Bacteria Levels in the Lower Rio Grande

Annual Water Quality Update and Basin Advisory Meeting

Elizabeth Verdecchia, USIBWC Texas Clean Rivers Program

What is the Texas Clean Rivers Program?

Identify & Evaluate Water Quality Issues

- State fee-funded program
- In every river basin in TX
- USIBWC collects water quality in the Rio Grande and Pecos rivers
  - Water quality monitoring
  - Assessment
  - Public Outreach

Provide data so that corrective actions can be prioritized and implemented

Texas Clean Rivers Program History

1991 Texas Clean Rivers Act

1998 TCEQ-USIBWC partnership established

2012 Monitoring sites on the Rio Grande

- USIBWC CRP – 68 sites
- TCEQ – 35 sites
  - 9 duplicate
  - Total 91 stations

What Does CRP do?

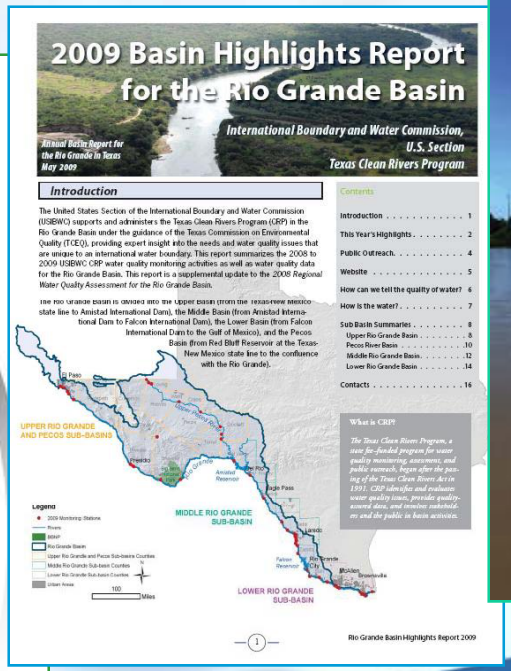
Water Quality Monitoring

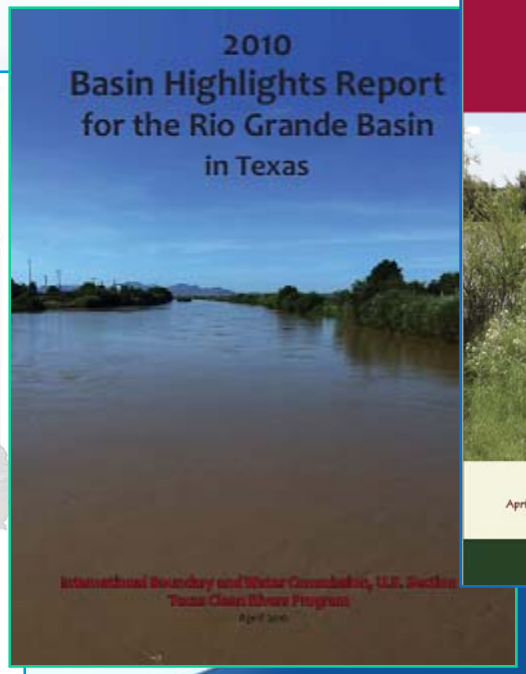
- Routine monitoring
- Special Studies

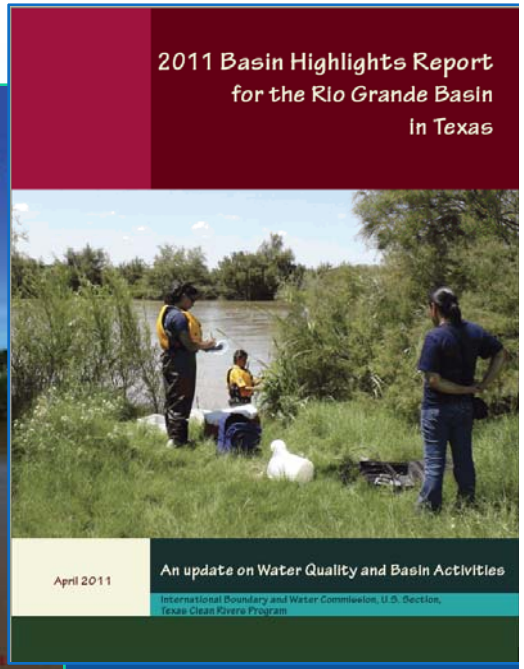
What Does CRP do?

Water Quality Assessment and Publications

- Annual Basin Highlights Report
- 5-year report
- Watershed characterizations

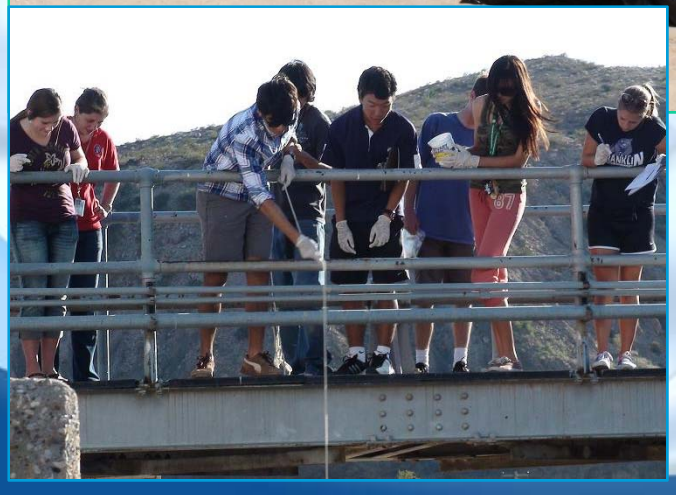






What Does CRP do?

