

# Lampasas River Watershed Partnership

Urban NPS Work Group Meeting  
October 15, 2010

Lisa Prcin  
Watershed Coordinator  
Texas AgriLife Research at  
Blackland Research & Extension Center

# Introductions

# Past Business

# Steering Committee Report

- ▶ Members approved the dissolution of Education and Outreach Group
  - Tasks will be distributed between Urban NPS and Agriculture and Wildlife Work Groups
  - Tasks are:
    - Defining target audiences for both broad-based and source-specific outreach and awareness programs
    - Develop strategies to reach these audiences
- ▶ David Cole, Kempner Water Supply Corp requested to be removed from the Steering Committee
  - Members approved the Mr. Cole's resignation and decided to not to replace his position at this time

# Steering Committee Report

- ▶ Reviewed *E. coli* Load Duration Curves
  - Analyses indicated that load reductions were only needed in periods of high flow
  - Pollutants are very difficult to control in the high flow regime
- ▶ Steering Committee voted and approved a margin of safety (MOS) level set at 0%
  - Agreed that the Texas Surface Water Quality Standards had a 'built-in' MOS
- ▶ Discussed and made recommendations for water quality sampling points for Bacterial Source Tracking project

# 2010 Integrated Report

- ▶ DRAFT 2010 Texas Integrated Report was approved by the TCEQ Commissioners on August 25<sup>th</sup>
- ▶ Draft has been sent to EPA for final approval
- ▶ Lampasas River is NOT listed as impaired on draft, pending EPA's approval

