Rincon WHEN: Water Habitat Energy Nexus

Overview presented to the
USIBWC Upper Rio Grande Citizens Forum
January 11, 2018

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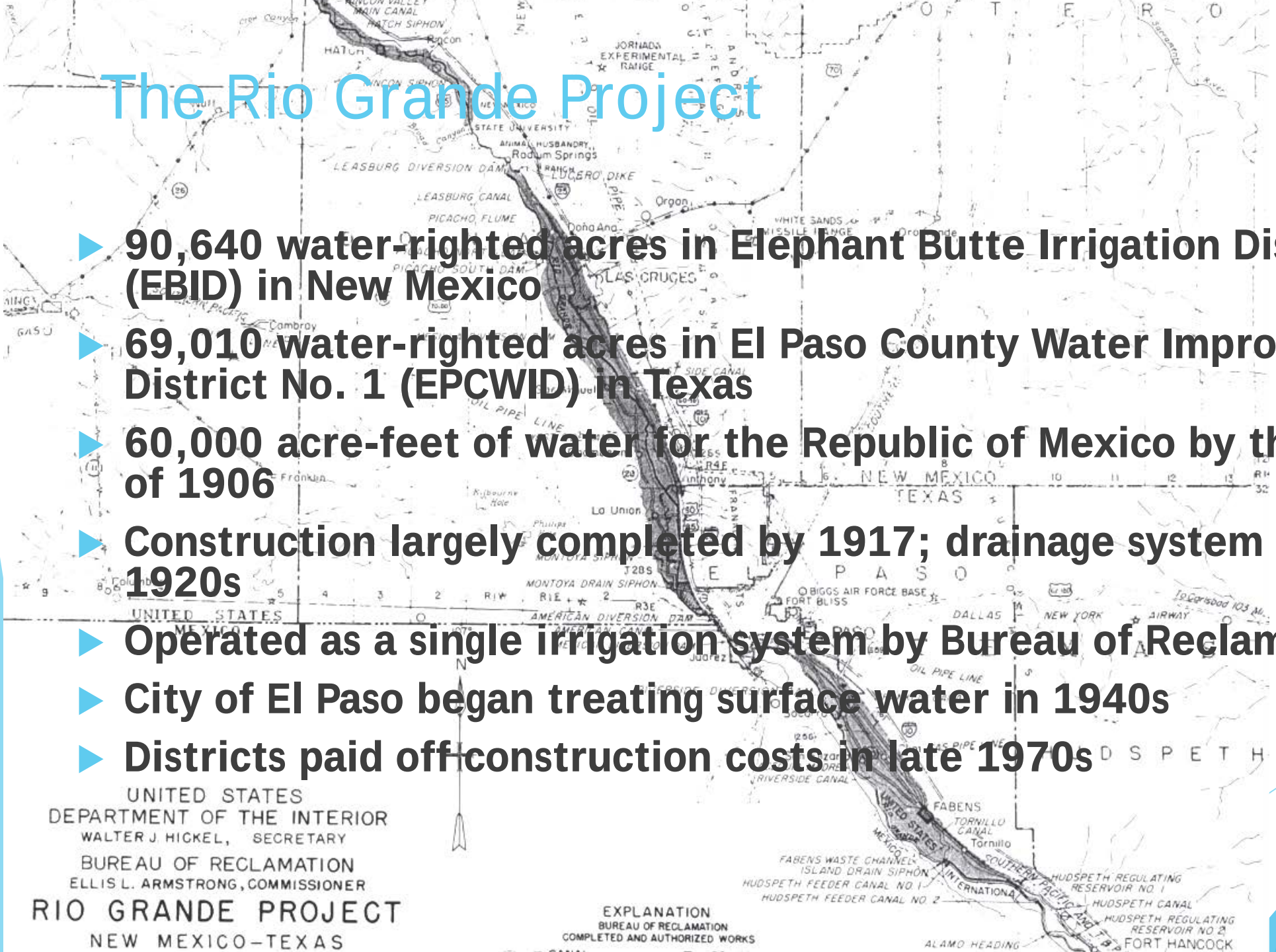
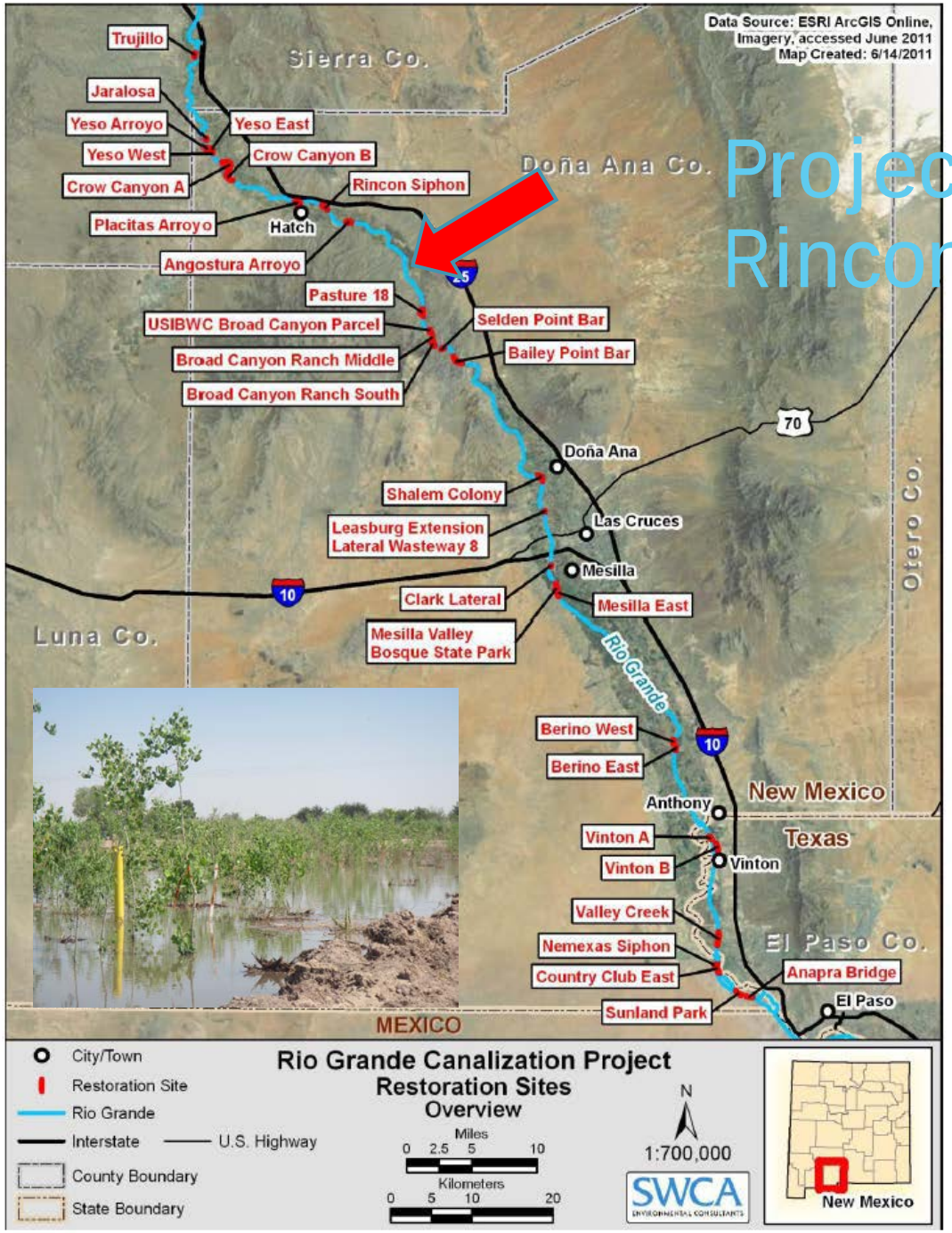
Elephant Butte Irrigation District

