



# **City of San Marcos**

## **City Council Work Session**

April 1, 2025

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# Presentation

## Item 1

Receive an update from Mark Enders, Habitat Conservation Plan Manager, regarding implementation of the Edwards Aquifer Habitat Conservation Plan and the permit renewal process



# Purpose

- Provide overview of the Edwards Aquifer Habitat Conservation Plan (EAHCP) and its purpose
  - Provides legal protection to permittees for activities that may impact endangered species such as river recreation and aquifer usage.
  - Clearly outlines specific activities that are required to be implemented by CoSM and TXST to maintain compliance with an incidental take permit.
  - The EAHCP has funded approximately \$10M in river restoration and habitat protection in the San Marcos River since 2013.
  - Without participation in the EAHCP, the City could be held liable for impacts to endangered species in the river and potentially would need to solely fund habitat protection measures and seek individual permits.
- Provide overview of the Permit Renewal Process
  - Current permit term: 2013-2027
  - Proposed new permit term: 2028-2058

# Edwards Aquifer Habitat Conservation Plan



- The EAHCP is a plan to protect endangered and threatened species in the San Marcos & Comal River systems
- Key component of an Incidental Take Permit (ITP) w/ USFWS
- Protects permittees from “take” of species associated with river recreation, aquifer pumping, etc.
- Includes habitat and springflow protection measures, refugia program and biological/ WQ monitoring
- Funded through Aquifer Mgmt Fees imposed by EAA on Edwards permittees
- Began in 2013 after almost a decade of planning and collaboration with regional stakeholders