Public Participation, Outreach, & Education



What kind of data does CRP collect?

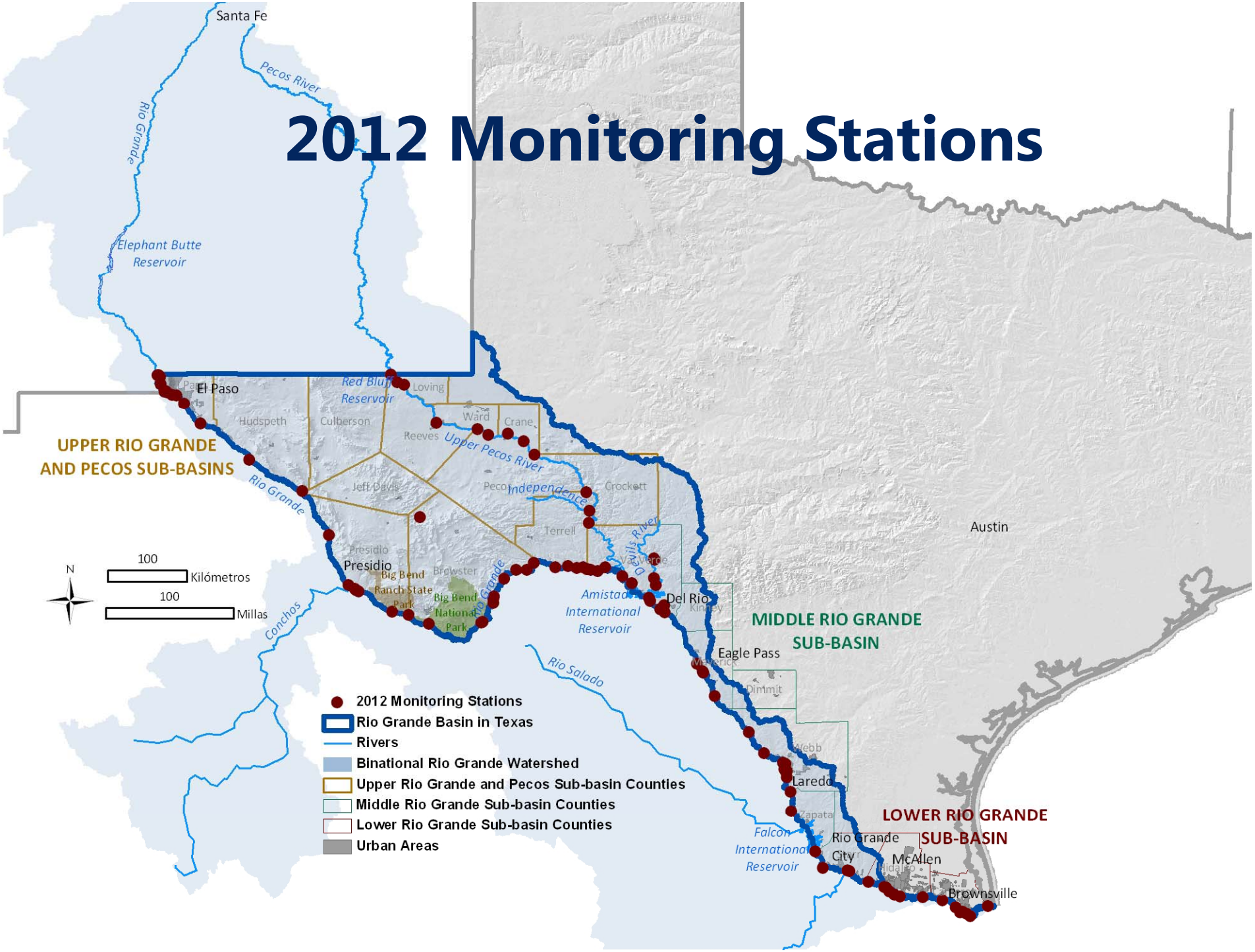
Routine parameters

- Field data (pH, DO, EC, Temp)
- Conventionals (nutrients, salts, BOD)
- Bacteria

