

Discussion of the Draft Sections of the Geronimo and Alligator Creeks WPP



Introduction and Background Chapters Update

New Additions

- Added a history section that was taken from *The History of Geronimo, Guadalupe County, Texas*
- Added a section that highlights the biology of Geronimo Creek, justifying and explaining the high aquatic life use designation for Geronimo Creek
- Seguin Outdoor Learning Center

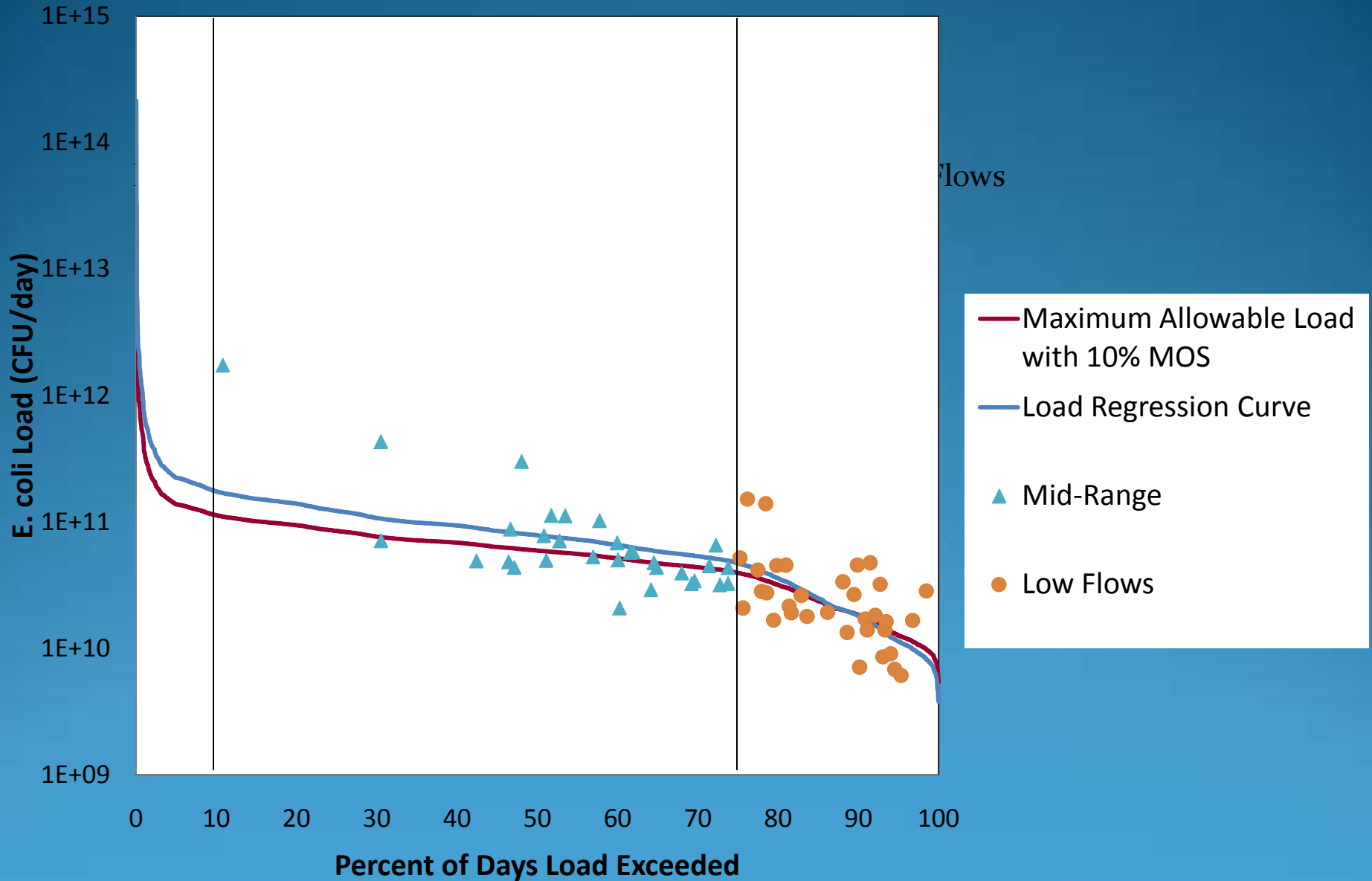
Discussion of the Draft LDC Section



How do you read a LDC?

- Data points above the red line (Maximum allowable load) are above the standard
- Data points below the line are below the water quality standard
 - The “best fit” blue line demonstrates the average of the data

