

2011 South Central Texas Regional Water Plan

**Lower Guadalupe Water Supply Project
for GBRA Needs**

South Central Texas Regional Water Planning Group

May 1, 2008

Topics for Discussion

- ❑ Overview of the LGWSP for GBRA Needs (Study 1) Project**
- ❑ Delivery Amounts and Destinations**
- ❑ Proposed Transmission Pipeline Route**
- ❑ Overview of the Three Scenarios**
- ❑ Results for the Three Scenarios**
 - Yield**
 - Off-Channel Storage Size**
 - Groundwater Capacity**
 - Preliminary Cost Estimates**

2011 Regional Plan

Study 1 — LGWSP for GBRA Needs

Initial Objective - Define three (3) scenarios of source composition and facilities for technical evaluation

- ❑ Scenario 1: GBRA Preferred Alternative**
- ❑ Scenario 2: Alternative Interpretation of HB3776 w/ Groundwater**
- ❑ Scenario 3: Alternative Interpretation of HB3776 w/o Groundwater**

Delivery Points - GBRA statutory district

Additional Considerations (HB3776)

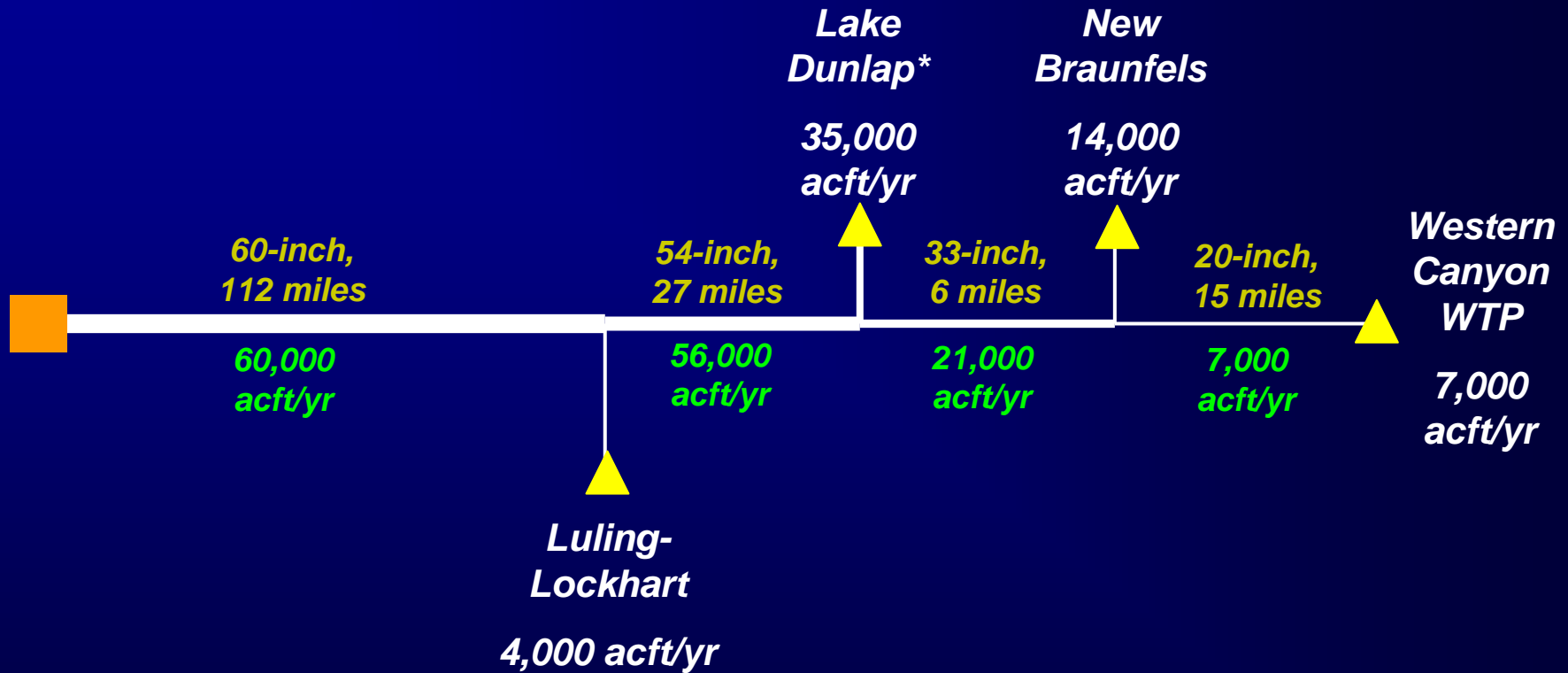
100,000 acft/yr for lower basin needs

Fresh groundwater prohibition (Gulf Coast Only)

