



3rd Texas Hill Country Water Summit Panel 3

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Surface Water Quality Assessment

- coordinated monitoring approach
- focus on classified water quality segments
 - Guadalupe River above/below Canyon Lake
 - Canyon Lake
 - Comal River
- and some tributaries
 - Dry Comal Creek
 - Geronimo Creek
 - Big Joshua Creek
 - Sandies Creek



Classified Segments in Comal, Kendall, and Guadalupe County





Surface Water Quality Assessment

- results of water quality monitoring given in biennial report (Texas Integrated Report)
- Draft 2016 Integrated Report was adopted by TCEQ on October 17, 2018
- being reviewed by EPA
- report evaluates data collected between 12/1/2007 and 11/30/2014
- data assessed against applicable water quality standards which are meant to protect uses (aquatic life, public water supply, recreation, etc.)



Surface Water Quality Assessment

- water bodies not meeting standards are placed on 303(d)/impaired waters list
- Comal County impairments
 - Canyon Lake (mercury, 5c, 2006)
 - Dry Comal Creek (bacteria, 5c, 2010)
 - Comal River (bacteria, 5c, 2016, not final)
- Guadalupe County impairments
 - Sandies Creek* (bacteria, 5b, 2002; DO, 5b, 1999)
 - Geronimo Creek (bacteria, 5c, 2006)



