



Florida Stormwater Association

# New Developments in Florida Stormwater Utilities

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# Presentation outline

1. What is Still Common about Stormwater Utilities in Florida?
2. What is Relatively New in Stormwater Utilities?
3. “The Times They Are A-Changin”
4. What Does the Future (of SWU’s) Look Like?
5. Questions / Discussion



# What is Still Common About Stormwater Utilities in Florida?

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# A stormwater utility is a business unit of local government dedicated to the management of stormwater

**Organization**

**Personnel**

**Facilities /  
Infrastructure**

**Programs**

**Accounting**

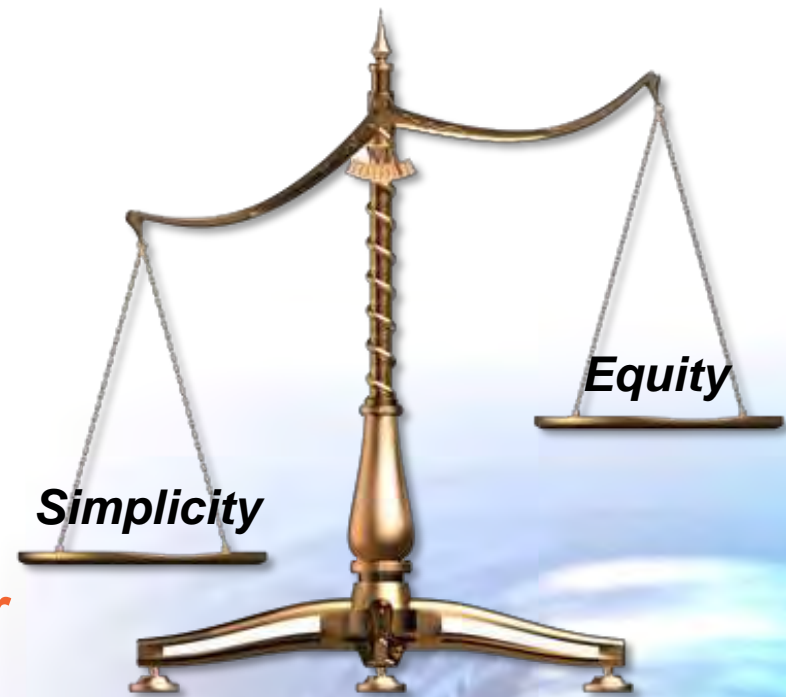
**Stormwater Funding  
(Fees, charges, etc.)**

# Fundamental requirements of a stormwater utility

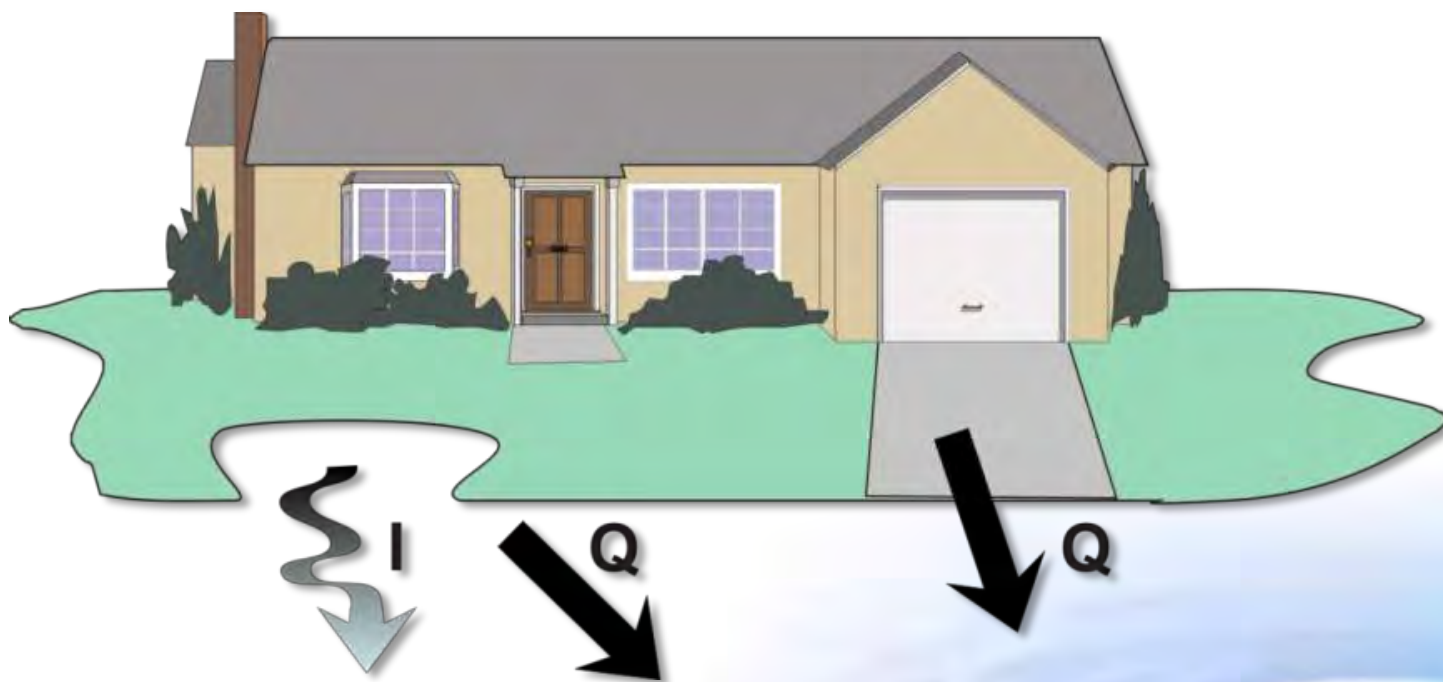
- Dedicated / sufficient revenues
- Equitable rate structure for customers
- Collectable / enforceable
- Easily administered
- Legally defensible (ordinances/resolutions)

