



# Edwards Aquifer Habitat Conservation Plan

## Implementing Committee Meeting

EAHCP Staff ♦ May 23, 2019



# 2018 Withdrawal Summary



**Chuck Ahrens**

**Director, Water Resources**

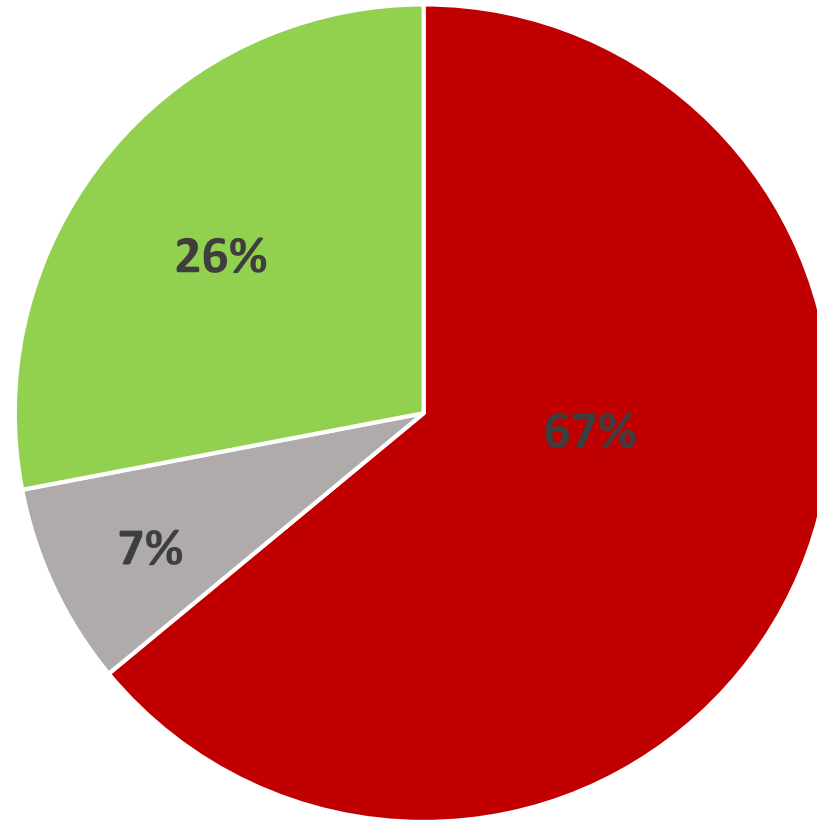
**May 23, 2019**

## **2018 Permitted Users**

1,278 permit holders authorized 571,599 acre-feet

- 171 Municipal
- 293 Industrial
- 814 Irrigation

## 2018 Regional Authorizations by Purpose of Use



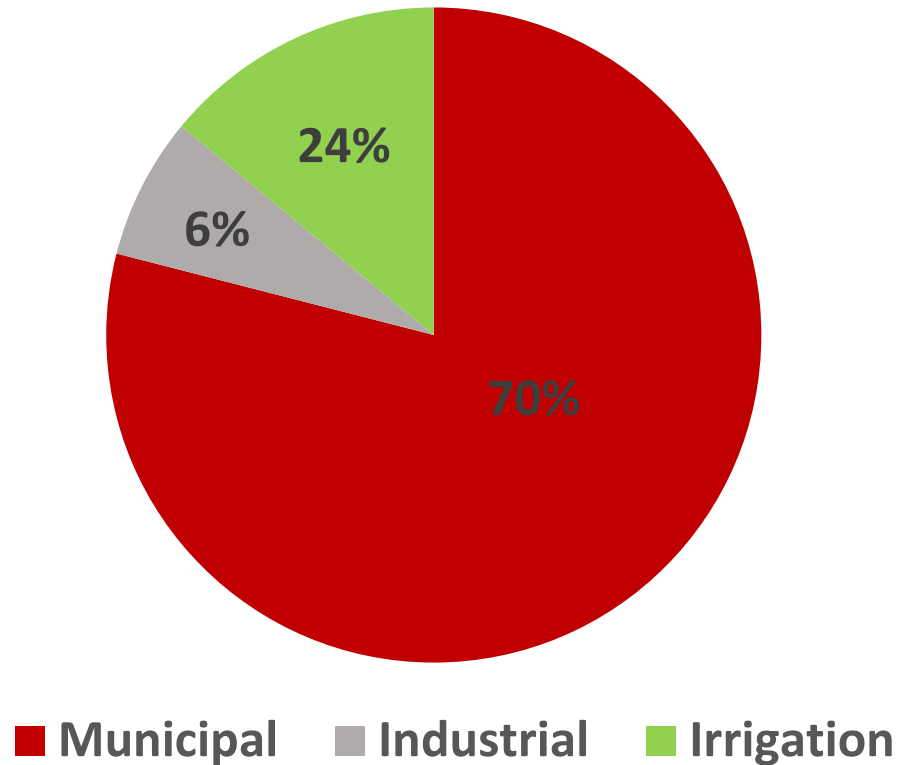
■ Municipal   ■ Industrial   ■ Irrigation

- 571,599 acre-feet: Municipal 378,621 acre-feet; Industrial 40,864 acre-feet; Irrigation 152,114 acre-ft.

# 2018 Regional Permitted Withdrawals by Purpose of Use

Total Pumped = 352,275 acre-ft.

Total volume of unused water = 219,324 acre-ft.



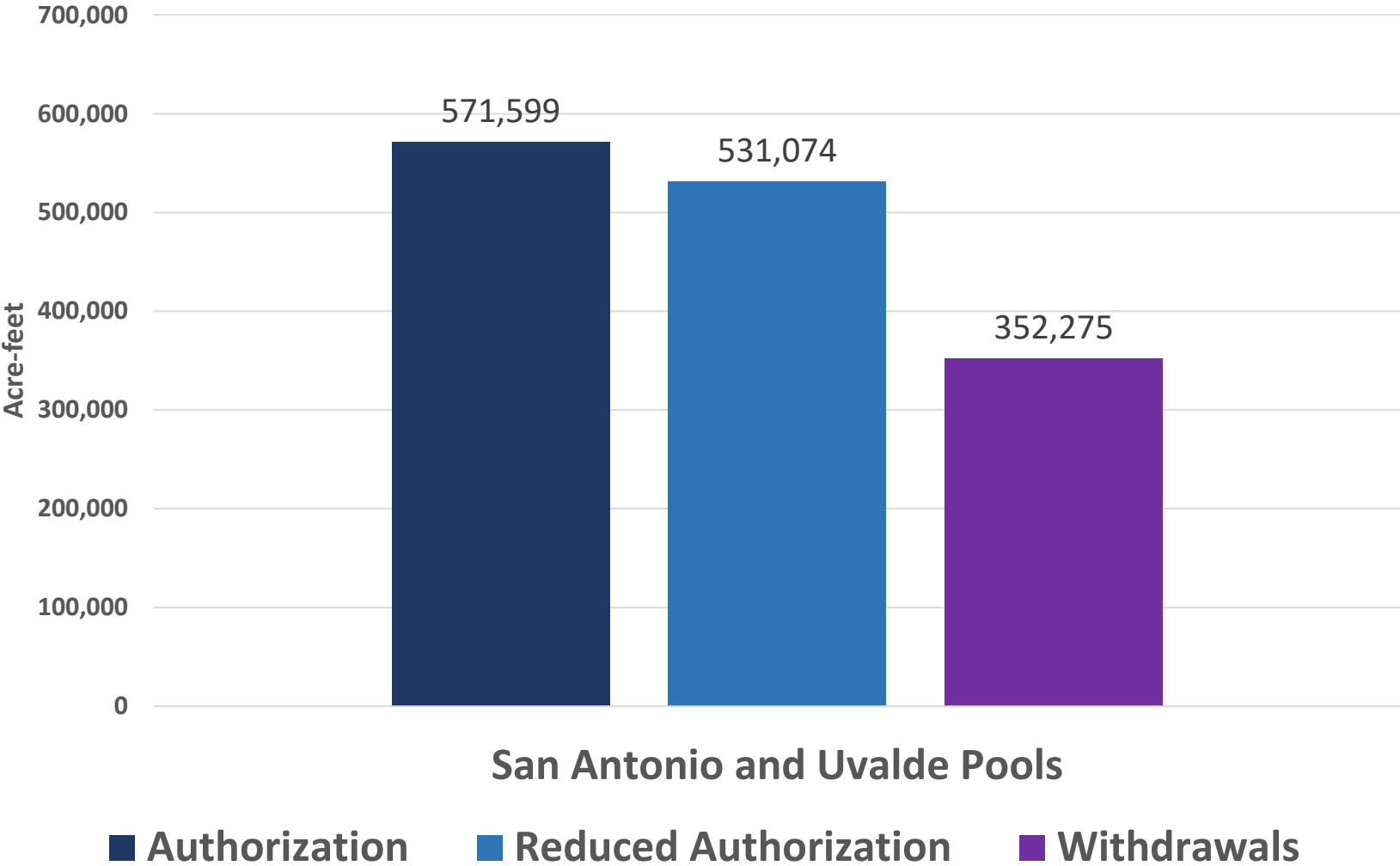
Municipal = 245,093 acre-ft.; Industrial = 23,214 acre-ft.; Irrigation = 83,968 acre-ft.