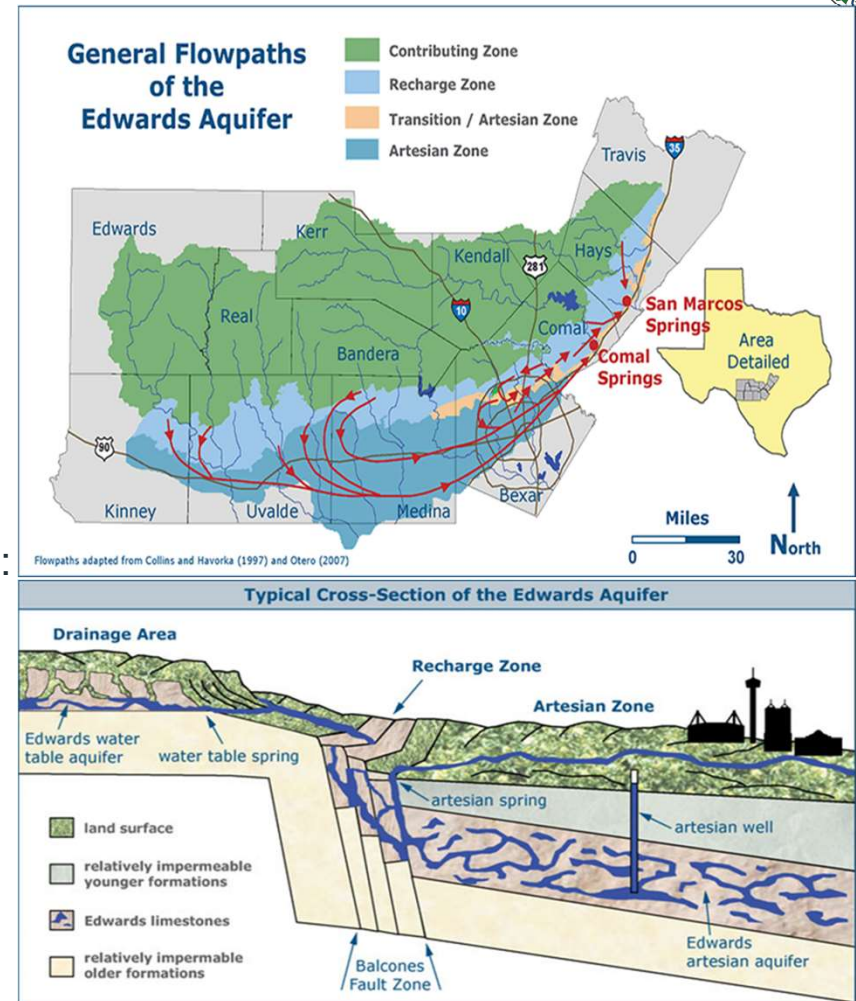
# EAHCP – Regional Partnership

- Incidental Take Permit permittees partners include:
  - Edwards Aquifer Authority
  - San Antonio Water System
  - City of New Braunfels
  - Texas State University
  - City of San Marcos
- Other program stakeholders/ partners:
  - Edwards Aquifer withdrawal permit holders
  - Texas Parks and Wildlife Dept
  - Texas Commission on Environmental Quality
  - Guadalupe Blanco River Authority
  - New Braunfels Utilities
  - Texas Living Waters Project
  - San Marcos River Foundation
  - US Fish and Wildlife Service
- Regional partnership and stakeholder-driven



# EAHCP Springflow Protection Measures

- Max annual Edwards Aquifer permitted withdrawal volume: 572,000 acre-ft
- The EAHCP establishes minimum springflows for both San Marcos (45cfs) and Comal Springs (30cfs) required to meet species needs
- EAA Stage V Critical Period Withdrawal Reductions: Up to 44% (-251,680 af/ yr)
- Voluntary Irrigation Suspension Program Option (VISPO): -41,795 af/ year, triggered for 2023, 2024, 2025
- SAWS ASR: 126,000 acre-ft currently stored, approx. -50,000 acre-feet/ year during deep drought when 10-yr rolling recharge avg is <500,000 ac-ft
- Designed and modeled to achieve minimum springflows during drought and 1950s “drought of record” scenarios





# EAHCP Springflow Protection Measures



- Max annual Edwards Aquifer permitted withdrawal volume: 572,000 acre-ft through approx. 1,800 individual permits
  - SAWS: 235,000 af/yr
  - NBU: 9,269 af/ yr
  - CoSM: 5,433 af/ yr\***
  - TXST: 2,002 af/ yr
- Mandatory EAA Edwards Aquifer withdrawal reductions based on aquifer levels and/ or springflow
- Reductions applied to these permitted volumes

Critical Period Stage	Edwards Aquifer Level @ J-17 Index Well	San Marcos Springflow (cfs)	Comal Springflow (cfs)	% required withdrawal reduction
None	660 ft or >	96 or >	225 or >	0%
Stage 1	<660 ft	<96	<225	20%
Stage 2	<650 ft	<80	<200	30%
Stage 3	<640 ft	N/A	<150	35%
Stage 4	<630 ft	N/A	<100	40%
Stage 5	<625 ft	N/A	<45	44%

\* CoSM Edwards allotment accounts for 28% of total existing supply

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# EAHCP Habitat Protection Measures



Implemented by CoSM, TXST and CoNB in San Marcos and Comal River systems and since 2013, and funded through the EAHCP program, to minimize and mitigate impacts to covered species. Includes but it not limited to:

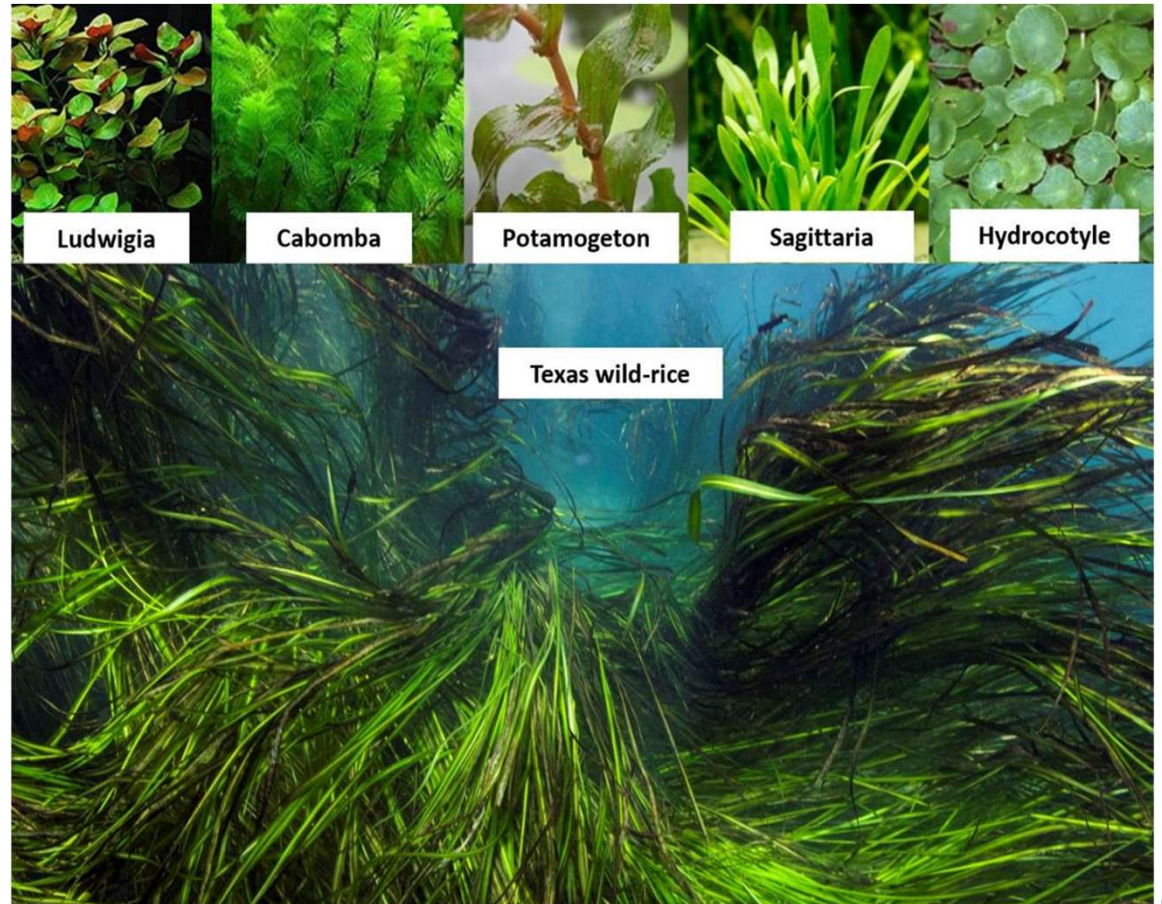
- Aquatic Vegetation/ Texas Wild Rice Restoration
- Riparian Restoration & Riparian Zone Mgmt
- Non-native Species Mgmt
- Water Quality Protection
- Mgmt of Litter & Floating Vegetation Mats
- Permanent River Access Points/ Bank Stabilization
- Mgmt of River Recreation
- Household Hazardous Waste Mgmt
- Hazardous Materials Transport Prohibition

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# EAHCP Habitat Protection Measures: Aquatic Vegetation Restoration

- The EAHCP includes goals specific to coverage of aquatic vegetation
- Texas Wild Rice
- Fountain Darter Habitat
- Includes routine removal of non-natives and planting of native aquatic vegetation
- Mitigates for low-flow & recreational impacts





# EAHCP Habitat Protection Measures: Riparian Restoration



- Includes control of non-native, invasive vegetation and establishment of native vegetation along the river from Spring Lake to Stokes Park



# EAHCP Habitat Protection Measures: Non-Native Species Mgmt

- Removal of non-native fish (i.e. Plecostomus and tilapia) within the San Marcos River to minimize impacts to covered species

	Suckermouth Armored Catfish	Tilapia
Total # Removed-SM River (2013 - Dec 2024)	16,722	2,827



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# EAHCP Litter Collection

- Includes contracted underwater litter collection from headwaters to Stokes Park. Occurs 2x/ week during recreation season (May-Sept) & 1x/ month during off-season.
- Removed approx. 1,350 ft<sup>3</sup> between 2022-2024



