

# Water Reuse

## The Florida Model

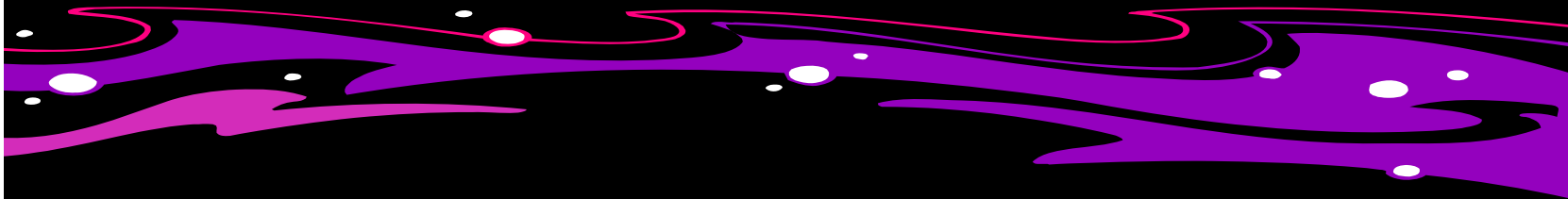


*David W. York*



# Overview...

- **Reuse in Florida:**
  - ◆ **3 Eras of Water Reuse.**
- **Looking to the Future.**
- **15 Lessons Learned.**



# Reuse Timeline...

Age of  
Expansion

1985

2003

Dark Ages

Age of  
Enlightenment

# Dark

- Surface Water Discharges.

- Deep Injection Wells.

- Deep Injection Wells.

Age of Disposal

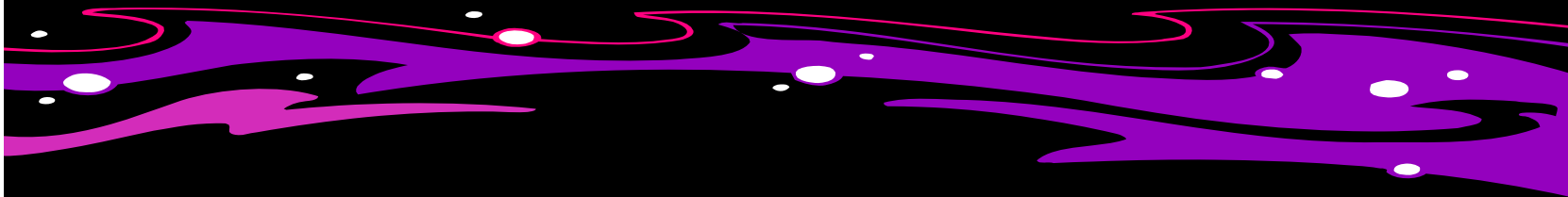


# Water Reuse Program

Age of Expansion

# Advantages...

- **Conserve Water.**
- **Recharge Water Resources.**
- **High Quality Water Source.**
- **Drought Protection.**
- **Postpone Water Investment.**
- **Savings.**
- **It's "Green."**



