

# TRES PALACIOS WATERSHED PROTECTION PLAN

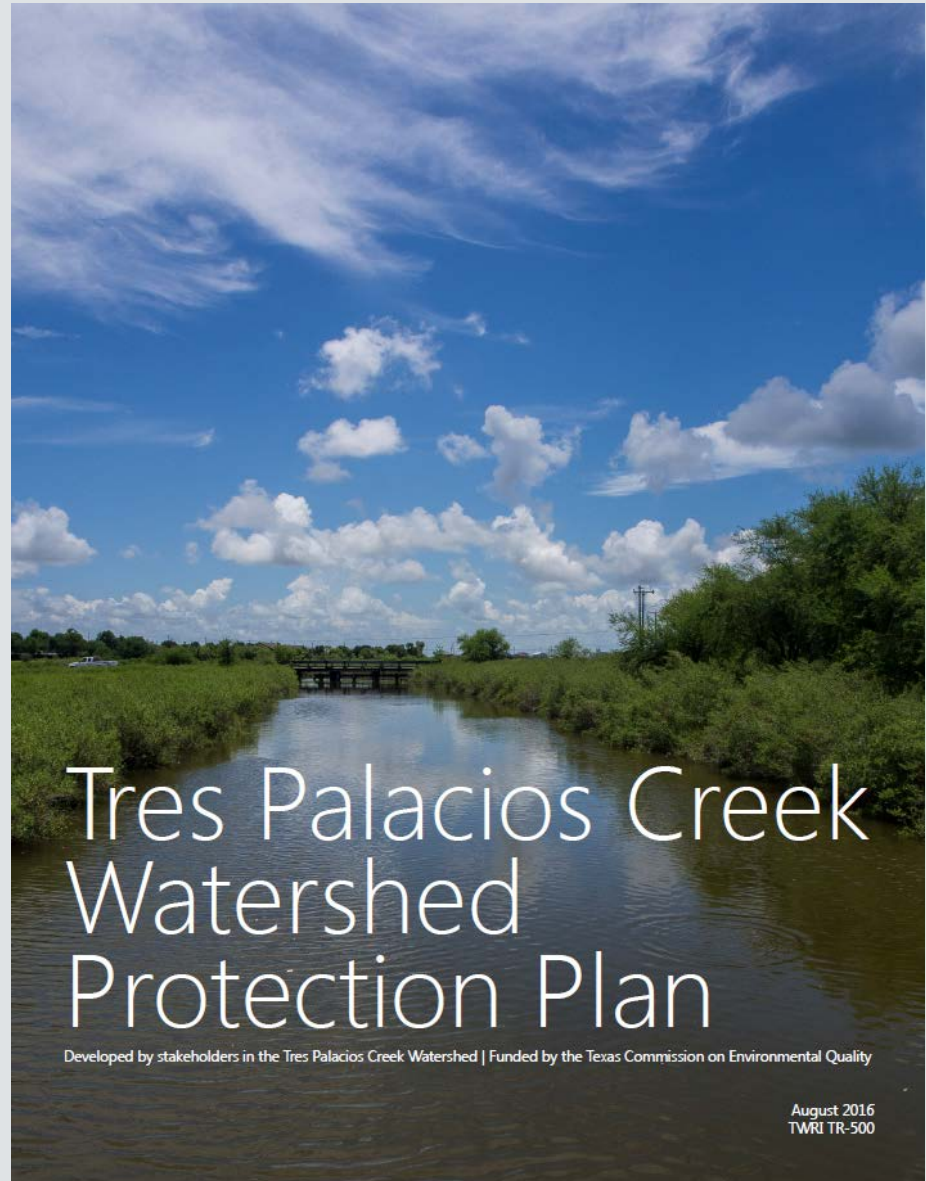
*Michael Schramm – Texas Water Resources Institute  
June 21, 2018*



# Tres Palacios

## Watershed Protection Plan

- Developed in coordination with Tres Palacios bacteria TMDL and TMDL I-Plan
- TIAER provided water quality modeling used in both documents
- Heavy focus on bacteria nonpoint source reductions



# Tres Palacios Creek Watershed Protection Plan

Developed by stakeholders in the Tres Palacios Creek Watershed | Funded by the Texas Commission on Environmental Quality

