



Presentation and discussion
related to water system
operations and needs.

July 7, 2014

Canadian River Municipal Water Authority



CRMWA MEMBER CITIES

Amarillo (37.058%)

Borger (5.549%)

Brownfield (2.198%)

Lamesa (2.179%)

Levelland (2.79%)

Lubbock (37.058%)

O'Donnell (0.27%)

Pampa (7.163%)

Plainview (3.691%)

Slaton (1.576%)

Tahoka (0.46%)

HISTORY OF CRMWA

1947: Project supporters requested a study by U.S. Bureau of Reclamation (USBR).

1949: USBR Reconnaissance Report finds of the Project could be developed.

1950: Public law 898-81 passed Congress, authorizing Canadian River project.

1953: Texas legislature created the Canadian River Municipal Water Authority.

1955: Legislature amended Enabling Act to allow title to dam to stay with the United States. Bond elections approved sale of \$74,800,000 in bonds.

1956: Texas Board of Water Engineers approved Permit to impound and divert water.

1957: Returned to Federal financing; Enabling Act amended to allow non-uniform water rates and to require unanimous votes to set rates and charges for water service.

1958: Reclamation presented revised cost estimates.

HISTORY OF CRMWA (Continued)

1960: Member cities reached agreement on the allocation of costs and water. USBR revised cost estimate to \$96,090,000. Contract with USBR signed on November 28.

1961: Contracts with ten cities signed on January 9 (Lamesa signed on September 11).

1962: Construction began. Groundbreaking for the Sanford Dam was held on June 30. Available supply of water from Lake Meredith was estimated to be 103,000 Acre-feet per year.

1965: Storage of water in Lake began. In June, inflow to the Lake increased storage to 158,000 acre-feet. Lake officially named Lake Meredith to honor A.A. Meredith.

1966: Last joint of pipe for Canadian River Aqueduct laid south of Lubbock. Sanford Dam and Lake Meredith dedicated November 1.

1967: John C. Williams named General Manager effective July 1, 1968. Project facilities were declared ready to deliver water in 1968. Preliminary Final Cost Notice issued by USBR, cost at \$84,605,000 of which all but \$4,912,000 was reimbursable. Interest during construction made the reimbursable obligation a total of \$84,820,440.

HISTORY OF CRMWA (Continued)

1968: On April 1, normal deliveries of water began. On July 1, operation and maintenance of the Project was transferred to CRMWA.

1969: First payment made on debt to USBR in the amount of \$2,014,060.

1971: Salt springs located downstream from Ute Dam, near Logan, New Mexico, a Federal study of brine inflows was requested.

1973: Lake Meredith reached a depth of 101.9 feet, storing 540,000 acre-feet.

1974: Visitation to Lake Meredith for the year was 1,732,221.

1975: Final Cost Notice issued by USBR, obligation set at \$83,358,280.21.

1977: USBR reported finding a shallow brine aquifer near Logan, New Mexico.

1979: USBR reported that saline inflow could be controlled by pumping from wells.

1981: Lake Meredith reached a low level of 63.16 feet on May 28.

HISTORY OF CRMWA (Continued)

1983: Ute Dam in New Mexico enlarged to store 279,000 acre-feet, potentially reducing water inflow to Lake Meredith.

1986: USBR Technical Report issued with plan to control brine inflows.

1987: Texas and Oklahoma filed suit on New Mexico over Ute Dam enlargement. Texas Legislature amended Enabling Act to allow for Salinity Control. Engineering study reported firm yield of Lake Meredith to be 76,000 acre-feet per year.

1989: Efforts to authorize Salinity Control Project “bottled up” in Congress.

1990: Lake Meredith designated a National Recreation Area.

1992: Grant from Texas Water Development Board for Alternate Water Supply Study approved. Congress authorized the Lake Meredith Salinity Control Project (LMSCP), CRMWA to pay for construction and to operate and maintain the Project.

HISTORY OF CRMWA (Continued)

1993: Three Member Cities expressed interest in obtaining groundwater supplies. Texas Legislature appropriated \$3,000,000 matching funds for LMSCP. The Supreme Court ruled in favor of Texas and Oklahoma in the Canadian River Compact suit against New Mexico.

1994: The Board of Directors approved purchase of 42,765 acres of water rights, pending approval of the Member Cities.

1996: In January, the Panhandle Groundwater Conservation District (PGCD) issued a revised permit for 40,000 acre-feet pumping per year, the CRMWA amended time-line for purchasing Roberts County water rights. \$19,500,000 in revenue bonds for investigation and purchase of water rights were sold and the purchase closed on August 13.

1999: Bids for the major components of the Groundwater Supply Project were taken on September 9. On February 2, \$3,605,000 bonds were sold to finance the LMSCP construction. On May 25, the USBR debt was paid and CRMWA received title to the aqueduct. Injection Well No. 1 for the LMSCP was completed on September 14. On September 15, issuance of bonds to finance construction of the ground water project.

HISTORY OF CRMWA (Continued)

2000: On March 22, groundbreaking for the Groundwater Supply Project and dedication of “The John C. Williams Aqueduct and Wellfield.”

2001: The LMSCP was placed in operation in September. In November, John Williams retired as General Manager and Secretary/Treasurer, board selected Kent Satterwhite as replacement. The John C. Williams Aqueduct and Wellfield was placed in operation in December, providing about 35% of the total water demand of Authority Cities.

2002: A Resolution was adopted establishing the firm yield of Lake Meredith as 76,000 acre-feet per year, with another 40,000 acre-feet normally available from the Ground Water Supply Project. A summary judgment was issued in favor of CRMWA in the Takings Impact Assessment suit filed in 2001.

2003: Efforts were initiated to purchase additional groundwater rights.

2004: In January, CRMWA began its’ pursuit to purchase additional water rights from a large group of 130 to 150 landowners in Roberts County representing around 150,000 acres.

HISTORY OF CRMWA (Continued)

2005: CRMWA signed contracts covering 160,515 acres of water rights at an estimated cost of \$50,820,533.

2007: CRMWA completed water rights pursuit purchases with a total contract acreage of 212,100 acres at a final cost of \$76,293,681.

2010: The wellfield expansion was completed with the addition of 15 high capacity wells, making a total of 45 wells available, capable of supplying about 65,000 Acre-feet annually.

