

Village Creek-Lake Arlington Watershed Protection Plan

Aaron Hoff

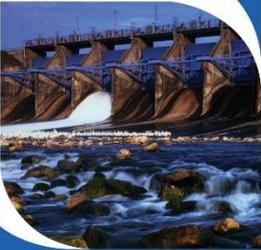
Trinity River Authority

December 10, 2015

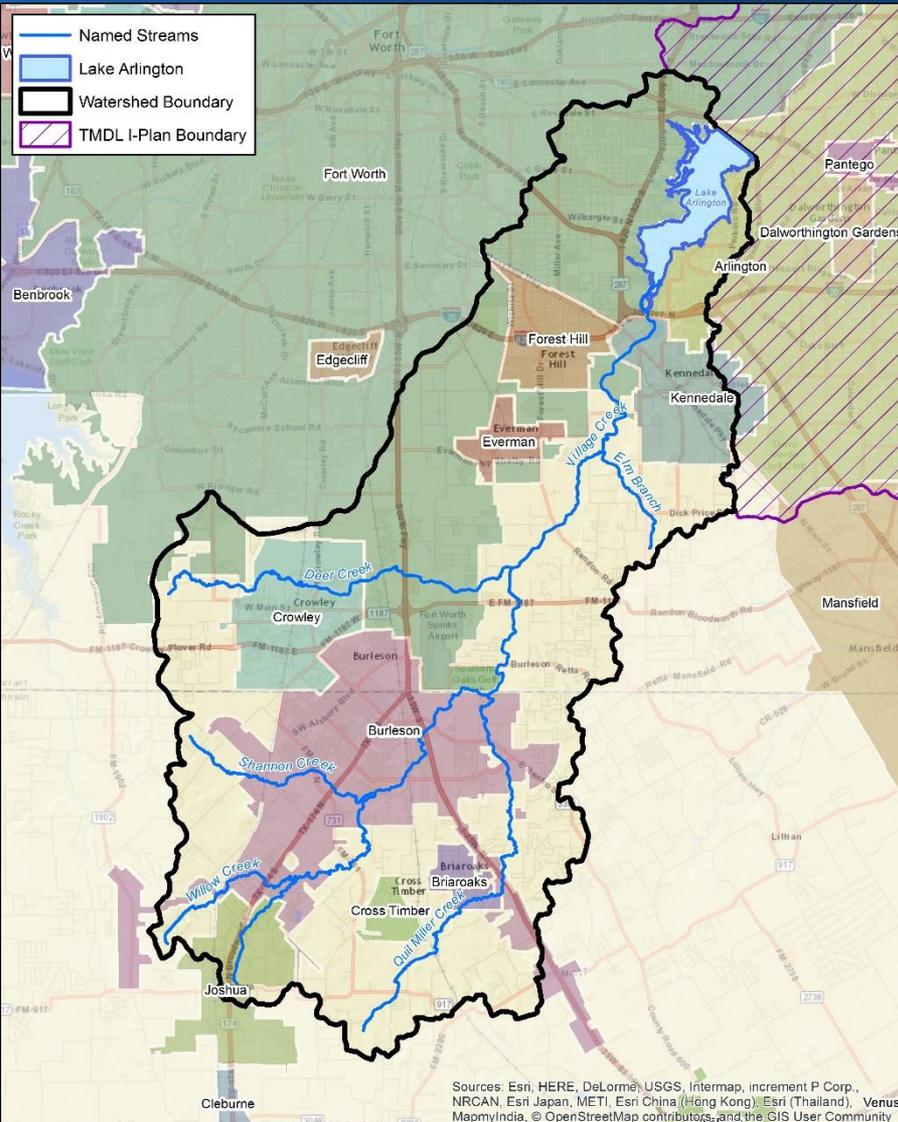


Trinity River Authority of Texas
Enriching the Trinity basin as a resource for Texans