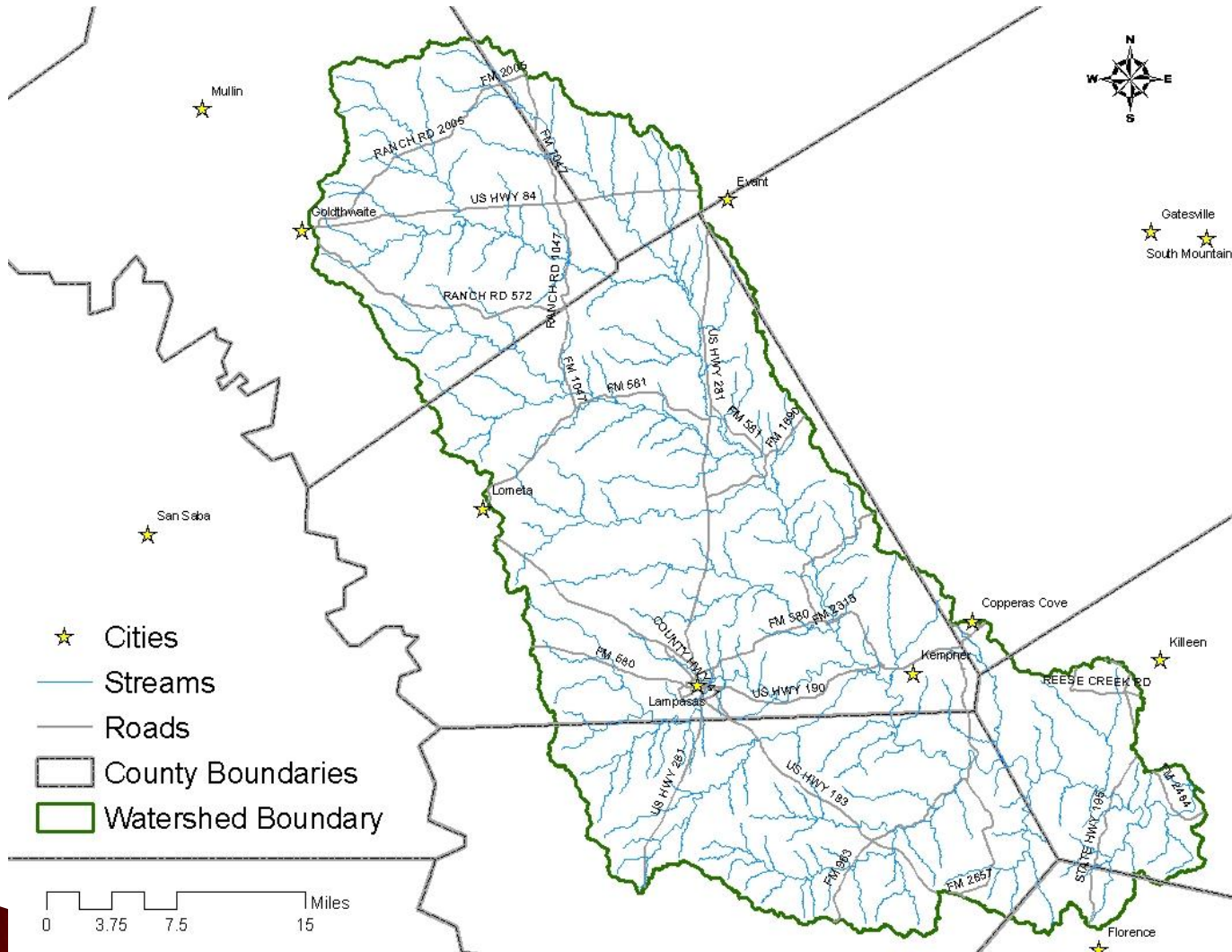
# Prioritize Subwatersheds for BMPs

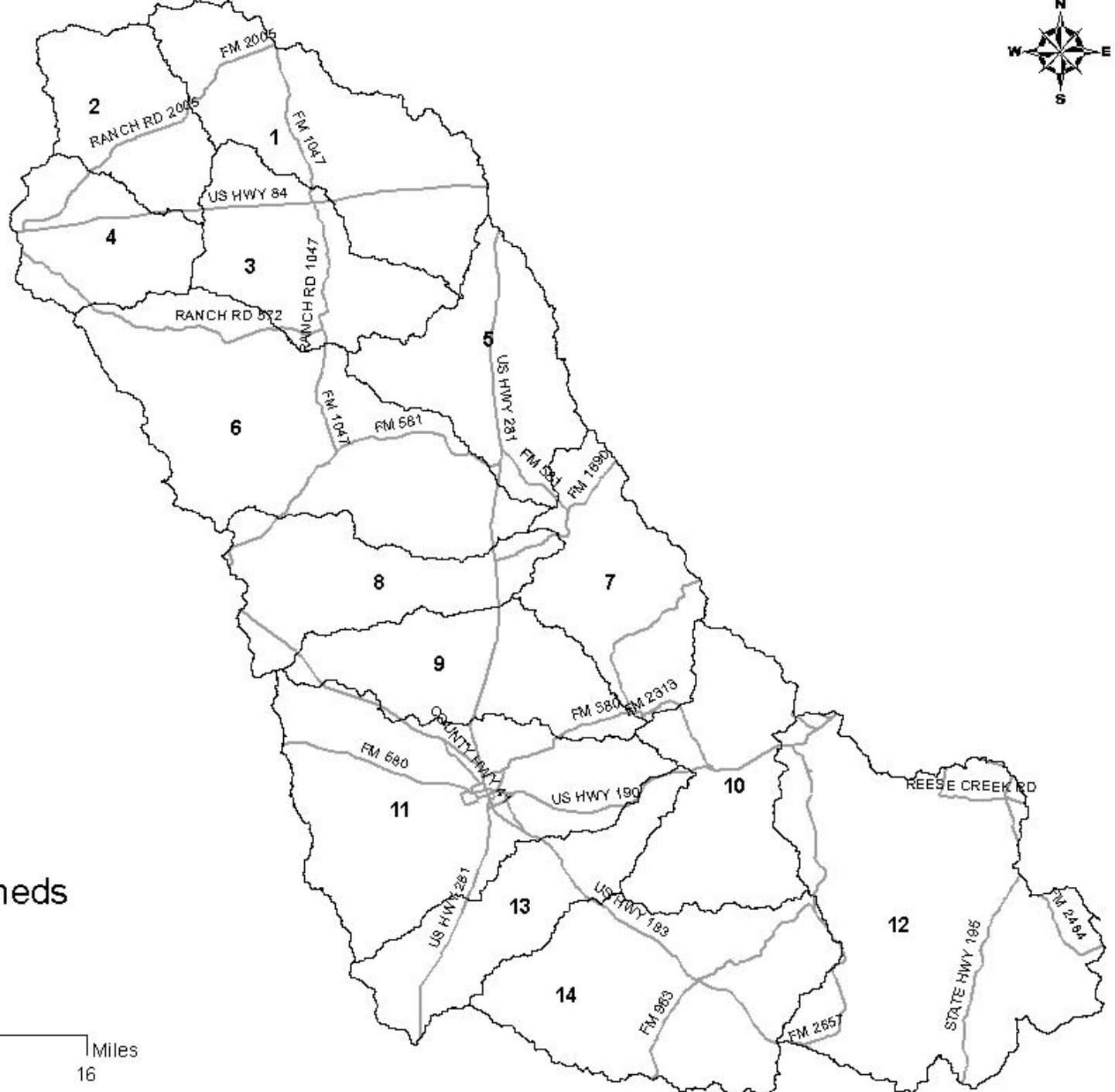
# Potential Sources with SELECT Analysis

