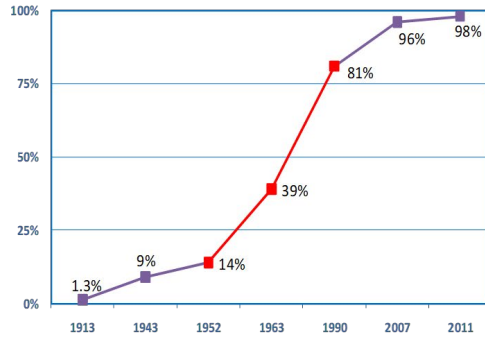




# Surface Water Management Program Update

# Background

Pinellas County Development History



Community Flooding



Infrastructure Failures



Water Quality Degradation



# 2013 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	C to C+	Inspection Based C to C- ↓	B- to C+
		Minimal Permit Compliance		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

# Adopted Surface Water Program

## 2013 Program +

- **Increased LOS:**
  - **Operations & maintenance**
    - Swales, Ditches, & Channels
  - **Closed conveyances**
    - Restoring or replacing Corrugated Metal Pipes
  - **Street sweeping**
    - Cost effective source control program



# Surface Water Program

- **Increased LOS:**
  - **Program management**
  - **NPDES compliance**
  - **Monitoring program**
    - In response to new water quality standards
  - **Watershed planning**
  - **Floodplain management**
  - **Site plan compliance**
  - **Adopt-A-Pond**





# Future State



# Future State



**Very good basic public program**

**Focuses on most critical needs first**

**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 projects to achieve drainage and water quality goals in priority areas**
- **Celebrate 150-200 adopted and restored community ponds**
- **Engaged communities**

# Asset Management

## Asset Management Plan and Criticality Analysis (2020)

### Stormwater Inventory

- **Structures: 46,889**
- **Pipes: 880 miles**
- **Open conveyances: 308 miles**
- **Major weirs: 51**
- **Permitted facilities: 701**
- **Alum treatment systems: 5**

**Asset Value: \$1.23B**



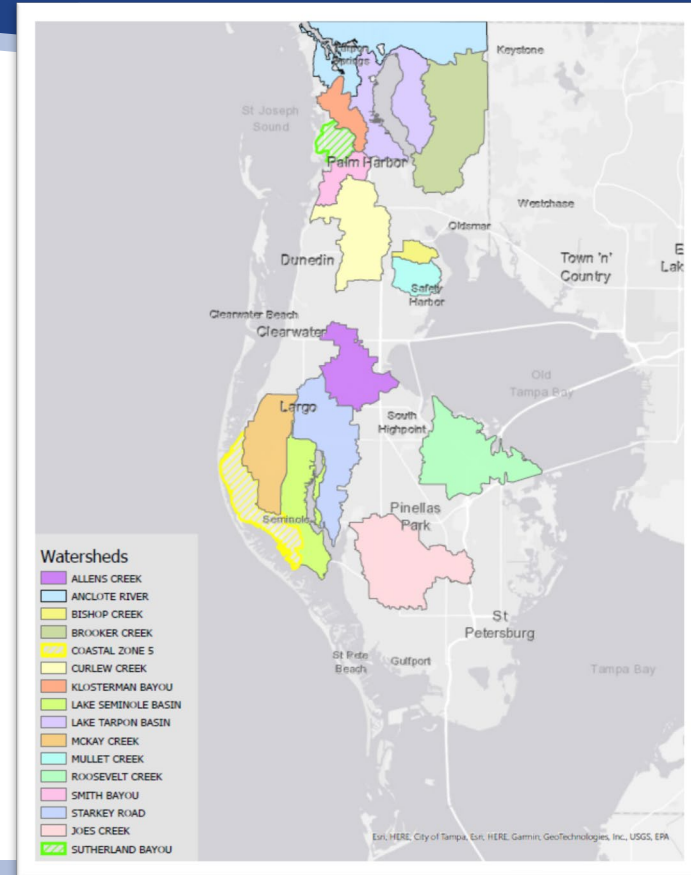
Stormwater  
Asset Management Plan  
July 2020



# Watershed Planning

## 14 Watershed plans

- **Modeling**
  - Maintenance focus areas
  - Capital improvements
  - Flood (SLR) forecasting
  - Pollutant loading
  - Development
- **Areas for improvement**
  - Flood control projects
  - Water quality investment