**Balancing  
Administrative Simplicity  
and Equity is the Key**

**“Equity” means the Customer  
Pays in Accordance with  
Their Use/ Service Need**



# Historically, rate structures in Florida have been based on proxies for runoff generation



...contribution to burden is a measure of the benefit from the system / program

# Common model surrogates include impervious area, gross area land use, weighted combination of gross / impervious area

- Impervious Area Only (108) – 70%
- Gross and Impervious Areas (18) - 12%
- Intensity of Development (7) – 5%
- Other (20) – 13%

FSA 2016 Stormwater Utilities Survey  
(Number of Respondents in Parenthesis)

# ERU/ESU could be based on single or multiple classifications



**SFR**

**Dominated by SFR**



**Residential**

**Dominated by Non-SFR**



# Usually a base billing unit and one or more “flat rate” customer classes are established

- Most Common Parcel Type – Residential
  - FSA Survey – Average 92% of Parcels
- Average ERU – 2,521 square feet
- 57% Use Single Family Unit only for ERU
- 34% Use All Residential Areas for ERU
- 55% Have Single Family Fee Equal Multifamily Fee

# Exemptions

- These are potential customers who are not billed for some reason or another.
- Common Exemptions:
  - Streets and Highways – 71%
  - Rail Roads – 55%
  - Undeveloped – 54%
  - Agriculture – 51% (Note – if you are just adopting a utility state law precludes charging “Bone fide” Agricultural Parcels.)

# Credits

- Surprisingly, Only 42% of Respondents Offered Stormwater Credits for Private Ponds
  - Range of Credits – Up to 100%
  - Of The SWU Answering Yes on Credits (36),
    - ▶ 60% Offered Less Than 100% (23)
    - ▶ 40% Offered 100% (13)

# What is Relatively New in Stormwater Utilities?



# Better data means more options

- Better Data
  - Property Appraiser's Data Getting Better
  - Aerial Interpretation of Impervious Area Better
- More Options:
  - Tiered Residential Structures
  - Individual Residential Rates

# Better understanding of stormwater program

- Level of Service Costs Better Understood
- Rates Becoming More Related to Actual Costs of Service
- Still – Most SWU's Do Not Fund Their Whole Program With SWU Fees

	<i>Admin</i>	<i>O&amp;M</i>	<i>CIP</i>
All	52%	25%	10%
Most	30%	39%	21%
Urgent	10%	26%	37%
Not OK	2%	8%	27%

# Credits – What and why

- Credits are Reductions in Fee/Assessment Due to Activities of Customer (Reduced Burdon on Stormwater System)
- Purposes:
  - Recognize Reduction in Services Needed
  - Promote Good Stormwater Management Behavior by Customer

