Water Quality and Quantity Protection and Water Conservation Updates

CLEAN RIVERS PROGRAM, APRIL 2022

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State of the Hill Country Report

8 key Conservation and Growth Metrics

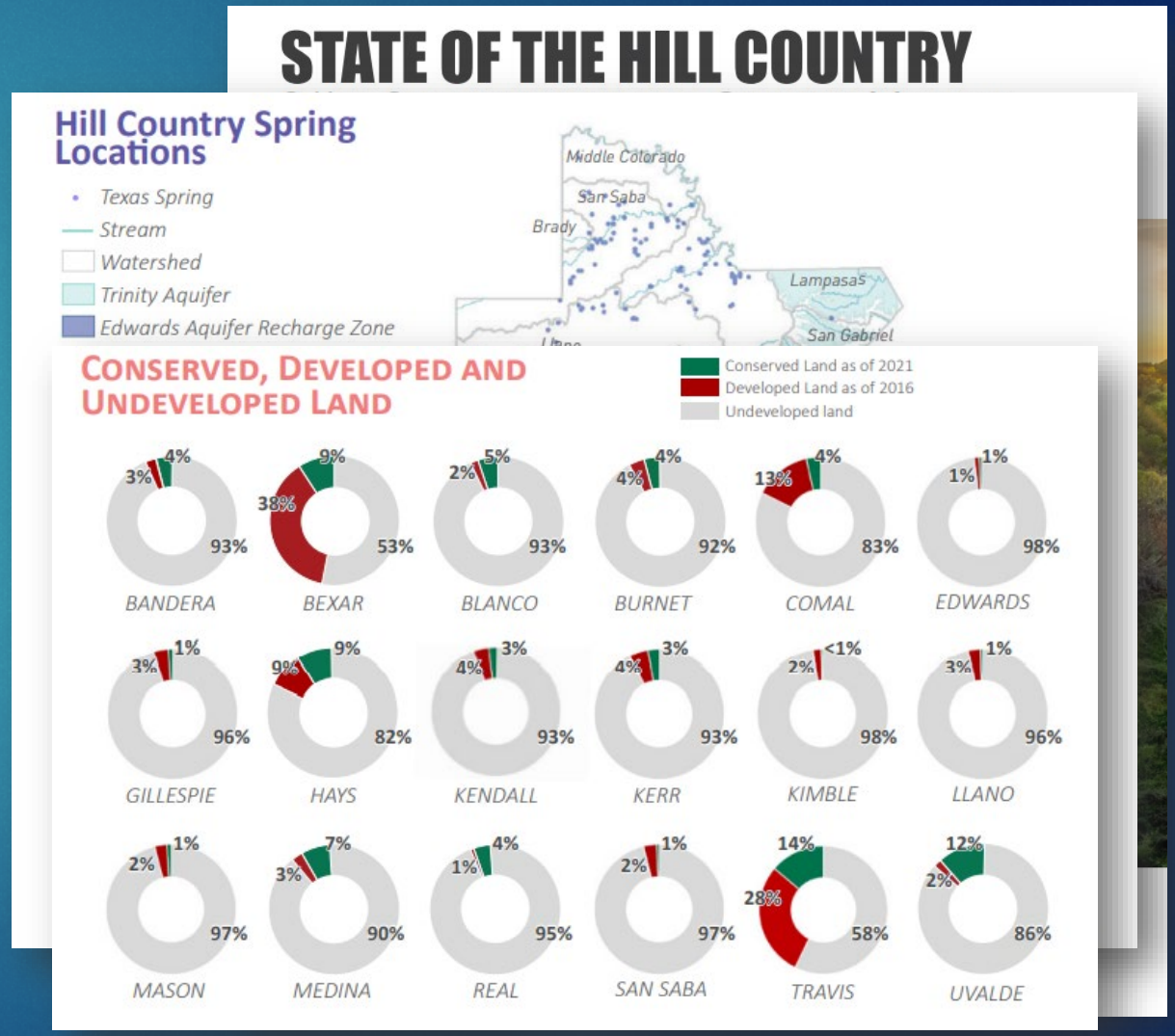
- **Spring Flow Chapter**

  Highlights the connectivity of groundwater and surface water and the relationship between Trinity and Edwards Aquifer groundwater systems.