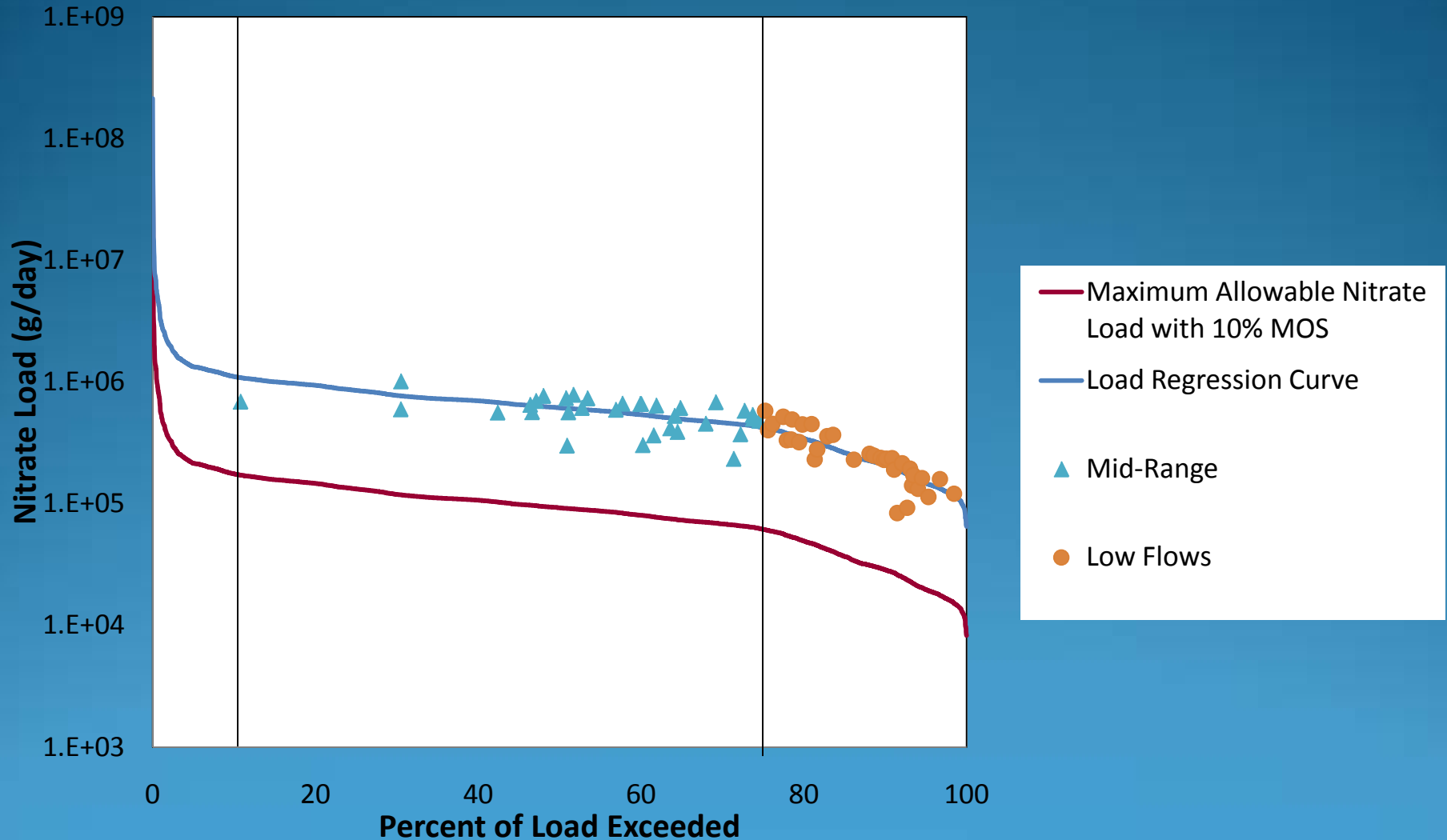
LDC for Bacteria for Geronimo Creek at Haberle Road



Geronimo Creek at Haberle Road Bacteria Reductions

Flow Condition	Percent Reduction
High Flows	42%
Mid-Range	26%
Low Flows	0%

Geronimo Creek at Haberle Rd Nitrate Concentrations



Geronimo Creek at Haberle Rd Nitrate Reductions

Flow Conditions	Percent Reduction
High Flows	84
Mid-Range	85
Low Flows	86

Geronimo at Haberle Road

Summary

- Bacteria
 - Exceedances occur during high and mid range flows
 - Required reduction (26%) is reasonable and achievable
- Nitrates
 - Exceedances occur across all flows
 - Further investigation may be required

Questions?