- ▶ Urban NPS Work Group
  - Septic Systems
  - Wastewater Treatment Facilities
  - Dogs
- ▶ Agriculture & Wildlife Work Group
  - Horses
  - Goats
  - Sheep
  - Cattle
  - Confined Animal Feeding Operations
  - Deer
  - Feral Hogs

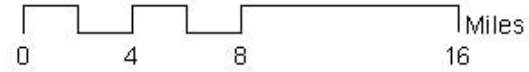


# Lamparas River Watershed

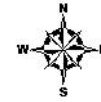




□ Subwatersheds  
— Roads

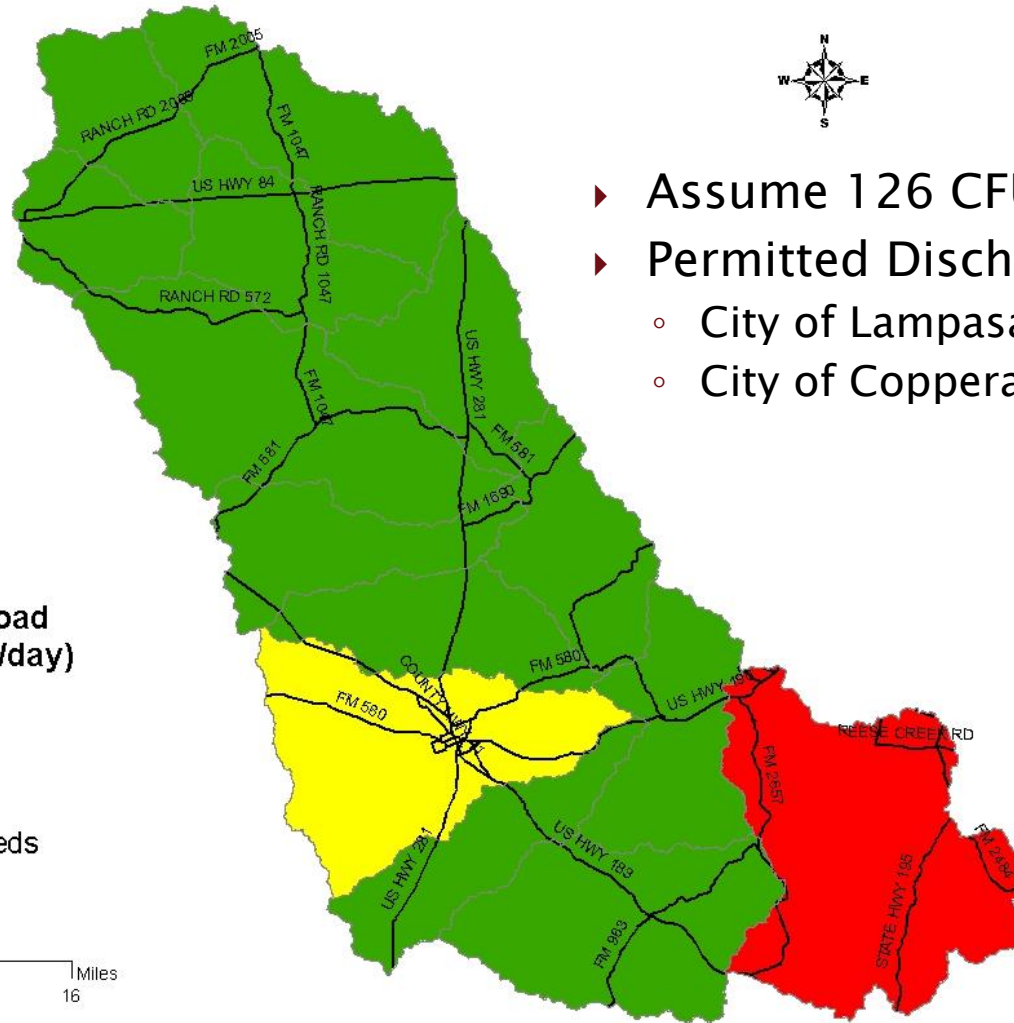
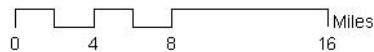
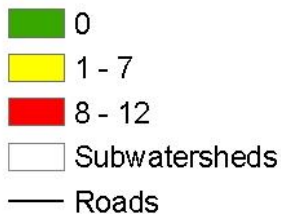


