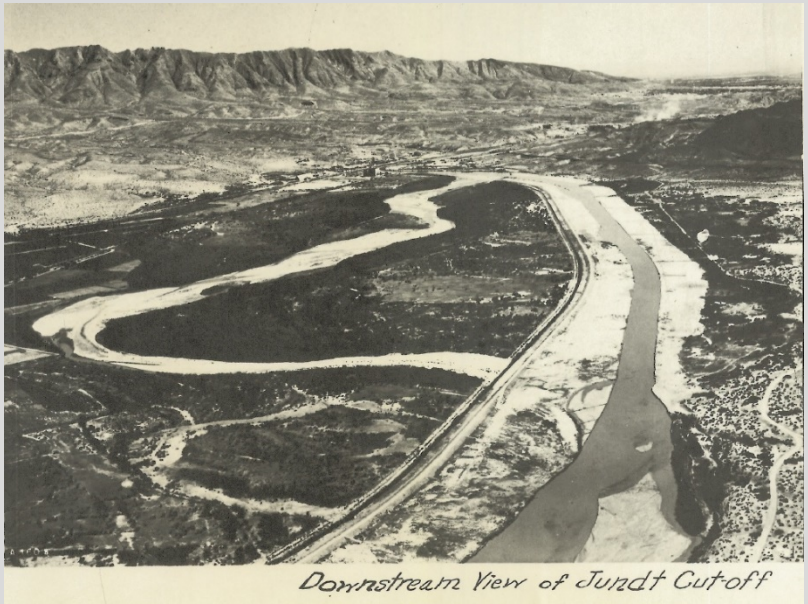
Aquatic Habitat Restoration in the Rio Grande Canalization Project

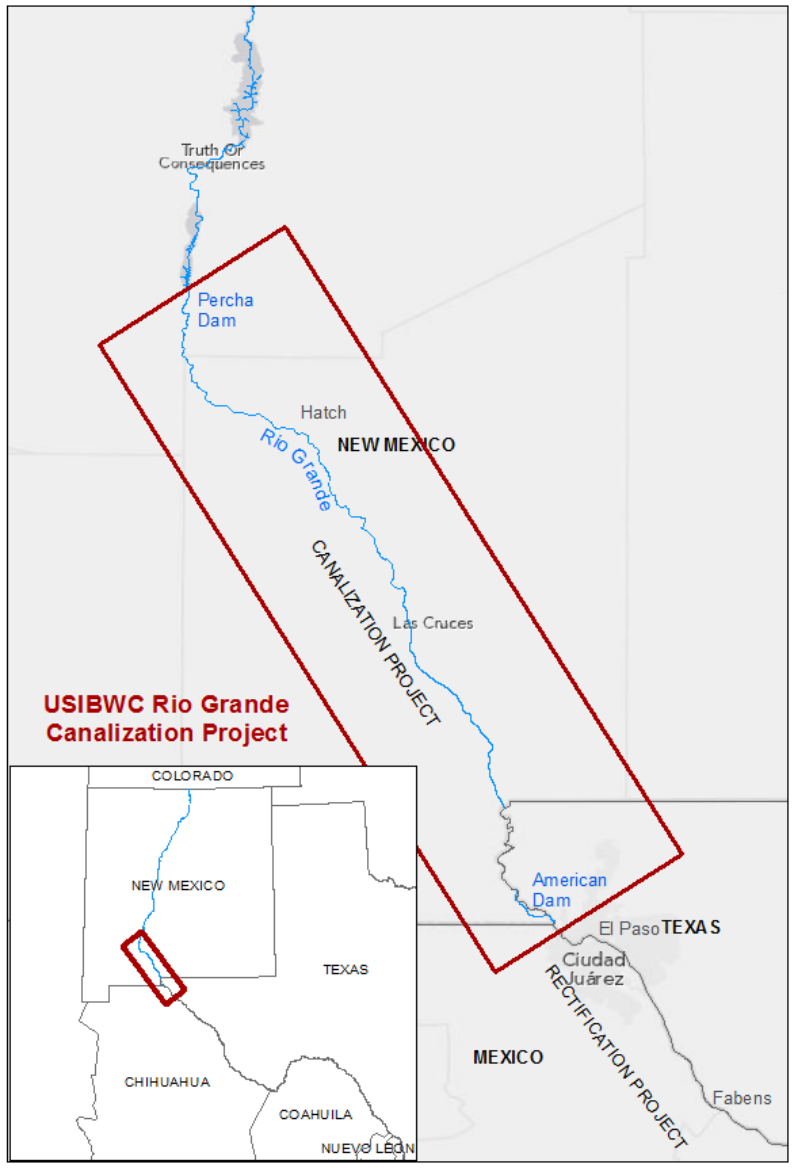
Elizabeth Verdecchia
International Boundary and Water Commission, U.S. Section

Rio Grande Citizens Forum February 2021

Rio Grande Canalization Flood Control Project

Canalization Project constructed in early 1940s to facilitate deliveries under the 1906 Convention with Mexico and to control floods





