2011 South Central Texas Regional Water Plan

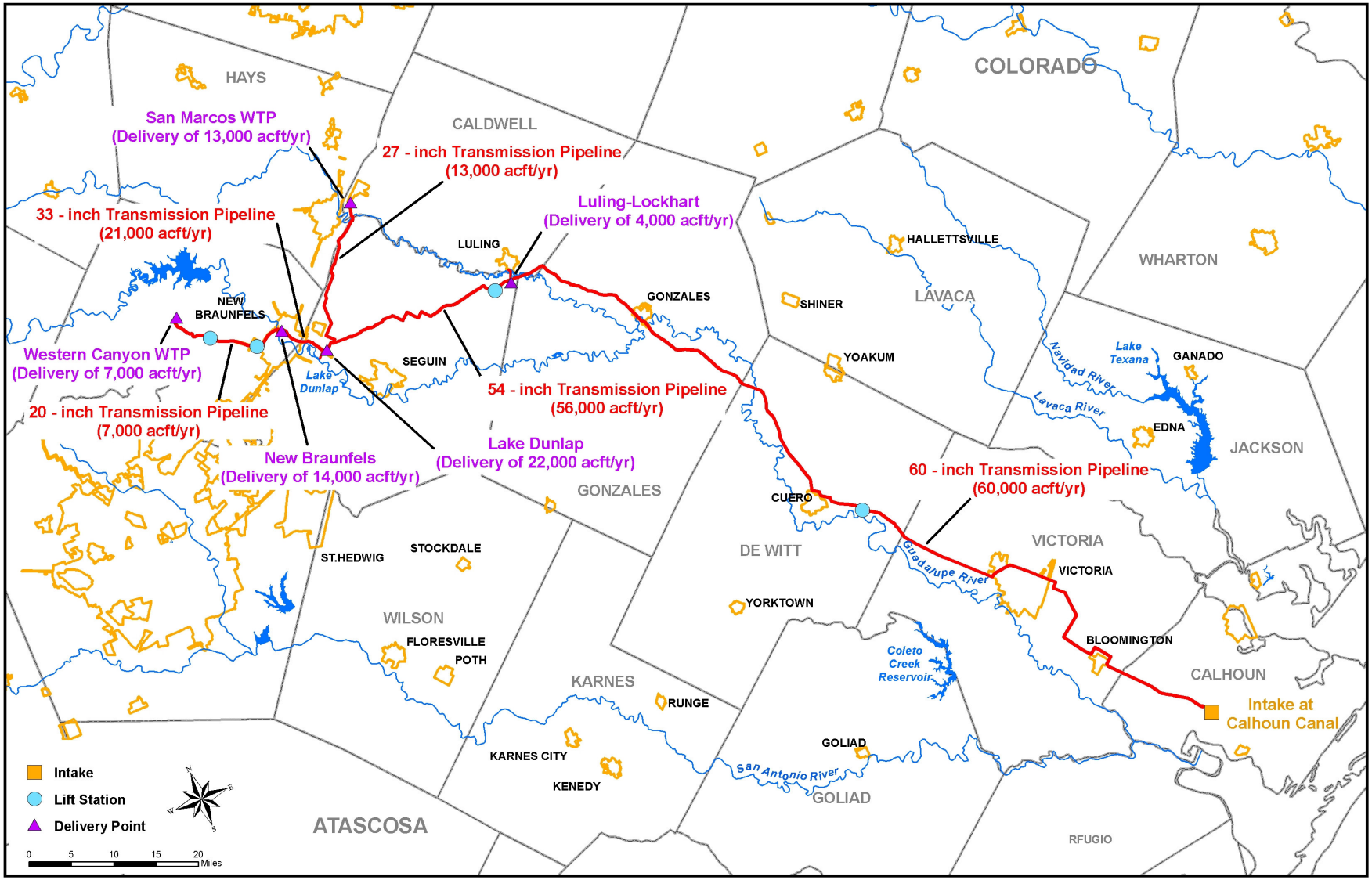
Lower Guadalupe Water Supply Project for GBRA Needs

Updates

South Central Texas Regional Water Planning Group

August 7, 2008

Transmission and Delivery



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

	CCEFN on Existing Water Rights	Groundwater Used	Lower Basin Needs Reserved	Storage Used
Scenario 1			✓	✓
Scenario 2	✓	✓	✓	✓
Scenario 3	✓		✓	✓*

LGWSP for GBRA Needs
Scenario 1 (GBRA)

Key Assumptions

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

Results

- Junior 75,000 acft/yr of GBRA available for diversion and storage make-up
- 19,000 acft of Off-Channel Storage (950 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 = 64,198 acft
- Preliminary estimates indicate that the cost of water is $1,506/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 = $1,423/acft/yr

LGWSP for GBRA Needs
Scenario 2 (Alt Interpretation of HB3776 w/ GW)

Key Assumptions

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

Results

- Junior 75,000 acft/yr of GBRA available for diversion and storage make-up
- 52,500 acft/yr Groundwater Capacity Needed
  - 26,250 acft/yr GW Capacity from Brackish Gulf Coast Aquifer (Average Use = 16,769 acft/yr)
  - 26,250 acft/yr GW Capacity from Fresh Carrizo-Wilcox Aquifer (Average Use = 16,769 acft/yr)
- 51,500 acft of Off-Channel Storage (2,575 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 = 64,358 acft
- Preliminary estimates indicate that the cost of water is $1,744/acft/yr

LGWSP for GBRA Needs
Scenario 3 (Alt Interpretation of HB3776 w/o GW)

Key Assumptions

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

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 = 4,250 acft/yr
- Maximum diversion rate from canal = 187 cfs (pro-rata share of CA# 18-5178)
- Maximum annual diversion = 75,000 acft
- Costs = ????