CENTRAL TEXAS WATER COALITION

May 24, 2021

VIA EMAIL TO PUBLIC-COMMENT@twdb.texas.gov

Ms. Melinda Smith
Water Supply Planning Division
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

Re: Comments of Central Texas Water Coalition on Draft 2022 State Water Plan

The Central Texas Water Coalition (CTWC), a nonprofit organization advocating for responsible water management and conservation policies, appreciates the opportunity to submit the following comments on the Draft 2022 State Water Plan (the 2022 Plan) developed by the Texas Water Development Board (TWDB). We recognize the enormity of this task, and we appreciate the hard work of the Regional Water Planning Groups, their consultants, and the TWDB in compiling this document. The following comments are submitted for your consideration:

General Comments. We appreciate the treatment of the 2022 Plan as a "living document" that is updated every five years, since Texas is experiencing a number of significant changes in water supply and management. We must stay vigilant with our observations and data gathering, so that water planning can be relevant, useful, and successful in avoiding the disastrous consequences of inadequate or absent water supplies for a state with such significant population growth. The increased emphasis on water conservation is also an important component of the 2022 Plan, and we hope that emphasis continues in future plans.

Water Availability and Existing Supplies (Chapter 5). CTWC is concerned that surface water availability is significantly overstated in Chapter 5 of the Draft 2022 Water Plan, particularly in some regions such as Region K. These concerns originate with the surface water supply and modeling assumptions, which the Draft 2022 Water Plan assumes will remain generally stable, with a decline of 3% from 2020-2070 on a statewide basis. (*See* Page D-67, Chapter 5)

Despite the assertions in the 2022 Plan, surface water supplies that feed Region K's storage reservoirs (the Highland Lakes) appear to be declining. Data on inflows to the Highland Lakes shows statistically significant decreases in average annual inflows over the 1942-2020 period. For reference, average annual inflows reported by the Lower Colorado River Authority (LCRA) from 2008-2020 are about 50% of the averages from 1942-2007.

Within Region K, water management practices by the LCRA assume that historical inflows and inflow patterns to its storage reservoirs will repeat themselves in the future, relying on use of historical data to manage future water supplies. The CTWC is concerned that such an approach does not reflect the general consensus in the scientific community that Central Texas is likely to experience longer, more severe droughts in the future. These concerns are compounded by recent studies on the watershed of the Colorado River Basin from the Texas Water Development Board (Furnans et al, 2019) and Slade (Slade, 2020), noting the proliferation of a very large number of unpermitted or permit-exempt stock ponds in the watershed, the vast majority of which are not included in the naturalized flows of the Water Availability Modeling. (*See* references below) Other factors identified as contributors to the decline in surface water inflows to the Highland Lakes include the large number of unmonitored alluvial wells, the proliferation of noxious brush in the watershed, and higher ambient air temperatures. These factors create a problem with reliance on historical data and naturalized flows in the Water Availability Models that are so fundamental to the planning process. As acknowledged on Page D-67, Chapter 5 of the Draft 2022 Plan, changes over time to reservoir inflows are "not presently accounted for in the methodology" for assessing surface water availability. CTWC asks the TWDB to acknowledge these issues and develop tools and adjustments to incorporate and account for the observed declining inflow trends into water availability modeling, at least in the Lower Colorado River Basin within Region K.

Future Surface Water Availability (Chapter 5, Section 5.3). The CTWC has major concerns with the continued reliance on Firm Yield by many of the regions, such as is used by LCRA in Region K. The methodology of the Firm Yield calculation is very troubling because it allows storage within reservoirs to be drawn down to ZERO without providing any water reserves to cover the situation when future droughts are more severe than droughts observed during the period of record. In a river basin such as the one in the Region K Plan, the LCRA operates large water storage reservoirs under the terms of a TCEQ-approved water management plan, which establishes water management actions that may not be incorporated into the Region K Plan (such as the large volumes of water released from reservoir storage for environmental flows or for specific downstream customers). As we understand it, the surface water availability numbers used by Region K in its Region K Plan do not incorporate the details of LCRA's water management plan, and therefore, the water availability numbers presented by Region K may be substantially larger than the water that is actually present and available for use in the Highland Lakes. CTWC research, conducted by LRE Water,

indicates that under the terms of LCRA's TCEQ-issued water management plan, the required interruptible customer releases and environmental flow releases reduce the water available to firm water customers served by LCRA in Region K by up to 100,000 acre-feet per year. LCRA has reported that environmental flow releases alone in 2020 were expected to approach 140,000 acre-feet/year.