- **Conserved vs. Developed Lands Chapter**

  Compares investment in conservation lands to urbanized or developed lands by county throughout the Hill Country.

- **Collaboration**
  - Texas Hill Country Conservation Network
  - The Watershed Association is a member organization & on the Steering Committee.



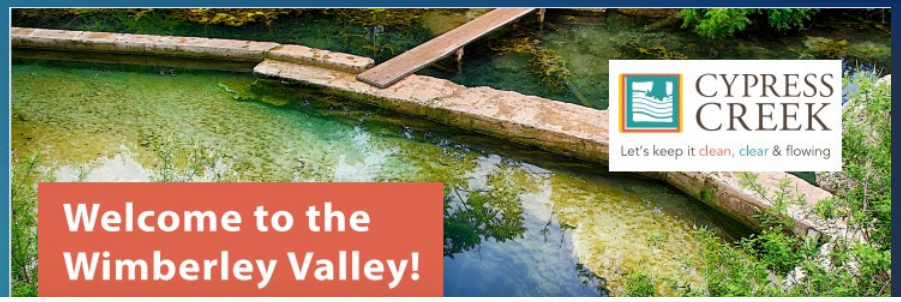
Jacob's Well GMZ Permit Planning Guide

Permitting Overview

- **Limited Groundwater Available**

  GMZ Rules limit available permits to protect spring flow and groundwater supplies within the GMZ.

- **Collaboration**
  - Hays Trinity Groundwater Conservation District
  - Hays County Development Services
  - The Cypress Creek Project
  - The Watershed Association is a member of the Cypress Creek Project.



JACOB'S WELL GROUNDWATER MANAGEMENT & REGIONAL RECHARGE STUDY ZONE PERMIT PLANNING TOOL

	WATER USE	PERMIT TYPE	VOLUME	AQUIFER AVAILABILITY	DROUGHT CURTAILMENT	DROUGHT REPORTING	NOTES
DISTRICT WELLS	Domestic	Exempt	17.36 gpm[2] or Less	All	Voluntary		Registration Required
	Agriculture[1]		N/A				
	Geoexchange		None		–		Registration Required: Heat Exchange Only
	Monitor Well						Registration Required: Long Term Data Resource
	Test Well		Temporary				Registration Required: Temporary and Limited
JACOBS WELL GMZ	Tier 1	Non-Exempt	2 AFY or Less	All	Up to 30% of Baseline Production	Monthly	Permit Required: *Includes Irrigation Use* Well must be cased and grouted to the producing strata
	Tier 2		>2 to 6 AFY	Lower Trinity			
	Tier 3		6 AFY or More				
RECHARGE STUDY ZONE[3]	See Tier Guidelines Above		Tiered as Above with Maximum 10 AFY or Less	All	Up to 30% of Permitted Volume	Quarterly	

https://wimberleywatershed.org/2022/04/18/groundwater-permit-planning-guide-for-western-hays-county/

Two New Monitor Wells

Jacob's Well Groundwater Management Zone

- **Multiport Monitor Well**

  9 independent zones to allow monitoring of Middle & Lower Trinity

- **Dual Completion Monitor Well**

  Two sampling intervals to continuously monitor water level fluctuations in Middle Trinity formations (Lower Glen Rose, Cow Creek)

- **Collaboration**
  - Barton Springs Edwards Aquifer Conservation District
  - Hays Trinity Groundwater Conservation District.
  - Hays County
  - Wimberley Valley Watershed Association

https://wimberleywatershed.org/2022/04/11/two-new-monitor-wells-for-the-jacobs-well-gmz/