# 2018 Critical Period Management

## San Antonio Pool

Stages	Days	Formula
Stage I	36	$36/365 \times 20 = 1.97\%$
Stage II	82	$82/365 \times 30 = 6.74\%$
Stage III	0	N/A
<b>Totals =</b>	<b>118</b>	<b>8.7%</b>

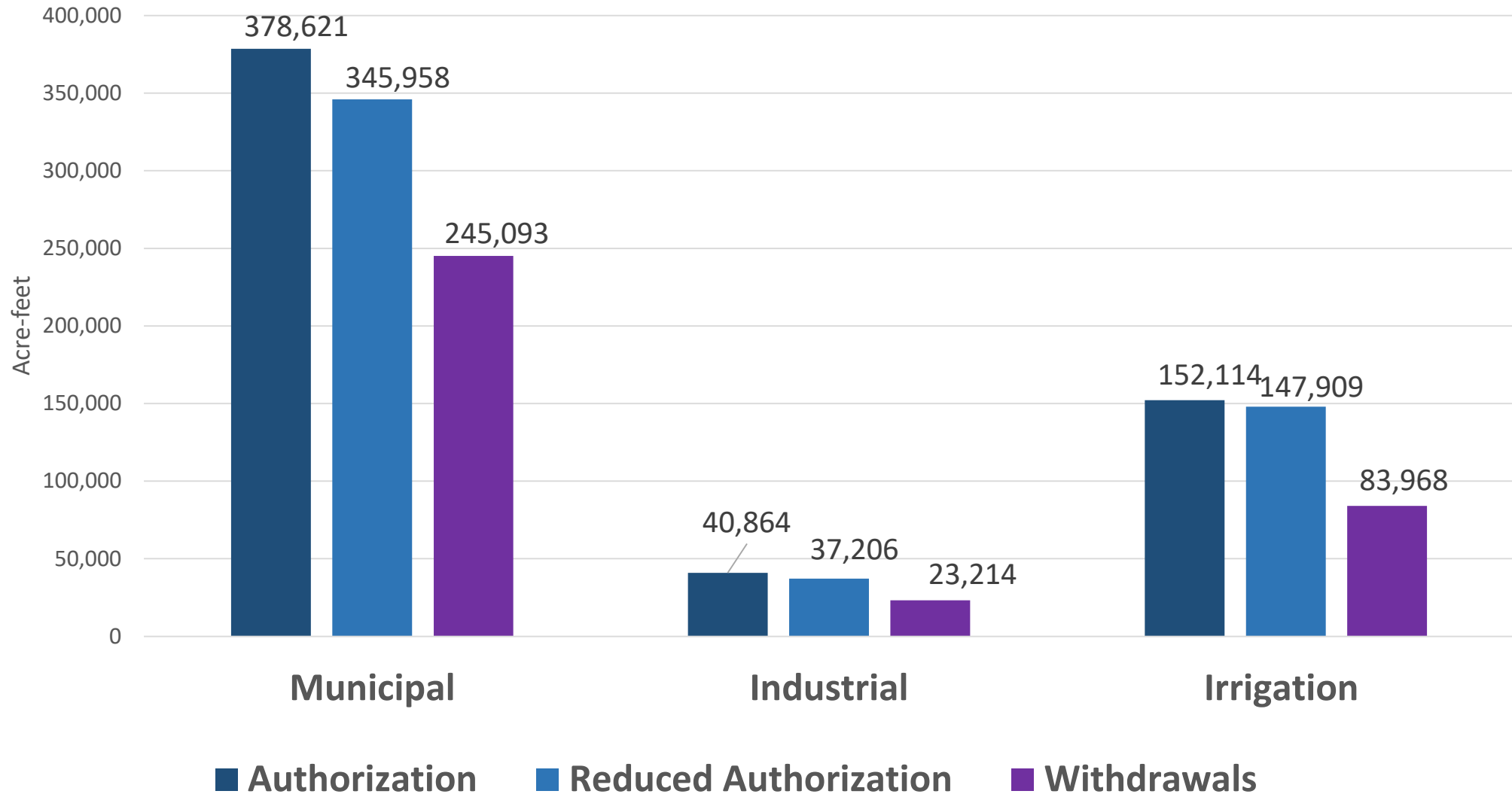
# 2018 CPM Regional Reductions and Withdrawals



**Amount Reduced: 40,525 acre-ft.    Amount Unpumped: 219,324 acre-ft.**



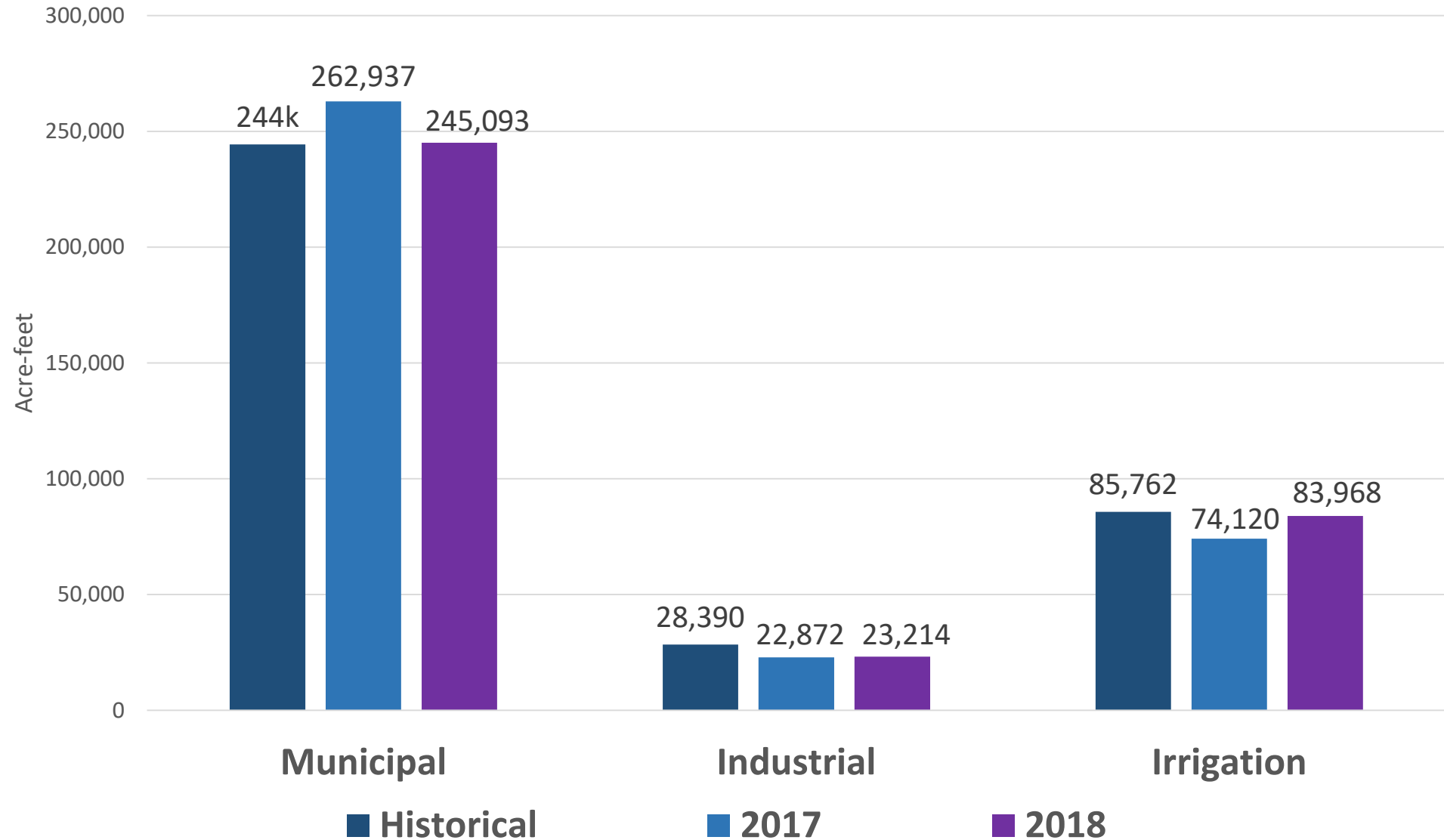
# 2018 CPM Regional Reductions and Withdrawals by Purpose of Use



**CPM Reduction: 40,525 acre-ft. Municipal = 32,663 acre-ft. Industrial 3,658 acre-ft. Irrigation 4,205 acre-ft.**



# Historical Use Comparison



# Historical Use Comparison

Purpose	2017	2018	Difference
Municipal	262,937	245,093	-17,844
Industrial	22,872	23,214	+342
Irrigation	74,120	83,968	+9,848
Total:	359,929	352,275	-7,654

Purpose	Historical 1999-2017	2018	Difference
Municipal	244,376	245,093	+717
Industrial	28,390	23,214	-5,176
Irrigation	85,762	83,968	-1,794
Total:	358,449	352,275	-6,174

Questions?