# EAHCP Habitat Protection Measures: Mgmt of Recreation

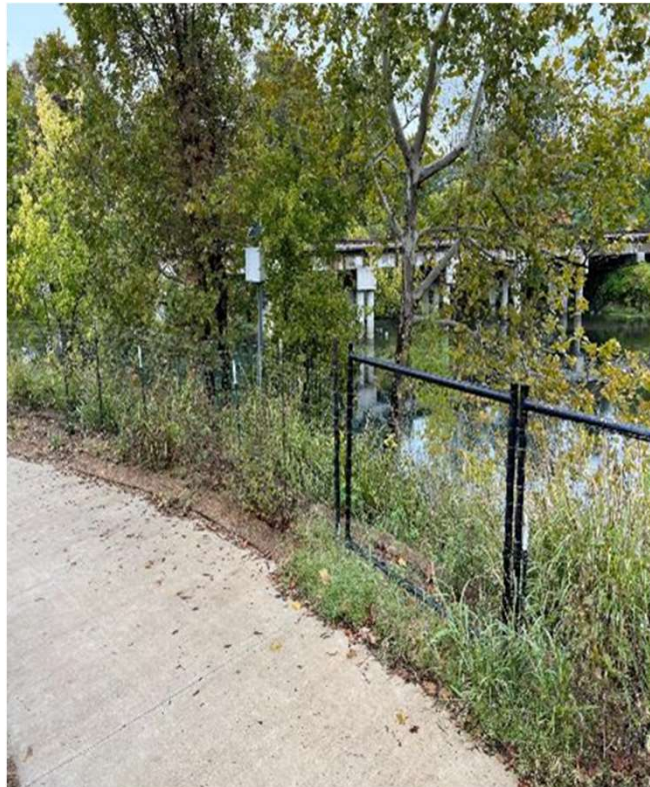
- River recreation in the San Marcos River is managed in several ways to help protect endangered species habitat:
  - Signage
  - EAHCP Conservation Crew
  - State Scientific Area exclusions
  - Stabilized River Access points and riparian buffers/ fencing