Wimberley Water Advisory Group

E.coli monitoring of Cypress Creek and Blanco River

- **Swim Season Sampling**
  - 11 Sites
  - Samples collected by volunteers
  - Analysis done by the Edwards Aquifer Research and Data Center lab
- **Collaboration**
  - Wimberley Civic Club
  - Wimberley Lions Club
  - Wimberley Chamber of Commerce
  - Wimberley Valley Watershed Association

Wimberley Water Advisory Group

2021 Water Testing Results

e-coli colonies per 100 ml

Cypress Creek	4/7/21	5/10/21	6/7/21	7/6/21	8/9/21	9/7/21	10/12/21	11/8/21	Geometric mean	4/4/22
Jacob's Well Flow	*0.89 cfs*	*2.67 cfs*	*13.8 cfs*	*11.3 cfs*	*4.38 cfs*	*4.06 cfs*	*2.6 cfs*	*21.3 cfs*		*2.3 cfs*
Site 0 – Jacob's Well	1	117	326	3	75	1	7	51	*15.3*	Less than 1
Site 1 – Cypress Creek at Jacob's Well Road	19	46	308	18	50	161	135	99	*69.1*	23
Site 2 – Cypress Creek at Woodcreek	5	21	93	11	12	324	18	65	*28.9*	19
Site 3 – Cypress Creek at north RR12	33	24	345	93	40	40	27	75	*54.9*	44
Site 4 – Cypress Creek at Blue Hole	10	49	157	61	146	33	10	41	*41.8*	6
Site 5 – Cypress Creek below bridge at Square	214	120	68	140	69	260	56	206	*122.5*	61

Blanco River	4/7/21	5/10/21	6/7/21	7/6/21	8/9/21	9/7/21	10/12/21	11/8/21	Geometric mean	4/4/22
Blanco River at Fischer Store Rd Flow	*11.7 cfs*	*14.5 cfs*	*33.5 cfs*	*35.3 cfs*	*32.3 cfs*	*28.2 cfs*	*16.1 cfs*	*25.4 cfs*		*14.7 cfs*
Site 6 – Blanco River at Paradise Valley	47	71	122	142	91	233	81	83	*97.6*	44
Site 7 – Blanco River at bridge on south RR12	NR	NR	NR	146	60	206	NR	326	***155.7***	NR
Site 8 – Blanco River above Cypress Creek	19	41	**435**	178	83	45	199	58	*84.5*	35
Site 9 – Blanco River at 7A Ranch	214	28	75	**548**	22	135	88	345	*110.5*	Less than 1
Site 10 – Blanco River at River Meadows	4	50	78	142	68	**517**	122	119	*76.1*	26

NR = No Reading

cfs = cubic feet per second

If e-coli counts are over 394 colonies per 100 ml of water sample at any one time OR a geometric mean of 126 colonies per colonies over time, there is a greater chance that pathogenic organisms are present. EPA set the standard for contact recreational use in fresh water as a geometric mean below 126 colonies per 100 mL.

https://wimberleywatershed.org/impactareas/watershedprotection/bacteria-sampling/

