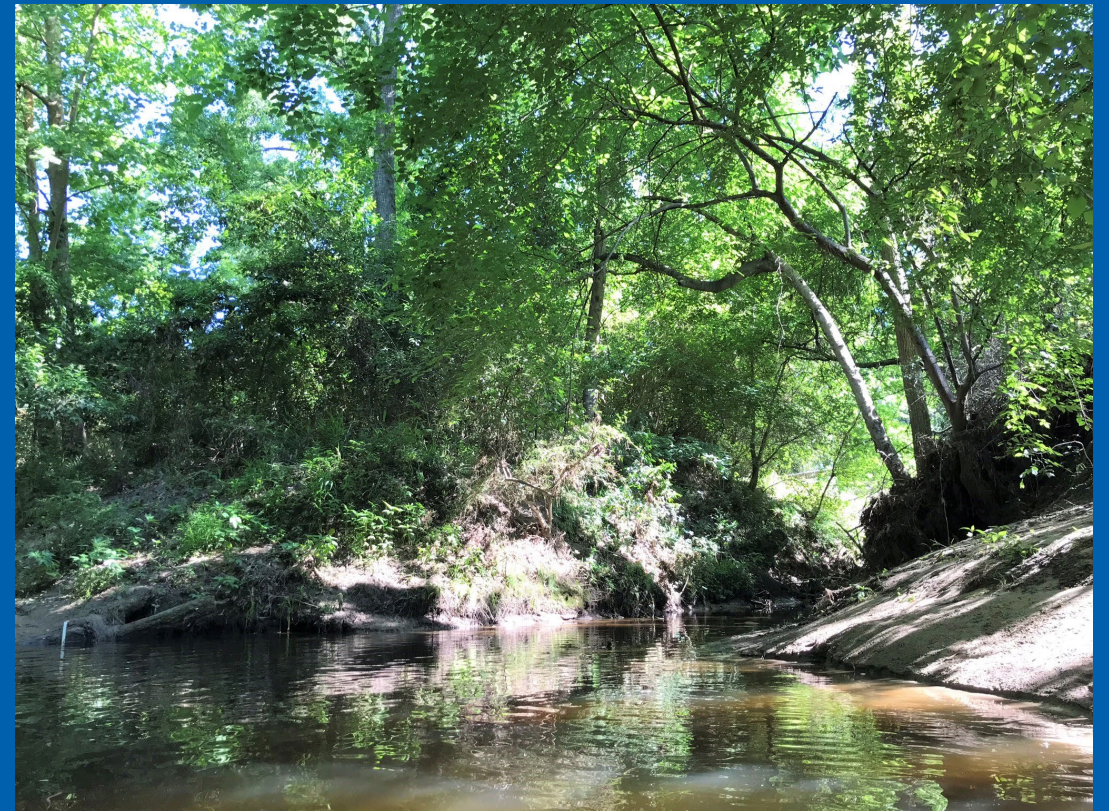


Texas Water Resources Institute

# Cedar Creek TSD – Middle Neches TMDL Addendum

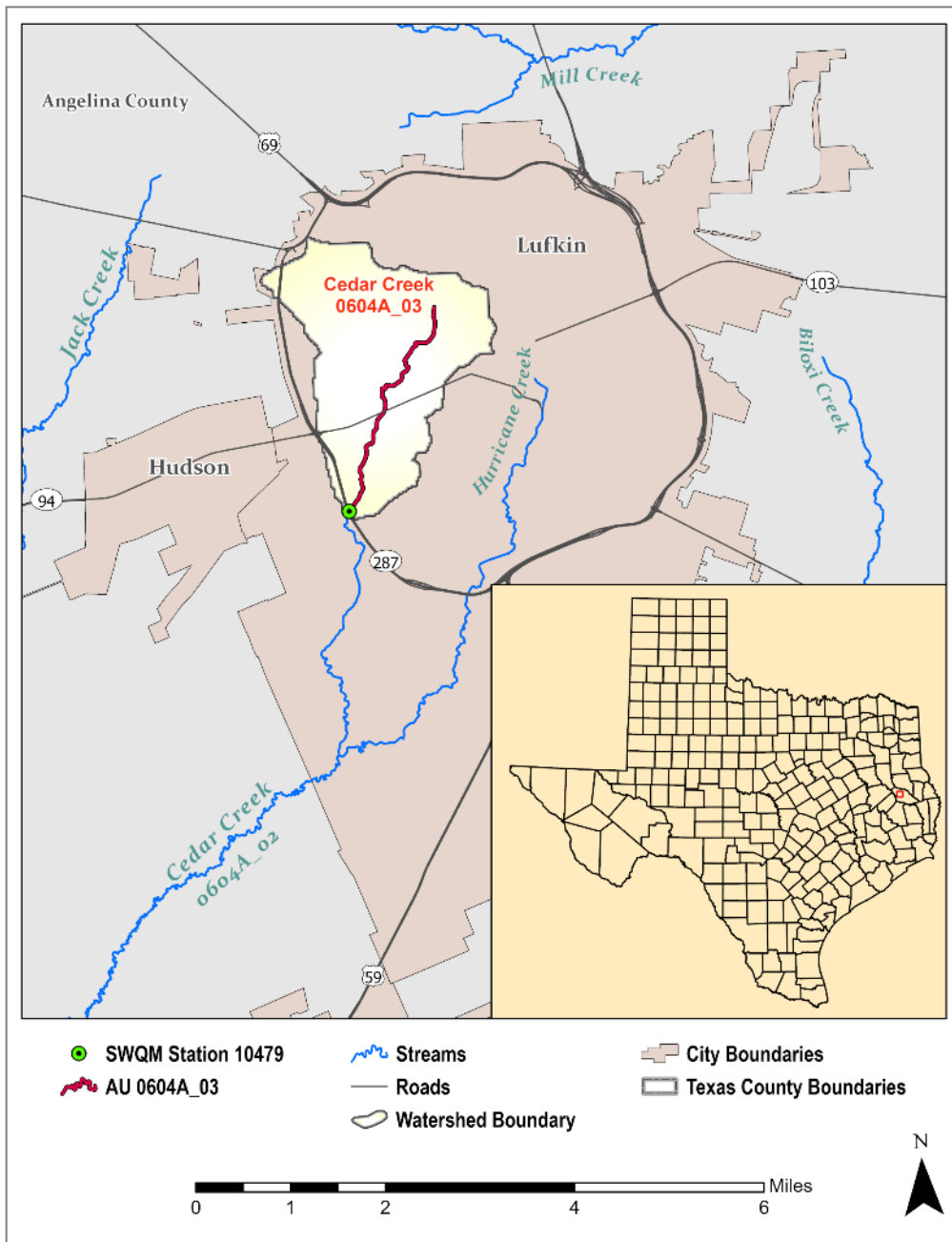