Watershed Characterization



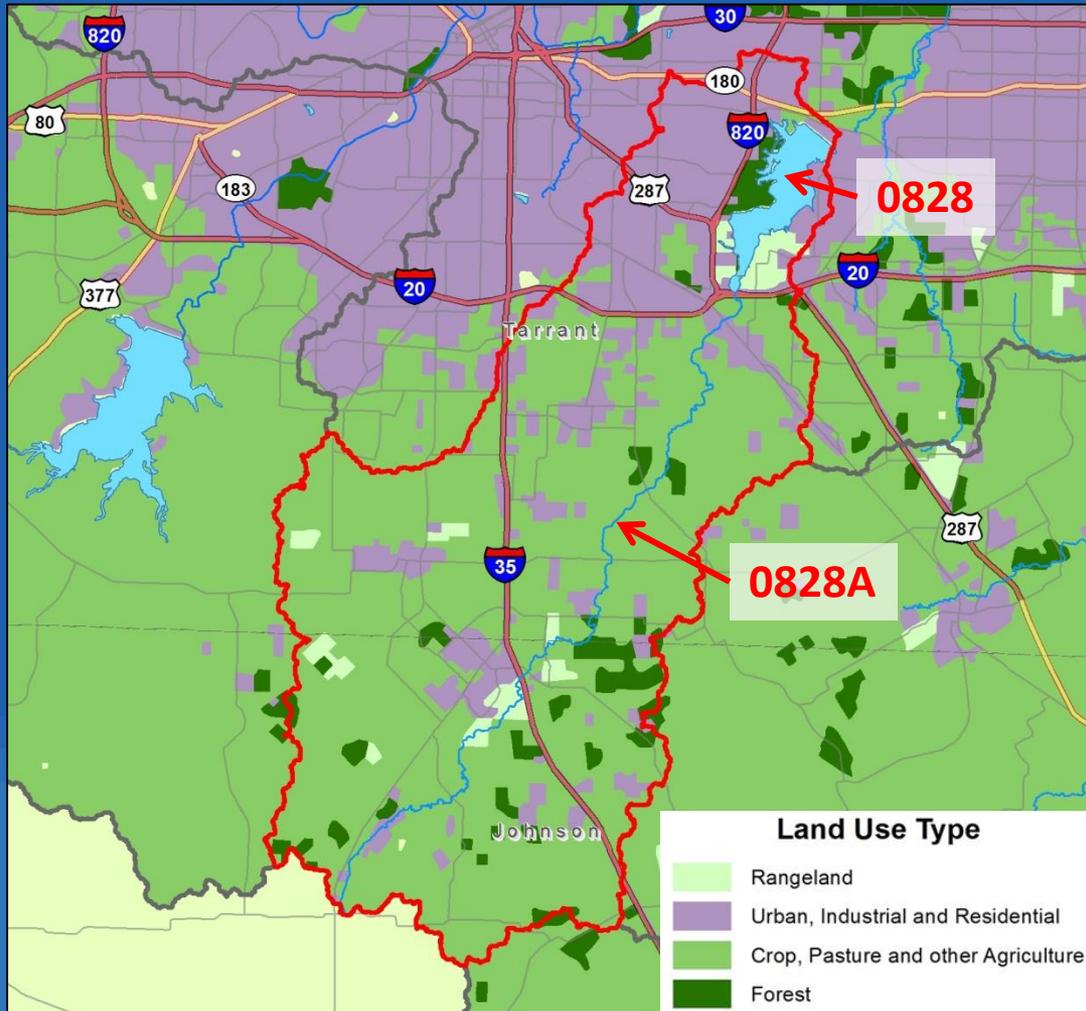
What's in the watershed?