Property owner consent for off-channel storage

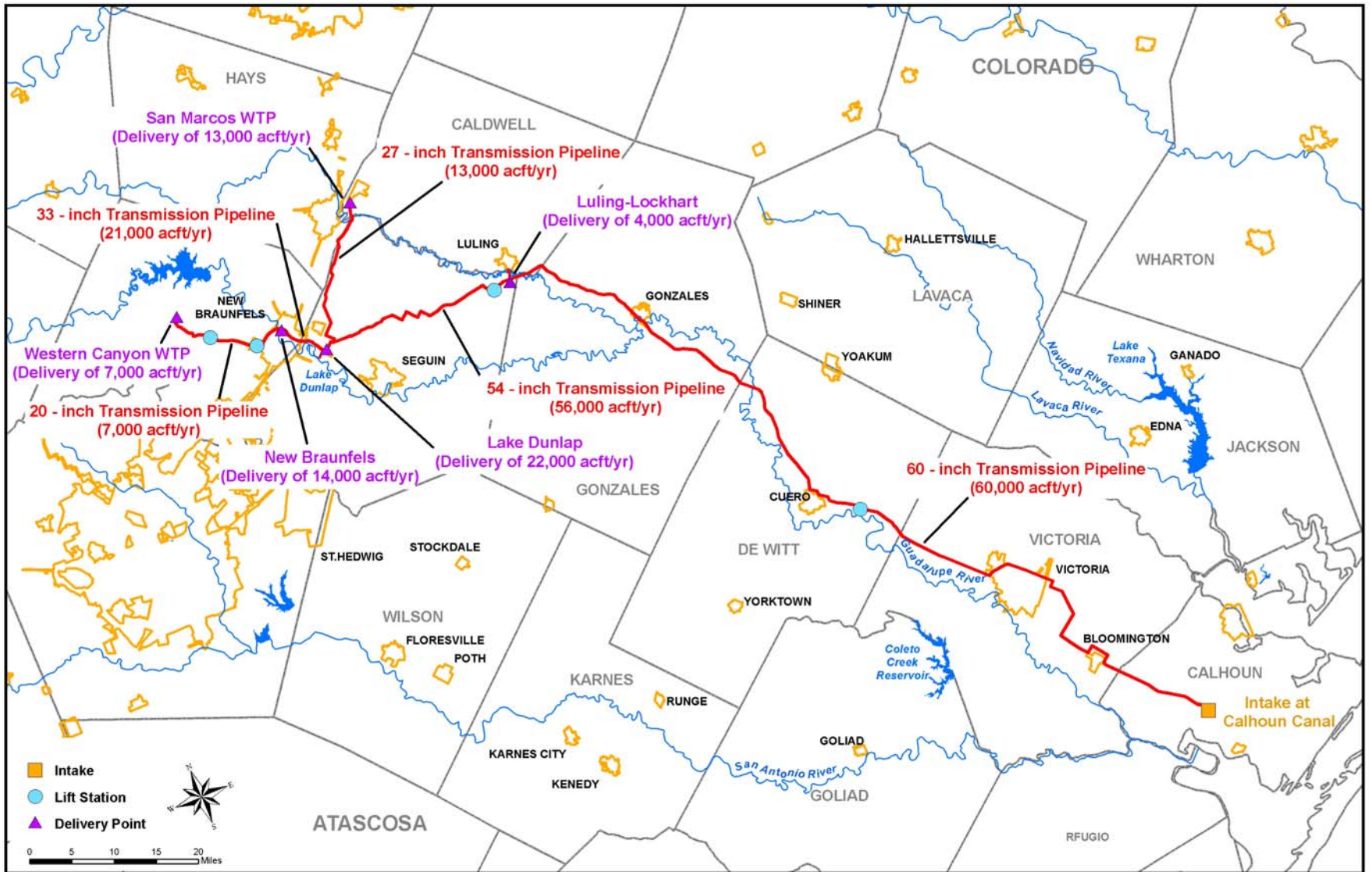
Consensus Criteria for Environmental Flow Needs