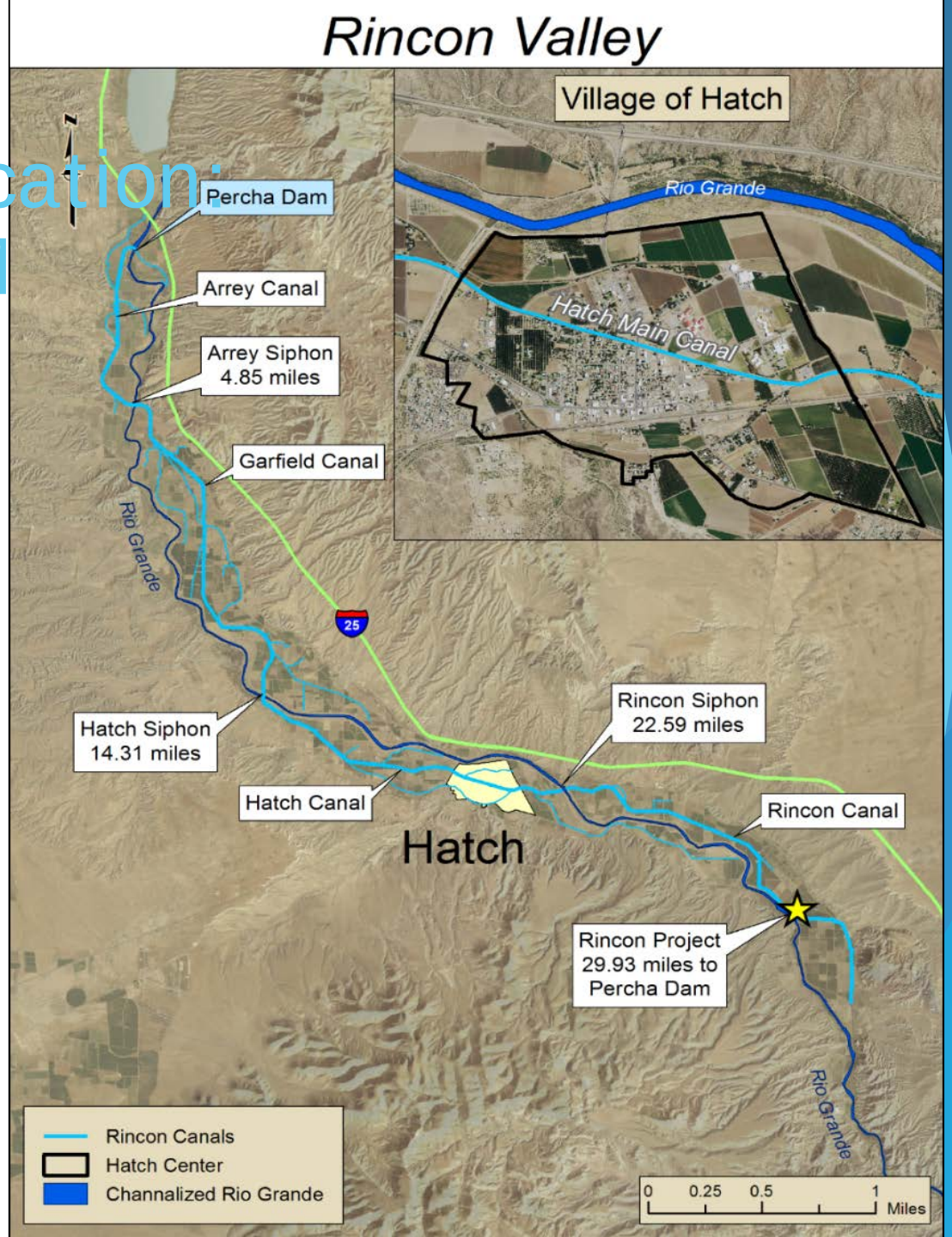
The Rio Grande Project

- 90,640 water-righted acres in Elephant Butte Irrigation District (EBID) in New Mexico
- 69,010 water-righted acres in El Paso County Water Improvement District No. 1 (EPCWID) in Texas
- 60,000 acre-feet of water for the Republic of Mexico by the Treaty of 1906
- Construction largely completed by 1917; drainage system built in 1920s
- Operated as a single irrigation system by Bureau of Reclamation
- City of El Paso began treating surface water in 1940s
- Districts paid off construction costs in late 1970s