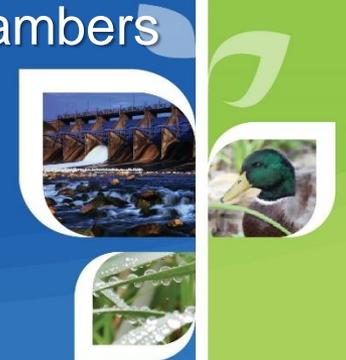
- 91,400 acres (143 mi²)
- Village Creek = 28 river miles
- Counties
 - Johnson • Tarrant
- Towns and Cities
 - Joshua • Cross Timber
 - Briaroaks • Burleson
 - Crowley • Everman
 - Forest Hill • Kennedale
 - Arlington • Ft. Worth
- Soil and Water Conservation Districts
 - Dalworth • Johnson



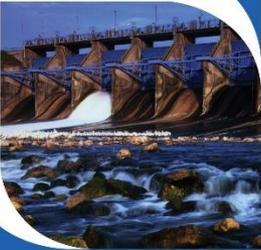
Water sources and uses



- Village Creek drains to Lake Arlington
- Headwaters in Joshua
- Supplies water to City of Arlington, portions of Tarrant County
- Imports from Cedar Creek and Richland-Chambers Reservoirs



Data Collection



Who's collecting the samples?



What are we looking for?

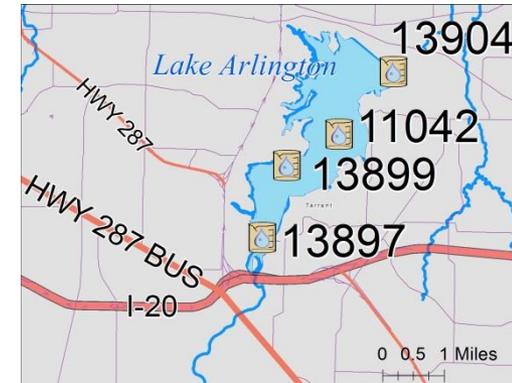
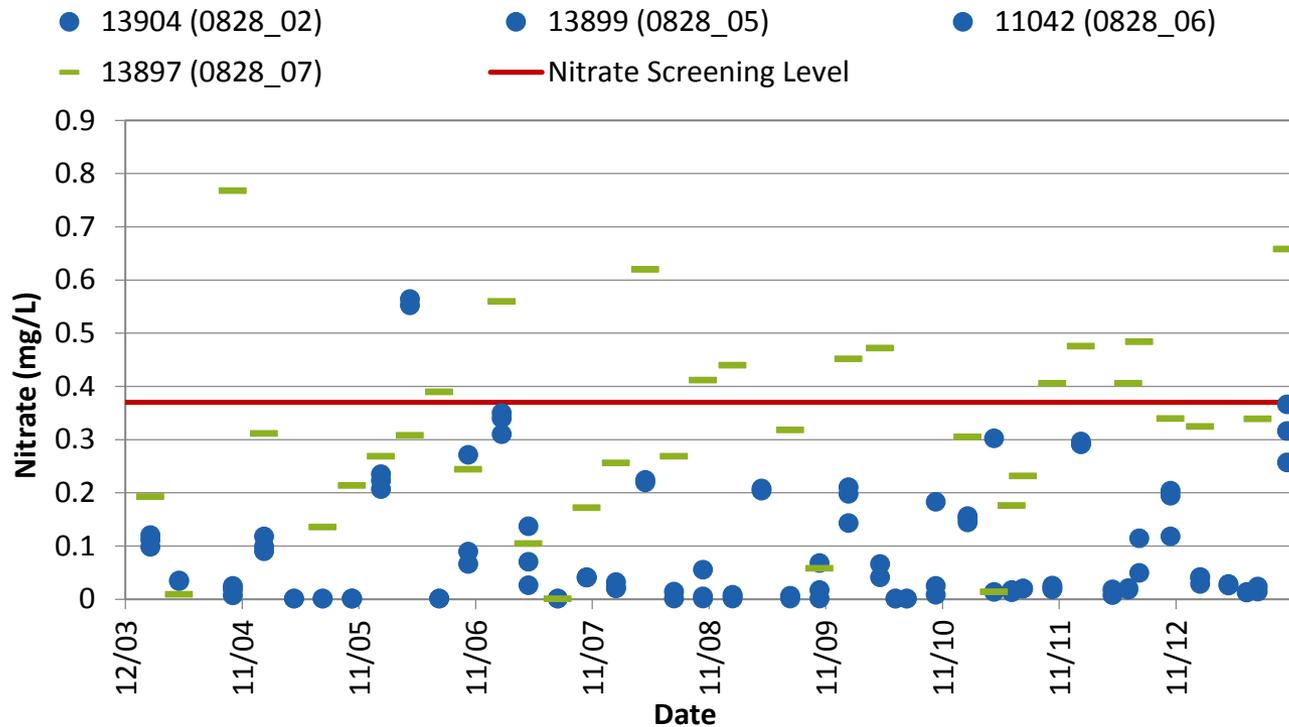
- Loadings!
- How do we get them?
 - Collecting flow and water quality samples
 - Parameter concentration x Flow = Loading
- What are the parameters?
 - **Bacteria (*E. coli*)**
 - Total Suspended Solids (TSS)
 - Volatile Suspended Solids (VSS)
 - Total Dissolved Solids (TDS)
 - **Nitrite/Nitrate (NO_2/NO_3)**
 - Total Kjeldahl Nitrogen (TKN)
 - Total Phosphorus (TP)
 - Dissolved Orthophosphate (OP)
 - **Chlorophyll-a**