# Floodplain and Stormwater Management



**2013 – CRS Rating of 7**

**2015 – CRS Rating of 5**

**2021 – CRS Rating of 3**



- **Program for Public Information,**
- **Real estate program,**
- **Flood risk evaluation,**
- **Watershed planning,**
- **Flood warning and response,**
- **Repetitive loss area plan,**
- **Floodplain code updates and Stormwater Manual**

# Closed Conveyance Accomplishments



## 2013

- **Corrugated Metal Pipe (CMP)**
  - **Est. Inventory: 24 miles**
  - **Annual Plan: <1 mile**
- **Years to complete: 24**

## Status

- **CMP Inventory: 24.48 miles**
  - **Annual plan 2.4 miles/yr**
  - **14.89 miles completed**
  - **9.59 miles left**
- **Anticipated completion FY25**

# Open Conveyance Accomplishments



## Open Conveyances

- **Channels, ditches, swales**

**2013 Estimated inventory: 322 miles**

**2013 Maintenance cycle: 22.5 yrs**

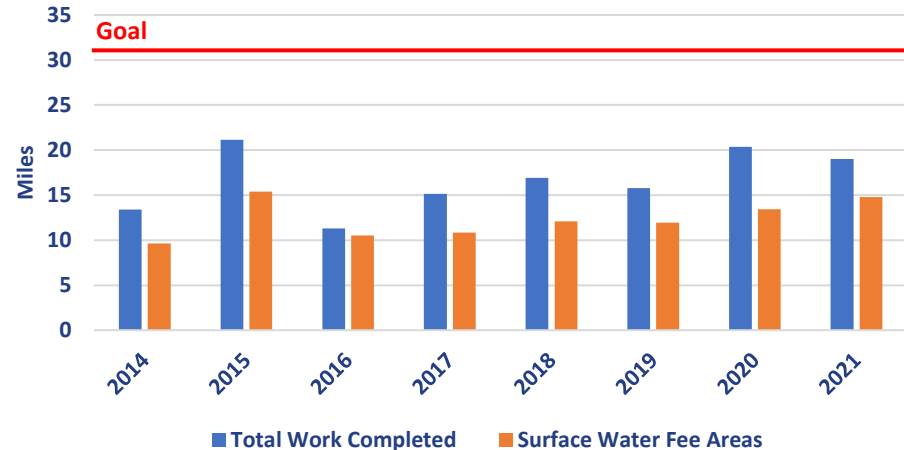
**Approved maintenance cycle: 10 yrs**

**Updated inventory: 308 miles**

**Surface Water Fee area: 227 miles**

**Gap: ~14 miles/year**

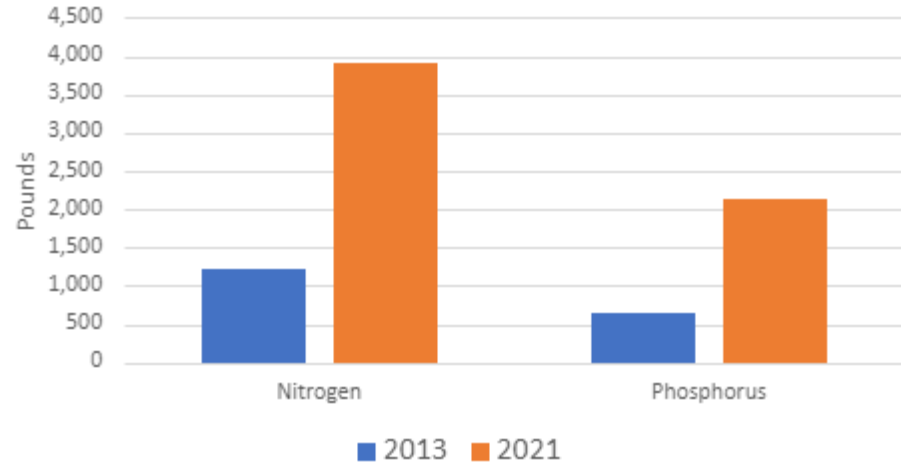
## Open Conveyance Maintenance



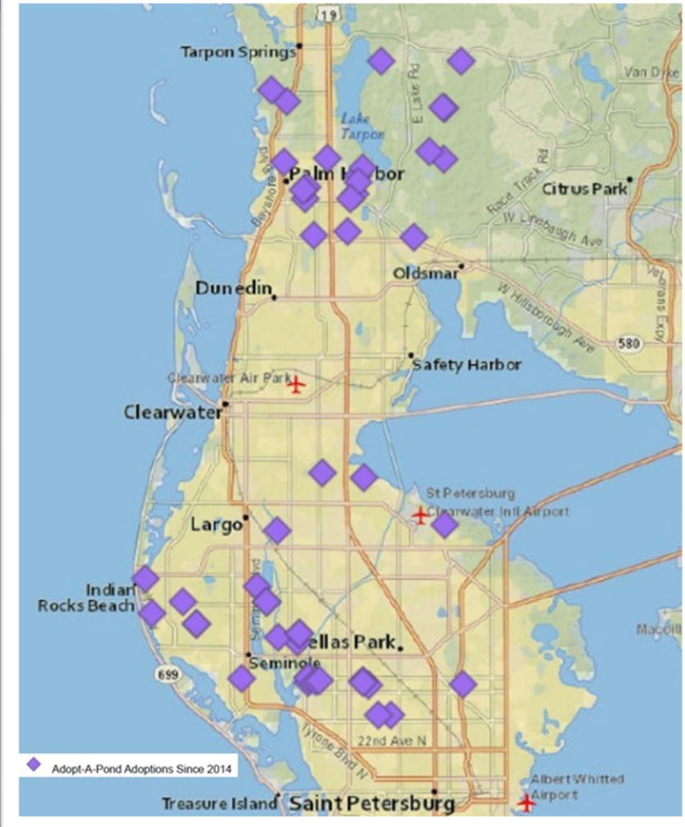
# Street Sweeping Accomplishments



Nutrients Removed Through Street Sweeping



# Adopt-A-Pond and Outreach





# Improving Existing Facilities



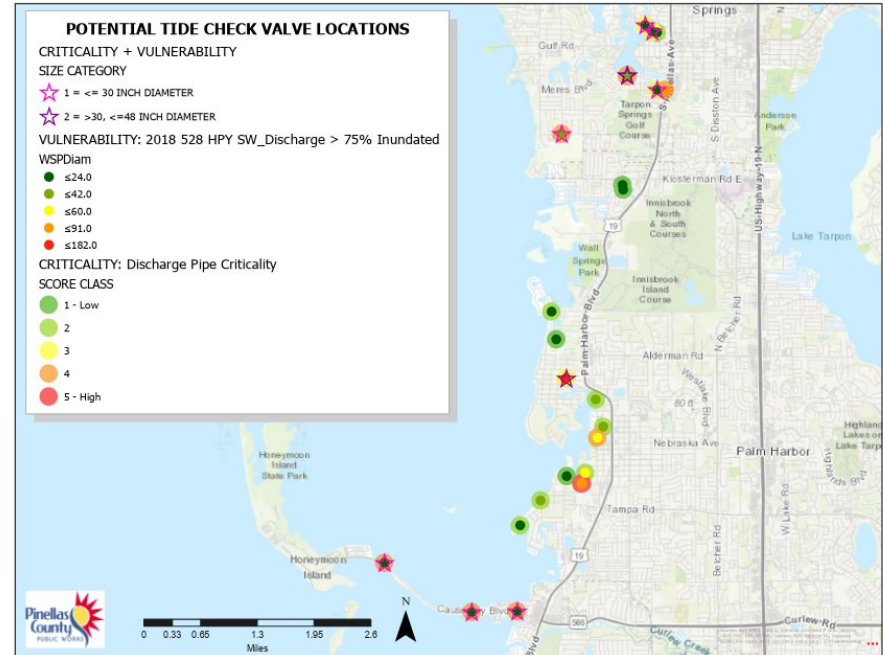
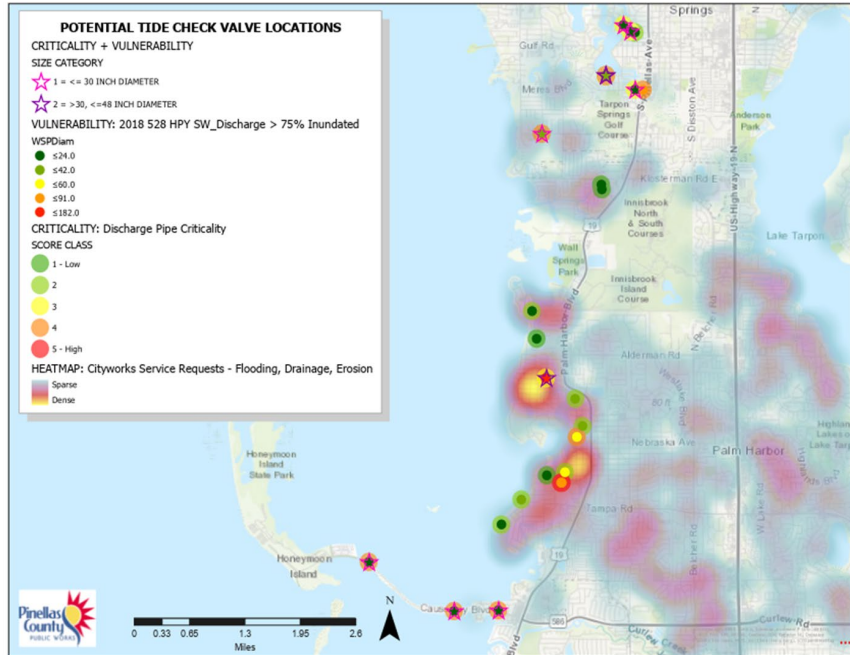
## **Private: site plan compliance**