Luna Yang | Research Specialist



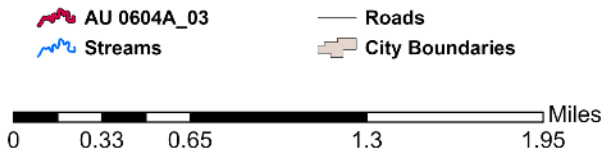
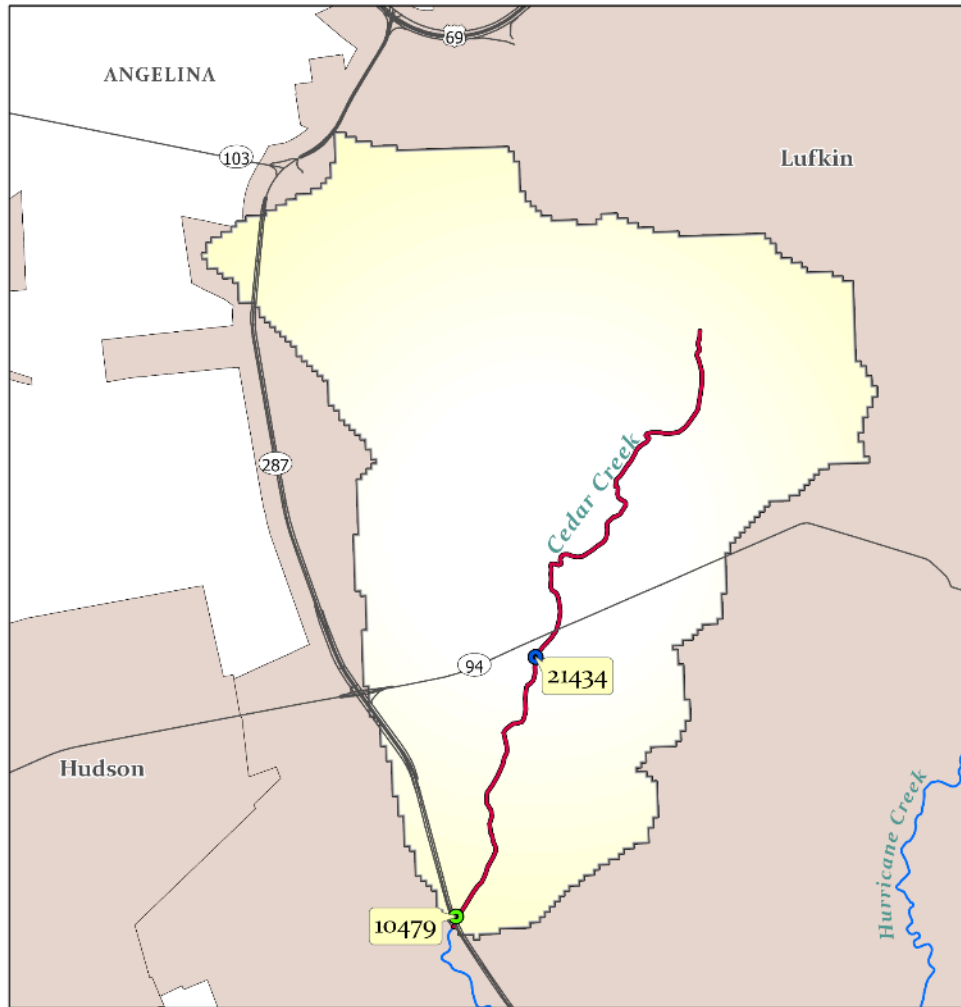
# 303(d) Listing

Primary Contact Recreation 1  
Impairment (126 cfu/100 mL)

- **Cedar Creek** (AU 0604A\_03) listed impaired in 2022 Texas Integrated Report
- TMDL for Tributaries of the Neches River below Lake Palestine adopted in 2022