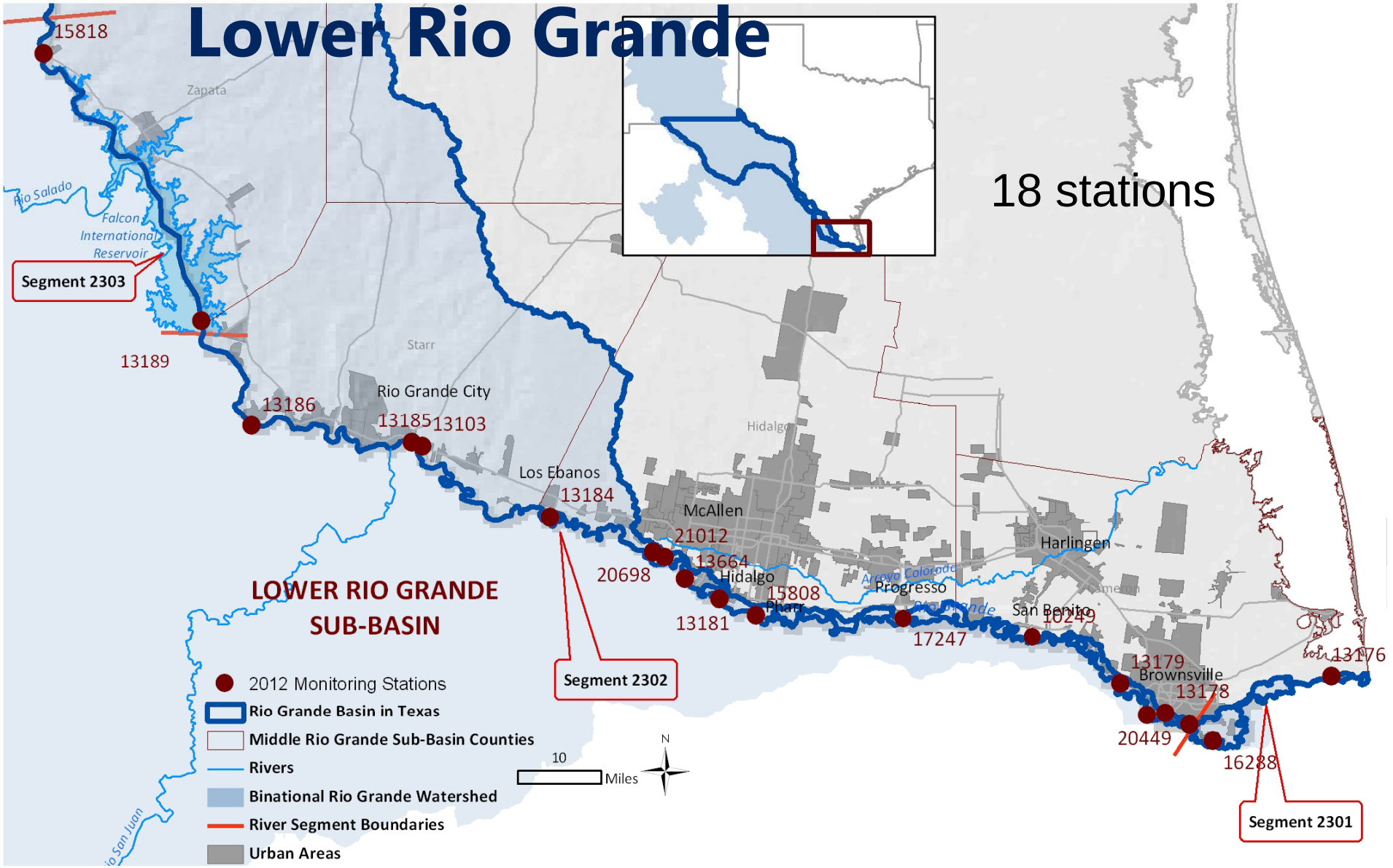
Non-routine

- organics in sediment
- metals
- biological data

2012 Monitoring Stations



2012 Monitoring Stations – Lower Rio Grande



Local Partnerships – Lower RG

Help monitor, collect, and analyze

USIBWC MERCEDES

USIBWC FALCON

SABAL PALM SANCTUARY

UT BROWNSVILLE

US FISH & WILDLIFE

BROWNSVILLE PUB

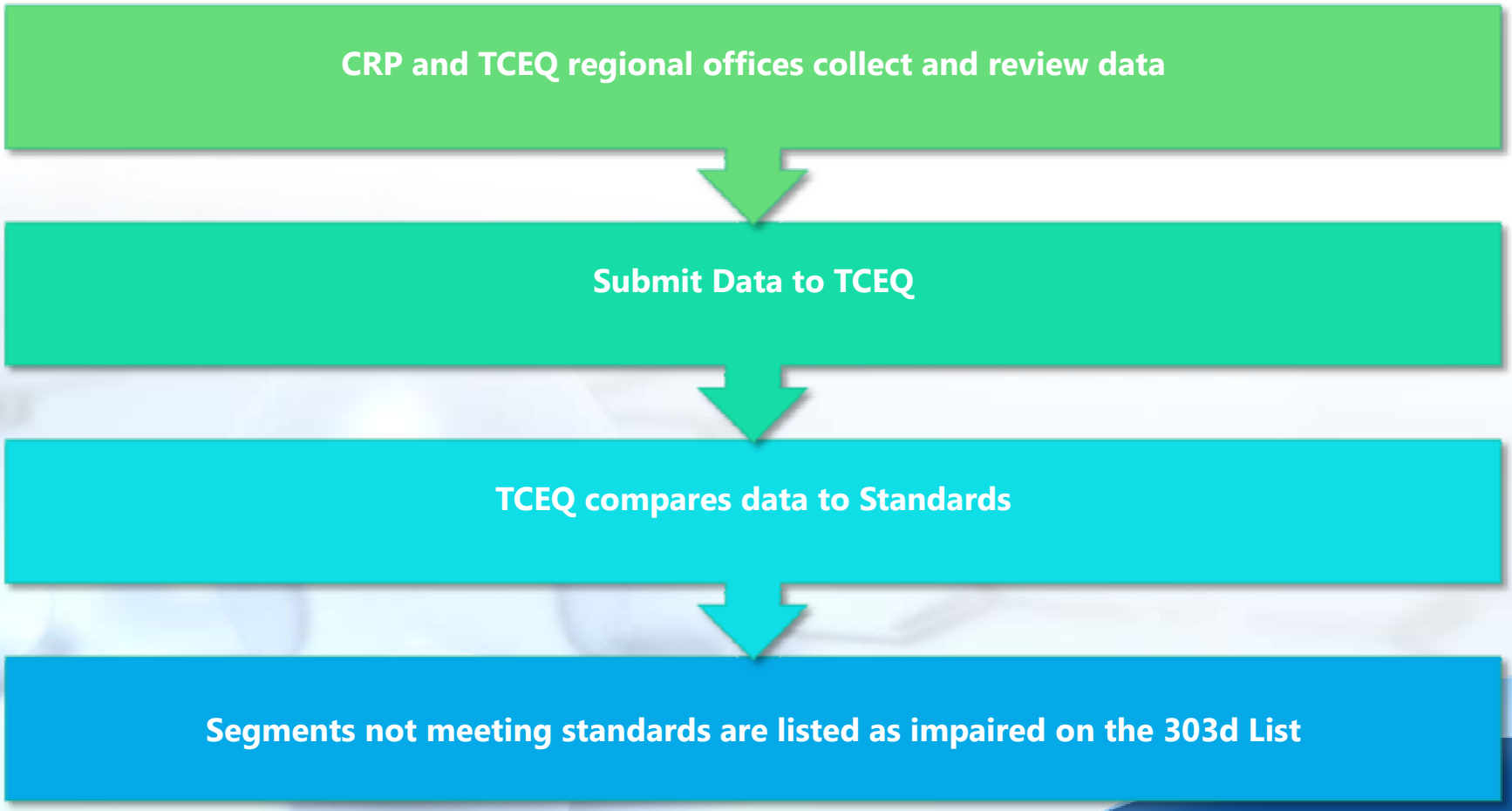
USGS

TCEQ HARLINGEN

TCEQ CONTINUOUS WQ MONITORING

Tray 1
BOD #1
Tray 2
SKALAR

What happens to the data?