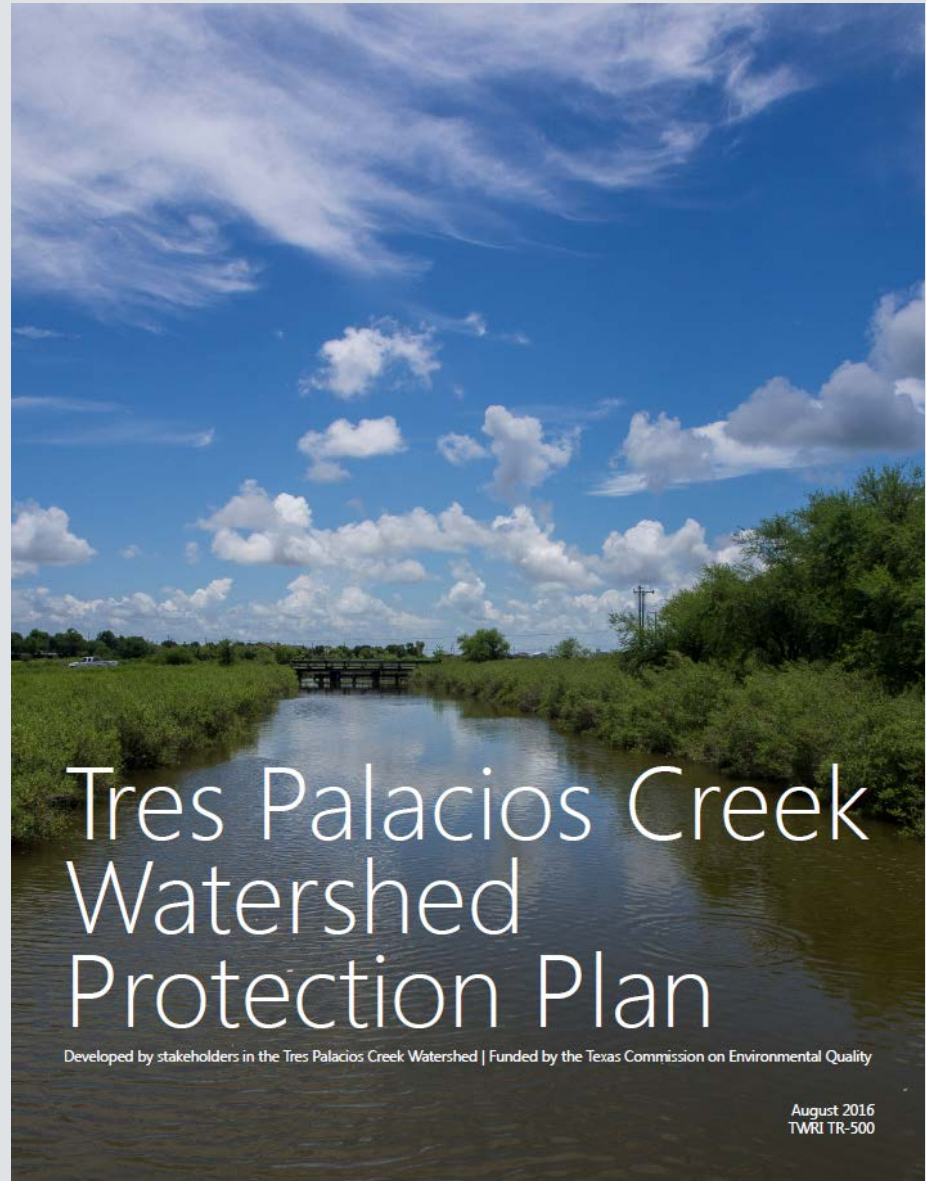
August 2016  
TWRI TR-500



# Tres Palacios

## Watershed Protection Plan

- Submitted to TCEQ summer of 2016
- Submitted to EPA January 2017
- Summer 2017 – EPA requests revisions
- May 2018 – EPA accepts!



# Tres Palacios Creek Watershed Protection Plan

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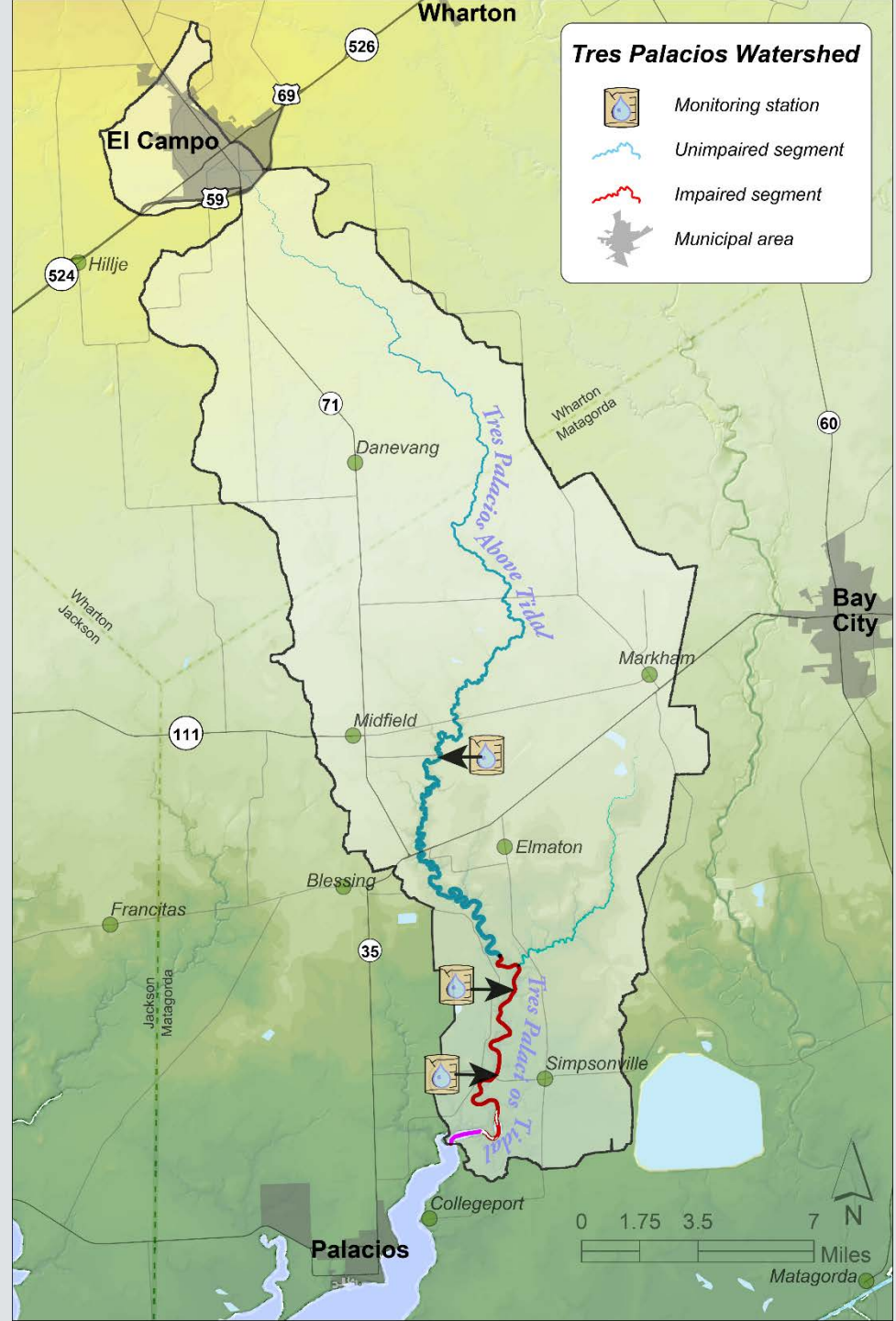
August 2016  
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# Tres Palacios

