

# Navasota River Watershed Plan Overview

*Lucas Gregory*

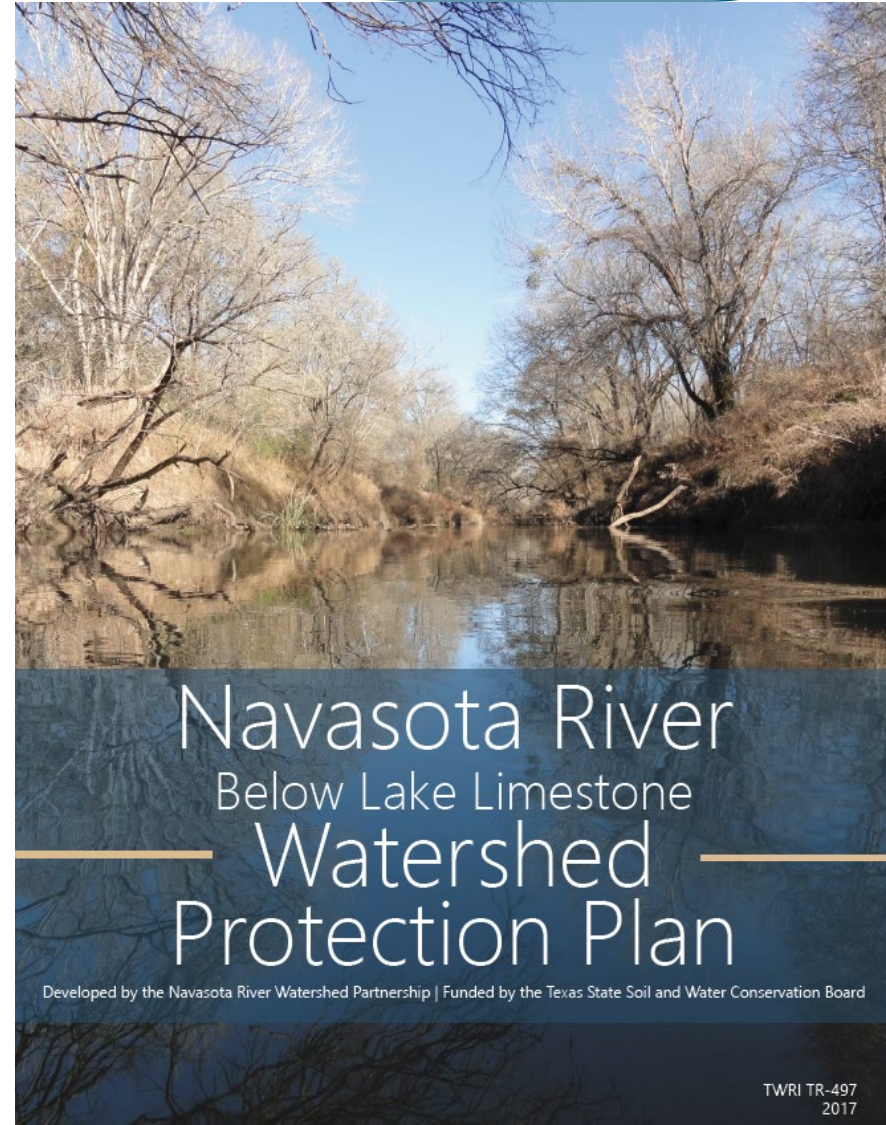
*Texas Water Resources Institute*

*December 11, 2017*



# WPP Accepted!

- ⦿ Agency review led to plan acceptance
  - ⦿ TCEQ and TSSWCB reviewed and comments addressed
- ⦿ EPA reviewed and had several minor comments
  - ⦿ Comments were addressed after several discussions with EPA



# EPA Concerns Addressed

- ⦿ Requested clarification on potential pollutant load assessment
  - ⦿ Further described the approach
  - ⦿ Compared/contrasted it to similar methods done previously
  - ⦿ Explained why this approach was used
    - ⦿ Less \$\$\$\$
- ⦿ Requested additional info on adaptive management
  - ⦿ Better describe the adaptive management process
  - ⦿ Identify how adaptive management will be triggered
  - ⦿ What data/metrics will be used
    - ⦿ Water quality data