CTWC believes a "Safe Yield" approach to water management is needed in view of Region K's reliance on surface water reservoirs to provide water for a significant and continuously growing Central Texas population. Relying solely on the "Firm Yield" of Lakes Buchanan and Travis in today's water planning evaluations carries risks associated with rapid drawdown of the lakes in times of drought, particularly given the potentially very large interruptible and environmental flow releases required by LCRA's water management plan and the trend toward lower inflows into the Highland Lakes. We believe the reliance on a reservoir's Firm Yield for water planning is dangerous and akin to ERCOT's poor risk management practices that did not plan for lower and longer than expected temperatures and require adequate protective winterization measures. Requiring a Safe Yield approach would add a prudent safety margin to protect against dangerously low water supplies within times of prolonged drought. The 2022 Draft Plan notes that some regions are incorporating a Safe Yield approach, and CTWC respectfully requests that each region be required to use a Safe Yield approach or justify why such an approach is not appropriate. TWDB's regional water planning rules should be amended to require for the accounting of all permitted and or required water uses/requirements, including interruptible and environmental flow releases, in the Firm and Safe Yield methodologies. This would help to address the water supply uncertainty regarding the frequency, duration, and severity of future droughts. CTWC appreciates that the need for measures such as these are being recognized in this Draft 2022 State Water Plan. Studies are also needed that would support the direct incorporation of climatology into forward-looking water planning processes and management.

Water Management Strategies and Projects (Chapter 7). The CTWC appreciates the work that has gone into the identification of many needed water management strategies described in Chapter 7 of the 2022 Plan. Conservation is one of the strategy types included in this Chapter (in Section 7.3.1), and we strongly recommend including water pricing as a water management strategy that each region must specifically address for all of its water user groups. Water prices are known to have impacts on water conservation efforts, and water sales may provide funding for the development of new water supplies or more efficient water management practices. In addition, pricing water below the cost of managing and delivering said water promotes waste and should be highly discouraged. The 2022 Plan states that "Municipal conservation strategies include a variety of activities, such as … stronger water conservation pricing structures that discourage waste, …" (*See* Page D-121, Chapter 8) CTWC respectfully requests a specific review and discussion on water pricing as part of each Regional Water Plan.

The CTWC wholeheartedly supports conservation as an essential strategy for sustaining water supplies throughout Texas and all of its water user groups. In Region K, we support the conservation strategies presented for agricultural irrigation but are concerned that those strategies may not be implemented without incentives such as higher water rates and outside funding for conservation projects. Water rates can incentivize water conservation, and revenues from appropriately priced water can fund efficiency and water supply projects.

In addition to describing the benefits of conservation and the various conservation-based strategies, CTWC requests that the Regional Planning Groups collect data that allows an accounting of the results of the conservation strategies implemented by the water user groups. Collecting data and verifying the savings associated with a conservation method or practice would assist the regions in making better decisions in future plans. With additional data on water savings, water user groups can identify their successes or deficiencies with respect to different conservation practices.

Conservation (Chapter 8). CTWC applauds the fact that Regional Water Planning Groups are now required to set specific per capita per day water use goals for each municipal water user group for each decade of the 2022 Plan. This information, presented in Chapter 8, will be useful for measuring conservation progress and successes. CTWC respectfully requests the inclusion of comparable goals for every water user group in these plans. Establishing water conservation metrics and goals for groups such as agricultural water users is a logical and reasonable next step toward achieving water savings through conservation, especially in view of the fact that agricultural water users continue to demand the largest quantities of water in the state.

Thank you for your consideration of our comments, and please let us know if we can be of assistance in this important work.

Sincerely,

Jo Karr Tedder

Jo Karr Tedder, President
Central Texas Water Coalition

References:

Furnans, Jordan, Keester, Michael, and Kennedy, Kirk (2019). "Final Report: Evaluation of Rainfall-Runoff Trends in the Upper Colorado River Basin (Phase Two)" – Texas Water Development Board Contracted Report #1800012283.

Slade Jr., Raymond M. (2020) "Runoff Inflow Volumes to the Highland Lakes in Central Texas: Temporal Trends in Volumes and Relations between Volumes and Selected Climatic Indices" Texas Water Journal, Volume 11, Number 1. Pages 32-60.

