

TRES PALACIOS WATERSHED PROTECTION PLAN

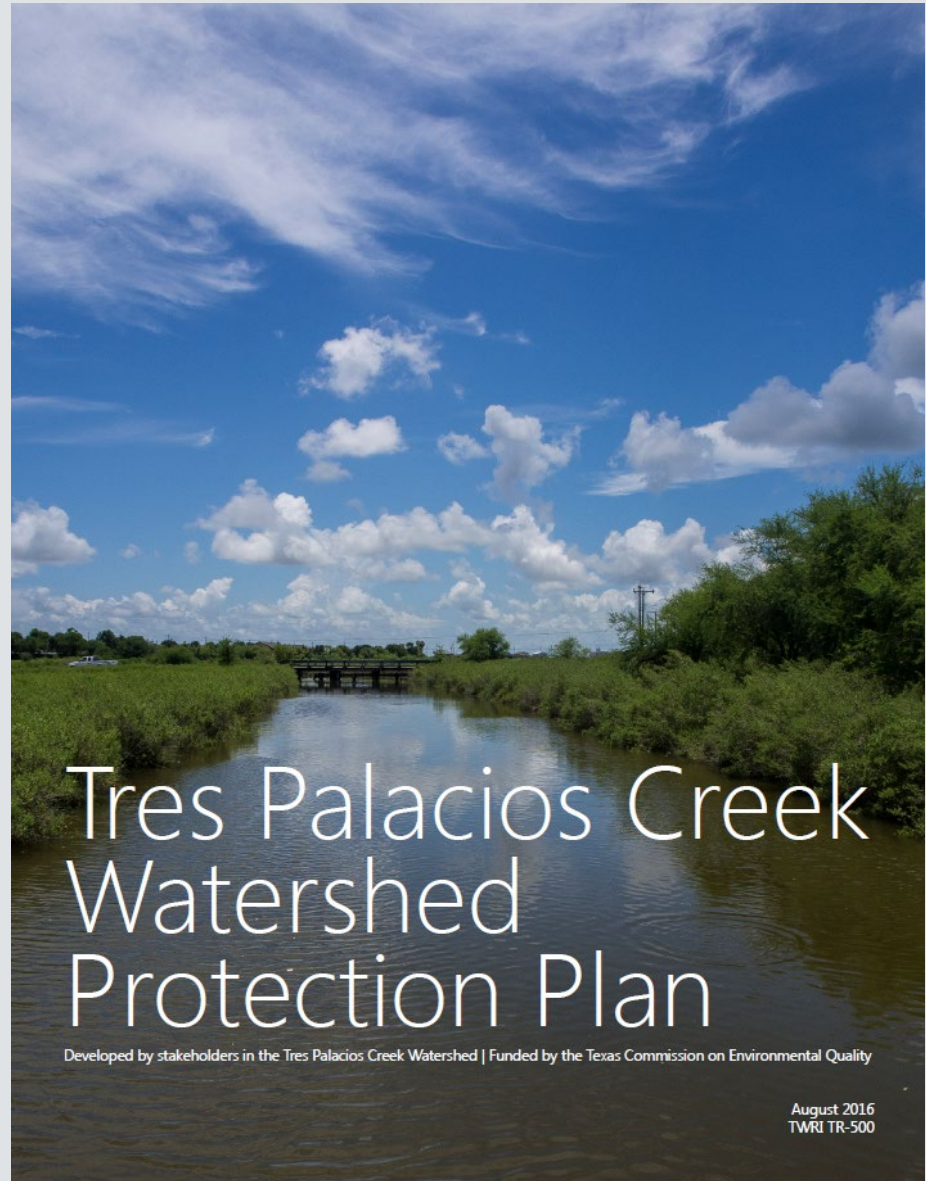
*Michael Schramm – Texas Water Resources Institute
April 10, 2019*