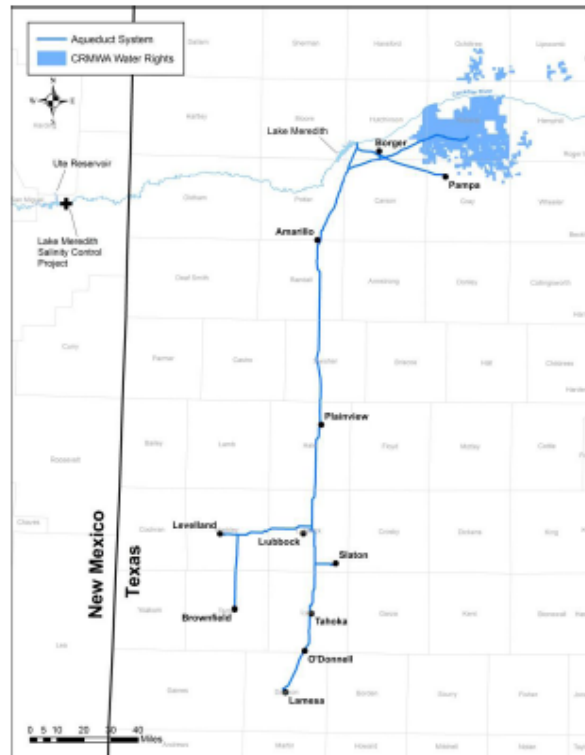
2011: CRMWA inked a deal with Mesa Water and Mr. T. Boone Pickens to purchase 211,000 acres of additional water. Total supply estimated at over 100 years.

2012: Steve Tucker (Slaton) elected President, Richard Ellis (Levelland) elected Vice President. Lake Meredith has been serving member cities with water since 1968, after 44 years the year 2012 will be the first year that no water has been pulled from the lake to help supplement city water supplies.

HISTORY OF CRMWA (Continued)

2013: CRMWA Board of Directors approved a routing study and work up to and including the purchase of pipeline right-of-way for an additional groundwater transmission pipeline. This new line would at least double the current capacity of CRMWA's groundwater project. The new line will likely go directly from CRMWA's new wellfield (Phase III) to the Amarillo Regulating Reservoir.

**CANADIAN RIVER
MUNICIPAL WATER AUTHORITY
PROJECTION OF FUTURE NEEDS
OF MEMBER CITIES**



PREPARED BY JOHN C. WILLIAMS, SPECIAL ADVISER

Updated April 2014

City of Levelland

Future Water Needs and Supply

Using 2014 CRMWA Amount

NORMAL YEAR (AVERAGE RAINFALL)

Year	Population	GPCPD	Total Use Mil-Gal	AVG Day MGD	Mun. Peak Factor	Peak MGD	Annual Supply				Summer Supply			
							CRMWA MGD	Wells MGD	Total	Surplus or Shortage	CRMWA MGD	Wells MGD	Total	Surplus or Shortage
2015	14,023	160	819	2.24	2.00	4.49	1.62	2.9	4.5	2.26	1.81	3.74	5.55	1.07
2020	14,521	160	848	2.32	2.00	4.65	1.62	2.8	4.4	2.10	1.81	3.65	5.46	0.81
2025	15,036	160	878	2.41	2.00	4.81	1.62	2.7	4.4	1.95	1.81	3.56	5.37	0.56
2030	15,570	160	909	2.49	2.00	4.98	1.62	2.7	4.3	1.80	1.81	3.47	5.28	0.30
2035	16,122	160	942	2.58	2.00	5.16	1.62	2.6	4.2	1.64	1.81	3.38	5.20	0.04
2040	16,695	160	975	2.67	2.00	5.34	1.62	2.5	4.2	1.49	1.81	3.30	5.11	(0.23)
2045	17,287	160	1,010	2.77	2.00	5.53	1.62	2.5	4.1	1.33	1.81	3.22	5.03	(0.50)
2050	17,901	160	1,045	2.86	2.00	5.73	1.62	2.4	4.0	1.17	1.81	3.14	4.95	(0.78)