Conservation Lands

Jacob's Well Groundwater Management Zone

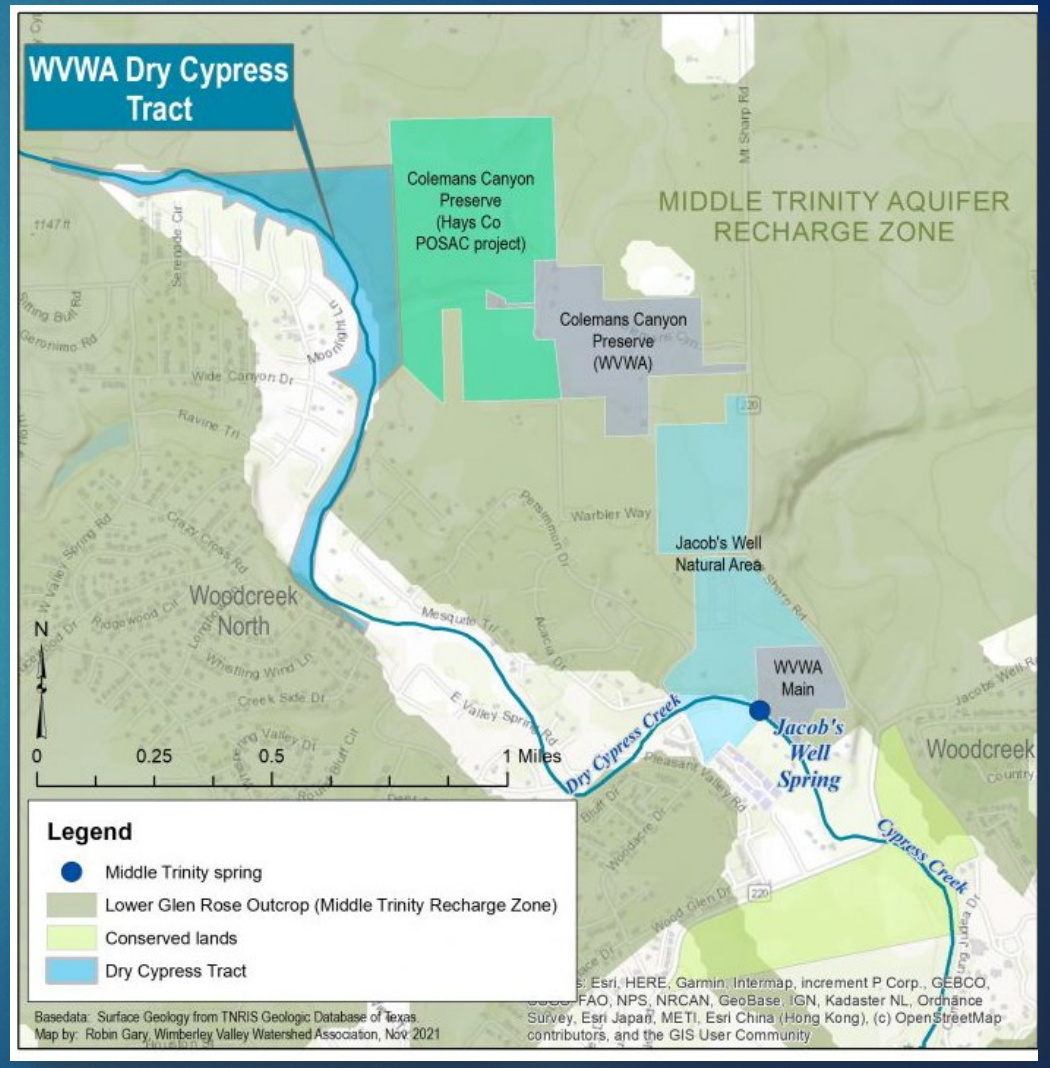
- **Dry Cypress Tract**

  The Watershed Association finalized the purchase of 74 acres adjacent to the Colemans Canyon Preserve in November 2021.

- **Colemans Canyon Preserve**

  Appraisals and conservation easement baseline almost complete. The transfer to Hays County is estimated for early summer 2022.

- **Collaboration**
  - Hays County
  - Wimberley Valley Watershed Association



https://wimberleywatershed.org/2021/11/18/watershed-association-purchases-74-acres-of-dry-cypress-for-recharge-protection/