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

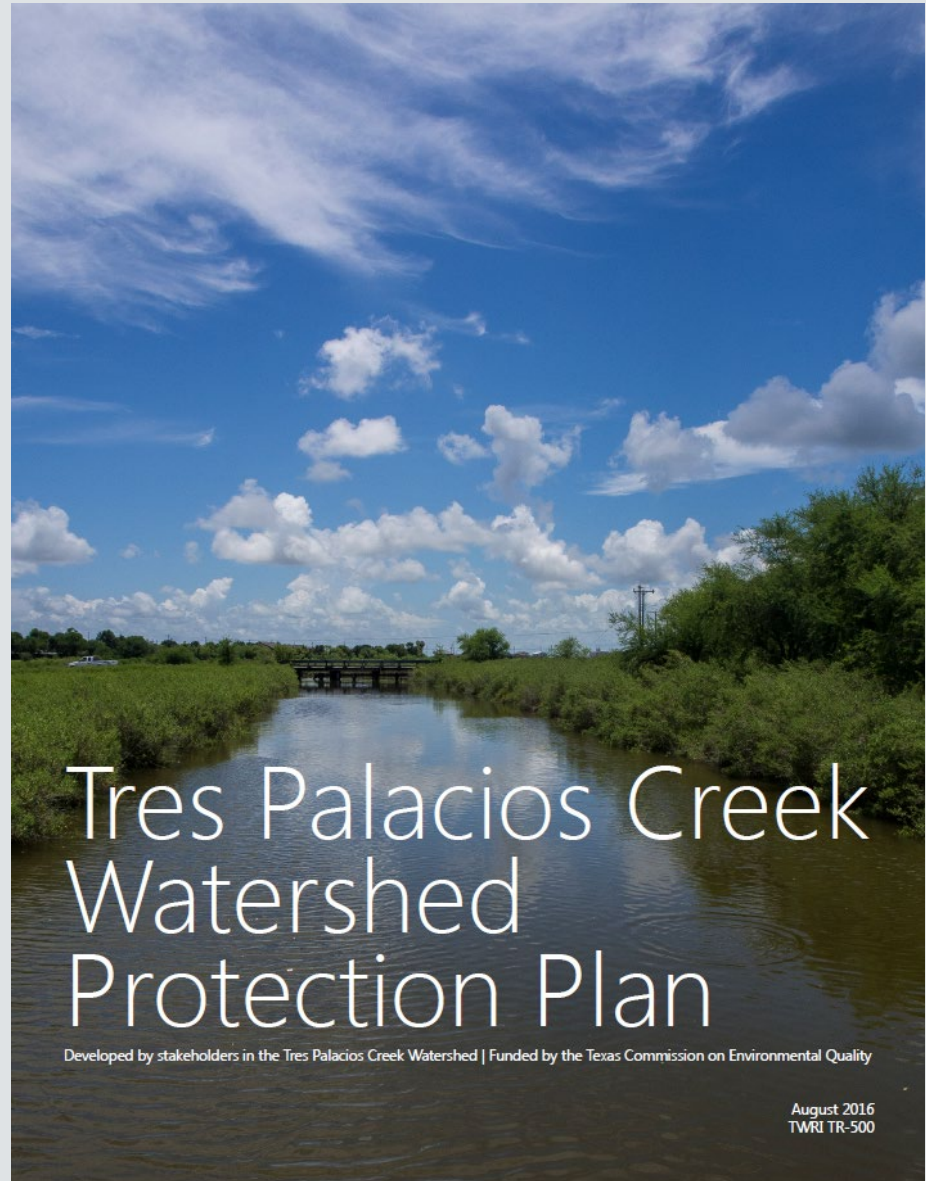
August 2016
TWRI TR-500



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

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

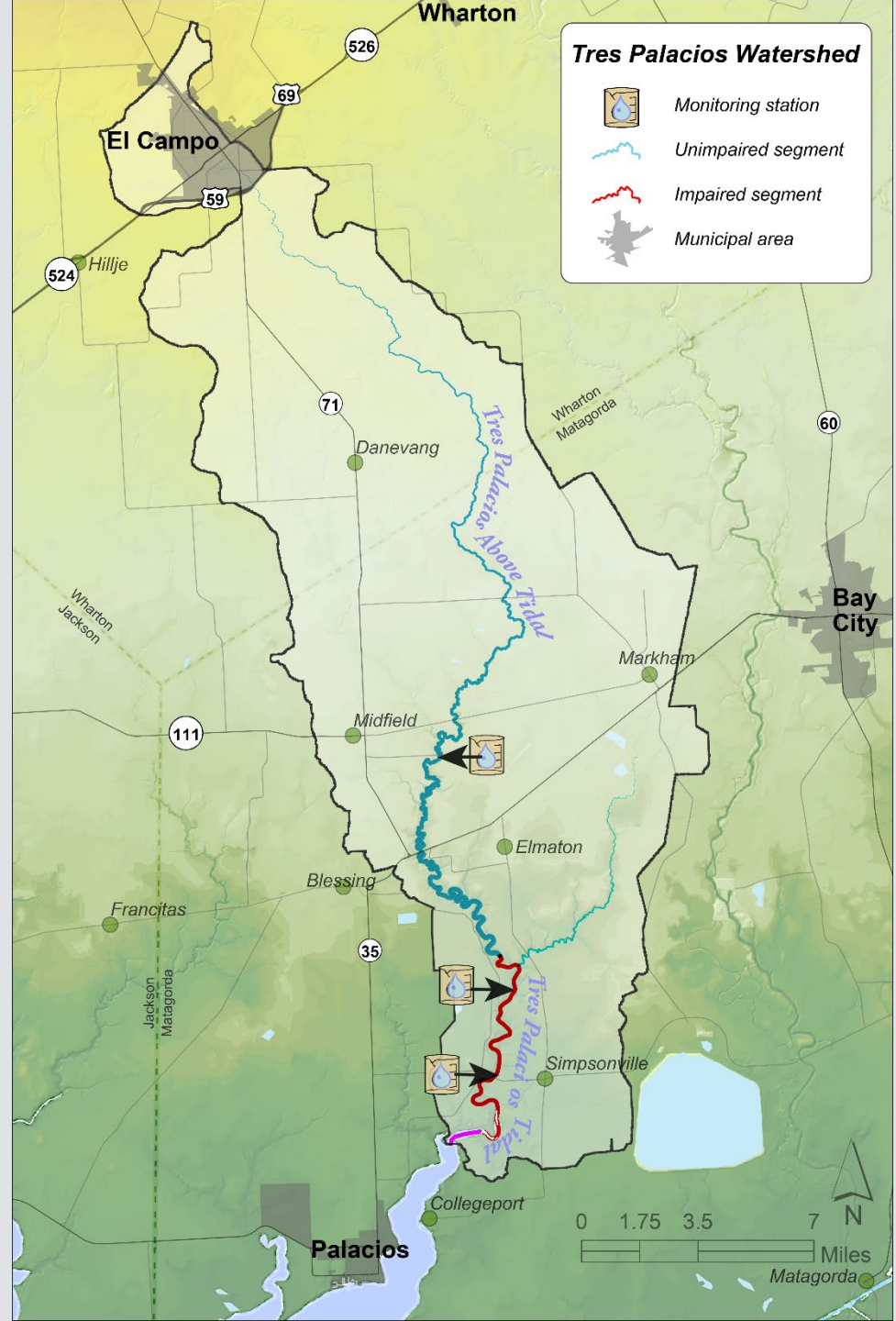
August 2016
TWRI TR-500



Tres Palacios

Watershed Protection Plan

- 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