# Basic principles

- Credit System Should Be No More Complex Than the Stormwater Management Program
- The Credits Offered Must Be Balanced with The Administrative Costs
- Customers Must Offer Proof of Eligibility Initially and Periodically Thereafter
- The Maximum Credit Offered is Politically Driven





# Common issues on the table

- Attenuation versus Treatment
- Green Infrastructure
- Reduction in Directly Connected Impervious Areas
- Off-site Runoff
- No Discharge to MS4
- MS4
- Incentives – Grants and Loans



# Questions/Discussion

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# “The Times They Are A –Changin”

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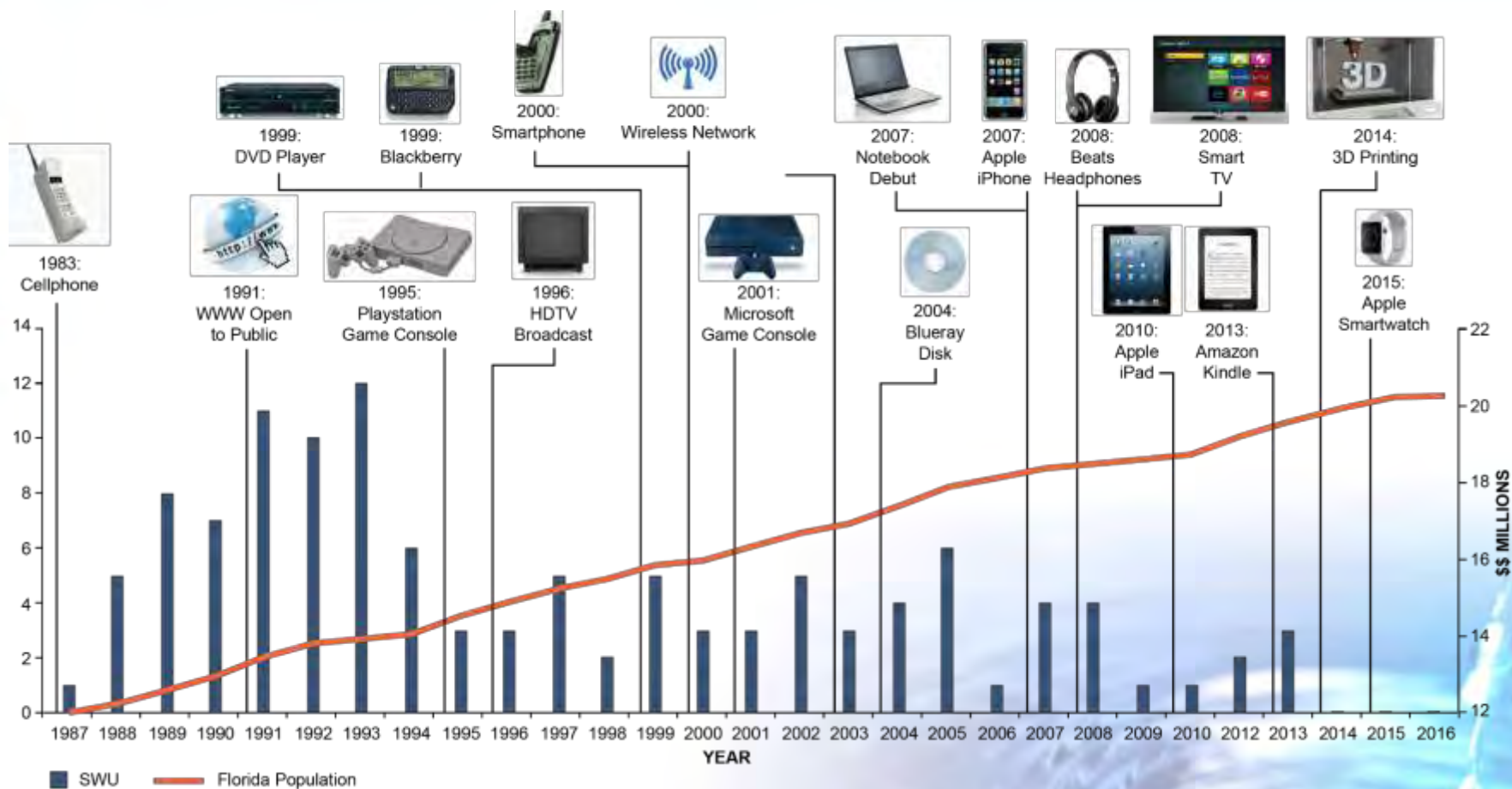


# Let's recall the world when this all started

§ 403.0893, FLA. STAT., provides for the funding of stormwater systems. Although the Florida Constitution already granted local governments broad home rule powers, subsection 403.0893(1) specifically authorized cities and counties to create one or more stormwater utilities...