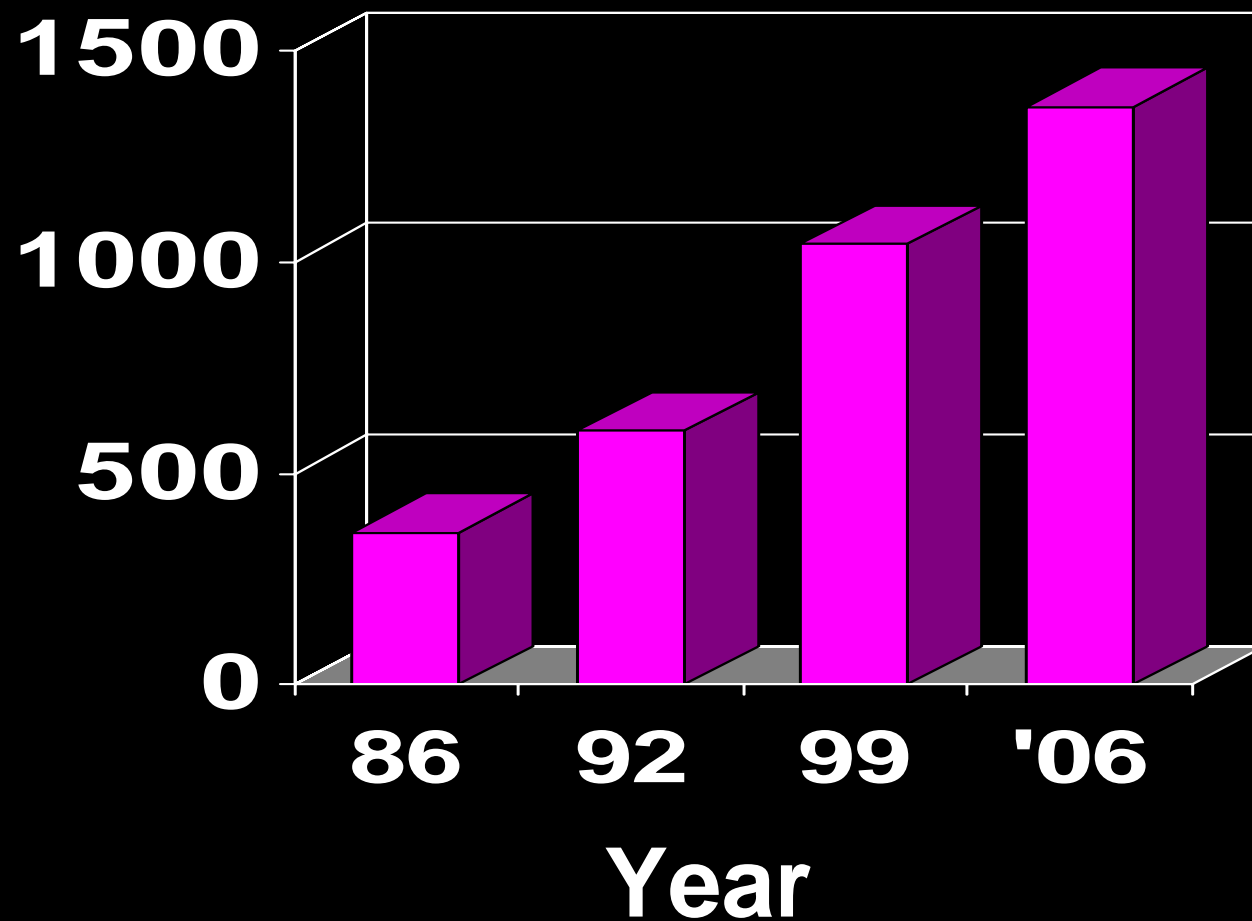
# State Objectives...