0828 Lake Arlington Nitrate



- Screening Level = 0.37 mg/L



- Averages

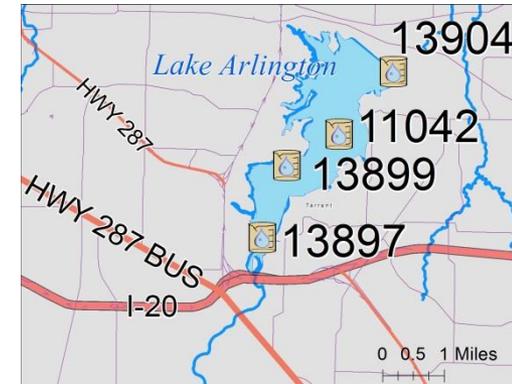
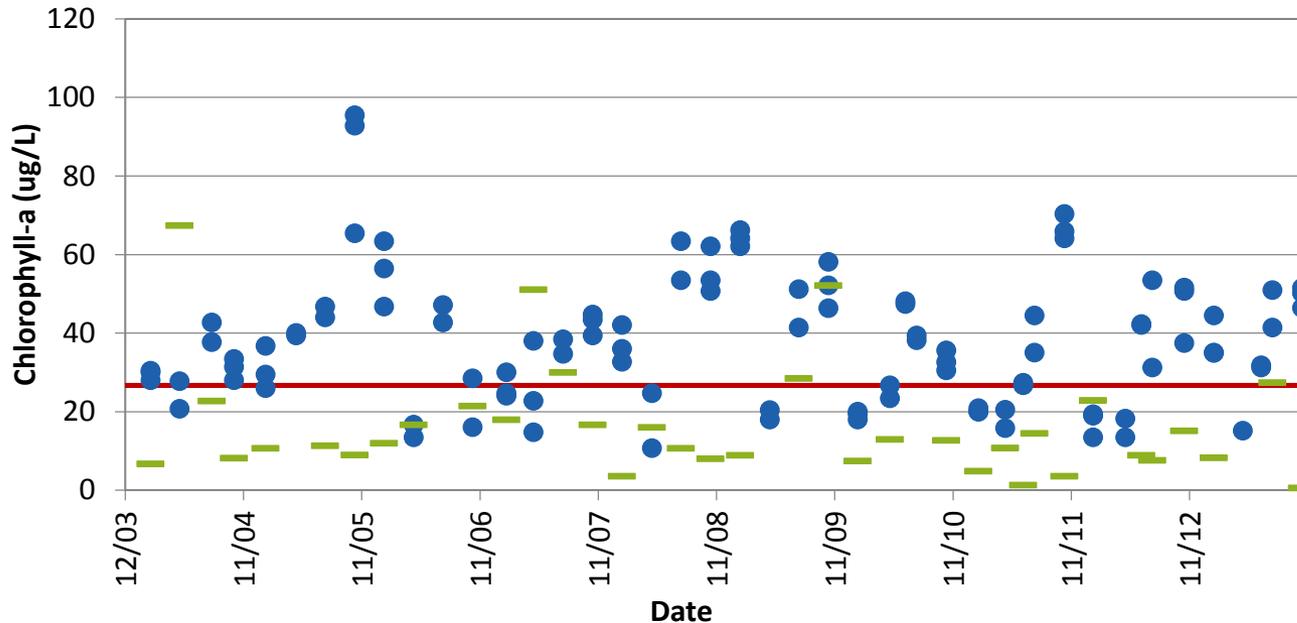
- 13904 = 0.09 mg/L
- 13899 = 0.11 mg/L
- 11042 = 0.09 mg/L
- 13897 = 0.32 mg/L