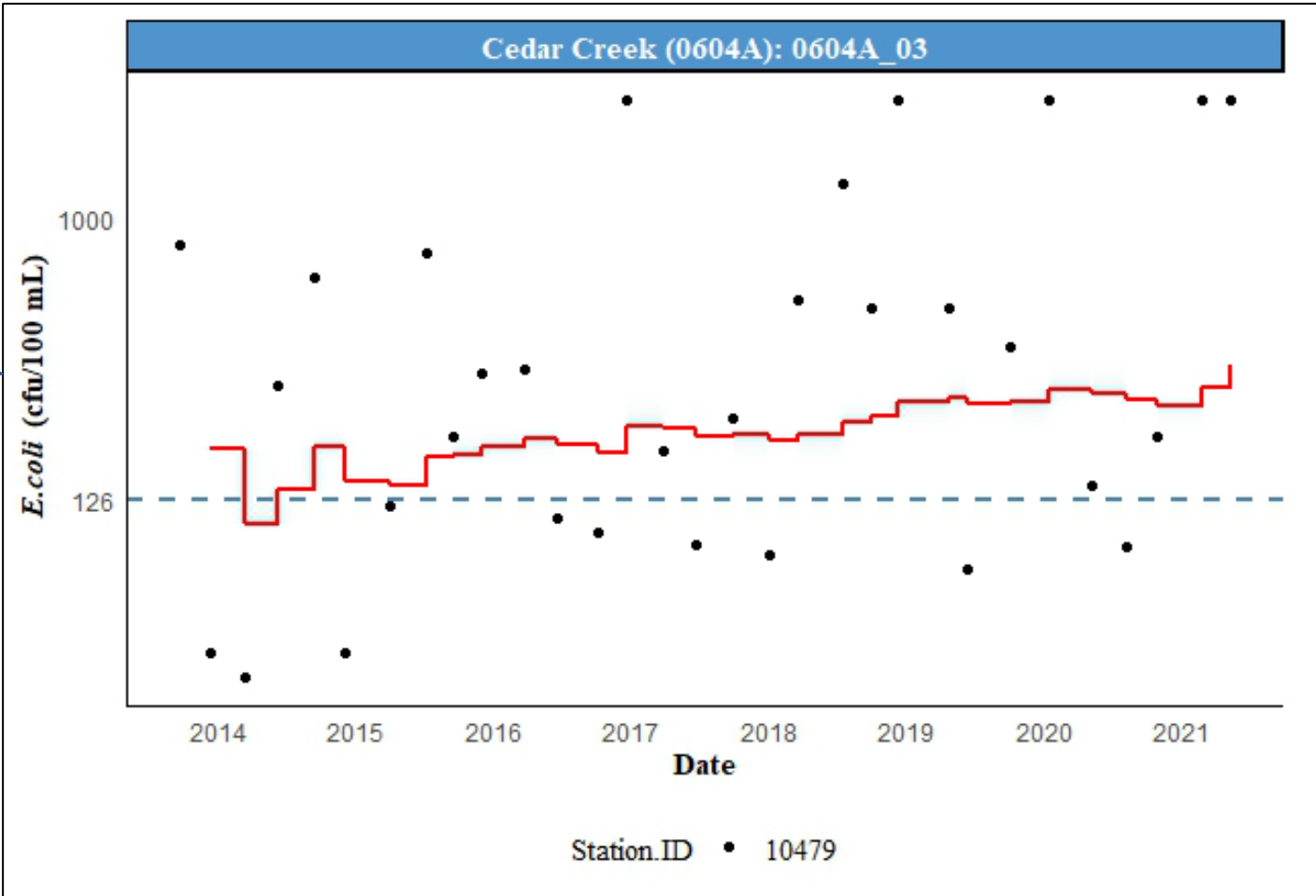