**To encourage and promote  
water conservation and  
reuse of reclaimed water.**

**373.250, F.S.**

**403.064, F.S.**

# Permitted Capacity for Reuse (MGD)



Age of Expansion

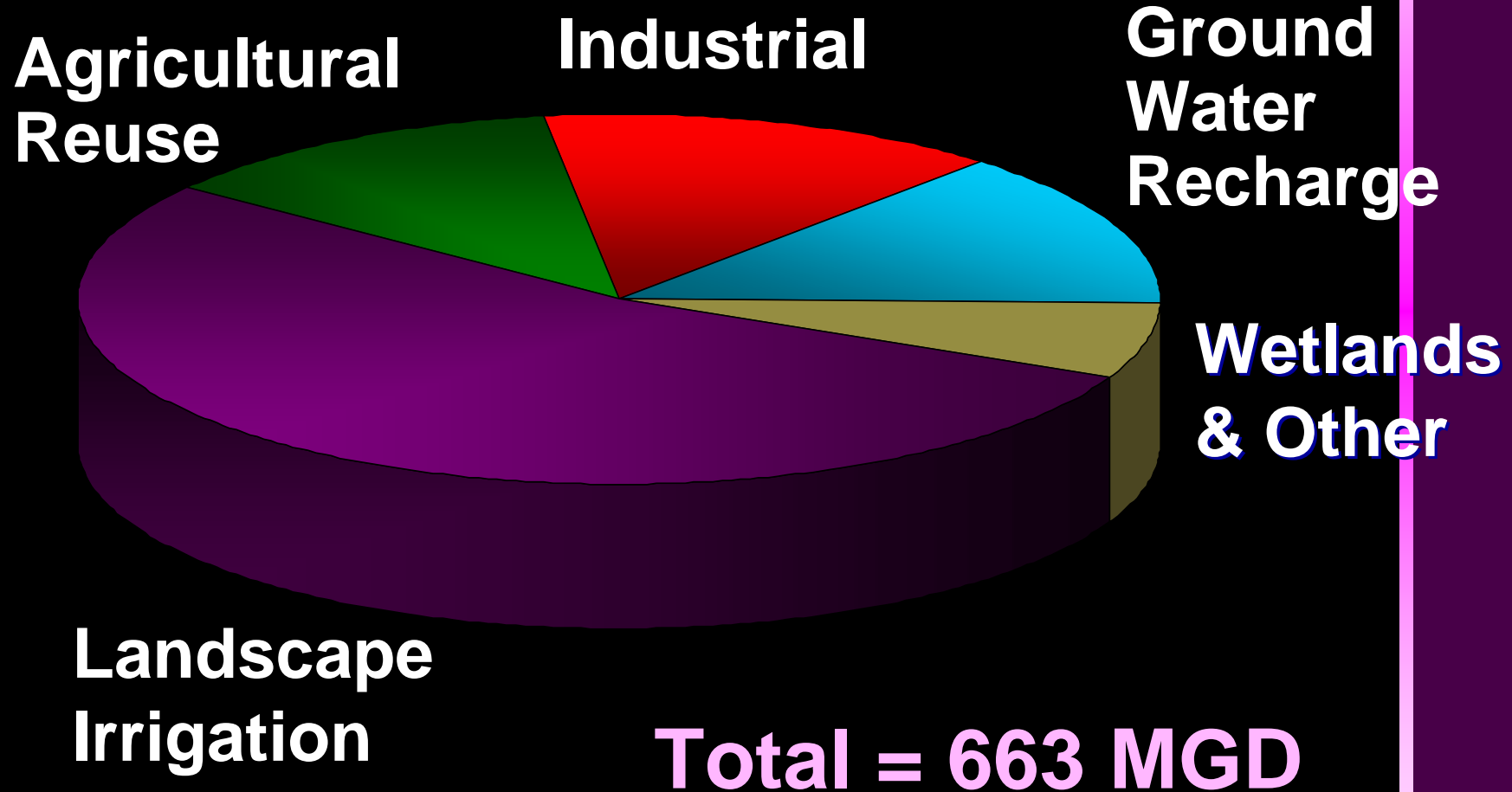


# 2006 Reuse Facts...



- **468 WWTPs**
- **Capacity = 1,368 MGD**
  - ◆ **About 58% of All WWTP Capacity**
- **663 MGD Reused**
  - ◆ **About 41% of All Treated Wastewater**

# 2006 Reuse Flow...



# 2006 Reuse Facts...

- **216,248 Residences**
- **468 Golf Courses**
- **684 Parks**
- **274 Schools**