# Edward Aquifer JBSA Pumping & EAHCP Guidance

Scott Storment – EAHCP Program Manager

May 23, 2019



# JBSA & Edwards Aquifer Use

- ▶ “Sovereign immunity” – exempt well under EAA regulations
- ▶ JBSA follows Endangered Species Act
- ▶ JBSA Biological Opinion – covers all incidental take related to JBSA activities
- ▶ JBSA BO baseline withdrawal amount is 12.012 ac-ft/yr
- ▶ Average use between 2007-2014 was 4,691 ac-ft/yr



# EAHCP & JBSA Aquifer Use

- ▶ No JBSA “take” is covered by EAHCP Incidental Take Permit
- ▶ MODFLOW uses 6,000 ac-ft/yr in current model
  - ▶ 2011 HDR model proposed 6,714 ac-ft/yr (JBSA usage)
- ▶ Model amounts based on assumed use and determined by:
  - ▶ Consensus during EARIP
  - ▶ Approved by USFWS in EAHCP ITP
  - ▶ Issuance of JBSA BO



# Areas for Further JBSA Engagement

- ▶ Clarify covered take calculations
  - ▶ How USFWS differentiates yearly take from EAHCP and JBSA activities respectively
- ▶ Cooperate in planning
  - ▶ EAHCP coordinate efforts to promote conservation among JBSA and permittees
  - ▶ Explore JBSA participating in next HCP and ITP
- ▶ Improve reporting and information sharing
  - ▶ Request USFWS and JBSA share annual reports to show federal use pumping amounts





# Comprehensive Phase II Work Plan Timeline

- **November 29:** Phase II Work Group (*Part 1*)
- **December 5:** Phase II Work Group (*Part 2*)
- **December 7:** Final comments from the Work Group submitted to EAHCP Program Manager.
- **January 24:** Draft Phase II Work Plan presented to the Implementing Committee. Public comment period begins.
- **February 15:** Public comment period ended.
- **March 21:** Implementing Committee reviewed final draft of the Phase II Work Plan.
- **May 23:** EAHCP to seek approval of the final Comprehensive Phase II Work Plan.



# Resolution No. 05-19-001

## RESOLUTION NO. 05-19-001

### OF THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM RELATIVE TO ACTION ON THE SCIENCE REVIEW PANEL'S DETERMINATIONS PURSUANT TO SUBSECTION 7.13.7 OF THE FUNDING AND MANAGEMENT AGREEMENT.

WHEREAS, on March 18, 2013, the U.S. Fish and Wildlife Service ("Service") issued Incidental Take Permit No. TE-63663A-1 ("ITP"), as amended, for a fifteen (15) year term, to the Edwards Aquifer Authority, the City of New Braunfels, the City of San Marcos, the City of San Antonio, acting by and through its San Antonio Water System, and Texas State University ("Permittees"), under Section 10(a) (16 U.S.C. § 1539(a)) of the federal Endangered Species Act of 1973; and

WHEREAS, Paragraph E of the ITP provides that the ITP is "subject to full and complete compliance with, and implementation of, the EAHCP ..."; and

WHEREAS, the EAHCP document as approved by the Service is entitled *Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan* (Nov. 2012) (prepared by RECON Environmental, Inc., Hicks & Company, Zara Environmental LLC, and BIO-WEST) ("EAHCP"); and

WHEREAS, as described in Section 1.1.1 of the EAHCP, the EAHCP takes a 2-phase approach during the 15-year term of the ITP described as follows:

"The approach taken in this HCP incorporates a two-phased implementation strategy. Phase I of the strategy will involve implementation of a package of minimization and mitigation measures that will be implemented very quickly upon issuance of the permit. These measures (described in Chapter 5) provide protection for the species covered by the ITP and their associated ecosystems. An Adaptive Management Process (AMP) (described in Chapter 6) will use information from monitoring data collected during Phase I, along with evaluation of technical and engineering alternatives and improved groundwater, biological and ecological models, to make appropriate modifications, if any are needed, to the Phase I program. Specified additional measures, if necessary to achieve the biological goals, will be implemented during Phase II"; and

WHEREAS, pursuant to Section 1.3.2 of the EAHCP and Recital E of the FMA, the period of Phase I is from March 18, 2013 through March 17, 2020, and the period of Phase II is from March 18, 2020 through March 31, 2028; and

WHEREAS, Section 9.1.1 of the EAHCP also provides for the development of a "funding and management agreement" between the Permittees with the purpose of such document being to "establish in greater detail the procedures and mutual commitments among the permittees for funding and management of the HCP and adaptive management process"; and

- **March 21:** Presentation of Resolution No. 005-19-001
- **March 21- April 12:** Comment Review Period
- **May 23:** EAHCP to seek approval of Resolution No. 005-19-001 from Implementing Committee





# Nonroutine AMP proposal - Timeline

- **March 14:** Nonroutine AMP process decision proposal sent to all EAHCP Committees.
- **March 27:** Nonroutine AMP proposal presented to the Science Committee.
- **May 1:** Scientific Evaluation Report submitted to Stakeholder Committee.
- **May 23:** Nonroutine AMP consideration by Stakeholder and Implementing Committees



## FMA 7.12.4 c

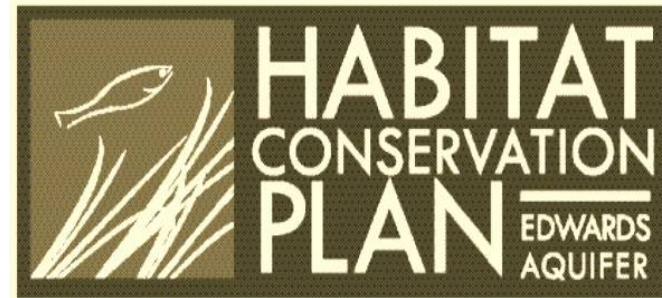
- ▶ “The Implementing Committee, through the Program Manager, may **commence discussion with the [U.S. Fish and Wildlife Service]** on the proposed modification, and implement the modification if approved by the Service...”





# 2020 City of New Braunfels Work Plan

EAHCP Implementing Committee  
May 23, 2019



# **City of New Braunfels' EAHCP Projects**

- **Flow-Split Management (5.2.1)**
- **Old Channel Aquatic Restoration (5.2.2.1)**
- **Comal River/ Landa Lake Aquatic Restoration (5.2.2.2)**
- **Management of Public Recreation (5.2.3)**
- **Decaying Vegetation and Dissolved Oxygen Management (5.2.4)**
- **Non-Native Animal Species Control (5.2.5 & 5.2.9)**
- **Monitoring and Reduction of Gill Parasites (5.2.6 & 6.3.6)**
- **Prohibition of Hazardous Materials Transport Routes (5.2.7)**
- **Native Riparian Habitat Restoration-Riffle Beetle (5.2.8)**
- **Litter and Floating Vegetation Management (5.2.10)**
- **Management of Golf Course Diversions and Operations (5.2.11)**
- **Native Riparian Habitat Restoration-Old Channel (5.7.1)**
- **Management of Household Hazardous Wastes (5.7.5)**
- **Impervious Cover/ Water Quality Protection/ LID (5.7.6)**

# City of New Braunfels- 2020 EAHCP Workplan Budget

HCP Section	Conservation Measure	Table 7.1	Available Budget for 2020	Estimated 2020 Budget	Delta from Available Budget
5.2.1	Flow Split Management	\$0	\$0	\$0	\$0
5.2.2.1/ 5.2.2.3	Old Channel Aquatic Vegetation Restoration & Maintenance	\$100,000	\$100,000	\$50,000	\$50,000
5.2.2.2/ 5.2.2.3	Landa Lake/ Comal River Aquatic Vegetation Restoration & Maintenance	\$50,000	\$50,000	\$100,000	(\$50,000)
5.2.3	Management of Public Recreation	\$0	\$0	\$0	\$0
5.2.4	Decaying Vegetation Removal and Dissolved Oxygen Management	\$15,000	\$15,000	\$15,000	\$0
5.2.5/ 5.2.9	Non-Native Animal Species Control	\$75,000	\$75,000	\$50,000	\$25,000
5.2.6/ 6.3.6	Monitoring and Reduction of Gill Parasites	\$75,000	\$75,000	\$10,000	\$65,000
5.2.7	Prohibition of Hazardous Material Transport Routes	\$0	\$0	\$0	\$0
5.2.8	Native Riparian Habitat Restoration (Riffle Beetle)	\$25,000	\$25,000	\$10,000	\$15,000
5.2.10	Litter and Floating Vegetation Management	\$0	\$0	\$30,000	(\$30,000)
5.2.11	Golf Course Management	\$0	\$0	\$0	\$0
5.7.1	Native Riparian Habitat Restoration	\$100,000	\$75,000	\$125,000	(\$50,000)
5.7.5	Management of Household Hazardous Waste	\$30,000	\$30,000	\$38,000	(\$8,000)
5.7.6	Impervious Cover/ Water Quality Protection	\$100,000	\$100,000	\$100,000	\$0
	<b>Totals</b>	<b>\$570,000</b>	<b>\$545,000</b>	<b>\$528,000</b>	<b>\$17,000</b>



## Old Channel(5.2.2.1) & Landa Lake/ Comal River (5.2.2.2) Aquatic Vegetation Restoration

- **EAHCP Requirement:**

Achieve submerged aquatic vegetation (SAV) coverage goals in both the LTBG and restoration reaches.