## Watershed Protection Plan

- Segments –
  - Tres Palacios Creek Tidal (1505\_01)
  - Tres Palacios Creek Above Tidal (1505\_02)
  - Wilson's Creek
- Approximately 268 sq miles
- 81% cropland (52%) or pasture (29%)
- Approximately 5% developed
- Permitted wastewater outfalls –
  - City of El Campo 2.62 MGD
  - Markham MUD 0.3 MGD
  - Midfield 0.03 MGD



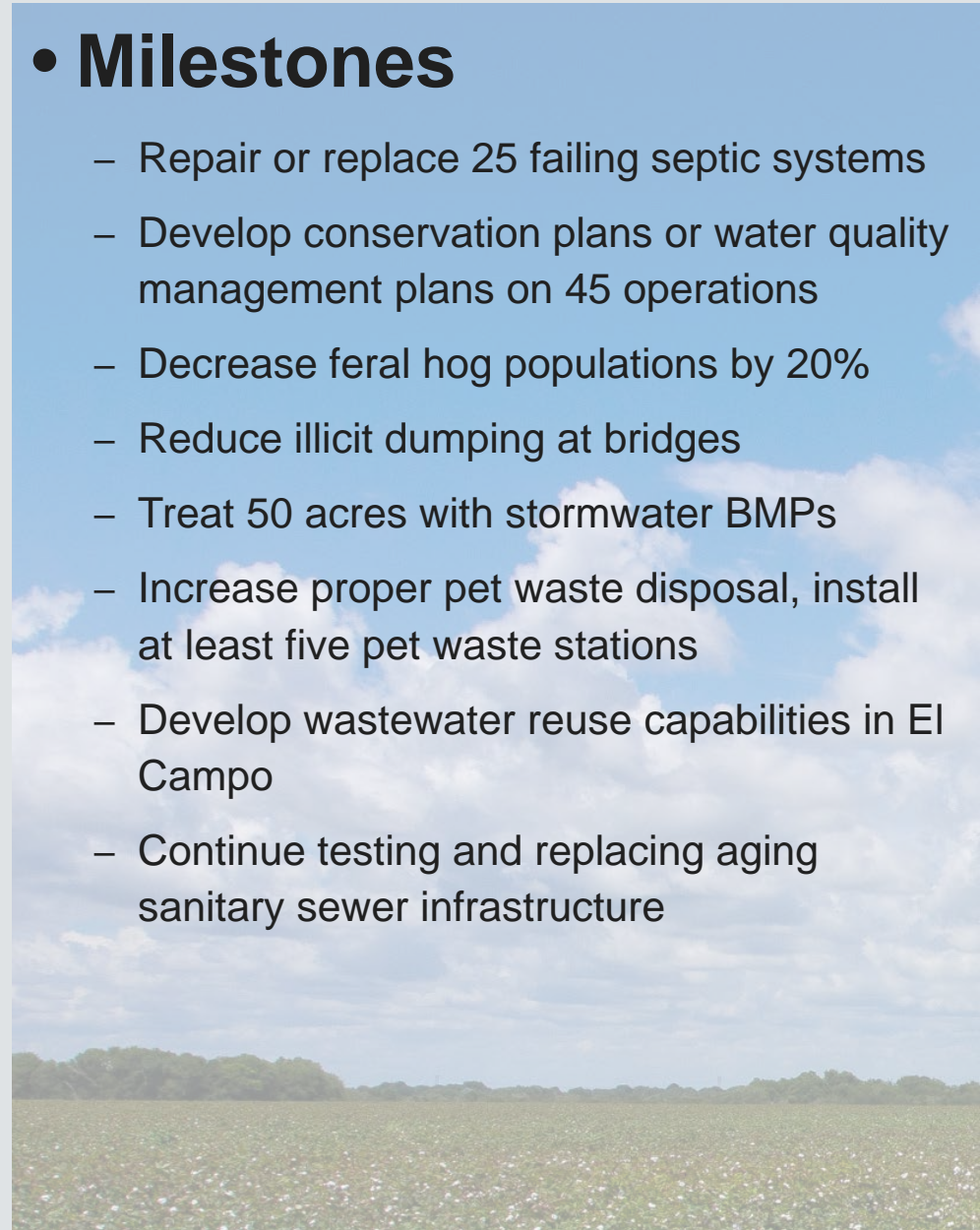


# Tres Palacios

## Watershed Protection Plan

### • Milestones

- Repair or replace 25 failing septic systems
- Develop conservation plans or water quality management plans on 45 operations
- Decrease feral hog populations by 20%
- Reduce illicit dumping at bridges
- Treat 50 acres with stormwater BMPs