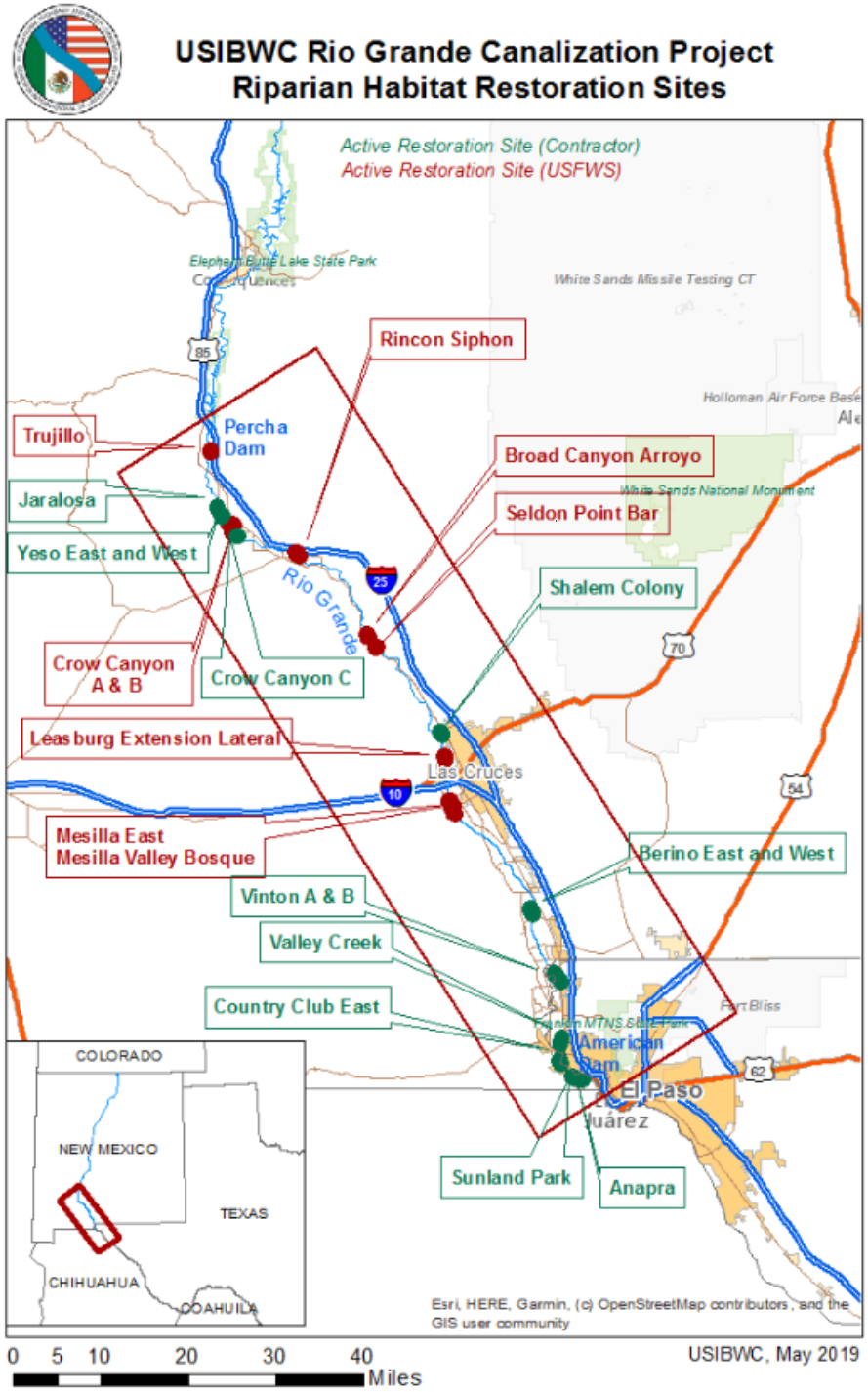
Rio Grande Canalization Project Record of Decision

USIBWC signed Record of Decision (ROD) June 2009

- Long term management of the river corridor
  - Mission requirements (water delivery, flood control)
- Includes environmental measures
  - Habitat restoration - 550 acres, including aquatic habitat
  - Environmental Water Transaction Program for water rights/irrigation

Habitat Restoration

- 30 original conceptual sites totaling 550 acres
- Target habitats:
  - Open riparian woodland
  - Riparian woodland
  - Riparian forest
  - Dense riparian shrub (for endangered birds)
  - Riparian savanna
  - Saltgrass meadow
  - Screwbean mesquite
  - Aquatic



Restoration Accomplishments 2009 to 2020

- Cooperative Agreements with USFWS, NM State Parks, EBID, USBR
- **22 sites implemented (508 acres**)
  - 9 by USFWS
  - 13 by USIBWC environmental contractors
- Over **120,000 trees and shrubs** planted 2011-2020
- **500 acres of saltcedar** cleared
- 6 prescribed burns for saltcedar debris piles
- **55 shallow groundwater monitoring wells** installed
- Monitoring protocol established
- Acquired **47 acres of EBID-administered surface water rights**
- Constructed irrigation infrastructure and **irrigated 5 restoration sites**

- Main ROD requirements remaining are water rights acquisition and aquatic habitat restoration. These have been incorporated into USIBWC's long-term management of the RGCP in the River Management Plan.

Why Aquatic Habitat?

- Aquatic environments include many types of habitats:
  - Wetlands
  - open water
  - Ponds
  - riffles/runs
- support a variety of aquatic fauna:
  - Fish
  - benthic macroinvertebrates
  - Amphibians
  - Reptiles
  - shore birds
- serve multiple ecosystem functions
  - Water quality improvement
  - Flood storage
  - bankline erosion control
  - Wildlife habitat
- The purpose of this project is to create aquatic habitat, although USIBWC does not have objectives for specific types of aquatic habitat or species.