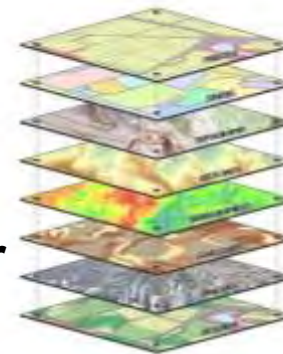
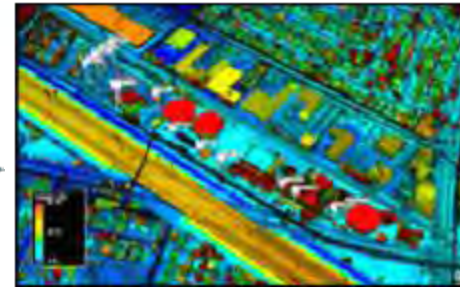
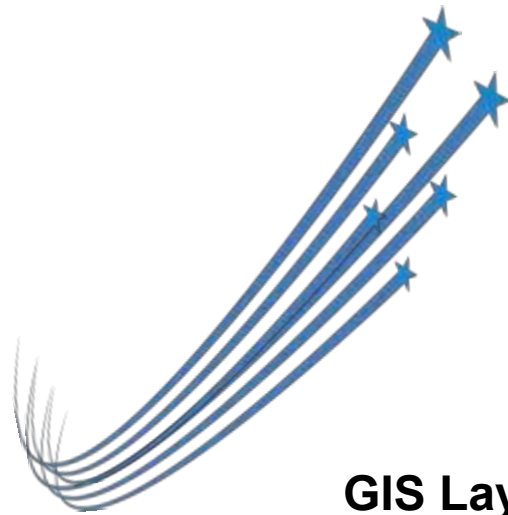