Project Location: Rincon, NM

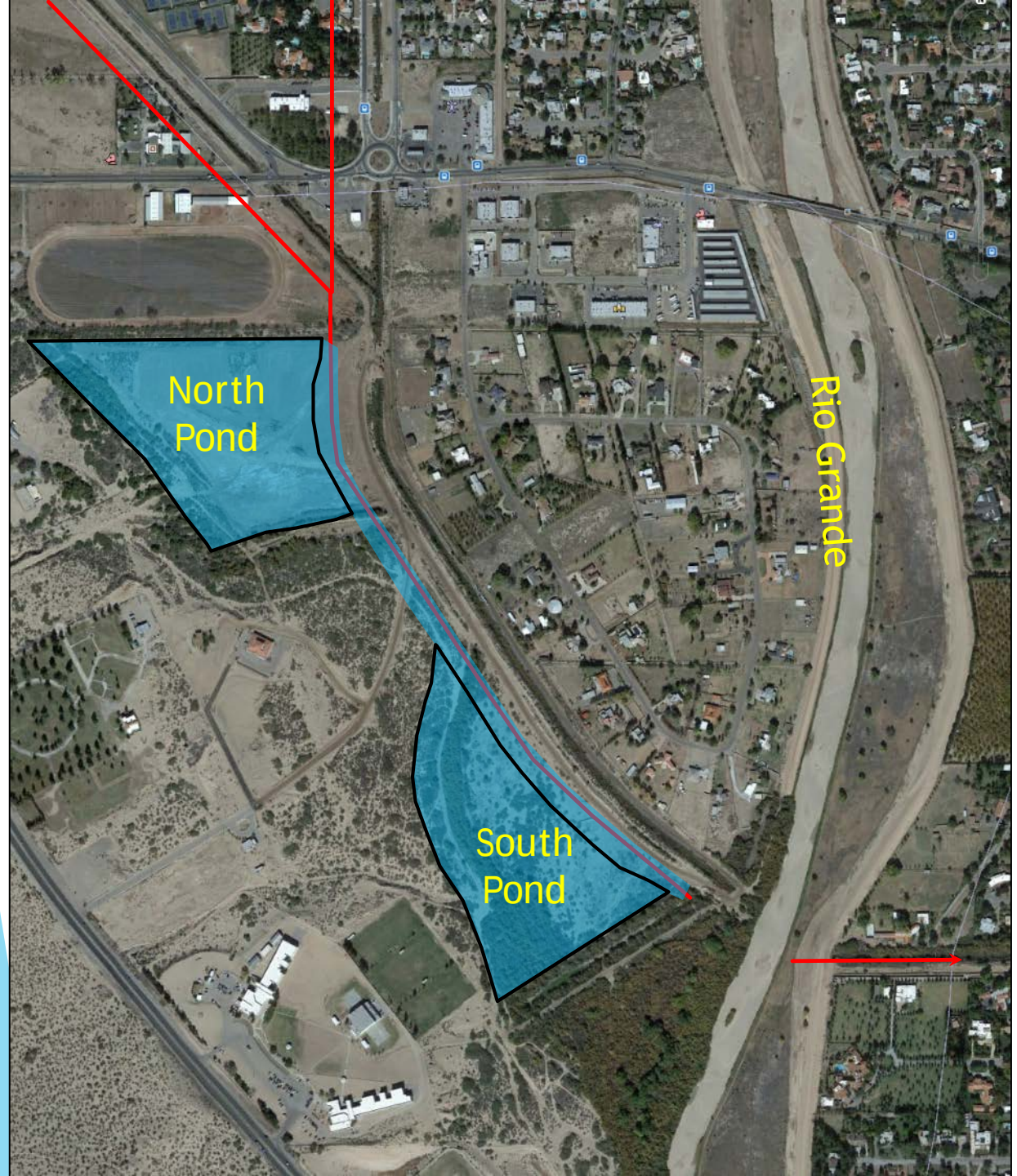




Selden Drain

Multi-objective project

- Flood control: Protect local neighborhoods
- Water supply: Storm water capture, infiltration
- Habitat: Topography and vegetation create riparian meadow, forest zones
- Water Quality: Mitigate E. coli loading
- Research/Education: Partners from NMED and BSA
- An Eagle Scout Project on Memorial Day Weekend 2015 turned the project into a community park with a trail and picnic table



