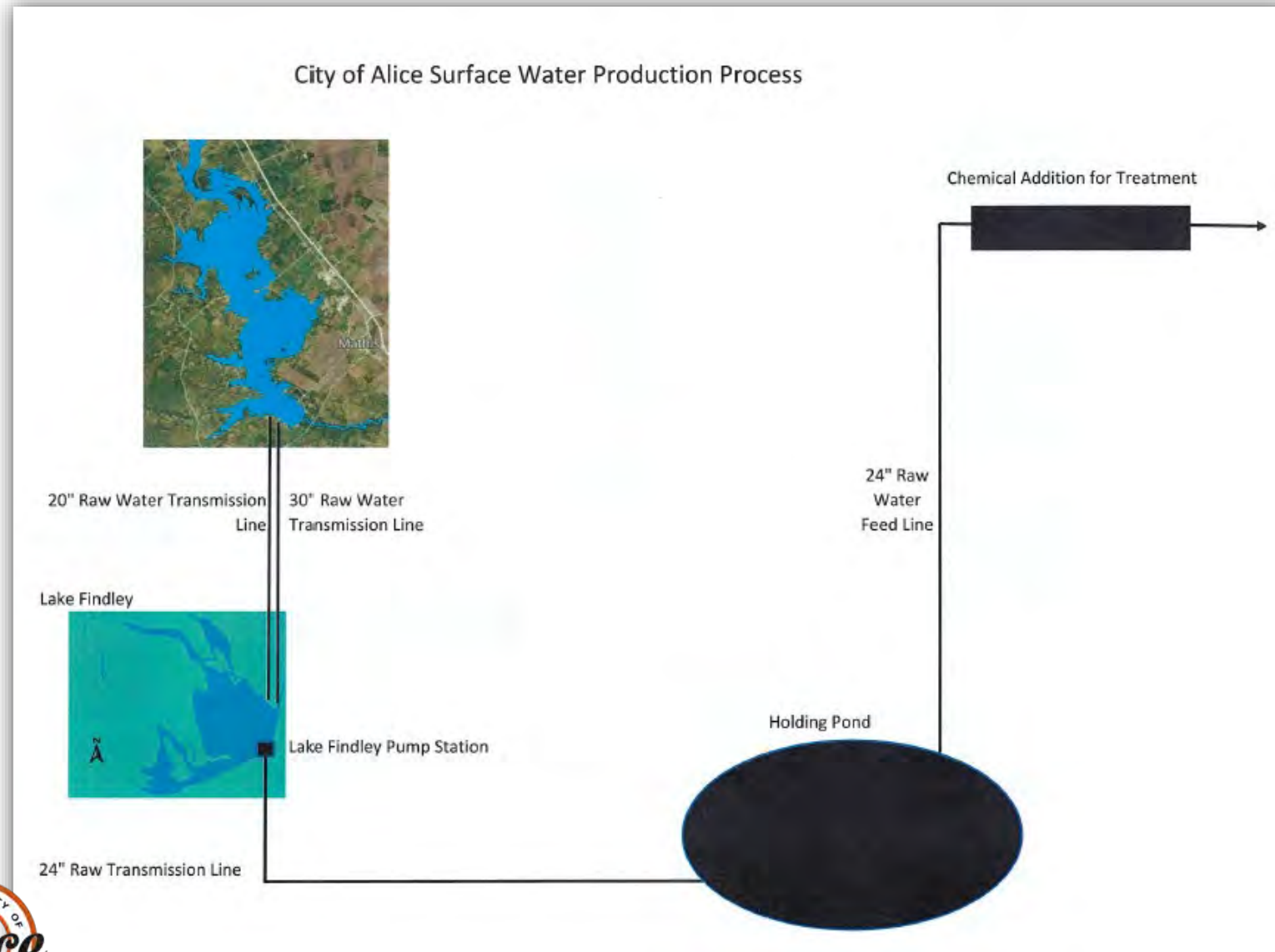


# City of Alice Brackish Desalination Project

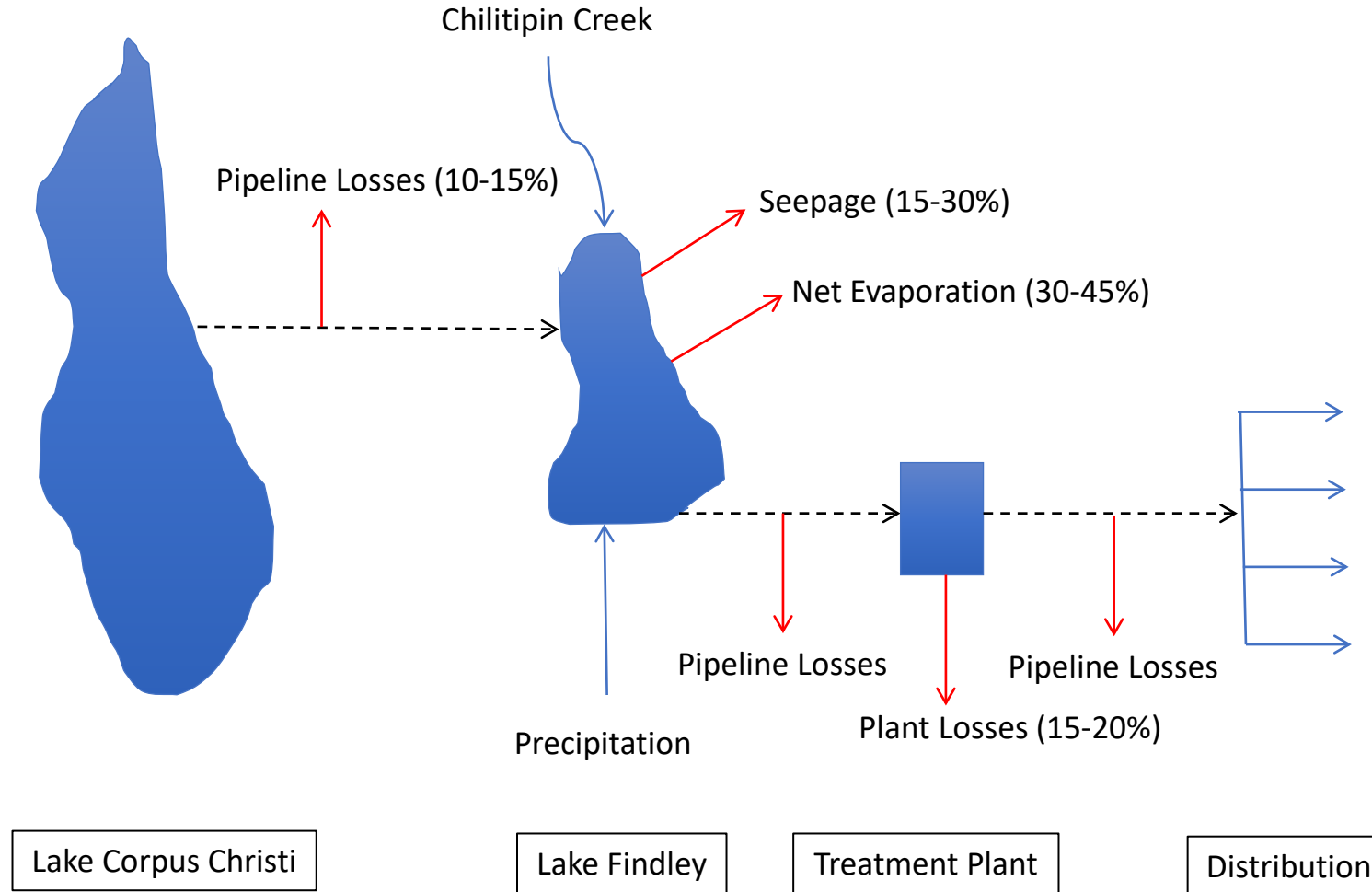
# Current City of Alice Water System



To water treatment plant