Texas Surface Water Quality Standards

For the Lower Rio Grande

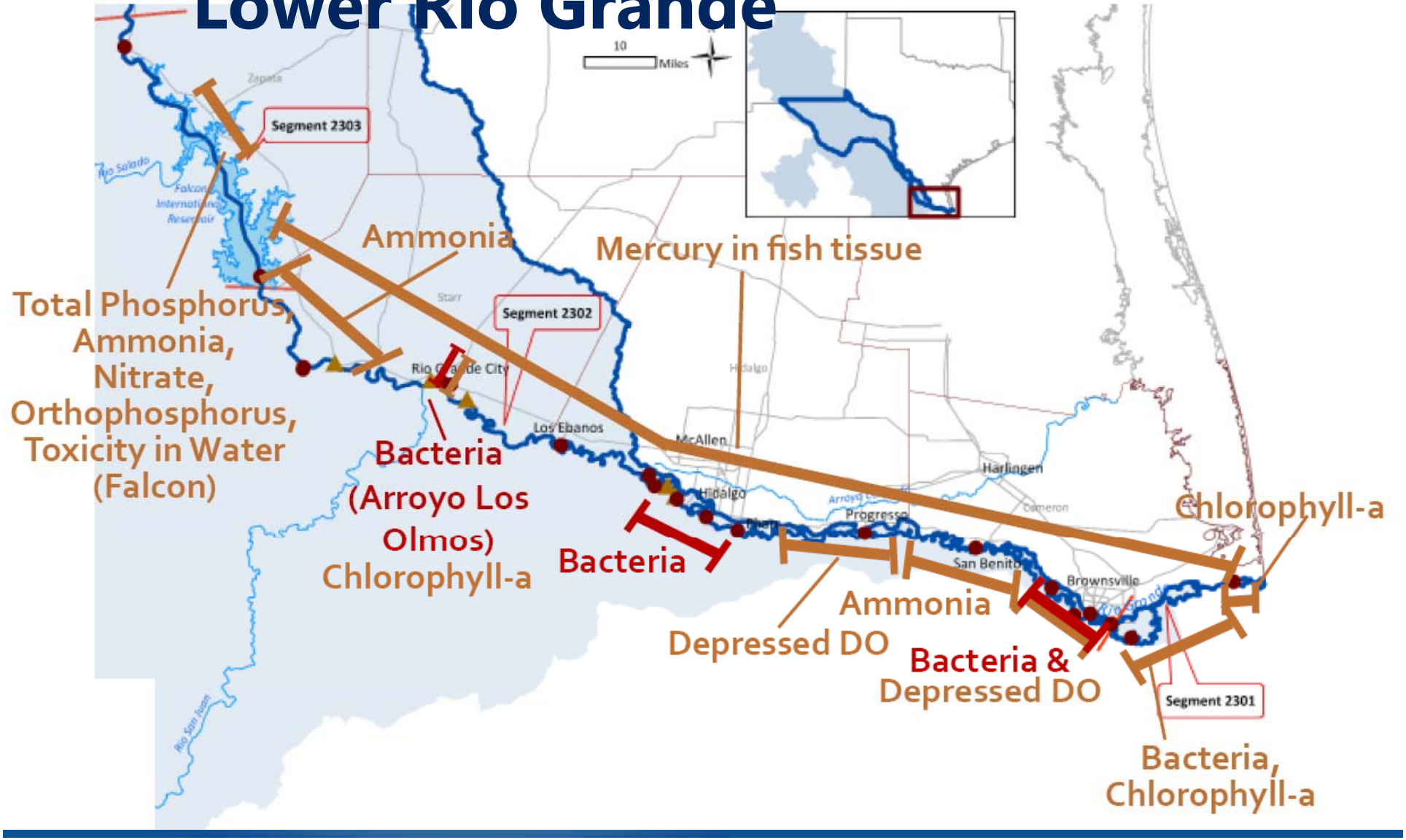
SEGMENT	USES	TDS (mg/l)	Bacteria (#/100 ml)
2301 – Tidal	• Primary Contact Recreation • Excellent Aquatic Life	--	35 Entero
2302 – Below Falcon	• Primary Contact Recreation • High Aquatic Life •Sole-source public drinking supply	880	126 E. Coli
2303 – Falcon Reservoir	•Primary Contact Recreation • High Aquatic Life •Sole-source public drinking supply	1,000	126 E. Coli