Schematic of Delivery Amounts



* Approximately 13,000 acft/yr is needed for the IH35 Corridor (Including San Marcos)

Proposed Transmission Pipeline Route



LGWSP for GBRA Needs Scenario 1 (GBRA)

Water Sources

- ❑ **GBRA water rights (75,000 acft/yr) w/ delivery of 60,000 acft/yr**

Facilities

- ❑ **Diversion pump station at existing station site on Calhoun Canal System**
- ❑ **Off-channel storage as needed**
- ❑ **Transmission within GBRA district, treatment, & integration**

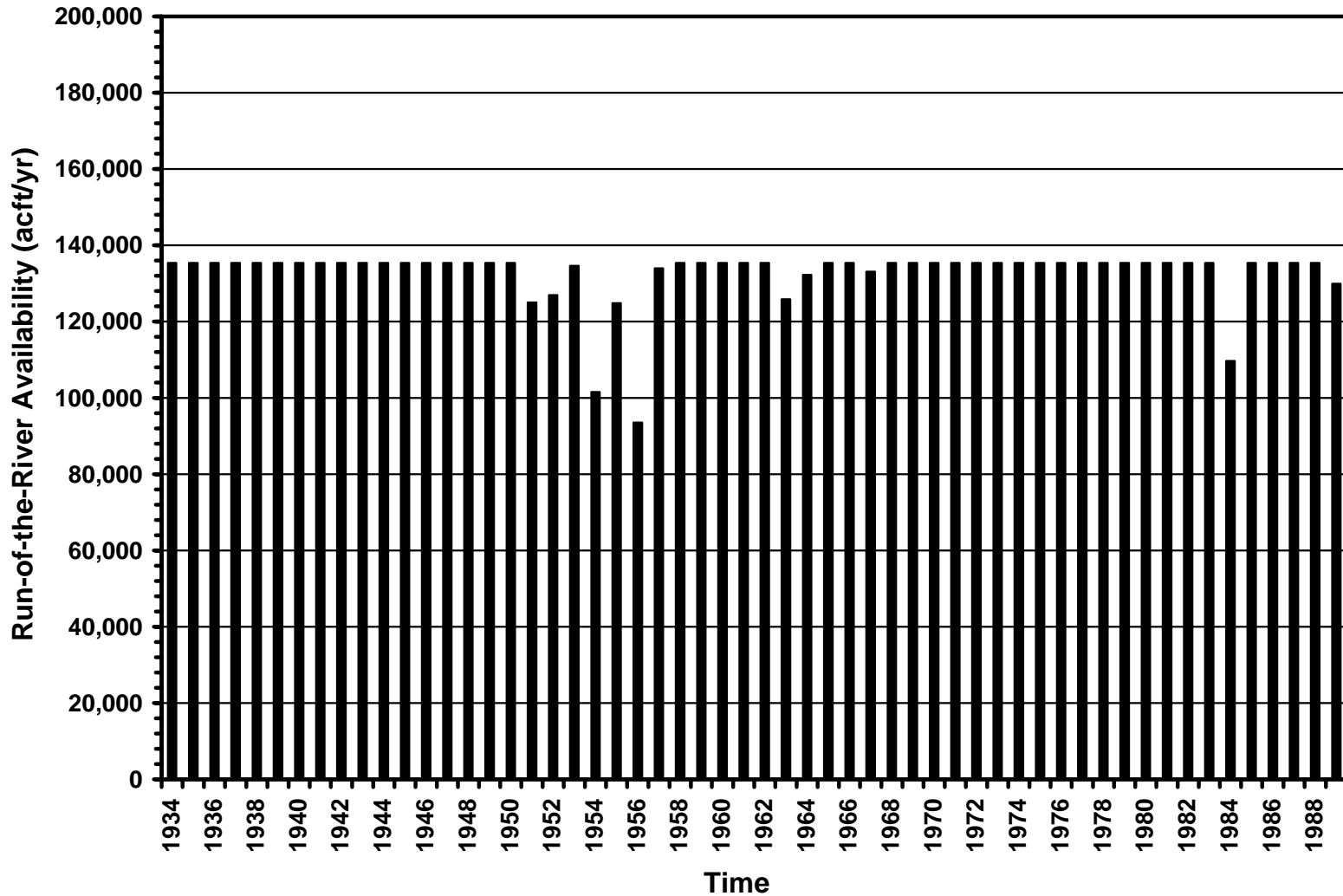
Delivery Point(s)