- Increase proper pet waste disposal, install at least five pet waste stations
- Develop wastewater reuse capabilities in El Campo
- Continue testing and replacing aging sanitary sewer infrastructure





# Tres Palacios

Watershed Protection Plan

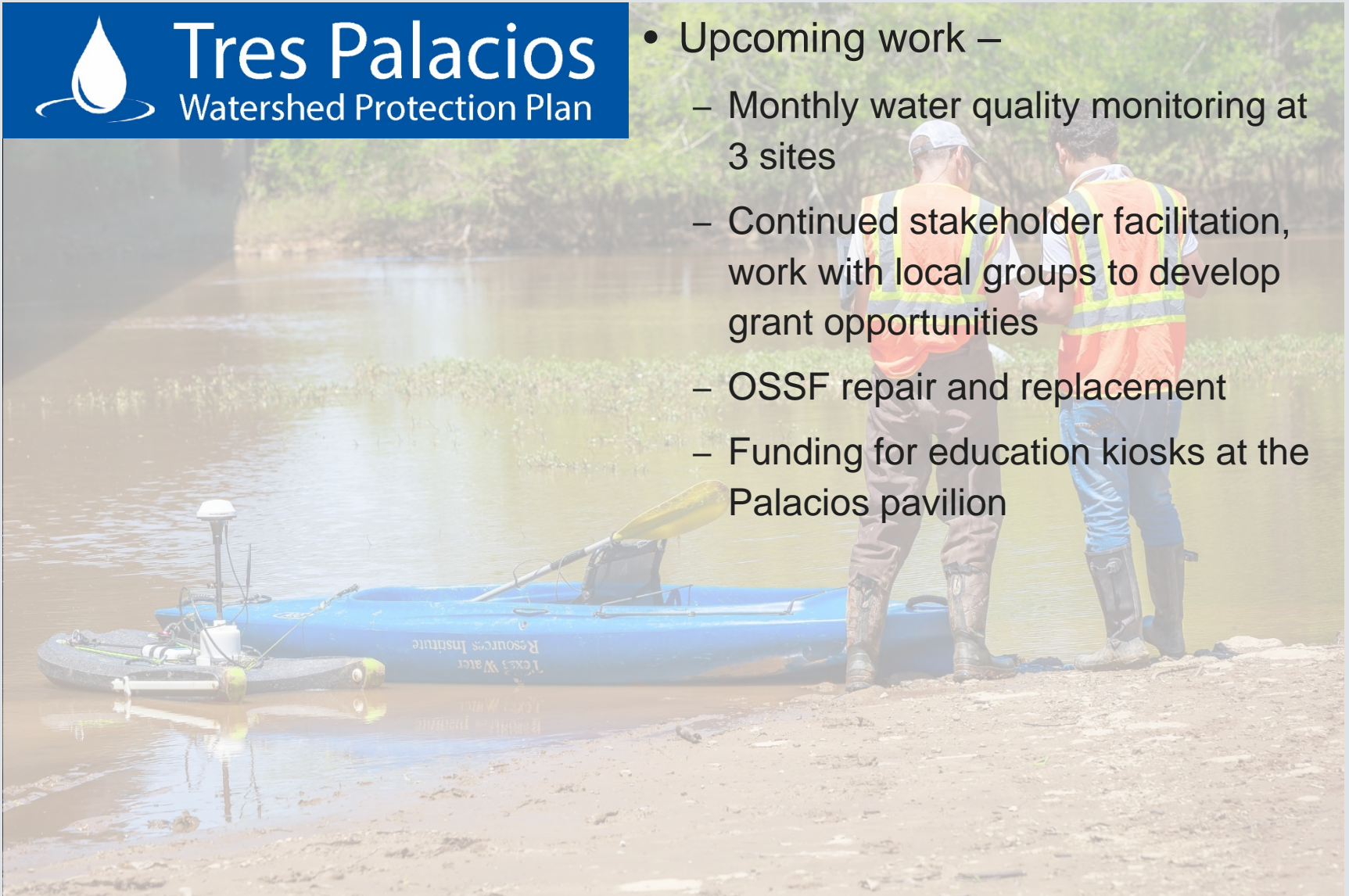
- Working with TGLO to bring education events and CEU opportunities related to water quality to local residents
  - Feb 13<sup>th</sup>: Watershed Stewards Workshop in Palacios
  - May 8<sup>th</sup>: Riparian Workshop at Matagorda County Birding Nature Center
  - TBD: Lone Star Healthy Streams (livestock and feral hogs)
  - TBD: Septic System Education
  - TBD: Feral hog management