# Potential *E. coli* loads resulting from Wastewater Treatment Facilities

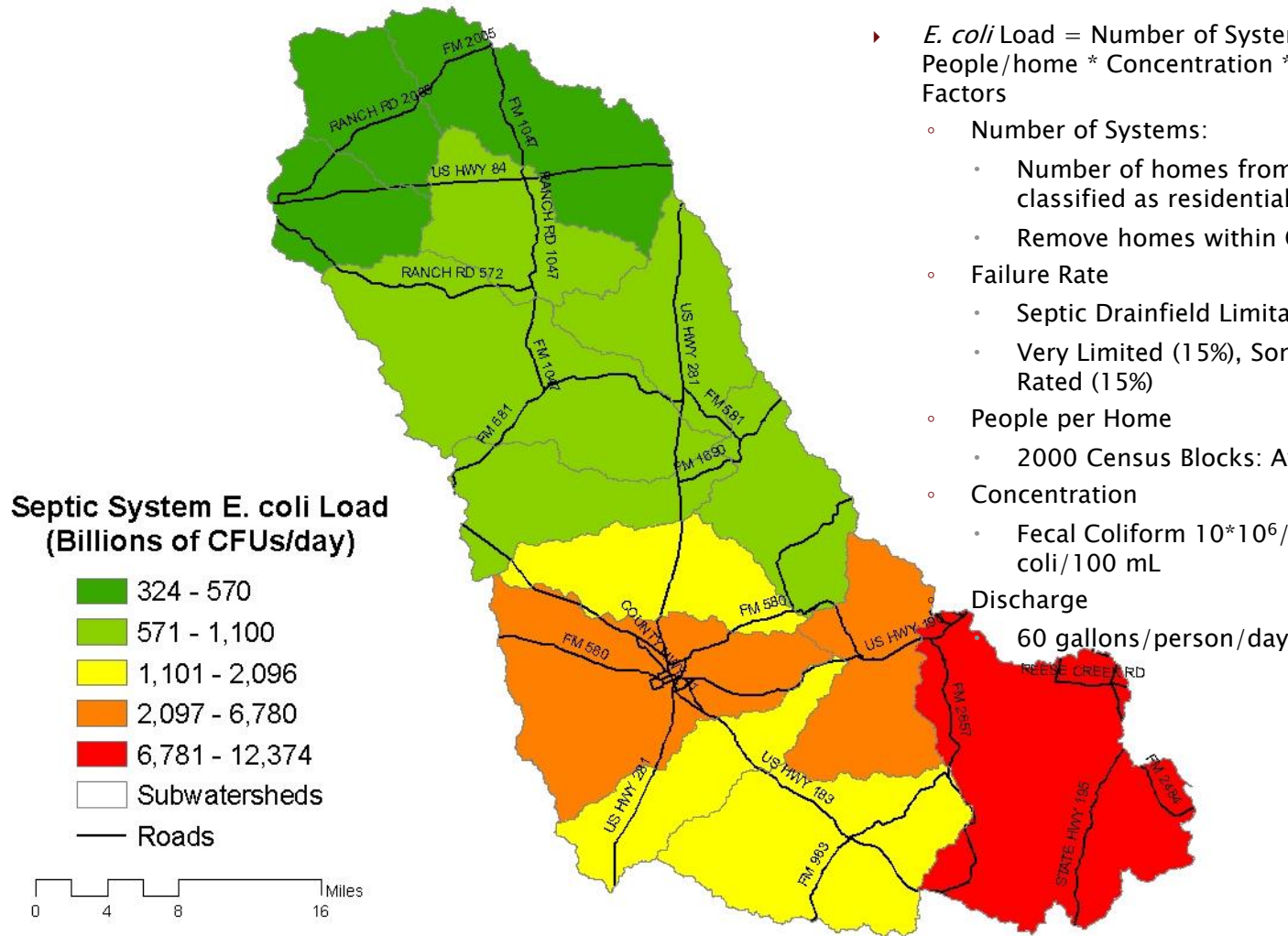


- ▶ Assume 126 CFU/100 mL
- ▶ Permitted Discharge
  - City of Lampasas: 1.457 MGD
  - City of Copperas Cove: 2.5 MGD