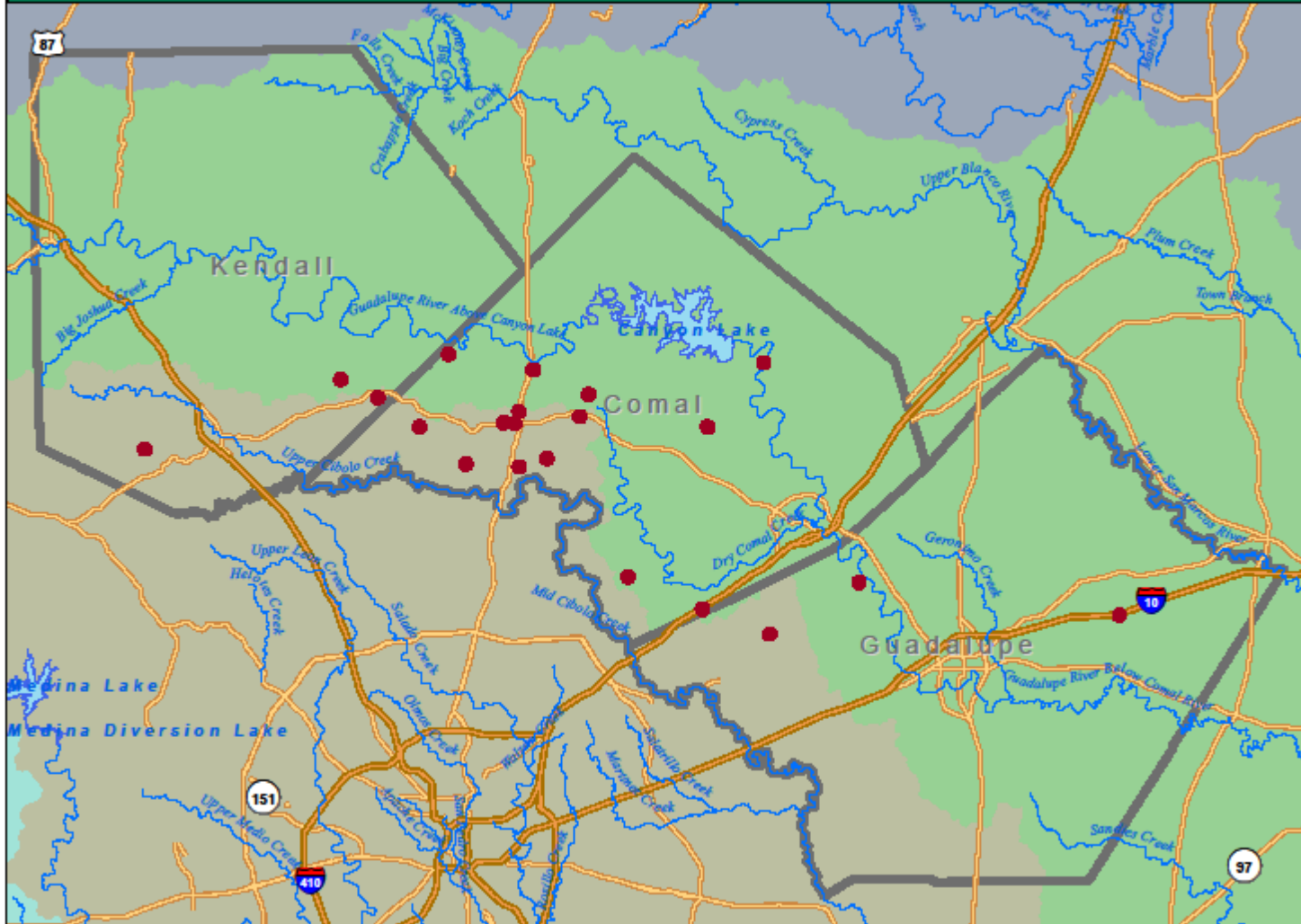
Wastewater Permitting

- centralized domestic wastewater management options:
 - discharge to water body (TPDES permit)
 - land application/irrigation (TLAP permit)
