

Comparison of Local Water Quality Regulations

Measure/Control	City of San Marcos Edwards Aquifer Rules	Draft City of San Marcos WQPP (Within WQPP Boundary only)	TCEQ Edwards Aquifer Rules	TCEQ Edwards Aquifer, Optional Enhanced Measures	City of Georgetown (Ord 13-059) (Only in Edwards Recharge Zone)	Lower Colorado River Authority Highland Lakes Watershed Ordinance
Impervious cover (IC) limits	In Edwards Recharge Zone: Sites up to 3 acres – 40% Sites 3 to 5 acres – 30% Sites > 5 acres – 20% Outside Recharge Zone – No water quality based IC limits.	All site areas in Edwards Recharge Zone – 20% Outside Recharge Zone - no water quality IC limits	None	None	None	None
Exemptions	If impervious cover < 15%, then permanent water quality measures are not required	No permanent water quality measures are required if development disturbs less than 5,000 square feet of land.	Residential development with impervious cover <20%, then permanent water quality measures are not required	Exemption from stream bank erosion if less than 10,000 SF IC, total IC <15% in all watersheds, surface discharge, or discharge directly to listed water body	None specified. Structural water quality control measures required for all new impervious cover developments.	No permanent measures are required if development creates less than 10,000 SF of impervious cover and disturbs less than 1 acre
Erosion and sediment controls (ESC)	All temporary erosion and sediment controls must be designed and maintained per the TCEQ Edwards Aquifer Rules and BMP Maintenance Manual.	Extensive guidance and design criteria, much based on TCEQ Edwards Rules. Requires preparation of temporary ESC plan. Pre-development planning meeting to review plan prior to permit issuance.	Detailed guidance and construction details to manage erosion and sediment. Inspection and maintenance of temporary BMPs is required. Also, rely on the SWPPP for TPDES.	Follow TCEQ Edwards Rules with one addition, sediment basins are required for drainage area (DA) of at least 10-acres and are sized to capture the runoff from the 2-year, 24-hour storm. Sediment basins cannot be used in DA > than 128 acres.	All development projects, but not limited to, individual home sites shall implement temporary BMPs to minimize sediment runoff.	Extensive guidance and design criteria, much based on TCEQ Edwards Rules. Requires preparation of temporary ESC plan. Pre-development planning meeting to review plan prior to permit issuance.
Stream bank erosion control	None specified	Stream Protection Volume (SPV) required to control stream erosion. SPV is a function of site IC with maximum of 1.36 inches SPV at 100% impervious cover. Infiltration credit allowed that can reduce SPV.	None specified	Limit peak runoff rate for the 2-YR 24-hr storm to 50% of the undeveloped rate for that storm; also limit 10-YR 24-hr developed storm peak to existing 10-year runoff rate.	No increase in the developed peak flow rate for the 2-year, 3-hour storm.	Retain 1-year, 3-hour storm (1.93 inches) runoff for a minimum of 24 hours. Can be included in the water quality basin and detention volume can be reduced through LID. Release in sheet flow manner to the buffer zone.
Stormwater quality treatment	Permanent BMPs must limit the increase in total suspended solids (TSS) to no more than 20% above that which would occur from natural drainage from the site. Designed per TCEQ Edwards Manual.	Edwards Aquifer Recharge Zone -- maintain existing rate of recharge, no increase in annual average Total Phosphorus load (non-degradation). Outside Recharge Zone - annual average Total Phosphorus load discharged from site to be no greater than a site with 10% impervious cover. BMP pollutant removal performance based on effluent concentration method, as recommended by the International BMP Database Project. Requires geologic assessment.	The BMP(s) must reduce the increase in TSS load associated with development by at least 80%. Requires geologic assessment in the recharge zone.	Developments must remove 80% of the annual TSS for the developed condition per TCEQ Edwards Aquifer Protection Rules Methodology. Requires geologic assessment in the recharge zone. Roadways capable of conveying at least 5,000 vehicles per day must include a hazardous material trap (HMT). Provides design guidance for HMTs.	Developments must remove 85% of the annual TSS load for the entire project and be certified by a licensed professional engineer. Follow TCEQ Edwards Aquifer Protection Rules Methodology. New roadways or expansions of existing roadways that provide a capacity of 25,000 vehicles per day shall provide for spill containment as described in the Optional Enhanced Measures of the Edwards Recharge Zone Aquifer Protection Program. Requires geologic assessment. Adaptive Management Working Group established by Williamson County Conservation Foundation to review data, make variance and program recommendations.	Manage runoff from the 1-year, 3-hour design storm, rainfall volume of 1.93 inches. Uses primary and secondary BMP approach to manage 90% of TSS and total phosphorus. Multiple BMP design options provided in LCRA Technical Manual including use of LID tools to reduce runoff volume and BMP size.

