



# Surface Water Management

## **Pinellas County Commission Workshop**

*April 30, 2013*

# Workshop Agenda

- ▶ Desired outcomes of the workshop
- ▶ Background
- ▶ Comprehensive Plan and Strategic Direction
  - Connecting the dots
- ▶ Comprehensive Surface Water Management Initiative
  - Overview
- ▶ Progress update
- ▶ Surface Water Management Program
  - Current program, costs, level of service, and funding sources
  - Proposed program, costs, level of service
  - Funding assessment and Rate analysis
- ▶ Proposed schedule

# Desired Outcomes

- ▶ Board re-affirmation of strategy
  - Focus on prevention versus cure
- ▶ Board direction for funding surface water management program
  - Funding sources for program implementation
  - Level of service
  - Rate structure
  - Schedule and next steps

# Background

- ▶ **May 2011 Workshop**
  - ▶ Local conditions
    - Geology
    - Geography
    - Hydrology
  - ▶ Flooding and flood control
  - ▶ Water quality impacts
  - ▶ Regulatory forecast
  - ▶ Funding options



# Background

- ▶ **December 6, 2011  
Comprehensive Surface  
Water Management  
Initiative**
- ▶ **Validation of approach**
  - Prevention versus cure
- ▶ **Approval of interim  
measures**
  - Resources for permit compliance
  - Stormwater asset inventory, condition assessment, and connectivity analysis
  - Discussions with cities



# Comprehensive Plan and Strategic Direction

## **Connecting the Dots**

# Connecting the Dots: Comprehensive Plan

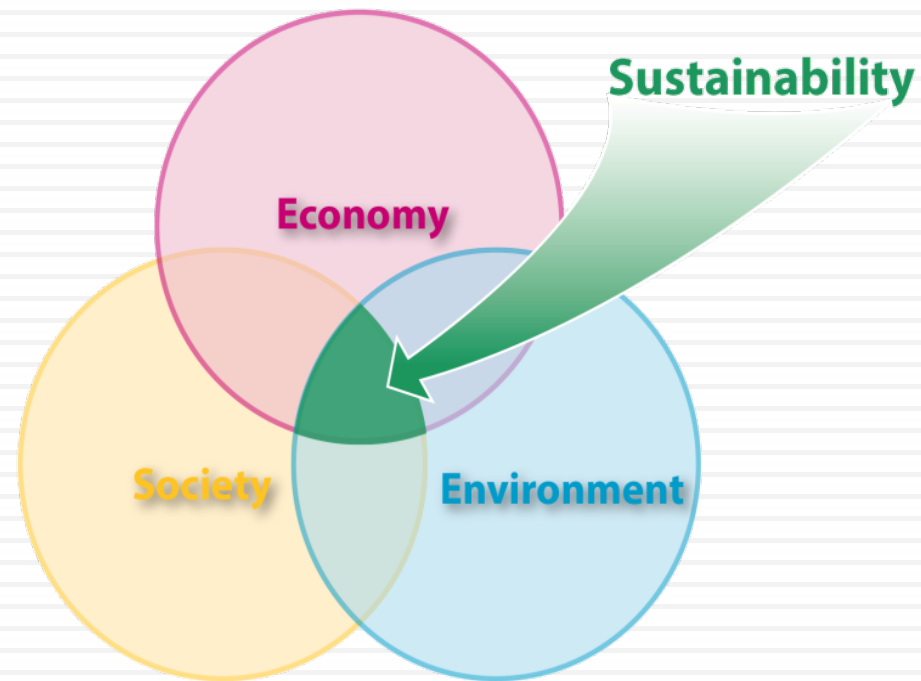
## ► Comprehensive Plan

- The Surface Water Management Element requires
  - Flood protection
  - Preservation and enhancement of water quality
  - Natural resources protection and enhanced ecological diversity
- Objectives and policies within the Surface Water Element
  - Comprehensive and integrated approach
  - Good inventories and analysis
  - Show measurable improvements in the quality of County waters
  - Watershed planning as foundation for a comprehensive program
  - Such plans shall address water quality, stormwater management, habitat requirements, and biological targets, as well as recommended funding sources

# Connecting the Dots: Vision Concepts

- ▶ Incorporates existing Comprehensive Plan principles and values

- **Principle 1:** *Sustainability is fundamental to every county policy, plan and decision, to ensure that our actions today do not compromise the quality of our future.*
- **Principle 2:** *Pinellas County is committed to meeting its existing needs without compromising the ability of future generations to meet their needs.*
- **Principle 3:** *The long-term impacts of each policy decision will be evaluated to ensure that they do not compromise a sustainable future.*





# Connecting the Dots: County Vision

- ▶ Vision – Improve Quality of Life
  - 25=1
  - Engaged citizens
  - Revitalized and redeveloped communities
  - Protect and promote our region's unique natural resources



# Connecting the Dots: Strategic Direction

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## ► Strategic Direction

### ► Core Services

- Improved service delivery
  - Level of service choices
  - Best Management Practices
  - Outcome-oriented

## ► Sustainable service delivery

- Life-cycle based asset management
- Front-end decisions

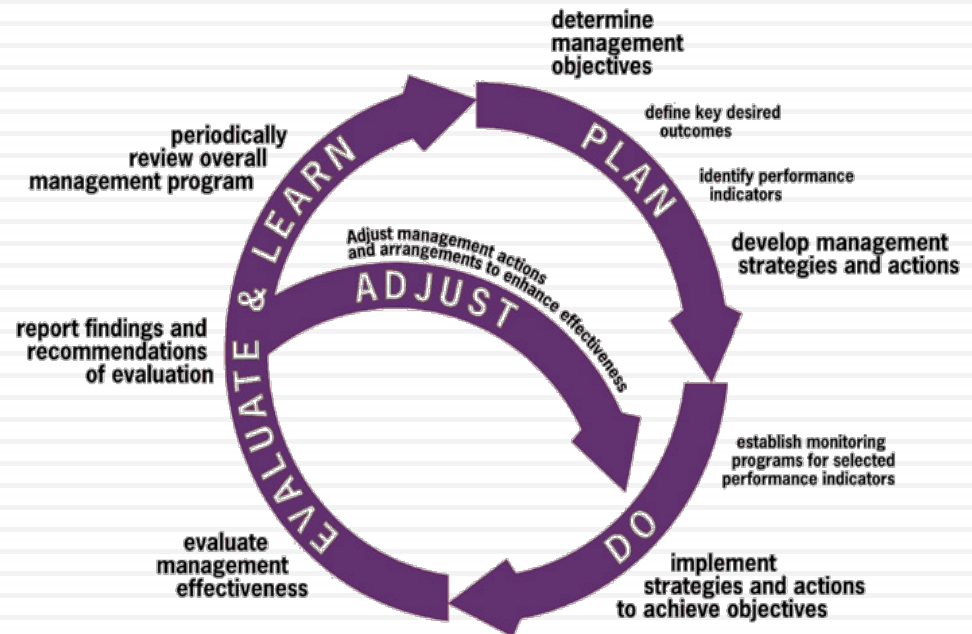


# Connecting the Dots: Strategic Direction

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## ► Strategic Direction

- Improved efficiency of operations
  - Adaptive Management Strategy
  - Proven technologies
  - Data driven decisions
  - Investing in human capital – capacity building

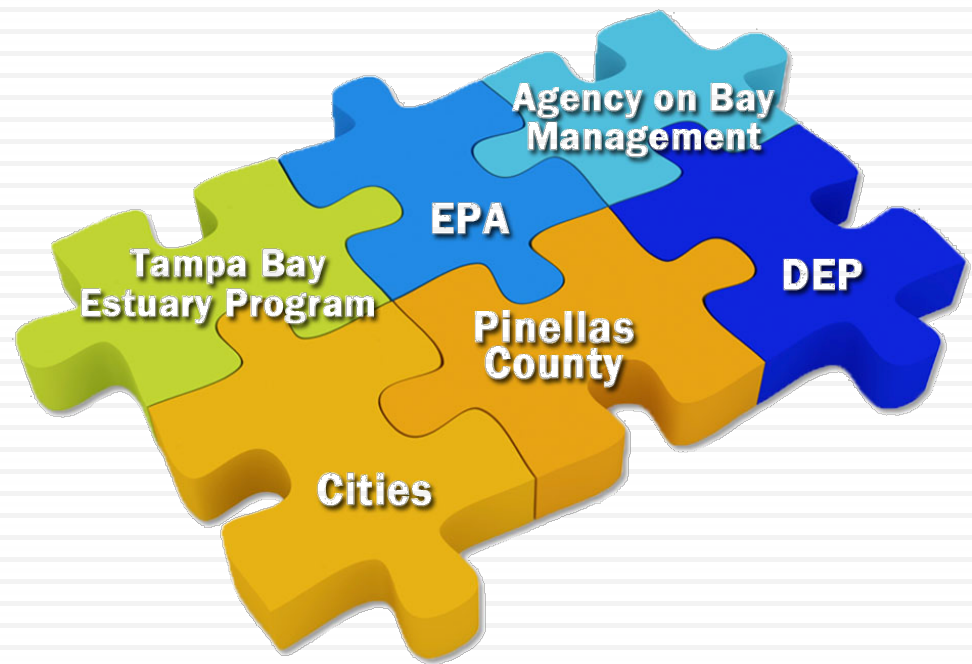


# Connecting the Dots: Strategic Direction

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## ► Strategic Direction

- Increase partnerships
  - Watershed planning
  - Monitoring program
  - Public engagement
  - Service sharing
    - Street sweeping
    - Equipment sharing

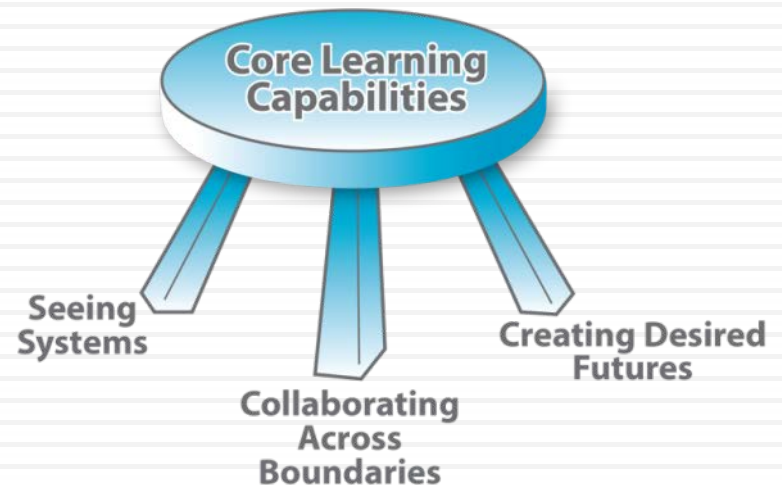


# Connecting the Dots: Strategic Direction

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## ► Strategic Direction

- High performing workforce
  - Aligned vision
  - Development and training
  - Increased engagement
  - Increased productivity and efficiencies



