

How does 2016 compare?

| TYPE OF WATER USE* | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Municipal Water Use | 218,202 | 209,265 | 246,601 | 228,570 | 213,691 | 203,668 | 198,738 | 213,792 |
| Water from the Highland Lakes | 110,150 | 78,091 | 184,889 | 122,360 | 133,317 | 107,996 | 98,920 | 97,134 |
| Water from the Colorado River | 108,052 | 131,174 | 61,712 | 106,210 | 80,374 | 95,672 | 99,818 | 116,658 |
| Industrial Water Use | 112,716 | 86,258 | 60,272 | 117,977 | 96,253 | 72,327 | 92,443 | 38,949 |
| Water from the Highland Lakes | 33,234 | 35,572 | 53,757 | 19,133 | 34,296 | 14,482 | 8,776 | 13,335 |
| Water from the Colorado River | 79,482 | 50,686 | 6,515 | 98,844 | 61,957 | 57,845 | 83,667 | 25,614 |
| Agricultural Water Use** | 509,839 | 430,622 | 529,580 | 102,668 | 108,296 | 88,401 | 74,723 | 254,085 |
| Water from the Highland Lakes | 367,920 | 182,152 | 433,251 | 8,896 | 22,346 | 15,952 | 0 | 7,656 |
| Water from the Colorado River | 141,919 | 248,470 | 96,329 | 93,772 | 85,950 | 72,449 | 74,723 | 246,429 |
| Recreational and Firm Irrigation | 5,945 | 5,784 | 9,099 | 6,546 | 5,680 | 5,853 | 5,620 | 5,123 |
| Water from the Highland Lakes | 5,753 | 5,550 | 8,759 | 6,338 | 5,535 | 5,599 | 5,346 | 4,870 |
| Water from the Colorado River | 192 | 234 | 340 | 208 | 145 | 254 | 274 | 253 |
| Environment*** | 32,573 | 19,279 | 33,433 | 31,285 | 33,465 | 4,582 | 0 | 54,641 |
| (from the Highland Lakes) | | | | | | | | |
| Emergency Hydroelectric Releases | 2,084 | 352 | 345 | 0 | 0 | 490 | 180 | 69 |
| (from the Highland Lakes) | | | | | | | | |
| TOTAL WATER USE | 881,359 | 751,560 | 879,330 | 487,046 | 457,385 | 375,321 | 371,704 | 566,659 |

*Water use is in acre-feet.

**Releases from the Highland Lakes for downstream agriculture in the Gulf Coast, Lakeside and Pierce Ranch irrigation operations were suspended from 2012 through 2015 because of the severe drought.

***Dedicated environmental releases are the water released solely for the purpose of satisfying environmental needs. In addition, releases for downstream customers and runoff flowing into the river and bays help satisfy environmental needs.

Why does LCRA release water from the Highland Lakes?

Releases are made for several reasons:

- LCRA is legally obligated to pass water through the dams if a downstream senior water right holder is entitled to the water and makes a request for it. Downstream senior water rights include those owned by LCRA and by the cities of Austin and Corpus Christi.
- LCRA releases water to meet the needs of customers such as cities, power plants and farmers.
- LCRA releases water for environmental flow needs for the river and Matagorda Bay as required by the state-approved 2015 Water Management Plan.
- In general, LCRA releases water through hydroelectric generating units in order to produce electrical energy while supplying water for other demands. In the event of an emergency shortage of electricity, water may be released for hydrogeneration absent a downstream demand.
- LCRA releases water through Mansfield Dam for flood control purposes in accordance with U.S. Army Corps of Engineers' regulations and protocols.

Learn more about the lower Colorado River

Visit the River Operations Report at lcr.org. · Visit lcr.org/watersupply to learn about long-term water planning. Visit lcr.org/watercontracts for a complete list of LCRA's firm water contracts.



LCRA Water Use Summary 2016

May 4, 2017

In 2016, the Highland Lakes completely recovered from the severe drought that gripped the lower Colorado River basin from 2008-2015. By mid-year, lakes Travis and Buchanan – the region's water supply reservoirs – had risen to the top of their water supply levels, where they remained for the rest of 2016. Heavy rainfall in May and June prompted flood operations at all of the Highland Lakes dams. It was the first time in about a decade LCRA conducted flood operations simultaneously at Buchanan and Mansfield dams.