Discussion of the Draft Final SELECT Outputs

SELECT Inputs

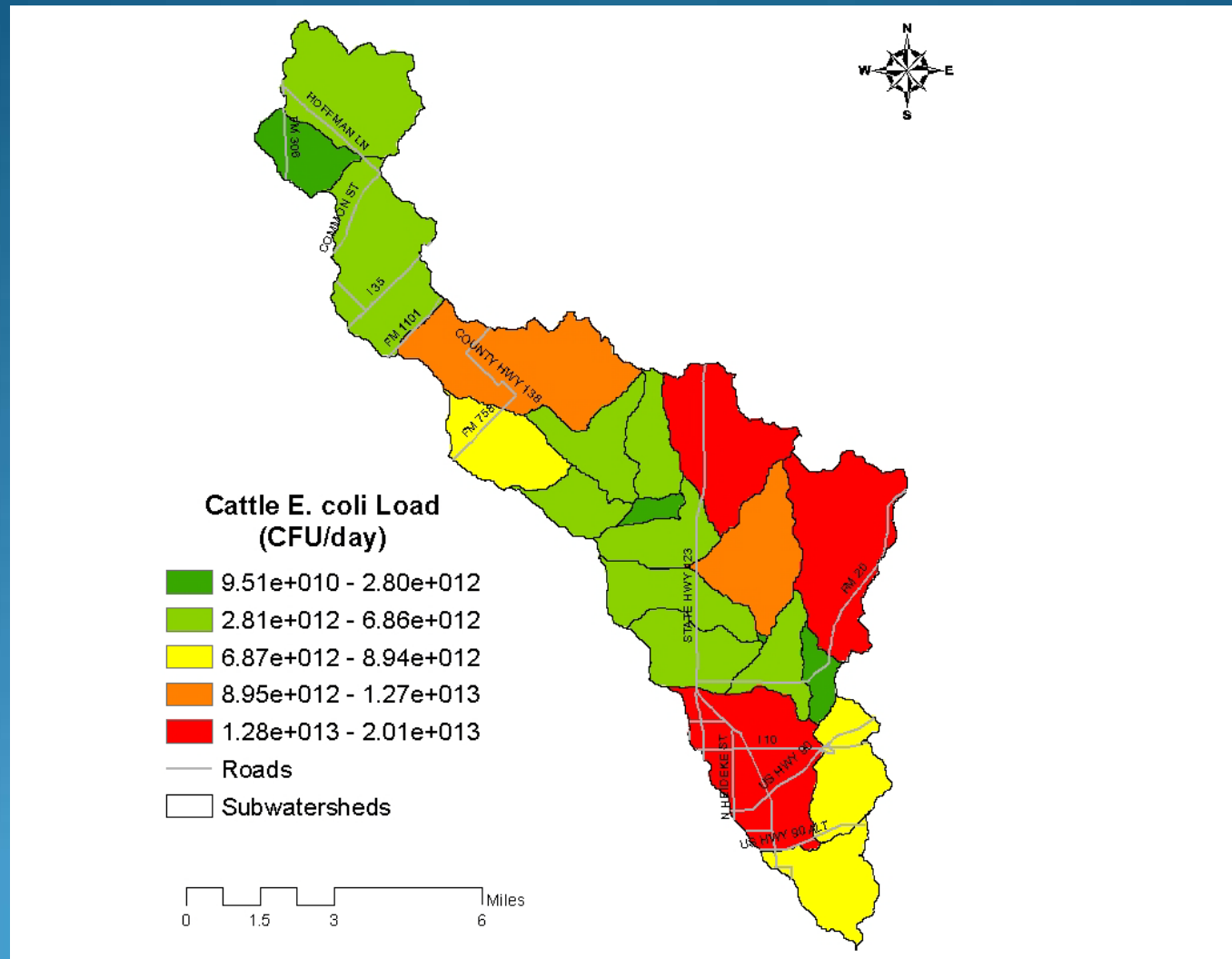
- Agriculture Work Group
 - Livestock: cattle, horse and goat populations
 - Wildlife populations (deer)
 - Feral hog populations
- Urban Work Group
 - Pet populations
 - Urban runoff
- Wastewater Work Group
 - Septic systems
 - WWTF data

Cattle

The Work Group estimated:

- 1 animal/20 acres in Comal County
- 1 animal/10 acres in Guadalupe County
- To distribute cattle to:
 - Rangeland
 - Forest
 - Managed Pasture
- Estimated Watershed Population: 2629