## Alice Water Supply and Distribution System Loss

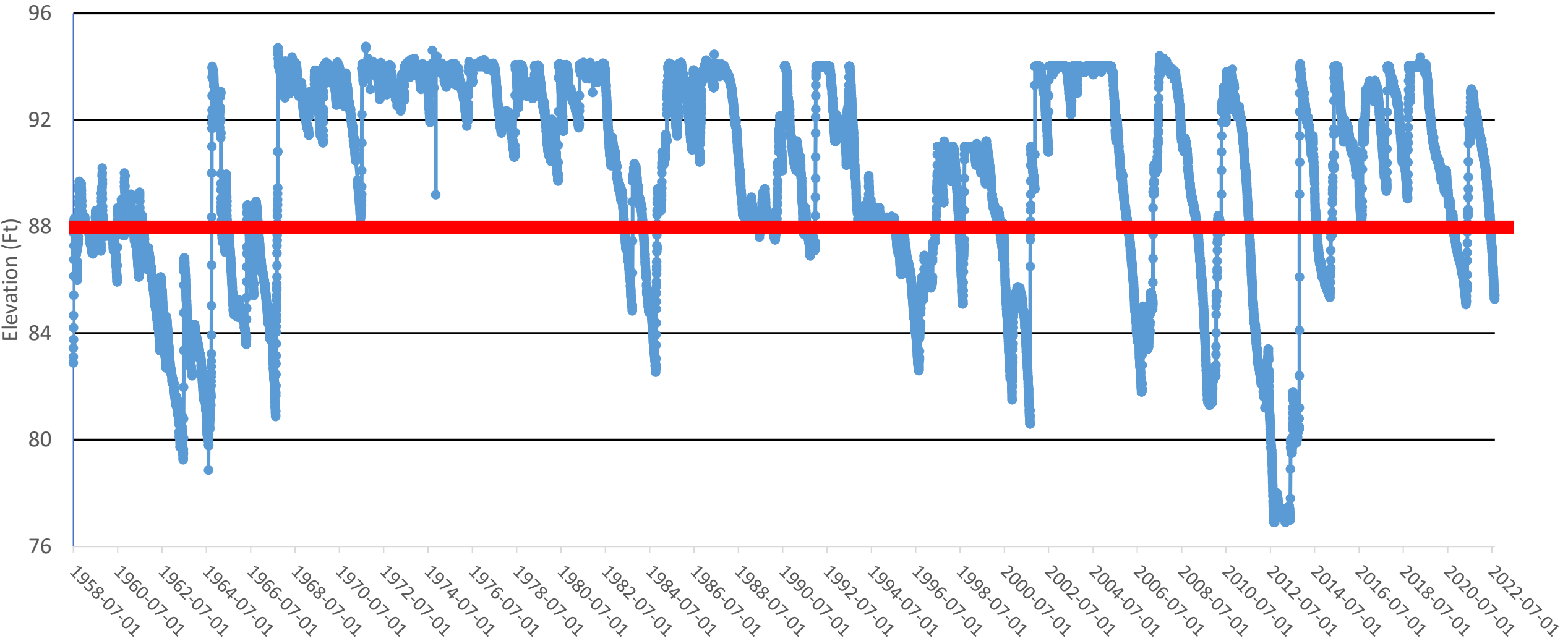




# How it Began...Droughts

- 2011 was the driest year ever for Texas, with an average of only 14.8 inches of rain
- Lake Corpus Christi was at risk of falling below our intake
- Our DCP calls for us to explore other water options