## Board of County Commissioners



Comprehensive Plan

Pinellas by Design

Penny for Pinellas

CIP

MPO Plan

County Wide Plan

10 Year Financial Forecast

Budget

Programs

Products and Activities

Measures Metrics

## QUALITY PINELLAS COMMUNITY PLAN

QUALITY PINELLAS  
COMMUNITY ELEMENT

Vision  
Mission  
Leadership Philosophy  
Master Challenge Narrative  
Major Performance Metrics

## OTHER PLAN ELEMENTS

- Effective Government
- Urban Regeneration and Built Environment
- Natural Environment
- Healthy Communities
- Safe Communities
- Prosperity, Education and Culture
- Public Investments

## EACH ELEMENT CONTAINS:

- Challenge Narrative
- Strategic Initiatives
- Metrics

(Plan Elements build Sustainability Case)

## DEPARTMENT PLANS

- By Program linked to Budget
- Performance Metrics build Business Case

(Departmental Plans build Business Case)

## MAJOR PLANNING TOOLS

- Comprehensive Plan\*
- Pinellas by Design
- MPO Plan
- Capital Improvements Plan
- Penny for Pinellas
- Countywide Plan
- 10-Year Financial Forecast

\* Will be incorporated into Quality Pinellas Community Plan

## STRATEGIC PRIORITIES

- Future Fiscal Issues
  - General Fund Long-term Sustainability of Service Levels
  - EMS Funding
  - Stormwater Utility
  - Fire District Funding
  - Transportation Trust Fund
- Countywide Plan and Land Use Map
- Updated Land Development Code and Review Procedures
- Extreme Weather and Sea Level Rise
- Practicing Sustainability and Stewardship Ethics in County operations, products and services
- 25 Equal 1, and other Collaborative Capacity-building Efforts and Initiatives

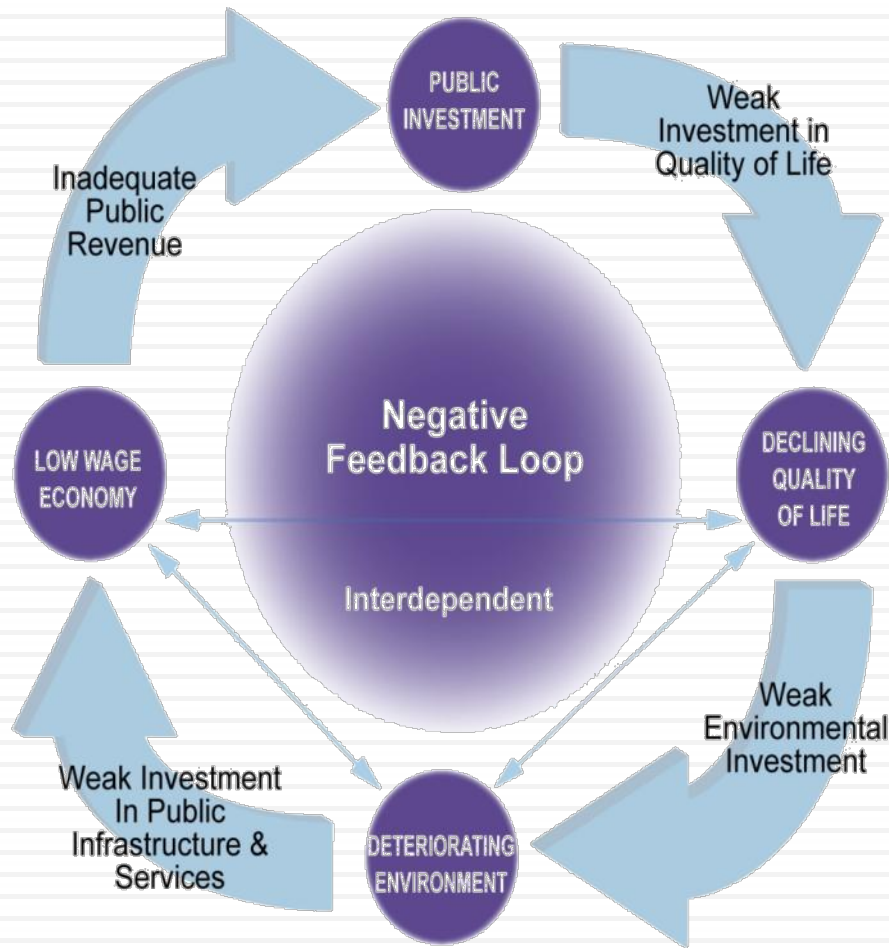
# Comprehensive Surface Water Management Initiative

## **Overview**



# Surface Water Management Initiative

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- ▶ Pinellas challenges are multiple, complex, and feed off each other
- ▶ No one, simple solution
- ▶ A complex and multi-faceted response is needed
- ▶ Adaptive Management strategy

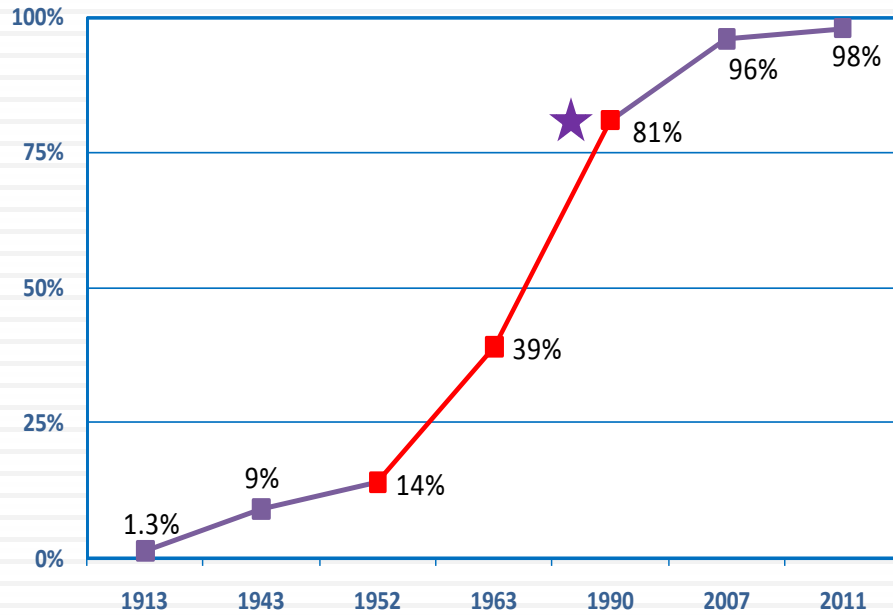


# Surface Water Management Challenges

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## Pinellas County Development History



## Community Flooding



## Infrastructure Failures

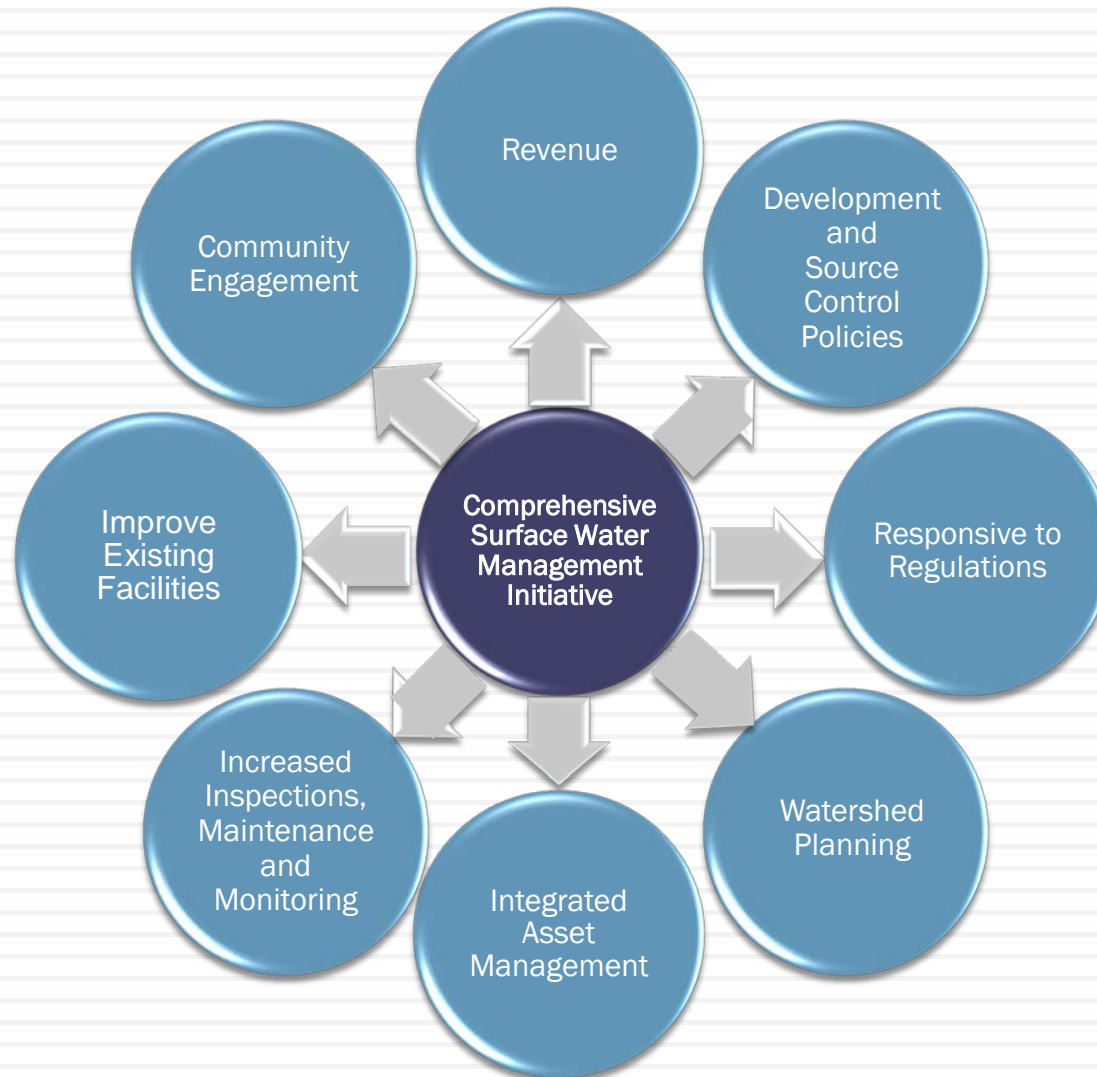


## Water Quality Degradation



# Surface Water Management Initiative

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# Prevention versus Cure

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# Prevention versus Cure

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# Prevention versus Cure

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## Pinellas County Development Future



