

SAWS Role In Development of the Edwards Aquifer Recharge Zone

**Presented by
Annalisa Peace and Ron Green
on behalf of the Greater Edwards Aquifer Alliance
to the SAWS Board
Development Task Force
October 29, 2014**

The Edwards is a uniquely prolific aquifer characterized by rapid groundwater recharge and rapid open channel flow



The Texas Commission on Environmental Quality (TCEQ) has designated the Edwards Aquifer as the major aquifer in the state most vulnerable to pollution.

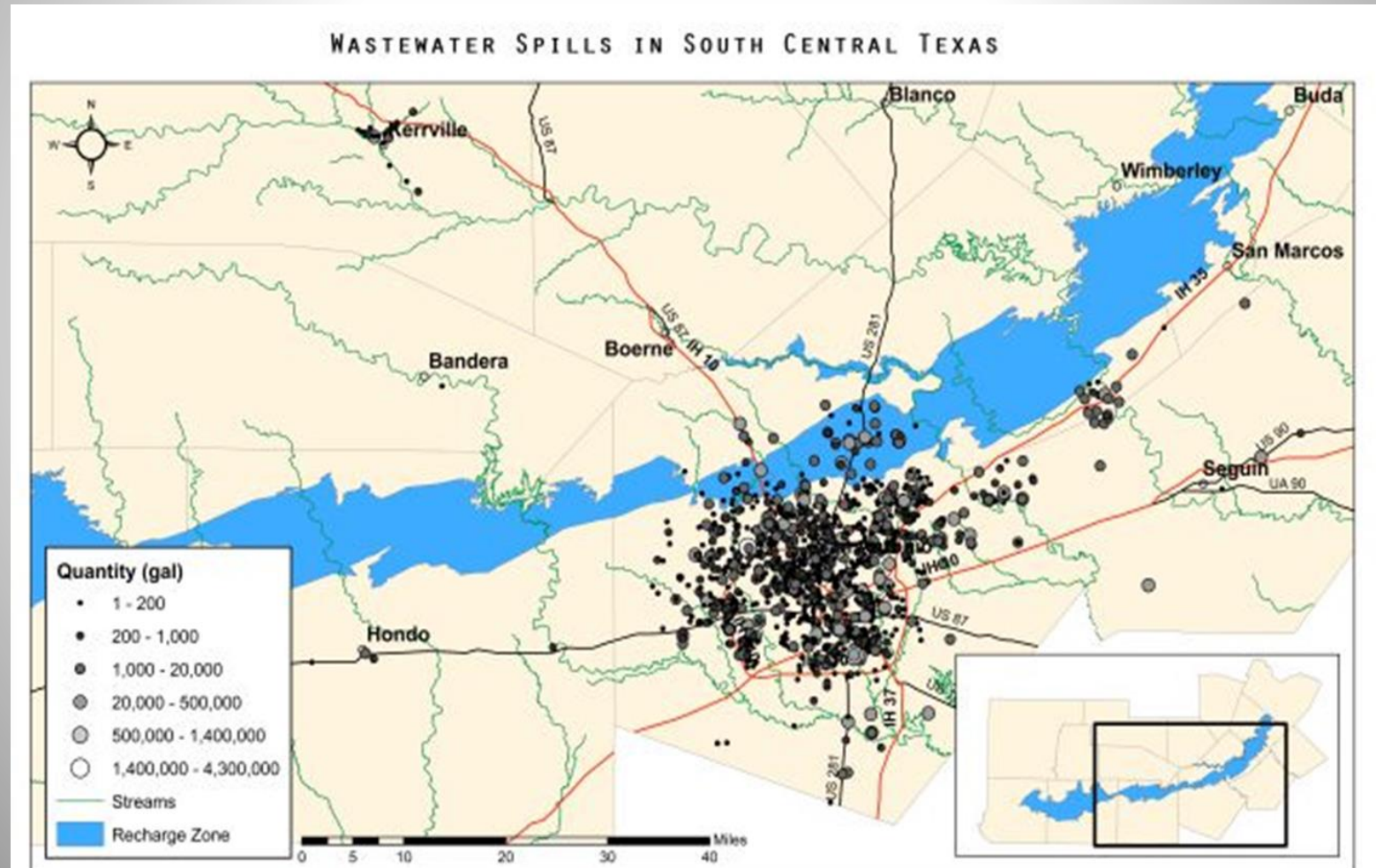


Little to no filtration is provided as water enters directly into the Aquifer through faults, stream beds, and terrain characterized by uniquely porous Edwards limestone.