- **2020 Goals:**

- Conduct aquatic vegetation restoration to meet annual aquatic vegetation coverage goals per SAV report recommendations.
- Conduct routine monitoring and maintenance

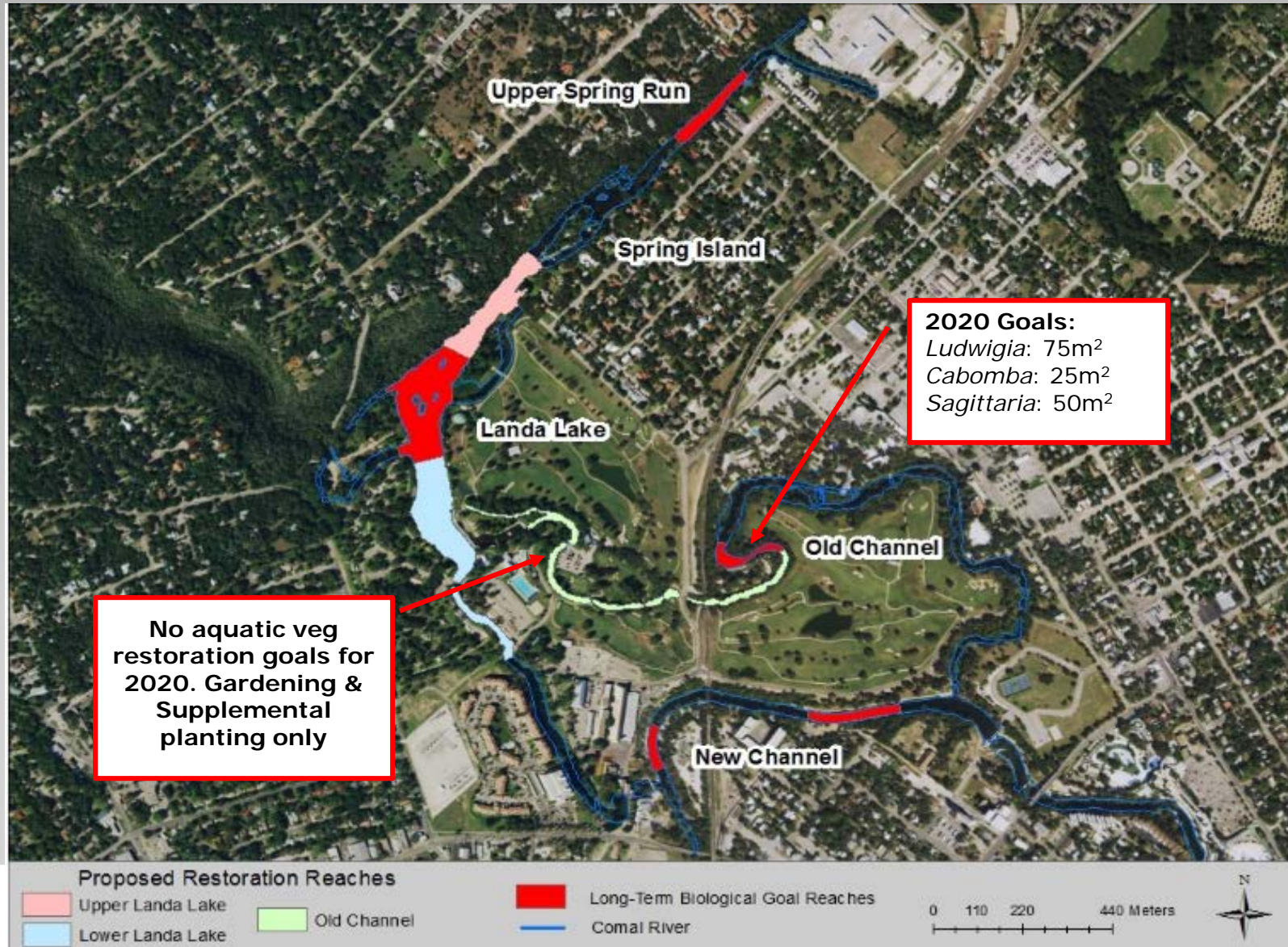
- **Estimated 2020 Budget:**

- Old Channel: \$50,000
- Comal River/ Landa Lake: \$100,000



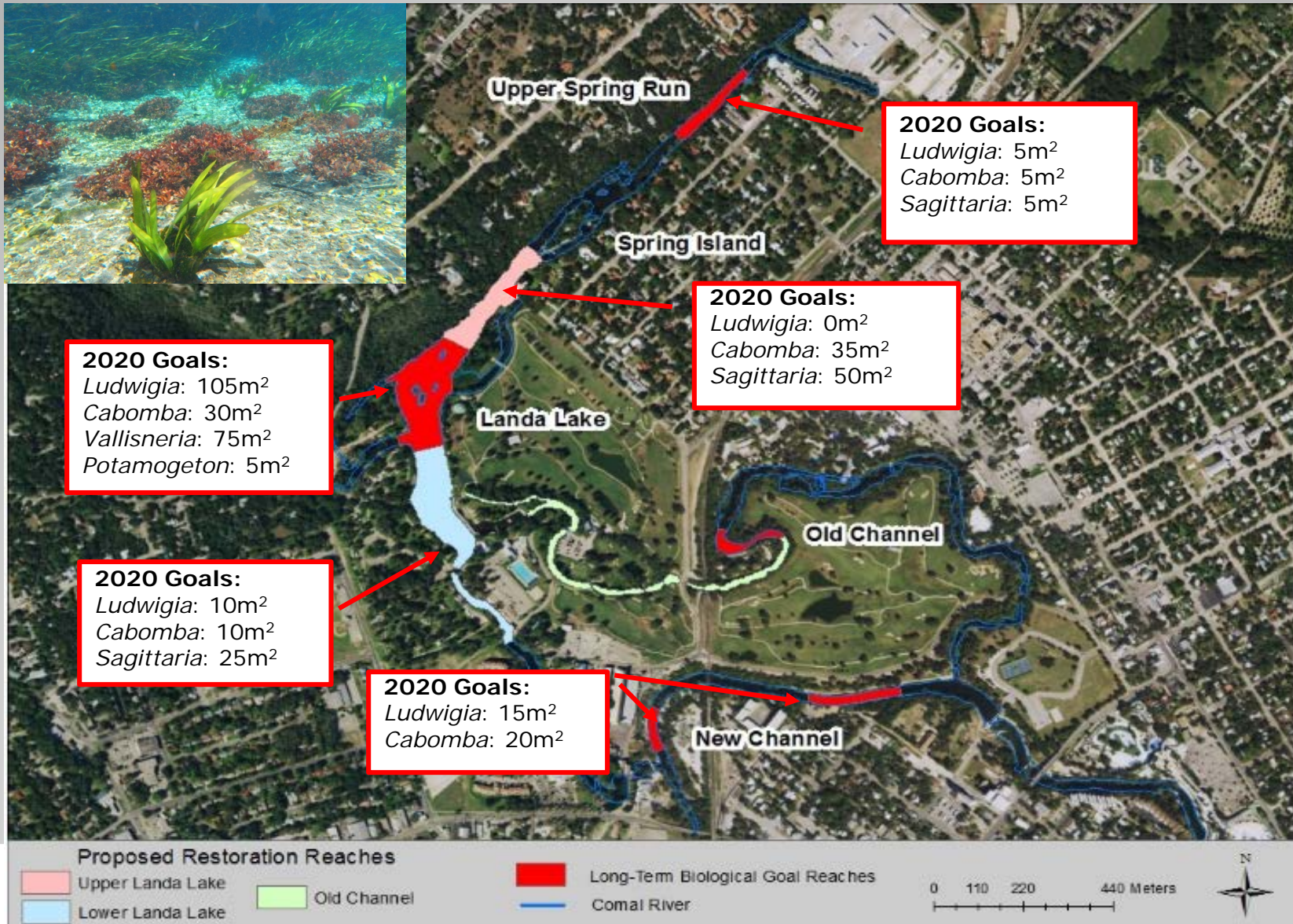


# Old Channel Aquatic Vegetation Restoration





# Landa Lake/ Comal Rvr Aquatic Vegetation Restoration



## **Non-Native Animal Species Control (5.2.5/ 5.2.9)**

- **EAHCP Requirement:**

Continue program to remove non-native, invasive species including tilapia, nutria and suckermouth armored catfish.

- **2020 Goals:**

Continue existing program to remove tilapia, nutria, and suckermouth armored catfish from the Comal River system. Record number removed and metrics.

- **Available Budget Table 7.1: \$75,000**

- **Estimated 2020 Budget: \$50,000**

- **Delta from Table 7.1: -\$25,000**

## Monitoring and Reduction of Gill Parasite (5.2.6/ 6.3.6)

- **EAHCP Requirements:**

Establish and implement a gill parasite monitoring and reduction program.

- **2020 Goals:**

Continue gill parasite monitoring during low-conditions

- **Estimated 2020 Budget:** \$10,000

- **Delta from Table 7.1:** -\$65,000

- **Reason for Budget Decrease:**

Funding of \$10,000 included for low-flow (<100cfs) water column gill parasite monitoring in 2020. Gill parasite reduction work not occurring at this time and may prove infeasible. Addressed in Phase II workplan.