0828 Lake Arlington Chlorophyll-a



- Screening Level = 26.7 ug/L

- 13904 (0828_02)
- 11042 (0828_06)
- Chlorophyll-a Screening Level
- 13899 (0828_05)
- 13897 (0828_07)



- Averages

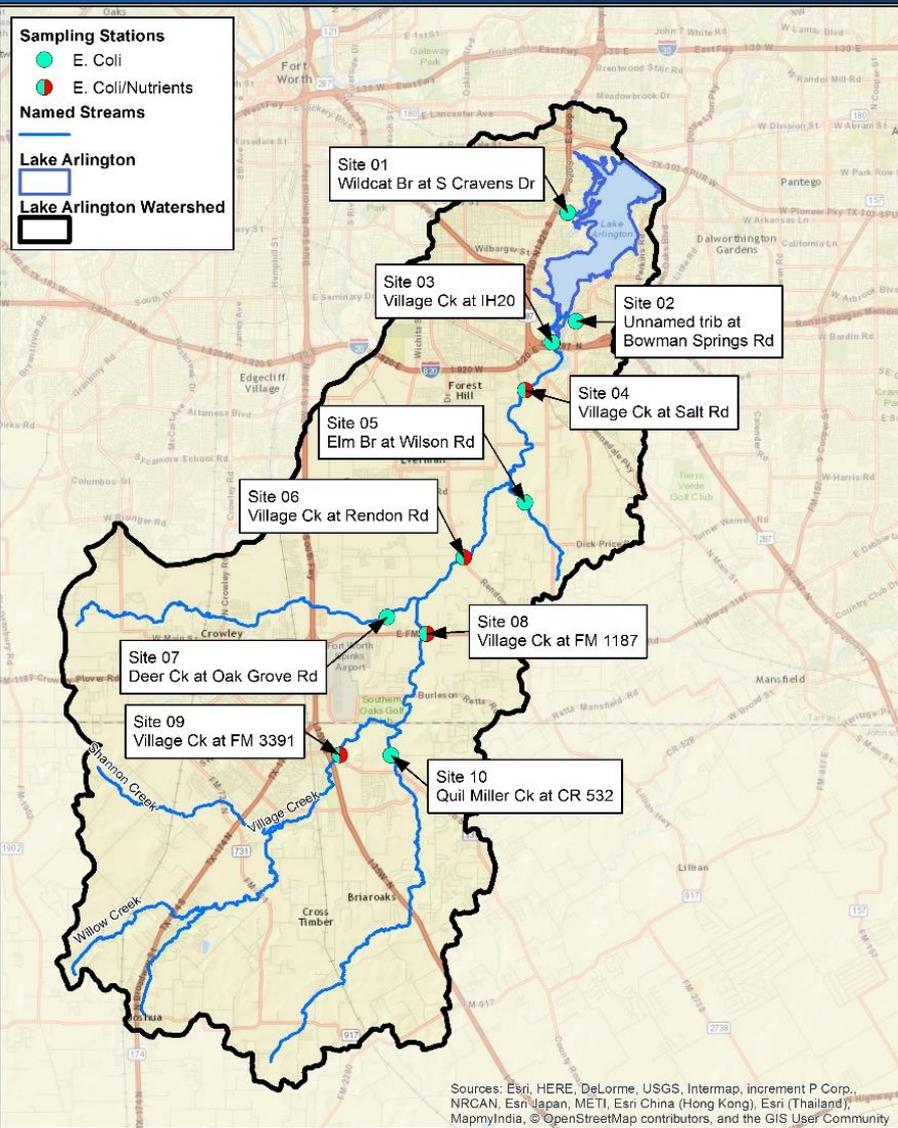
- 13904 = 36 ug/L
- 13899 = 41.5 ug/L
- 11042 = 38.1 ug/L
- 13897 = 16.4 ug/L