In 2016, LCRA continued to manage and increase water supplies for the lower Colorado River basin. LCRA continued construction on the Lane City Reservoir in Wharton County, the first significant new water

supply reservoir in the region in decades. The Lane City Reservoir could add up to 90,000 acre-feet per year to the region's water supply when it goes online in 2018. LCRA also continued to explore additional water strategies for Central Texas, including using surface water, treated effluent and groundwater.

As the drought ended and many cities eased their watering restrictions, municipal water use from the Highland Lakes and lower Colorado River increased by 7.5 percent in 2016. LCRA also resumed releases from the Highland Lakes for downstream agriculture in the Gulf Coast, Lakeside and Pierce Ranch irrigation operations in 2016. The releases were suspended from 2012 through 2015 because of the severe drought.

Water use by source — LCRA uses two basic sources of water to meet customers' needs: water naturally flowing in the Colorado River, and water stored in lakes Buchanan and Travis. When the flows into the Highland Lakes are greater than the downstream needs for water – for example, during floods – LCRA captures as much of the excess water as can be safely stored in lakes Buchanan and Travis.

Highland Lakes water use — Contracts for water stored in the Highland Lakes can be for firm or interruptible supply. LCRA also uses water from the Highland Lakes to help maintain environmental flows and to produce hydroelectric energy. In 2016, the Highland Lakes supplied 177,705 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 115,339 acre-feet, or about 65 percent of all water used from the Highland Lakes, in 2016.

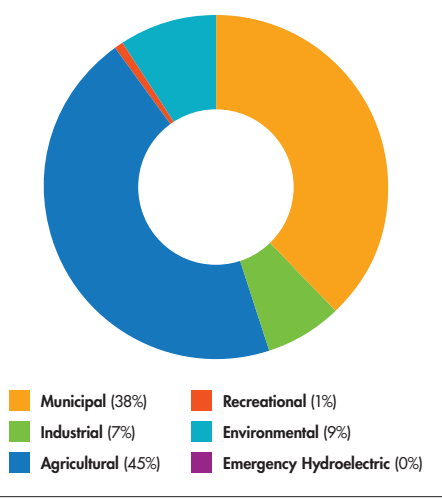
Interruptible water contracts — These contracts primarily supply agricultural customers. Interruptible water is subject to cutbacks during drought conditions. Interruptible agricultural customers used 7,656 acre-feet, or about 4 percent of all water used from the Highland Lakes, in 2016.

Environmental and emergency hydroelectric releases — LCRA releases water from the Highland Lakes to meet environmental flow requirements for the Colorado River downstream of Austin and for Matagorda Bay. In 2016, LCRA released 54,710 acre-feet, or about 31 percent of water released from the Highland Lakes, for environmental flows and emergency hydroelectric generation. Only 69 acre-feet of that total was used solely to meet emergency needs for electricity.

Colorado River water use — In addition to the rights to water from the Highland Lakes, LCRA owns and manages other rights to water from the Colorado River. In 2016, a total of 268,992 acre-feet of water was supplied from the Colorado River for agricultural, municipal and industrial uses under these water rights.

| Water Rights | 2016 Use (in acre-feet) |
|--------------------------------|-------------------------|
| LCRA Garwood | 68,325 |
| LCRA South Texas Project | 15,421 |
| LCRA Lakeside | 81,560 |
| LCRA Gulf Coast | 91,552 |
| LCRA Pierce Ranch | 12,134 |
| LCRA Lakes Buchanan and Travis | 177,705 |
| SUBTOTAL — LCRA | 446,697 |
| City of Austin Water Rights | 116,366 |
| Bastrop Energy Partners, LP | 180 |
| City of Corpus Christi | 3,416 |
| TOTAL | 566,659 |

