



Irrigation Canal Remediation Project

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Colorado River



Site Map



Las Ciénegas de Santa Clara



Desalinating Plant



An aerial photograph of a wetland area, showing a winding canal or waterway that has been converted from an agricultural runoff canal. The surrounding land is dark and appears to be a mix of water and vegetation. The title 'Goal and Objectives' is written in a light blue, hand-drawn style font at the top of the image.

Goal and Objectives

- To turn an agricultural runoff canal into a wet meadow in order to:
 - Improve water quality before entering the Colorado River
 - Improve water quality for the Cienega Wetlands in Santa Clara, Mexico
 - Allow an ecosystem for native wildlife species to re-inhabit the area

Inventory

Land use
Drainage system
Water velocity

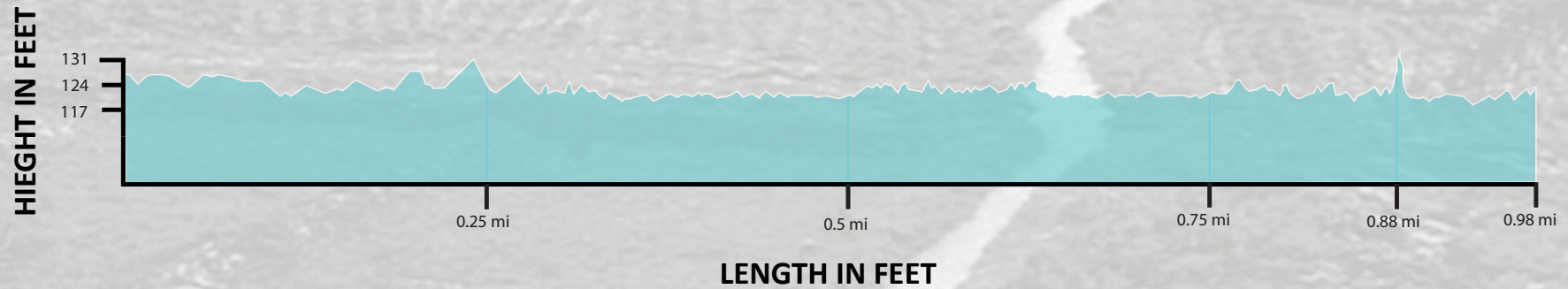
Section Cuts

- Horizontal section

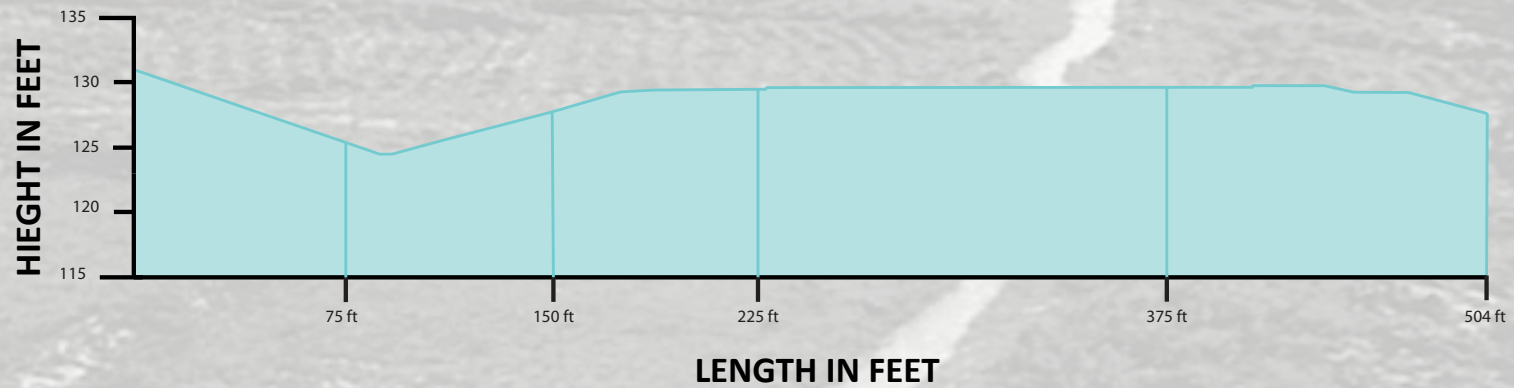


- Vertical section

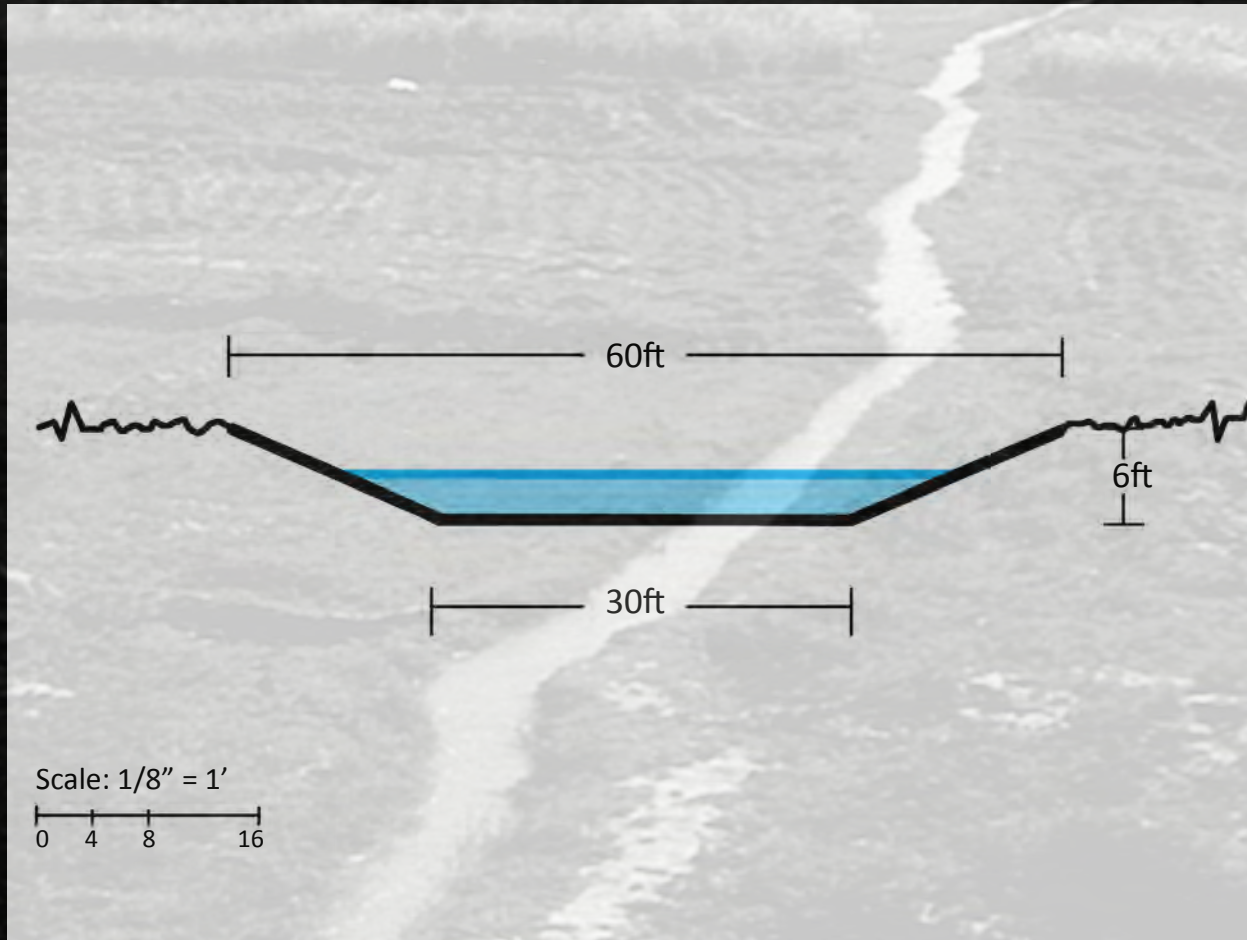
1 mile of topography



500 Ft of Topography



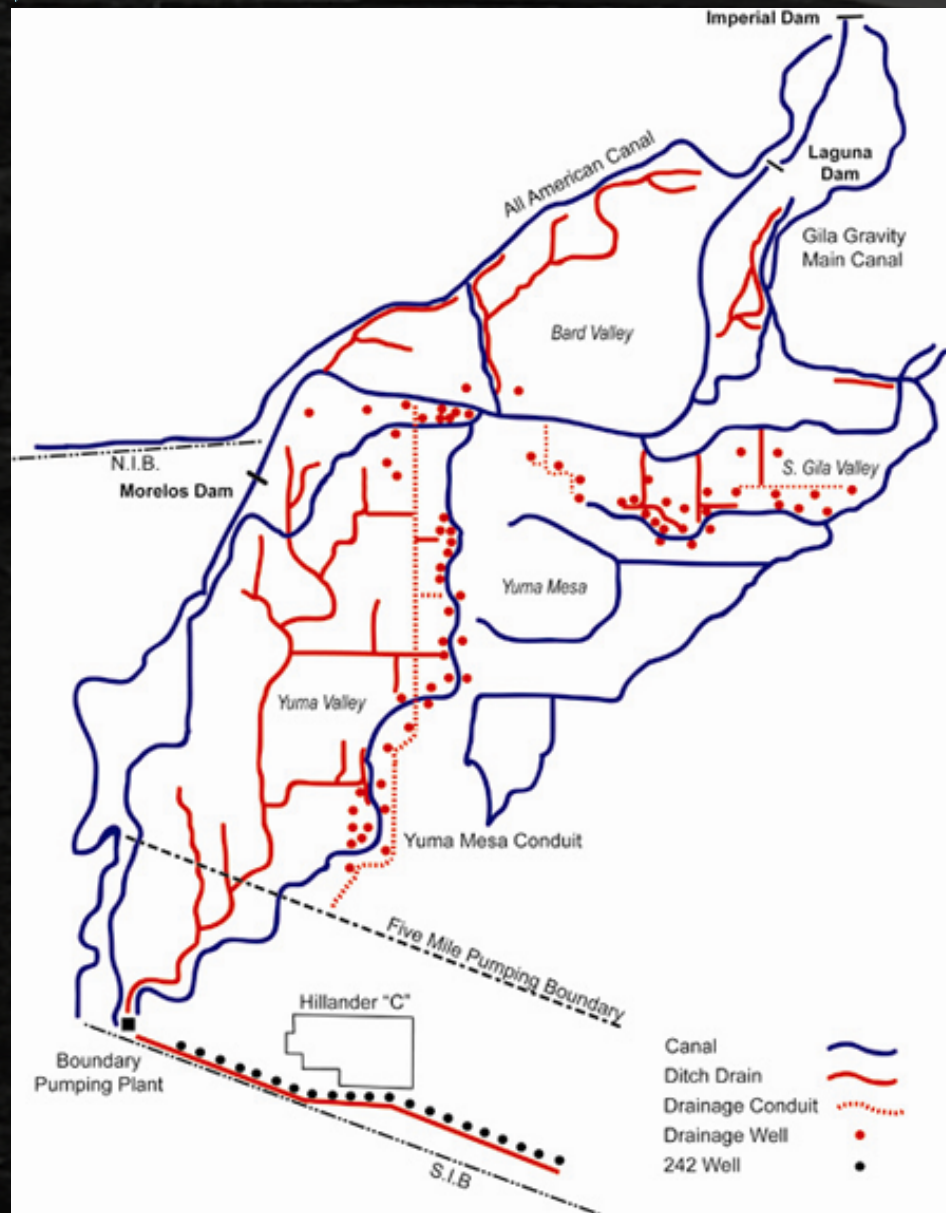