DRY YEAR

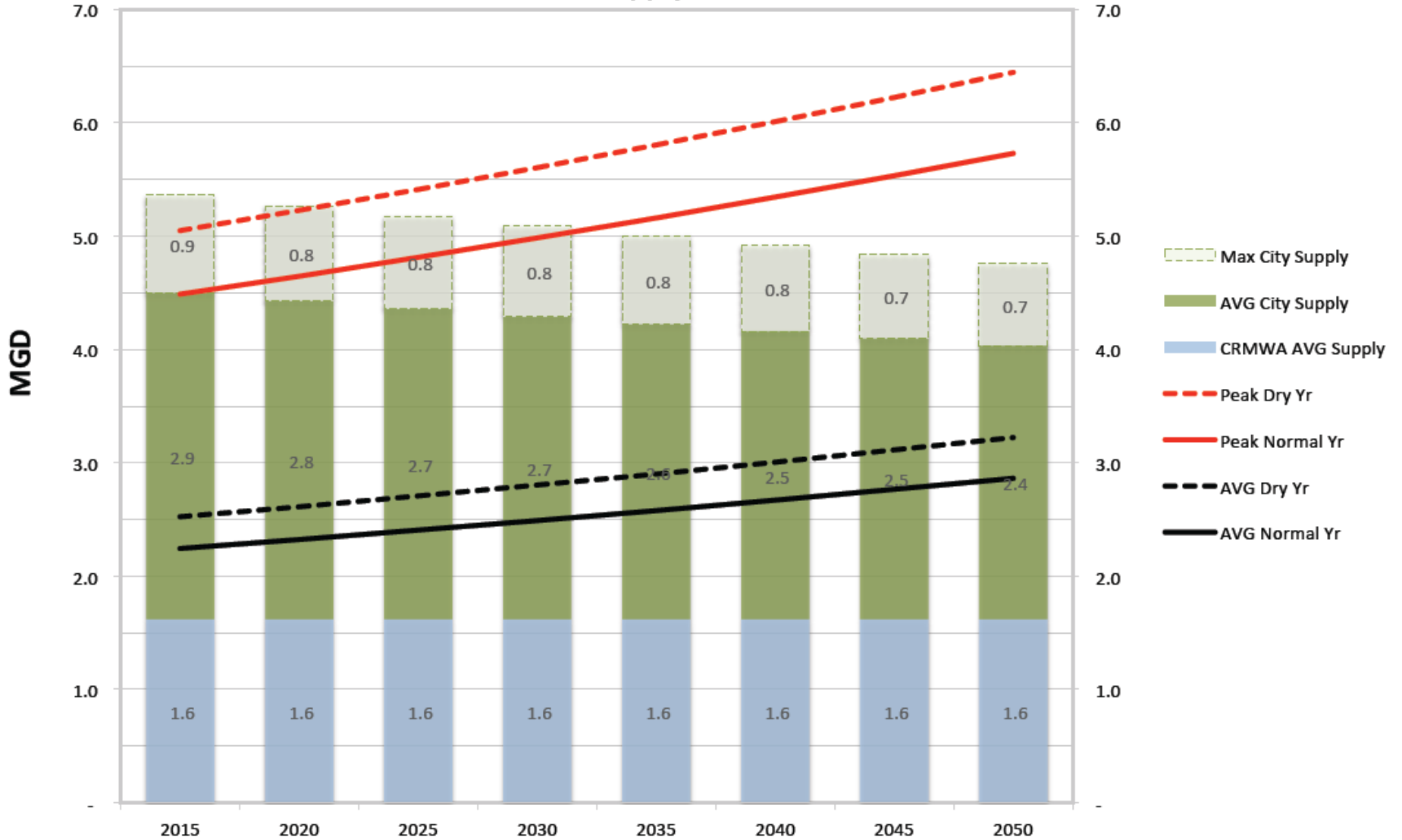
Year	Population	GPCPD	Total Use Mil-Gal	AVG Day MGD	Mun. Peak Factor	Peak MGD	Annual Supply				Summer Supply			
							CRMWA MGD	Wells MGD	Total	Surplus or Shortage	CRMWA MGD	Wells MGD	Total	Surplus or Shortage
2015	14,023	180	921	2.52	2.00	5.05	1.62	2.9	4.5	1.97	1.81	3.74	5.55	0.51
2020	14,521	180	954	2.61	2.00	5.23	1.62	2.8	4.4	1.81	1.81	3.65	5.46	0.23
2025	15,036	180	988	2.71	2.00	5.41	1.62	2.7	4.4	1.65	1.81	3.56	5.37	(0.04)
2030	15,570	180	1,023	2.80	2.00	5.61	1.62	2.7	4.3	1.49	1.81	3.47	5.28	(0.32)
2035	16,122	180	1,059	2.90	2.00	5.80	1.62	2.6	4.2	1.32	1.81	3.38	5.20	(0.61)
2040	16,695	180	1,097	3.01	2.00	6.01	1.62	2.5	4.2	1.15	1.81	3.30	5.11	(0.90)
2045	17,287	180	1,136	3.11	2.00	6.22	1.62	2.5	4.1	0.99	1.81	3.22	5.03	(1.19)
2050	17,901	180	1,176	3.22	2.00	6.44	1.62	2.4	4.0	0.81	1.81	3.14	4.95	(1.49)