## Infrastructure Management



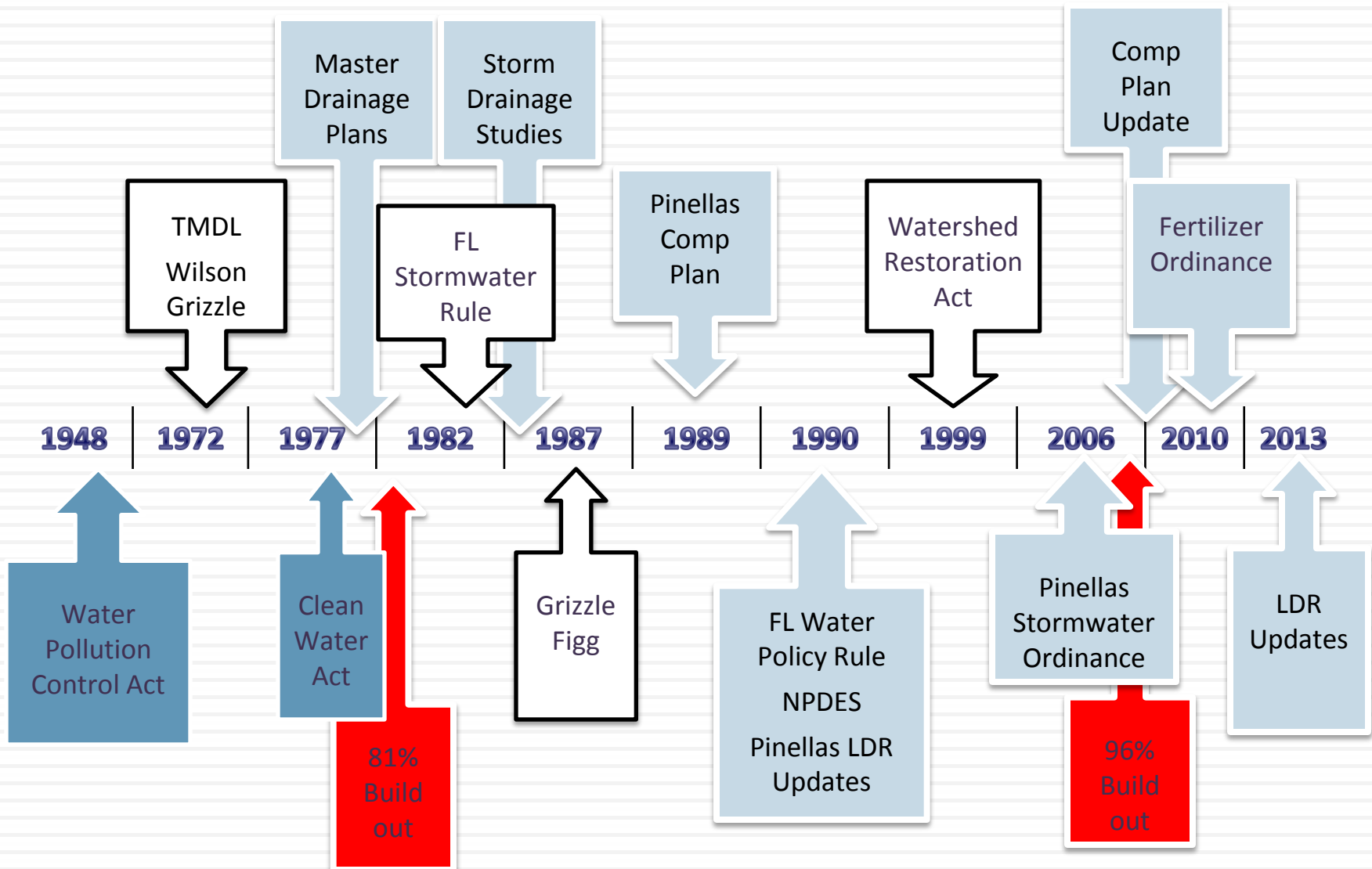
Working together, we're saving Tampa Bay  
*Tampa Bay Times 3/22/2013*

## Routine Operations and Maintenance



# Surface Water Management – Our History

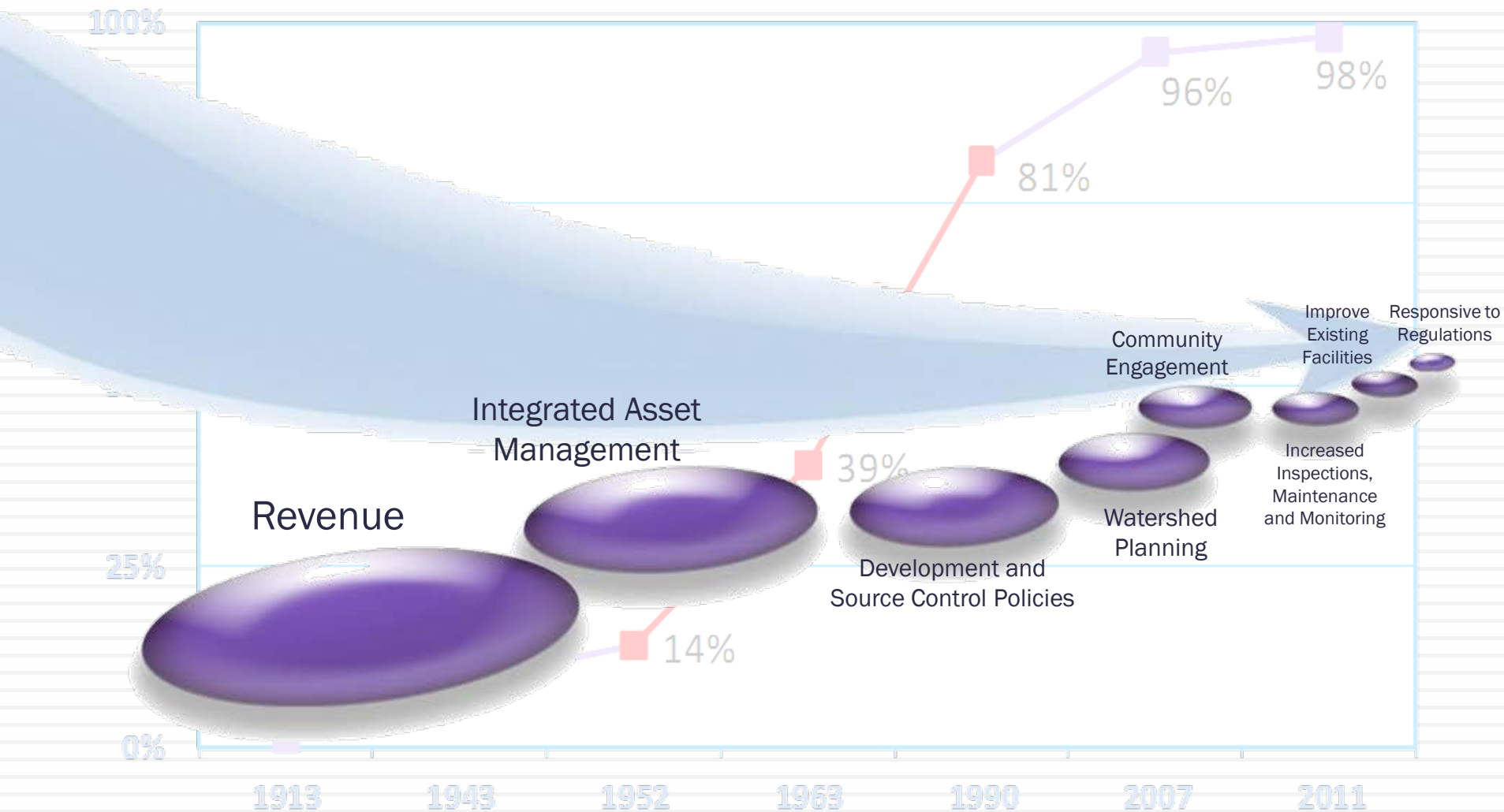
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# Surface Water Management Initiative

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# Progress Update

**Prior BCC Direction – Interim Measures**

# Progress Update

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## ► Interim measures

### ► Permit requirements

- Inspections
- Maintenance
- NPDES permit challenge
  - Flexibility
- New permit issued in 2013 –looking ahead
  - Inventory
  - Construction
  - Development
  - Education/Training
  - Inspections
  - TMDLs



# Stormwater Assets

## ► Inventory of Public Assets

- Pipes
- Culverts
- Stormdrain inlets
- Ditches, channels
- Weirs
- Other drainage features

