Proposal: A bill or budget rider relating to a study by the Texas Water Development Board of the technical and economic feasibility of the use of recycled municipal wastewater and/or dry plant operations by aggregate production operations currently using Edwards and Trinity groundwater wells.

Rationale: Quarries in the Texas Hill Country are critical state-wide economic drivers and vital to the development and maintenance of Texas infrastructure. As Texas' population continues to grow, so too will the need for materials from Hill Country limestone quarries. While quarries are certainly not the main consumer of groundwater in Texas, they represent a unique opportunity within the region to conserve Trinity and Edwards aquifer water. Many quarries in the region are located in close proximity to an existing wastewater treatment plant (see map below). If determined technically and economically feasible, certain quarries in Central Texas and elsewhere could replace the majority of their groundwater use with treated recycled wastewater.[1] Alternatively, quarries could adopt dry plant techniques to phase out the majority of water use altogether.[2]

Issue Example: In 2020, mining operations in Comal County used 3,966 acre-feet of water, 100% of which was groundwater from Edwards and Trinity aquifer wells. Mining accounted for 21% of county-wide groundwater use in 2020.

In 2022, mining operations in Comal County used 6,310 acre-feet of water, 99% of which was groundwater and 1% of which was reuse water or brackish groundwater. Mining accounted for 27% of county-wide groundwater use and 15% of all county water use in 2022.[3] To place this in perspective, the 6,245 acre-feet of groundwater used by mining operations in 2022 in Comal County was 806 acre-feet more than the annual 5,439 acre-feet of firm yield supply from Edwards Aquifer wells for New Braunfels Utilities (NBU). Water sourced from Edwards Aquifer wells makes up 27% of NBU's annual firm yield supply.[4]

Within the Edwards Aquifer Authority's boundaries as a whole, in 2023, aggregate production operations used 7,790 acre-feet of groundwater, roughly equivalent to 15,580 single-family households.[5, 6]

Options to study:

- **Review groundwater savings from switching from groundwater to recycled wastewater, cost of using recycled municipal wastewater compared to cost of groundwater withdrawals, impact of recycled wastewater on quarry machinery, and feasibility of connecting quarries to recycled wastewater supply sources.**
- The Texas Legislature could create reuse districts to coordinate the use of treated wastewater within the new district's boundaries, supplying reuse water to quarries and other users. The district could construct and maintain the necessary infrastructure to supply the reuse wastewater with fees from the end users.
- Quarries could enter agreements with operators of nearby wastewater treatment plants to receive reuse water.
- The TCEQ could encourage applicants for new wastewater treatment plants to contract with nearby quarries to beneficially reuse wastewater effluent and could research other ways to incentivize uptake of reuse water.
- As alternative to groundwater pumping or implementing reuse water, quarries could adopt proven dry plant techniques.

Benefits:

- Municipal water service providers often provide recycled wastewater at a lower cost than the potable water supply. Depending on the cost of on-site pumping, an agreement with a local water utility could provide water for operations at a lower cost. Providers could also potentially assist with the cost of reuse infrastructure.
- Recycled wastewater is often considered a relatively drought-proof supply and water utilities often do not place restrictions on customers using recycled water during times of drought or shortage. Operations dependent on reuse water or dry plant techniques would be less likely to be curtailed in the event that groundwater pumping is required to be cut back under permitting requirements.[7]
- Using reuse water or dry plant techniques can "free up" groundwater supplies, engendering goodwill with local communities and helping maintain the sustainability of both the quarry operations and water supplies.