# 64 Year History of Lake Corpus Christi Elevation (Ft)





## Coastal Bend Regional Water System Elements

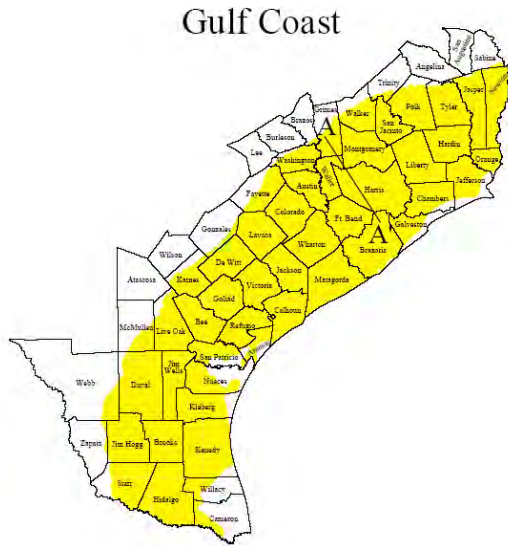




# Our Options: Pros & Cons

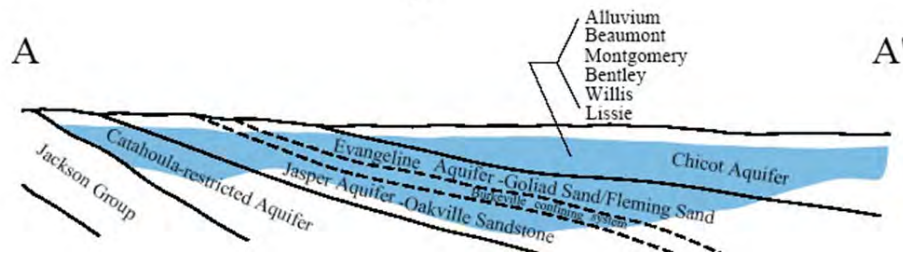
	Drill <i>Freshwater</i> Wells Near City Water Plant	Drill <i>Freshwater</i> Wells Along 22-Mile-Long Pipeline	Drill <i>Brackish</i> Wells Near Water Treatment Plant	Seawater Desalination
✓	<ul style="list-style-type: none"> <li>Limited water treatment</li> <li>Short transmission line</li> <li>Drought resistant</li> </ul>	<ul style="list-style-type: none"> <li>Availability of fresh ground water</li> <li>Drought resistant</li> </ul>	<ul style="list-style-type: none"> <li>Co-location at existing plant</li> <li>Drought resistant</li> </ul>	<ul style="list-style-type: none"> <li>Adequate Water Supply</li> <li>Drought resistant</li> </ul>
✗	<ul style="list-style-type: none"> <li>Drawdown</li> <li>Availability</li> </ul>	<ul style="list-style-type: none"> <li>Drawdown</li> <li>Availability</li> <li>Mixing Ground And Raw Water</li> <li>Evaporation Or Additional Pipeline Cost</li> <li>Variable Speed Drives</li> </ul>	<ul style="list-style-type: none"> <li>Treatment cost</li> <li>Discharge</li> </ul>	<ul style="list-style-type: none"> <li>Permitting</li> <li>Water Rights</li> <li>Discharge</li> <li>Pipeline</li> <li>Treatment cost</li> </ul>





# Our Project: Gulf Coast Aquifer

- Jasper Aquifer\*
  - Miocene Era
  - Drought proof source
  - 2,000 feet deep
  - 2,000 PPM
  - 3 MGD





# Our Project

- Partnership
- Co-locating at existing plant
- City
  - Two wells
- Partner
  - Brackish plant & treatment
  - Discharge permit