Daily Potential *E. coli* loads resulting from Cattle

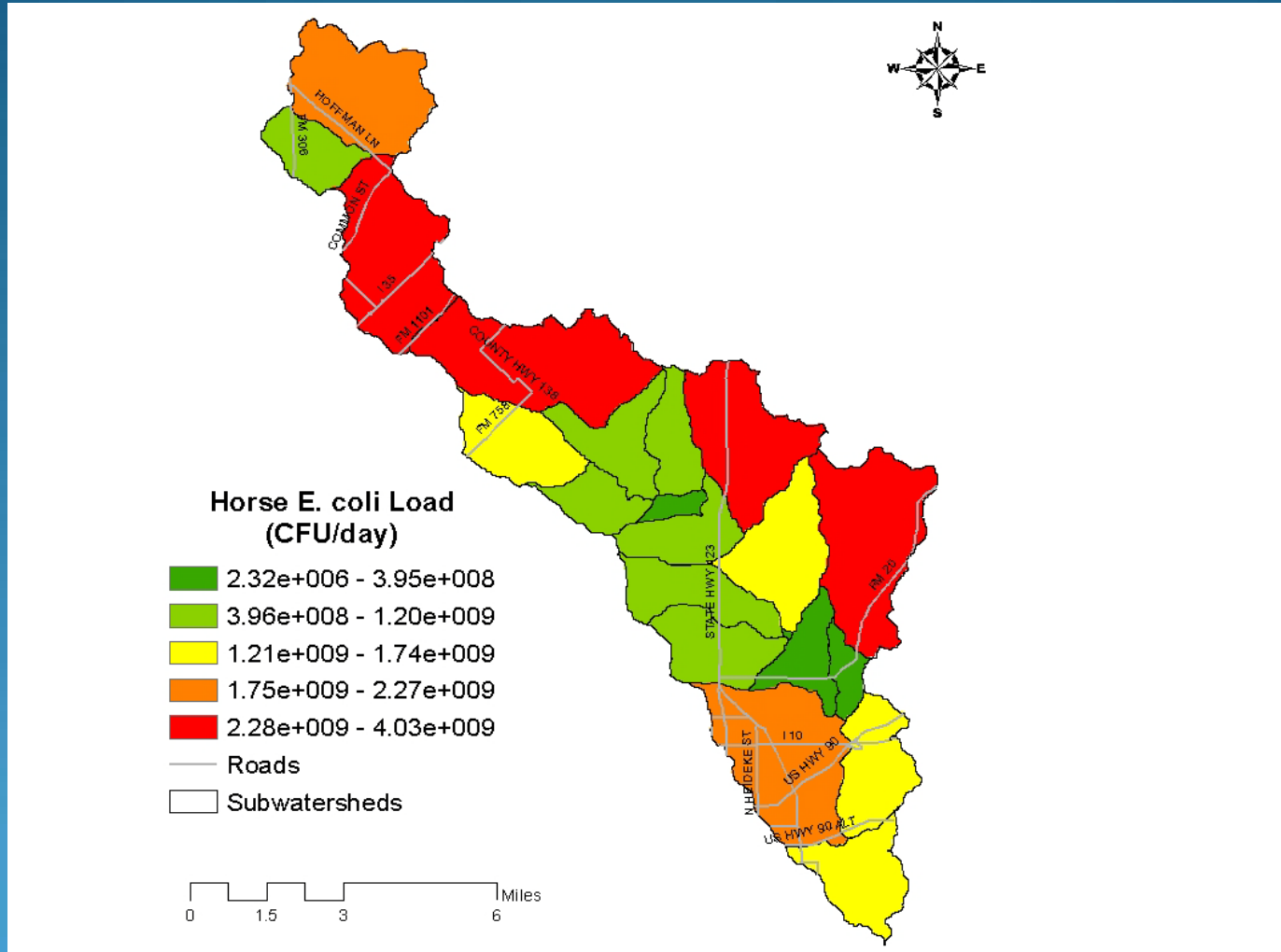


Horses

The Work Group chose to:

- Use the NASS population as the basis for the estimate for the watershed
- Results in a density of 132 acres per animal
- Distribute horses to:
 - Rangeland
- Estimated Watershed Population: 124

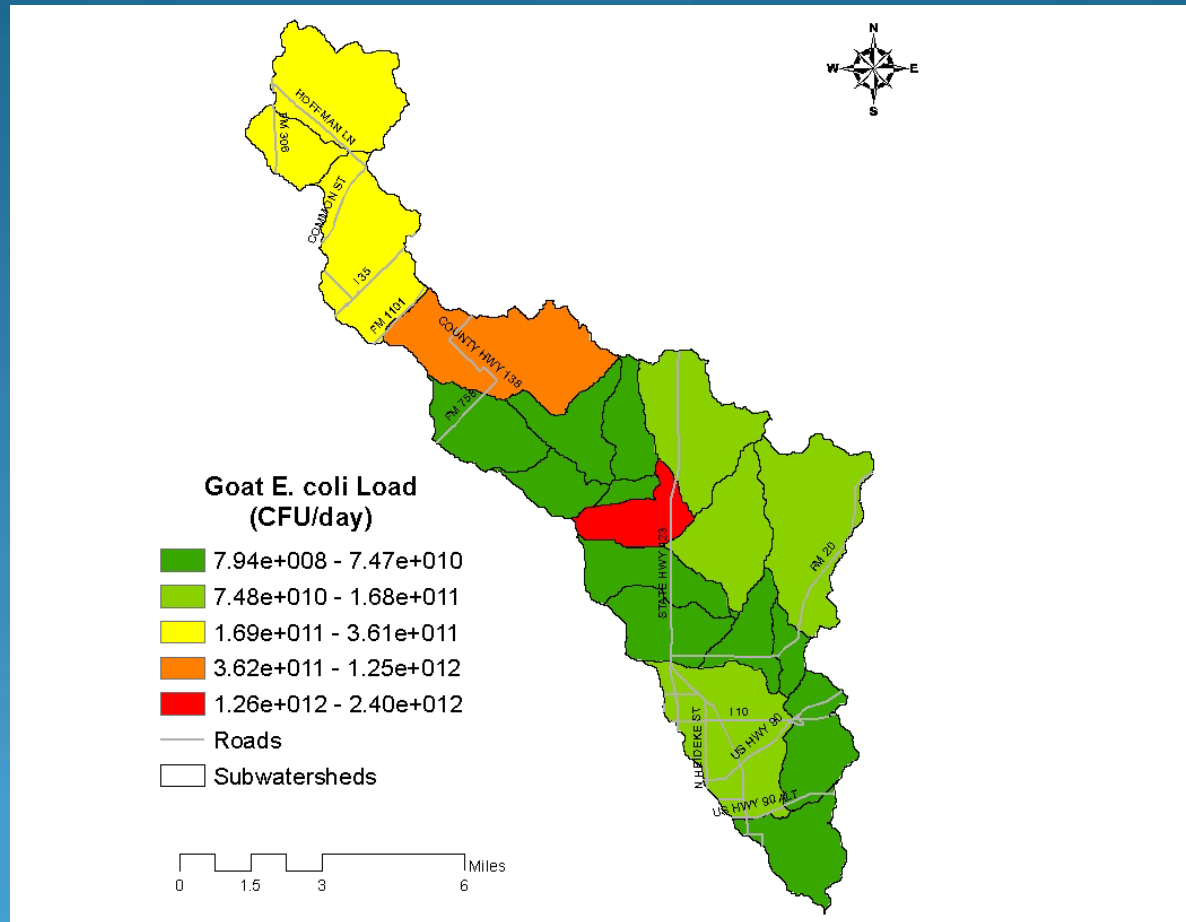
Daily Potential *E. coli* loads resulting from Horses



Goats

- The Work Group estimated:
 - 150 in Subwatershed 4
 - 300 in Subwatershed 10
 - 100 spread across Subwatersheds 1, 2, and 3
 - 200 evenly distributed around entire watershed
 - Land Use
 - Rangeland
 - Forest
 - Managed Pasture
- Estimated Watershed Population: 750