# EAHCP Habitat Protection Measures: Stabilized River Access Points

- Installation of hardened river access points in combination with riparian fencing





# EAHCP Habitat Protection Measures: Stabilized River Access Points

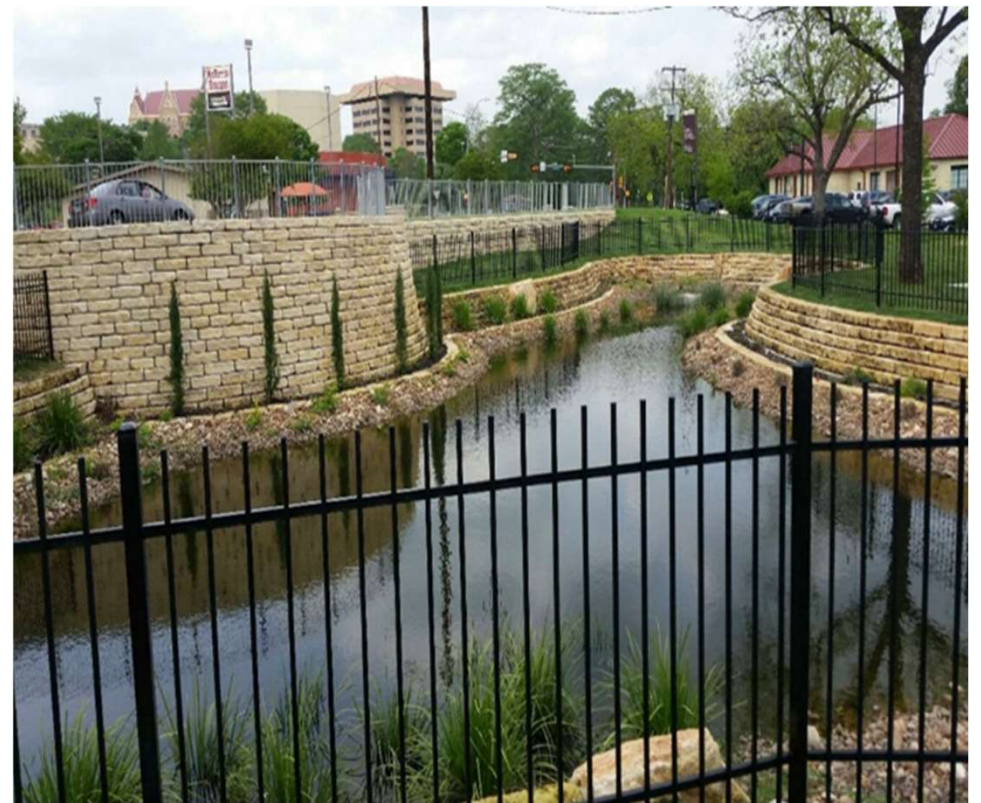
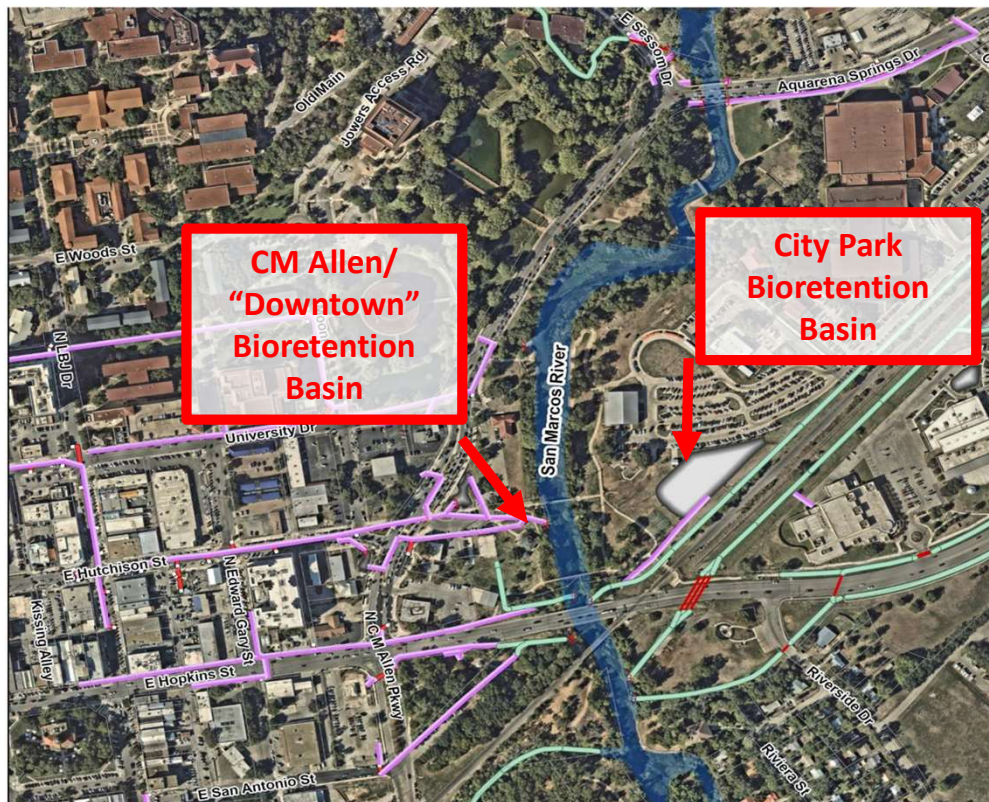
- Hardened river access points in combination with riparian fencing help to protect both aquatic and riparian vegetation and prevent bank erosion.