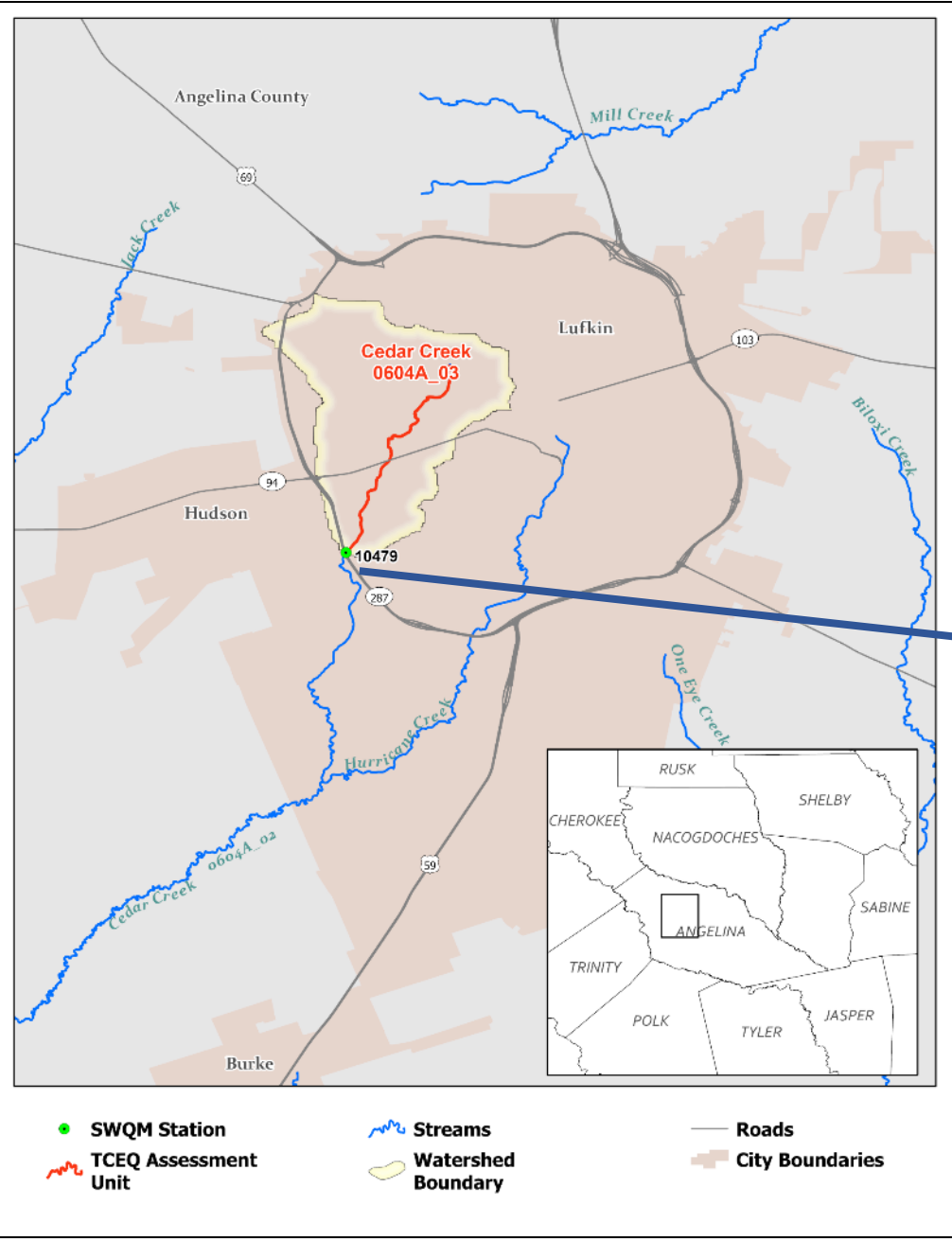