Daily Potential E. coli Loads from Goats

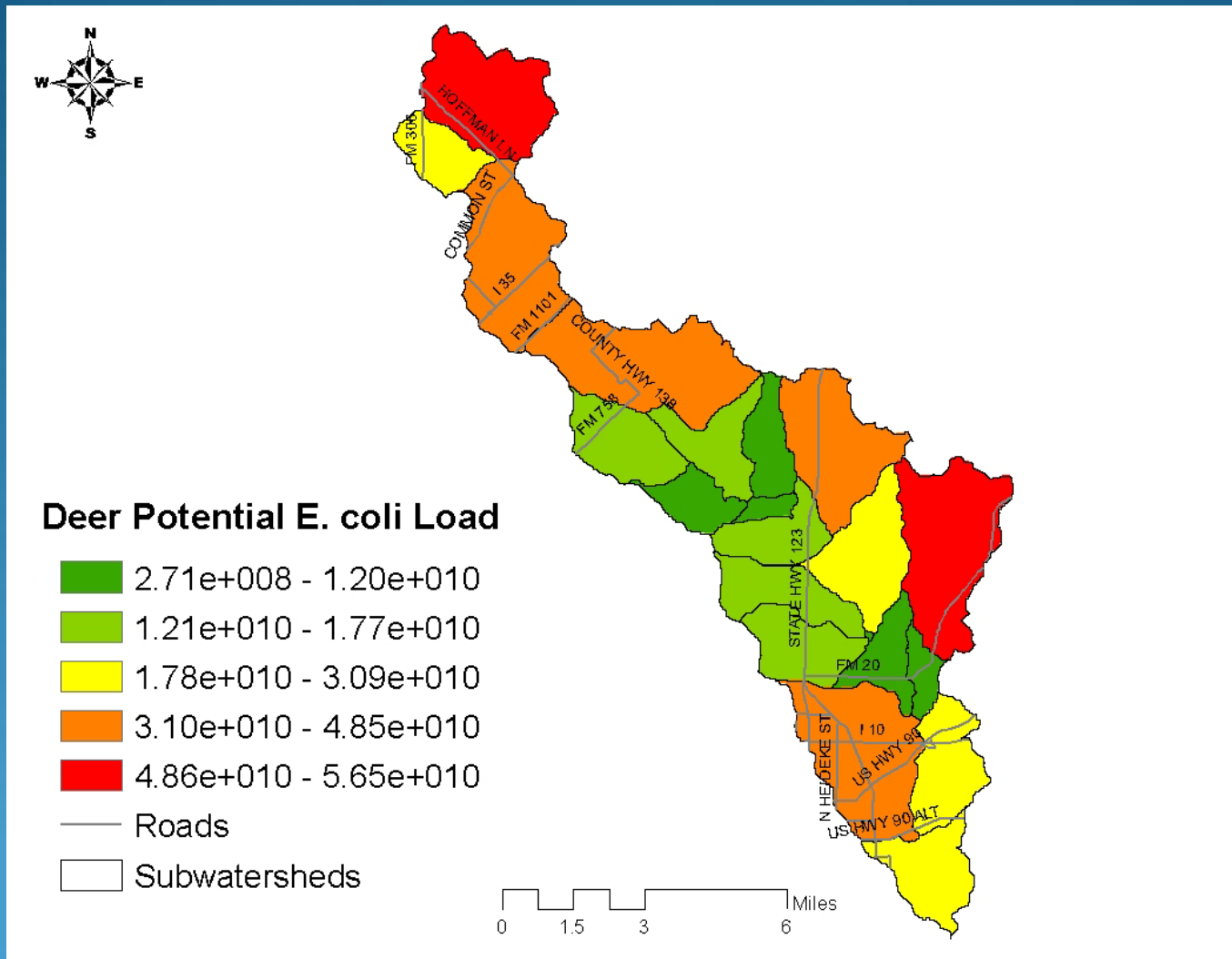


White-Tailed Deer

The Work Group chose to:

- Use the TPWD estimate
 - Average of the previous 4 years
 - Density of 10 acres per animal
- Distribute them to:
 - Forest
 - Rangeland
- Estimated Watershed Population: 2172