Integrated Report 303d List

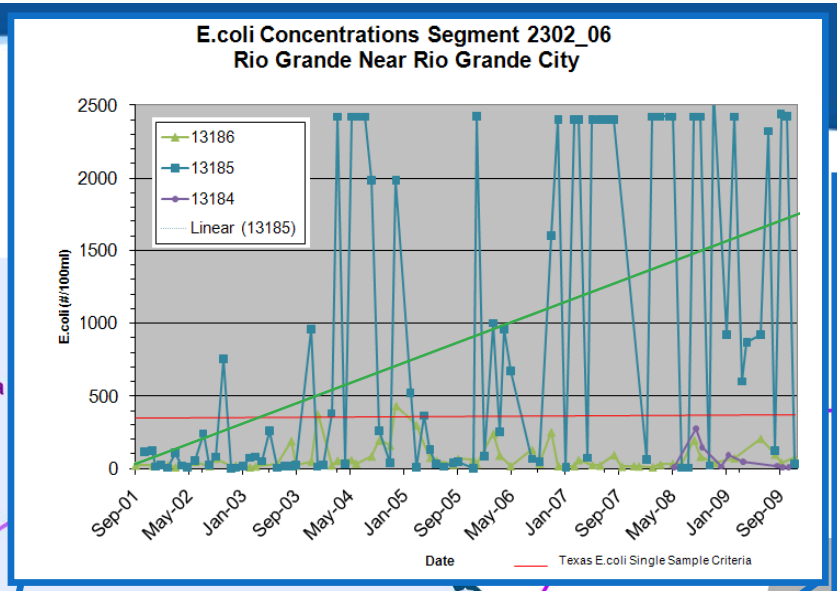
IMPAIRMENTS→ don't meet standards

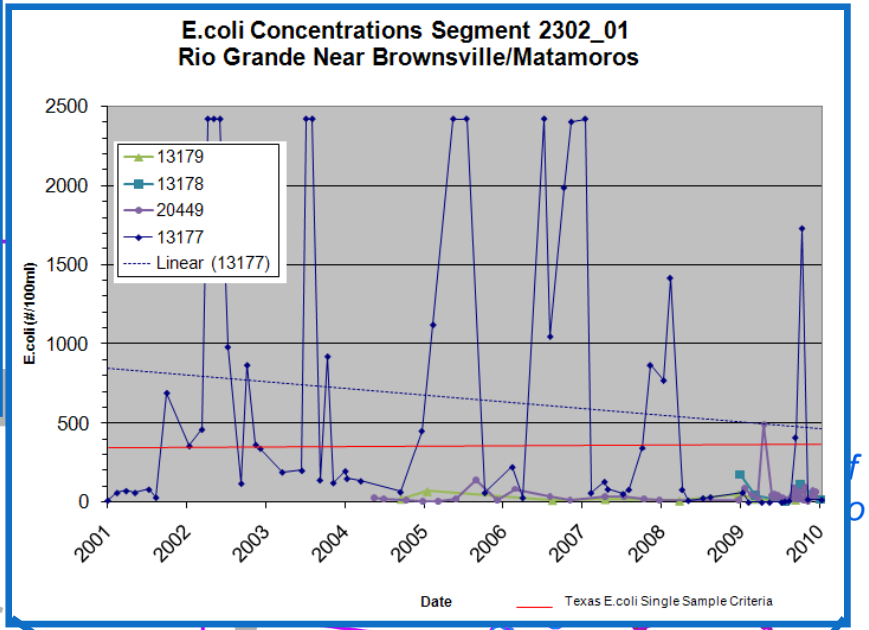
CONCERNS → almost don't meet standards, or have high values of parameters for which there are no standards

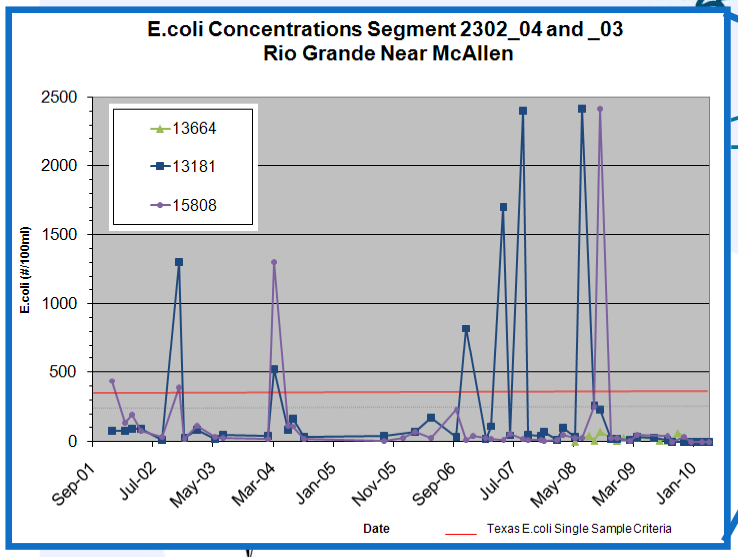
2010 Impaired Waters in the Lower Rio Grande