Issues with protection of the Edwards Aquifer:

- The State has no density restrictions for the Edwards Aquifer Recharge Zone.
- Neither the State nor the City require protection of the Edwards Aquifer Contributing Zone. Most Edwards Aquifer Authority regulations extend protections for five miles into the Contributing Zone.
- The State treats storm water as a pollutant, requiring measures to seal the Aquifer from recharge, or to mitigate water quality through the use of engineered Best Management Practices (BMP's).
- Current engineered structures required by the state to mitigate water quality are often poorly designed and poorly maintained.

Between January 2008 and May 2012 eighty three spills totaling 809,000 gallons (2.5 acre/feet) of raw sewage occurred on Edwards Aquifer Recharge Zone.



Increased Urbanization in the Edwards Aquifer Recharge and Contributing zones is Impairing Water Quality

- Results of EAA well tests (2011 – 2012*) detecting anthropogenic or “emerging” contaminants (pharmaceuticals and personal care products)
- Analytic MethodChemical NameResultUnitAY-68-28-2118/22/11 10:50 AMWS-LC-002217a-Estradiol1.2ng/lAY-68-28-2118/22/11 10:50 AMWS-LC-0022Equilenin3.8ng/lAY-68-28-2118/22/11 10:50 AMWS-LC-0022Estrone6.9ng/lAY-68-28-2118/22/11 10:50 AME1694Triclocarban2.9ng/lAY-68-28-2118/22/11 10:50 AME1694Tylosin2.3ng/lAY-68-28-6088/18/11 10:30 AME1694Cotinine1.7ng/lAY-68-28-6088/18/11 10:30 AME1694Cotinine1.7ng/lAY-68-28-6088/18/11 10:30 AME1694Lincomycin0.51ng/lAY-68-28-6088/18/11 10:30 AME1694Lincomycin0.51ng/lAY-68-28-6089/19/12 12:40 PME1694Diltiazem7.9ng/lAY-68-29-1128/18/11 1:35 PME1694Lincomycin0.42ng/lAY-68-29-1121/11/12 11:05 AME1694Caffeine53ng/lAY-68-29-1121/11/12 11:05 AMWS-LC-0022Estrone1.6ng/lAY-68-29-1121/11/12 11:05 AME1694Lincomycin0.27ng/lAY-68-29-1138/18/11 12:05 PME1694Lincomycin0.31ng/lAY-68-29-1138/18/11 12:05 PME1694Lincomycin0.31ng/lAY-68-29-1131/10/12 11:25 AMWS-LC-002217a-Estradiol1.4ng/lAY-68-29-1131/10/12 11:25 AMWS-LC-002217b-Estradiol1.5ng/lAY-68-29-1131/10/12 11:25 AME1694Caffeine320ng/lAY-68-29-1131/10/12 11:25 AME1694Diltiazem0.48ng/lAY-68-29-1131/10/12 11:25 AMWS-LC-0022Estrone1.3ng/lAY-68-29-1131/10/12 11:25 AME1694Lincomycin0.69ng/lAY-68-29-1131/10/12 11:25 AME1694Triclosan17ng/lAY-68-29-4181/17/12 9:45 8/16/12 9:50 AME1694Thiabendazole24ng/lIDX-68-15-901 Hueco Springs12/3/12 1:15 PME169817a-Estradiol1.60ng/lIDX-68-15-901 Hueco Springs12/3/12 1:15 PME1694Cotinine4.85ng/lIDX-68-15-901 Hueco Springs12/3/12 1:15 PME1694Diltiazem0.705ng/lIDX-68-23-301 Comal Springs8/23/11 8:50 AMWS-LC-002217a-Estradiol4.3ng/lIDX-68-23-301 Comal Springs8/23/11 8:50 AMWS-LC-002217b-Estradiol7.0ng/lIDX-68-23-301 Comal Springs8/23/11 8:50 AMWS-LC-0022Equilenin0.72ng/lIDX-68-23-301 Comal Springs8/23/11 8:50 AMWS-LC-0022Estrone5.8ng/lLR-67-01-801 Hotel Springs at San Marcos12/3/12 11:50 AME1694Cotinine4.73ng/lLR-67-01-801 Hotel Springs at San Marcos12/3/12 11:50 AME1694Diltiazem0.451ng/lLR-67-09-101 12/14/12 12:00 AME1694Caffeine250ng/lLR-67-09-101 12/14/12 12:00 AME1694Carbamazepine19ng/lLR-67-09-101 12/14/12 12:00 AME1694Sulfamethoxazole12ng/l
- *excludes results from test well near Cibolo Nature Center
- Lincomycin and sulfamethoxazole are antibiotics ·Diltiazem is a blood pressure medication · Carbamazepine is an epilepsy medication . Cotinine is a nicotine metabolite