# In the three decades of SWU's in Florida, things have changed a bit



Reference: 2016 FSA Survey Report

# The tools available to us have come light years



**High Density LIDAR**

**GIS Layer**



**Soils**



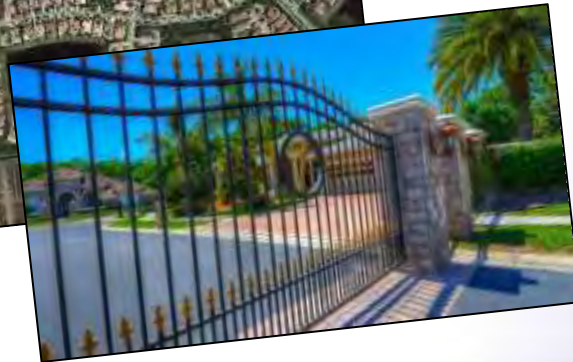
**Land Use**



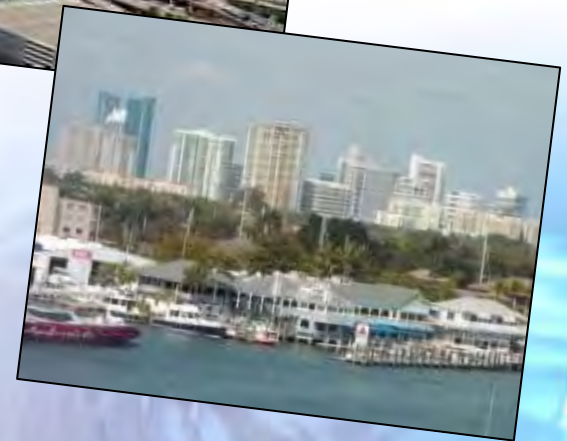
**Water Table**

# Our communities continue to change also

**Typical Development  
of the 1980's, 1990's**

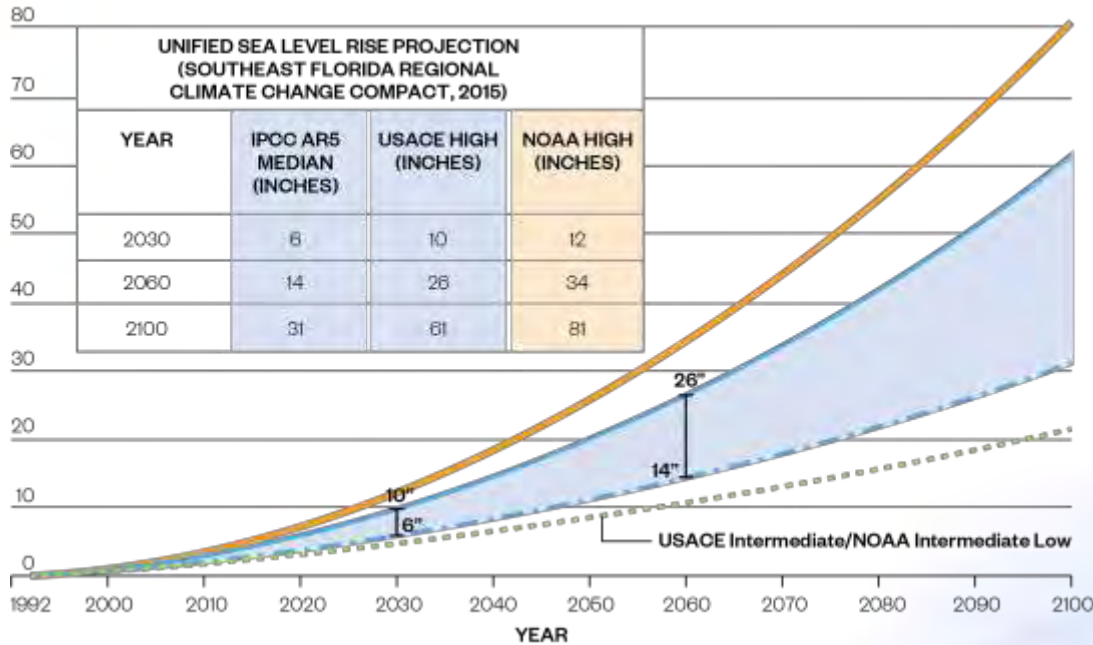


**Densification of  
Development**



# As does our climate...

RELATIVE SEA LEVEL RISE NEAR KEY WEST, FL  
(INCHES RELATIVE TO MEAN SEA LEVEL)





# So land use, climate and technology have changed



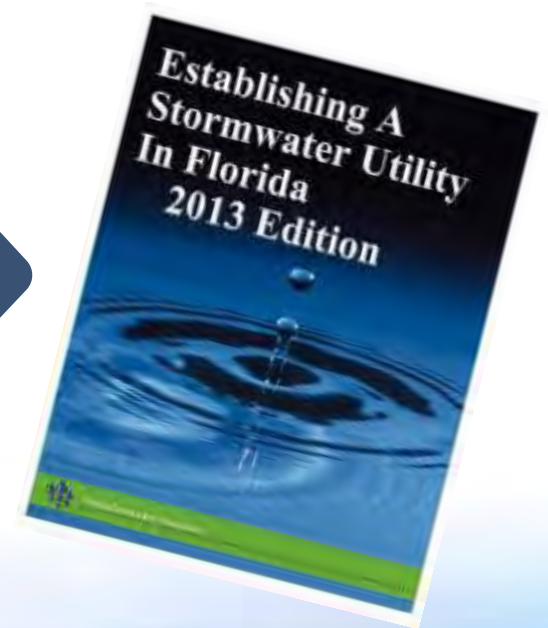
**Land Use/  
Development**



**Climate**



**Technology**



**...how about our Stormwater Utilities (SWU's)**

# Early SWU's were necessarily simple

Hydrology

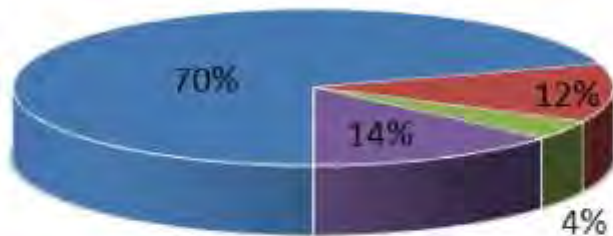


Parcel Classification



Parcel ID	Area	Classification	Value	Notes
100-100-100-100	100	Residential	10000	Single-Family
100-100-100-101	100	Commercial	20000	Office Building
100-100-100-102	100	Industrial	50000	Warehouse
100-100-100-103	100	Public	0	City Hall
100-100-100-104	100	Open Space	0	Park
100-100-100-105	100	Water	0	Lake
100-100-100-106	100	Forest	0	Wooded Area
100-100-100-107	100	Other	0	Unimproved