 - can add reclaimed water authorization to either permit type
- permit types within each county:

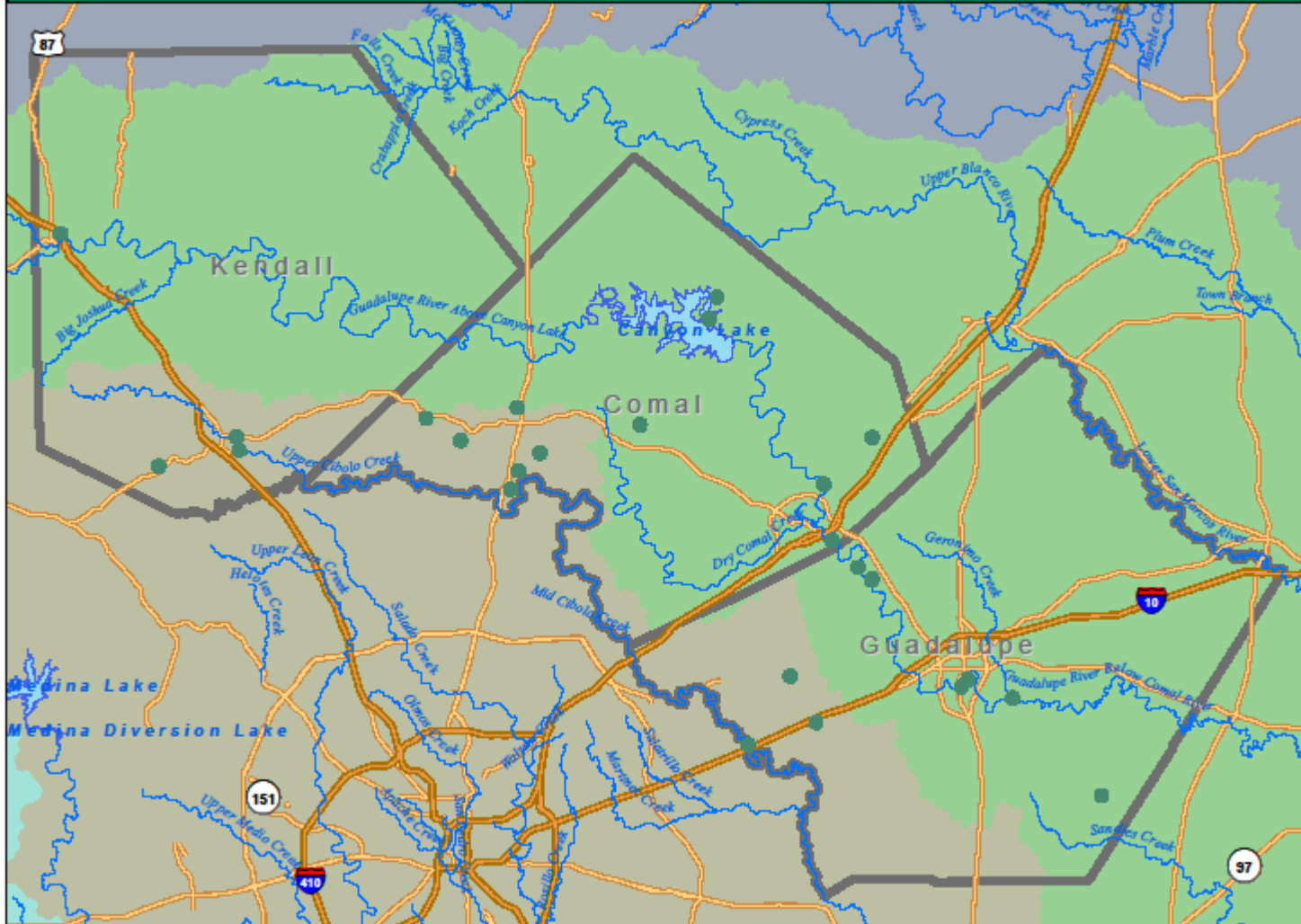
County	TLAP act	TLAP ina	TPDES act	TPDES ina
Comal	12	2	6	4
Kendall	2	1	3	1
Guadalupe	2	0	6	1