# Tres Palacios

## Watershed Protection Plan

- Upcoming work –
  - Monthly water quality monitoring at 3 sites
  - Continued stakeholder facilitation, work with local groups to develop grant opportunities
  - OSSF repair and replacement
  - Funding for education kiosks at the Palacios pavilion



# 2014 Integrated Report: Assessment Results

Dec 2005-Nov 2012

- Segment 1501 – Tres Palacios Creek Tidal
  - Category 5b:
    - Dissolved oxygen grab minimum
    - Dissolved oxygen 24-hr average\*
    - Dissolved oxygen 24-hr minimum\*
  - Category 5c:
    - Enterococcus bacteria
  - Concerns:
    - Dissolved oxygen grab screening level
    - Chlorophyll-a
- Segment 1502 – Tres Palacios Creek Above Tidal
  - Concerns:
    - Chlorophyll-a
    - Dissolved oxygen grab screening level\*

\* Listings carried forward from previous assessments due to inadequate data

# 2016 DRAFT Integrated Report: Assessment Results

Dec 2007-Nov 2014

- Segment 1501 – Tres Palacios Creek Tidal
  - Category 5b:
    - Dissolved oxygen 24-hr average\*
    - Dissolved oxygen 24-hr minimum\*
  - Category 5c:
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  - Concerns:
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- Segment 1502 – Tres Palacios Creek Above Tidal
  - Concerns:
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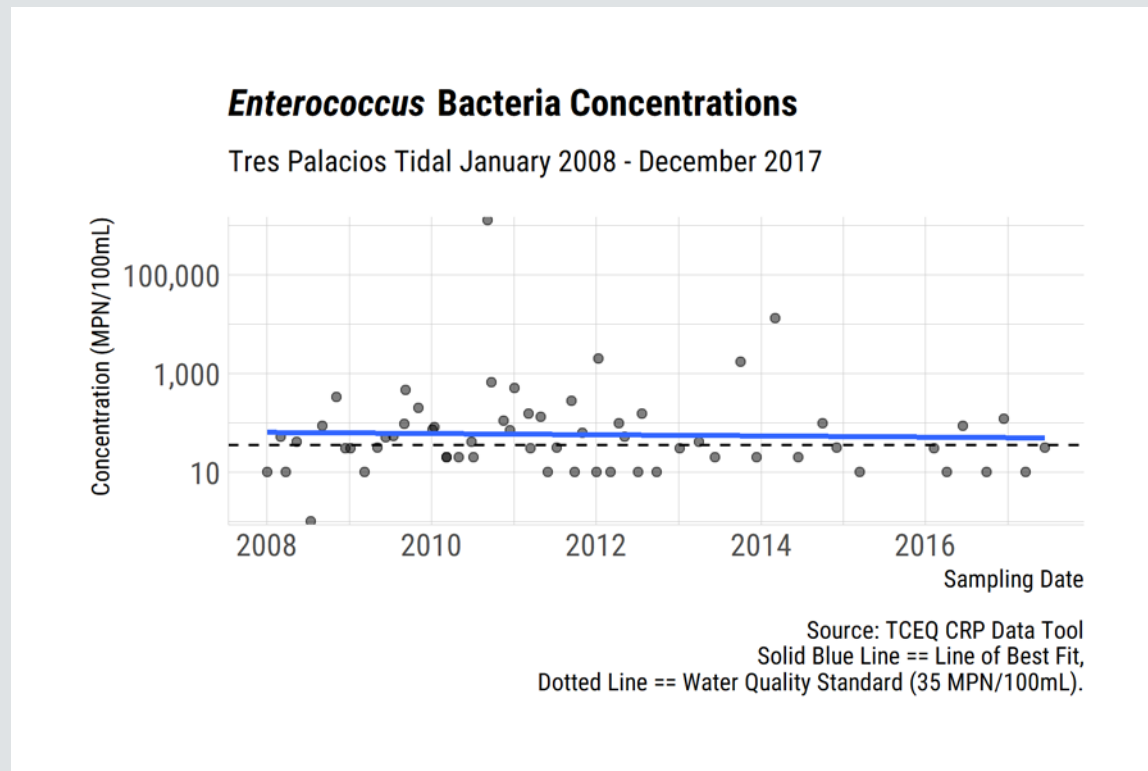
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# Some Comparisons

| Tres Palacios Tidal | Bacteria (Enterococcus) | Dissolved Oxygen (24-hr) | Chlorophyll-a                          |
|---------------------|-------------------------|--------------------------|--|
| 2014 Report         | 67.19 MPN/100mL         | No new data              | 30 exceedances out of 65 samples (46%) |
| 2016 Report         | 60.69 MPN/100mL         | No new data              | 27 exceedances out of 54 samples (50%) |