Stormwater channel Courchesne Nov 2018

Mesilla Valle Bosque SP ponds summer 2012

Aquatic Habitat Restoration

- 2009 Conceptual Restoration Plan suggested 4 sites for aquatic habitat
- USIBWC implemented Yeso West in 2017 – approx. 1 acre inset floodplain
- Three other sites were not implemented due to concerns about impacts to levee
- Aquatic restoration has more limited options than riparian habitat restoration
- Additional challenges due to water availability, dam operations, soil conditions, salinity, and water accounting due to potential interaction of groundwater and surface water
- Many projects need continued maintenance
- Water rights challenges

Yeso West restoration site, 2019

Environmental Assessment for Aquatic Habitat

- USIBWC awarded a contract in Sept 2018 to GSRC and subcontractors SWCA and GeoSystems Analytics for an Environmental Assessment of aquatic habitat restoration sites
- Contractors evaluated ten sites in a 2019 technical analysis, including soils, hydrology, vegetation data and wetland delineations
- Draft EA with 9 alternatives was posted for public comment in May 2019; Comment period was extended to August 2019.
- Based on public and stakeholder input, USIBWC re-evaluated preferred alternatives. USIBWC modified the contract with GSRC to assess feasibility of several additional sites. Contractors did a new technical analysis, and two new alternatives were added to the EA.
- The amended EA includes 11 alternatives (ten sites + No Action).
- EA and Technical reports assess feasibility, cost, water availability, offsets, water rights, species benefited, maintenance requirements, and constraints

Aquatic Habitat Sites

- Alternative A - No Action
- Alternative B - Yeso Arroyo
- Alternative C - Angostura Arroyo e
- Alternative D - Broad Canyon Arroyo
  Alternative E - Selden Point Bar
  Alternative F - Las Cruces Effluent
  Alternative G - Mesilla Valley Bosque State Park
- Alternative H - Downstream of Courchesne Gage
- Alternative I – Trujillo Restoration Site
- Alternative J – Montoya Intercepting Drain

- See Table 2-1 in Draft EA for summary of all sites

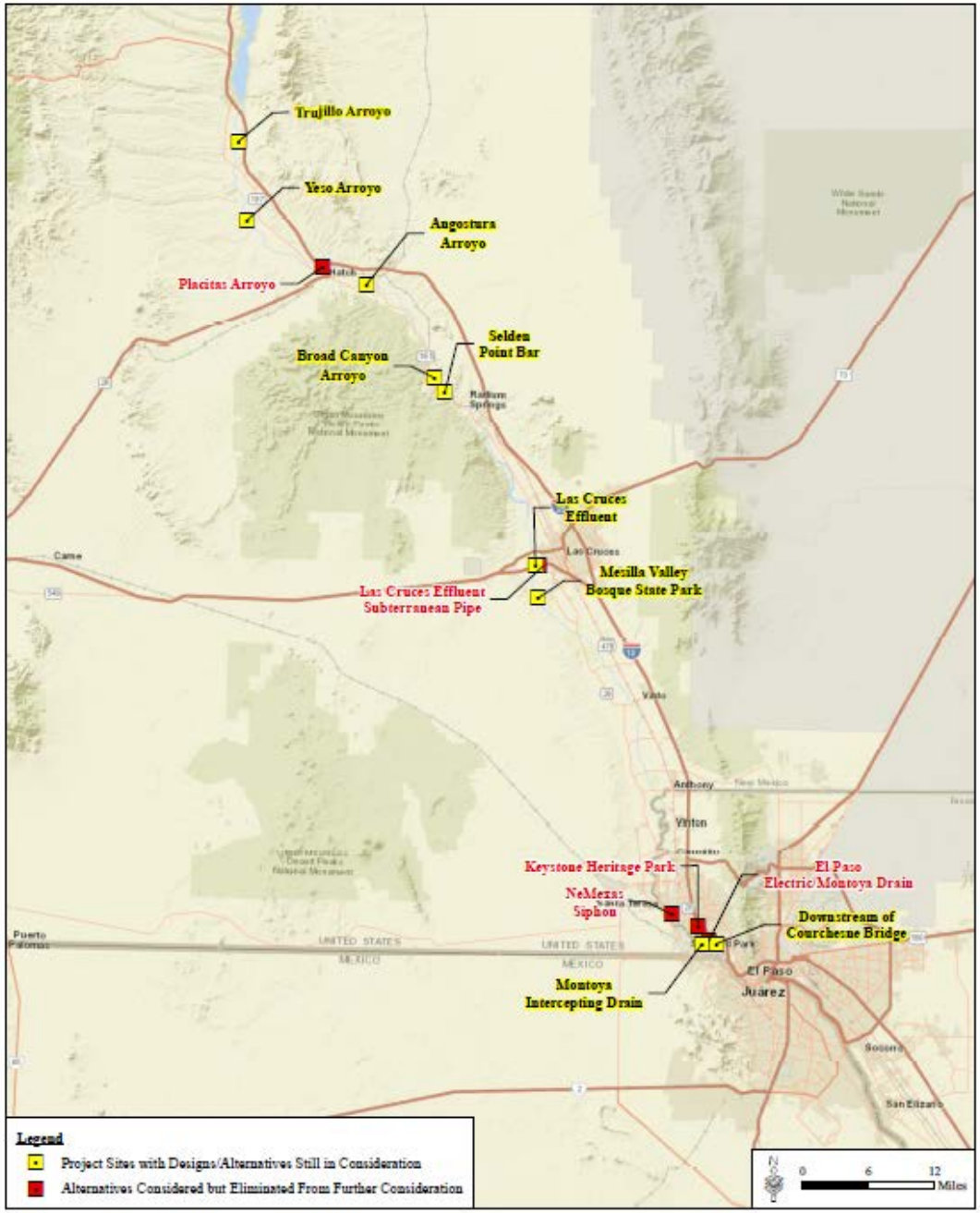


Figure A-2. Project Area Map Showing the Location of Project Sites Under Construction