MGD = Million Gallons per Day

CITY OF LEVELLAND

Projected Demand vs. Supply

Current Supply

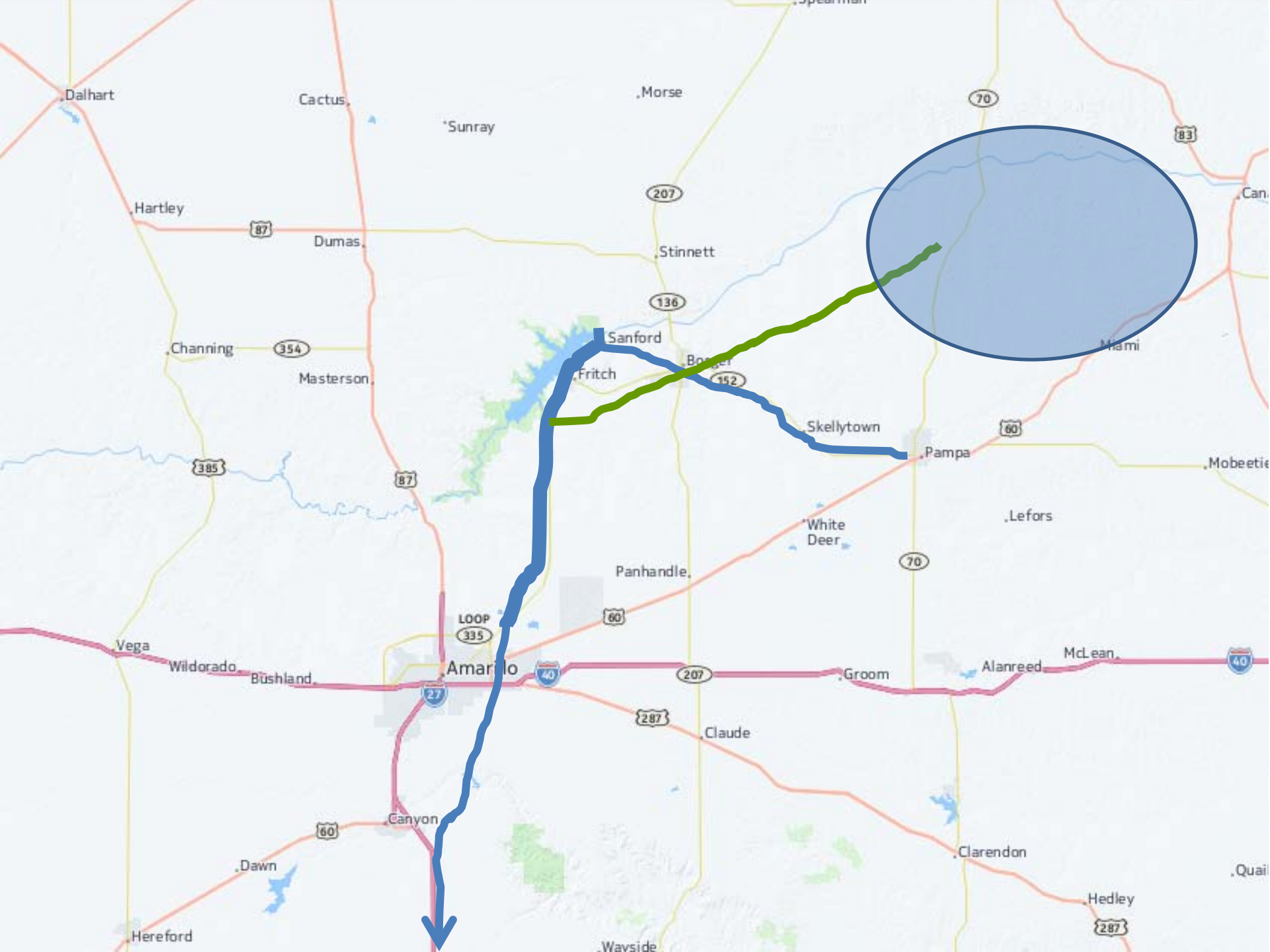


CRMWA Improvements to Address Cities' Needs

Short Term (5-10 years) – Reach Original Delivery Capacity

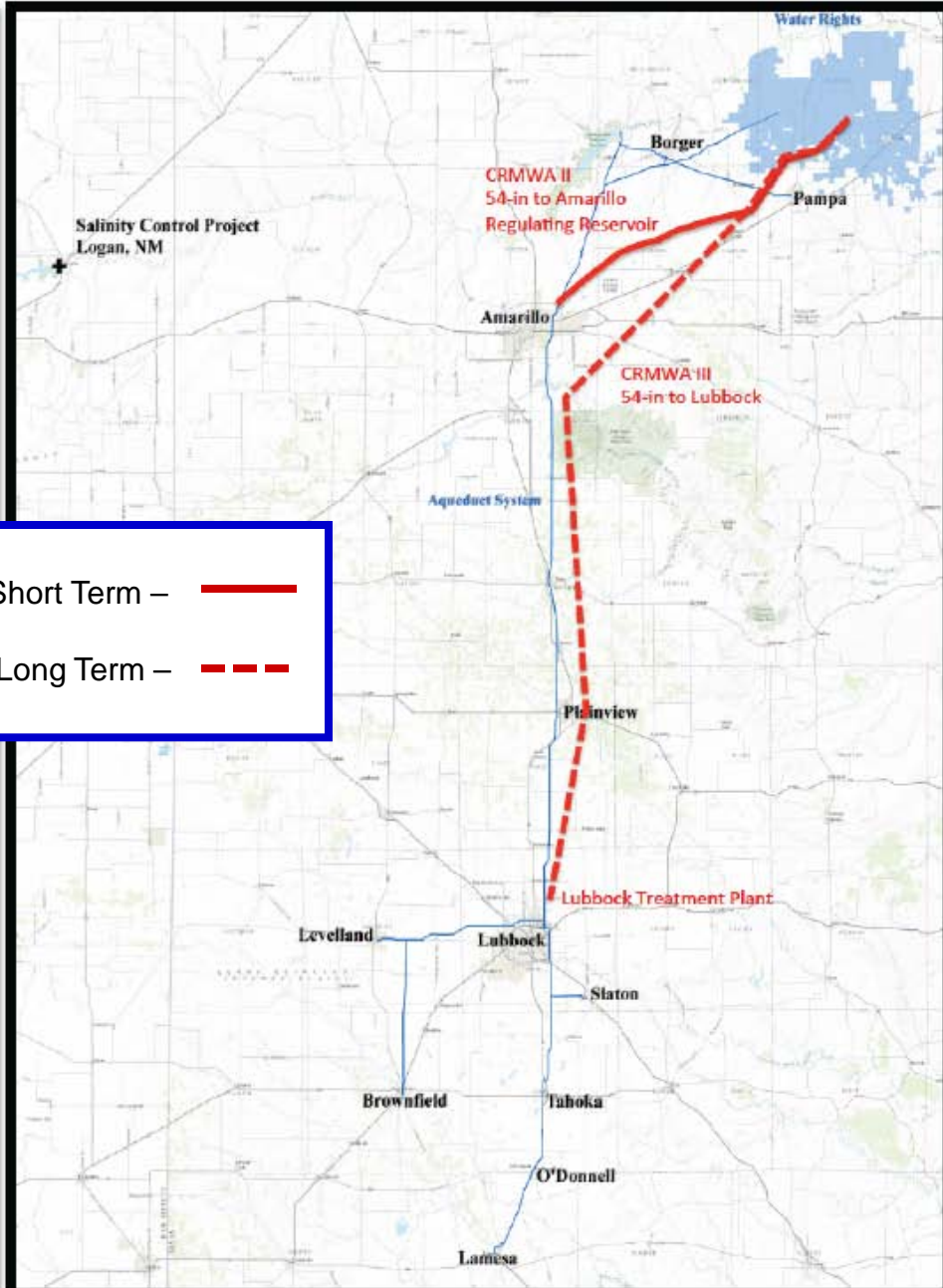
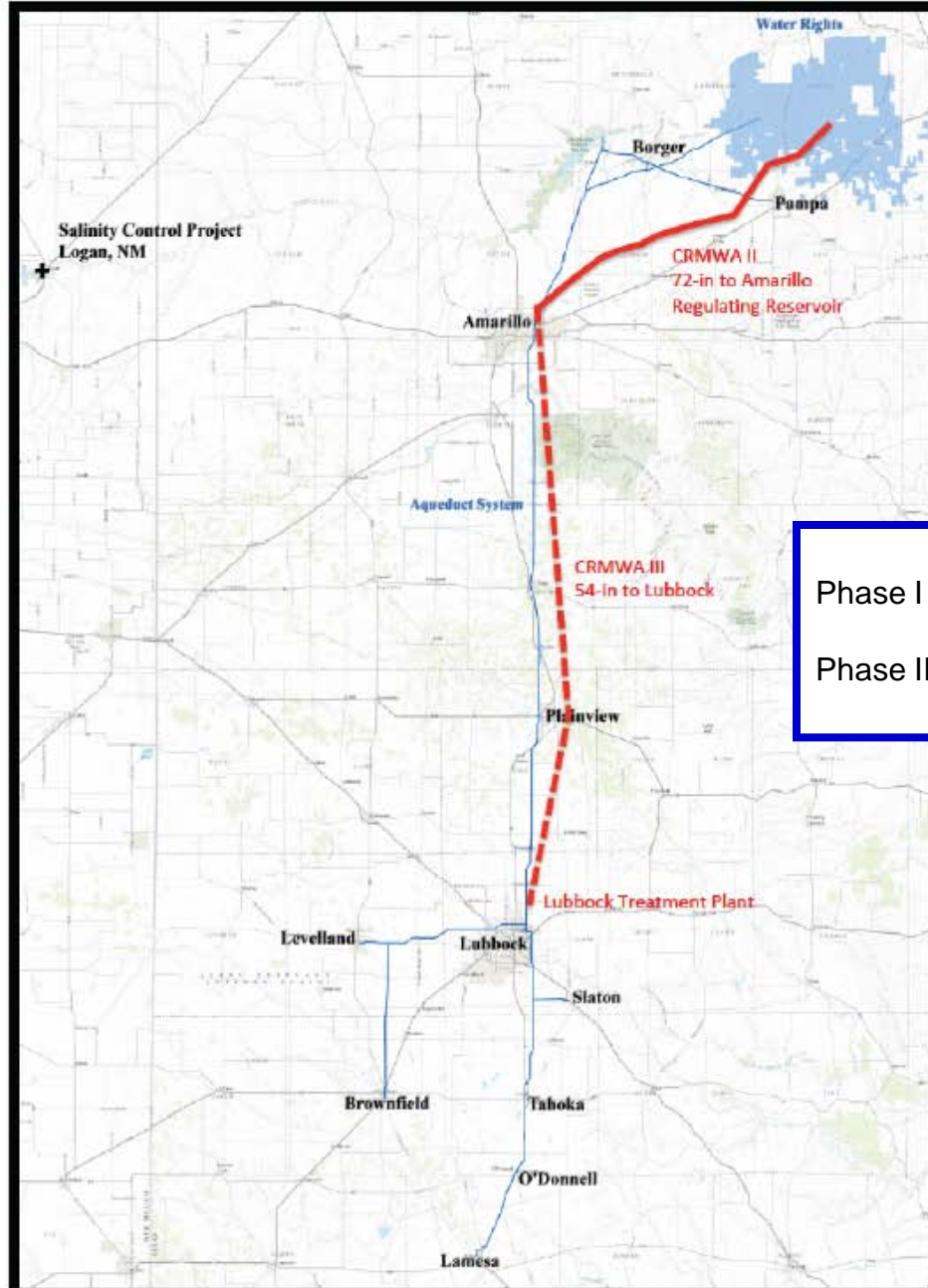
- No water from Lake Meredith Since 2012
- Line from well field is not large enough