# As a result, 2016 FSA Survey reports

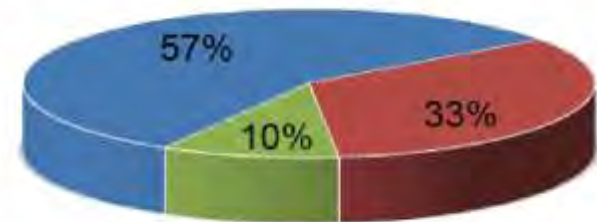


Impervious area (87)

Both gross area and impervious area (15)

Gross area with intensity of development factor (5)

Other (17)



Single-family (68)

All residential types (40)

Other (12)

Reference: 2016 FSA Survey Report

# While five key tenets of SWU's remain, their application may change

- Equity
- Administrative simplicity
- Efficiency  
(collections/enforcement)
- Revenue adequacy  
(dedicated funding)
- Legal defensibility



**Used to sacrifice one for the other**

**(but with today's technology that may be changing)**

# To date, most utilities follow an approach where...



Nexus

Cost = f (Runoff)

Proxy

Runoff = f (Imp Area)



# How does focus on resiliency change things

How do we fund



**Tidal Flooding Protection**



**Coastal Hardening**

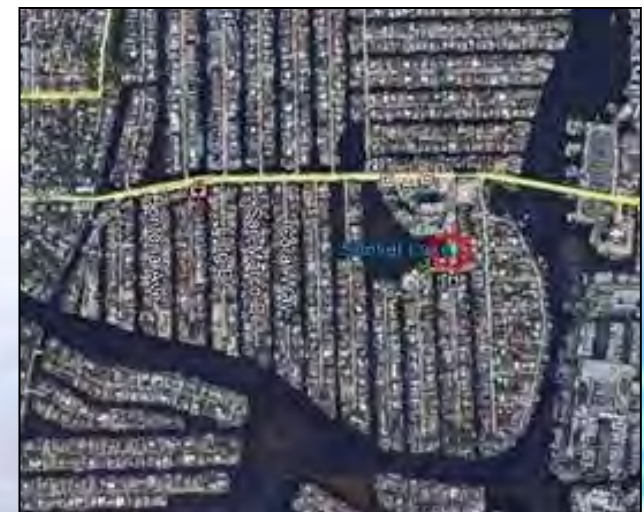
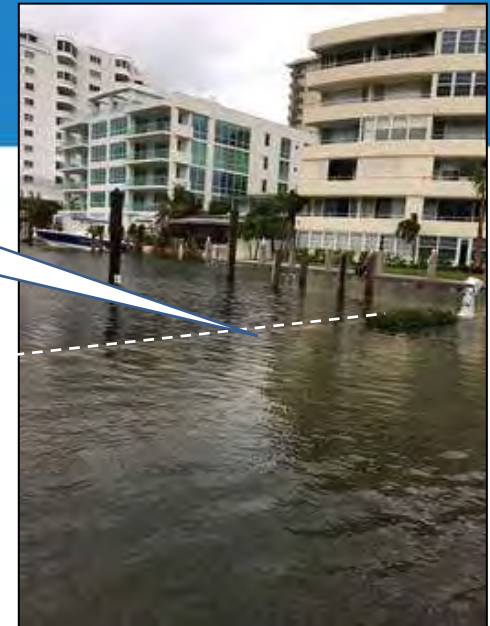
# Tidal flooding surfaces importance of other factors



**Relative Elevation**



**Seawall**



**Location within Watershed**

# Similarly, water quality issues may change the equation

Quantity = f (hydrologic parameters)

Quality = f (hydrologic parameters, land use, etc.)







# What Does the Future (of SWU's) Look Like?

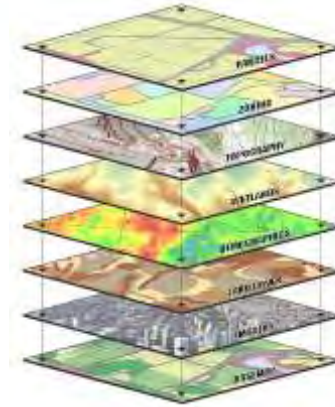
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# What do these changes mean to future rate structures?