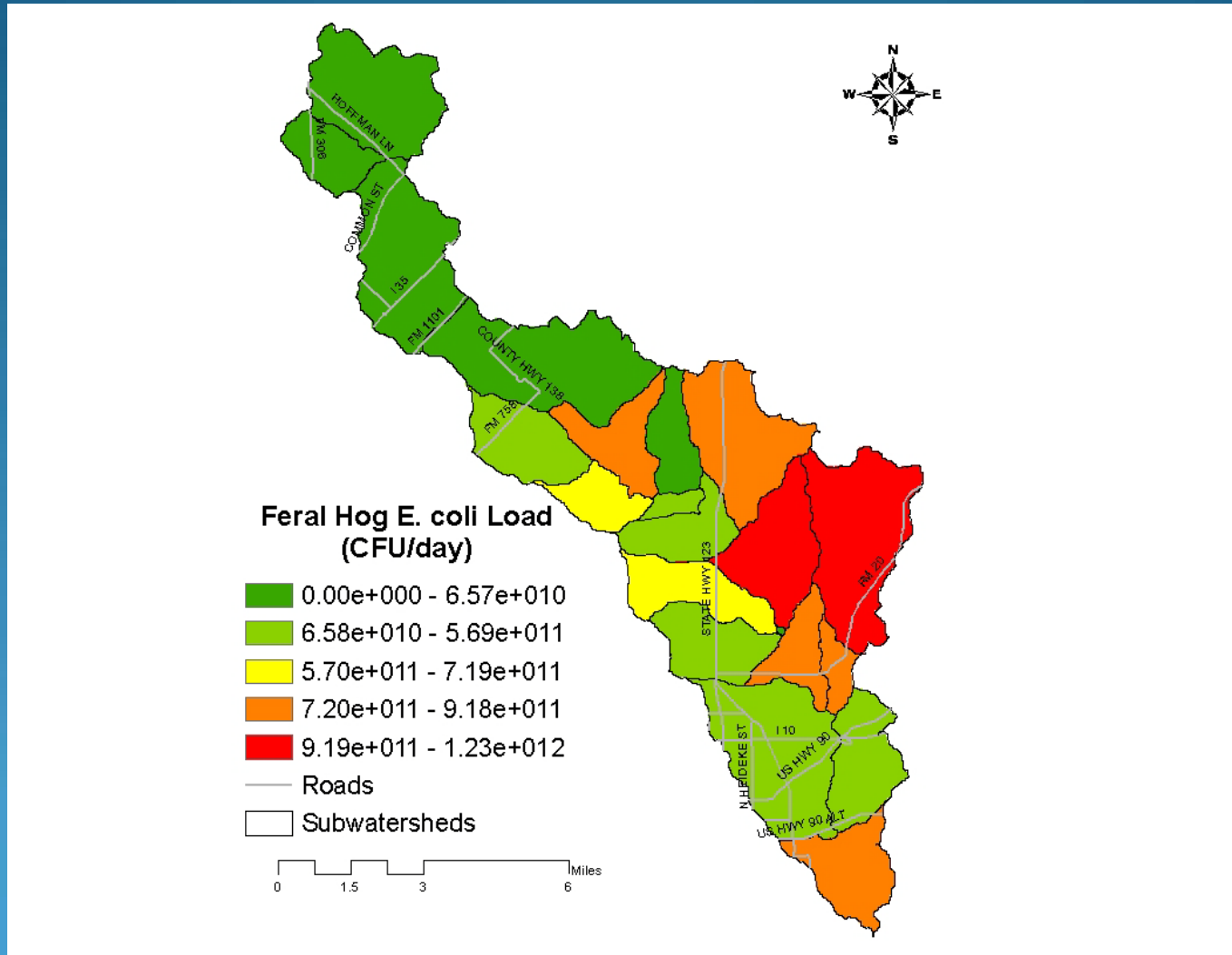
Daily Potential *E. coli* Loads from Deer



Feral Hogs

- The Work Group chose to:
 - Distribute feral hogs to all land uses except for urban and open water
 - Concentrate populations to perennial riparian corridors
 - 25 animals per square mile (1 animal per 26 acres)
- Estimated watershed population: 1626