When are we sampling?

- Begin sampling in May 2016
- One year of routine monthly sampling, regardless of flow
- Maximum of four additional flow-biased samples
 - Two high-flow
 - Two low-flow
- 6 sites monitored for bacteria only
- 4 sites monitored for bacteria and nutrients



Where are we sampling?



- One site west of Lake Arlington
- One Site east of Lake Arlington
- Five sites on the main stem of Village Creek
- Three sites on Village Creek Tributaries
 - Deer Creek
 - Elm Branch
 - Quil Miller Creek



Why did we pick these sites?

- Two existing sites with historical data for comparison
- Public road crossings
- Even representation of land uses
- Includes main channel and tributaries



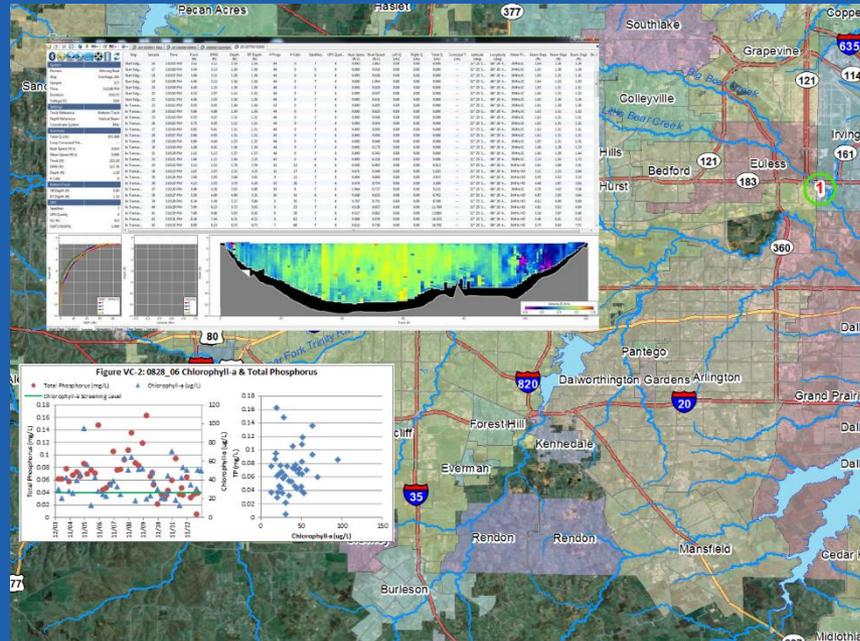
What will we learn from the data?

- Establishes baseline knowledge
- Monitoring results can show changes over time
 - Are there any trends?
 - Does the time of year matter?
- Data can show potential areas of concern
 - Is land use a major factor?
 - Are parameters highest in a particular tributary?
 - **OR...is something else entirely different going on that we haven't considered?**

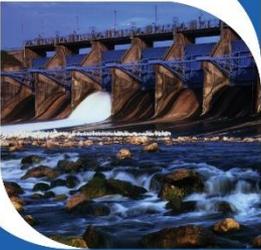


How will we use the data?