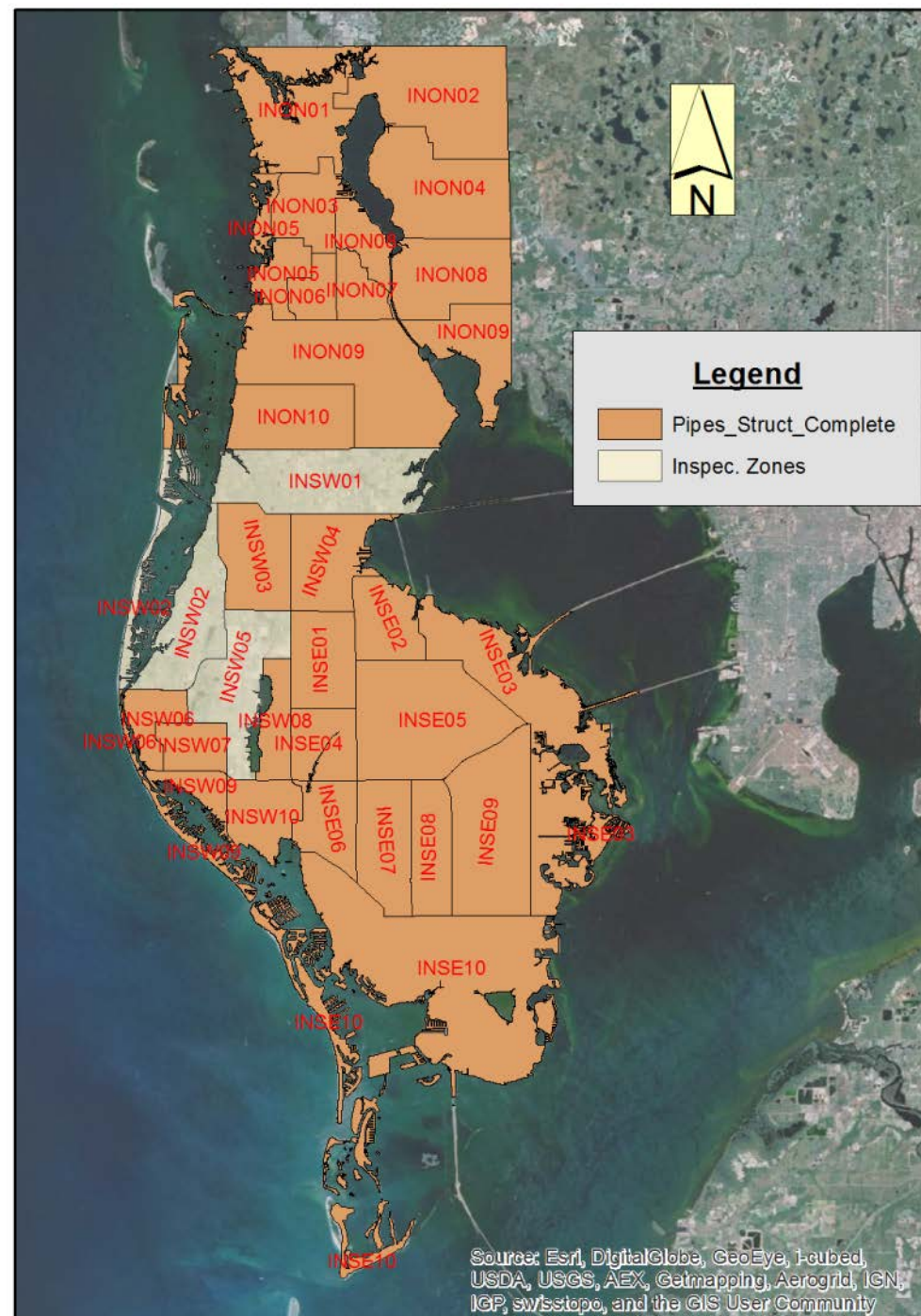
## ► 30 Inspection Zones





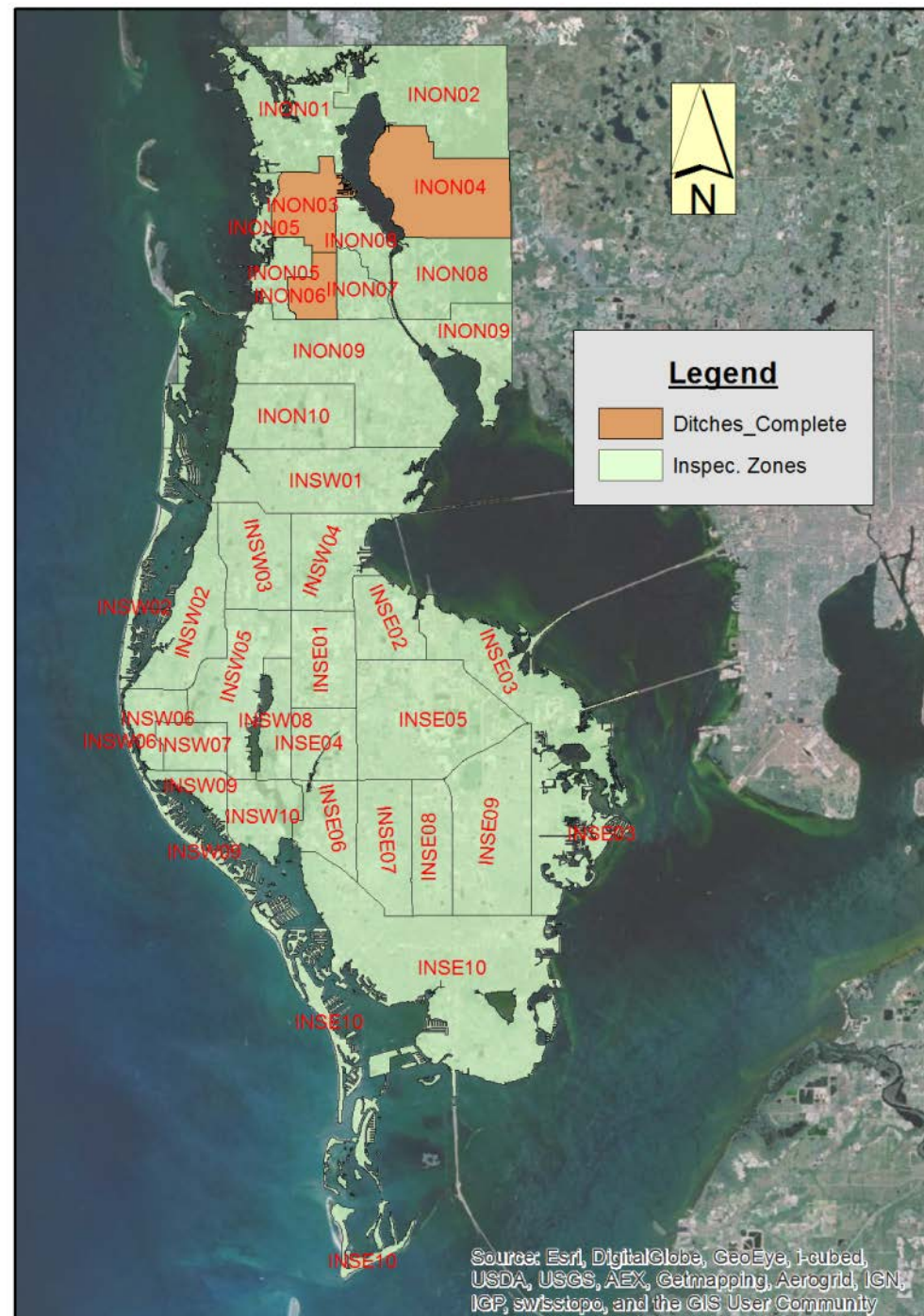
# Pipes/Structures

- ▶ Three (3) zones left to complete pipe and structure inventory



# Ditches/Channels

► Twenty seven (27) zones left to complete ditch inventory

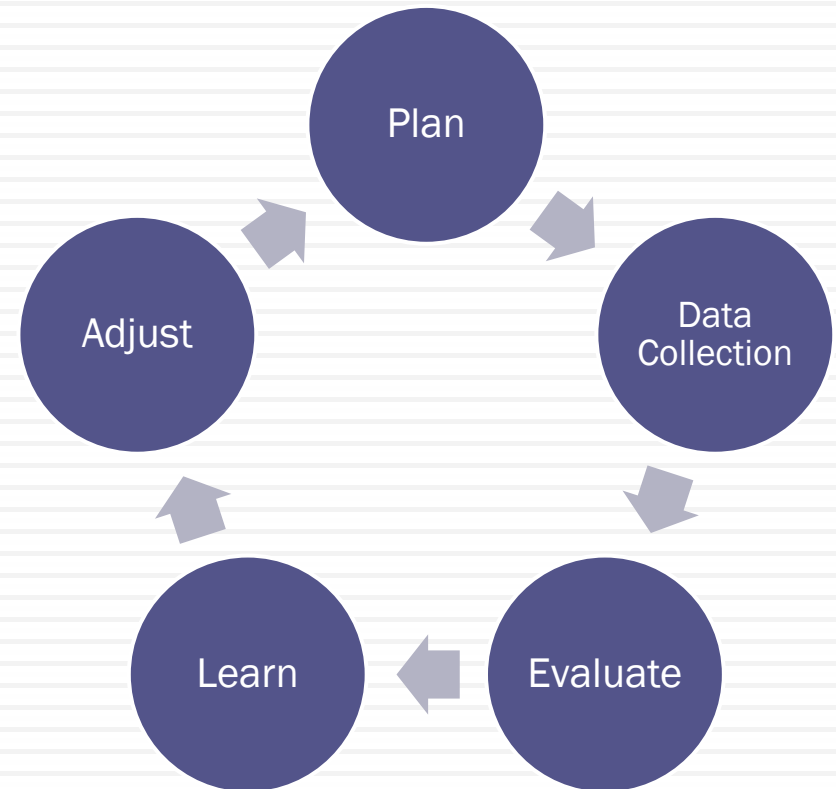


# Progress Update

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## ► Interim measures

- Stormwater Asset Inventory
  - Public Infrastructure
- Condition Assessment
- Connectivity Analysis
- Schedule
  - Complete data collection/assessment December 2013
  - Complete connectivity analysis December 2014
- Iterative process going forward



# Progress Update

## ► Meetings with Cities

- Discussion points
  - How do they fund their program?
  - What does it pay for?
  - Is the funding sustainable?
  - What level of service is provided?
  - Are there opportunities for service sharing?

## ► Summary

- 15/24 have a stormwater fee
- Primarily O&M/NPDES and some capital
- 2/24; fully funded through the fee
- LOS range between B and D
- Service sharing potential:
  - NPDES activities
  - Watershed Planning
  - Street sweeping services
  - Equipment sharing and some vegetation management activities



# Progress Update

## ► Meetings with Cities

- Discussion points
  - County-wide fee to support major drainage
  - What is the County's role in your community and how can we be a better partner?

## ► Summary

- Mixed responses on a County-wide fee for major drainage. All agreed more discussion was needed.
- Common themes on improving our relationships (25=1)
  - Increased communication
  - Joint projects to address community-wide issues
  - Improve collaboration on management plans

# Progress Update

Stormwater fees in Pinellas County	\$/ERU/Month	Funding adequate to support all program needs (self reporting)	TOTAL ACREAGE
Belleair	\$11.92	NO	1,132
Clearwater	\$13.40	YES	16,695
Dunedin	\$9.30	NO	6,814
Gulfport	\$2.87	NO	1,773
Largo	\$5.32	NO	11,982
Madeira Beach	\$5.00	NO	572
Oldsmar	\$4.00	NO	5,898
Pinellas Park	\$4.00	NO	10,407
Redington Beach	\$2.50	NO	205
Redington Shores	\$1.50	NO	205
Safety Harbor	\$7.25	NO	3,169
St. Pete Beach	\$3.00	NO	1,321
St. Petersburg	\$6.84	NO	40,414
Tarpon Springs	\$5.65	Not for future needs	5,950
Treasure Island	\$13.04	YES	939
UNINCORPORATED	N/A	NO	67,449

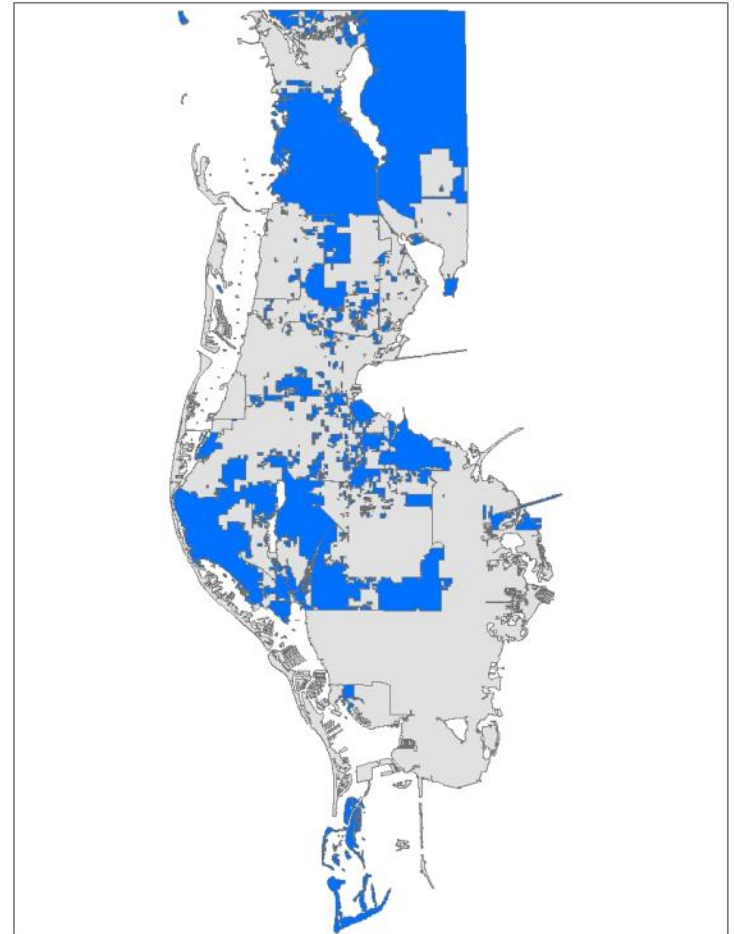
# Surface Water Management Program

**Current program, costs, and funding sources**

# Surface Water Management Program

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- ▶ **Current program for Unincorporated Areas**
- ▶ **Program Management**
  - Engineering and Survey
  - Watershed Management
  - Floodplain Management
  - Asset inventory data collection and management
  - O&M programming
  - NPDES
    - Inspections
    - Education and training
  - TMDL implementation plan