# EAHCP Habitat Protection Measures: Water Quality Protection

- Application of green stormwater infrastructure and improvements to help protect water quality







# EAHCP Habitat Protection Measures: Water Quality Protection – Sessom Crk





# EAHCP WQ & Biological Monitoring



- Aquatic Vegetation Mapping
- Fountain Darter Surveys
- Salamander Surveys
- Riffle Beetle Surveys
- Water Quality Monitoring
- Fish Community Surveys



# EAHCP Refugia Program

- Involves the housing and husbandry of Edwards Aquifer endangered species at the USFWS' San Marcos Aquatic Resources Center and Uvalde National Fish Hatchery.
- Includes research on housed endangered species
- Salvage collection and reintroduction of species as needed

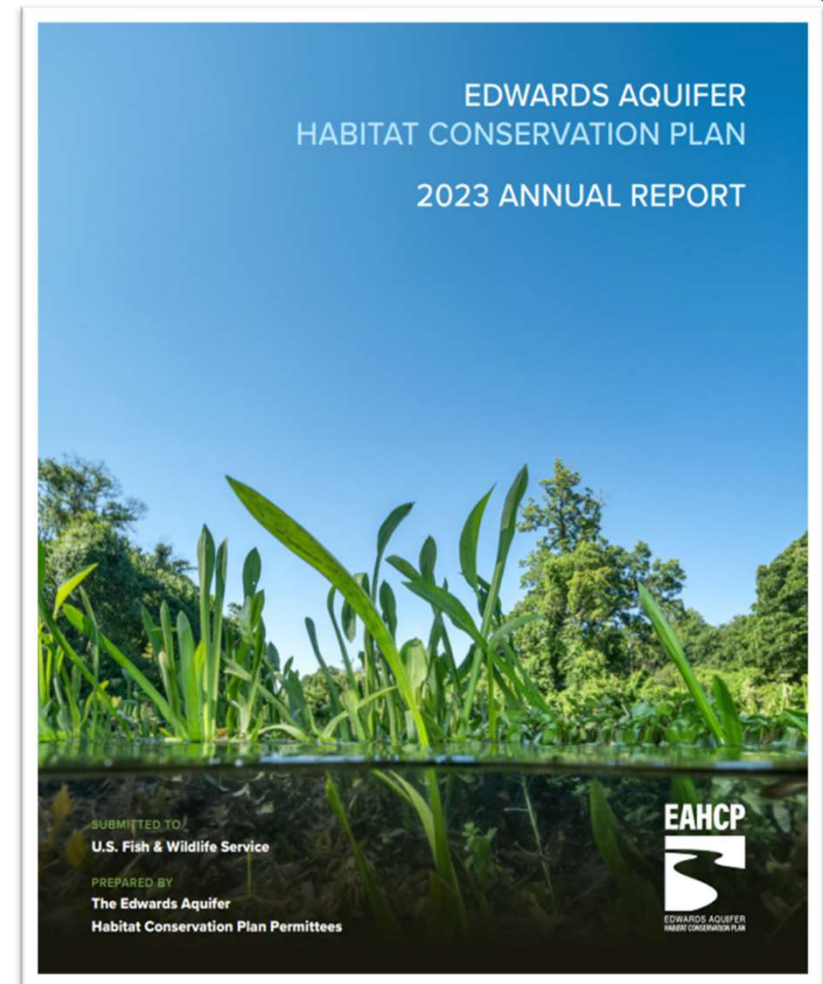




# EAHCP Program Administration



- EAHCP Implementing Committee, Stakeholder Committee & Science Committee
- Funding for EAHCP implementation comes from a portion of Aquifer Management Fees (AMF) paid annually by permitted M&I Edwards Aquifer users. Current AMF: \$90/ ac-ft/ yr, \$40 to EAHCP
- EAHCP Program Cost:
  - Approx. \$20M/ yr, total \$230M (2013-2027)
  - San Marcos: Approx. \$12M (2013-2027)
- Annual workplan development
- Annual reporting to US Fish and Wildlife Service
- ITP and EAHCP renewal





# EAHCP/ Incidental Take Permit Renewal Effort

- Existing EAHCP ITP expires in 2028
- Individual workgroups have been meeting to provide input on permit renewal components (i.e. Covered Activities, Biological Goals, Conservation Measures, etc)
- EAA and their consultant, ICF, utilize input from workgroups to generate draft EAHCP sections that are presented to the Implementing Committee/ permittees for approval for inclusion into the draft EAHCP
- Draft EAHCP to be submitted to USFWS for review/ comment in Spring 2026
- Final ITP permit application, EAHCP, NEPA docs submitted to USFWS late 2027
- Considering a 30-yr permit term (2028-2058)



# **EAHCP Permit Renewal - Proposed Covered Activities**

- Facilitation of River Recreation
- Permitted Use of the Edwards Aquifer
- **Construction in and immediately adjacent to the San Marcos River (\*new proposed covered activity)**
- Implementation of EAHCP minimization and mitigation activities (i.e. restoration activities)





# **EAHCP Permit Renewal - Proposed Biological Goals and Objectives**

- Springflow Objectives for Comal and San Marcos
- Species Abundance, Density and Recruitment – SM Salamander, Fountain Darter, Riffle Beetle
- Texas Wild-Rice Areal Coverage
- Aquatic Vegetation Areal Coverage
- Water Quality (i.e. maintain adequate water temps)



# EAHCP Permit Renewal - Proposed Biological Goals and Objectives

- Proposed Springflow Objectives for San Marcos Springs:

- San Marcos Springflow**

- **Objective 1.2, Minimum San Marcos Springflow Discharge:** Maintain mean monthly discharge at San Marcos Springs (gage #08170000) greater than or equal to 60 cfs for at least 11 months per calendar year. Maintain daily average springflow greater than or equal to 45 cfs. This will be quantified by using mean daily springflow data to calculate average springflow for each month per year.
    - **Objective 1.4, Long-Term San Marcos Springflow Discharge:**
      - *Maintain a 3-year moving-average annual San Marcos Springs discharge (gage #08170000) above 136 cfs.*
      - *Maintain a 30-year long-term average San Marcos Springs discharge above 140 cfs.*