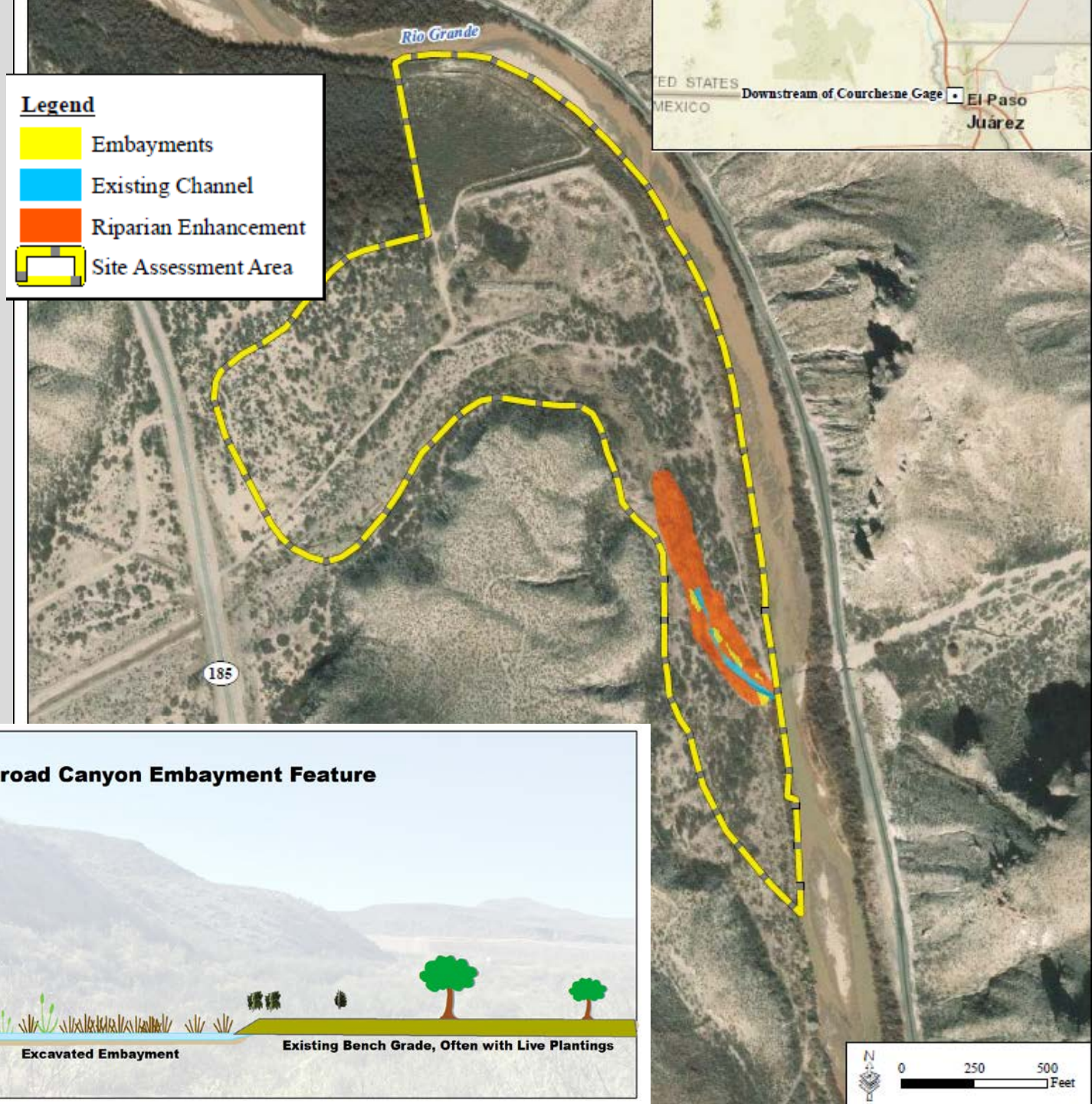
Basemap: ESRI World Street Map

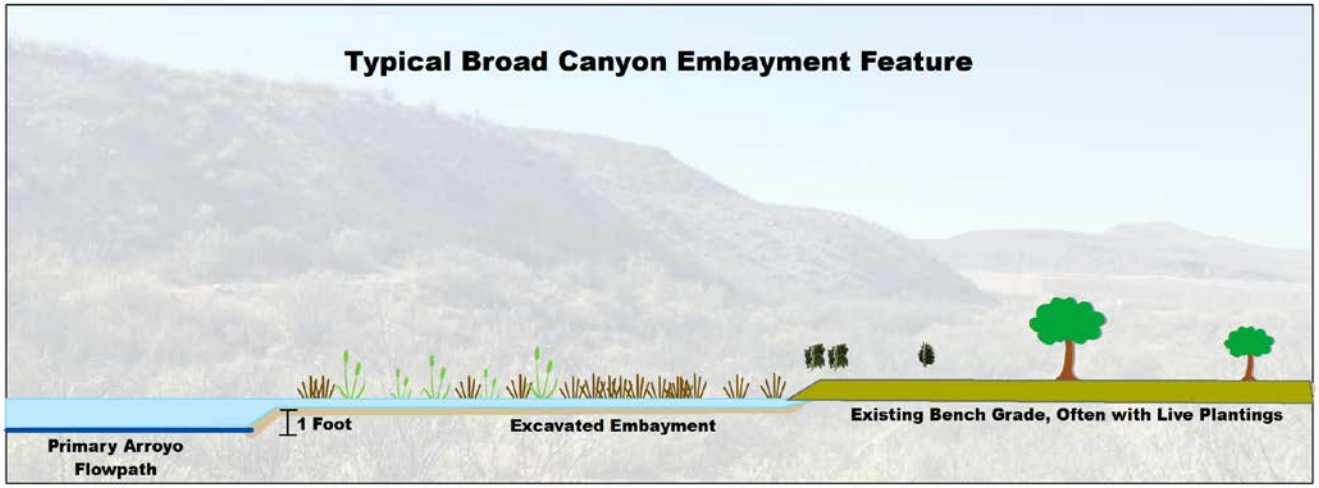
GSRC

January 2021

Broad Canyon Arroyo

Broad Canyon Arroyo

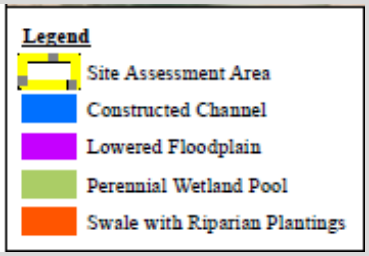




05 24 2019