Directives from the EPA may address some of these issues, but it will not address all

For example, one of the largest sewage leaks on the ERZ was the result of a broken lateral line (the line that connects the structure to SAWS main) for a large apartment building, which is the responsibility of the property owner, and is not maintained by SAWS.



Picture from frontage road of Hwy 281, construction crews widening the highway sheared a SAWS sewer main, resulting in a very large leak not reported for 28 days from the time of the incident.

SAWS Role In Development of the Edwards Aquifer Recharge Zone

The Greater Edwards Aquifer Alliance Recommends:

- **Amend Certificate of Convenience and Necessity (Water CCN #10640 and Sewer CCN #20285) to exclude the Edwards Aquifer Recharge and Contributing zones in northeast Bexar and Comal counties**
- **Adopt a moratorium on issuing new Utility Service Contracts for water and waste water service on the Edwards Aquifer Recharge, Transition, and Contributing zones until such time as policies protective of these areas are adopted**
- **Institute a fee to be assessed on all customers served by SAWS sewer service and residing on the Edwards Aquifer Recharge Zone to cover the cost of State required sewage infrastructure inspections**
- SAWS Aquifer Division staff must **consult with the San Antonio City Attorney's office prior to issuing Category 1 status exempting projects from City of San Antonio Water Quality ordinances** - Aquifer Protection Ordinance No. 81491 (City of San Antonio Code of Ordinances, Chapter 34, Article VI, Division 6)