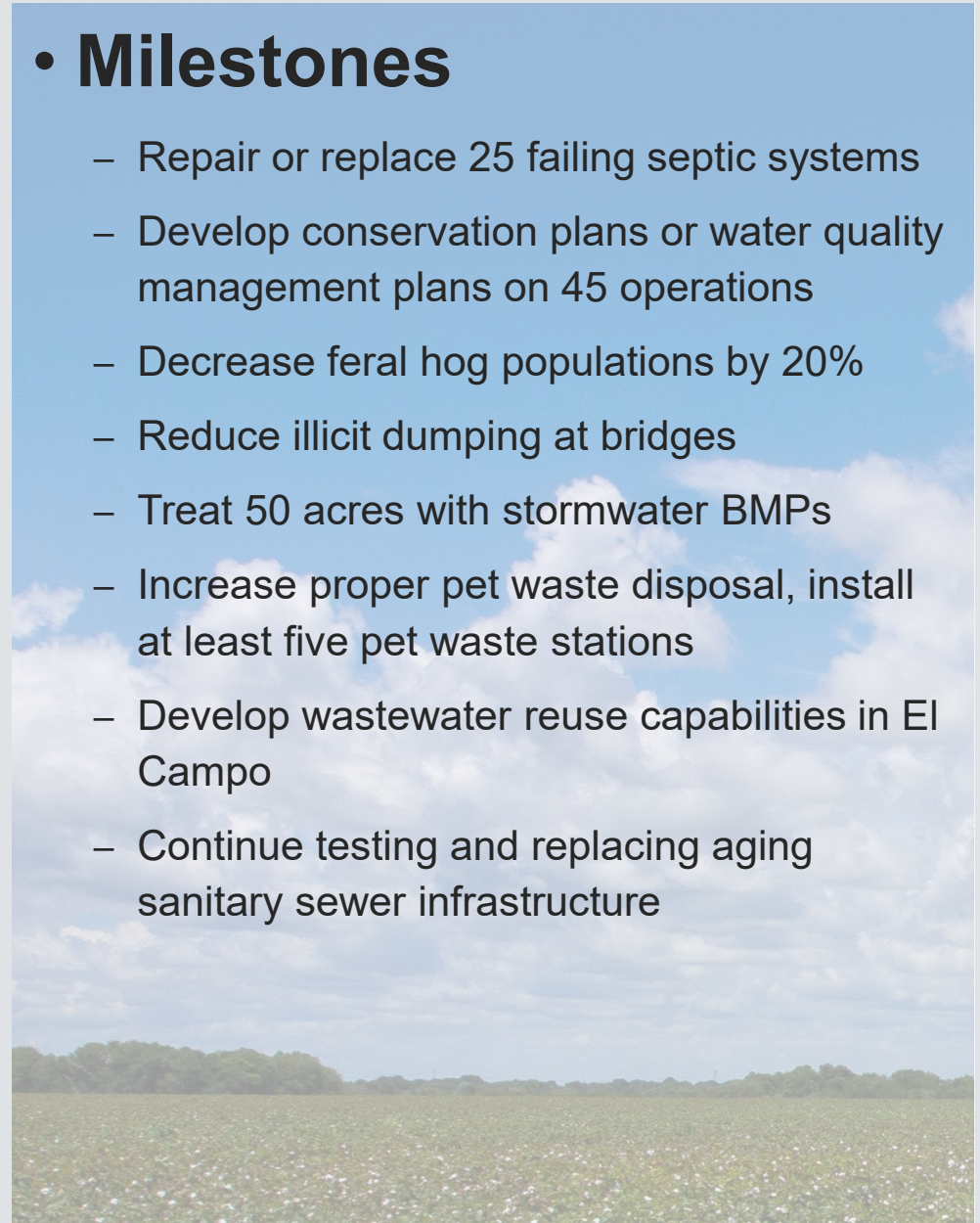


Tres Palacios

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

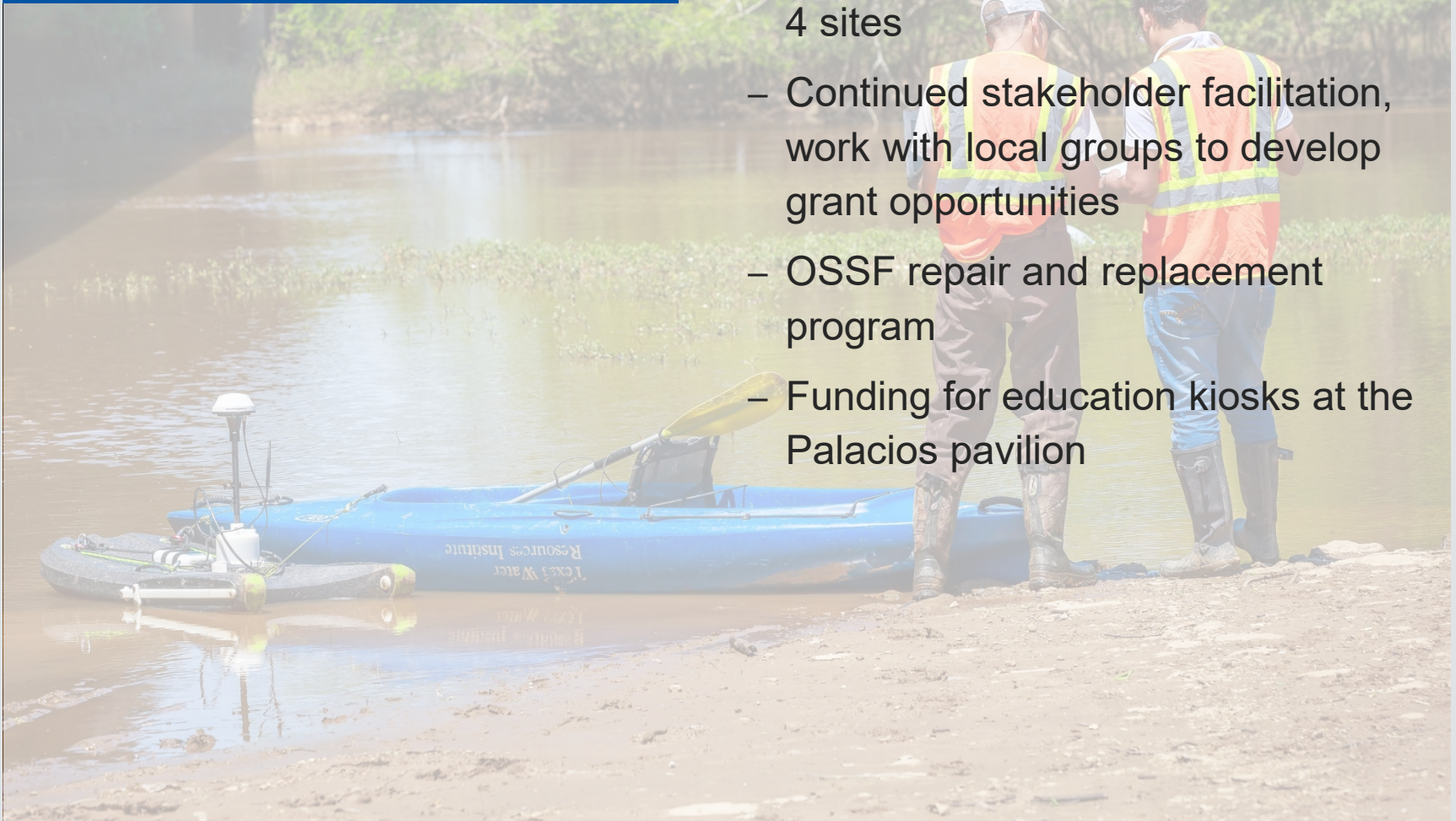
- Working with TGLO to bring education events and CEU opportunities related to water quality to local residents
 - Watershed Stewards Workshop in Palacios- Done on Feb 13, 2018
 - Riparian Workshop at Matagorda County Birding Nature Center- Done on May 8, 2018
 - Septic System Education- Done on Dec. 6, 2018 in Palacios and Dec. 7, 2018 in Bay City
 - Feral hog management- Done on Oct. 23, 2018 in Bay City
- Upcoming Educational Events:
 - TBD: Lone Star Healthy Streams (livestock and feral hogs)
 - TBD: Texas Well Owners Network



Tres Palacios

Watershed Protection Plan

- Upcoming work –
 - Monthly water quality monitoring at 4 sites
 - Continued stakeholder facilitation, work with local groups to develop grant opportunities
 - OSSF repair and replacement program
 - 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:
 - Enterococcus bacteria
 - Concerns:
 - Chlorophyll-a
- Segment 1502 – Tres Palacios Creek Above Tidal
 - Concerns:
 - Chlorophyll-a