Main Drainage Canal



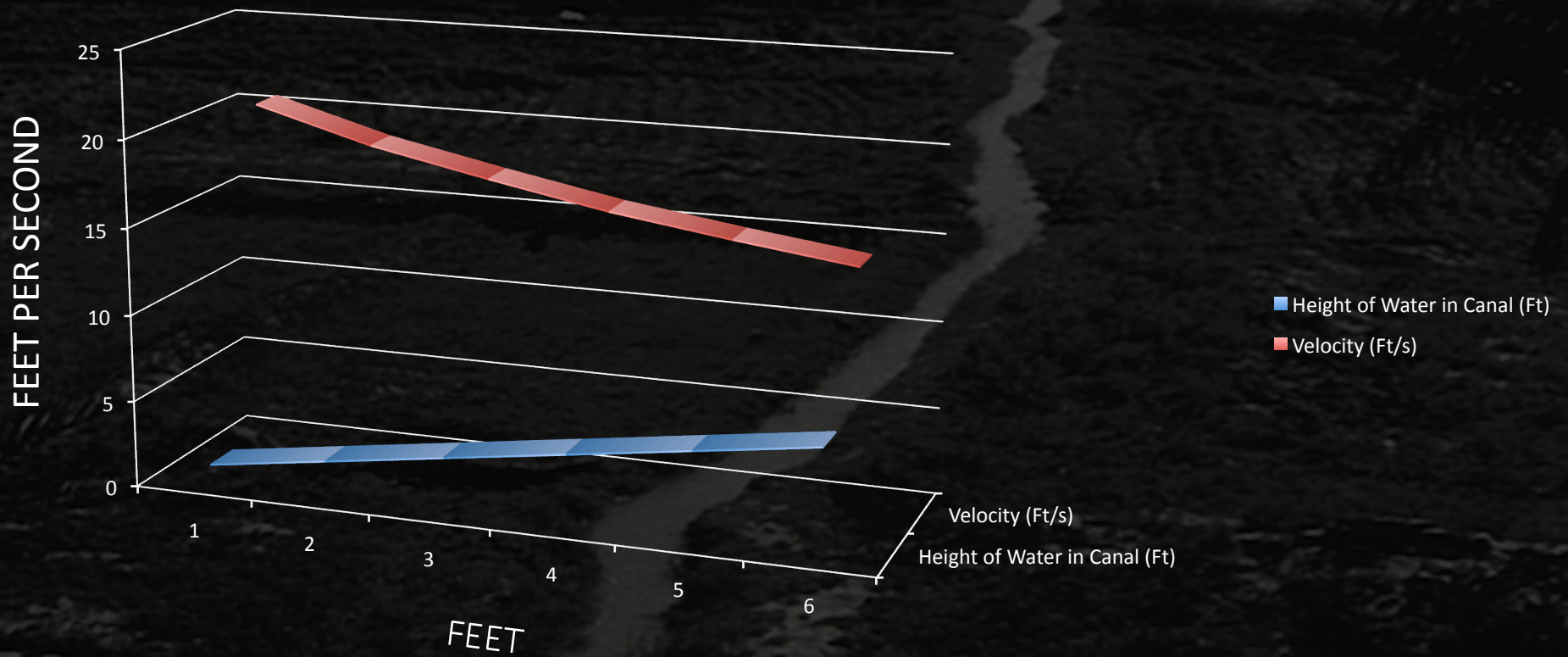
Drainage Map



Drainage System



Canal Water Velocity

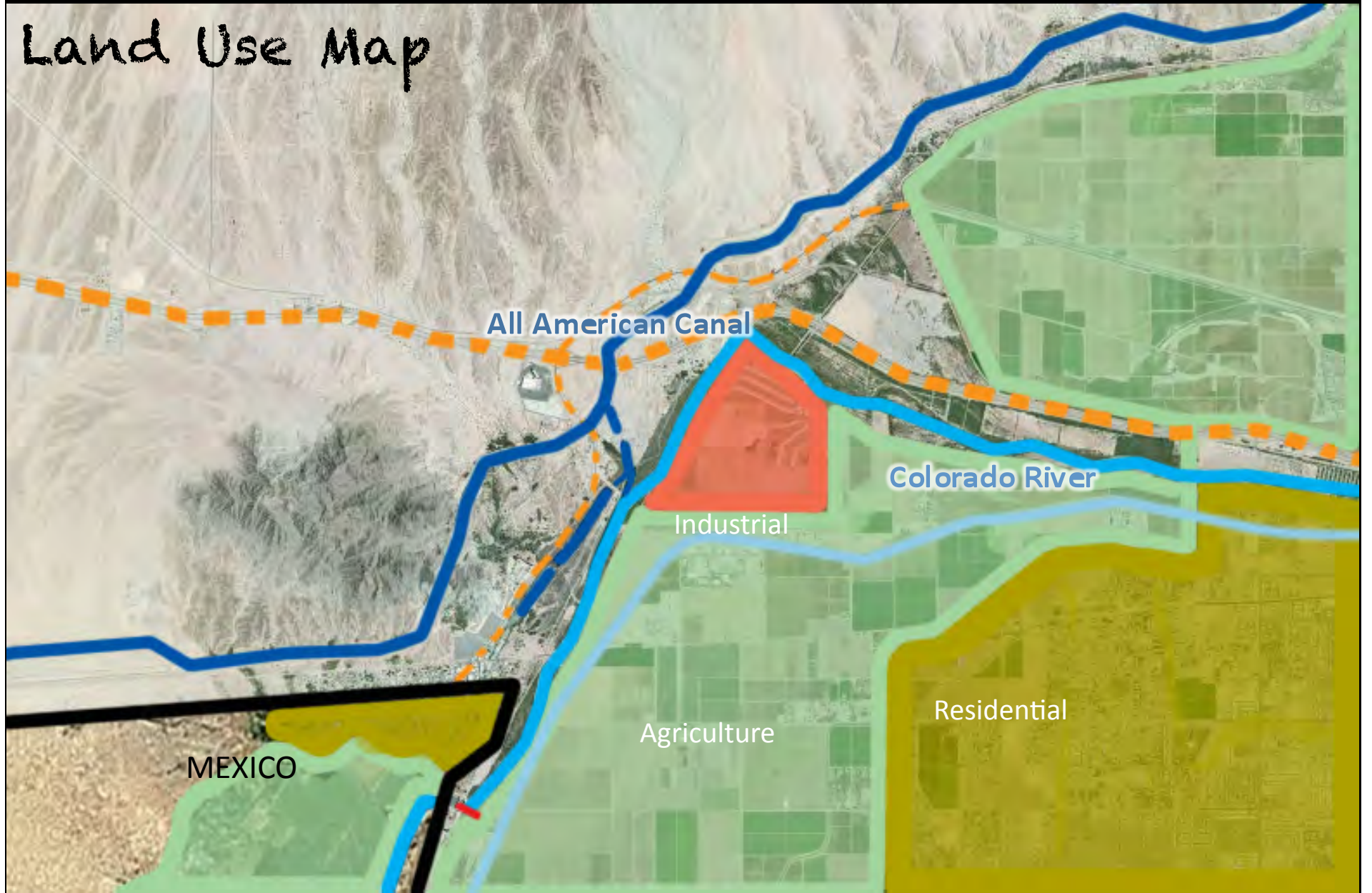


Pollutants

- Chemical fertilizers
 - Phosphorus
 - Nitrogen
 - Potassium
- Manure
- Sludge
- Selenium
- Salt