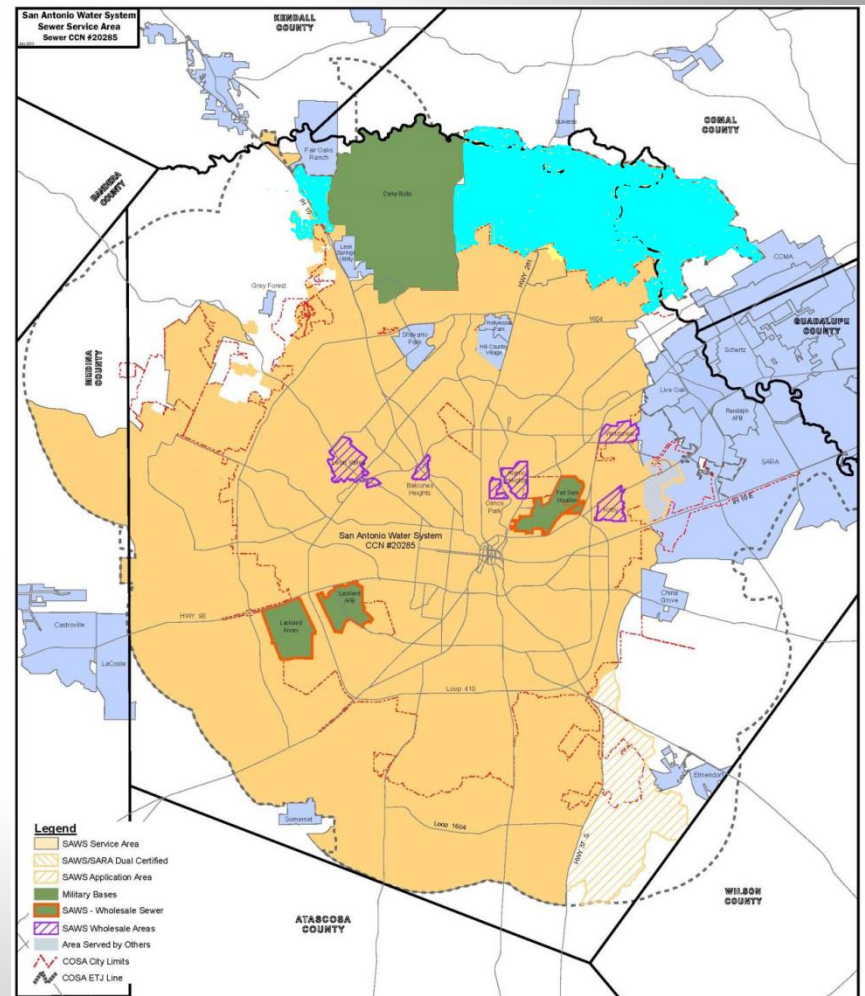
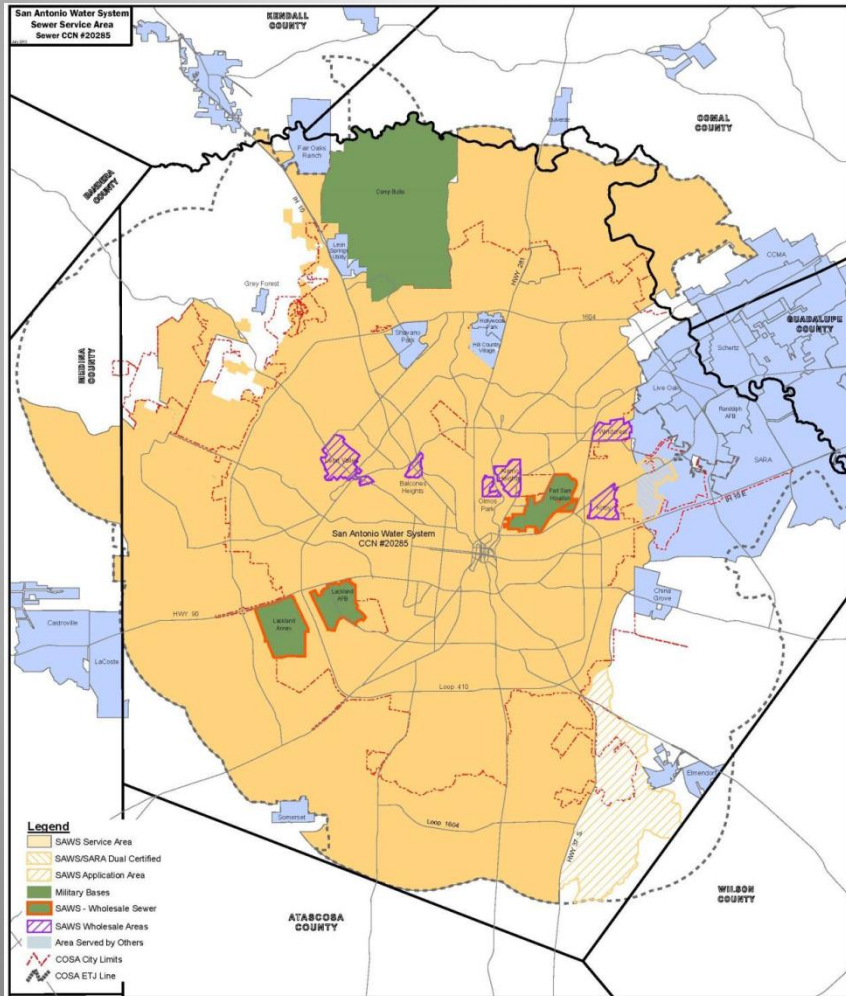
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The Greater Edwards Aquifer Alliance Recommends:

- The San Antonio Water System shall **require**, as condition of approval of service contracts for service in jurisdictions other than the City of San Antonio, **compliance with conditions no less stringent than San Antonio's Water Quality ordinances**, or in the event that the jurisdiction has ordinances to protect water quality, the application of whichever ordinance provides greatest protection.
- The San Antonio Water Systems Board shall direct the San Antonio Water System to establish a policy to **prohibit applications for extension of Certificates of Convenience and Necessity into areas eligible for Proposition 1 funds** dedicated to the protection of the Edwards Aquifer.
- The San Antonio Water System shall **require full compliance with San Antonio's water quality ordinances** as a condition of service, regardless of category status as to previously vested rights.
- **"Grandfathered" projects will not be considered eligible for service contracts unless they comply with current regulations.**

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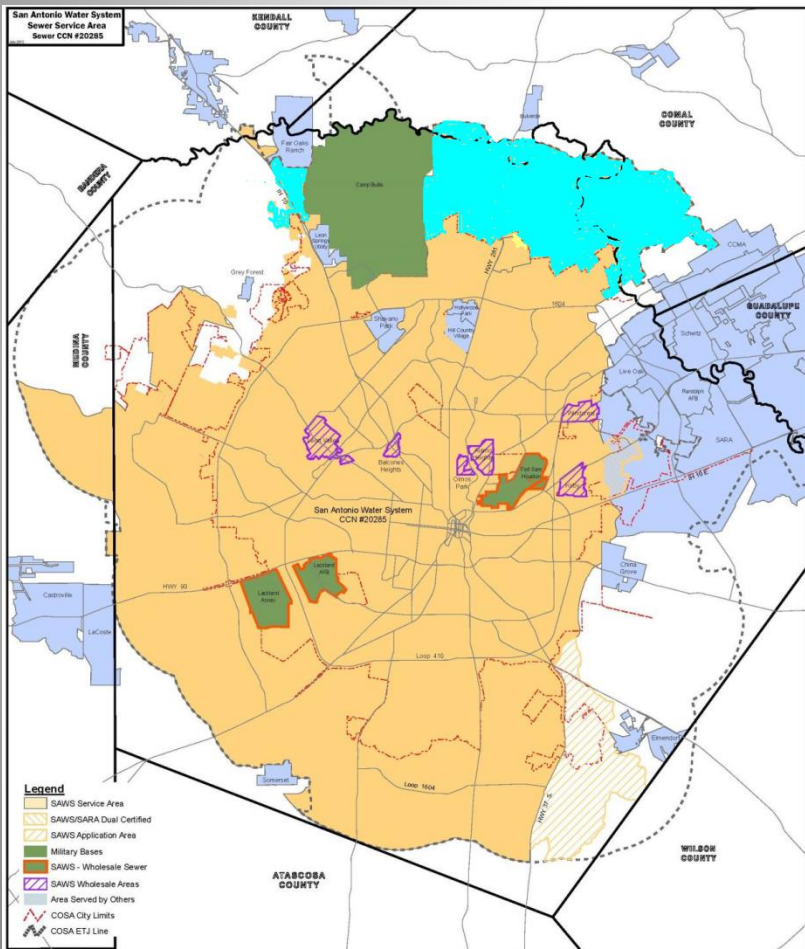
**Amended area is between IH 10 and the City of New Braunfels ETJ.
Includes the entire ETJ in the north east portion of Bexar County
and into Comal County.**

The Edwards Aquifer Recharge Zone within this ETJ is roughly the area between the City Limits and the ETJ border.