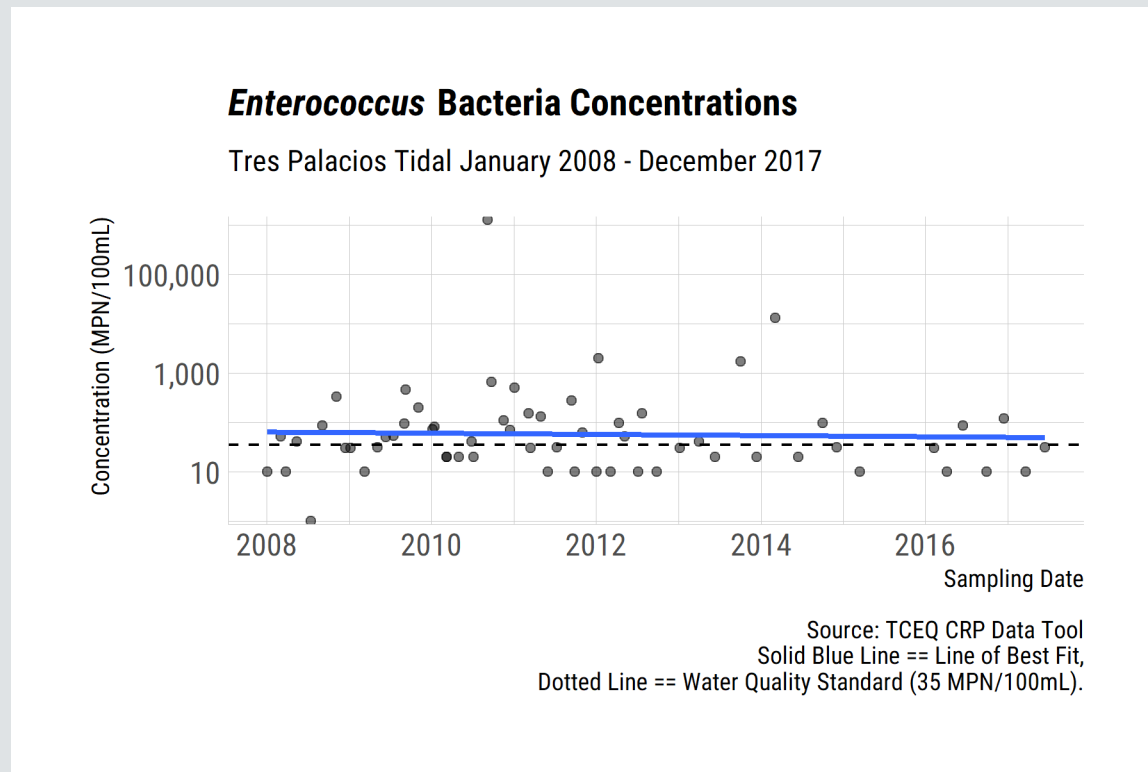
* Listings carried forward from previous assessments due to inadequate data

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%)

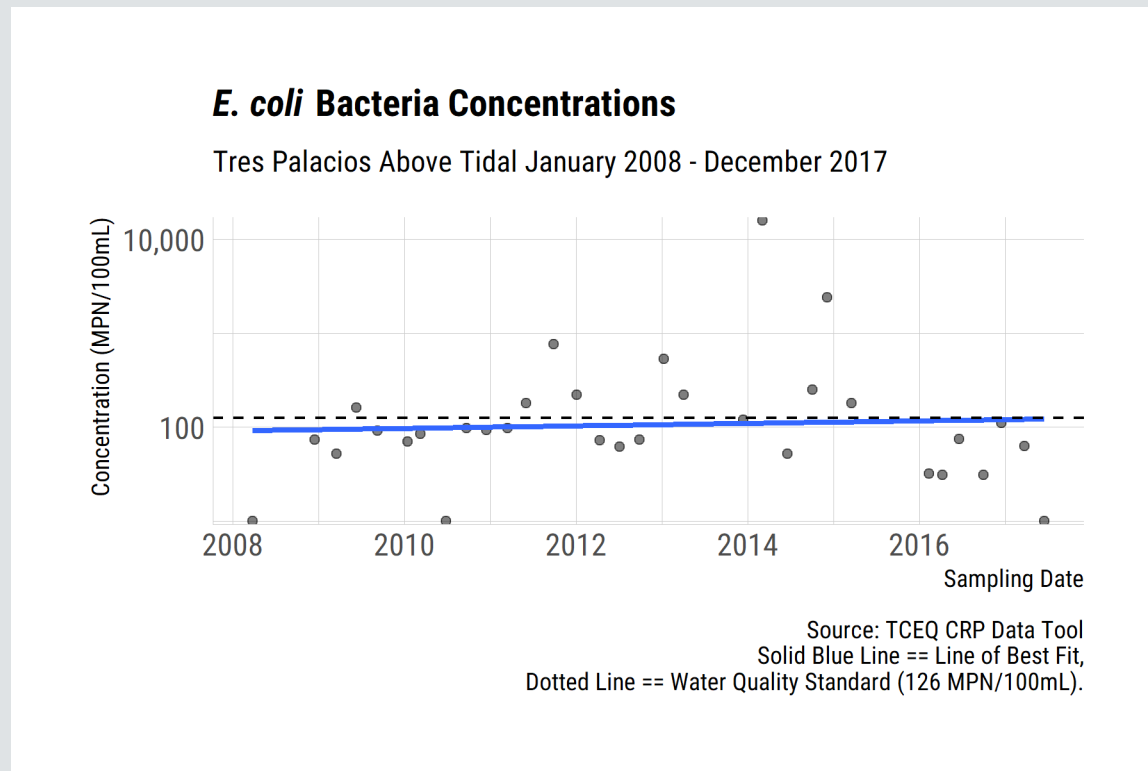
Tres Palacios Above Tidal	Bacteria (E. coli)	Dissolved Oxygen (grab)	Chlorophyll-a
2014 Report	73.22 MPN/100mL	No exceedances	13 exceedances out of 25 samples (52%)
2016 Report	120.41 MPN/100mL	No exceedances	15 exceedances out of 25 samples (60%)