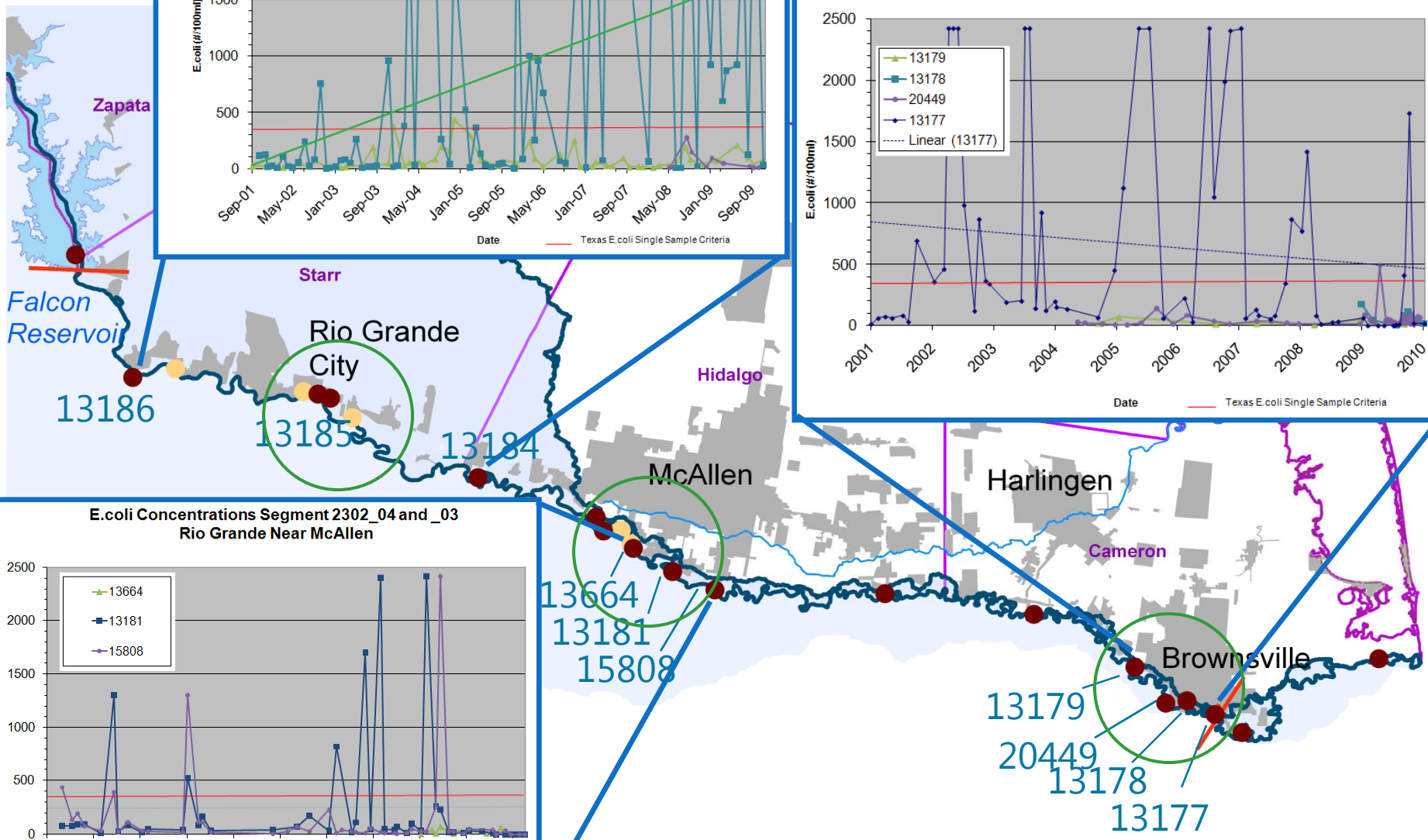


Bacteria – Lower RG









Arroyo Los Olmos

Alex Flood Bacteria Sampling

- To support IBWC Mercedes flood operations
- USIBWC CRP collected 59 bacteria samples in structures, floodways, and Rio Grande flood waters
- Bacteria low