Long Term (25 years) – Increase Delivery Capacity to all Cities
Beyond Original Delivery Capacity



Option 1

Option 2



Phase I Short Term – 
Phase II Long Term – 

OPTION 1

Phase I (5-10 years) - **————**
New 72" pipe from well field to
Amarillo

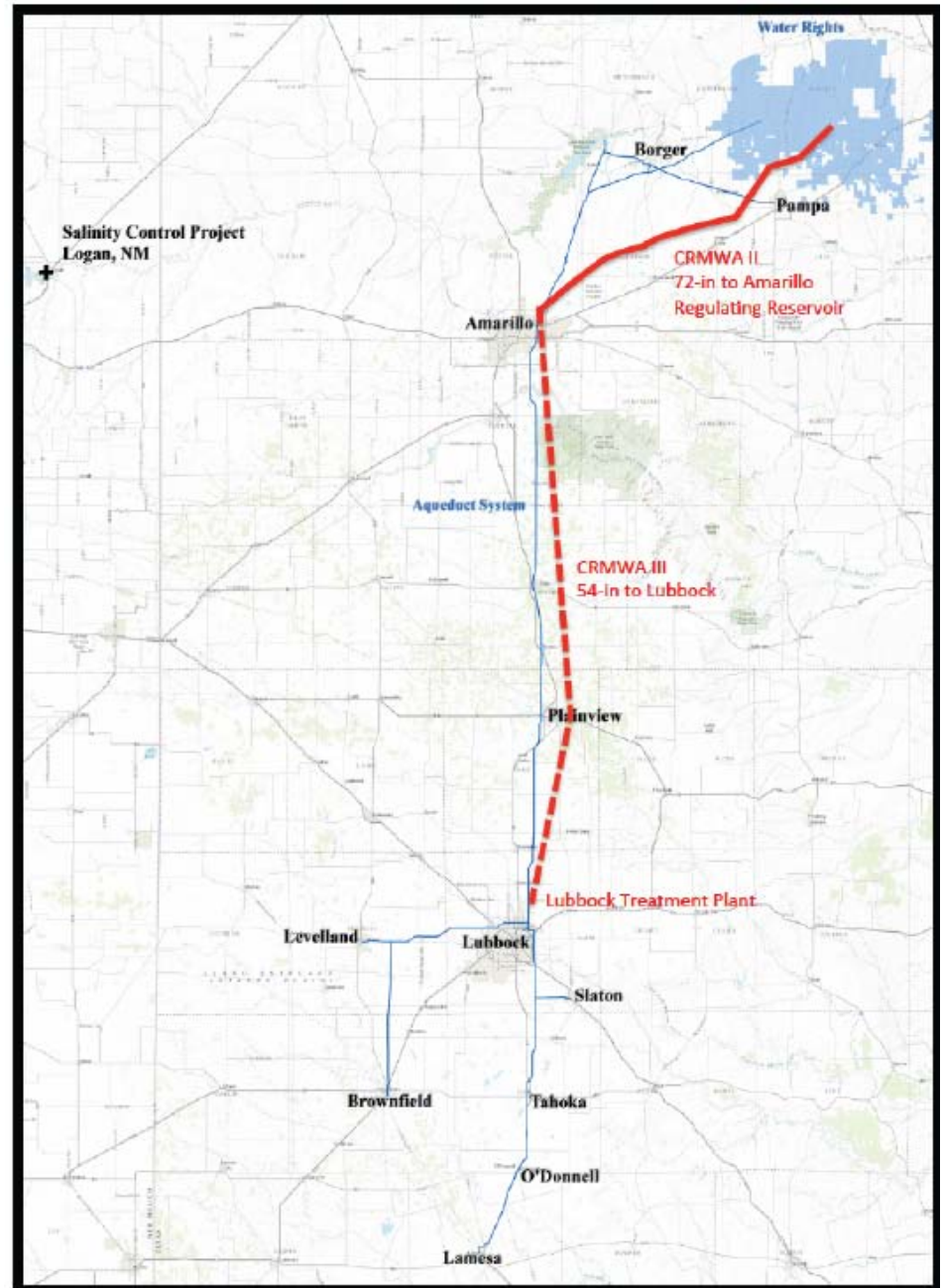
- Delivery to Design Capacity
- Excess Capacity for Phase II