LCRA Water Use Summary 2020

In 2020, the Highland Lakes watershed saw near- to above-average rainfall through September, before a drier fall and winter. Much of the rain in the early part of the year was sporadic and soaked into parched soil, resulting in little runoff to the Highland Lakes. The lower-than-average amount of water flowing into the Highland Lakes continued a pattern that began in the summer of 2019.

Inflows were below the historical monthly averages every month but March, and 2020 inflows to the Highland Lakes ranked as the sixth lowest on record since 1942.

In 2020, reduced river flows contributed to decreases in water use from the Colorado River and increases in water use from the Highland Lakes across all water use types.

LCRA
ENERGY • WATER • COMMUNITY SERVICES

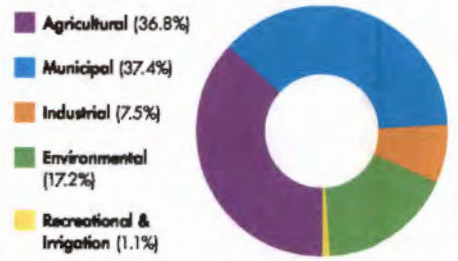
May 2021

WATER USE BY SOURCE – LCRA uses two basic sources of water to meet customer and environmental needs: water stored in lakes Buchanan and Travis and water naturally flowing in the Colorado River. When the natural flow into the Highland Lakes is greater than customer needs and environmental obligations, LCRA stores the excess in lakes Buchanan and Travis for later use.

1. **Highland Lakes water use** – Contracts for water stored in lakes Buchanan and Travis can be for firm or interruptible supply. LCRA also supplies water from the Highland Lakes to help maintain environmental flows, as required by the state-approved Water Management Plan. In 2020, the Highland Lakes supplied 370,595 acre-feet of water for all uses.
   - **Firm water contracts** – These contracts supply cities, businesses and industries that need a reliable long-term water supply. Firm supply is expected to be available through a repeat of the driest conditions the region has experienced. Firm customers accounted for 170,537 acre-feet, including 175 acre-feet to meet emergency needs for electricity, or about 46% of all water used from the Highland Lakes, in 2020.
   - **Interruptible water contracts** – These contracts supply agricultural customers. Interruptible water is subject to cutbacks during drought conditions. Interruptible customers used 84,472 acre-feet, or about 23% of all water used from the Highland Lakes, in 2020.
   - **Environmental** – From time to time, LCRA releases water from the Highland Lakes to meet environmental flow requirements for the Colorado River downstream of Austin and for Matagorda Bay. In 2020, LCRA released 115,586 acre-feet, or about 31% of water released from the Highland Lakes, for environmental flows.
2. **Colorado River water use** – In addition to the rights to water from the Highland Lakes, LCRA owns and manages other rights to the natural flow of the Colorado River. In 2020, a total of 189,396 acre-feet of water was supplied from the Colorado River for agricultural, municipal, industrial, recreation and firm irrigation uses under these water rights.

Water Rights	2020 Use (in acre-feet)
LCRA Garwood	78,819
LCRA South Texas Project	12,795
LCRA Lakeside	36,016
LCRA Gulf Coast	53,378
LCRA Pierce Ranch	8,388
LCRA Lakes Buchanan and Travis	370,595
SUBTOTAL — LCRA	**559,991**
City of Austin Water Rights	112,869
Bastrop Energy Partners, LP	180
TOTAL	**673,040**

Water Use From Highland Lakes and Lower Colorado River
(LCRA and Other Water Rights)



HOW DOES 2020 COMPARE?

TYPE OF WATER USE*	2016	2017	2018	2019	2020
Municipal (firm)	**210,376**	**221,037**	**225,861**	**234,648**	**251,970**
Water from the Highland Lakes	97,134	115,416	133,517	112,701	144,531
Water from the Colorado River†	113,242	105,621	92,344	121,947	107,439
Industrial (firm)	**39,018**	**91,188**	**80,580**	**57,030**	**50,343**
Water from the Highland Lakes	13,404	23,000	24,433	9,157	18,593
Water from the Colorado River†	25,614	68,188	56,147	47,873	31,750
Recreational and Irrigation (firm)	**5,123**	**7,362**	**6,760**	**7,013**	**7,568**
Water from the Highland Lakes	4,870	7,225	6,667	6,766	7,413
Water from the Colorado River	253	137	93	247	155
Agricultural (interruptible)	**254,085**	**235,255**	**289,665**	**219,467**	**247,573**
Water from the Highland Lakes	7,656	59,266	136,490	27,319	84,472
Water from the Colorado River	246,429	175,989	153,175	192,148	163,101
Environmental‡ *(from the Highland Lakes)*	**54,641**	**67,762**	**55,923**	**61,954**	**115,586**
TOTAL WATER USE	**563,243**	**622,604**	**658,789**	**580,112**	**673,040**

* *Water use is in acre-feet.*

† *Reported use includes water under water rights held by the City of Austin and Bastrop Energy Partners, LP.*

‡ *Environmental releases are made to meet environmental requirements set out in the LCRA Water Management Plan. Releases for downstream customers and runoff flowing into the river and bay also help satisfy environmental needs.*

Learn more about the lower Colorado River at www.lcra.org.