**Greater Use of Tiers**



**Additional Hydrologic Factors**



**Hydrologic Effects**



**Spatial Effects**

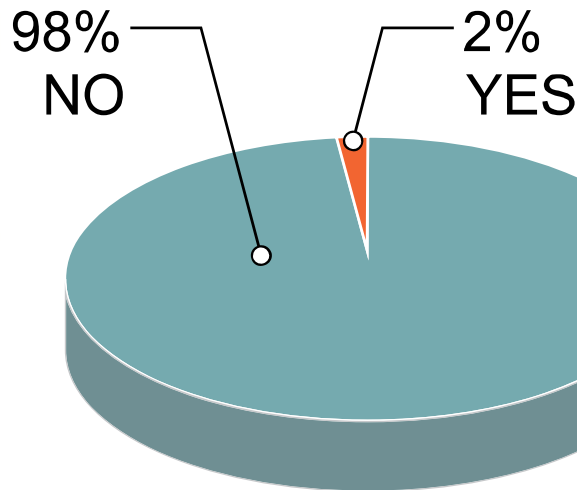


**Land Use Effects**

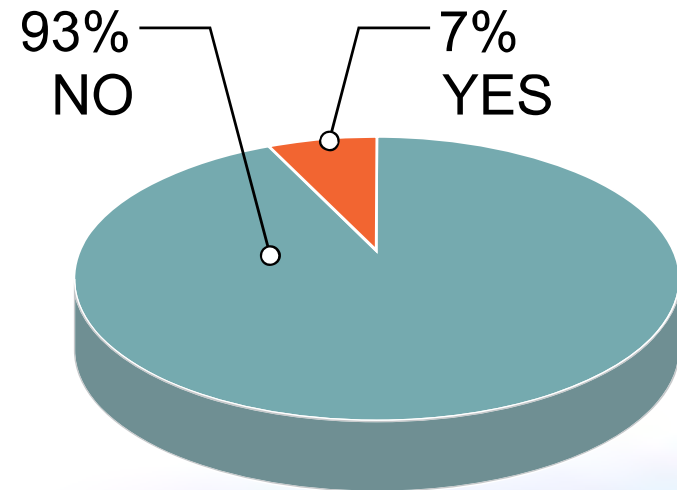
**Multi-faceted Rate Structure**

# Maybe variable rates/structures by watershed or other geographic areas

**FSA (2016)**



**B&V (2016)**



Stormwater rates that vary by watershed/zone

**...advancements in GIS and data analytics should make this easier**

Reference: 2016 FSA Survey Report and 2016 B&V Stormwater Utility Report

# Equity is improved with a reasonable credit program

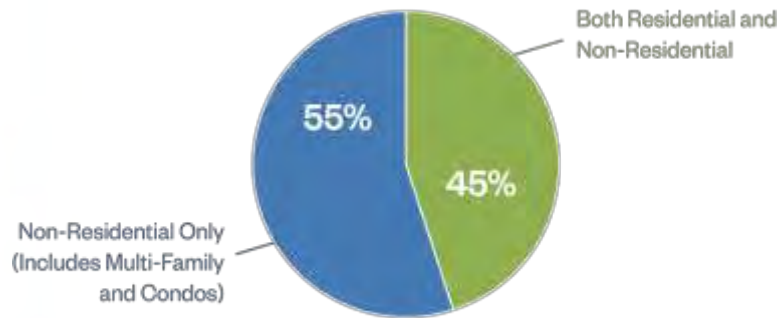


Means of comparing relative benefits/burden

**Yet only about half have one. Probably less in Florida.**

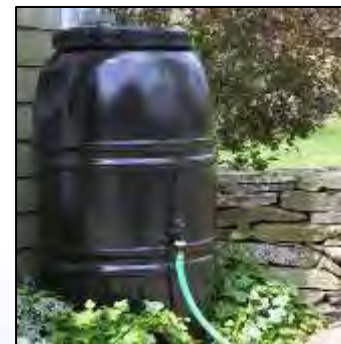
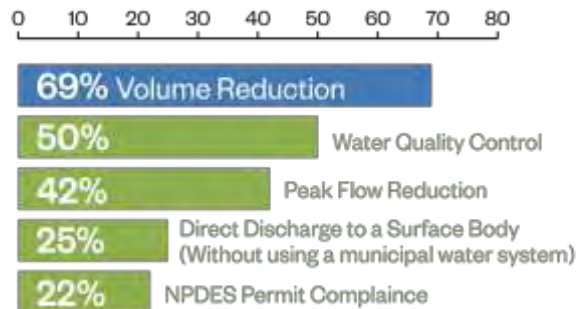
# What do today's credit programs look like?