Land Use Map



Idea

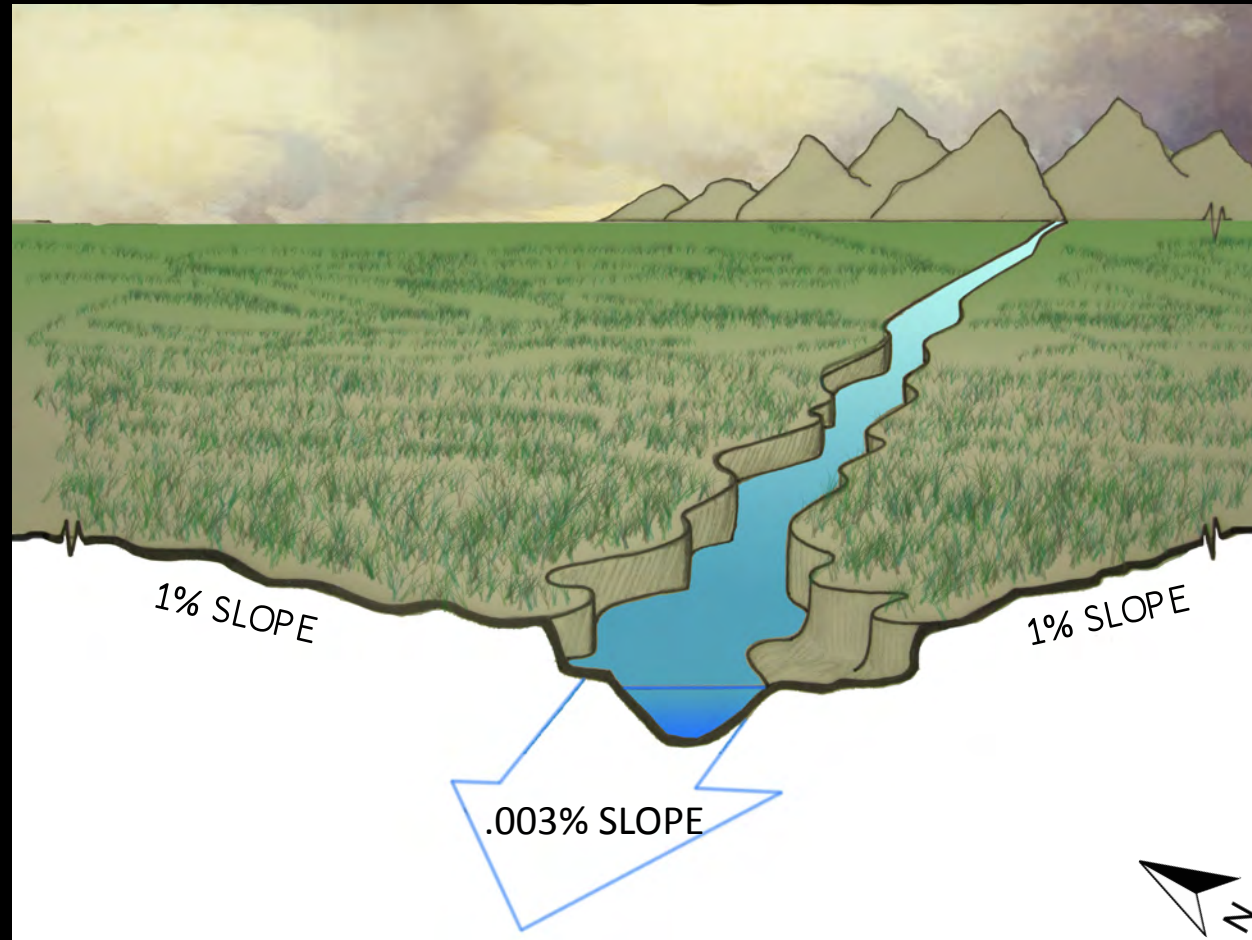
Concept



Wet Meadows



Wet Meadow



Wet Meadow Benefits

- No standing water
- the ground is damp and squishy
- Attracts small mammals, birds, reptiles, amphibians, and insects
- Herbaceous vegetation species such as sedges, rushes, forbs and grasses
- Collects runoff
- The vegetation acts as a natural filter by removing the excess nutrients accumulated by the water