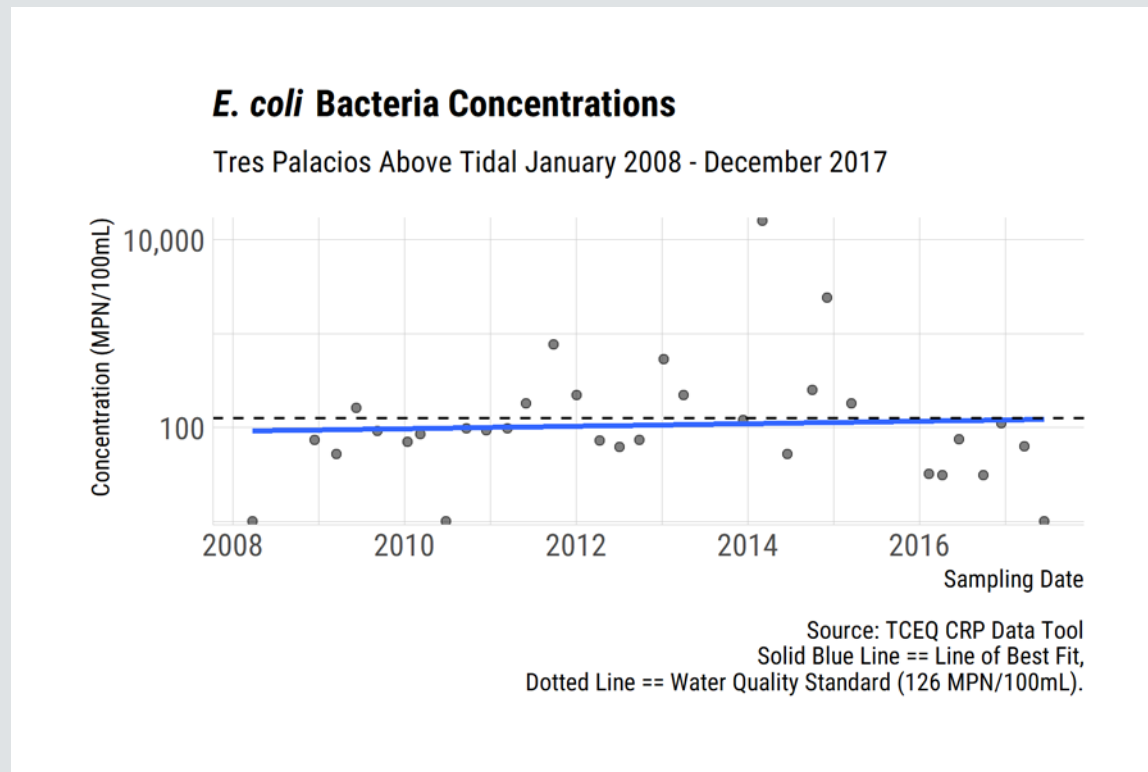
| Tres Palacios Above Tidal | Bacteria (E. coli) | Dissolved Oxygen (grab) | Chlorophyll-a                          |
|---------------------------|--------------------|-------------------------|--|
| 2014 Report               | 73.22 MPN/100mL    | No exceedances          | 13 exceedances out of 25 samples (52%) |
| 2016 Report               | 120.41 MPN/100mL   | No exceedances          | 15 exceedances out of 25 samples (60%) |

# Recent Trends



1. No statistically significant increase or decrease in bacteria
2. *Enterococcus* remains above the water quality standard in the tidal segment
3. *E. coli* is approaching the standard in the above tidal segment

# Recent Trends



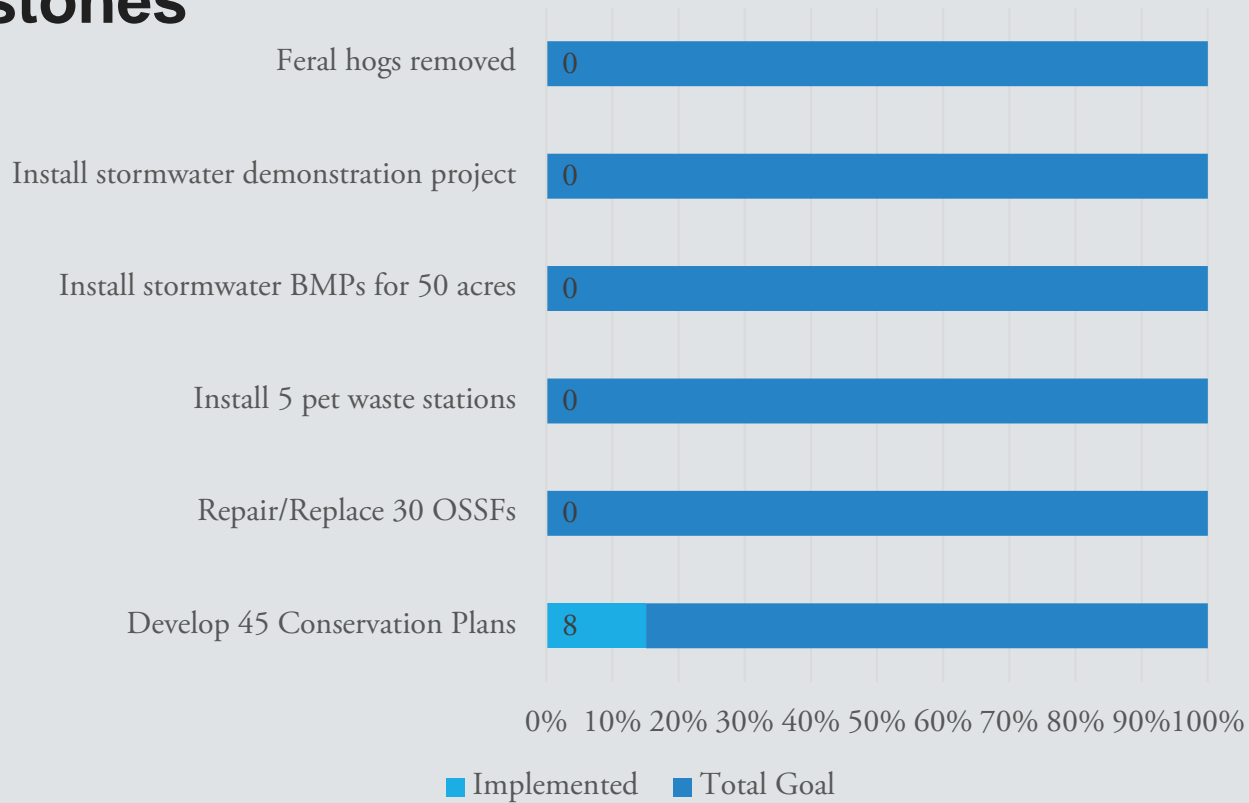
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# Tres Palacios