## **Native Riparian Habitat Restoration-Riffle Beetle (5.2.8)**

- **EAHCP Requirement:**

Improve and expand riparian zone along both sides of Spring Run #3 (SR3) & along western shoreline to stabilize banks and increase useable habitat and food sources (i.e. root zone biofilms) for Riffle Beetle. Monitoring of restored areas.

- **2020 Goals:**

Monitor and maintain previously restored areas.

- **Estimated 2020 Budget:** \$10,000

- Look to Riffle Beetle Work Group for recommendations for future restoration efforts for this task.

## Litter and Floating Vegetation Control (5.2.10)

- **EAHCP Requirement:**

Minimize the impacts to habitat in Landa Lake, Spring Runs and Old Channel caused by litter and floating aquatic vegetation

- **2020 Goals:**

-Dislodge floating vegetation mats weekly to prevent shading of native, target SAV and accumulation on flow-split gates.

-Collect litter from Old Channel & Spring Runs 2x/ Month

- **Available 2020 Budget:** \$0

- **Estimated 2020 Budget:** \$30,000

- **Delta from Available Budget:** +\$30,000

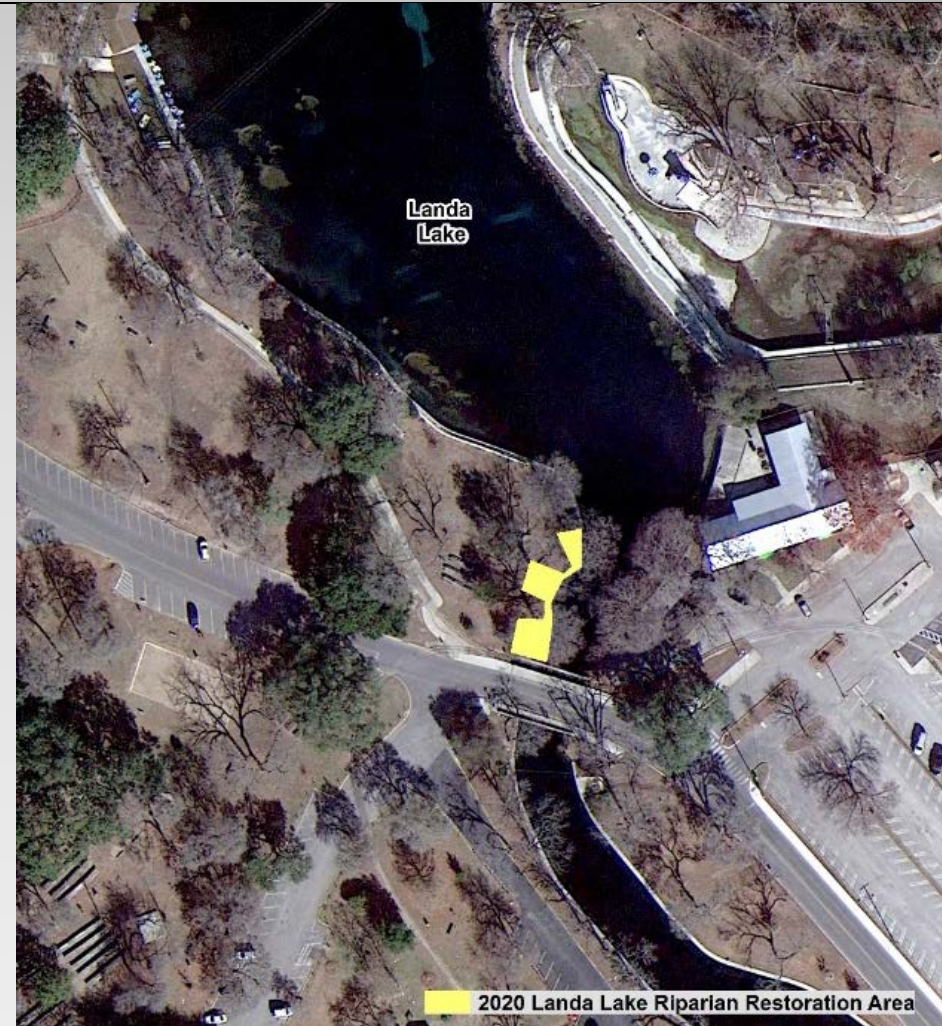
\*Funding for this measures from decreases in Task 5.2.6 and 5.2.8.



## Native Riparian Habitat Restoration (5.7.1)

- **EAHCP Requirement:**  
Increase the area and density of riparian zone
- **2020 Goals:**
  - Increase the coverage and density of native riparian vegetation along the banks of Landa Lake and along NBUs Headwaters facility located at the confluence of Blieder's Creek and the Upper Spring Run.
  - Remove non-native vegetation and plant native vegetation along bank of Landa Lake in the area of Spring Island on CCWRD#1 property.
- **Available 2020 Budget:** \$75,000
- **Estimated 2020 Budget:** \$125,000
- **Delta from Available Budget:** +\$50,000
  - \*Increase in funding for this measures from decreases in Task 5.2.6.

## Native Riparian Habitat Restoration (5.7.1)





# Native Riparian Habitat Restoration (5.7.1)



## Mgmt of Household Hazardous Waste (5.7.5)

- **EAHCP Requirement:**  
Minimize the potential for improper disposal of HHW & associated negative impacts to species.
- **2020 Goals:**
  - Hold three household hazardous waste (HHW) collection events in New Braunfels. Continue to partner with New Braunfels Utilities (NBU) on the Operation MedSafe drug recovery program.
- **Available 2020 Budget:** \$30,000
- **Estimated 2020 Budget:** \$38,000
- **Delta from Available Budget:** +\$8,000
  - \*Increase in funding for this measures from decreases in Task 5.2.6.
- Increase in requested funds due to increase in costs associated with HHW events (event set-up, disposal of collected wastes)





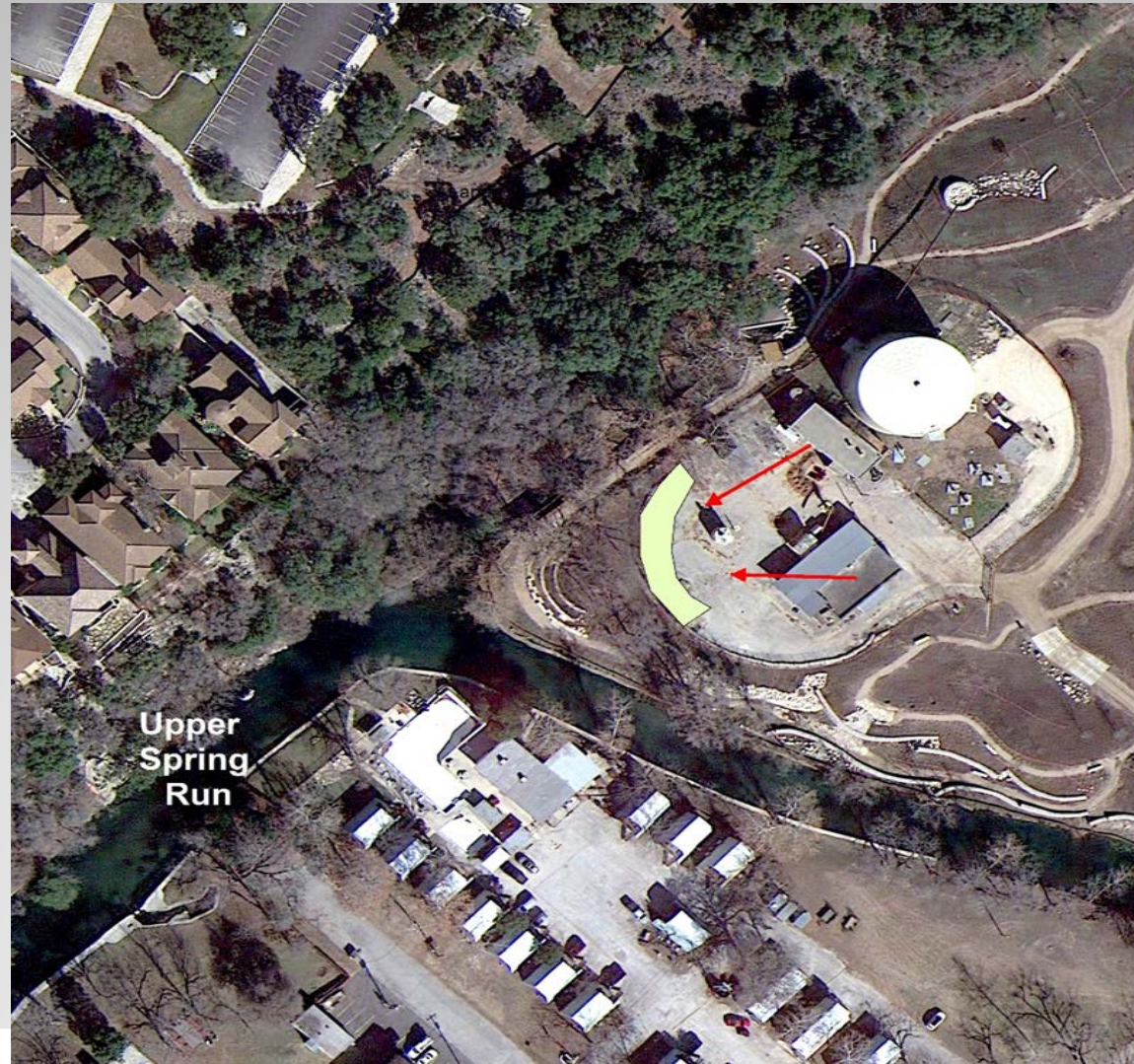
## **Impervious Cover/ Water Quality Protection (5.7.6)**

### **2020 Goals:**

- Design and construct a bio-retention basin to be located at the New Braunfels' Utilities (NBU) Headwaters facility to treat and infiltrate stormwater runoff from remaining impervious surfaces.