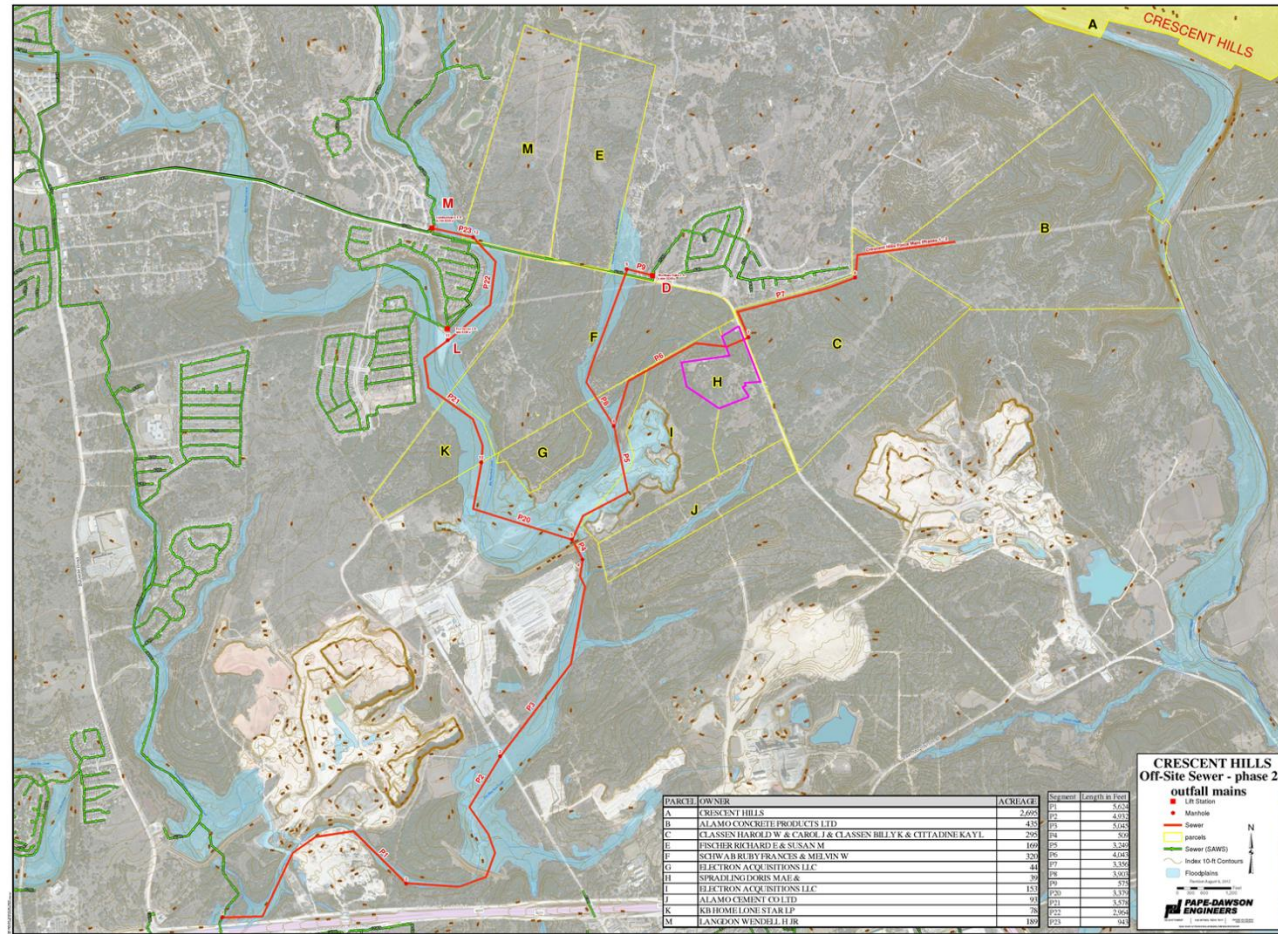
GEAA and member groups successfully opposed the extension of the CCN over the Edwards Aquifer Recharge and Contributing Zones in the western portion of our ETJ.

18,000 acres of the CCN are in Comal County

Currently, the Crescent Hills Development is the only service contract that has been issued within the disputed area of the CCNs.