- Promotes group discussion and provides basis for informed decisions
- Denotes focus areas for specific BMPs
- Ultimately drives decisions that will become part of the WPP

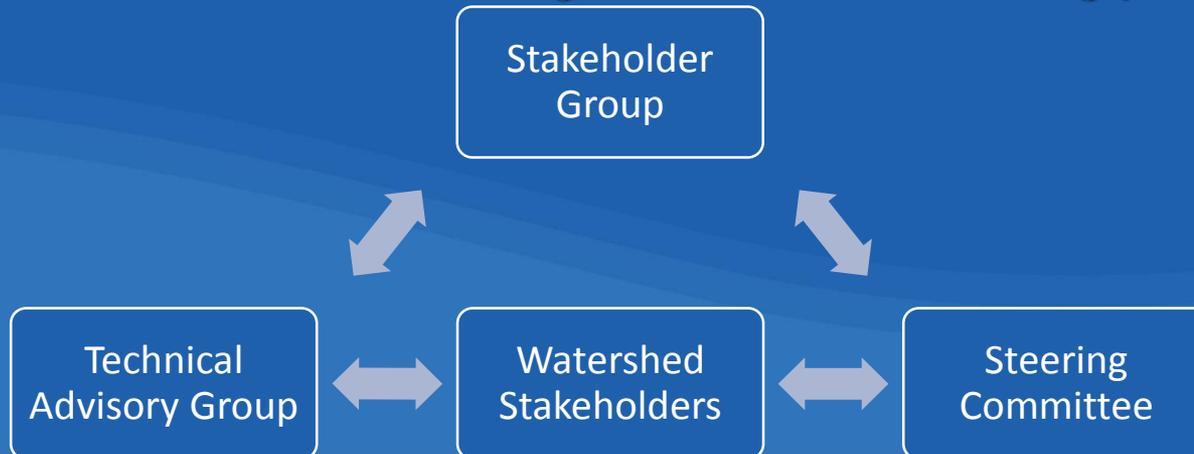


Stakeholder Participation



Building the Stakeholder Group

- **GOAL – develop a plan that will drive implementation**
 - Locally-driven and stakeholder supported
 - Improve water quality in Village Creek
 - Protect water quality in Lake Arlington
- **Steering committee**
 - Comprised of local “movers ‘n shakers”
 - Voting body responsible for making decisions
- **Technical Advisory Group**
 - Comprised of resource agency personnel
 - Provides direction and guidance, but no voting power



Watershed Logo Designs

1



2



3



4



5



6



Credit for logo design goes to Sarah Barr with the City of Arlington.