Daily Potential *E. coli* Loads from Feral Hogs



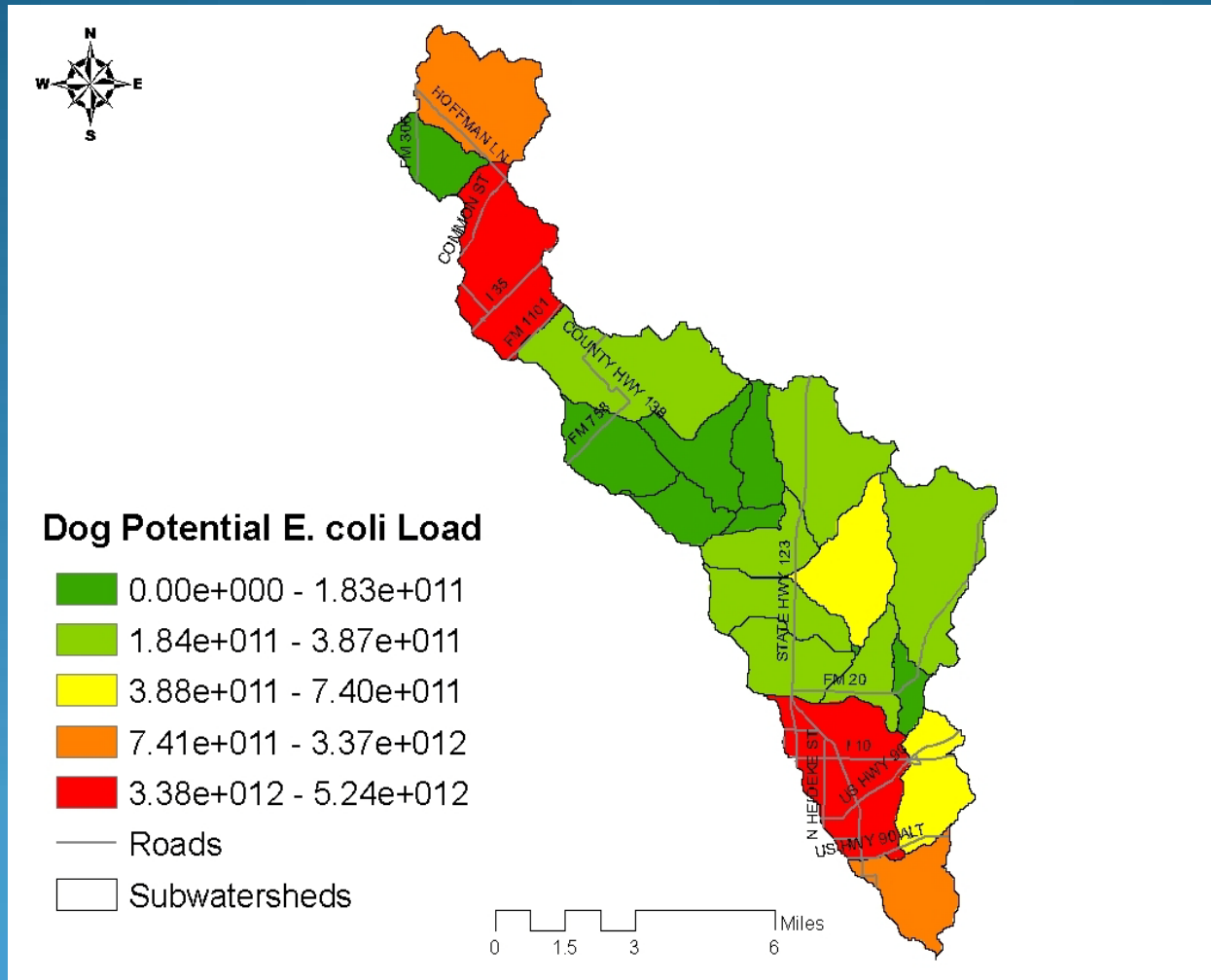
SELECT Inputs

- Urban Work Group
 - Dog populations
 - Urban runoff
- Wastewater Work Group
 - Septic systems
 - WWTF data
- Agriculture Work Group
 - Feral hog populations
 - Livestock: cattle, horse and goat populations
 - Wildlife populations (deer)

Dog Population Estimate

- The Work Group decided to use an estimate of 1.0 dog per household
- Utilized 911 addresses to determine the number of households
- Estimated watershed population: 6,362 dogs

Daily Potential *E. coli* Loads from Dogs

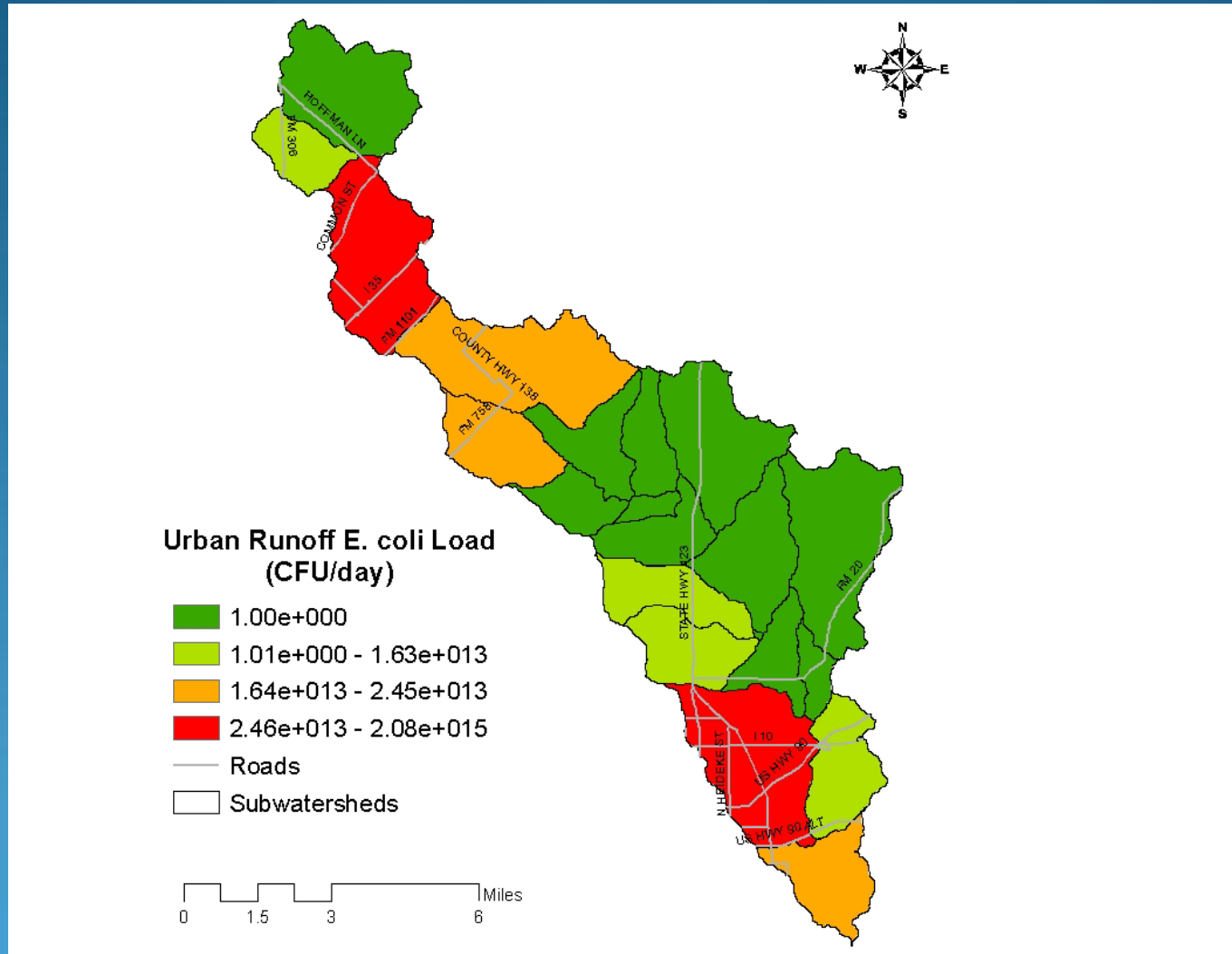


Urban Runoff

- Curve Number Approach
 - Curve number assigned determines runoff percent
 - Curve numbers were determined by land use
- Precipitation = based on annual average daily rainfall
- Runoff Volume = function of precipitation and curve number
- Concentration = based on a study by the COA