# Plan is Accepted, Now What?

## ⦿ Implement the Plan

- ⦿ Use the management recommendations in the WPP as a road map for implementation projects
- ⦿ Identify funding opportunities and apply for funding
  - ⦿ TCEQ and TSSWCB have annual funding opportunities for implementing portions of WPPs
  - ⦿ Applications typically due in late spring/early summer
  - ⦿ Can fund:
    - ⦿ Management items listed in the WPP

## ⦿ Water quality goal:

- ⦿ To meet the applicable contact recreation standard for *E. coli* in terms of concentration and load

Annual reduction =  $1.11 \text{ E}+15 \text{ cfu}$

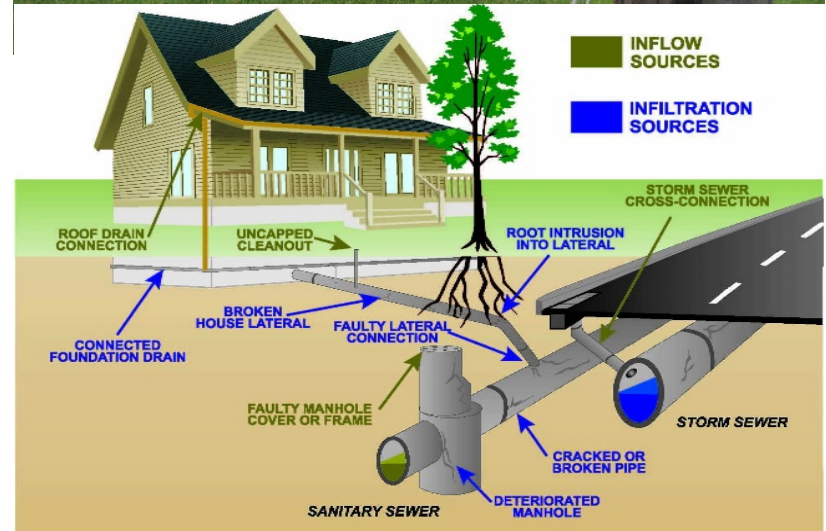
# Management Strategies

- ⦿ Management Approach
  - ⦿ Address the sources that can be reasonably managed
    - ⦿ Feral Hogs
    - ⦿ Livestock
    - ⦿ Human
    - ⦿ Pets
- ⦿ Feral hogs
  - ⦿ Remove 5,524 hogs annually
  - ⦿ Trap, shoot, snare, dogs
  - ⦿ Fence around deer feeders to limit food access
  - ⦿ Deliver education programs regarding trapping techniques and hog biology



# Management Strategies

- ⦿ Livestock
  - ⦿ Goal is to modify resource usage with voluntary practice implementation
  - ⦿ Implement 130 plans
- ⦿ Wastewater
  - ⦿ OSSFs
    - ⦿ Repair and replace failing systems: ~ 150 systems
    - ⦿ Education and outreach programs
  - ⦿ Centralized systems
    - ⦿ Address inflow and infiltration issues



# Management Strategies

- ◎ Pets & Urban Stormwater
  - ◎ Reduce dog waste not properly disposed of in the watershed
    - ◎ Information
      - ◎ Utility bill inserts
      - ◎ Signage in dog parks
    - ◎ Pet waste stations
      - ◎ Keep them stocked and maintained



# Expected Load Reductions

⦿ Annual reduction goal is 1.11 E+15 cfu

Management Measure	Expected <i>E. coli</i> Load Reduction
<b>Agricultural Management Measures</b>	
Water Quality Management Plans (TSSWCB/Local SWCDs)	1.83 x 10 <sup>15</sup> cfu/year
Conservation Plans (NRCS)	
Livestock Management Education and Outreach	
<b>Feral Hog Management</b>	
Feral Hog Removal	3.49 x 10 <sup>15</sup> cfu/year
Supplemental Feeding Enclosures	
Feral Hog Education and Outreach Programming	
<b>OSSF Management</b>	
OSSF Repair and Replacement	1.05 x 10 <sup>15</sup> cfu/year
OSSF Owner Education and Outreach	
OSSF Installer and Service Provider Education and Outreach	
<b>Urban Stormwater Management</b>	
Dog Waste Management and Disposal	4.84 x 10 <sup>15</sup> cfu/year
Dog Waste Management Education and Outreach	
General Stormwater Management Education and Outreach	