# Reuse Works

*Even with  
55 inches of Rain*



# 2006 Recognition

EPA

**WATER EFFICIENCY**



LEADER AWARD

# Reuse Timeline...

Age of  
Expansion

1985

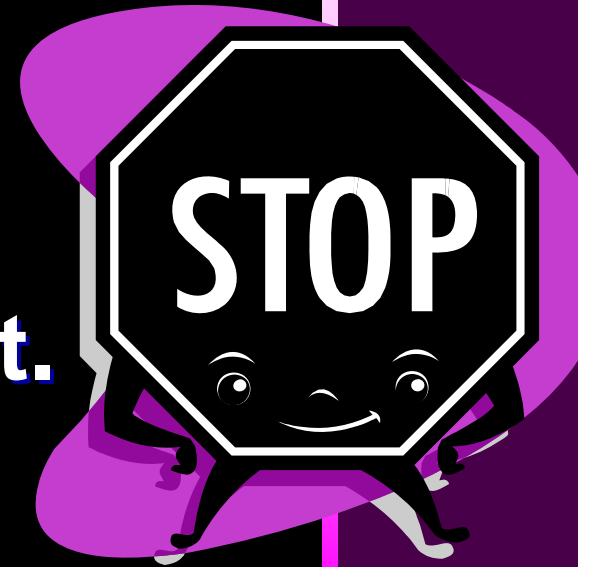
2003

Dark Ages

Age of  
Enlightenment

# Barriers...

- **Effluent Disposal Mindset.**
- **Cost of Reuse.**
- **Water is Cheap.**
- ☑ **Regulatory Obstacles.**
- **Water Rights Issues.**



# Drivers...



- **Wastewater Management.**
- **Water Resource Management:**
  - ◆ **Conservation.**
  - ◆ **Augmentation & Recharge.**
- **Water Scarcity & Drought.**
- Regulatory Encouragement.**
- Financial Assistance.**
- **Environmental Ethic.**



# Established State Objective...

***“Encourage & Promote Water Reuse.”***

- Implement Objective.
- Requires Action.
- Encourage Reuse.
- Build Awareness.
- Discourage Effluent Disposal.



# Adopt Rules...

***“Rules are constraints on the utilities and on the regulators.”***

- Focal Point of Program.
- Keep it Safe.
- Comprehensive.
- Facilitate Permitting.
- Minimize Constraints.



# Chapter 62-610, F.A.C.

- **Comprehensive**
- **Detailed**
- **Consistent with EPA Guidelines**



# Part III of Chapter 62-610

- **Public Access, Residential, Edible Crops, Urban Uses**
- **Secondary Treatment**
- **Filters & Chemical Feed**
- **High-Level Disinfection**
- **Other Controls**



# Focus on Reclaimed Water Quality...

- **Continuous, Reliable Production of High-Quality Reclaimed Water.**
- **Minimal Use Controls.**



# Ensure Safety...

***“Safety must be the cornerstone.”***

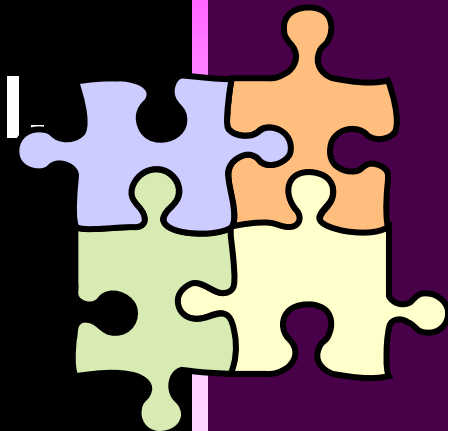
- Partnership with Health Dept.
- Appropriate Rules.
- Continuous, Reliable  
Production of High-Quality  
Reclaimed Water.
- Ongoing Activity.



# Assemble Program Components...

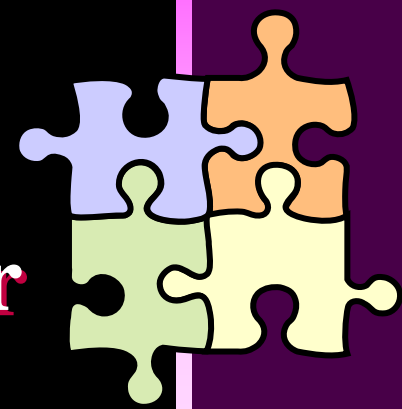
***“Assemble Components into a Comprehensive Program.”***

- **Take Advantage of Every Opportunity to:**
  - ◆ **Encourage Reuse.**
  - ◆ **Discourage Effluent Disposal.**
  - ◆ **Build Awareness.**