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



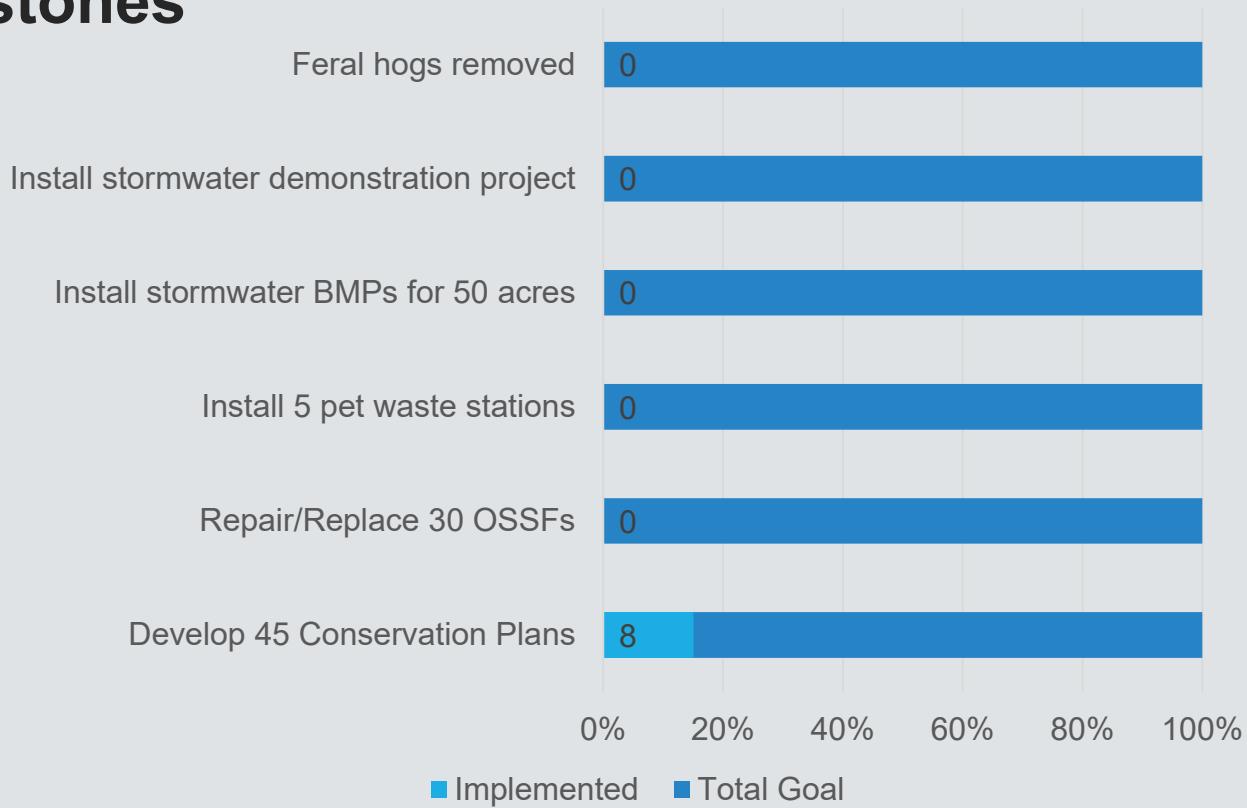
1. No statistically significant increase or decrease in bacteria
2. *Enterococcus* remains above the water quality standard in the tidal segment
3. *E. coli* is approaching the standard in the above tidal segment



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.