# Surface Water Management Program

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## ► Operations and Maintenance

- Emergency response
- >323 miles of ditches\*
- >390 miles of pipe\*
- ~27,000 structures (to date)\*
- 197 ponds\*
- ~344 acres of mitigation\*
- 4867 miles of street sweeping/year\*
- 5 alum treatment systems\*

\* Permit Compliance Activity

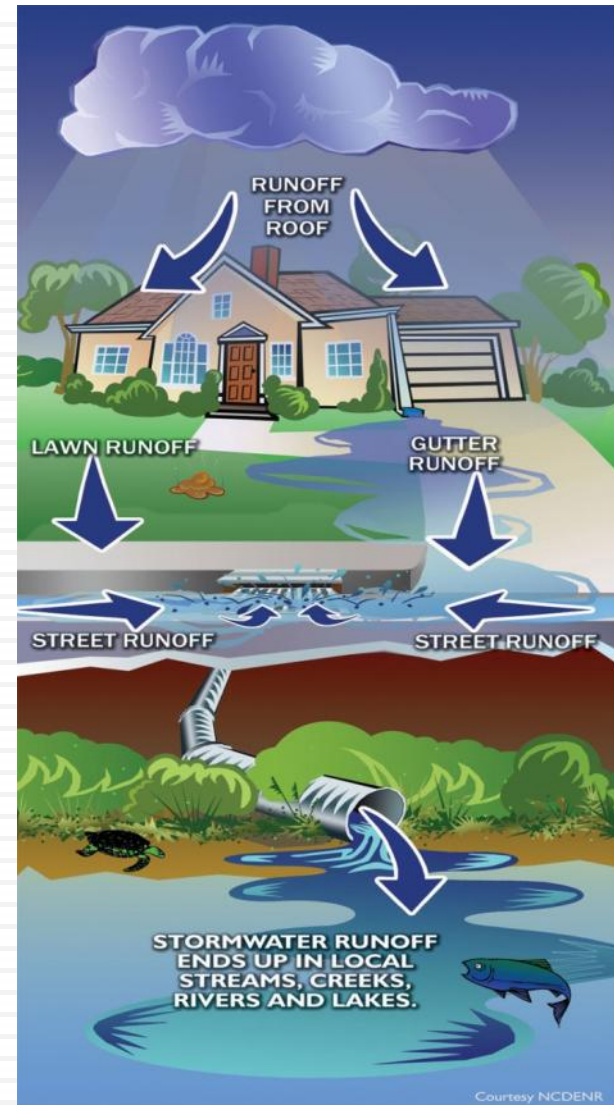


# Surface Water Management Program

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## ► NPDES Permit Compliance

- Development review
- Roadway maintenance
- Flood control projects
- Transfer, storage & disposal facilities (TSDs)
- Pesticide, herbicide and fertilizer control
- Illicit connections (regulation, detection, investigation, enforcement)
- Illicit discharges (and illegal dumping)
- Industrial and high risk runoff
- Construction site runoff control
- Water quality monitoring, analysis, and reporting
- TMDL compliance





# Surface Water Management Program

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## ► Capital Improvement Program

- Design
- Permitting
- Construction

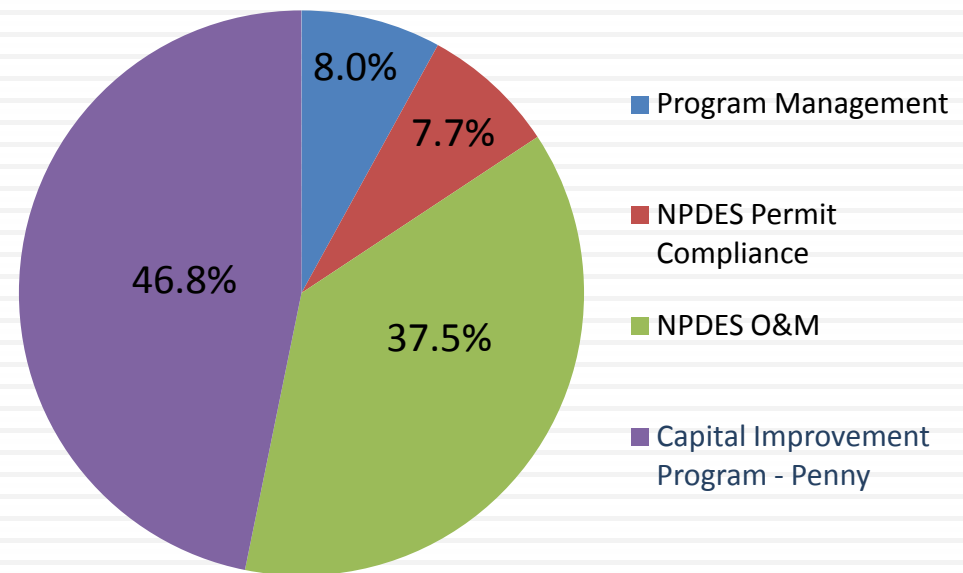


# Surface Water Management Program

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## ► Current Annual Program Costs

- **\$21,398,309**
- Program management
  - \$2,147,269
- NPDES Operations and maintenance
  - \$8,972,345
- NPDES permit compliance
  - \$1,562,520
- Capital Improvement Program
  - \$8,716,175





# Surface Water Management Program

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## ▶ Current Annual Program Costs

- \$21,398,309

## ▶ General Fund

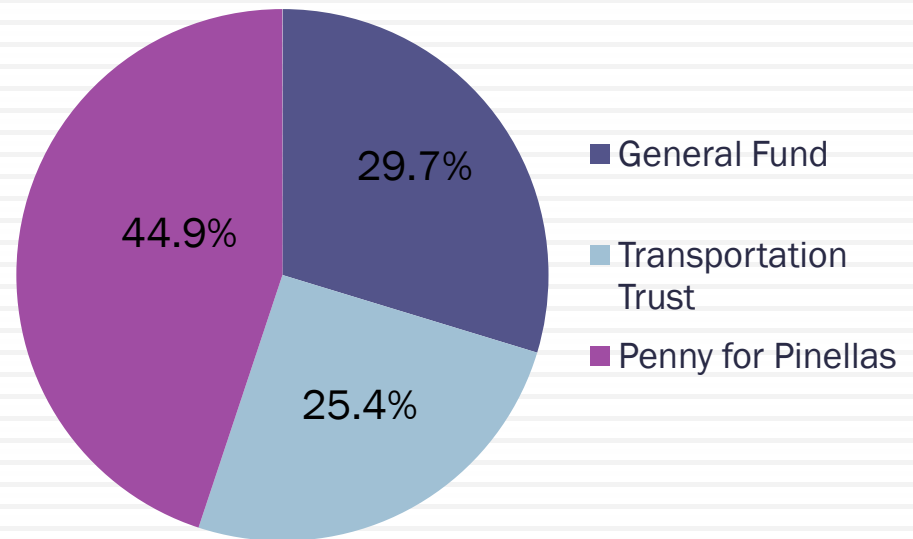
- \$6,358,018

## ▶ Transportation Trust

- \$5,435,528

## ▶ Penny for Pinellas

- \$9,604,763



# Surface Water Management Program

## **Current Level of Service Evaluation**

# Current Level of Service

Figure 3-1

Stormwater Governance Study: Stormwater Program Level of Service Matrix

Level of Service	Program Management Activities	NPDES Compliance Activities		Capital Improvement Projects
		Non-O&M Related Compliance Activities	Operation and Maintenance Program Activities	
A	Comprehensive Planning + Full Implementation Capabilities	Exemplary Permit Compliance	Fully Preventative/ 100% Routine	10-year Plan
B	Pro-Active Planning + Systematic CIP Implementation Capabilities	Pro-Active Permit Compliance	Mixture of Routine and Inspection Based	20-year Plan
C	Priority Planning + Partial CIP Implementation Capabilities	Minimal Permit Compliance	Inspection Based	40-year Plan
D	Reactionary Planning + Minimal CIP Implementation Capabilities	Below Minimum Permit Compliance	Responsive Only (Complaint-based)	50-year Plan
F	No Planning + No CIP Implementation Capabilities	Non-Compliance	Less than full response to all complaints	75-year or More Plan

# Current Level of Service

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- Program Management
  - LOS C
- NPDES Permit Compliance
  - LOS C to C+
- NPDES O&M
  - LOS C-
- Capital Improvement Program\*
  - LOS C+ to B-
- Overall
  - LOS C



# Surface Water Management Program

## **Integrated Approach: Proposed Strategies**

# Surface Water Management Program

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- ▶ **Proposed Strategy**
- ▶ **Current Program +**
  - **Increased LOS**
    - Open conveyances
    - Closed conveyances
    - Street sweeping
    - Public education
    - Site plan/floodplain management program





# Surface Water Management Program

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## ► Proposed Strategy (continued)

- Biological monitoring
  - In response to new water quality standards
- Watershed planning
- Watershed plan implementation
- Adopt-A-Pond



# Surface Water Management Program

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## ► Open Conveyances

- Ditches
- Channels
- Swales

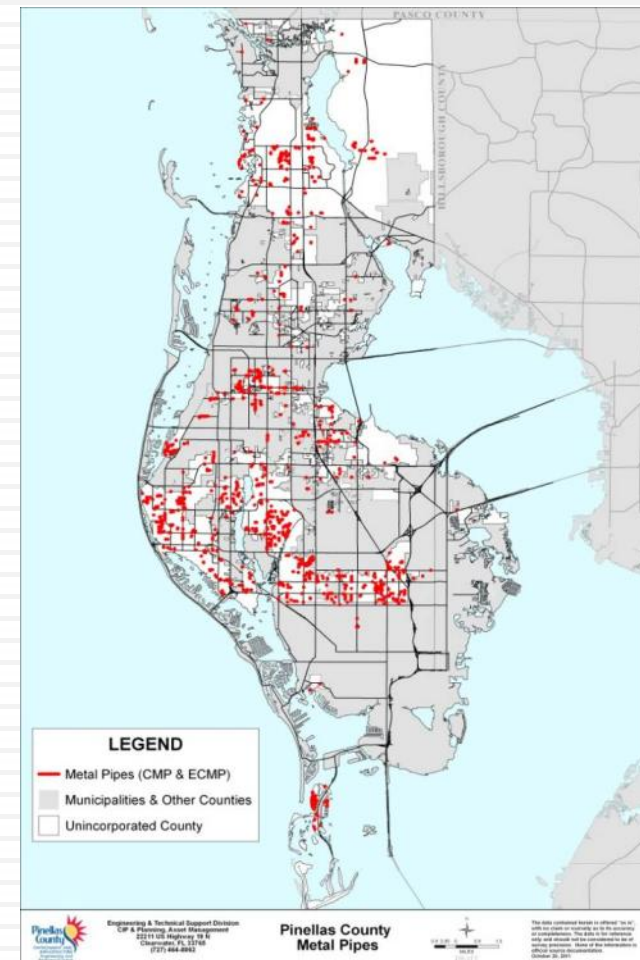
- Current Annual Plan: 89,119 LF
- Estimated Inventory: 1.7 M LF
- Maintenance cycle: 22.5 years
- Proposed Annual Plan: 200,726 LF
- Maintenance cycle: 10 years
- Additional funding needed:  
\$1,966,727/year