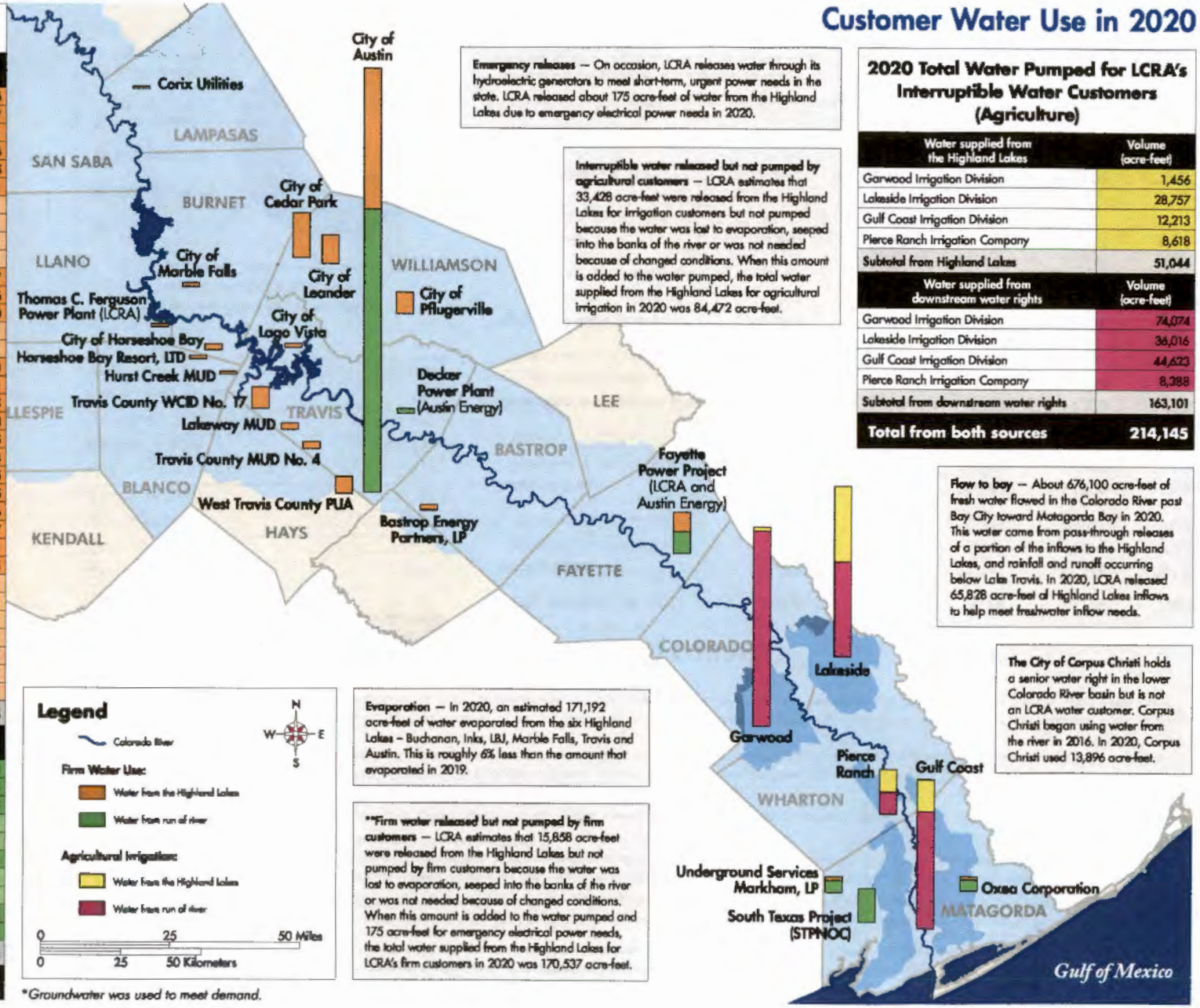
Customer Water Use in 2020

2020 Total Water Pumped by LCRA's Firm Water Customers

Water supplied from the Highland Lakes	Volume (acre-feet)
City of Austin, municipal and parks	53,346
City of Cedar Park	16,957
City of Leander	10,861
Travis County WCID No. 17	8,256
City of Pflugerville	8,245
LCRA power plants	8,211
• Fayette Power Project (LCRA share)	7,010
• Sim Gideon Power Plant*	0
• Lost Pines 1 Power Project*	0
• Thomas C. Ferguson Power Plant	1,201
West Travis County Public Utility Agency	6,517
Domestic water users on Highland Lakes	4,406
Austin Energy (AE) power plants	3,360
• Fayette Power Project (AE share)	3,360
• Decker Power Plant	0
Travis County MUD No. 4	2,663
Lakeway MUD	2,501
City of Horseshoe Bay	2,235
Bastrop Energy Partners, LP	1,864
City of Marble Falls	1,575
City of Lago Vista	1,478
Underground Services Markham, LP	1,395
Oxea Corporation	1,215
Horseshoe Bay Resort, LTD	1,186
Hurst Creek MUD (The Hills)	1,077
Corix Utilities (Lometa)	871
Other firm customers	16,285
• Diverted from Lake Buchanan	27
• Diverted from Inks Lake	566
• Diverted from Lake LBJ	2,063
• Diverted from Lake Marble Falls	0
• Diverted from Lake Travis	5,317
• Diverted from Lake Austin	6,876
• Diverted downstream of Lake Austin	1,436
Subtotal from Highland Lakes**	**154,504**

Water supplied from other water rights	Volume (acre-feet)
City of Austin, municipal and parks	107,593
South Texas Project Nuclear Operating Co.	12,795
Gulf Coast municipal and industrial use	8,755
• Underground Services Markham, LP	4,592
• Oxea Corporation	4,163
Austin Energy (AE) power plants	5,276
• Fayette Power Project (AE share)	3,426