Bacteria load = runoff volume * concentration

Daily Potential *E. coli* loads resulting from Urban Runoff



Loading Estimate for Septic Systems

Bacteria Load = Number of failing systems * flow * concentration

Number of failing systems

- Number of people per home from 2000 Census
- 911 addresses and then determined areas that are served by collection systems
- Failure rate average based on soil data and the age of the system

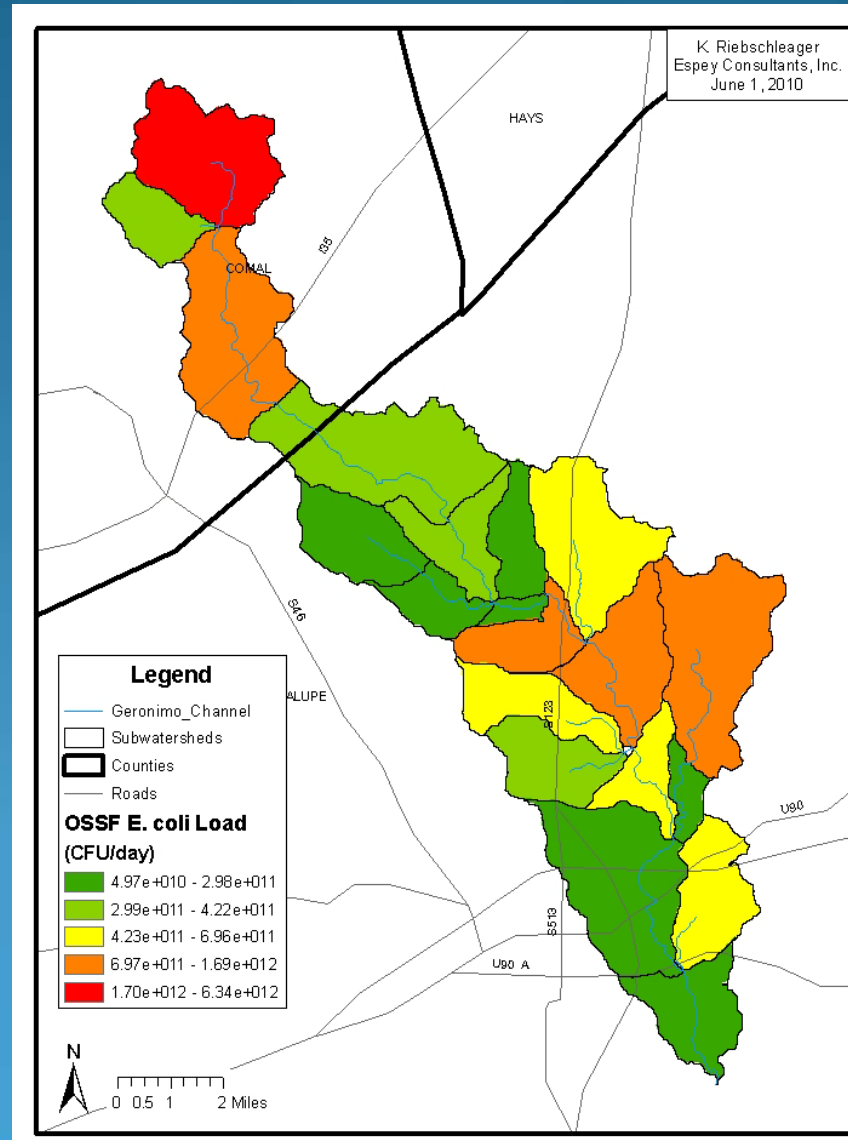
Flow

- 60 gal/person/day average

Concentration

- Average concentration of bacteria in effluent

Daily Potential *E. coli* Loads from Septic Systems



Questions?



Management Measures Update/Review

Other Management Measures

- Seek funding to provide New Braunfels with the means to implement programs/activities that are above the requirements of their Phase II Storm Water Permit
- Addition of explanation of the Oak Village North Wastewater Project
- Seek funding for more frequent and expanded household hazardous waste cleanups in the watershed
- Discussion of expanding educational opportunities based out of the Seguin Outdoor Learning Center

Proposed Feral Hog Management Measures

- Partner with Texas Wildlife Service to work directly with landowners to remove feral hogs
- Develop a feral hog tracking website
- Landowner surveys will be conducted to identify specific feral hog locations and better quantify populations
- Organize and conduct feral hog education workshops for landowners and managers

Questions?



Timeline

- January 2011- Deliver a complete draft WPP to the stakeholders, and begin to discuss and review final draft
- February- Conduct public meetings in New Braunfels and Seguin to receive comments on draft WPP