WWTF *E. coli* Load  
(Billions of CFUs/day)



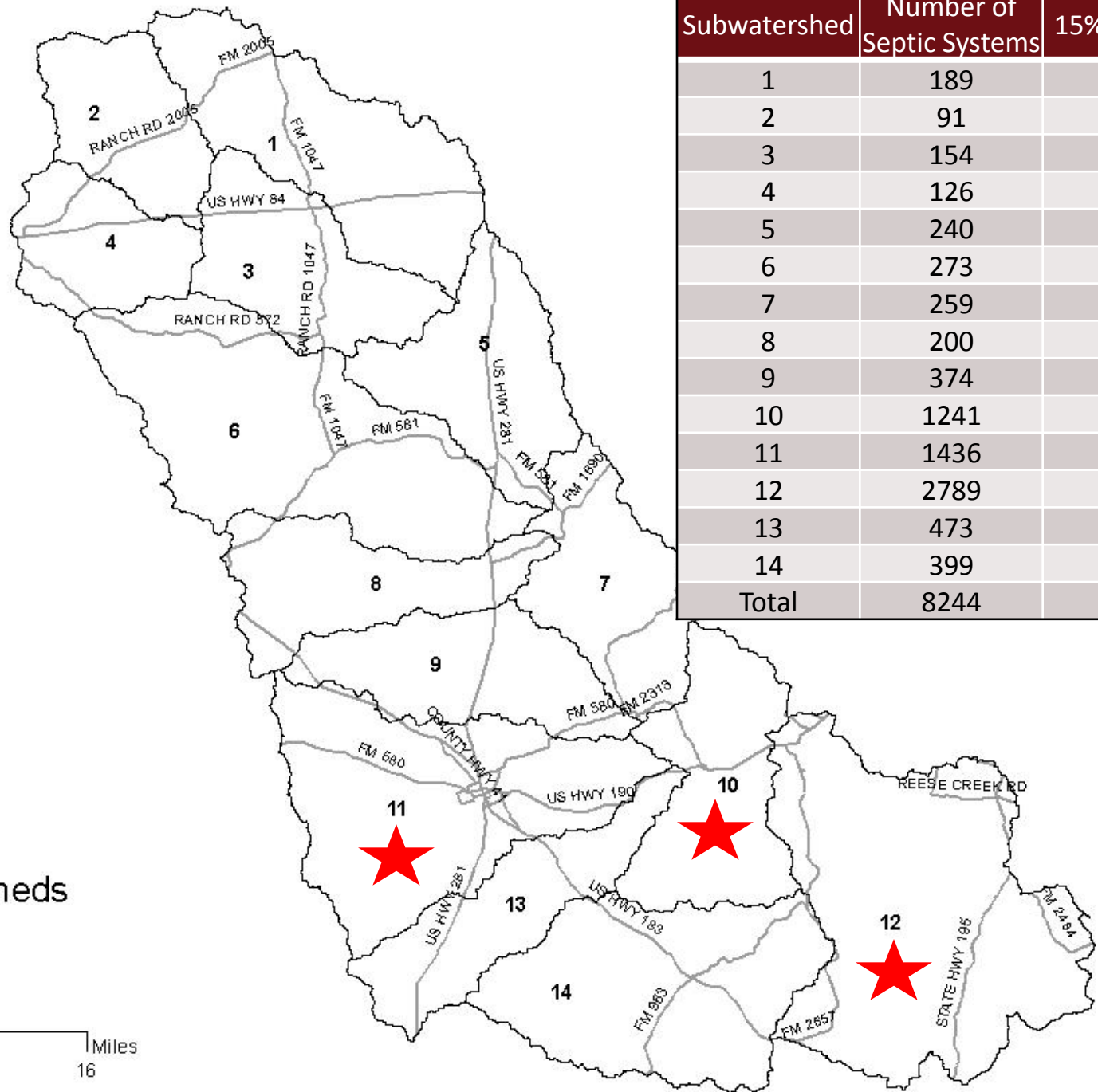
# Potential *E. coli* Load Resulting From Septic Systems



▶  $E. coli$  Load = Number of Systems \* Failure Rate \* People/home \* Concentration \* Discharge \* Conversion Factors