## Classes of parcels that are offered stormwater credits



**Education Credit**

## Stormwater management actions eligible for credits



**One-time Household**



**Grants/Cost Sharing**

Source: 2016 Stormwater Utility Survey, Black and Veatch Management Consulting, LLC

# What should we expect relative to credit programs?

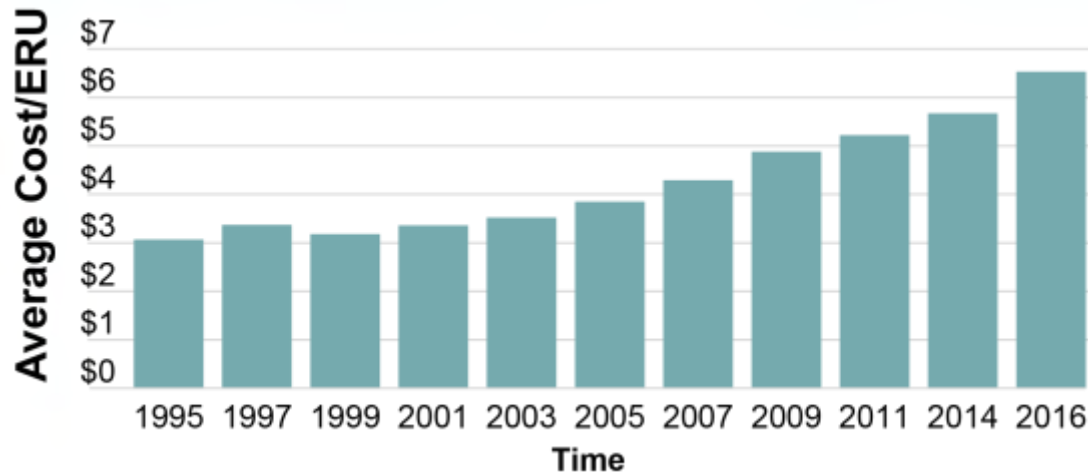
Greater incorporation of credits into existing SWU's



More Consideration of Water Quality

- *Better connection of credits to costs*
- *Certification to maintain credit*

# Big drivers for change



Increasing relative costs command public attention



Public awareness of issues

# Forecast for Florida SWU's

- Better Data/More Robust Analytics
- More Complex Rate Structures
- Credit Programs More Widely Included



**Older Utilities Catching Up to More Modern ones**



# Starting to look to other states for “what is working”

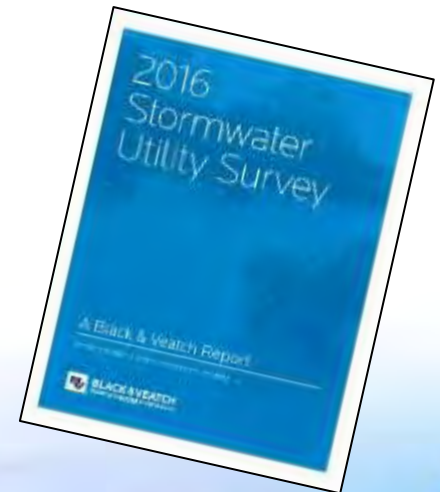
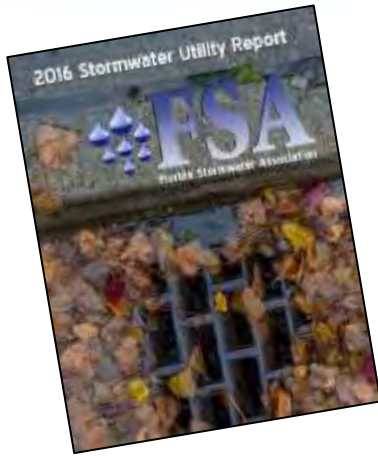
Over **1600** stormwater utilities

**40** States represented; **3** considering

**Expect to start importing best practices**

*Reference: Western Kentucky University Stormwater Utility Survey 2017*

# References





# Questions/Discussion

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