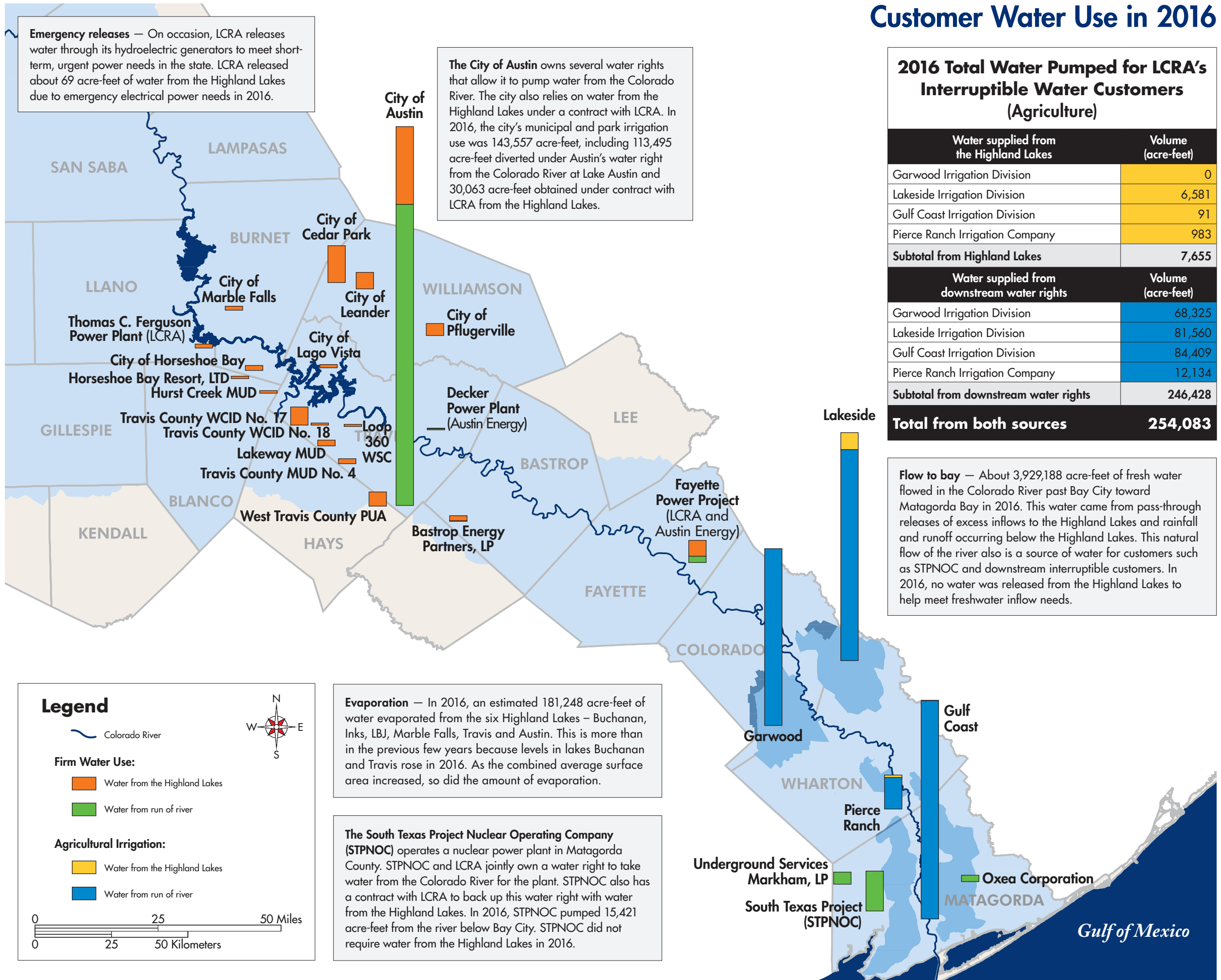
Water Use From Highland Lakes and Lower Colorado River
(LCRA and Other Water Rights)