- ❑ **GBRA District – Caldwell, Comal, Guadalupe, Hays, & Kendall**

Key Assumptions

- ❑ **GBRA water rights exercised per certificates of adjudication**
- ❑ **Standard 2006 Plan hydrologic assumptions w/ Edwards per SB3**

Availability from the Guadalupe River – Scenario 1



LGWSP for GBRA Needs Scenario 1 (GBRA)

Results

- ❑ Junior 75,000 acft/yr of GBRA available for diversion and storage make-up
- ❑ **18,500 acft of Off-Channel Storage** (925 acres, 20 feet deep) needed to firm rights up during short periods (3-4 months) in 1954 and 1956
- ❑ Maximum diversion rate from canal = **187 cfs** (pro-rata share of CA# 18-5178)
- ❑ Maximum annual diversion = **64,087 acft**
- ❑ Preliminary estimates indicate that the cost of water is **\$1,374/acft/yr**

Alternative

- ❑ GBRA could deliver 60,000 acft/yr out of firm portion of water rights. No need for Off-Channel Storage. Approximate cost of water = **\$1,293/acft/yr**

LGWSP for GBRA Needs

Scenario 2 (Alt Interpretation of HB3776 w/ GW)

Water Sources

- ❑ GBRA water rights (75,000 acft/yr) w/ delivery of **60,000 acft/yr**
- ❑ **Groundwater** as needed (50% Gulf Coast Brackish, 50% Carrizo-Wilcox Fresh)

Facilities

- ❑ Diversion pump station at existing station site on Calhoun Canal System
- ❑ **Off-Channel Storage** as needed
- ❑ Transmission within GBRA district, production/storage well field(s), groundwater collection/distribution, treatment, & integration

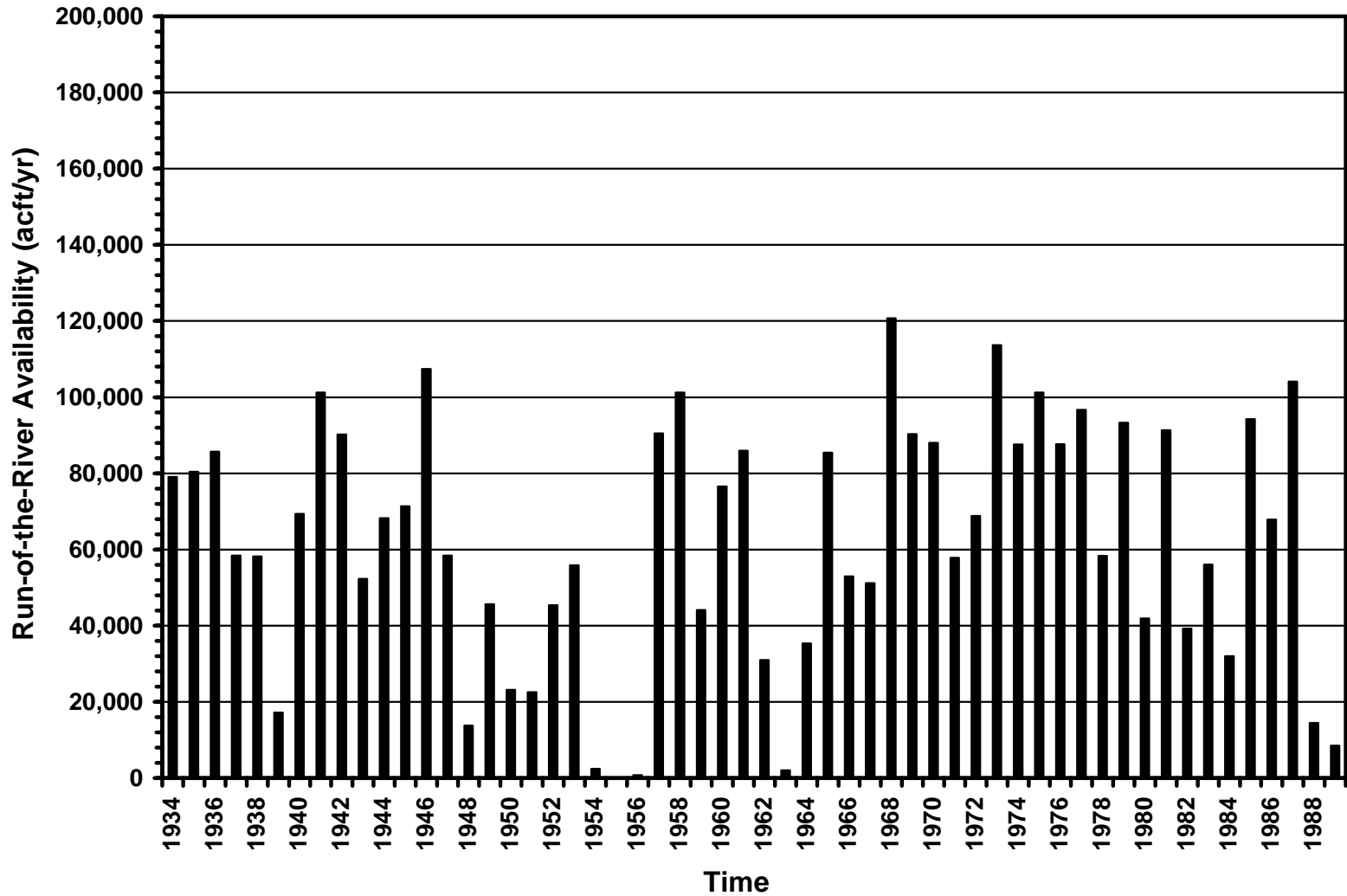
Delivery Point(s)