• Decker Power Plant	1,850
LCRA Fayette Power Project - Garwood amendment	4,745
Bastrop Energy Partners, LP	180
Subtotal from other water rights	**139,344**
Total from both sources	**293,848**

*Groundwater was used to meet demand.



Emergency releases — On occasion, LCRA releases water through its hydroelectric generators to meet short-term, urgent power needs in the state. LCRA released about 175 acre-feet of water from the Highland Lakes due to emergency electrical power needs in 2020.

Interruptible water released but not pumped by agricultural customers — LCRA estimates that 33,428 acre-feet were released from the Highland Lakes for irrigation customers but not pumped because the water was lost to evaporation, seeped into the banks of the river or was not needed because of changed conditions. When this amount is added to the water pumped, the total water supplied from the Highland Lakes for agricultural irrigation in 2020 was 84,472 acre-feet.

Evaporation — In 2020, an estimated 171,192 acre-feet of water evaporated from the six Highland Lakes – Buchanan, Inks, LBJ, Marble Falls, Travis and Austin. This is roughly 6% less than the amount that evaporated in 2019.

***Firm water released but not pumped by firm customers** — LCRA estimates that 15,858 acre-feet were released from the Highland Lakes but not pumped by firm customers because the water was lost to evaporation, seeped into the banks of the river or was not needed because of changed conditions. When this amount is added to the water pumped and 175 acre-feet for emergency electrical power needs, the total water supplied from the Highland Lakes for LCRA's firm customers in 2020 was 170,537 acre-feet.