Cost: \$311 million

Phase II (25 years) - **-----**
New 54" pipe from Amarillo to
Lubbock

COST: \$228 million

TOTAL COST - \$539 million

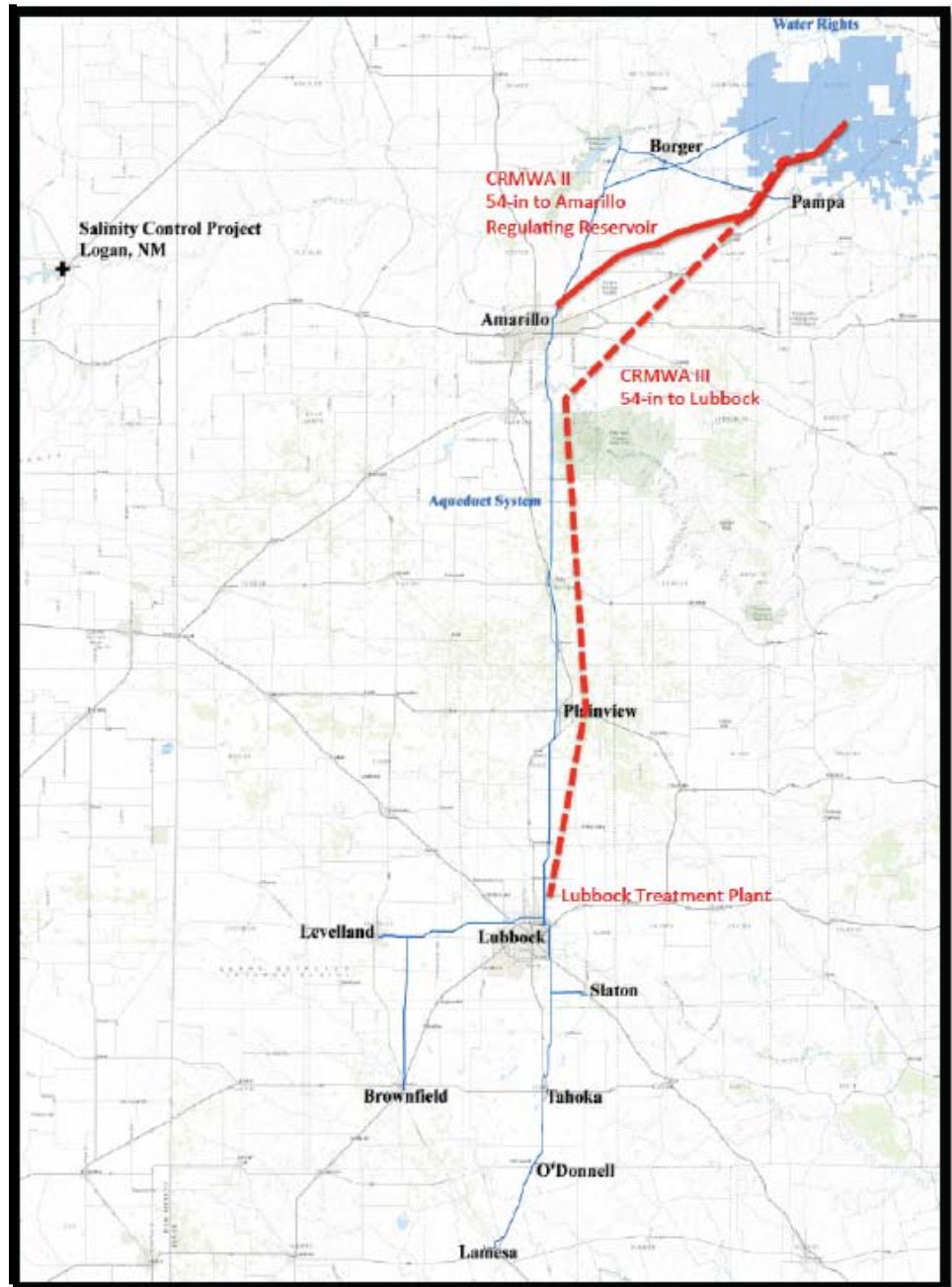


OPTION 2

Phase I (5-10 years) - **————**
New 54" pipe from well field to
Amarillo
Cost: \$193 million

Phase II (25 years) - **- - - -**
New 54" pipe from Well Field to
Lubbock
COST: \$417 million