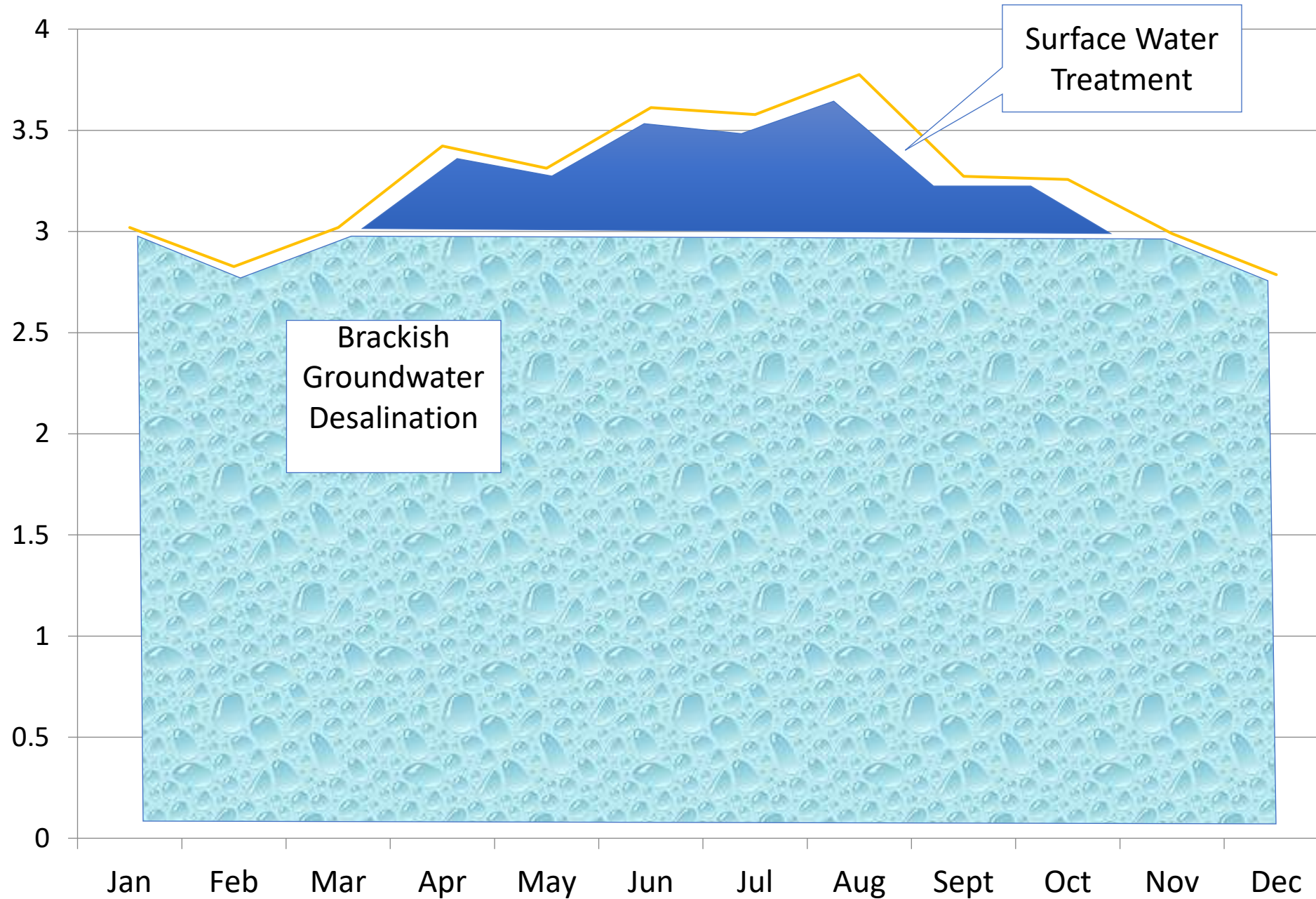




## Financials

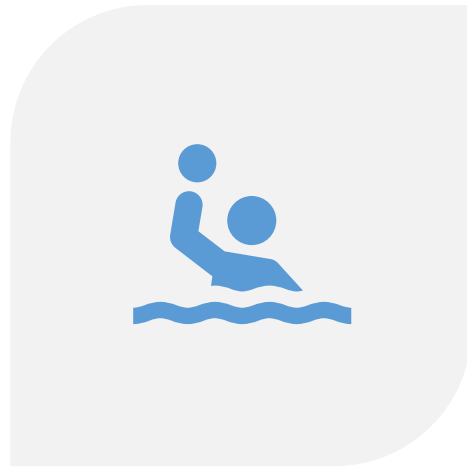
- Original Projected cost: \$17,000,000 (100% City of Alice)
- Final Project Cost: \$12.5 million
  - Phase 1: \$5.5 million
  - Phase 2: \$7 million