# 2022 Integrated Report



Stations	No. of Samples	Data Date Range	Geometric Mean (cfu/100 mL)
<b>10479 21434</b>	56	12/01/2013 – 11/30/2020	186.67

# Historical Water Quality



# Draft Technical Support Document

- Due to the additional listing, TCEQ contracted TWRI to develop a Technical Support Document



Technical Support Document for  
One Total Maximum Daily Load  
for Indicator Bacteria in  
Cedar Creek

Assessment Unit: 0604A\_03

By Luna Yang and Michael Schramm,  
Texas Water Resources Institute

Submitted to TCEQ May 2023

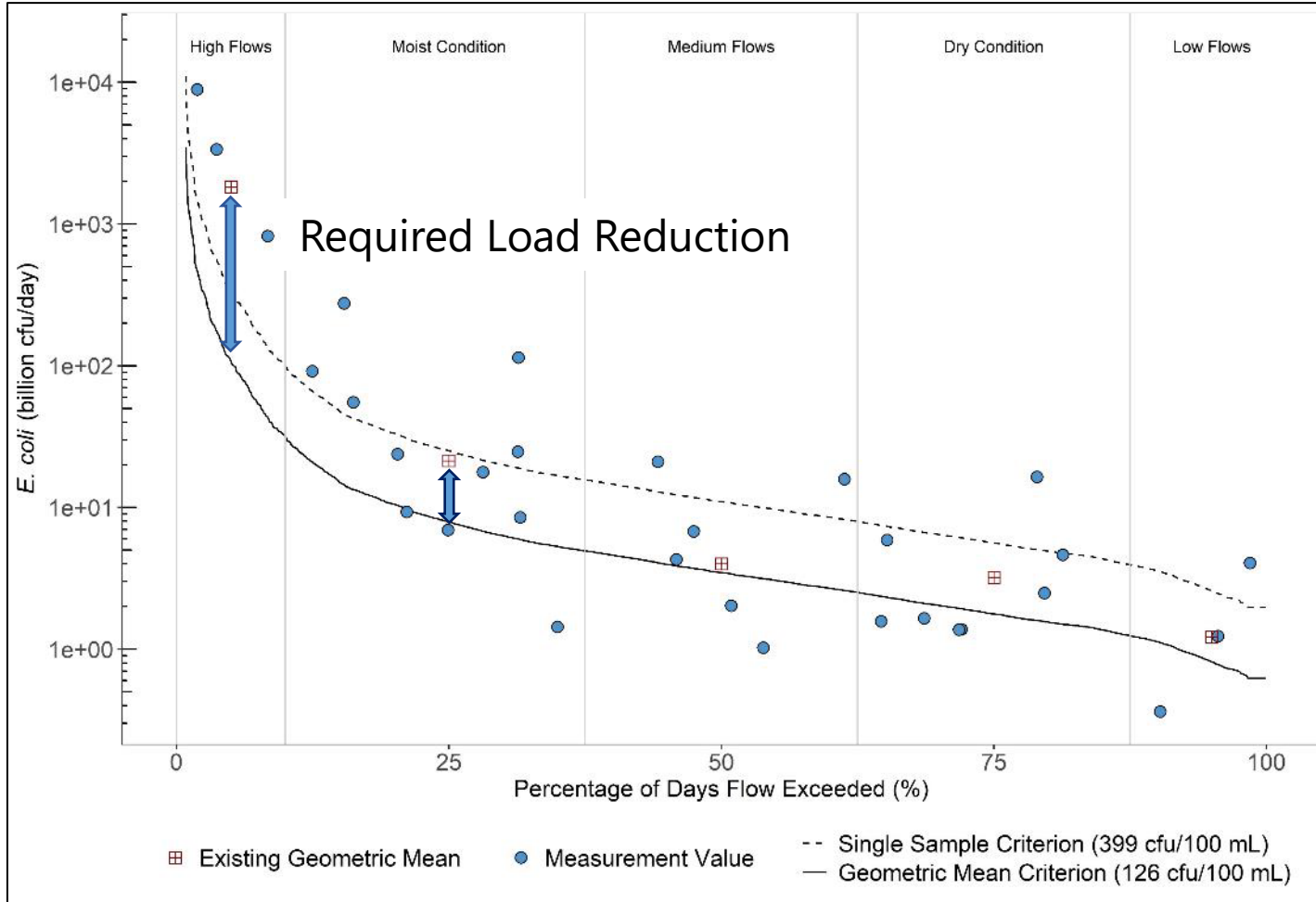


Published by the Texas Commission on Environmental Quality, [Month Year](#)  
AS-XXXX