# Plan Implementation

- ⦿ Schedule
  - ⦿ 3 implementation windows
    - ⦿ Yrs 1 – 3; 4 – 6; 7 – 10
  
- ⦿ Milestones
  - ⦿ Numeric implementation targets
    - ⦿ Livestock plans
    - ⦿ OSSF repairs/replacements and inspections
  
- ⦿ Ultimate goal
  - ⦿ Reduce *E. coli* content in water bodies

# Next Steps

- ⦿ Develop project proposals that implement management practices described in the WPP
- ⦿ Target specific sources of funding
- ⦿ Get applications turned in
- ⦿ Begin projects when funding arrives



Texas Water  
Resources Institute  
*make every drop count*

TEXAS A&M  
**AGRILIFE**  
RESEARCH | EXTENSION



**Questions or Comments about the WPP?**

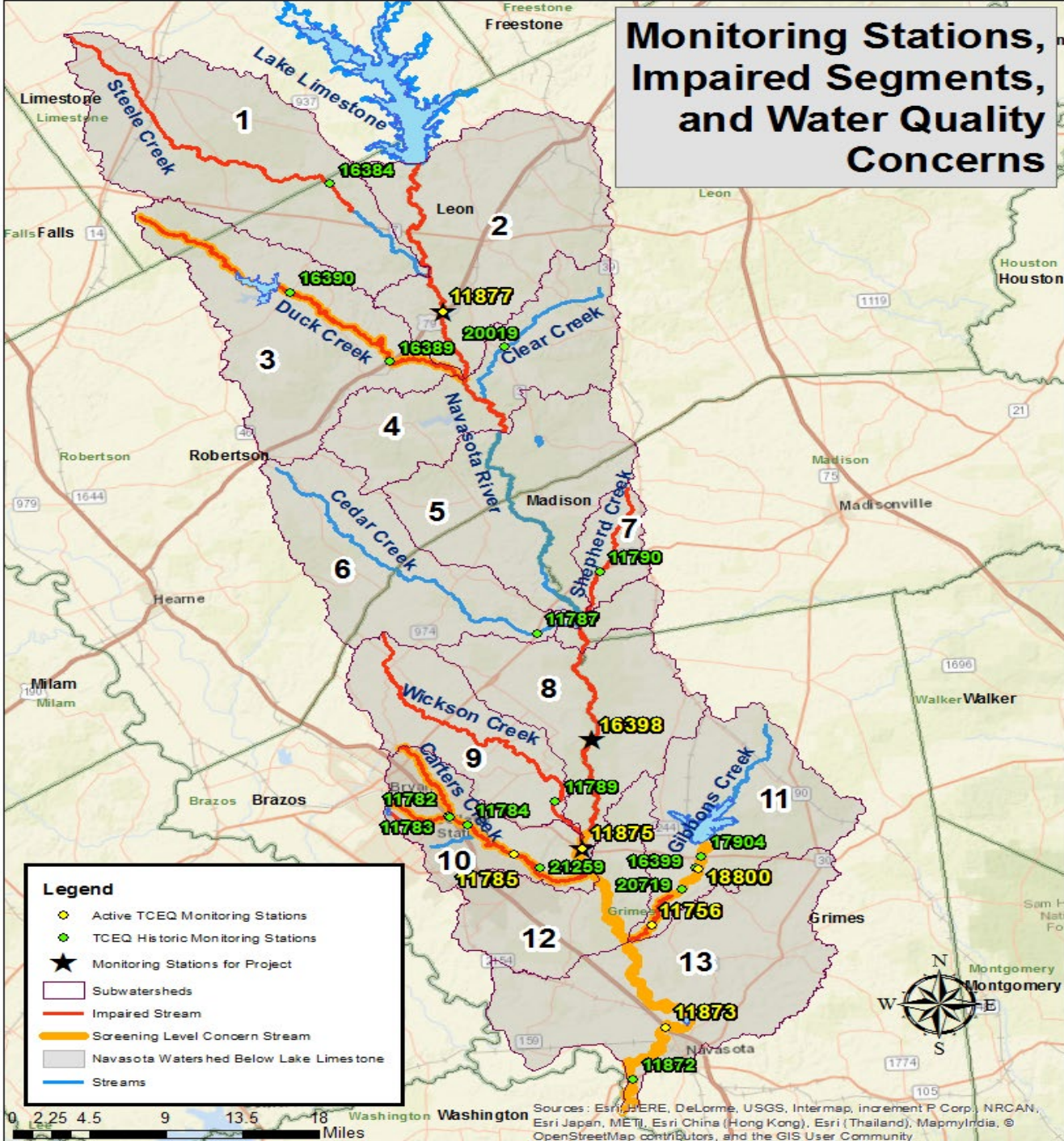
# Removing Impairment Status

- ⦿ WPP development and acceptance did not/will not result in removal of the impaired status designation
- ⦿ Most effective tool for that is to develop a Total Maximum Daily Load (TMDL)
  - ⦿ Components already defined in the WPP
- ⦿ TMDLs also require an associated Implementation Plan
  - ⦿ VERY similar to the WPP
- ⦿ Decision to take this approach was made in earlier meetings

# Removing Impairment Status: Developing the TMDL

- ⦿ Develop the draft TMDL
  - ⦿ TMDL only on Navasota River
  - ⦿ Not tributaries – RUAA result pending
- ⦿ Stakeholders approve the draft TMDL
- ⦿ Draft TMDL delivered to TCEQ for review
- ⦿ Revise TMDL based on TCEQ feedback
  - ⦿ Stakeholder approval of revisions
- ⦿ Resubmit to TCEQ for approval
- ⦿ EPA will review and approve as well

# Monitoring Stations, Impaired Segments, and Water Quality Concerns



# Removing Impairment Status: Develop the Implementation Plan

- ⦿ Implementation Plan is description of management recommendations needed/planned to meet the TMDL(s)