Had the Crescent Hills project gone forward, there would be an explosion of growth in undeveloped areas along the oversized mains installed to supply this project

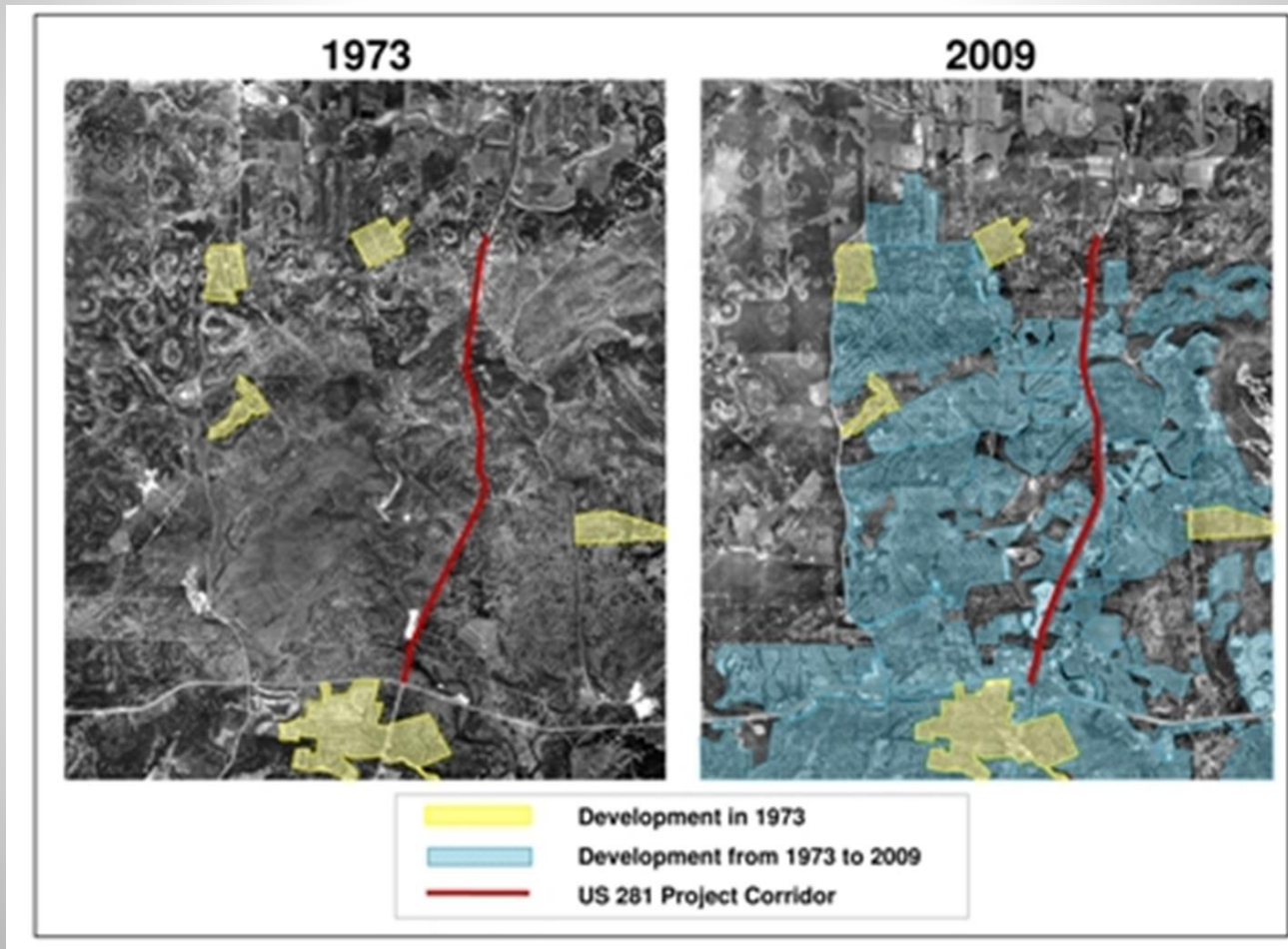


SAWS had determined that the oversized main was needed to serve other developments anticipated to be built in this area. Sewage infrastructure was to be installed in creeks that recharge the Edwards Aquifer.