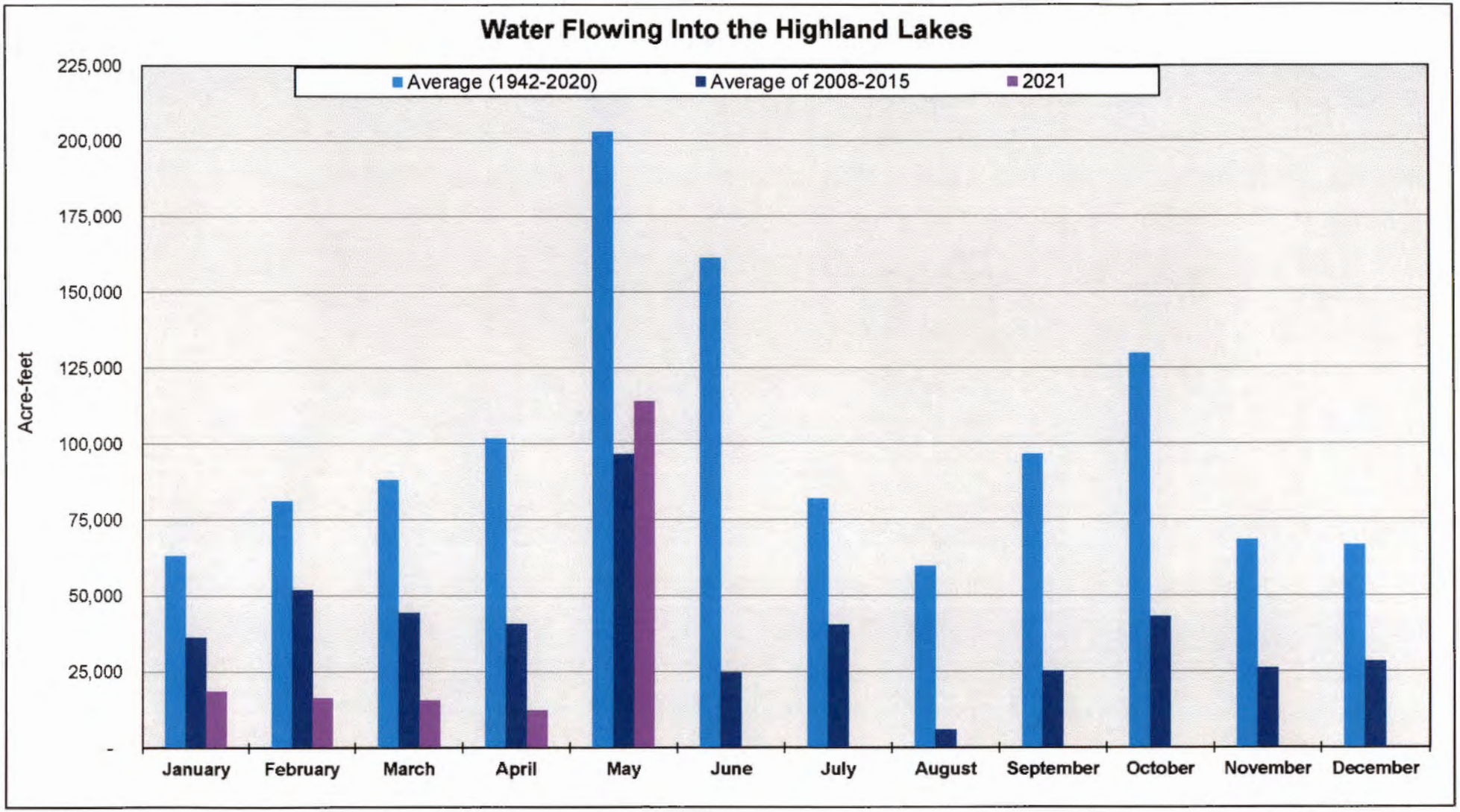
2020 Total Water Pumped for LCRA's Interruptible Water Customers (Agriculture)

Water supplied from the Highland Lakes	Volume (acre-feet)
Garwood Irrigation Division	1,456
Lakeside Irrigation Division	28,757
Gulf Coast Irrigation Division	12,213
Pierce Ranch Irrigation Company	8,618
Subtotal from Highland Lakes	**51,044**

Water supplied from downstream water rights	Volume (acre-feet)
Garwood Irrigation Division	74,074
Lakeside Irrigation Division	36,016
Gulf Coast Irrigation Division	44,623
Pierce Ranch Irrigation Company	8,388
Subtotal from downstream water rights	**163,101**
Total from both sources	**214,145**

Flow to bay — About 676,100 acre-feet of fresh water flowed in the Colorado River past Bay City toward Matagorda Bay in 2020. This water came from pass-through releases of a portion of the inflows to the Highland Lakes, and rainfall and runoff occurring below Lake Travis. In 2020, LCRA released 65,828 acre-feet of Highland Lakes inflows to help meet freshwater inflow needs.

The City of Corpus Christi holds a senior water right in the lower Colorado River basin but is not an LCRA water customer. Corpus Christi began using water from the river in 2016. In 2020, Corpus Christi used 13,896 acre-feet.



Inflows: the estimated amount of water flowing into the Highland Lakes from rivers and streams.

Data for 2020 and 2021 is preliminary and subject to change.

Period:	May
Since 1942, May Average (acre-feet):	202,946
2008-2015, May Average (acre-feet):	96,501
May 2021 (acre-feet):	113,992