Domestic TLAP Locations in Comal, Kendall, and Guadalupe County

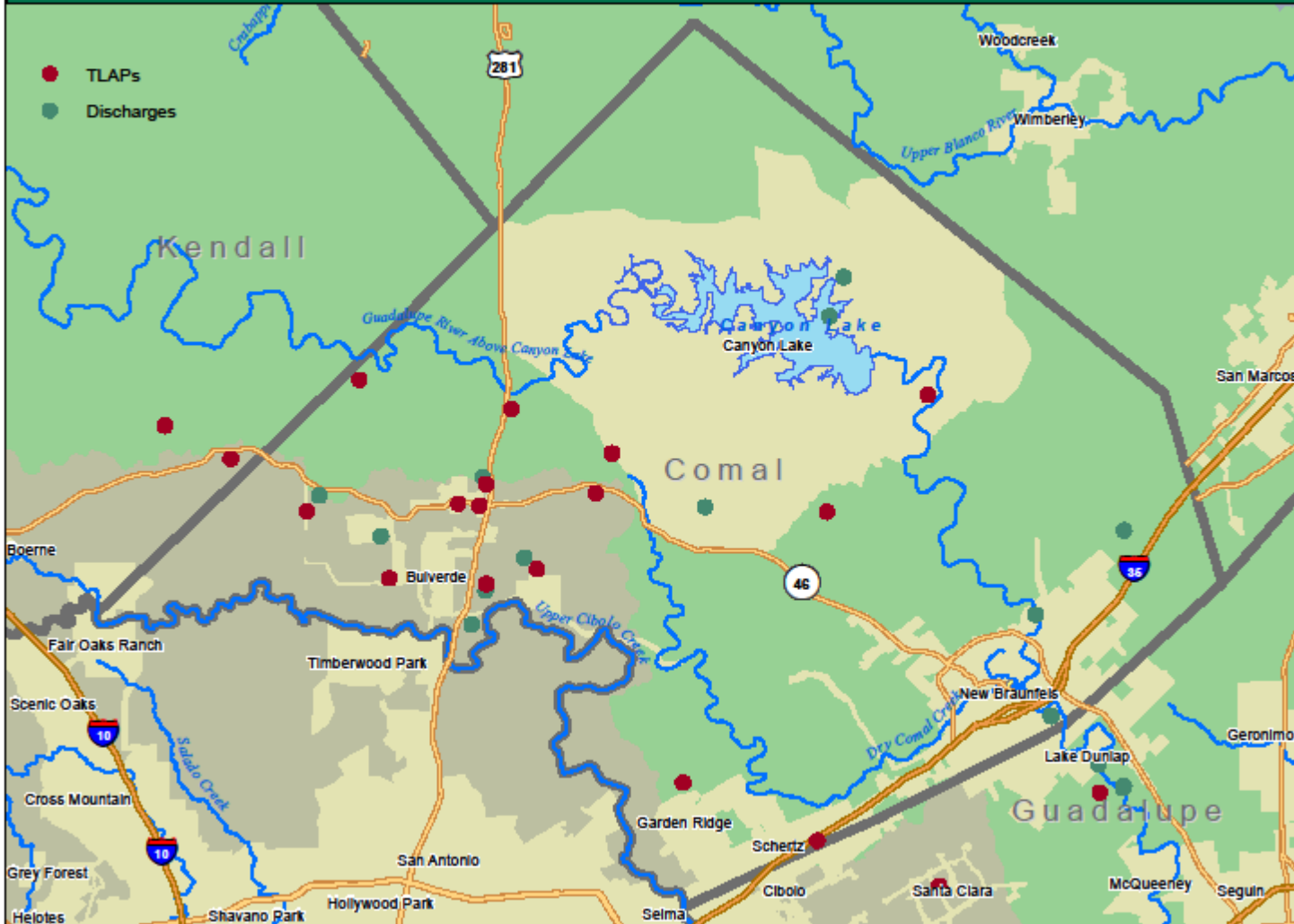


Domestic Discharge Outfalls in Comal, Kendall, and Guadalupe County



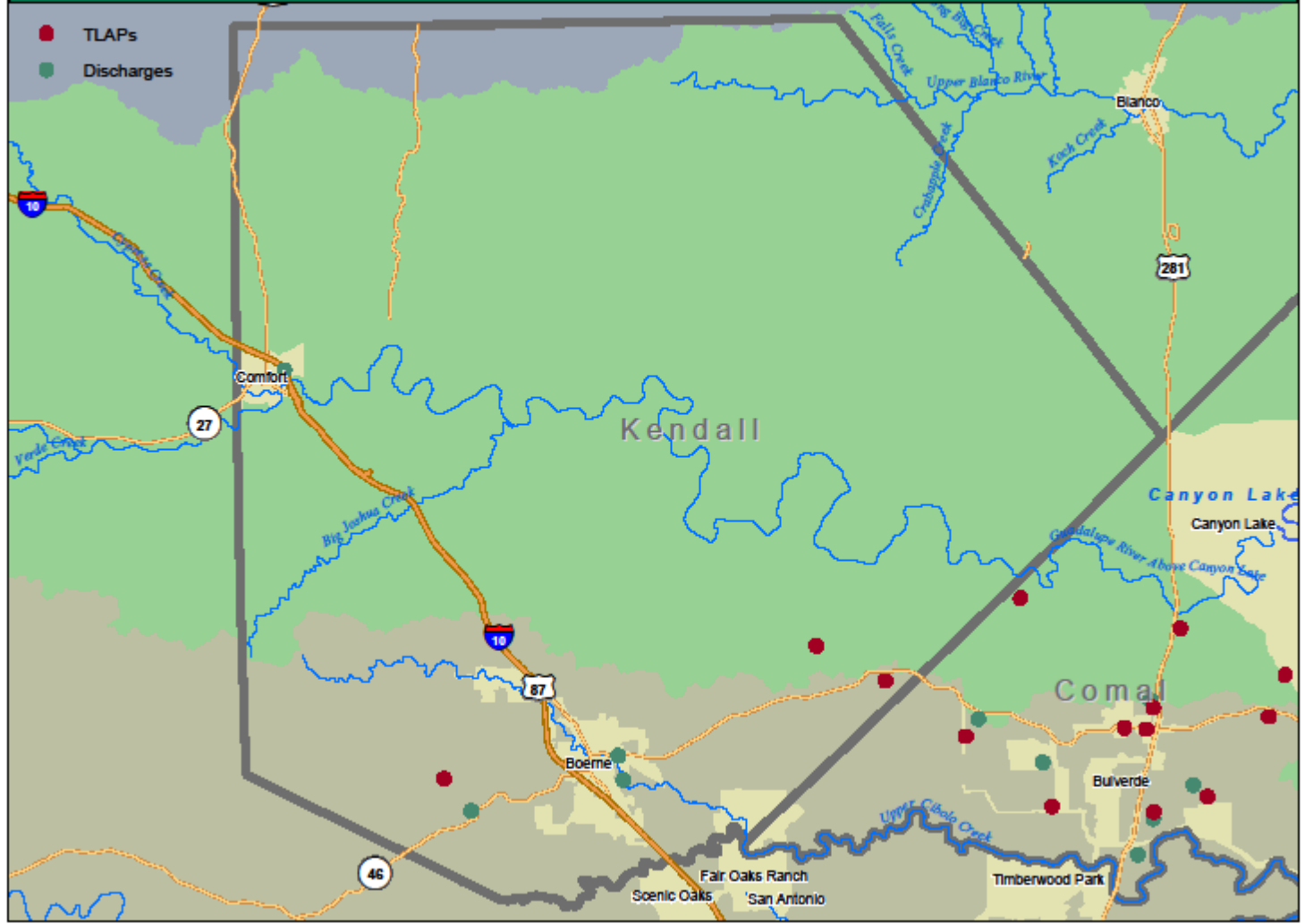


Domestic Discharge Outfalls in Comal County



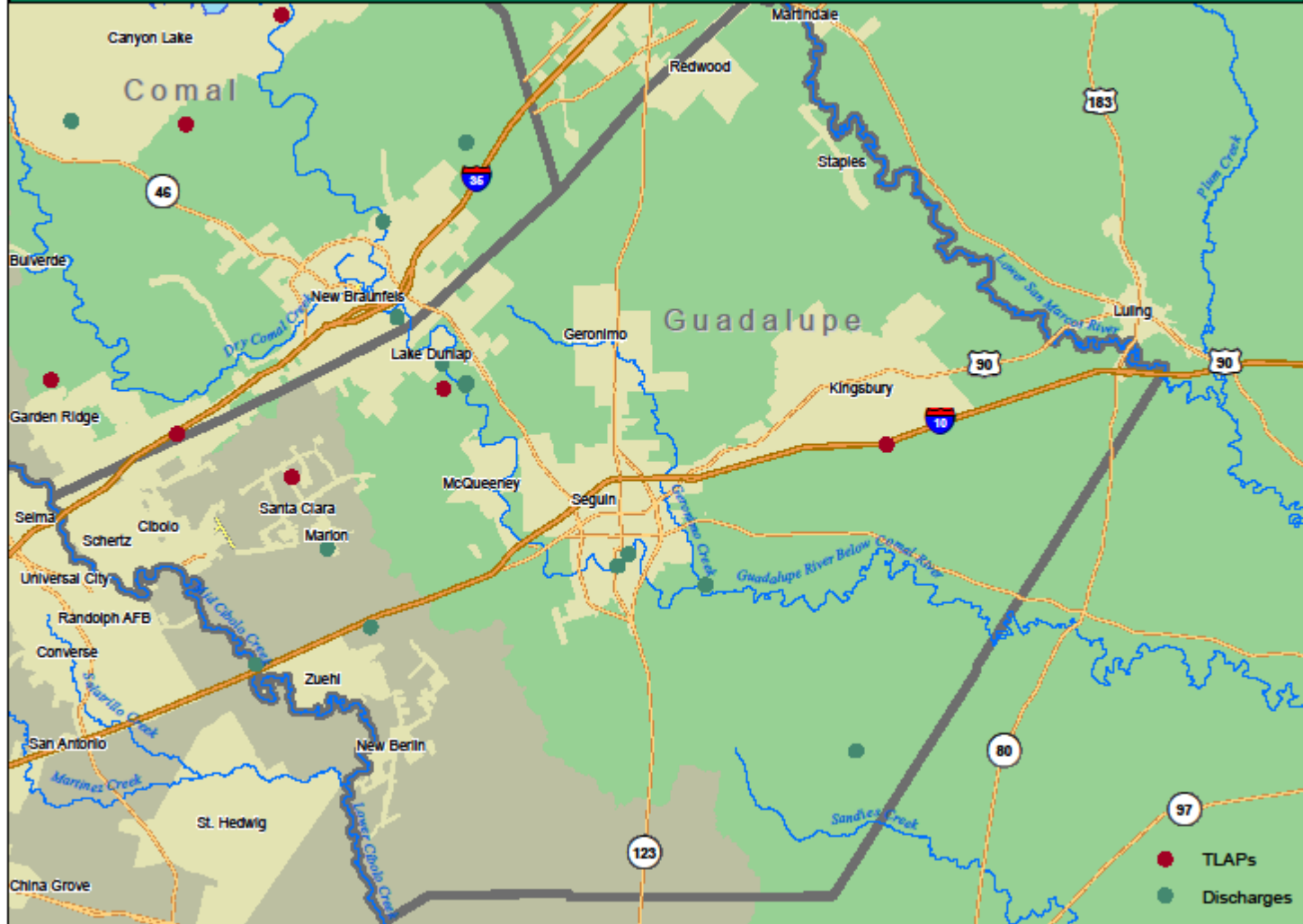


Domestic Discharge Outfalls and TLAPs in Kendall County





Domestic Discharge Outfalls and TLAPs in Guadalupe County





Wastewater Permitting

- treated wastewater standards by permit type
 - TLAPs
 - effluent parameters: BOD₅, TSS
 - minimum treatment levels depend on likelihood of public exposure/contact
 - effluent sets (BOD₅/TSS in mg/L) can be 20/20, 30/90, or 100/--
 - more stringent limits can be warranted depending on site-specific factors (e.g., sensitive environmental features)