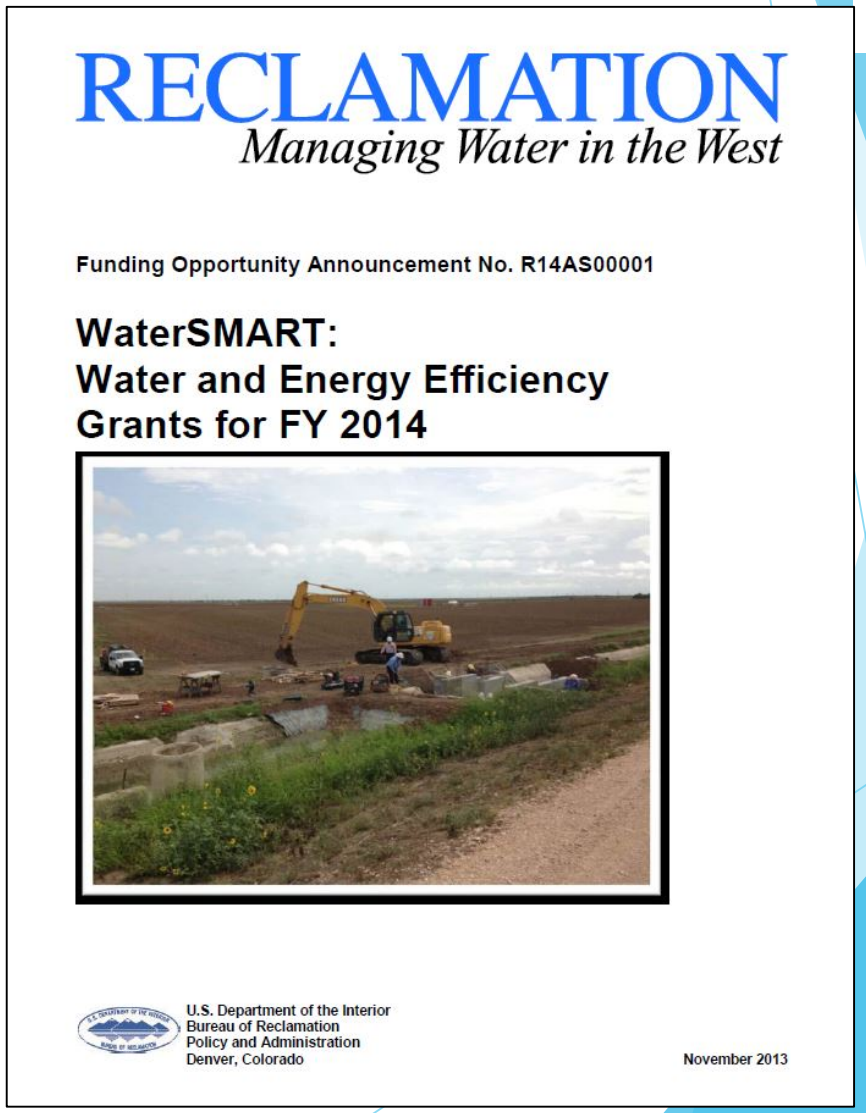
Diez Lagos

Multi-objective project

- Flood control: Protect local neighborhoods
- Water supply: Storm water capture. Release storm water for downstream demand, keep more water in upstream reservoir storage
- Habitat: Topography and vegetation create riparian meadow, forest zones
- Water Quality: Mitigate E. coli loading
- Research/Education: Partners from NSF and NMSU

