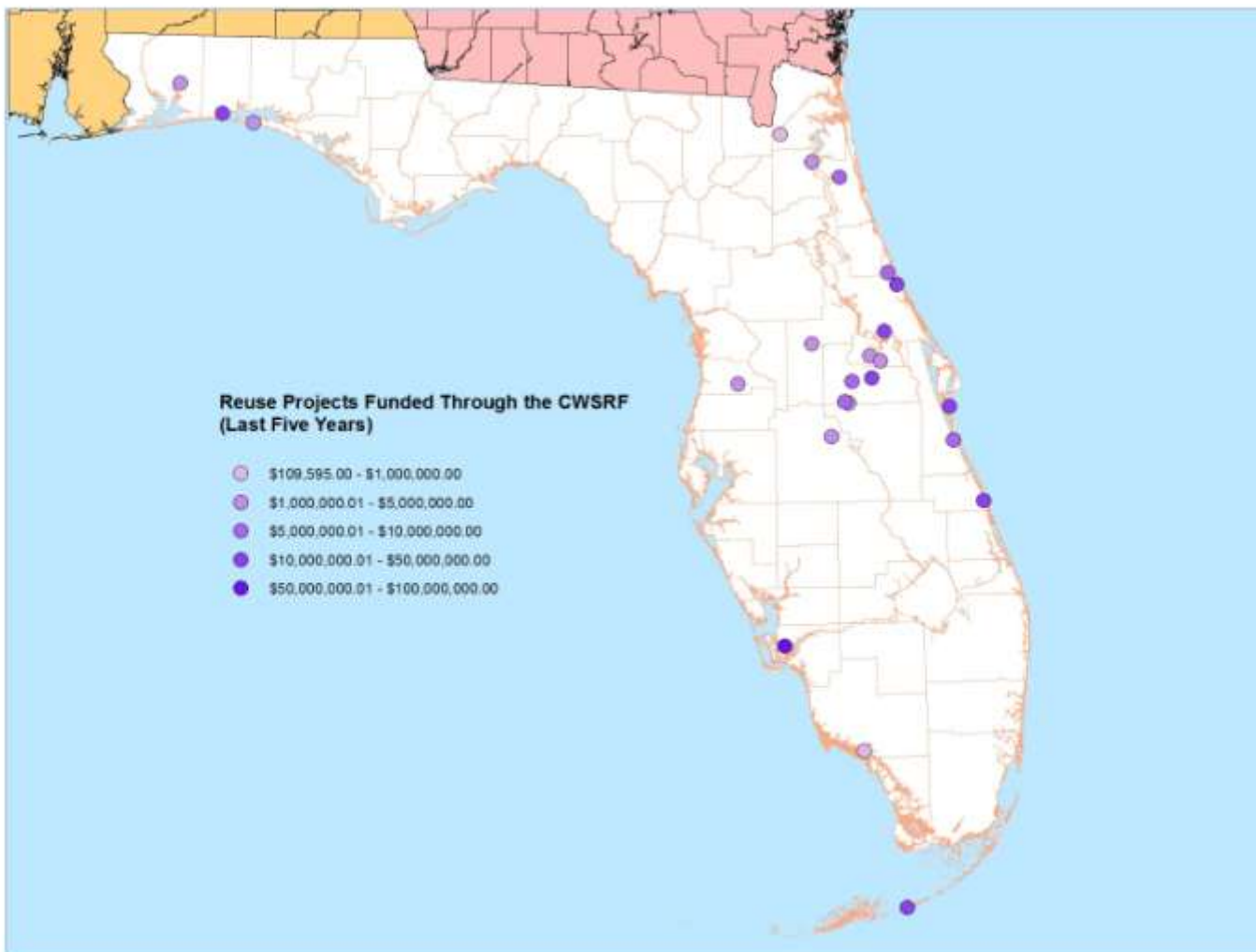
# Reuse with the State Revolving Fund

- Due to institutional requirements, funding reuse projects is not an issue with the SRF.
- First grant was given in 1985 to the Conserv II treatment facility.
- Have funded over \$306 million for reuse projects in the past 5 years.
- Types of reuse projects include:
  - Power plant cooling;
  - Public access irrigation;
  - Agricultural irrigation;
  - Grey water fixtures; and
  - Aquifer storage and recovery.





# State Revolving Fund Reuse Projects





# Example of SRF Reuse Projects Conserv II



- When built, it was the largest reuse project in the United States for use of reclaimed water for agricultural irrigation, mostly citrus.
- Delivers over 31 mgd of reclaimed water.
- Meets or exceeds the drinking water standards for at least ten parameters.
- SRF has loaned approximately \$100 million for various improvements to this system.





# Example of SRF Reuse Projects Conserv II





# Impediments to Reuse



- Philosophical
  - Disposal mindset, not an integrated approach
  - Viewed as a liability, not as an asset
- Perception – overcoming the toilet water mindset
  - Failing to recognize that “water is water”
  - Much of the “easy” reuse projects have already been done
- Regulations
- Financial





# Summary



- Image of reclaimed water is changing
- Reuse is a product in demand
- Agriculture and recent droughts helped reclaimed water usage gain wider acceptance
- More work needs to be done to finish “closing the loop”