- Existing EAHCP Objectives:

TABLE 4-13  
LONG-TERM AVERAGE AND MINIMUM TOTAL  
SAN MARCOS DISCHARGE OBJECTIVES

Description	Total San Marcos Discharge (cfs) <sup>a</sup>	Time-step
Long-term average	140	Daily average
Minimum	45 <sup>b</sup>	Daily average

<sup>a</sup> Assumes a minimum of a 50-year modeling period that includes the drought of record

<sup>b</sup> Not to exceed six months in duration followed by 80 cfs (daily average) flows for 3 months.

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# EAHCP Permit Renewal Proposed Biological Goals and Objectives

## – Aquatic Vegetation Coverage



- **Objective 5.2, Texas Wild-rice Reach-Specific Areal Coverage:** *Maintain minimum coverage per reach distributed longitudinally down the San Marcos River:*
  - Spring Lake—40 m<sup>2</sup>
  - Spring Lake Dam—360 m<sup>2</sup>
  - Sewell Park to Hopkins—4,200 m<sup>2</sup>
  - Hopkins to I-35—3,200 m<sup>2</sup>
  - Downstream of I-35—200 m<sup>2</sup>
- **Objective 6.6, San Marcos SAV Areal Coverage:** *Maintain a minimum of three SAV taxa including at least one complex structured SAV taxon in each reach (Table 9). Maintain total areal coverages of complex and simple SAV above the following thresholds per reach:*

Reach	Minimum Total Coverage (m <sup>2</sup> )	
	Complex SAV	Simple SAV
Spring Lake Dam	110	860
Spring Lake Dam - City Park*	130	2,740
City Park	370	1,220
City Park - Rio Vista Pool*	1,750	2,500
I-35	530	550
Total	2,890	7,870





# Proposed Springflow Protection Measures for EAHCP Renewal

Measures to help achieve spring flow objectives for SM and Comal with focus on achieving the minimum springflows at San Marcos (45cfs) and Comal Springs (30cfs) over the next 30 years with consideration of climate change

Springflow protection measures expected to remain similar for renewal with increased control flexibility

- Groundwater withdrawal and forbearance volume: **101,795 ac-ft/ year**
  - 41,795 af/yr** triggered when Edwards Aquifer level at or < 635 feet on October 1
  - 50,000 af/yr** pumping suspension when 10-yr rolling avg aquifer recharge <500,000 ac-ft
  - 10,000 af/yr** when either above measures is triggered
- SAWS ASR & Forbearance: Up to approx. **-46,000 af/yr** during deep drought, 126,000 acre-ft currently stored in ASR. Triggered when 10-yr rolling recharge avg <500,000 ac/ft/yr
- Stage V EAA Critical Period Management: **44% required reduction of on permitted aquifer withdrawals (-251,680 af/yr)**



# Proposed Habitat Conservation Measures for EAHCP Renewal

Proposed habitat protection measures expected to remain similar for renewal with some updates:

- Aquatic Recreation Mgmt
- Litter Mgmt
- Aquatic Vegetation Mgmt – TWR and FD habitat
- Non-Native Fish/ Animal Species Mgmt
- Riparian Zone Mgmt
- Surface Water Diversions (TXST)
- Floating Vegetation Mat Mgmt
- Sediment Accumulation Mgmt
- Water Quality Protection – HHW Mgmt, Septic System Prgm, Herbicide/ Pesticide Mgmt
- Water Conservation
- Land Conservation

# EAHCP– Next Steps



- Key Upcoming Milestones:
  - Approval of EAHCP Conservation Strategy by Implementing Committee - May 2025
  - Approval of Monitoring and Adaptive Mgmt Plan - Aug 2025
  - Approval of EAHCP Preliminary Costs - Oct 2025
  - **Approval of draft EAHCP and submittal to USFWS - mid 2026 (Council Resolution required)**

Note: An EAHCP-related item, consideration of an ILA with TXST for EAHCP Implementation activities, will be on the April 15<sup>th</sup> CC agenda.



# Questions?