2014 WaterSMART Grant

- Rincon WHEN
  - Water
  - Habitat
  - Energy
  - Nexus



RECLAMATION
Managing Water in the West

Funding Opportunity Announcement No. R14AS00001

WaterSMART:
Water and Energy Efficiency Grants for FY 2014

U.S. Department of the Interior
Bureau of Reclamation
Policy and Administration
Denver, Colorado

November 2013

2014 WaterSMART Grant

- **Funding:**
- $808,557 Federal Funding – Bureau of Reclamation
- $100,000 Cash from Bill Halsell – EBID Member
- $248,000 Quit Claim of 31 acres from JP and Rosie Lack – EBID Member
- $52,000 Easement 7.42 acres from Nick and Rene Carson – EBID Member
- $712,196 EBID Cost share

Total Project Budget: 1,810,953

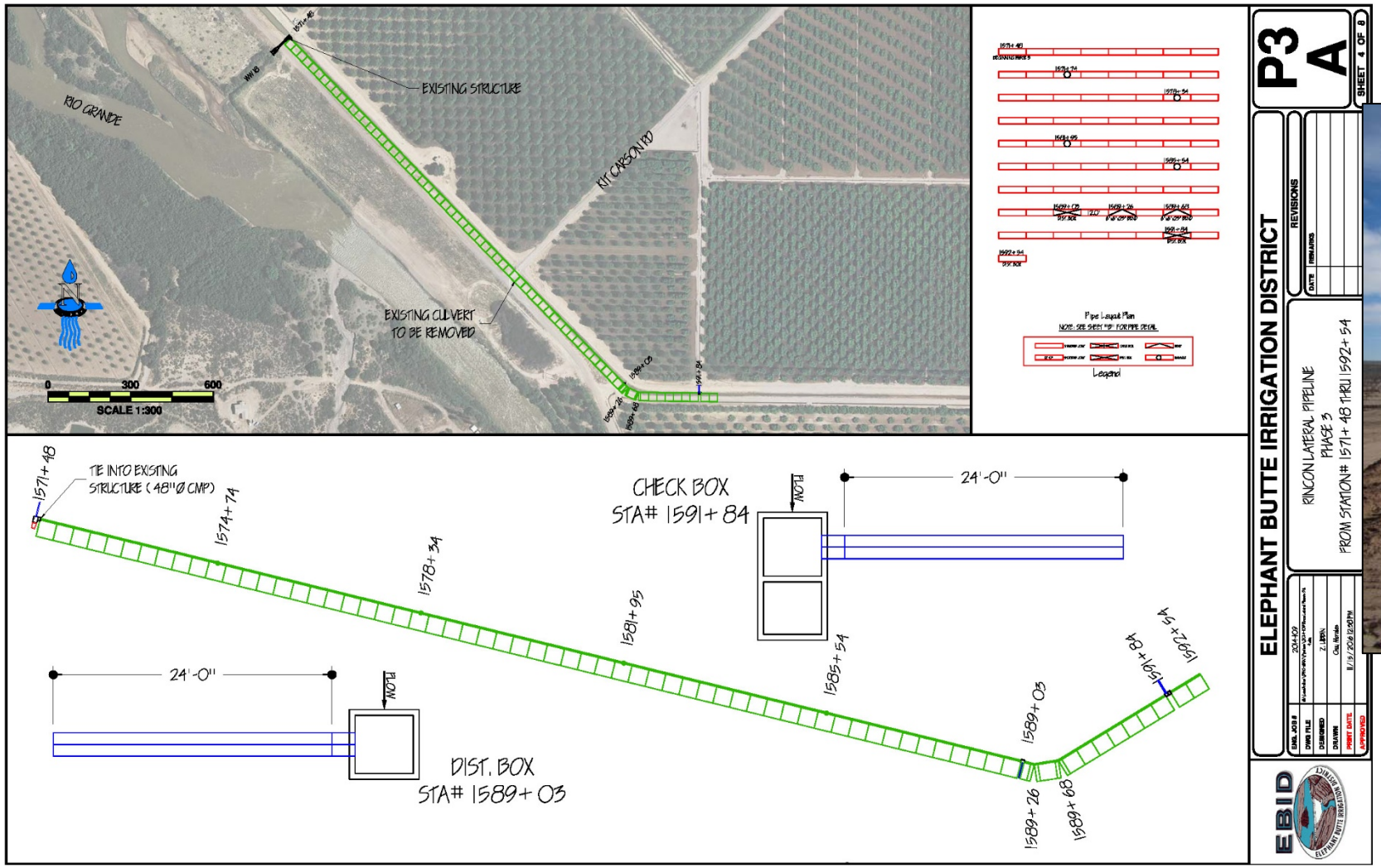
Water Nexus

- Pipe 12,830 feet of the tail end of the Rincon Lateral
  - Eliminate seepage and evaporation in this 12k foot stretch
  - Improve delivery timing and head pressure
- Supplemental Diversion at Wasteway 18
  - Improved timing of delivery
- Widen Rincon Drain for stormwater and groundwater drainage improvements
  - Improves groundwater quality
  - Improves quality of stormwater into the Rio Grande
- New water to pond from arroyo channel improvements
  - Introduces “new water” into drain and river that previously caused flooding problems

Water Conservation
Lateral Seepage Reduction

	Lateral seepage reduction	Source
A	12,830 feet	Project Plan
B	2.43 miles	A x 5,280
C	385 AF/mile/year	Haddad, 2005
D	936 AF seepage reduct./year	B x C