- **110 ponds restored**

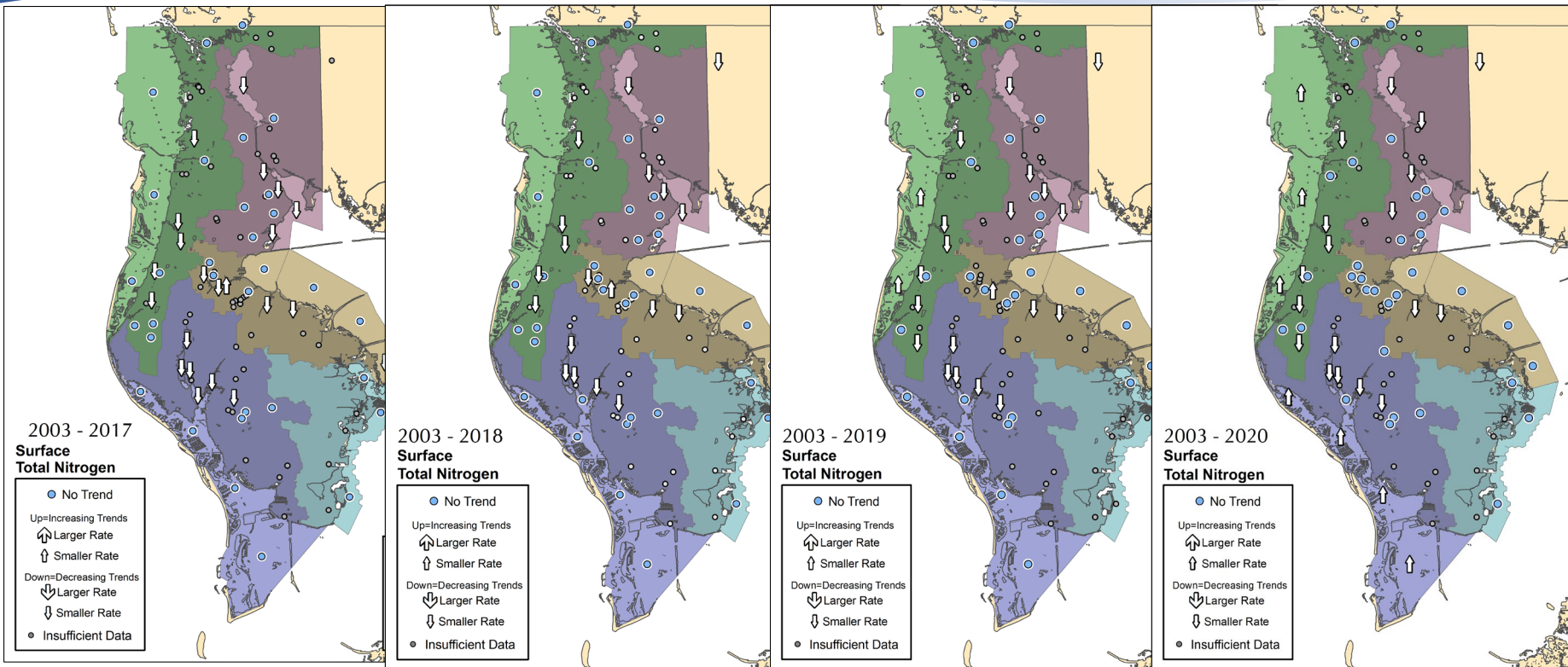
## **Public: Retrofitting existing systems**