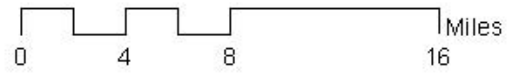
- Number of Systems:
  - Number of homes from 911 addresses that are classified as residential
  - Remove homes within CCN boundary
- Failure Rate
  - Septic Drainfield Limitation Class – SSURGO soil
  - Very Limited (15%), Somewhat Limited (10%), Not Rated (15%)
- People per Home
  - 2000 Census Blocks: Average Household Size
- Concentration
  - Fecal Coliform  $10 \times 10^6 / 100 \text{ mL} = 5 \times 10^6 \text{ E. coli} / 100 \text{ mL}$

Discharge  
60 gallons/person/day

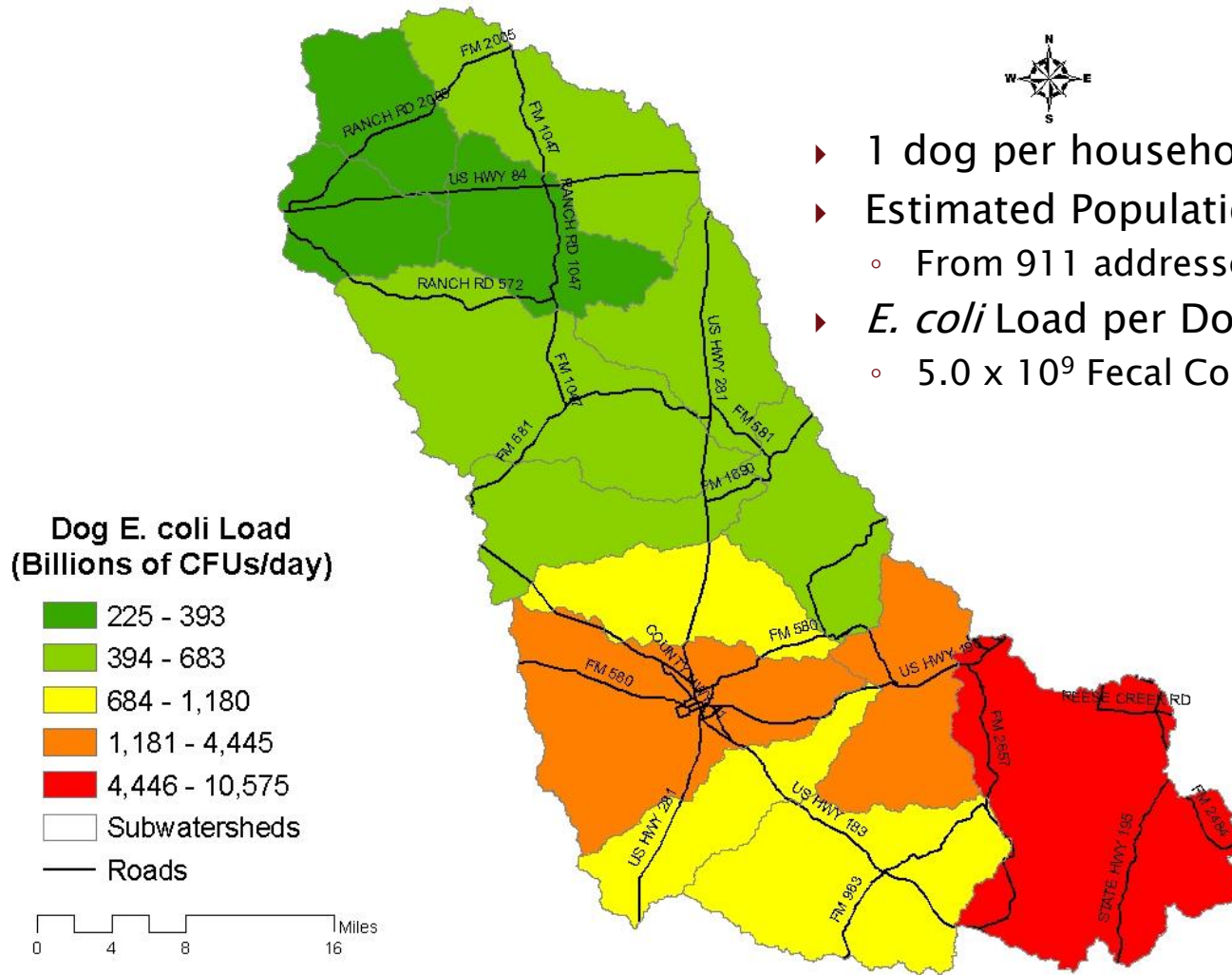


Subwatershed	Number of Septic Systems	15% Fail Rate
1	189	28
2	91	14
3	154	23
4	126	19
5	240	36
6	273	41
7	259	39
8	200	30
9	374	56
10	1241	186
11	1436	215
12	2789	418
13	473	71
14	399	60
<b>Total</b>	<b>8244</b>	<b>1237</b>