“Organized Wastewater collection is what drives development.”

Gene Dawson, president, Pape Dawson Engineers, Inc.

“Business in, waste out” San Antonio Express News, April 9, 2014



Since January 2014, the consent agendas of SAWS Board meetings have featured 28 requests for USA's within the Edwards Aquifer watershed. Most were approved with no discussion.

SAWS service results in projects of **greater density**, and **encourages growth** that follows the installation of oversized water and sewer mains. We can expect an **explosion of growth** in the **disputed area** as SAWS is required to approve service for **any project that requests it**.



SAWS staff says they will be able to better protect the Edwards watershed if SAWS is the sole service provider in this area. We disagree for the following reasons:

- The City of San Antonio has the right of first refusal for non-SAWS sewage systems within the ETJ.
- **SAWS can protest permits for substandard projects.** GEAA and SAWS joined forces to successfully protest the issuance of sewage discharge permits for the Hills of Castle Rock subdivision.
- In areas outside the CCN, **SAWS engineers can require changes to the plans** that will better protect the Aquifer as conditions of granting service. **When required to provide service, they have no such leverage.**
- To avoid the use of lift stations, which frequently malfunction, SAWS installs **gravity feed sewage lines within creek beds** and intermittent streams, which are **major Edwards Aquifer recharge features**. Thus, when leaks do occur, raw sewage is leaked in areas where the **most prolific recharge** of the Aquifer occurs.
- **Guarantee of SAWS service** will **boost the price of land** within the disputed service area, which will **necessitate higher density projects.**

- **The Greater Edwards Aquifer Alliance recommends that SAWS adopt a moratorium on issuing new Utility Service Contracts for water and waste water service on the Edwards Aquifer Recharge, Transition, and Contributing zones until such time as policies protective of these areas are adopted**

San Antonio Express News, October 26, 2014 “**Bracken Cave Deal Shows Need for Better Planning**”

“...it’s troubling that San Antonio Water System approved service to high-density residential development outside of Bexar County and over the aquifer recharge zone. The oversized sewer and water lines SAWS approved for the project would encourage even more development in an area where the region would clearly benefit from limits.

“Right now we’re operating in two different worlds with what council does in development and growth and planning, and what SAWS does in respect to its service area,” said City Councilman Ron Nirenberg, who spearheaded the bats deal and is examining comprehensive growth strategies.

The city’s growth and development standards don’t apply to its extraterritorial jurisdiction, Nirenberg said, meaning SAWS can provide service to pretty much any development in this portion of its service area.

Obviously, this needs to change.

While we largely support growth and development because it is a major driver of San Antonio’s economy, it is paramount that the city develop density requirements for SAWS service in the extraterritorial jurisdiction, particularly over the Edwards Aquifer.

Growth will come, and SAWS, because of its size and service capacities, is uniquely situated to shape how that growth occurs.

“The Crescent Hills subdivision shows the need for managed growth policies in SAWS’ extended service area.”

The Greater Edwards Aquifer Alliance recommends SAWS institute a fee for assessed on all customers served by SAWS sewer service who reside on the Edwards Aquifer Recharge Zone to cover the cost of State required sewage infrastructure inspections

TCEQ requires camera testing every five years for sewer lines on the Recharge Zone, at an estimated cost to SAWS customers of \$37,000/mile.

TCEQ requires smoke testing every two years for sewer lines on Recharge Zone.

Cost does not apply to sewage infrastructure that is not on Recharge Zone.

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Thank you for inviting us to make this presentation today.

Since SAWS is designated by the City of San Antonio to enforce the City's Water Quality ordinances, we hope the SAWS Board will move forward to coordinate policy with the City of San Antonio in the near future.

Please rely on the Greater Edwards Aquifer Alliance as a resource. You may contact Annalisa Peace at any time at 210-275-9336 / annalisa@aquiferalliance.org

For more information, including reports on the topics discussed, visit our web site: www.AquiferAlliance.org