2016 Total Water Pumped by LCRA's Firm Water Customers

| Water supplied from the Highland Lakes | Volume (acre-feet) |
|--|--------------------|
| City of Austin, municipal and parks | 30,063 |
| City of Cedar Park | 14,241 |
| Travis County WCID No. 17 | 7,007 |
| LCRA power plants, includes: | 6,976 |
| • Fayette Power Project (LCRA share) | 5,440 |
| • Sim Gideon Power Plant* | 0 |
| • Lost Pines 1 Power Project* | 0 |
| Thomas C. Ferguson Power Plant | 1,536 |
| City of Leander | 6,361 |
| West Travis County Public Utility Agency | 5,482 |
| City of Pflugerville | 4,628 |
| Domestic water users on Highland Lakes | 3,899 |
| Lakeway MUD | 2,210 |
| Bastrop Energy Partners, LP | 1,996 |
| City of Horseshoe Bay | 1,933 |
| Travis County MUD No. 4 | 1,917 |
| City of Marble Falls | 1,516 |
| City of Lago Vista | 1,260 |
| Hurst Creek MUD (The Hills) | 994 |
| Horseshoe Bay Resort, LTD | 926 |
| Austin Energy (AE) power plants, includes: | 922 |
| • Fayette Power Project (AE share) | 714 |
| • Decker Power Plant | 208 |
| Travis County WCID No. 18 | 811 |
| Loop 360 WSC | 805 |
| Other firm customers | 14,790 |
| • Diverted from Lake Buchanan | 362 |
| • Diverted from Inks Lake | 393 |
| • Diverted from Lake LBJ | 1,703 |
| • Diverted from Lake Marble Falls | 1 |
| • Diverted from Lake Travis | 3,122 |
| • Diverted from Lake Austin | 4,163 |
| • Diverted downstream of Lake Austin | 5,046 |
| Subtotal from Highland Lakes | 108,737 |
| Water supplied from other water rights | Volume (acre-feet) |
| City of Austin / Austin Energy, includes: | 116,365 |
| • Municipal and parks | 113,495 |
| • Fayette Power Project (AE share) | 2,426 |
| • Decker Power Plant | 444 |
| South Texas Project Nuclear Operating Co. | 15,421 |
| Gulf Coast municipal and industrial use, includes: | 7,142 |
| • Underground Services Markham, LP | 4,673 |
| • Oxea Corporation | 2,469 |
| Bastrop Energy Partners, LP | 180 |
| Subtotal from other water rights | 139,108 |
| Total from both sources | 247,845 |

*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 69 acre-feet of water from the Highland Lakes due to emergency electrical power needs in 2016.

The City of Austin owns several water rights that allow it to pump water from the Colorado River. The city also relies on water from the Highland Lakes under a contract with LCRA. In 2016, the city's municipal and park irrigation use was 143,557 acre-feet, including 113,495 acre-feet diverted under Austin's water right from the Colorado River at Lake Austin and 30,063 acre-feet obtained under contract with LCRA from the Highland Lakes.

2016 Total Water Pumped for LCRA's Interruptible Water Customers (Agriculture)

| Water supplied from the Highland Lakes | Volume (acre-feet) |
|--|--------------------|
| Garwood Irrigation Division | 0 |
| Lakeside Irrigation Division | 6,581 |
| Gulf Coast Irrigation Division | 91 |
| Pierce Ranch Irrigation Company | 983 |
| Subtotal from Highland Lakes | 7,655 |
| Water supplied from downstream water rights | Volume (acre-feet) |
| Garwood Irrigation Division | 68,325 |
| Lakeside Irrigation Division | 81,560 |
| Gulf Coast Irrigation Division | 84,409 |
| Pierce Ranch Irrigation Company | 12,134 |
| Subtotal from downstream water rights | 246,428 |
| Total from both sources | 254,083 |

Flow to bay — About 3,929,188 acre-feet of fresh water flowed in the Colorado River past Bay City toward Matagorda Bay in 2016. This water came from pass-through releases of excess inflows to the Highland Lakes and rainfall and runoff occurring below the Highland Lakes. This natural flow of the river also is a source of water for customers such as STPNOC and downstream interruptible customers. In 2016, no water was released from the Highland Lakes to help meet freshwater inflow needs.

Evaporation — In 2016, an estimated 181,248 acre-feet of water evaporated from the six Highland Lakes — Buchanan, Inks, LBJ, Marble Falls, Travis and Austin. This is more than in the previous few years because levels in lakes Buchanan and Travis rose in 2016. As the combined average surface area increased, so did the amount of evaporation.

The South Texas Project Nuclear Operating Company (STPNOC) operates a nuclear power plant in Matagorda County. STPNOC and LCRA jointly own a water right to take water from the Colorado River for the plant. STPNOC also has a contract with LCRA to back up this water right with water from the Highland Lakes. In 2016, STPNOC pumped 15,421 acre-feet from the river below Bay City. STPNOC did not require water from the Highland Lakes in 2016.

Legend

- Colorado River
- Firm Water Use:**
 - Water from the Highland Lakes
 - Water from run of river
- Agricultural Irrigation:**
 - Water from the Highland Lakes
 - Water from run of river

0 25 50 Miles
0 25 50 Kilometers

Gulf of Mexico