  - ⦿ Items are voluntary for non-permitted items
  - ⦿ Only things that would be regulatory are revisions to permits
    - ⦿ (Not applicable in this case)
- ⦿ Essentially extract content from the WPP and repackage it in the I-Plan form
- ⦿ Stakeholders review and approve the draft I-Plan

# Removing Impairment Status: Develop the Implementation Plan

- ⦿ Deliver stakeholders approved draft I-Plan to TCEQ for review
- ⦿ Receive and address TCEQ comments on draft I-Plan
- ⦿ Stakeholders approve revised I-Plan
- ⦿ Deliver to TCEQ for final approval
  - ⦿ \*\*\*EPA does not review or approve I-Plans\*\*\*



# Developing the TMDL and I-Plan

- ⦿ How much do y'all want to revisit the content of the TMDL and I-Plan?
- ⦿ TMDL – Load duration curves and the definition of the needed load reduction to meet the water quality goal
  - ⦿ Only for impaired segments on the Navasota proper
- ⦿ Implementation Plan – management recommendations already included in the WPP
  - ⦿ Or others if so desired

# Timeline Moving Forward

- Draft TMDL presented to stakeholders
  - Early 2018
  - Revise TMDL based on stakeholder comments
- Final draft TMDL presented to stakeholder for approval
  - Spring 2018
- Draft TMDL I-Plan presented to stakeholders
  - Spring 2018
  - Revise I-Plan based on stakeholder comments
- Final draft TMDL presented to stakeholders for approval
  - Early summer 2018



Texas Water  
Resources Institute  
*make every drop count*

TEXAS A&M  
**AGRILIFE**  
RESEARCH | EXTENSION

Lucas Gregory  
Texas Water Resources Institute  
LFGregory@ag.tamu.edu  
979-845-7869

[navasota.tamu.edu](http://navasota.tamu.edu)