**Estimated 2020 Budget: \$100,000**

## Impervious Cover/ Water Quality Protection (5.7.6)



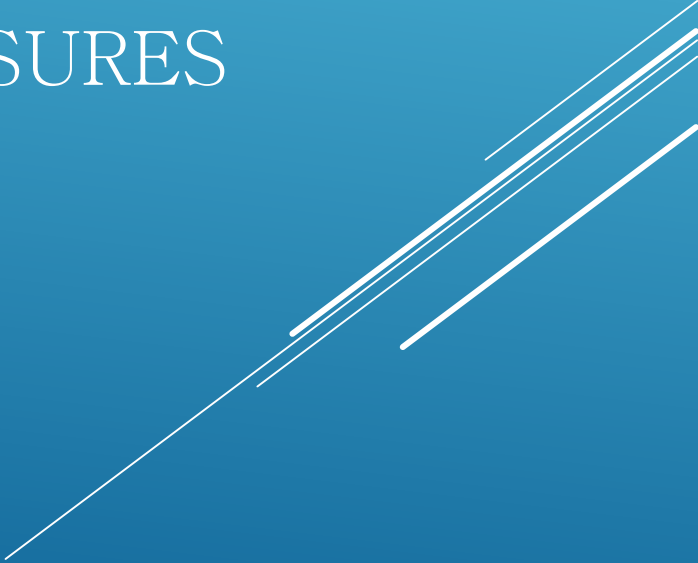
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5.7.6	Impervious Cover/ Water Quality Protection	\$100,000	\$100,000	\$100,000	\$0
	<b>Totals</b>	<b>\$570,000</b>	<b>\$545,000</b>	<b>\$528,000</b>	<b>\$17,000</b>



# CITY OF SAN MARCOS/TEXAS STATE UNIVERSITY

## 2020 WORK PLAN BUDGETED CONSERVATION MEASURES

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EAHCP Section	Conservation Measure	Table 7.1	Available Budget for 2020	Estimated 2020 Budget	Delta Between Available and Estimated
5.3.1/5.4.1	Texas wild-rice Enhancement	\$100,000	\$100,000	\$73,750	\$26,250 <sup>a</sup>
5.3.6/5.4.4	Sediment Management	\$25,000	\$25,000	\$0	\$25,000 <sup>b</sup>
5.3.8/5.4.3/ 5.4.12	Control of Non-Native Plant Species	\$50,000	\$50,000	\$76,607 TxSt \$42,670 EBR \$119,277 Total	(\$69,277) <sup>a</sup>
5.3.3/5.4.3	Management of Floating Vegetation Mats and Litter	\$80,000	\$80,000	\$44,688	\$35,312 <sup>a</sup>
5.3.5/5.3.9/ 5.4.11/5.4.13	Non-Native Species Control	\$35,000	\$35,000	\$27,285	\$7,715 <sup>a</sup>
5.3.7	Designation of Access Points	\$20,000	\$0	\$0	\$0
5.7.1	Native Riparian Restoration	\$20,000	\$20,000	\$20,000	\$0
5.3.2/5.4.2	Management of Recreation in Key Areas	\$56,000	\$56,000	\$56,000	\$0
5.7.6	Impervious Cover/Water Quality Protection	\$200,000	\$200,000	\$1,528,200	(\$1,328,200) <sup>c</sup>
5.7.5	Management of HHW	\$30,000	\$30,000	\$30,000	\$0
	<b>Total</b>	<b>\$616,000</b>	<b>\$596,000</b>	<b>\$1,899,200</b>	<b>(\$1,303,200)</b>

## 5.3.1/5.4.1 TEXAS WILD-RICE ENHANCEMENT

**EAHCP Requirement:** To achieve 8,000 – 15,450 m<sup>2</sup> of TWR and maintain existing and restored areas of TWR as required by the EAHCP

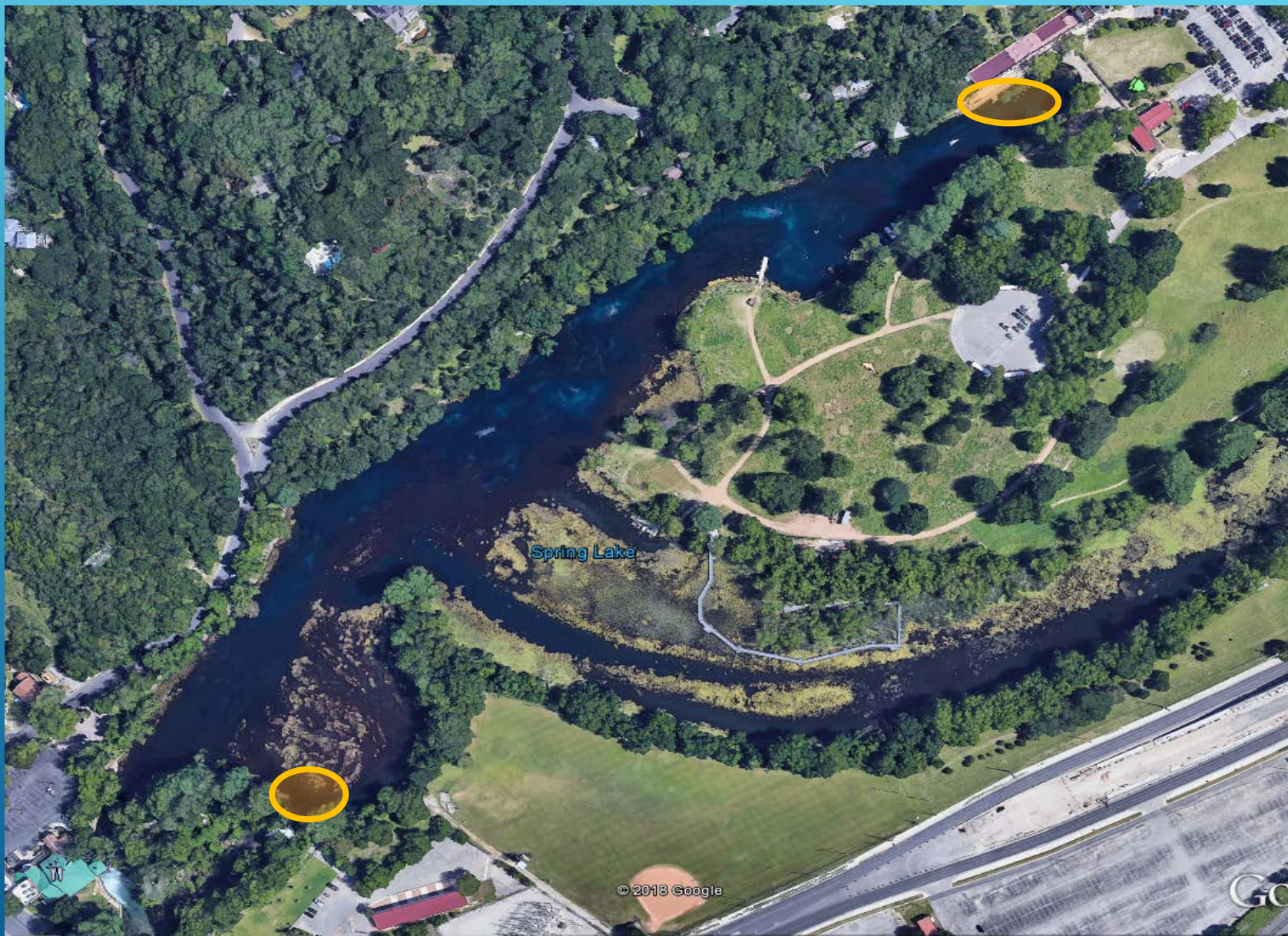
**2020 Goals:** The target area for planting TWR in 2020 is Spring Lake. The remainder of the TWR, from Spring Lake Dam to IH-35, will be encouraged to expand through invasive removal within and around the perimeter of TWR stands, or planted as needed.