## Draft Technical Support Document

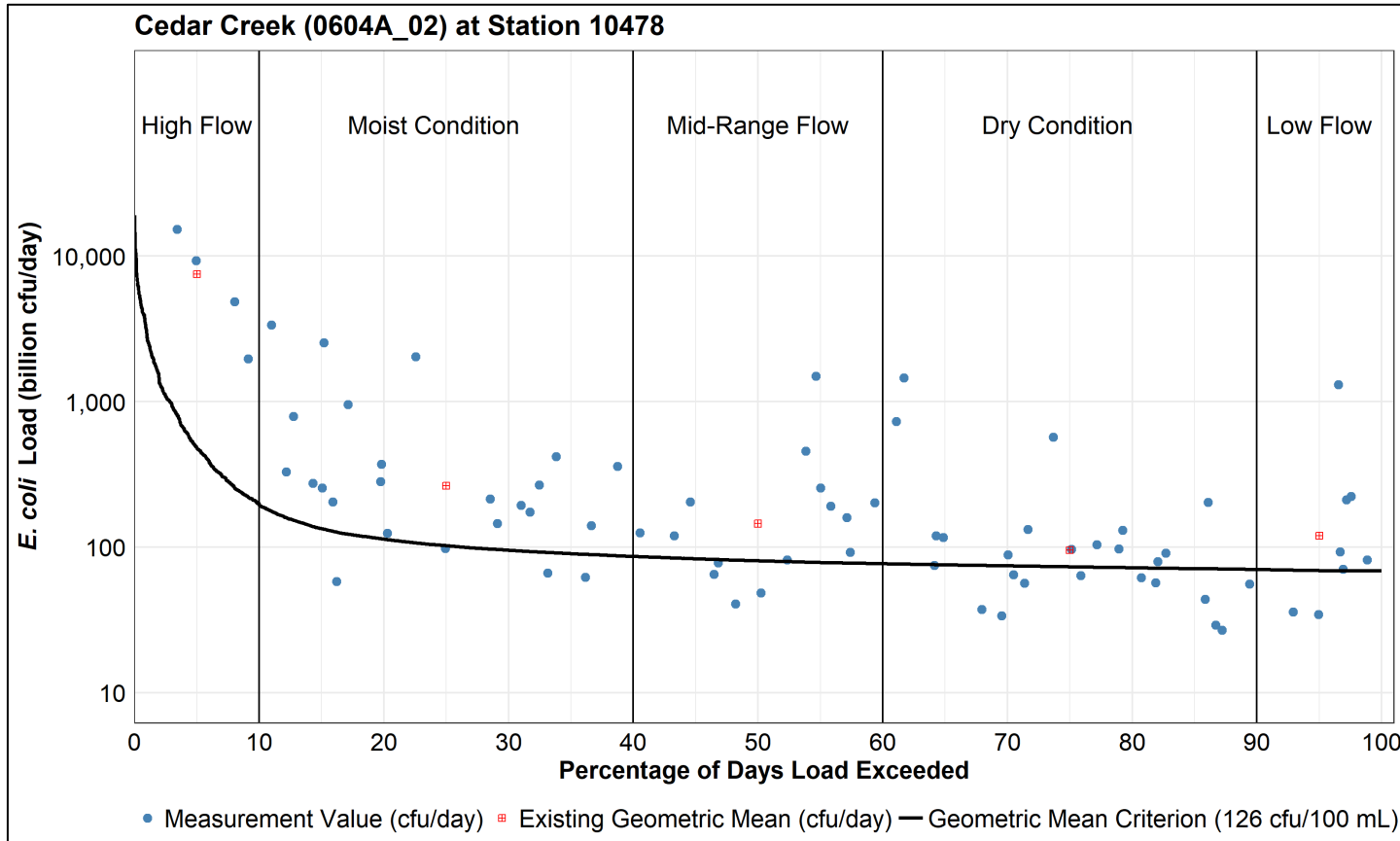
- Like previous TSD and TMDL documents
  - Review and explore potential sources of *E. coli*
  - Develop Load Duration Curves for TMDL
    - Under what conditions do bacteria loadings occur
  - Develop Load Allocations for the TMDL
    - “Budget” for potential indicator bacteria sources

# Load Duration Curve – AU 0604A\_03



Flow Regime	Geomean Concentration (cfu/100 mL)	Percent Reduction Required
High Flows	2,400	95%
Moist Conditions	338	63%
Mid-Range Flows	145	13%
Dry Conditions	228	45%
Low Flows	189	33%