Watershed Protection Plan

## Progress toward milestones





# Tres Palacios

Watershed Protection Plan

## Conservation Plans

- In 2016 –
  - 39 active conservation plans with financial assistance
- Through May 2018
  - 47 active conservation plans with financial assistance
  - Additional 37 active plans receiving technical assistance
- Acres covered through May 2018
  - 11,317 acres
- Practices with financial assistance
  - Brush management, pipelines, forage and biomass planting, prescribed grazing, watering facility, fence, and more.





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# Repair/Replace Septic Systems

- Goal to replace 30 failing systems
  - Secured funding for replacement of 15 systems over the next 3 years
  - Project starts this summer in Tres Palacios Oaks and Tidewater Oaks

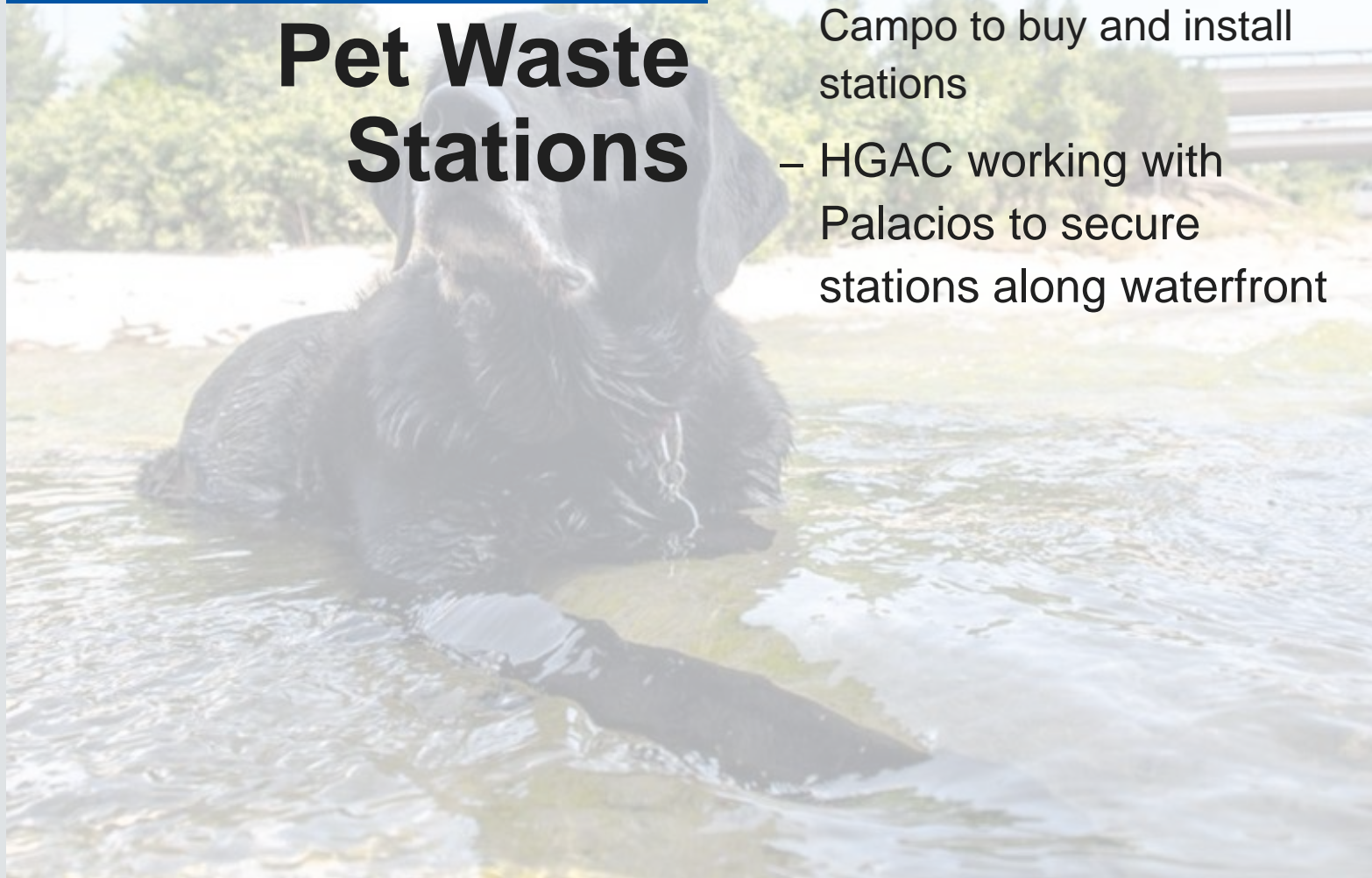




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# Pet Waste Stations

- Goal of 5 stations
  - Submitting grant with El Campo to buy and install stations
  - HGAC working with Palacios to secure stations along waterfront



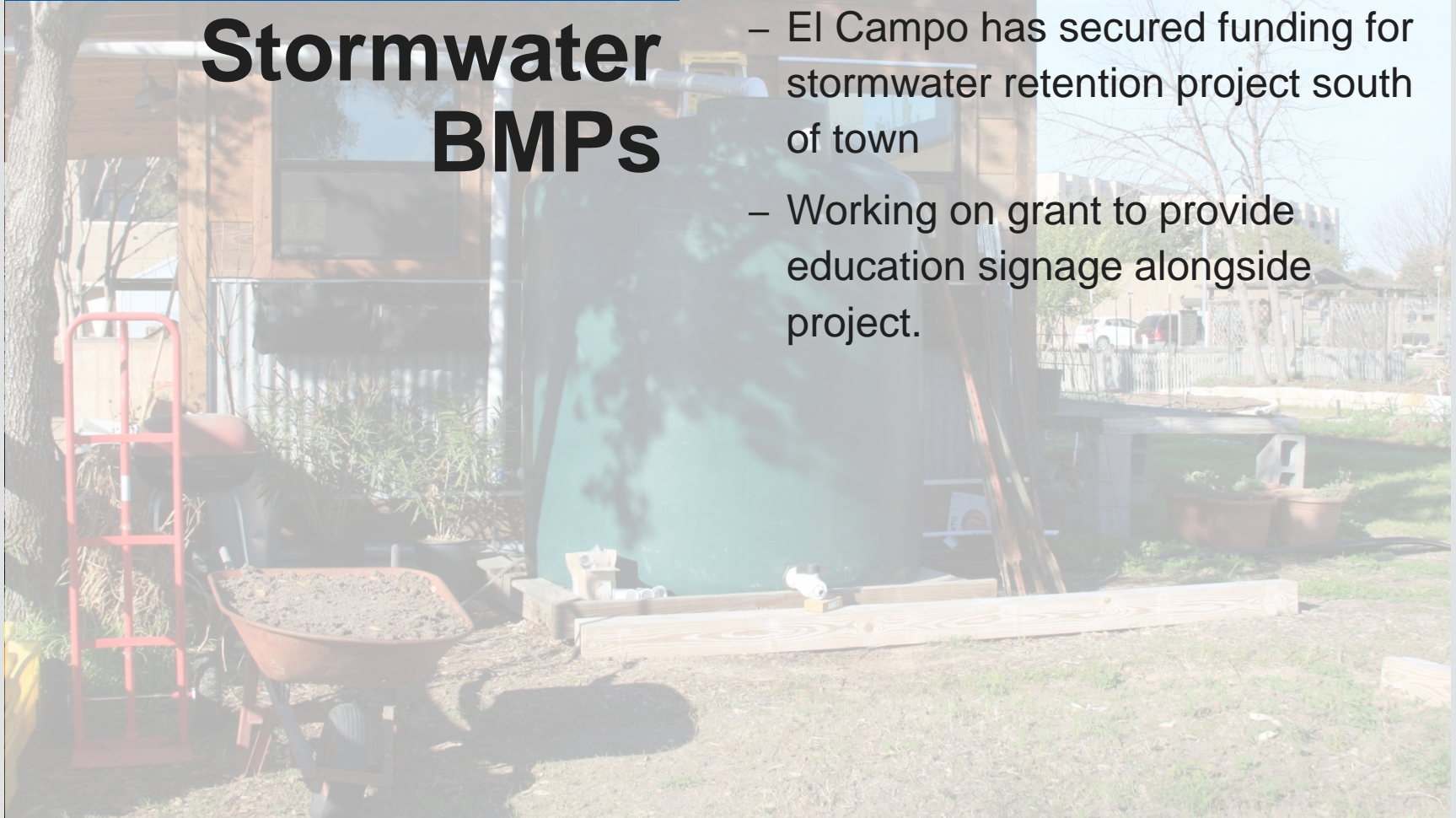


# Tres Palacios

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## Stormwater BMPs

- Goal of capturing runoff from 50 acres of developed land
  - El Campo has secured funding for stormwater retention project south of town
  - Working on grant to provide education signage alongside project.





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- Nothing currently planned

# Stormwater Demonstration Projects





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- 20% population reduction goal
- No tracking setup

# Feral Hogs