Blanco Water Reclamation Task Force

Alternatives to Direct Discharge

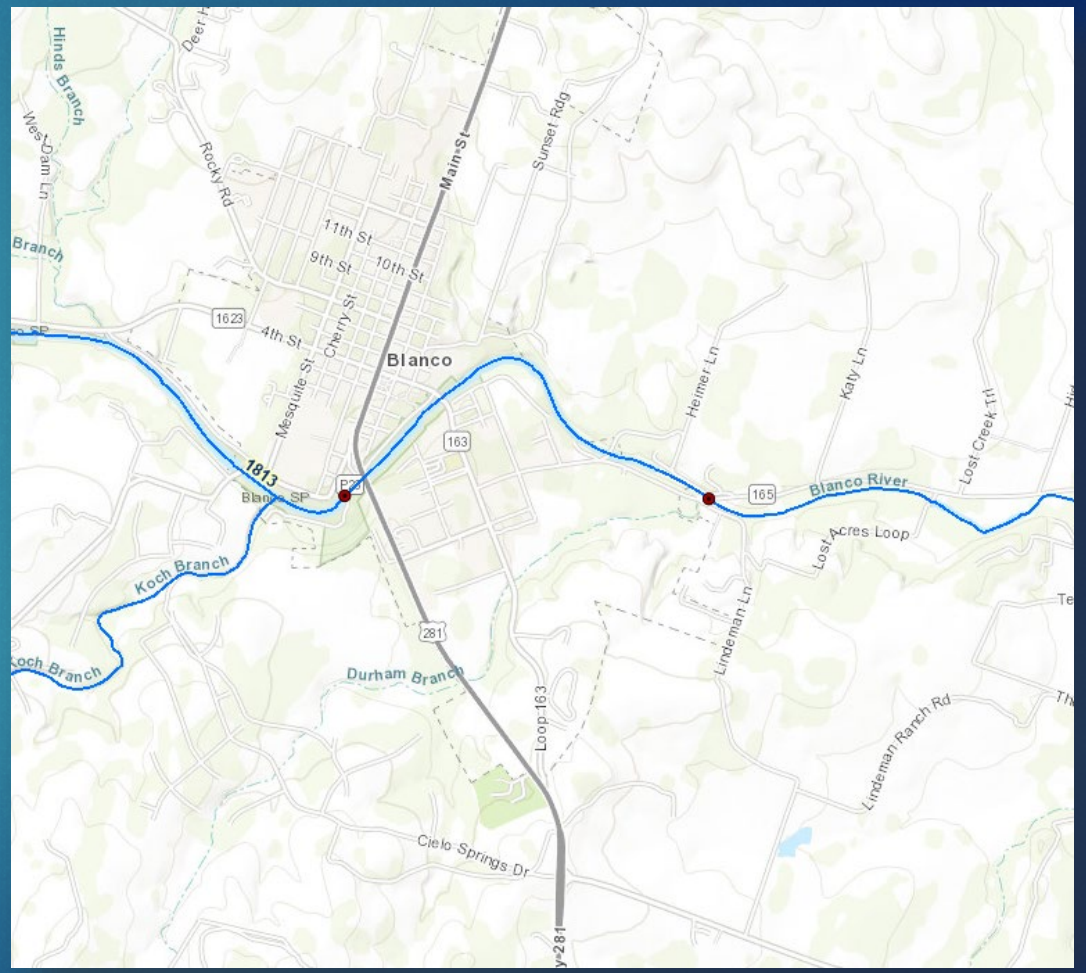
- **Transition to TLAP**

  Blanco City Council voted in favor of pursuing a phased and/or hybrid permitting approach through the TCEQ to obtain a Texas Land Application Permit (TLAP) to transition away from direct discharge into the Blanco River.

- **CRP Monitoring Sites**

  CRP data collection was integral to informing this decision. High nutrient loads downstream of the existing discharge altered water quality substantially and threatened aquatic habitat and recreational use.

- **Collaboration**
  - City of Blanco
  - Protect Our Blanco
  - Wimberley Valley Watershed Association
  - Meadows Center for Water and the Environment



https://wimberleywatershed.org/current-issues/blancowater/

Art4Water

Sacred Springs Kite Exhibition

- **Raising awareness of Texas' springs through Art**
  - 30 professional artists from across the US
  - 50 art pieces that have been transformed into kites
  - On display throughout the library & in main atrium

- **Collaboration**
  - Wimberley Valley Watershed Association
  - Austin Public Library

https://wimberleywatershed.org/impactareas/art4water/

Thank You!

- Good policy needs good science.
- Science needs to be accessible to be meaningful.
- Good stewardship goes a long way.
- Karst rocks!

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