Subwatersheds
   
 Roads



# Potential *E. coli* loads resulting from Dogs



- ▶ 1 dog per household
- ▶ Estimated Population: 10,775
  - From 911 addresses classified as residential
- ▶ *E. coli* Load per Dog
  - $5.0 \times 10^9$  Fecal Coliform =  $2.5 \times 10^9$  *E. coli*

# Potential Urban Nonpoint Source Best Management Practices

# Wastewater Treatment Facilities

- ▶ More rigorous monitoring of effluent
  - Current requirements in Texas for domestic WWTF

Permitted Flow (MGD)	Chlorine Systems	Ultraviolet Systems
1.0 – less than 5.0	1 /Week	Daily

- ▶ Stricter bacteria limits for WWTF effluent
  - Current regulations: Contact recreation WQ standard ~ geomean 126 MPN/100ml
    - Does not allow capacity to accommodate loads from other sources and existing downstream discharge
  - Can be voluntary or regulatory



# Wastewater Treatment Facilities

- ▶ Upgrade plants if there is a problem meeting standards
  - Possible sources of funding include:
    - EPA via the TWDB, Clean Water State Revolving Fund Program
    - U.S. Department of Commerce, Economic Development Grants for Public Works and Development Facilities
    - U.S. Department of Agriculture, Rural Utilities Service Water and Waste Disposal Program
    - U.S. Department of Housing and Urban Development, State Community Development Block Grant Program
- ▶ Use treated effluent for facility irrigation
  - Allows water to trickle through grass & soil and filter out additional pollutants

# Sanitary Sewer Systems

- ▶ Routinely inspect sewer lines to identify problem areas
- ▶ Replace old clay pipe sewer lines
- ▶ Clean & maintain existing sewer lines
- ▶ Develop database for reporting of all Sanitary Sewer Overflows (SSO) within the watershed
- ▶ Ordinances to determine proper size for grease traps, to inspect them and require grease traps be properly cleaned & maintained

# Septic Systems

- ▶ Map permitted and unpermitted OSSFs within the watershed
  - Identify and address target areas
- ▶ Repair or replacement
- ▶ Connections to municipal systems (where applicable)
- ▶ Enforcement of noncompliant systems
- ▶ Owner education
  - Encourage repair and pump-out logs to be kept by homeowners &/or maintenance providers
- ▶ Public education
  - Coordinate with Texas Real Estate Commission to educate real estate agents, property inspectors, and consumers about identification and consequences of inadequate maintenance and failure of OSSFs

# Dogs

- ▶ Pet waste stations in parks and popular walking trails
- ▶ Public education



# Other Pollutant Source Concerns

- ▶ Residential lawn care
  - Proper application rate and usage of fertilizers and pesticides
- ▶ Management of resident waterfowl
  - Periodic relocation of resident waterfowl to prevent overpopulation and concentration in parks
- ▶ Illegal dumping
  - Signage
  - Illegal dumping tip line
  - Partnership cleanup events
  - Household hazardous waste collection events
- ▶ Other?

# Voluntary MS4 Measures

- ▶ Cities with 50,000+ residents (Killeen) must operate under a Municipal Separate Storm Sewer System (MS4) permit
- ▶ Smaller cities may voluntarily implement the same measures

# Voluntary MS4 Minimum Measures

- ▶ Public education and outreach
- ▶ Public involvement or participation
- ▶ Detection and elimination of illicit discharges
- ▶ Controls for storm water runoff from construction sites
- ▶ Cost–construction storm water management in areas of new development and redevelopment
- ▶ Pollution prevention and “good housekeeping” measures for municipal operations