Winner, Winner, Chicken Sandwich

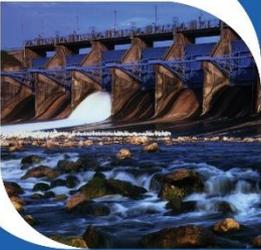


Village Creek
Lake Arlington

WATERSHED
PROTECTION



Future Meetings and General Timeline



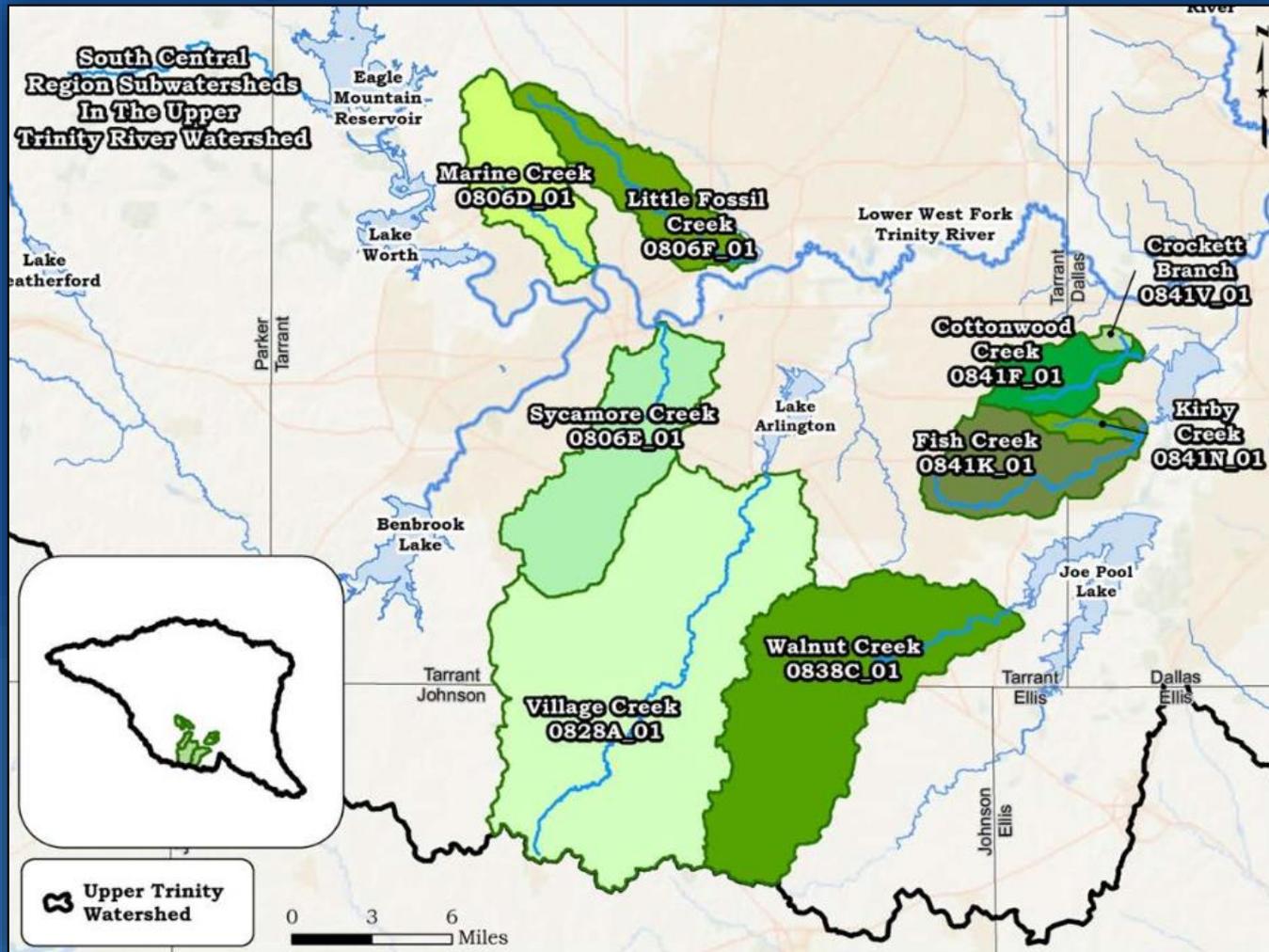
Where do we go from here?

- Next Public Meeting
 - Tentative for mid-February 2016
- Texas Watershed Stewards Workshop
 - Tentative Date: March 10, 2016, 1:00 pm
 - TRA General Office – Arlington, TX
- First Steering Committee Meeting
 - Tentative for Early March 2016
- Approve Monitoring Plan
 - Finalize by late March 2016
- Begin sampling in May 2016
 - Duration = 1 year
- Load Calculations & BMP evaluation
 - Baseline data retrieval underway
 - Analysis completed by mid-2017



Getting ahead of ourselves...

- Looking ahead towards implementation:



Source: Texas AgriLife Research



Questions?

<http://www.trinityra.org/lakearlingtonvillagecreek>

Aaron Hoff

Trinity River Authority

hoffa@trinityra.org

817.493.5581