## Treated Water (3yr Avg)

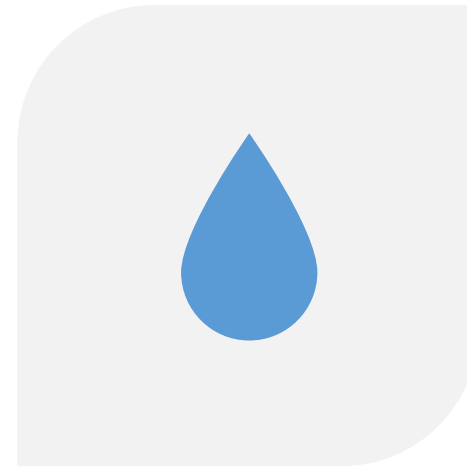




# Surface v. Ground Cost/1,000



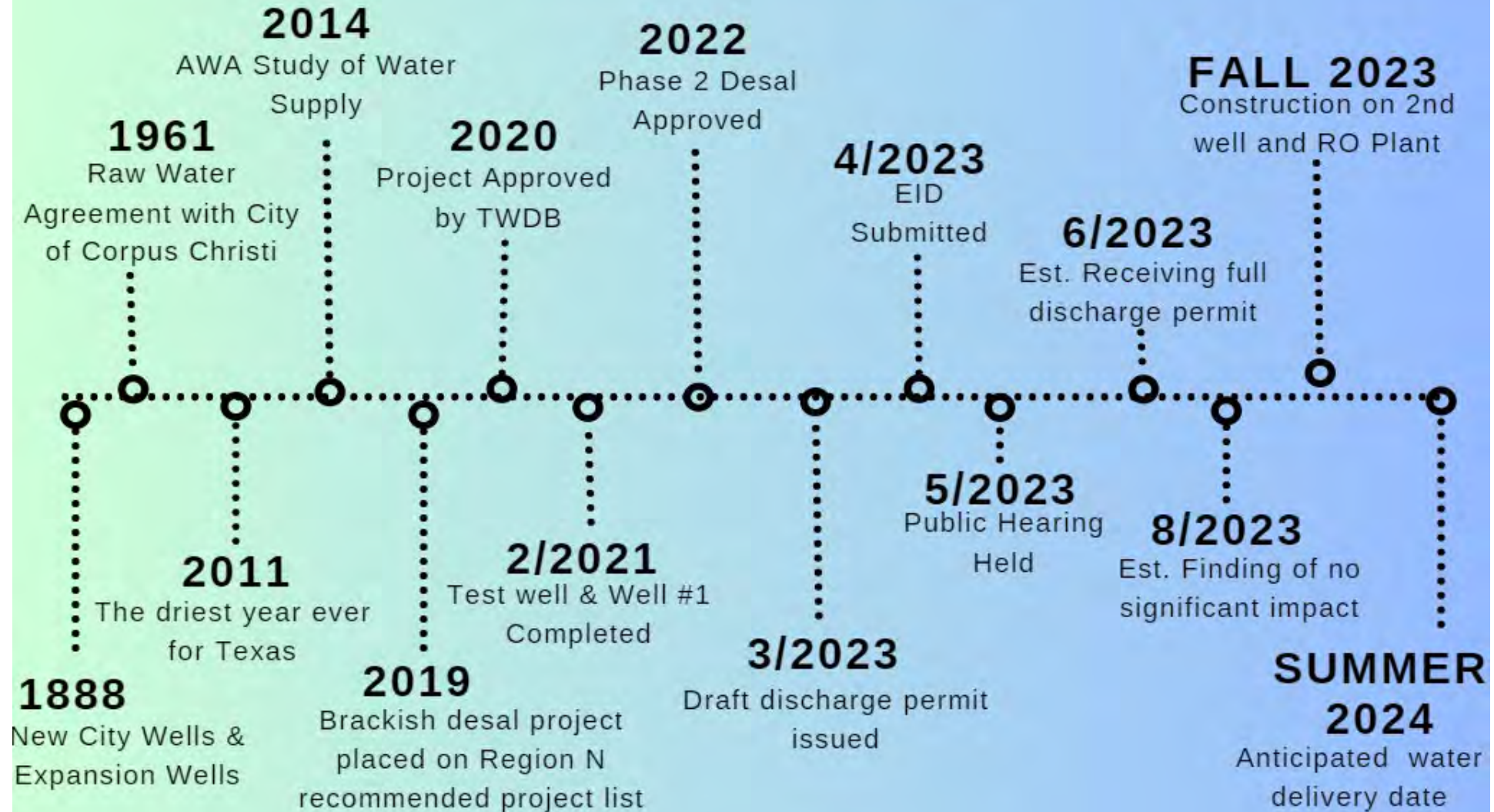
SURFACE WATER RANGE  
FROM \$3.35 TO \$4.05



GROUND WATER COSTS  
\$3.65/1,000 GALLONS



# Timeline



# Cost of existing system operations with recommended improvements

- For every year an alternative is not implemented, it will cost more than converting to treated brackish groundwater
  - Phase 1: Replace 8 miles of 20-inch pipeline
  - Phase 2: Replace 12 miles of 20-inch pipeline & rehabilitate existing pump station at Lake Corpus Christi
  - \$6.46 million/year or an average \$1.71 million per year more than the 3 MGD brackish groundwater option.
  - Slipline transmission line
  - Evaporation mitigation
  - Still not drought resistant



# WHAT IS THE COST OF NOT HAVING WATER?





# THANK YOU!