Brownsville Bacteria Special Study

To characterize bacteria impairment in Brownsville

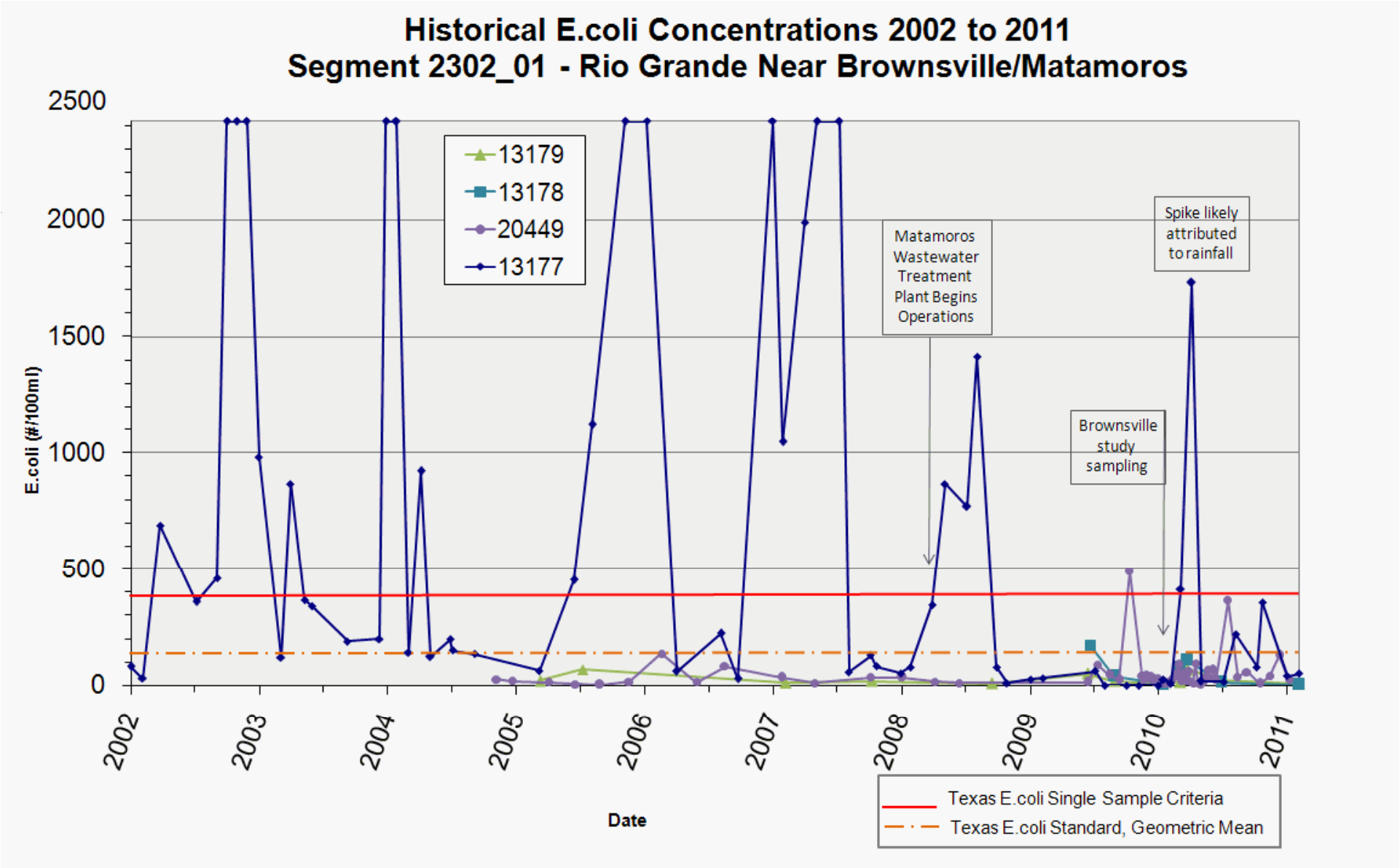
- Planning Phase 2008-2009
- Sampling 2010
- Final Report 2011

Study did not pick up historically high bacteria

Brownsville Bacteria Special Study RESULTS

- 63 total bacteria samples were taken
- Study did not pick up historically high bacteria
- Report documents total of 37 features on both banks
  - Pipes, drains, outfalls, structures
  - Trash dumps, goat trails
- No one feature could be pointed to as a likely cause
- Wastewater infrastructure improvements likely cause of decrease bacteria

Bacteria in the Brownsville Area



Matamoros Wastewater Plant

- First WWTP in Matamoros
  - Certified by BECC
  - Funded by NADBank in 2003
  - Completed 2008
  - Inaugurated 2009
- Secondary Treatment, Capacity 390 l/s
- Comprehensive Water and Sanitation Project