**Available Budget Table 7.1: \$100,000**

**Estimated 2020 Budget: \$73,750** (Transfer \$26,250 to Non-native Removal)



# Proposed 2020 TWR Planting Sites in Spring Lake





## 5.3.8/5.4.3/5.4.12 NON-NATIVE PLANT REMOVAL

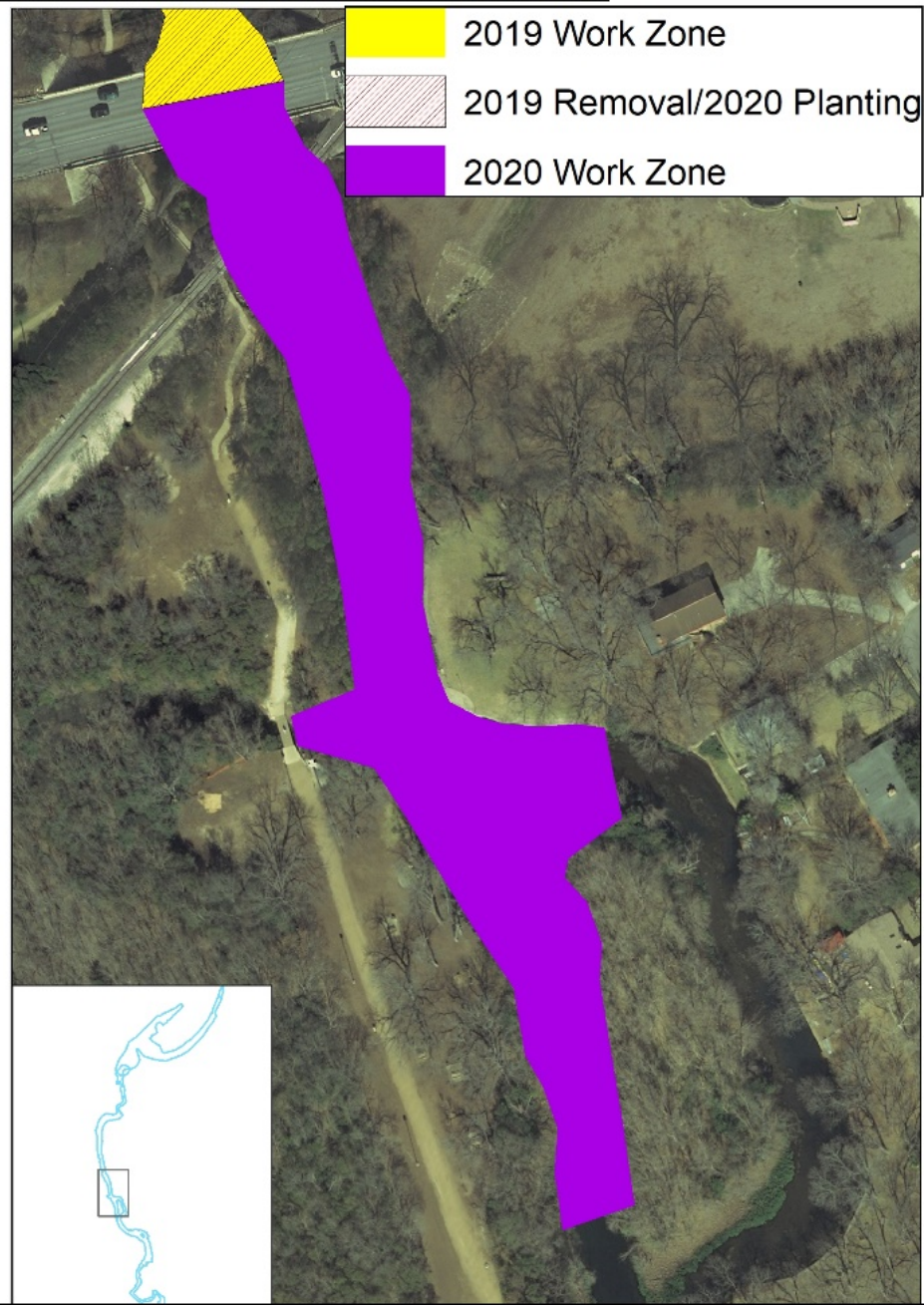
**EAHCP Requirement:** To decrease the density of invasive aquatic and littoral plants and eliminate as possible through monitored removal in and along the San Marcos River.

**2020 Goals:** Remove dense hydrilla stand **from City Park to Snake Island** reach with repeated removal treatments until non-native regrowth allows natives to outcompete. While awaiting regrowth of non-native plants, the reach immediately upstream will be planted with designated native aquatic plants. Continued smaller removal maintenance efforts will occur in previously worked areas or areas where immediate removal efforts are needed to protect existing native stands. Continue to remove and monitor littoral invasives.

**Available Budget:** \$50,000

**Estimated 2020 Budget:** \$119,277 (Transfer \$69,277 from other measures)

## 2020 Proposed Aquatic Vegetation Treatment Sites San Marcos





RED = Elephant ear

GREEN = Water Hyacinth

Yellow = yellow iris



## 5.7.1 NATIVE RIPARIAN HABITAT RESTORATION

**EAHCP Requirement:** Establish a robust native riparian and water quality buffer community that benefits Covered Species

**2020 Goals:** Contractor will maintain all treated areas from Spring Lake to Stokes Park, and any new adjacent areas to address invasive regrowth and/or seedbank source as appropriate. Volunteers will plant as needed.

**Available Budget Table 7.1:** \$20,000

**Estimated 2020 Budget:** \$20,000 (City funds \$20,000)



# A TIME INVESTMENT – BUT WORTH THE TIME SPENT



# IMPERVIOUS COVER/WQ PROTECTION

**EAHCP Requirement:** The City of San Marcos will establish a program to protect water quality and reduce the impacts of impervious cover (such as through LID). The City of San Marcos will develop criteria and incentives for the program based upon the LID/Water Quality Work Group Final Report (Appendix Q) recommendations for Implementation Strategies and BMPs.

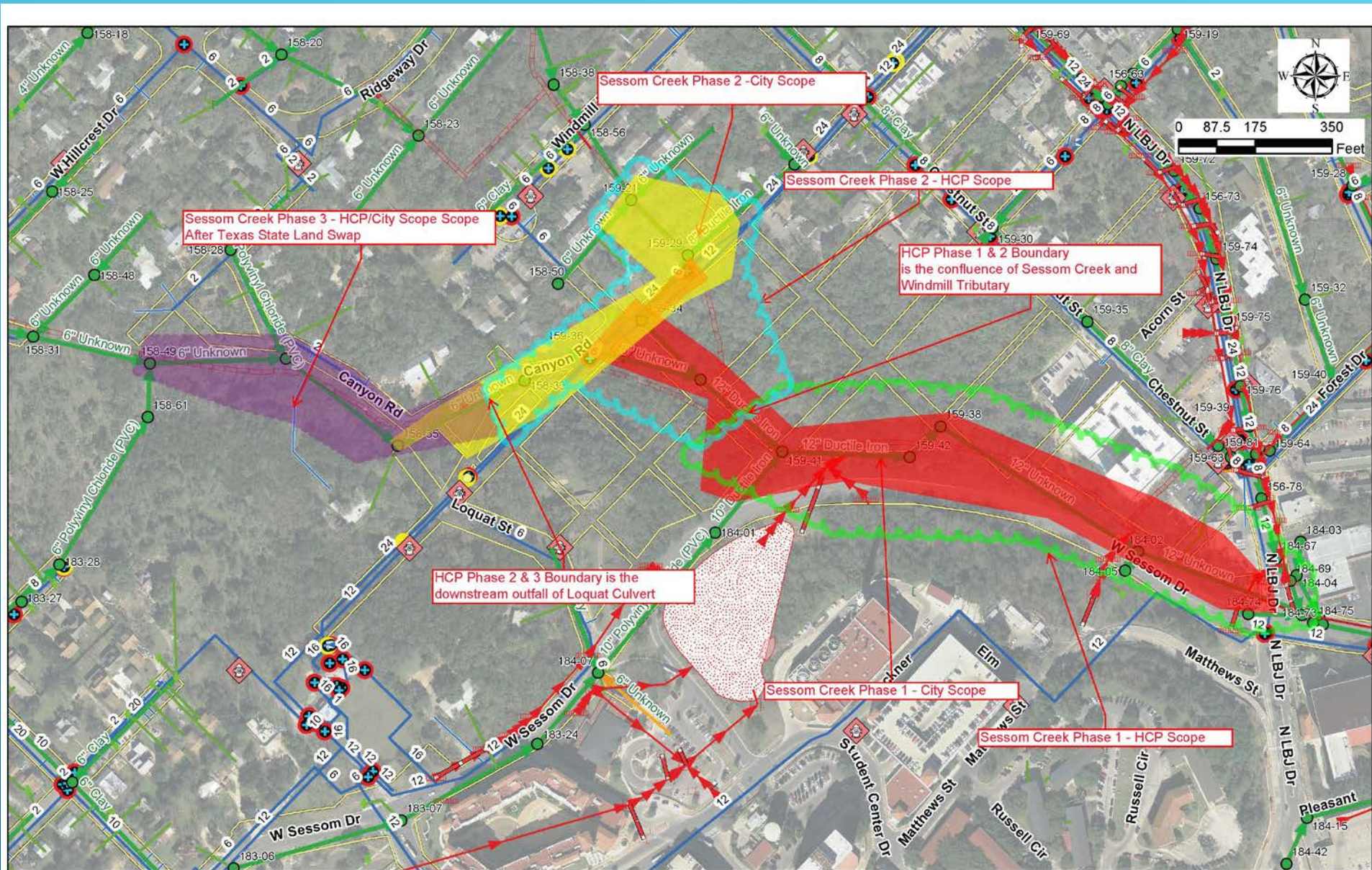
**2020 Goals:** Complete bid preparation for Phase 1 and begin construction in the fall. Phases 2 & 3 will begin construction in 2021/22. Continue working with TXST to control sediment loss into Sessom Creek from campus sites.