# Key Components of Florida's Water Reuse Program...

Require Use by State Agencies  
Reuse Feasibility Study  
Standard Permit Rules for Reuse  
Reuse Webpage  
Reuse Coordinating Committee  
Comprehensive Reuse Discharges  
SREU Funding  
Priority Proactive Partnerships  
Antidegradation Florida DEP  
Policy Favors Reuse  
Alternative Water Require Use of  
Supply Funding General Reuse  
Program Inventory





# Reuse Timeline...

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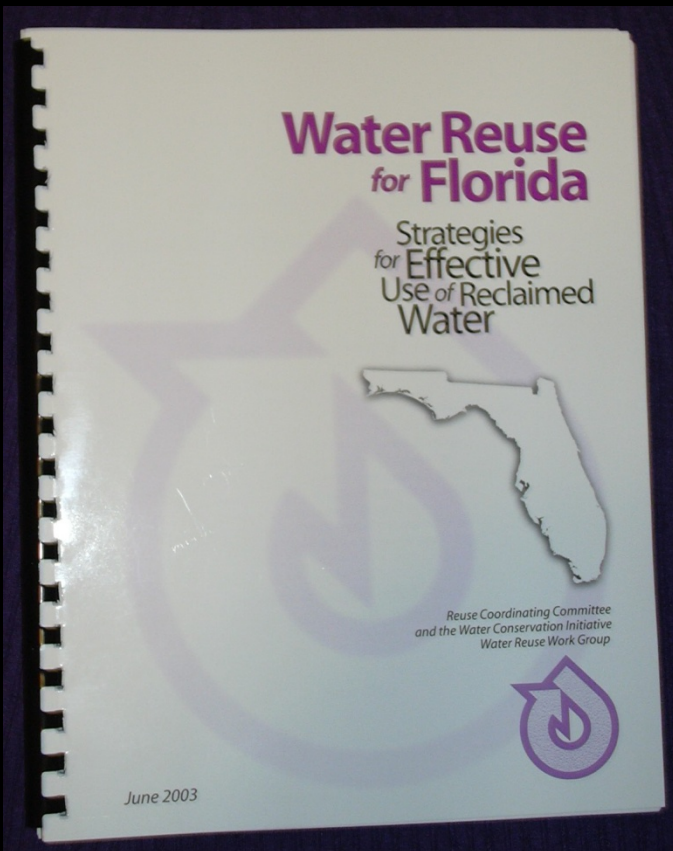
Dark Ages

Age of  
Enlightenment

**Water  
Conservation  
Initiative**




# Reuse Strategies Report...



- **June 2003**
- **Program Summary**
- **16 Strategies**



Water is Water

- 
- **Increase Efficiency**
    - ◆ **Potable Water Offset**
    - ◆ **Recharge Fraction**
  - **To Conserve Water**
  - **To Augment Supplies**

# High Desirability...

- **Ground Water Recharge**
- **Indirect Potable Reuse**
- **Industrial Uses (include Cooling Water)**
- **Toilet Flushing**
- **Efficient Irrigation**
- **Vehicle Washing**
- **Laundries**