- **Roosevelt stormwater improvements**
- **Eagle Lake Park**
- **Sunstar retrofit pilot project**
- **Ibis Lake**
- **Starkey M10 retrofit**

# Resiliency



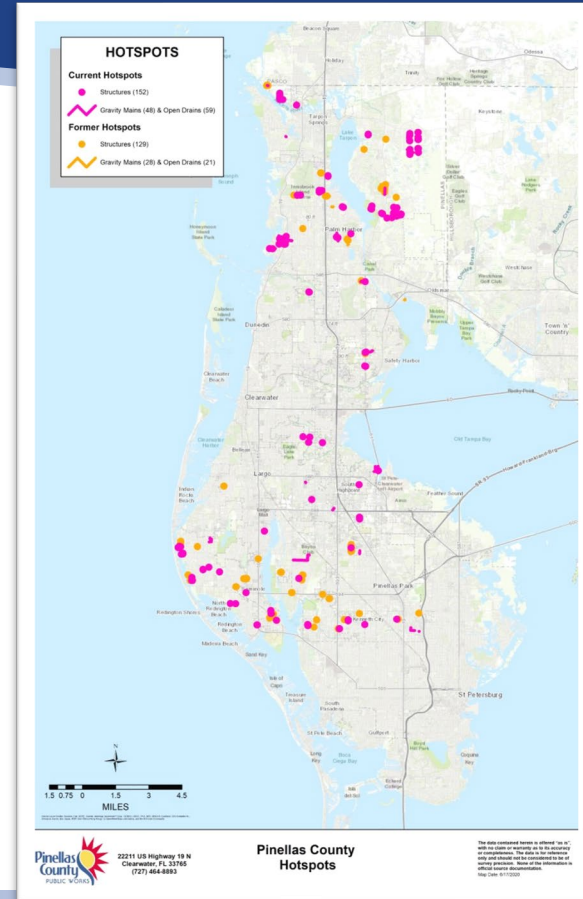
# Water Quality Outcomes



# Flooding Outcomes

## Hot Spots: known flooding areas

- County staff inspect and clear in advance of significant storms
- Before: 415 locations
- After: 259 locations
- Reduction in response and staff time
- Next Steps: additional locations prioritized for operational improvements.



# Next steps



## **Surface Water Utility Governance Study update (In Progress)**

- **Gap analysis**
- **Reevaluating program level of service**
- **Major drainage opportunities**
- **Recommendations for program improvements**
  - Open conveyance program

## **Developing and Refining Watershed Plans and recommendations**

- **New: Sutherland Bayou and Coastal Zone 5**
- **Refinement: McKay Creek, Starkey, and Curlew Creek – Smith Bayou**
- **Rank and recommend projects for implementation**
  - Operational improvements or capital investments

# Next steps

## Reassessing Stormwater Level of Service

- **The 25-year storm design standard shall confine the runoff from a 25-year, 24-hour rainfall event within drainage channel banks, or within designated 25-year floodplains, in order to protect human life and minimize property damage.**
- **The 100-year storm design standard shall protect homes and commercial buildings against flooding by a 100-year, 24-hour rainfall event.**

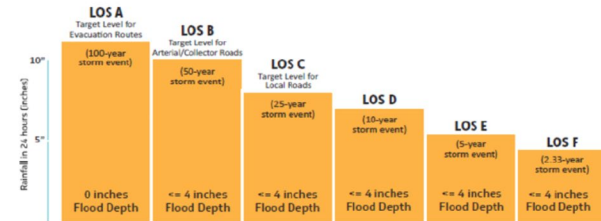


# Next steps

## Reassessing Stormwater Level of Service



### Stormwater Roadway Level of Service (LOS)



First responders and fire trucks can drive through water no more than 4 inches deep.

# Next Steps

## Evaluate areas for process improvements

- Hot spot improvements
- Open conveyances

## Review outcomes from the Governance Study update

- Major drainage
- Gap analysis opportunities

Continuous improvement process



# Questions