 - subsurface irrigation systems prohibited over EA recharge and transition zones (TCEQ rules)



Wastewater Permitting

- treated wastewater standards (cont.)
 - TPDES
 - effluent parameters: BOD₅, TSS, NH₃, DO
 - treatment levels water quality-based
 - effluent sets (BOD₅/TSS/NH₃/DO) can be 30/90/--/2 (pond system), 20/20/--/4, 10/15/--/4, 10/15/2-3/4 (nitrification)
 - other standard limits/requirements:
 - bacteria limits (typically 126 cfu *E. coli*)
 - disinfection requirements (chlorination, UV, ozone)
 - dechlorination requirements for larger discharges (≥ 0.5 MGD)



Wastewater Permitting

- TPDES treated wastewater standards (cont.)
 - site-specific factors can tighten limits or restrict discharge:
 - watershed and EA rules (5/5/2/... limits, no discharge over recharge zone)
 - TMDL requirements
 - insufficient assimilation in water body (i.e., NH_3 limits $< 2\text{mg/L}$, higher DO limits, or no discharge)
 - site-specific factors can also add limits:
 - nutrient limits (TP) for eutrophication potential
 - sensitive or endangered aquatic species
 - water body impairments
 - numeric standards to protect designated uses



Wastewater Permitting

- Treatment standards in existing permits
 - Comal County
 - TPDES: 20/20 (1) to 5/5/2 with TP limit (7)
 - TLAP: 100/-- (1) to 20/20 (8)
 - Guadalupe County
 - TPDES: 20/20 to 7/15/2 with TP limit
 - TLAP: 100/-- to 65/--
 - Kendall County
 - TPDES: 10/15/3 to 5/5/1 with TP limit
 - TLAP: 20/20 to 5/5/2



Questions?

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