# Surface Water Management Program

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- ▶ **Closed Conveyance**
  - Corrugated Metal Pipe (CMP)
- ▶ Current Annual Plan: <1 mile
- ▶ Estimated Inventory: 24 miles
- ▶ Years to complete: 24
- ▶ Proposed Annual Plan: 2.4 miles
- ▶ Years to complete: 10
- ▶ Additional funding needed: \$2,400,718 /year



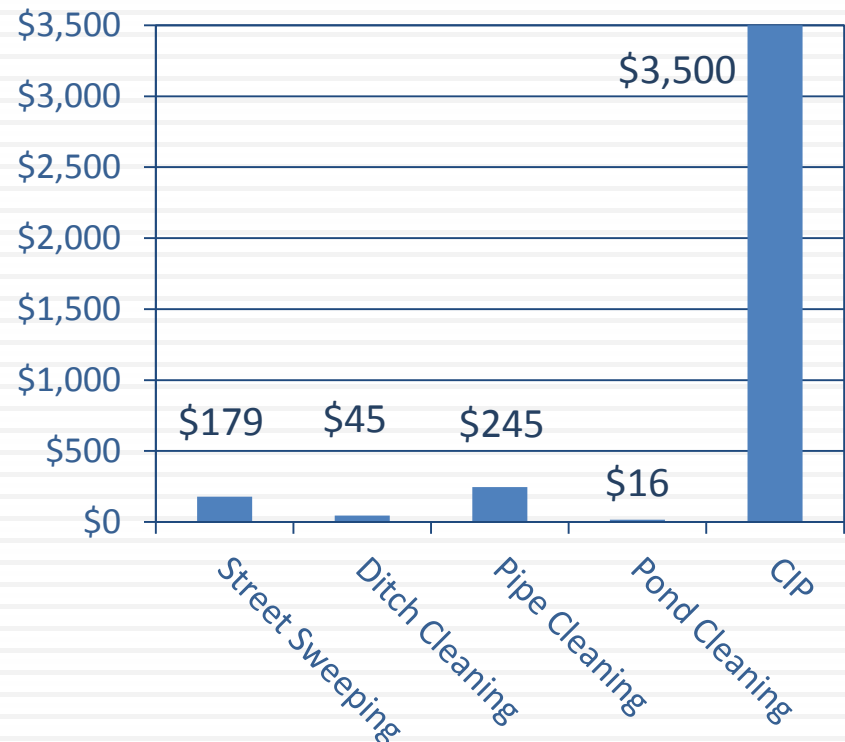
# Surface Water Management Program

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## ► Street Sweeping

- Per unit cost one of the most cost effective water quality improvement programs
- Since 2008; 69% reduction in nitrogen removal due to program cuts
- Additional cost to get back to 2008 levels \$40,000/year

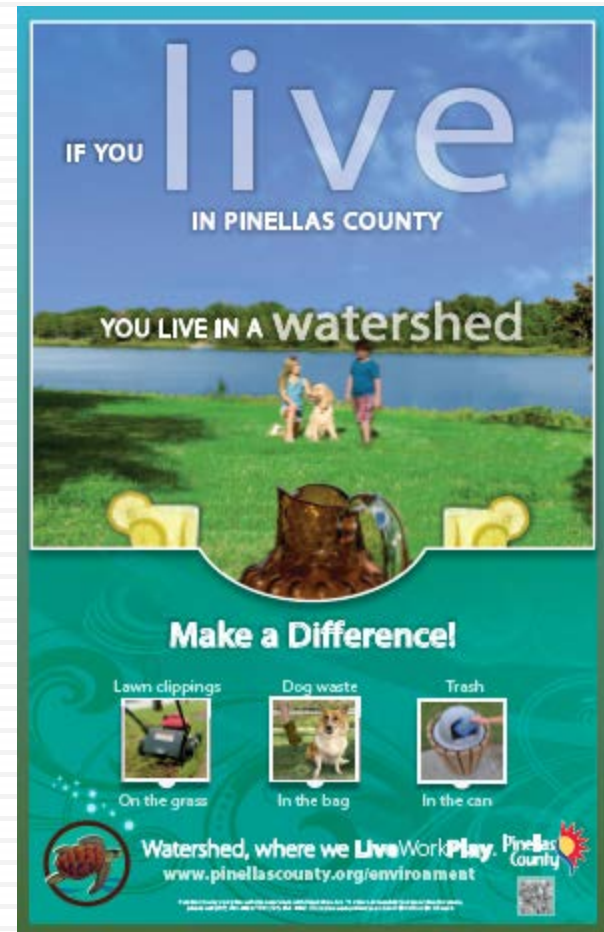
## Cost Per Pound Nitrogen Removed



# Surface Water Management Program

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- ▶ **Floodplain Management and Stormwater Facility Compliance**
  - Develop and implement comprehensive floodplain management program
  - Inspection/certification of private facilities to ensure stormwater management facilities are functioning per approved designs.
  - Annual cost \$189,000
- ▶ **Engagement and Education**
  - Digital and print media
  - PSAs, videos
  - Goal to increase awareness that results in positive behavior change
  - Annual cost \$50,000





# Surface Water Management Program

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## ► Biological Monitoring Program

- New water quality standards require “biological confirmation”
- Cost shared with cities and FDOT
- 45% County/55% Partners
- Total cost: \$173,000/year
- County cost: \$77,850/year

## ► Watershed Plan Development

- Annual cost: \$600,000



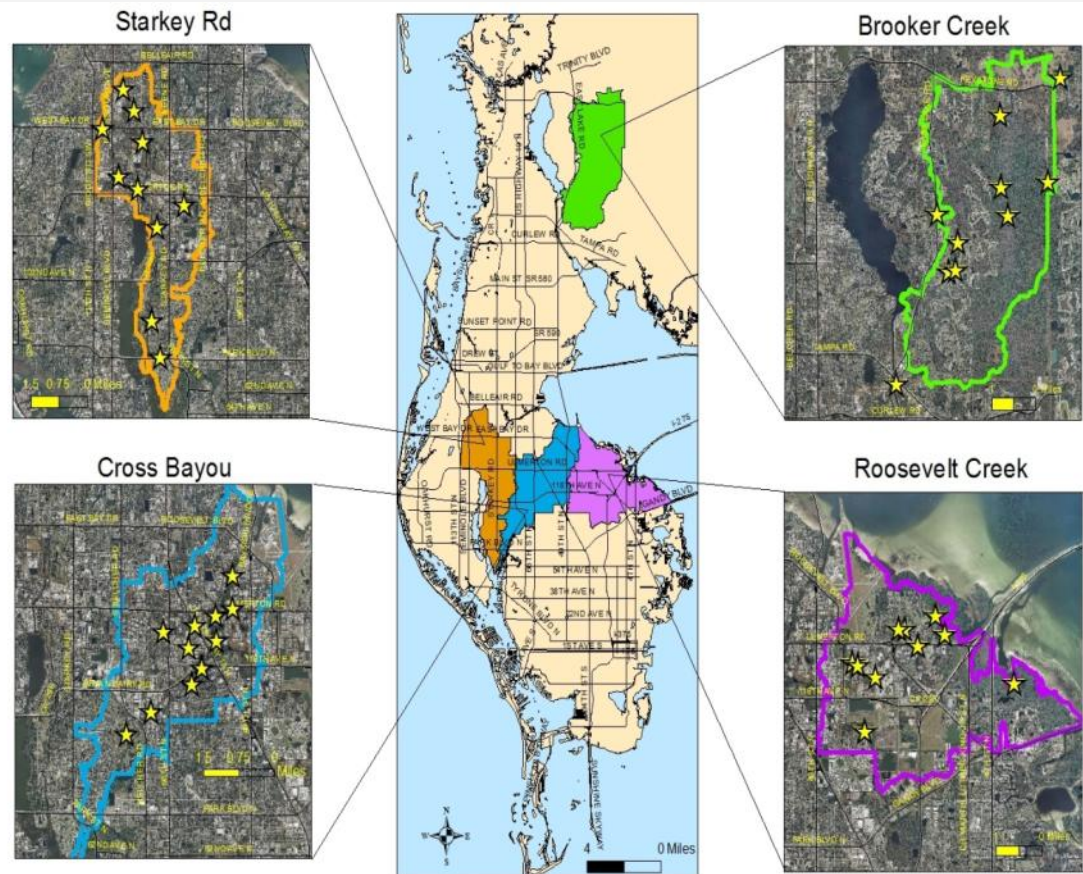


# Surface Water Management Program

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## ► Watershed Plan Implementation

- Water Quality Improvements
- Penny: \$1,212,000/yr
- Fee: \$1,998,558/yr
- Total: \$3,210,558/yr
- LOS C - 40 year CIP for water quality



# Surface Water Management Program

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## ► Adopt-A-Pond

- Private community ponds
  - Community engagement
  - Pond improvements – clean out and plantings
- Constraints – demonstrate significance to water quality or community drainage issues
  - Est. 2,000 ponds in unincorporated County
- Annual cost: ~\$469,000