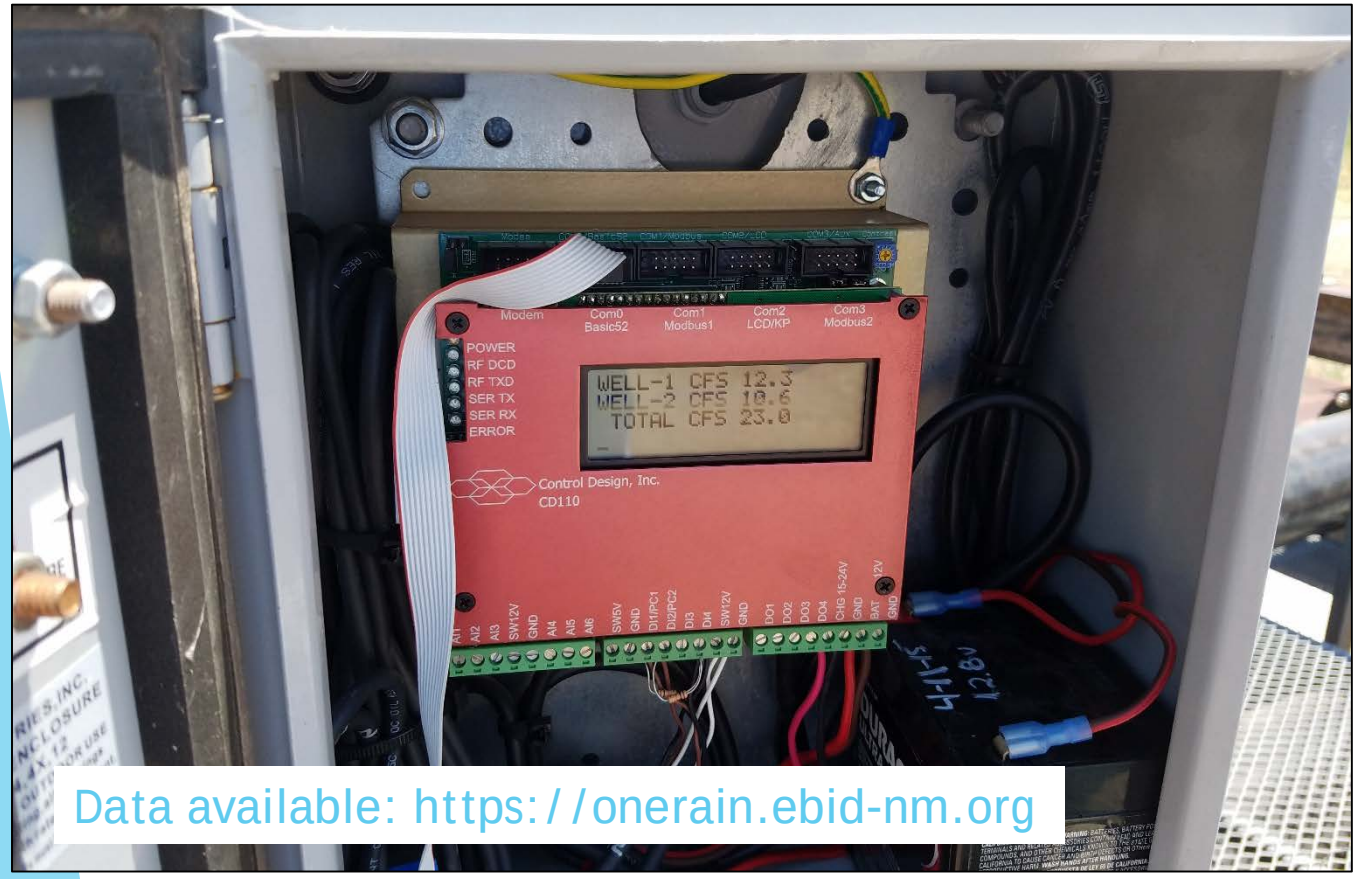
Rincon Lateral Piping



Water Conservation
WW 18 pumps

	Main On-farm deep percolation reduction	Source
E	2,242 acres	Project Plan
F	3.5 ft/year Consumptive Irig. Req't	Est. SS 101
G	7,847 AF/year Consumptive Irig. Req't	E x F
H	55% irrigation eff	Typical AEN 478
J	14,267 Farm Delivery Req't	G/H
K	65% irrig eff	Planned
L	12,072 Farm Delivery Requirement	G/K
M	**2,195 AF FDR reduction/year**	J - L
	Conveyance Loss reduction	**Source**
N	25% main loss	Est.
O	**3,773 AF main loss reduction/year**	N x (1+N) x L

Rincon WHEN – Water Conservation Improved Metering



Data available: https://onerain.ebid-nm.org

Habitat Nexus

- Widen Rincon Drain for stormwater and groundwater drainage improvements –Tonoco Pond
  - Create native riparian habitat
  - Improve groundwater drainage
  - Pump water from “pond” to river when drain wont flow
  - Create capacity for stormwater flows
- New water to pond from arroyo channel improvements
  - Water quality improvements for stormwater
  - Natural irrigation of habitat

Habitat Nexus

- 21.25 acres Diverse Habitat
- 4.5 acres of Habitat suitable for Willow Flycatcher
  - 4000 black willow whips
- Widened drain
- Don’t disturb existing habitat
- Small pump for drain flow

Energy Nexus

- Install 13kW of photovoltaic array along piped lateral
  - Offset energy required by supplemental diversion pumps
  - New use for space along lateral after piping
  - Demonstrate use of land for energy production

Questions?

EBID

ELEPHANT BUTTE IRRIGATION DISTRICT