**Available Budget Table 7.1:** \$200,000

**Estimated 2020 Budget:** \$1,528,200



# Phases 1, 2 and 3 – Sessom Creek Restoration Project





EAHCP Section	Conservation Measure	Table 7.1	Available Budget for 2020	Estimated 2020 Budget	Delta Between Available and Estimated
5.3.1/5.4.1	Texas wild-rice Enhancement	\$100,000	\$100,000	\$73,750	\$26,250 <sup>a</sup>
5.3.6/5.4.4	Sediment Management	\$25,000	\$25,000	\$0	\$25,000 <sup>b</sup>
5.3.8/5.4.3/ 5.4.12	Control of Non-Native Plant Species	\$50,000	\$50,000	\$76,607 TxSt \$42,670 EBR \$119,277 Total	(\$69,277) <sup>a</sup>
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5.3.5/5.3.9/ 5.4.11/5.4.13	Non-Native Species Control	\$35,000	\$35,000	\$27,285	\$7,715 <sup>a</sup>
5.3.7	Designation of Access Points	\$20,000	\$0	\$0	\$0
5.7.1	Native Riparian Restoration	\$20,000	\$20,000	\$20,000	\$0
5.3.2/5.4.2	Management of Recreation in Key Areas	\$56,000	\$56,000	\$56,000	\$0
5.7.6	Impervious Cover/Water Quality Protection	\$200,000	\$200,000	\$1,528,200	(\$1,328,200) <sup>c</sup>
5.7.5	Management of HHW	\$30,000	\$30,000	\$30,000	\$0
	<b>Total</b>	<b>\$616,000</b>	<b>\$596,000</b>	<b>\$1,899,200</b>	<b>(\$1,303,200)</b>



# 2020 EAA Work Plan

Jamie Childers, EAA Habitat Conservation Manager

Implementing Committee

May 23, 2019

## 2020 EAA Work Plan

- **Aquifer Storage and Recovery**
- **Regional Water Conservation**
- **Voluntary Irrigation Suspension Program**
- **Stage V Critical Period**
- Biological Monitoring
- Water Quality Monitoring
- Ecological Modeling
- Applied Research
- Refugia
- Program Management





## 2020 EAA Work Plan

- Aquifer Storage and Recovery
- Regional Water Conservation
- Voluntary Irrigation Suspension Program
- Stage V Critical Period
- **Biological Monitoring**
- **Water Quality Monitoring**
- **Ecological Modeling**
- **Applied Research**
- Refugia
- Program Management





## 2020 EAA Work Plan

- Aquifer Storage and Recovery
- Regional Water Conservation
- Voluntary Irrigation Suspension Program
- Stage V Critical Period
- Biological Monitoring
- Water Quality Monitoring
- Ecological Modeling
- Applied Research
- Refugia
- Program Management

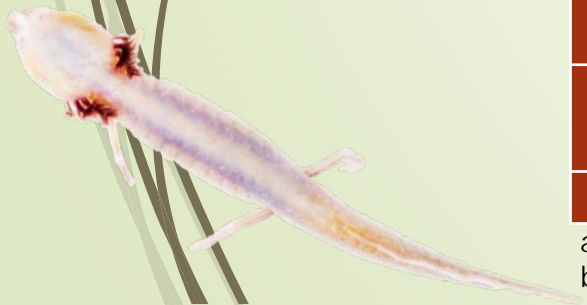


# EAHCP 2020 EAA Work Plan Budget

EAHCP Section	Conservation Measure	Table 7.1	Available Budget for 2020	Estimated 2020 Budget <sup>a</sup>	Delta between Available and Estimated
5.5.1	ASR Leasing & Forbearance	\$4,759,000	\$4,759,000	\$5,891,594	(\$1,132,594)
	ASR O&M	\$2,194,000	\$2,194,000	\$408,278	\$1,785,722
5.1.3	RWCP	\$1,973,000	\$600,400	\$600,400	\$0
5.1.2	VISPO	\$4,172,000	\$4,172,000	\$2,522,500	\$1,649,500
5.1.4	Stage V	NA	NA	NA	NA
6.3.1	Biological Monitoring	\$400,000	\$400,000	\$755,774 <sup>b</sup>	(\$355,077)
5.7.2	Water Quality Monitoring	\$200,000	\$200,000	\$330,410	(\$130,410)
6.3.3	Ecological Model	\$25,000	\$0	\$0	\$0
6.3.4	Applied Research	\$0	\$250,000	\$250,000	\$0
5.1.1	Refugia	\$1,678,597	\$1,151,682	\$1,151,657	\$25
FMA §2.2	Program Management	\$750,000	\$750,000	\$1,024,255	(\$274,255)
	Science Review Panel	\$0	\$0	\$0	\$0
<b>Total</b>		<b>\$16,151,597</b>	<b>\$14,477,082</b>	<b>\$12,934,868</b>	<b>\$1,542,214</b>

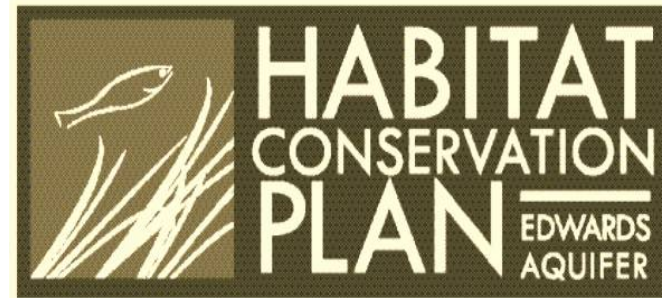
a. Expected to change as leases are renewed through 2019 and 2020. Estimate presented based on best available data to date.

b. Includes Critical Period Monitoring if required



# 2019 City of New Braunfels Work Plan and Funding Application Budget Revision

EAHCP Implementing Committee  
May 23, 2019



# CoNB 2019 EAHCP Workplan & Funding App Budget Revision

HCP Section	Conservation Measure	Table 7.1	Available Budget for 2020	Estimated 2020 Budget	Delta from Available Budget
5.2.1	Flow Split Management	\$30,000	\$30,000	\$0	\$30,000
5.2.2.1/ 5.2.2.3	Old Channel SAV Restoration	\$100,000	\$100,000	\$50,000	\$50,000
5.2.2.2/ 5.2.2.3	Landa Lake/ Comal River Aquatic Vegetation Restoration & Maintenance	\$50,000	\$50,000	\$100,000	(\$50,000)
5.2.3	Management of Public Recreation	\$0	\$0	\$0	\$0
5.2.4	Decaying Veg Removal and DO Mgmt	\$15,000	\$15,000	\$12,800	\$2,200
5.2.5/ 5.2.9	Non-Native Animal Species Control	\$75,000	\$75,000	\$55,000	\$20,000
5.2.6/ 6.3.6	Monitoring and Reduction of Gill Parasites	\$75,000	\$75,000	\$10,000 <sup>2</sup>	\$65,000
5.2.7	Prohibition of Hazardous Material Transport Routes	\$0	\$0	\$0	\$0
5.2.8	Native Riparian Habitat Restoration (Riffle Beetle)	\$25,000	\$25,000	\$25,000	\$0
5.2.10	Litter and Floating Vegetation Management	\$0	\$0	\$30,000	(\$30,000)
5.2.11	Golf Course Management	\$0	\$0	\$0	\$0
5.7.1	Native Riparian Habitat Restoration	\$100,000	\$75,000	\$102,200	(\$27,200)
5.7.5	Management of Household Hazardous Waste	\$30,000	\$30,000	\$30,000	\$0
5.7.6	Impervious Cover/ Water Quality Protection	\$150,000	\$250,000	\$250,000	\$0
	<b>Totals</b>	<b>\$650,000</b>	<b>\$725,000</b>	<b>\$665,000</b>	<b>\$60,000</b>



## Native Riparian Habitat Restoration (5.7.1)

- **EAHCP Requirement:**

Increase the area and density of riparian zone along the Old Channel & Golf Course.

- **2019 Goals:**

-Plant and establish native riparian veg along Old Channel between Elizabeth Street and OC LTBG reach.

-Establish riparian buffer zones in Landa Park along Landa Lake and Spring Run #1.

-Remove non-native riparian vegetation from Landa Lake, Upper Spring Run and islands. Removal from property will require consent from property owners.

- **Available 2019 Budget:** \$75,000
- **Estimated 2019 Budget:** ~~\$100,000~~ \$102,200
- **Delta from Available Budget:** ~~+\$25,000~~ \$27,200
- Increase in funding for this task from decrease in DO Mgmt task



# Native Riparian Habitat Restoration (5.7.1)

Establish riparian protection zones in Landa Park along Landa Lake and Spring Run #1.

CoNB Parks Dept to extend temp irrigation lines for veg establishment.