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Low Impact Development	Low Impact Development Manual developed for the City of San Marcos in 2011 however LID is not defined in TCEQ Edwards Rules. On site incentives for clustering, transfers, and parkland dedication credit in LDC.	Low Impact Development and Green Infrastructure site design. Direct credit for reducing "effective" IC by disconnecting directly connected IC. Integration of stormwater management and water conservation, especially via irrigation-rainwater harvesting design to meet fifty percent of outdoor water demands.	No specific criteria but provides suggestions for good housekeeping, street sweeping, IPM, and site planning.	Encourages site planning with greater building setbacks and deed restrictions to limit landscaping to native plants that require little or no fertilizers.	Utilizes IC limits and suggests to the maximum extent practical (MEP) that all runoff from non-residential buildings shall have downspouts disconnected from the stormwater drainage system, also, use overland flow and vegetative buffers to the MEP, maintain natural drainage patterns. IPM plans required.	Incentives offered by using stormwater LID credits to reduce effective IC to 15% or less, then, structural water quality controls are not required. Credits include numerous LID options to reduce stormwater runoff volume and integrate water conservation into stormwater design. Fast track permitting/reduced fees. Option for commercial tracts less than 3 acres.
Creek water quality (WQ) zones and buffer zones (Drainage Area = DA)	If FEMA floodplain, WQ buffer zone is the 100-yr floodplain, if non-FEMA mapped, the WQ setbacks from creek centerline are: 50' for DA >50 and < 250 acres 100' for DA >250 and <1000 acres 200' for DA >1000 acres OR, 100 YR fully developed floodplain. Buffer zone extends 100" on each side of water quality zone.	Defined as un-disturbed natural areas with setbacks from creek centerline as follows: - 25' for DA ≥ 5 and < 40 acres - 50' for DA ≥ 40 and < 128 acres - 100' for DA ≥ 128 and < 320 acres - 200' for DA ≥ 320 and < 640 acres - 300' for DA ≥ 640 acres Option to use the fully developed 100-year floodplain on each side of the creek for all categories. Detailed guidance provided for "sensitive karst features" through buffer zones. Natural buffer should extend 150 feet in all directions.	None	Defined as un-disturbed natural areas with setbacks from creek centerline as follows: - 25' for DA ≥ 5 and < 40 acres - 50' for DA ≥ 40 and < 128 acres - 100' for DA ≥ 128 and < 320 acres - 200' for DA ≥ 320 and < 640 acres - 300' for DA ≥ 640 acres No provisions for reducing buffers due to bluffs, other features or floodplain boundaries. Detailed guidance provided for "sensitive karst features". Natural buffers should extend 150 feet in all directions. When drainage boundary exceeds 150 feet from feature, the buffer should extend to the boundary of the drainage area or 300 feet, whichever is less.	<i>For Occupied Sites</i> , No-Disturbance Zone (Red Zone) – 80 meters upstream and downstream from Spring center. Minimal Disturbance Zone – 300 meters from Spring center and allows limited wastewater lines, parks, trails. <i>Spring Buffers</i> – 50 meters from the Spring center with some limited activities allowed. <i>Stream buffers</i> , minimum setback from centerline: - 75' for DA ≥ 64 and < 320 acres - 100' for DA ≥ 320 and < 640 acres - 200' for DA ≥ 640 acres Option to use 100-year floodplain, other provisions for land owners that own only one side of creek.	Defined as un-disturbed natural areas with setbacks from creek centerline as follows: - 25' for DA ≥ 5 and < 40 acres - 50' for ≥ 40 and < 128 acres - 100' for DA ≥ 128 and < 320 acres - 200' for DA ≥ 320 and < 640 acres - 300' for DA ≥ 640 acres Option to use fully developed 100-YR floodplain plus 25' on each side of creek for all above categories.
Maintenance plans	BMP operators shall provide an annual inspection report to the City and make corrections as needed. City has enforcement authority to ensure corrective action is taken when needed.	Extensive guidance on BMP maintenance. Requires BMP maintenance permit once project is constructed. BMP operators shall provide an annual inspection report to the City and make corrections as needed. City has enforcement authority to ensure corrective action is taken when needed.	Identified in the Tech manual including access, staging areas, slope requirements for maintenance areas, etc. - Focus is on accessibility, durability, and material disposal.	The owner/operator of a permanent BMP must note all the maintenance activities required to maintain the facility function and maintain records of all activities for the most recent 3 years. The records must be made available to TCEQ upon request.	All BMPs with an overt physical presence shall have signage that clearly identifies the purpose of the permanent BMP and party responsible for maintenance. Maintenance plans for permanent BMPs shall be recorded in the official records of Williamson Co.	Extensive guidance on BMP maintenance. Requires BMP maintenance permit once project is constructed. LCRA performs annual inspections to ensure maintenance.
Environmental education	None specified	Permit requires development to participate in a water quality education program with home owners and property managers using CoSM-approved WQ education materials to limit chemical use on landscapes and perform good housekeeping.	None specified.	None specified.	Ordinance specifies that the City shall adopt a Water Quality Management Plan for the Recharge Zone that will include public education, outreach, haz waste education, integrated pest management, and other measures.	Permit requires development to participate in a water quality education program with home owners using LCRA and/or other LCRA approved water quality education materials to limit chemical use on landscapes and perform good housekeeping practices.