# *Strategy No. 1*

**Encourage Metering &  
Volume-Based Rates**

# *Strategy No. 2*

**Implement Viable  
Funding Programs**



# *Strategy No. 4*

**Use Reclaimed Water  
in Lieu of Other  
Water Sources**

# *Strategy No. 5*

**Link Reuse to  
Regional Water  
Supply Planning**

# *Strategy No. 7*

**Encourage Ground  
Water Recharge &  
Indirect Potable Reuse**

# *Strategy No. 8*

**Discourage  
Effluent Disposal**



# LESSONS LEARNED

***15 Words of Wisdom***

**The Supply is Finite...**

**The Lord didn't make any  
new water today.**

**John R. "Jack" Sheaffer**

**1.**

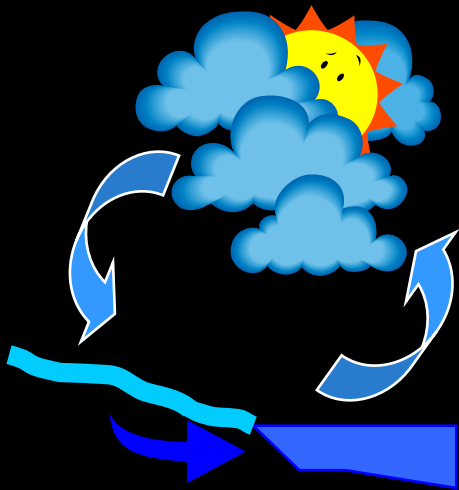
**LESSON**



**When the well is dry,  
we know the worth of water.**

**Benjamin Franklin,  
*Poor Richard's Almanac*, 1746.**

# All Water is Recycled...



## LESSON 2





Water is Life

3.  
LESSON  
3.

# Reuse is a Big Deal...

**If water is life,  
water conservation and reuse  
must be our way of life.**

**4.**

**LESSON**

**Untreated  
Wastewater is Over  
99.9% Water...**

**LESSON 5.**

**We can Treat Water to  
Whatever Quality is  
Needed...**

**6.**  
**LESSON**

# The Law of Filth...

***“For something to become clean,  
something else must become dirty.”***

**7.**  
**LESSON**

# Water is Water...

*Need to Judge Water  
on its “Quality”*

- not on its “History”
- not on its “Name”

# It's all about Sustainability...

- **Efficiency.**
- **Conservation.**
- **Water Reuse.**

# Must Change Mindsets...

- Public – A “Resource”
- Utilities – “Water Supply” Business
- Universities – Teach “Reuse”
- Regulators – Say “Yes” to Reuse





# Look to the Future...

- **Water Conservation & Reuse.**
- **Efficiency & Effectiveness.**
- **Indirect Potable Reuse  
& Ground Water Recharge.**

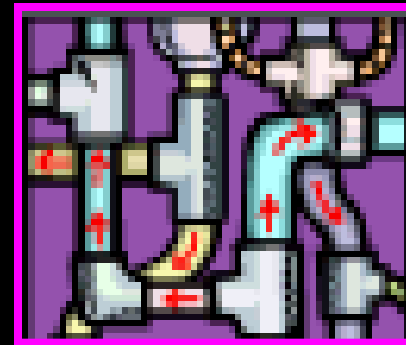


# Think Efficient Use...

- **Highly Desirable Uses:**
  - ◆ **Ground Water Recharge**
  - ◆ **Indirect Potable Reuse**
  - ◆ **Industrial Uses**  
(include Cooling Water)
  - ◆ **Toilet Flushing**
  - ◆ **Efficient Irrigation**
  - ◆ **Vehicle Washing**
  - ◆ **Laundries**

# Cross-Connection Control is Important...

- Multiple Parties.
- Multiple Agencies.
- Illegal – They Happen.
- Key Health Issue.
- News Splash.



13.  
KEY POINT

# Think “Quality” Service...

- Utilities.
- Customer Service.
- Partnerships.
- Nutrient Management.
- Efficient Use of Reclaimed Water.

14.  
KEY POINT

# Think "Quality" Water...

- Salts.
  - ◆ Saltwater Infiltration / Inflow.
  - ◆ Concentrate Blending.
- Membranes & MBRs.
- Advanced Oxidation.
- Disinfectants.

15.  
KEY POINT

*Use it Again,  
Florida!*



**David York**

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# UUV

## *Disinfection Workshop*

- **March 18, 2008**
- **Orlando, FL**
- **NWRI, IUVA, WaterReuse Florida.**

**[www.nwri-usa.org](http://www.nwri-usa.org)**



# 2008

## *Reuse Round Table*

- **May 6, 2008**
- **Tampa, FL**
- **Florida Water Resources  
Conference**

# 2008

## *WaterReuse Symposium*

- September 7-10, 2008
- Dallas, Texas

[www.watereuse.org](http://www.watereuse.org)



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