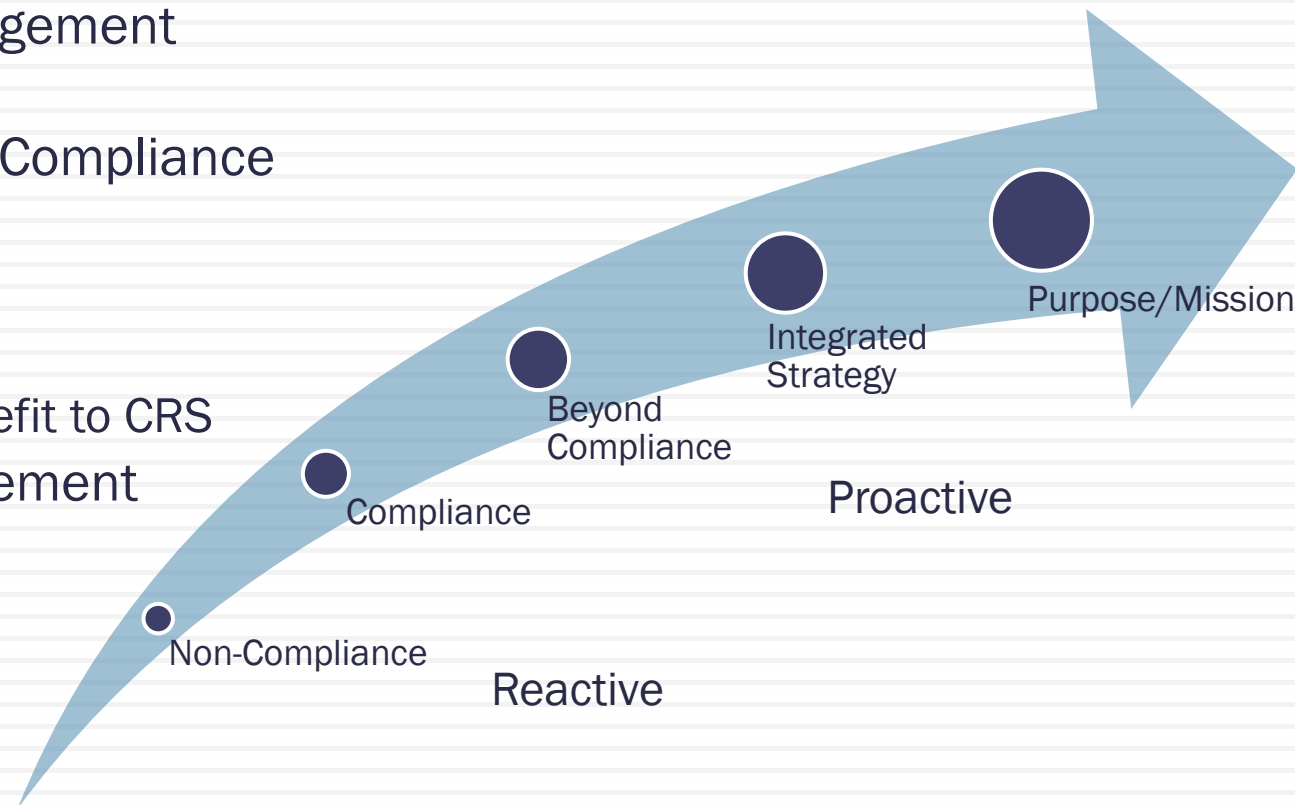


# Proposed Level of Service

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## ► Summary

- Program Management
  - LOS C+
- NPDES Permit Compliance
  - LOS C+ to B-
- NPDES O&M
  - LOS B
  - Potential benefit to CRS
- Capital Improvement Program
  - LOS C
- Overall
  - LOS C+ to B-



# Proposed Level of Service

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- ▶ Very good basic public program
- ▶ Focuses on most critical needs first
- ▶ Looking ahead 10 years
  - Replace or repair all deficit CMP
  - Restore ditches/channels and implement proactive PM cycles
  - Complete Watershed Plans for priority watersheds
  - Implement data driven maintenance cycles
    - Maximize water quality and quantity benefits
  - Implement capital improvements to achieve drainage and water quality goals in priority watersheds
    - Sustainable service delivery
  - Celebrate 150-200 adopted and restored community ponds
    - Engaged communities

# What Happens if We Don't Move Forward?

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- ▶ Permit compliance issues
  - New regulations require more
- ▶ Our infrastructure will continue to fail
  - Lack of preventative maintenance decreases the life of the asset
  - Catastrophic failures impact other infrastructure
  - More community flooding
- ▶ Our water quality will continue to decline
  - Lowers quality of life
  - Impacts our economy
  - Costs more to restore the environment than to prevent the damage

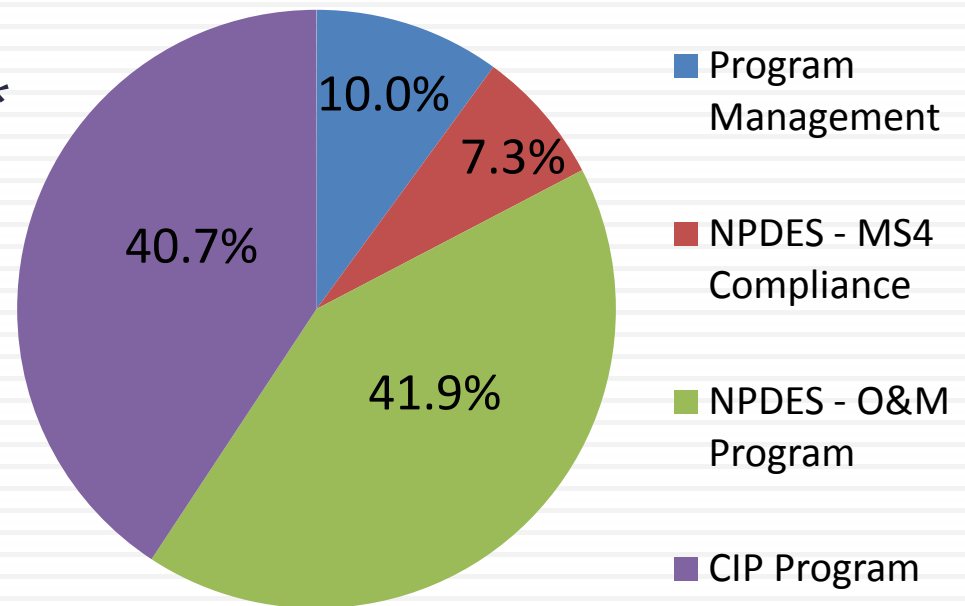


# Surface Water Management Program

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## ► Proposed Program Annual Costs

- **\$29,284,235**
- Program Management\*
  - \$2,336,221
- NPDES O&M
  - \$10,979,072
- NPDES Compliance
  - \$2,253,491
- CIP\*
  - \$13,715,452



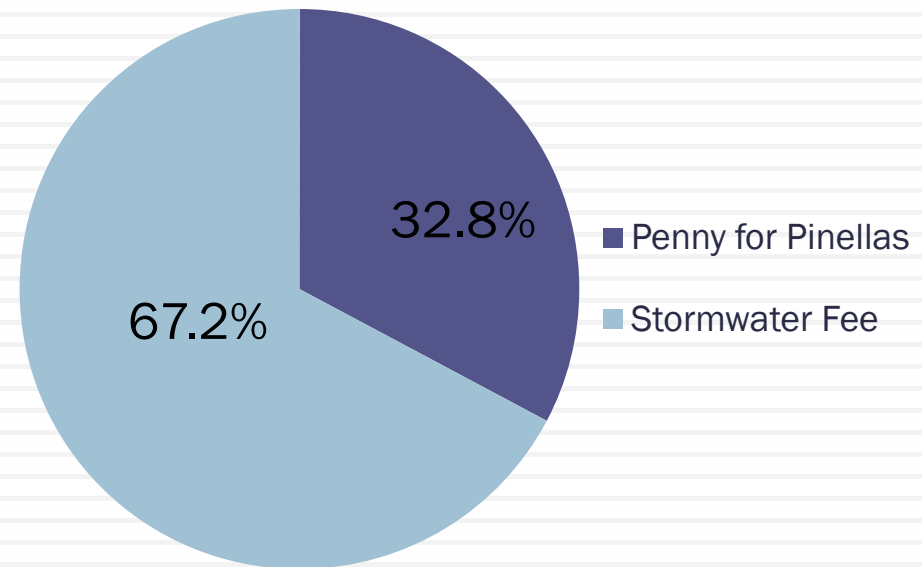


# Surface Water Management Program

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## ► Proposed Program Annual Costs

- **\$29,284,235**
- Penny for Pinellas
  - \$9,604,763
- Stormwater fee
  - \$19,679,472



# Surface Water Management Program

## **Funding Assessment and Rate Structure Analysis**

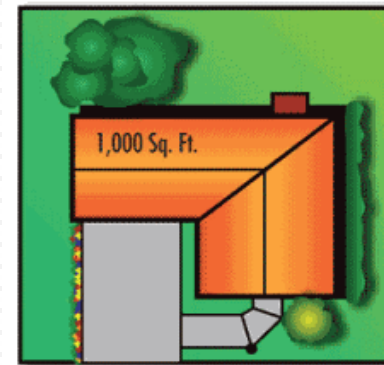
# Rate Structure Analysis

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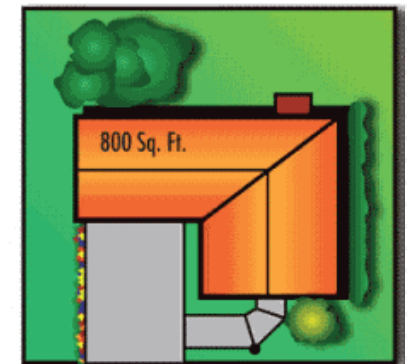
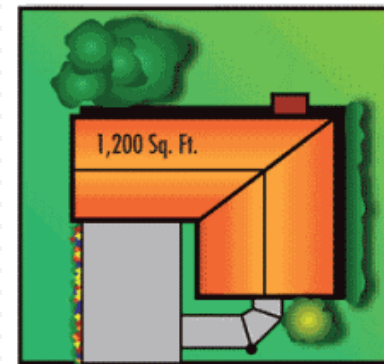
## ► Equivalent Units

- Equivalent Residential Unit (ERU)
- Average impervious area for all residential unit types vs single family detached
  - 2,329 sq ft/2,339 sq ft
- Options
  - Uniform
    - 70% of Counties use
    - 58% of SWU in Florida
  - Tiered

Impervious Area Approach: Definition of ERU



Example:  
1 ERU = 1,000 ft<sup>2</sup> of impervious area



Example of Equivalent Unit definition adapted from The Florida Stormwater Association.

# Rate Structure Analysis

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- **Non-residential Rates**
  - Actual impervious area
  - Data readily available
  - 83% of SWU in Florida



# Funding Analysis – Recommended Rate

## ► Rate to support proposed program

- \$10.50/month/ERU
- Generates \$19,679,472/year
- Index to CPI
- Rate structure applies to all properties within the unincorporated area

## ► Fee Breakdown

- Program Management
  - \$1,447,663
- NPDES Compliance
  - \$2,253,491
- NPDES O&M
  - \$10,979,072
- Capital Investments
  - \$4,999,276