Las Cruces Effluent

Las Cruces Effluent



2021 conceptual

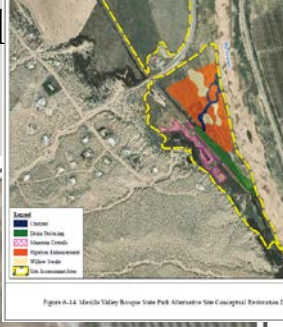
2019 conceptual

Mesilla Valley Bosque

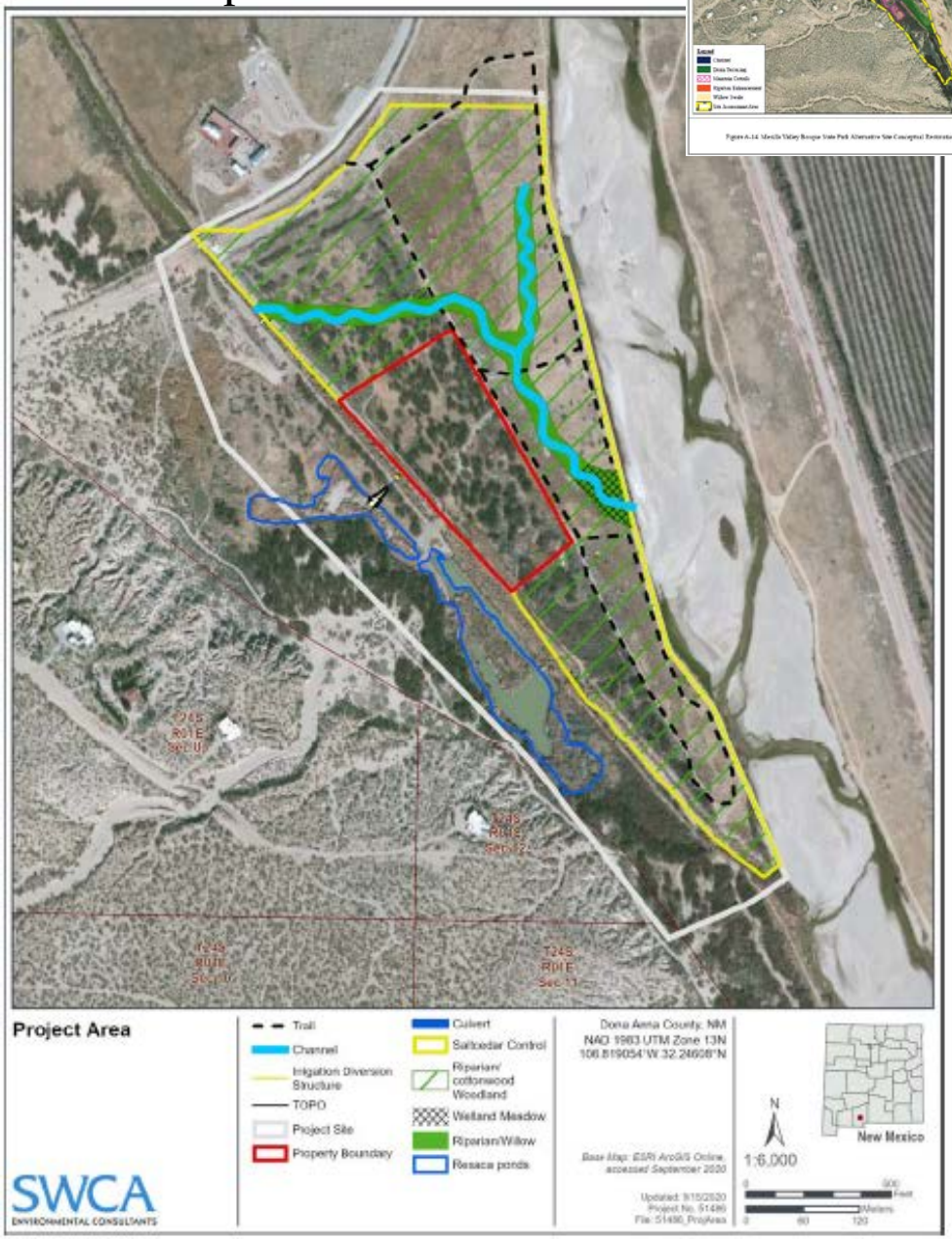
Picacho Drain (left) and ponds (right) 2018
Ponds (below) 2012