Tres Palacios
Watershed Protection Plan

Repair/Replace Septic Systems

- Goal to replace 30 failing systems
 - Secured funding for replacement of 15 systems over the next 3 years
 - Project started this summer in Tres Palacios Oaks and Tidewater Oaks
 - Called for first round of applications in Dec 2018.
 - Closed application in Feb. 2018
 - In process now of running needs-criteria on applicants to determine program participation



Tres Palacios
Watershed Protection Plan

Pet Waste Stations

- Goal of 5 stations
 - Submitting grant with El Campo to buy and install stations
 - Grant was accepted for funding by TCEQ
 - HGAC working with Palacios to secure stations along waterfront



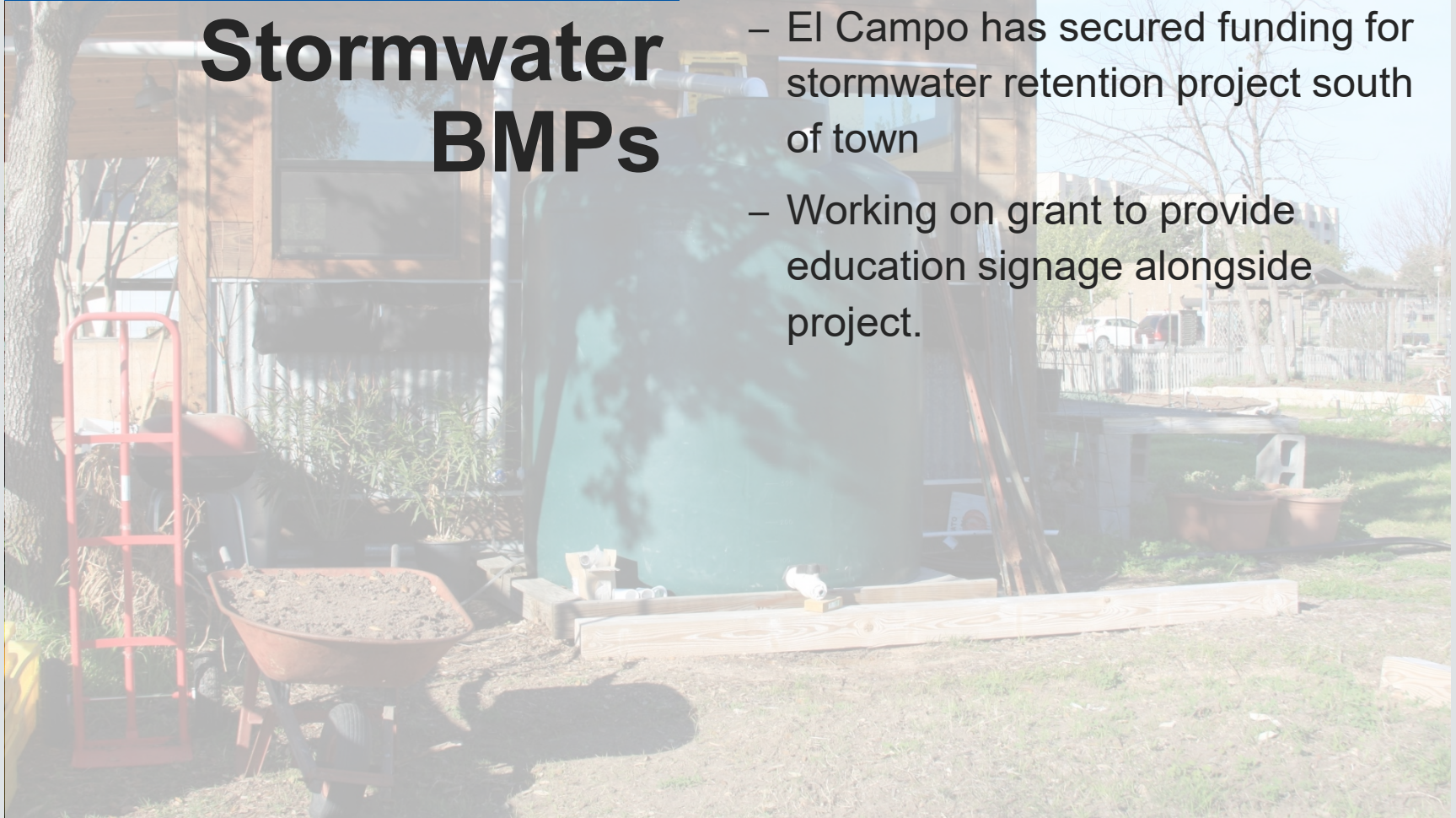


Tres Palacios

Watershed Protection Plan

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.





Tres Palacios
Watershed Protection Plan

- Nothing currently planned

Stormwater Demonstration Projects





Tres Palacios

Watershed Protection Plan

- 20% population reduction goal
- No tracking setup

Feral Hogs