- ❑ GBRA District – Caldwell, Comal, Guadalupe, Hays, & Kendall

Key Assumptions

- ❑ **GBRA water rights used subject to Consensus Environmental Criteria**
- ❑ Standard 2006 Plan hydrologic assumptions w/ Edwards per SB3

Availability from the Guadalupe River – Scenarios 2 & 3



LGWSP for GBRA Needs

Scenario 2 (Alt Interpretation of HB3776 w/ GW)

Results

- ❑ Junior 75,000 acft/yr of GBRA available for diversion and storage make-up
- ❑ **52,000 acft/yr Groundwater Capacity Needed**
 - 26,000 acft/yr GW Capacity from Brackish Gulf Coast Aquifer
(Average Use = 16,767 acft/yr)
 - 26,000 acft/yr GW Capacity from Fresh Carrizo-Wilcox Aquifer
(Average Use = 16,767 acft/yr)
- ❑ **54,500 acft** of Off-Channel Storage (2,725 acres, 20 feet deep) needed to firm rights up during long periods (several years) during drought
- ❑ Maximum diversion rate from canal = 187 cfs (pro-rata share of CA# 18-5178)
- ❑ Maximum annual diversion = **67,439 acft**
- ❑ Preliminary estimates indicate that the cost of water is **\$1,704/acft/yr**

LGWSP for GBRA Needs

Scenario 3 (Alt Interpretation of HB3776 w/o GW)

Water Sources

- GBRA water rights (75,000 acft/yr) w/ delivery of 60,000 acft/yr**

Facilities

- Diversion pump station at existing station site on Calhoun Canal System**
- Off-Channel Storage as needed**
- Transmission within GBRA district, treatment, & integration**

Delivery Point(s)

- GBRA District – Caldwell, Comal, Guadalupe, Hays, & Kendall**

Key Assumptions

- GBRA water rights used subject to Consensus Environmental Criteria**
- Standard 2006 Plan hydrologic assumptions w/ Edwards per SB3**

LGWSP for GBRA Needs

Scenario 3 (Alt Interpretation of HB3776 w/o GW)

Results

- ❑ Junior 75,000 acft/yr of GBRA available for diversion and storage make-up
- ❑ **Off-Channel Reservoir unable to firm up 60,000 acft/yr delivery (not firm w/ 1,000,000 acft of storage)**
- ❑ Off-Channel Storage fixed at 250,000 acft and a firm yield calculated
 - **Resulting Firm yield = 4,400 acft/yr**
- ❑ **Maximum diversion rate from canal = 187 cfs (pro-rata share of CA# 18-5178)**
- ❑ **Maximum annual diversion = 75,000 acft**
- ❑ **Costs = ????**

Comments & Questions