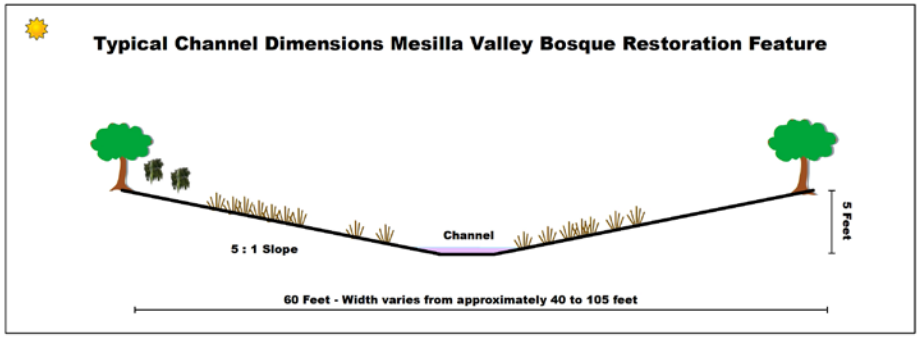
Mesilla Valley Bosque

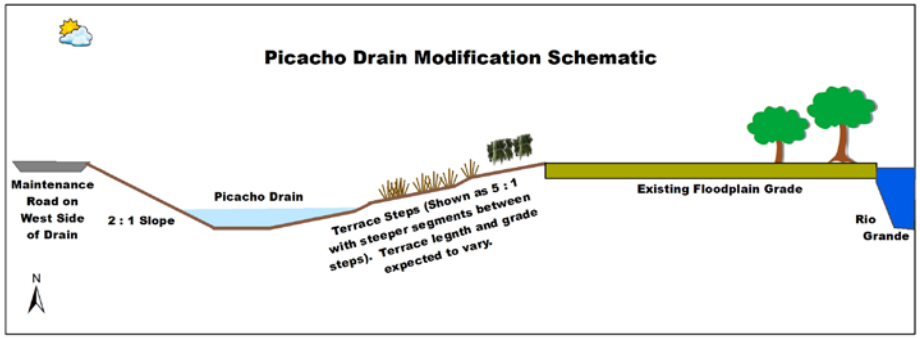
2019 conceptual



2021 conceptual

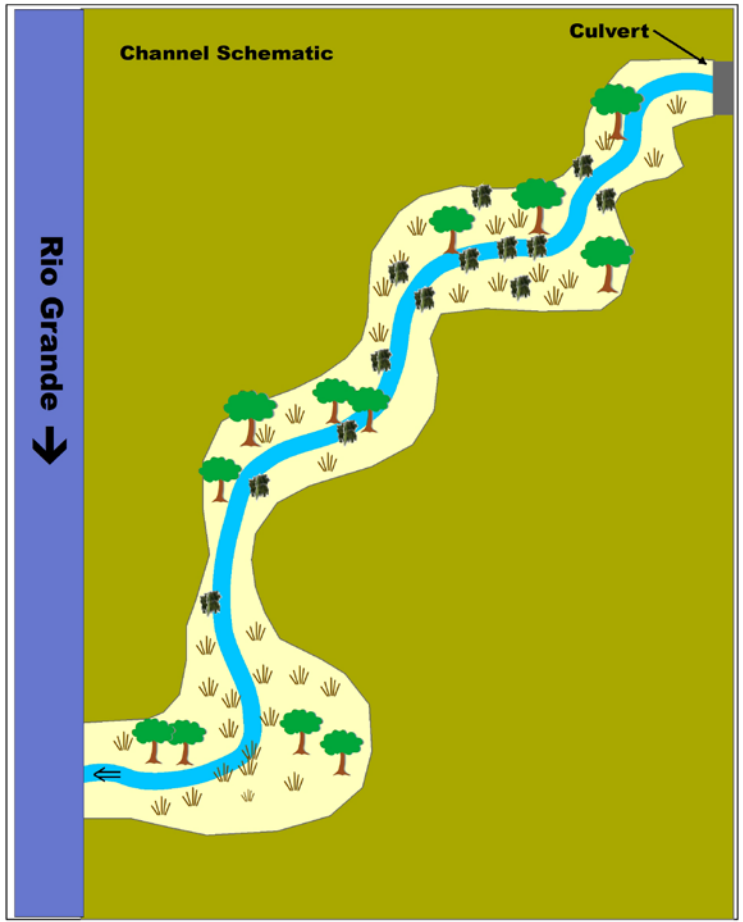


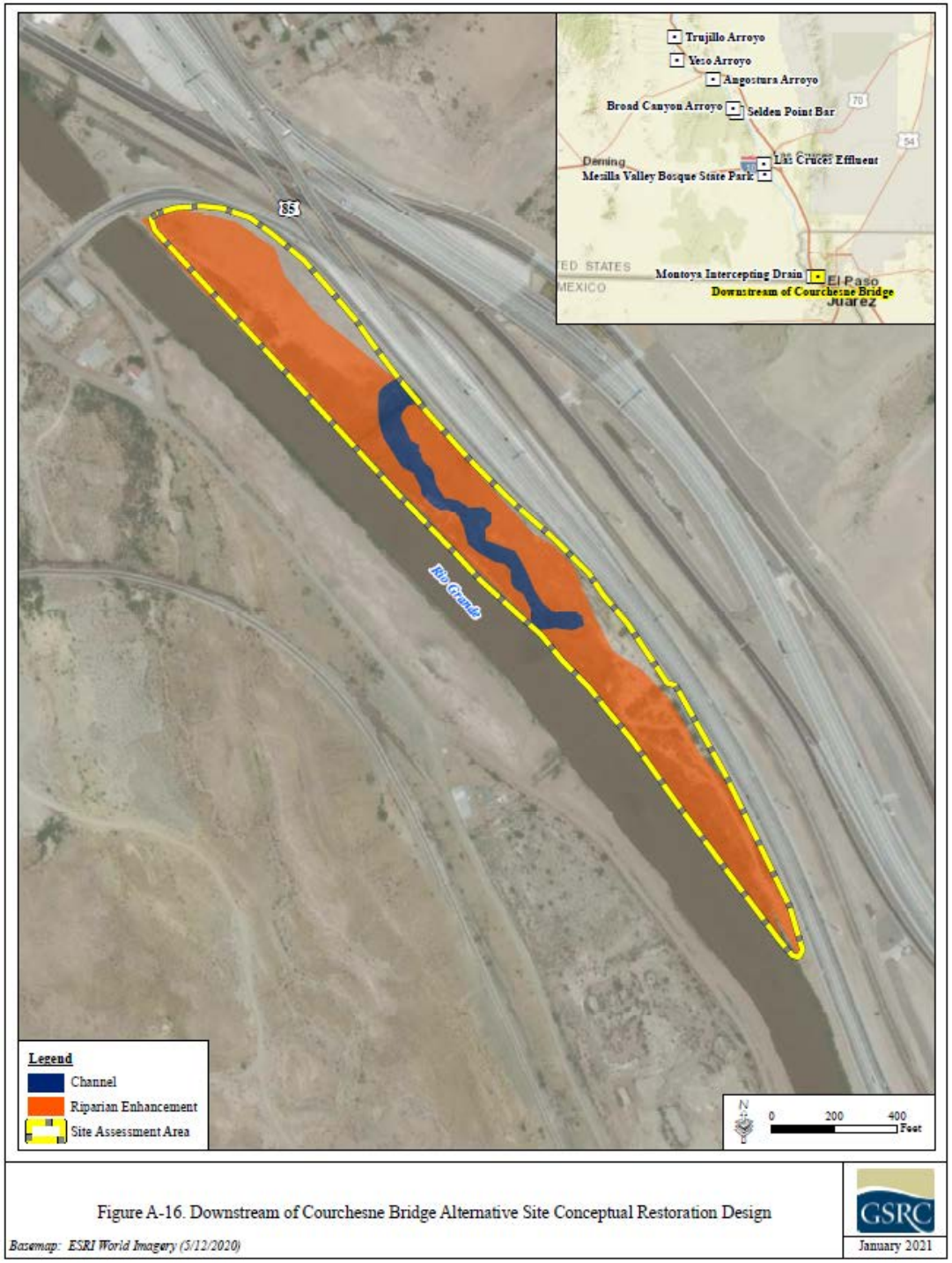




Below Courchesne Bridge

Below Courchesne Bridge





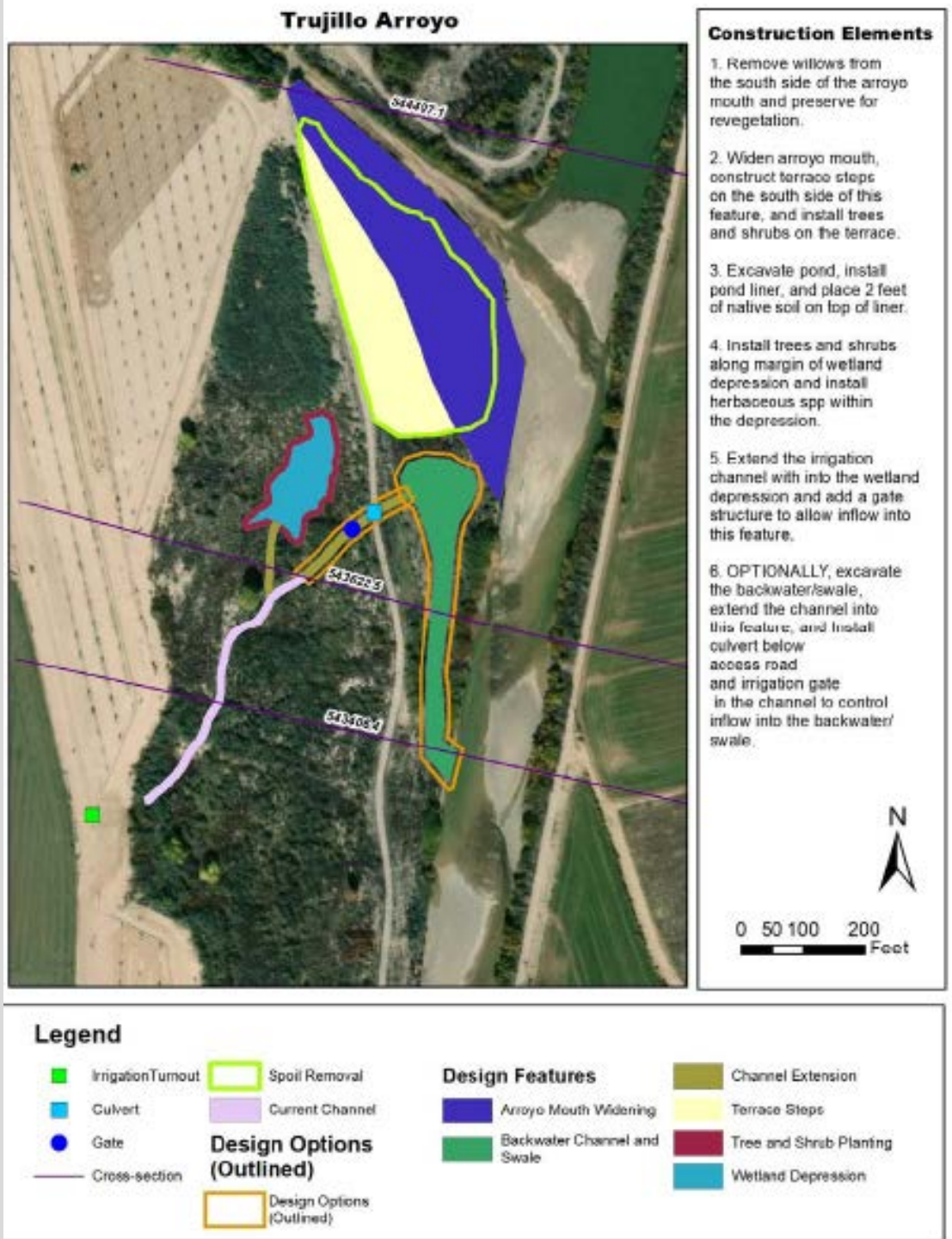
Trujillo Restoration Site

a. Willow and baccharis are widespread across the southern half of the project site

b. A mosaic of native and non-native grasses and woody plants comprise the northern half of the floodplain

c. View of Trujillo Arroyo looking towards the Rio Grande.

d. A large spoil pile of cobble and gravel occupies the northern end of the project site.