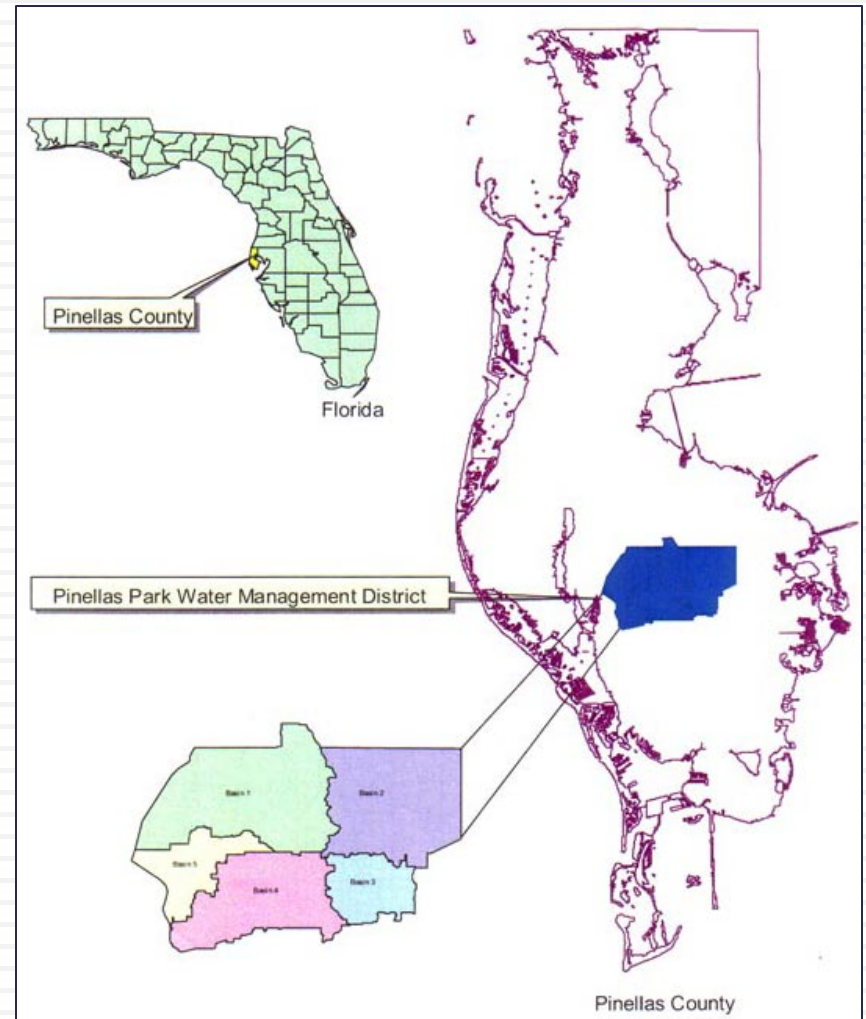
# Surface Water Management Program

**PPWMD**

# Pinellas Park Water Management District

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“The PPWMD is responsible for the management of the primary drainage systems within its jurisdictional boundaries. The secondary systems fall under the jurisdiction of the City of Pinellas Park and Pinellas County.”



# Pinellas Park Water Management District

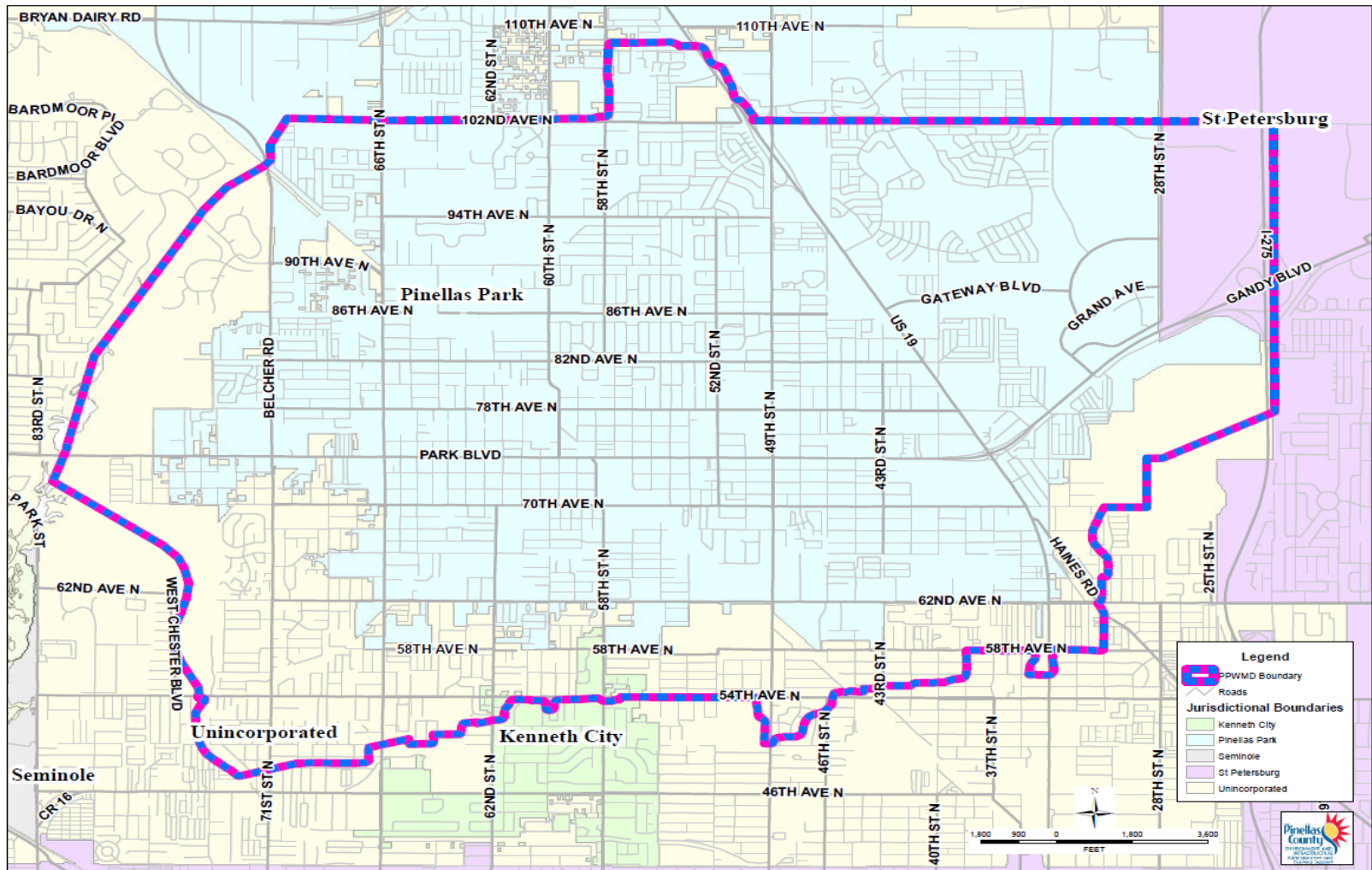
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## ► Facility types

- 5 channel systems
  - Structures at road crossings
  - Weirs
  - Ponds
- Operations and Maintenance and Capital Improvements
- Primary (major) drainage services

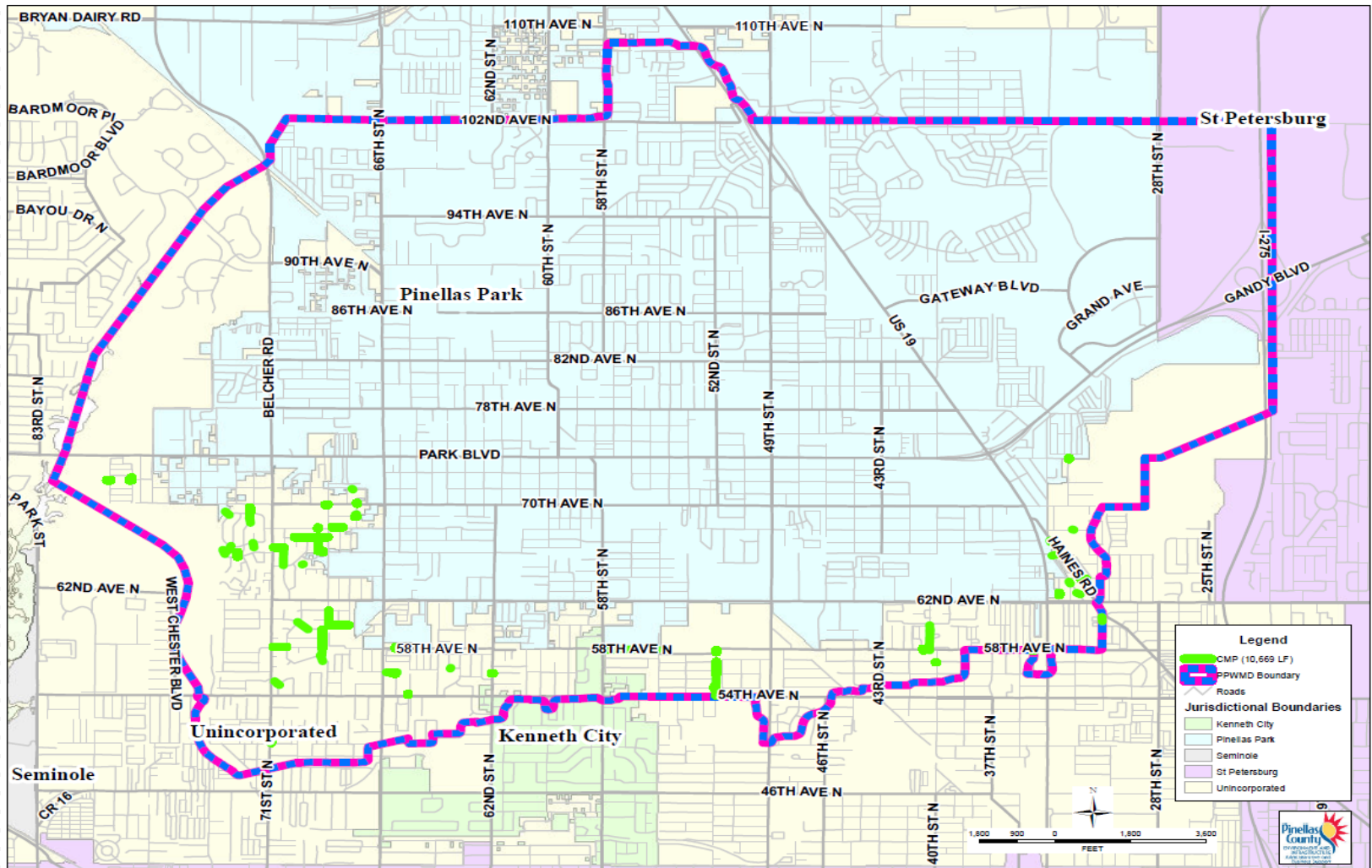


# PPWMD: Jurisdictional Boundaries



# Closed Conveyance (CMP) within PPWMD

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## 70



# Pinellas County versus PPWMD

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## ▶ County Services

- Operations and maintenance of public secondary drainage systems
- NPDES compliance
- CIP
  - Drainage improvements
  - Water quality improvements
  - Watershed Planning

## ▶ PPWMD

- Operations and maintenance of 5 major drainage channel systems and associated facilities
- Capital Improvements for PPWMD major drainage systems

No Overlap of Services



# Schedule

- ▶ Authority to Advertise Ordinance April 30, 2013
- ▶ Advertise Ordinance June 2013
- ▶ Ordinance to BCC June 2013
- ▶ Roll to Property Appraiser July 1, 2013
- ▶ TRIM notice insert August 19, 2013
- ▶ Notice Public Hearing for  
Final Assessment Resolution By August 22, 2013
- ▶ Public Hearing for Final  
Assessment Resolution September 10, 2013\*

# Discussions

- ▶ Board re-affirmation of strategy
  - Focus on prevention versus cure
- ▶ Board direction for funding surface water management program
  - Funding sources for program implementation
    - Stormwater fee and Penny for Pinellas
  - Level of service
    - LOS C+ to B-
  - Rate structure and Rate
    - ERU based or tiered
    - \$10.50/month/ERU
    - Index to CPI
  - Schedule