→ improving bacteria in the RG

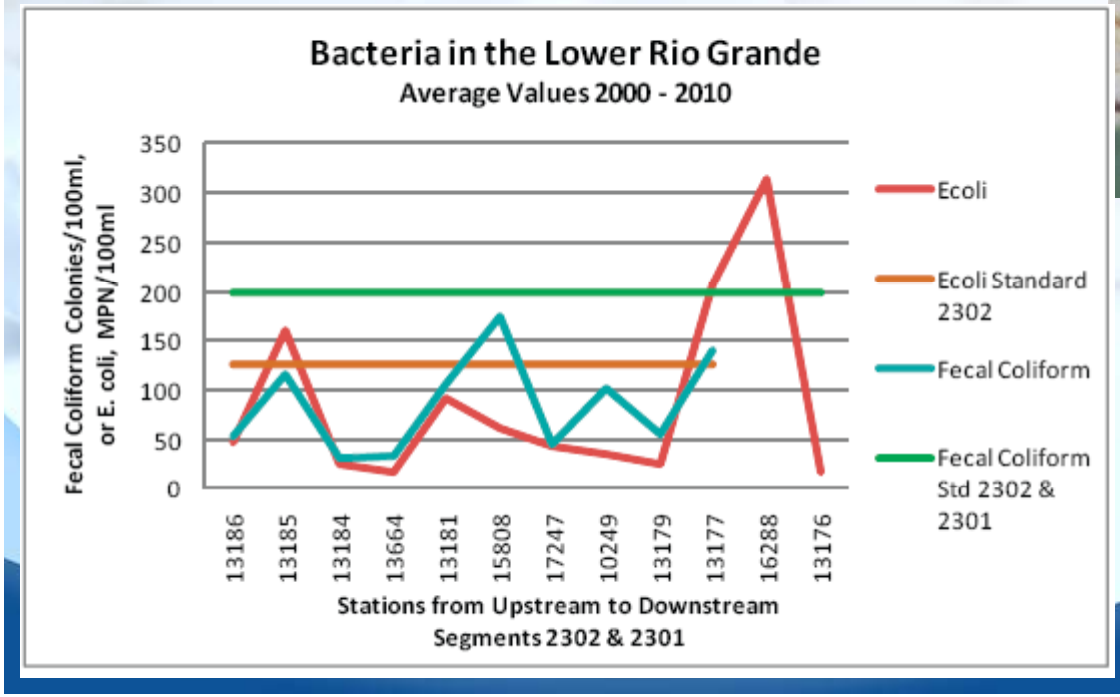
Lower RG Bacteria Summary

Increasing bacteria:

- Rio Grande City
- Hidalgo/McAllen

Decreasing bacteria

- Brownsville (impaired section)



Lower RG Watershed Initiative

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an Río Bravo

erization

cterize impaired

hydrology, water quality, tributaries, etc

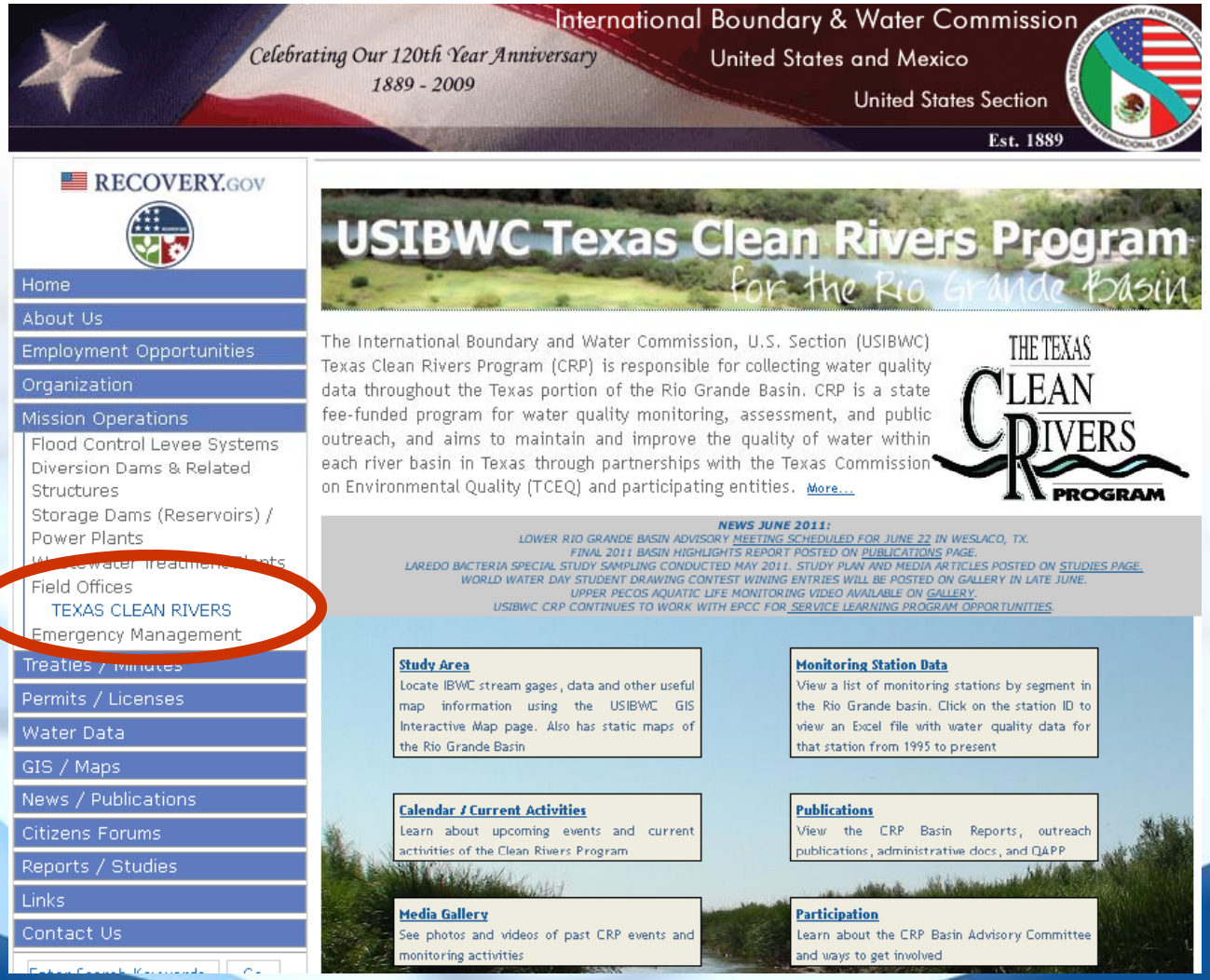
- Evaluation of sources of contamination
- → Series of maps and recommendations

Continuous Monitoring

- Continuous Water Quality Monitoring (CWQM)
- Evaluate TDS (salinity)
- 8 CWQM stations used by TCEQ RG Watermaster
- → important for irrigation

CRP Website

www.ibwc.gov/CRP/Index.htm



- Data
- Maps
- Calendar
- Publications
- Studies
- Links, etc

Thank you!

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