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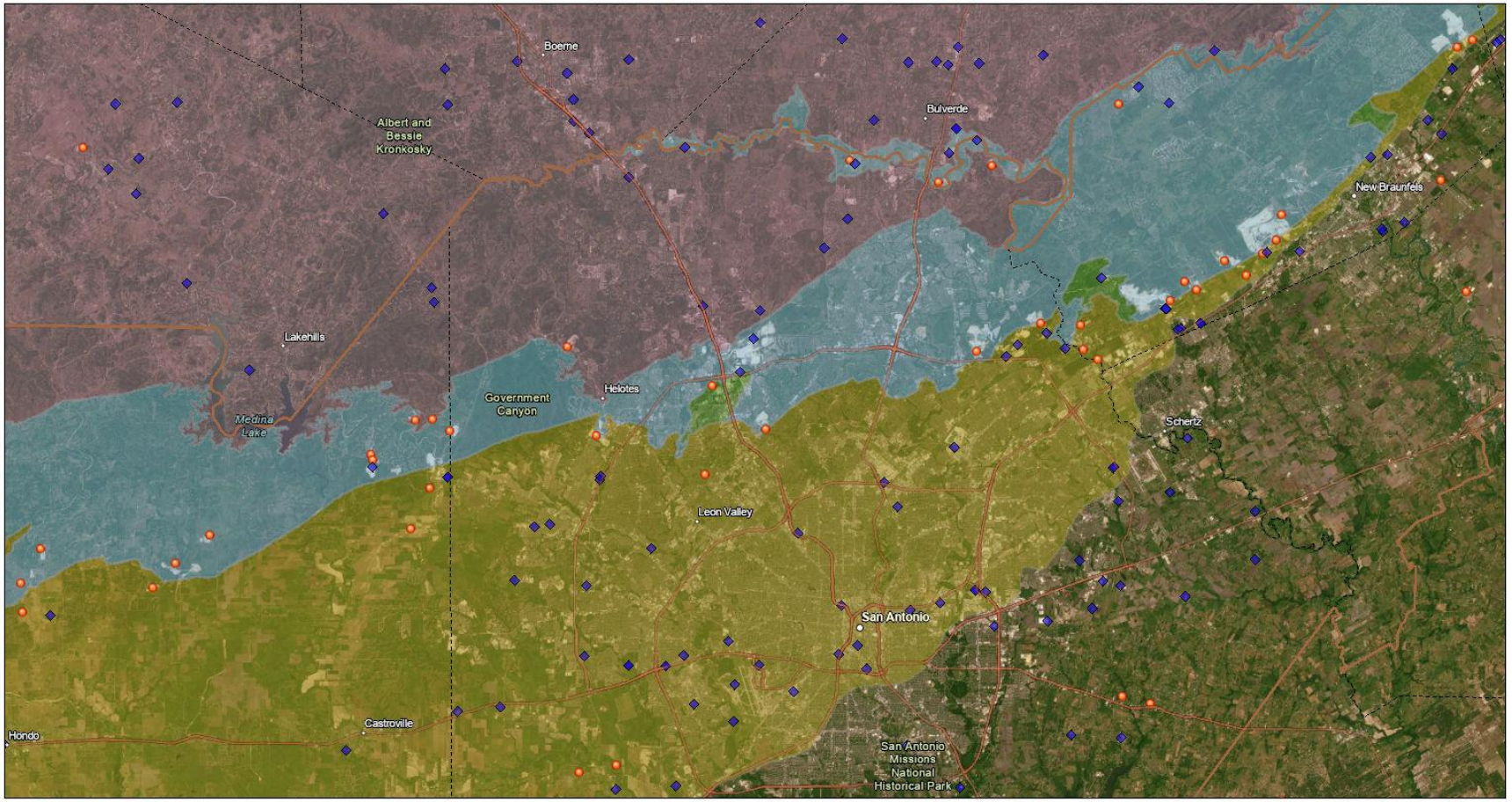
[1] Recycled wastewater, reuse water, and reclaimed water are interchangeable terms for this purpose.
[2] https://www.citizen.org/article/public-citizen-urges-texas-legislature-to-rein-in-aggregate-pollution/
[3] https://www3.twdb.texas.gov/apps/reports/WU_REP/SumFinal_CountyReportWithReuse
[4] https://www.nbutexas.com/wp-content/uploads/2021/10/2021-WRP-Update-Final_9.1.21-Reduced.pdf
[5] https://www.watereducation.org/aquapedia/acre-foot
[6] Data pulled from 2023 Annual Groundwater Withdrawal Report submitted to the EAA – Open Records Requests
[7] https://twj-ojs-tdl.tdl.org/twj/article/view/7170/6509

March 3, 2025

Quarries and WWTPs in the Edwards Aquifer Region



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- Wastewater Treatment Plants
- Aggregate Production Operations
- EAA Boundary
- Texas County Boundaries
- EA Artesian Zone
- EA Contributing Zone
- EA Recharge Zone
- EA Contributing w/in the Recharge
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 75m Resolution Metadata

0 3.5 7 14 mi
0 5 10 20 km

Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Rachel Hanes, Greater Edwards Aquifer Alliance

March 3, 2025