# Next Steps



# Riparian Proper Functioning Condition Workshop

- ▶ Learn about the basic interaction of Hydrology – Erosion/Deposition and Vegetation from Central Texas creeks and rivers
- ▶ One-day course; ½ Classroom, ½ Field
  - Friday, October 28<sup>th</sup>
    - Classroom and Field at Parrie Haynes Equestrian Center
    - Lunch provided by City of Killeen
  - Friday, October 29<sup>th</sup>
    - Classroom at Evant Methodist Church
    - Field at the Meis Ranch, 2650 CR 2965, Evant
    - Lunch provided by City of Lampasas
- ▶ Water will be provided at field sites
- ▶ Each workshop will be limited to 40 participants
- ▶ RSVP to me at (254) 774-6008 or [lpccin@brc.tamus.edu](mailto:lpccin@brc.tamus.edu)
- ▶ Open to all members of the Partnership and then to the general public

USDA – Natural Resources Conservation Service  
Proper Functioning Condition of Riparian Areas Workshop

- 8:00 – 8:25 Registration and Sign In
- 8:25 – 8:35 The Lampasas River Watershed Partnership  
Lisa Prcin, Texas AgriLife Research
- 8:35 – 8:45 Landowners Goals and Operation  
Adam Jarrett, Parrie Haynes Ranch  
Chris Meis, Meis Ranch
- 8:45 – 9:30 Introduction to Riparian Function  
Ricky Linex, USDA - NRCS
- 9:30 – 11:15 Hydrology/ Fluvial Morphology Principles and Interactions (with Break)  
Kenneth Mayben, USDA - NRCS
- 11:15 – 12:00 Riparian Vegetation  
Ricky Linex, USDA - NRCS
- 12:00 – 12:45 Lunch
- 12:45 – 1:00 Travel to Field Site
- 1:00 – 3:30 Observation and Discussion of Riparian Sites at Field Site  
Parrie Haynes Ranch – Killeen (Thursday, October 28<sup>th</sup>)  
Chris Meis Ranch – Evant (Friday, October 29<sup>th</sup>)

\*\*\* Special thanks to the Cities of Killeen and Lampasas for providing lunch\*\*\*

Join us for the 10th Annual  
**Bell County Water Symposium**  
Central Texas Council of Governments Building  
2180 N. Main Street  
Belton, Texas

October 21, 2010 8:15 a.m.—4:00 p.m.

**AGENDA**

- 8:15 a.m. *Registration*
- 8:45 a.m. *Welcome & Clearwater Update*
- 9:15 a.m. *Results of Edwards BFZ Aquifer Recharge Zone Studies*  
Randy Williams—Bar W Groundwater Exploration, LLC
- 10:00 a.m. *Break*
- 10:15 a.m. *Conserving Water through Sustainable Communities*  
Randy Doyle—Fort Hood Environmental Division
- 10:45 a.m. *Legislative Update on Water Issues*  
Brian Sledge—Lloyd Gosselink Attorneys at Law
- 11:30 a.m. *Lunch: Status of Water Supply in Central Texas & Upcoming Projects*  
Brad Brunett—Brazos River Authority
- 12:30 p.m. *State Water Planning Process & Future Outlook*  
Trey Buzbee—Brazos River Authority  
Bill Hutchison—Texas Water Development Board
- 1:15 p.m. *Wellhead Protection & Well Maintenance*  
Justin Mechell—Texas AgriLife Extension Service
- 2:00 p.m. *Break*
- 2:15 p.m. *Conservation Easements for Water Quality Protection*  
Susan Armstrong—Texas Land Trust Council
- 2:45 p.m. *Watershed Protection Plans for the Leon & Lampasas Rivers/Nolan Creek Study Results*  
Jay Bragg—Brazos River Authority  
Lisa Prcin—Blackland Research and Extension Center  
Kristina Ramirez—City of Killeen
- 3:45 p.m. *Closing Comments*

Three CEUs available  
for Licensed Private and  
Commercial Pesticide  
Applicators

**Please RSVP by October 12, 2010**

Clearwater Underground Water Conservation District  
P.O. Box 729, Belton, TX 76513

Phone: 254-933-0120 Fax: 254-770-2360 E-mail: [cmaxwell@clearwaterdistrict.org](mailto:cmaxwell@clearwaterdistrict.org)

Symposium Sponsors: Clearwater Underground Water Conservation District; Texas AgriLife Extension; Bell County;  
BarW Groundwater Exploration, LLC; Lloyd Gosselink Attorneys at Law; AECOM, Inc.

# November Steering Committee Meeting

- ▶ Thursday, November 18, 2010
- ▶ Lampasas County Farm Bureau (tentative)
- ▶ Discussion and approval of work group recommended BMPs
- ▶ Bacterial Source Tracking Project Update