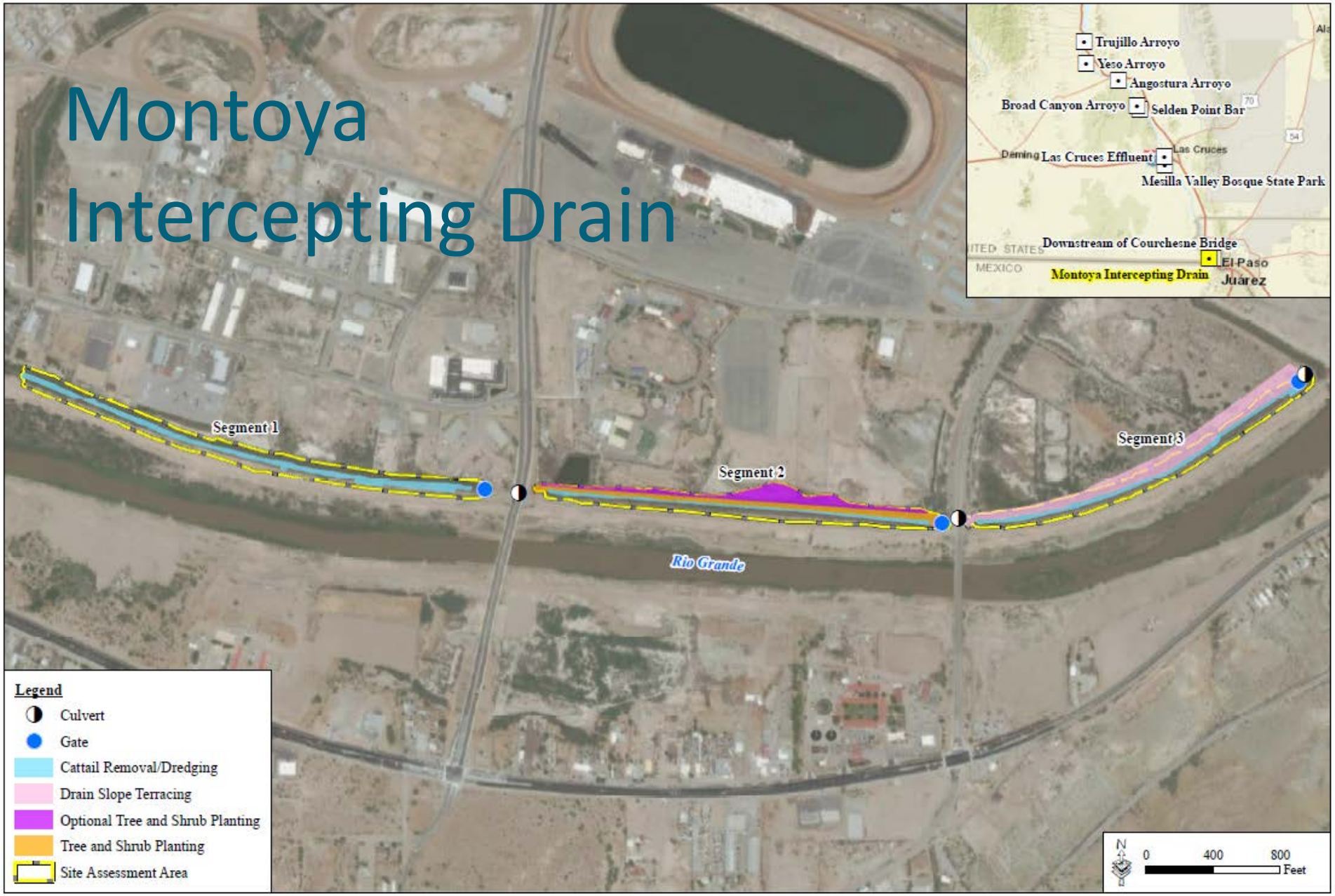


Figure A-20. Montoya Intercepting Drain Alternative Site Conceptual Restoration Design

Basemap: ESRI World Imagery (5/12/2020)

GSRC

January 2021

Draft FONSI Preferred Alternatives

- USIBWC has preliminarily selected five Preferred Alternatives in three Tiers:
  - Tier I – Simple
    - can be implemented with conceptual designs
    - Require Nationwide Permits #27
      - Alternative D – Broad Canyon Arroyo
      - Alternative J – Trujillo
  - Tier II – Complex
    - Have to move forward to construction design phase before implementation
    - require stakeholder coordination/agreements, construction designs, water rights, and logistics planning
      - Alternative F – Las Cruces Effluent
      - Alternative G – Mesilla Valley Bosque State Park.
  - Tier III – Compensatory Mitigation for Future Levee/Floodwall Improvements
    - Alternative H – Downstream of Courchesne Bridge

(MID not currently in Preferred Alternatives, but USIBWC is still looking into the feasibility of variations to this proposal)

Draft FONSI Preferred Alternatives

Site	Aquatic Acreage	Riparian Acreage	total acreage	Cost			
Broad Canyon	0.2		0.2	$38,000.00		ROD reqs	553
Las Cruces Effluent	3.4	13.8	17.2	$425,000.00		Riparian Restoration	509.9
Trujillo	3.8		3.8	$629,000.00		Remaining acreage	43.1
MVBSP	3.9	15.4	19.3	$1,072,000.00			
Total	**12.5**	**29.2**	**41.3**	**$2,542,000.00**			
Courchesne	1.4			$102,000.00		for Levee mitigation	

Timeline

- Draft EA public comment Feb-March 2021
- Final EA April-May 2021
- Permits for Tier I Alternatives June 2021
- Award construction of Tier I September 2021
- Design of Tier II summer to winter 2021
- Agreements for Tier II 2021-2022
- Award of construction of Tier II alternatives 2023
- Levee mitigation Tier III TBD

EA public comment period

- Draft EA will be open for public comment through March 31, 2021

https://go.usa.gov/xsWsu

Please let Liz Verdecchia know if you want to be added to the stakeholder distribution list
email Elizabeth.Verdecchia@ibwc.gov
phone 915-832-4701

For More Information:

http://www.ibwc.gov/EMD/canalization_eis.html

Contact

Elizabeth Verdecchia, Natural Resources Specialist
915-832-4701, elizabeth.verdecchia@ibwc.gov