# Load Duration Curve – AU 0604A\_02



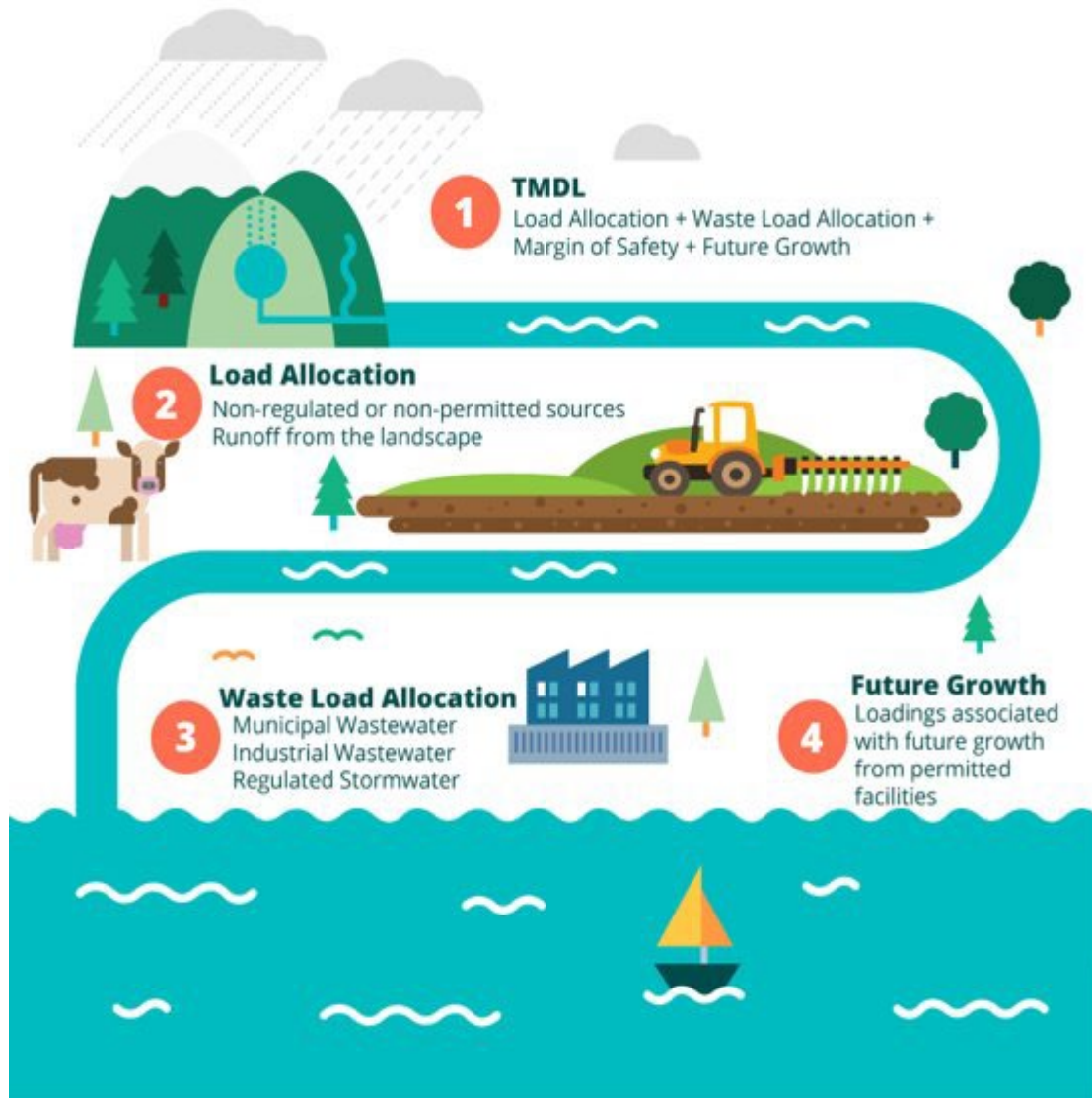
Flow Regime	Geomean Concentration (cfu/100 mL)	Percent Reduction Required
High Flows	1,983.64	94%
Moist Conditions	325.24	61%
Mid-Range Flows	227.02	44%
Dry Conditions	163.87	23%
Low Flows	218.57	42%



# Load Duration Curve Analysis

- Analysis of sources remains the same as documented in the previous Middle Neches TMDL
  - Unregulated stormwater - high and mid-range loadings.
    - OSSFs
    - Livestock
    - Wildlife
  - No WWTF permits in the watershed
  - SSOs and direct deposition – lower flow conditions

# TMDL Addendum



- TMDLs allocate the pollutant “budget” to regulated and unregulated sources, considering future growth and a margin of safety
- TCEQ will add the LDCs and load allocations to the existing Middle Neches TMDL and update the state’s Water Quality Management Plan.

# Thank You!

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