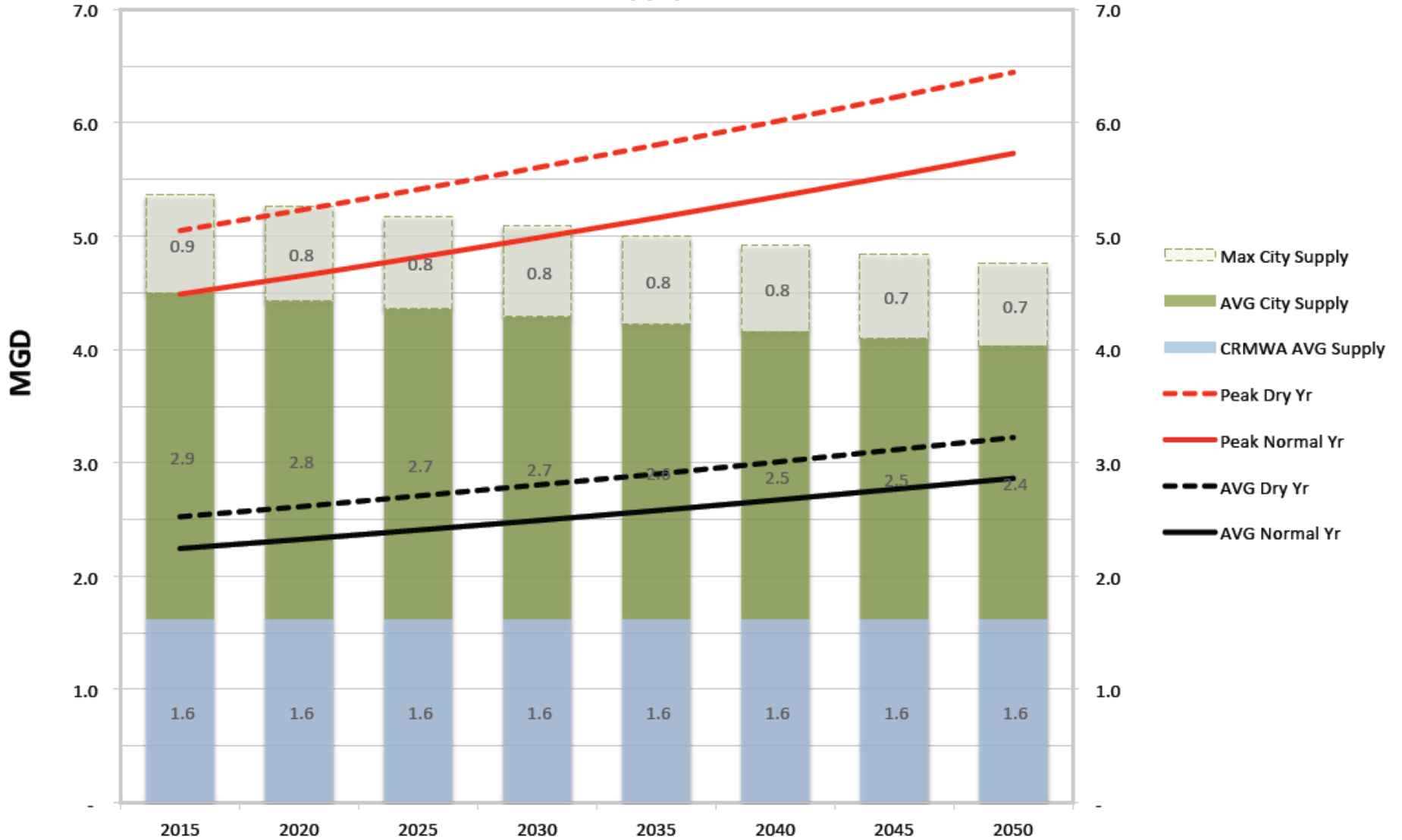
TOTAL COST - \$610 million



CITY OF LEVELLAND

Projected Demand vs. Supply

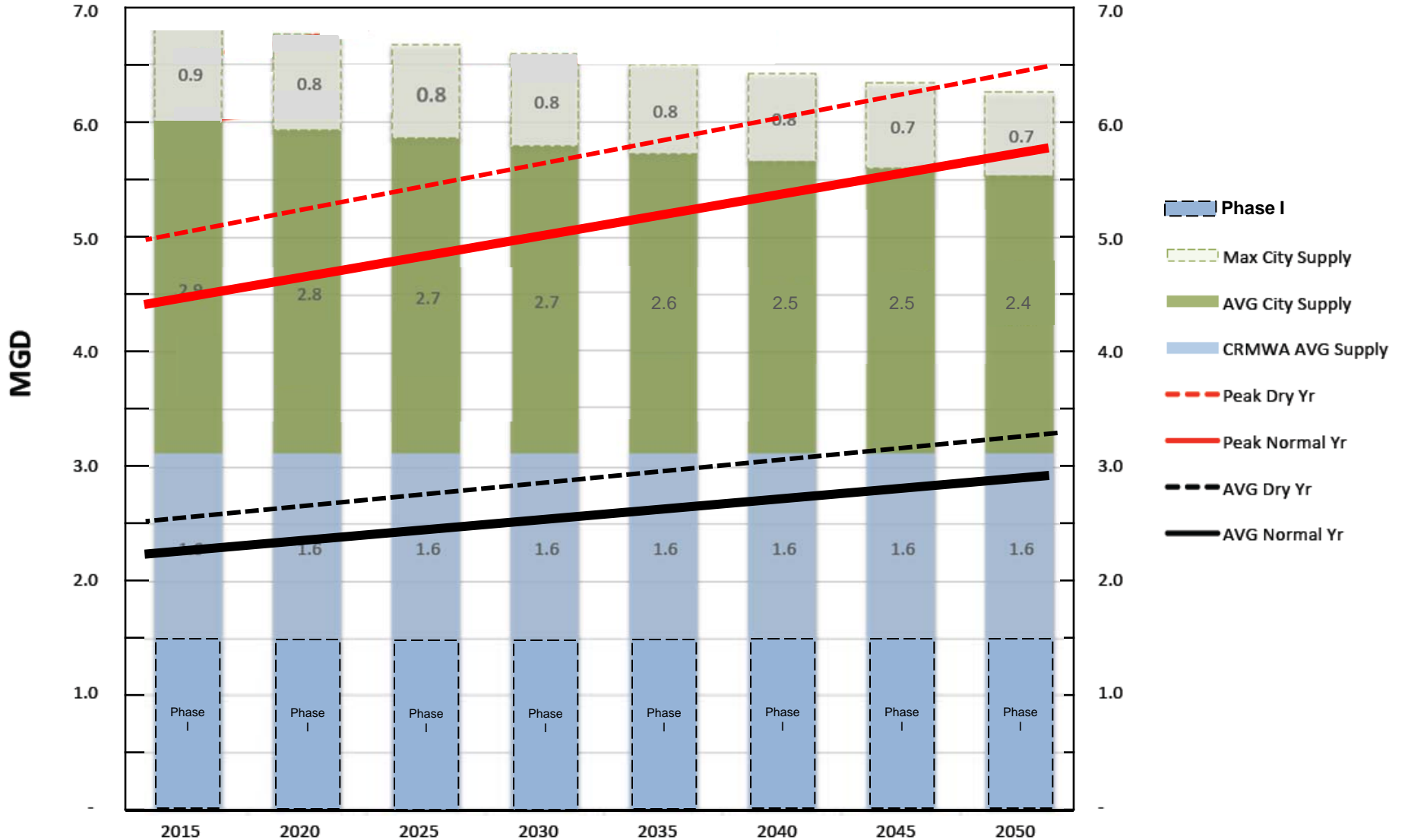
Current Supply



CITY OF LEVELLAND

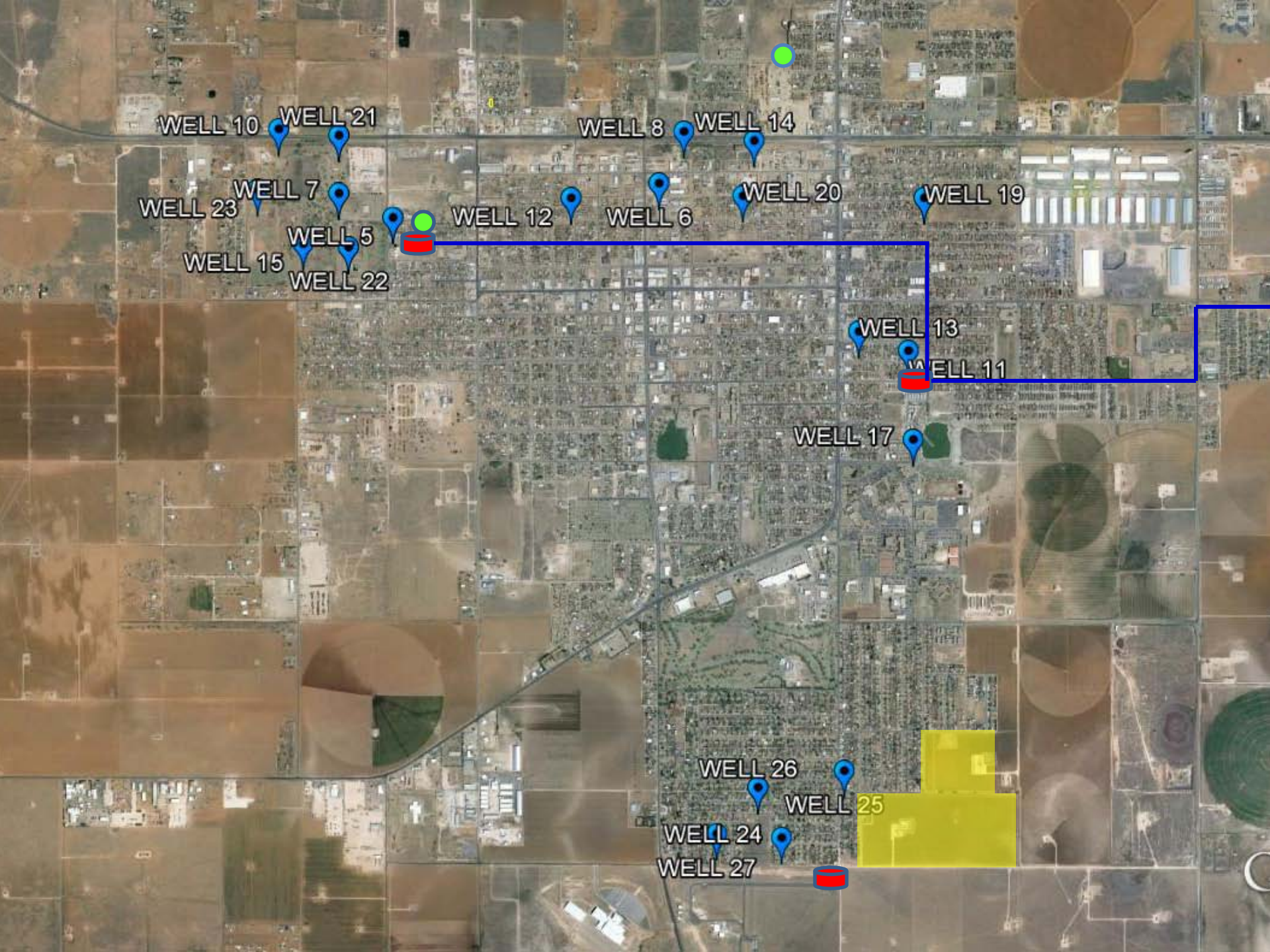
Projected Demand vs. Supply

Phase I Completed



City of Levelland CRMWA Debt Service Requirements

	USBR	Series 1999	Series 1999	Series 2005	2006 Bonds	2009 Bonds	2011 Bond	Total
2014	\$108,279	\$163,286	\$29,598	\$60,541	\$109,701	\$44,587	\$111,274	\$629,280
2015	\$108,202	\$143,765	\$25,128	\$78,770	\$109,722	\$44,681	\$111,287	\$623,570
2016	\$108,482	\$129,671	\$21,735	\$91,785	\$109,739	\$44,711	\$111,259	\$619,398
2017	\$108,233	\$129,685	\$21,679	\$91,853	\$109,745	\$44,702	\$111,242	\$619,156
2018	\$200,280	\$129,528	\$21,740	\$92,018	\$109,732	\$44,746	\$111,254	\$711,316
2019		\$129,793	\$35,615	\$91,970	\$109,695	\$44,888	\$111,255	\$525,235
2020		\$54,193	\$18,967	\$180,910	\$109,707	\$44,932	\$111,290	\$522,019
2021				\$244,609	\$109,735	\$44,864	\$111,284	\$512,513
2022				\$244,760	\$109,709	\$44,841	\$111,263	\$512,595
2023				\$244,983	\$109,705	\$44,819	\$111,236	\$512,766
2024				\$245,343	\$109,770	\$46,195	\$111,250	\$514,582
2025				\$102,297	\$109,807	\$44,916	\$111,271	\$370,316
2026					\$109,750	\$44,983	\$111,261	\$268,020
2027					\$45,712	\$45,092	\$111,268	\$204,099
2028						\$66,456	\$111,281	\$179,765
2029						\$25,705	\$111,264	\$138,998
2030							\$111,240	\$113,270
2031							\$37,078	\$39,109



WELL 10 WELL 21

WELL 8 WELL 14

WELL 23 WELL 7

WELL 12 WELL 6 WELL 20

WELL 19

WELL 15 WELL 5 WELL 22

WELL 13

WELL 11

WELL 17

WELL 26

WELL 25

WELL 24

WELL 27



Adjournment.