Plant Palette

Trees

- Willow
- Cottonwood
- Mesquite
- Blue Palo Verde

Grass Family

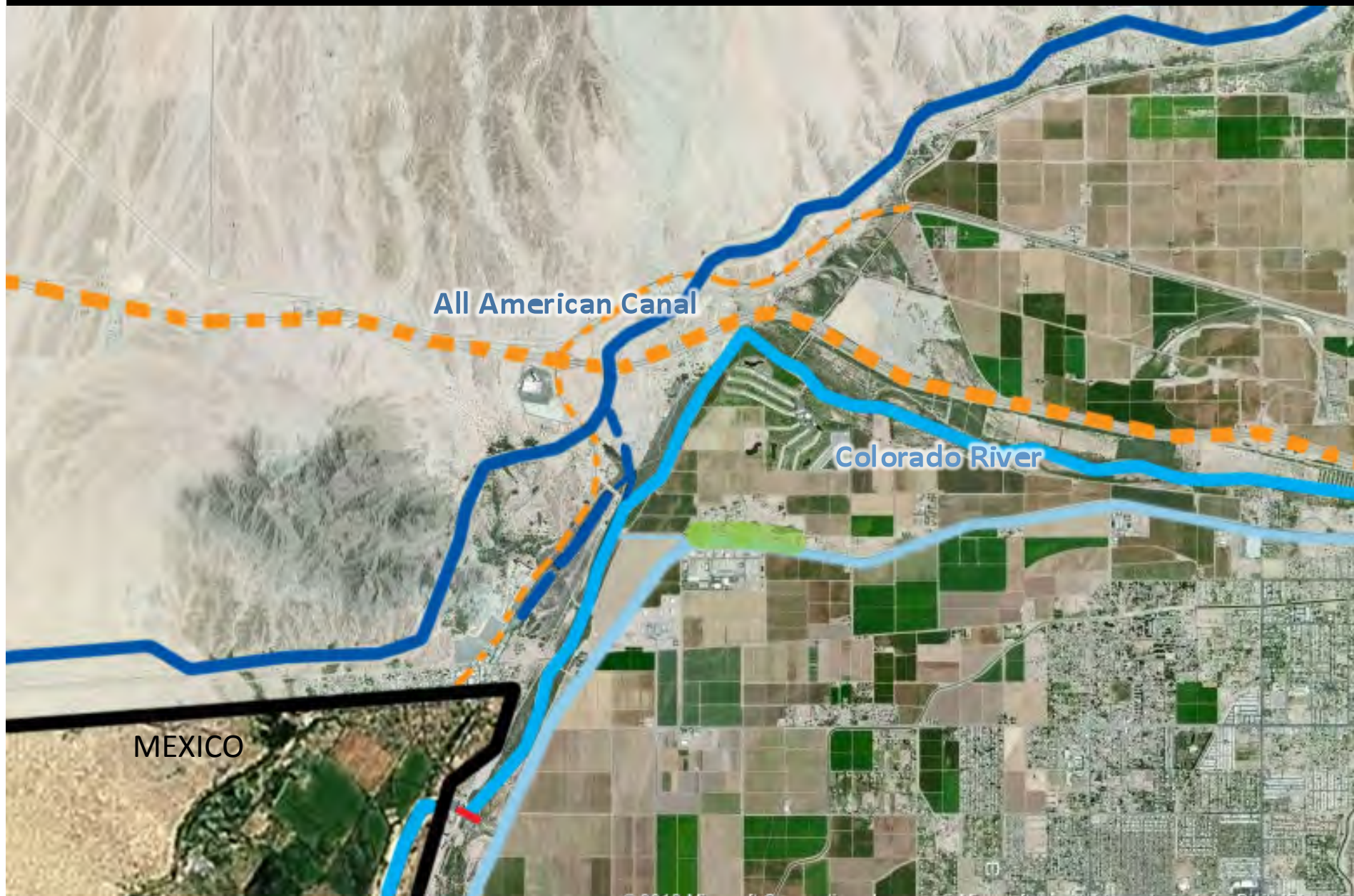
- Bulrush
- Cattail
- Sedges
- Salt grass



Design



Site Location



Desalinating Plant



1 Mile Length



1 Mile Length



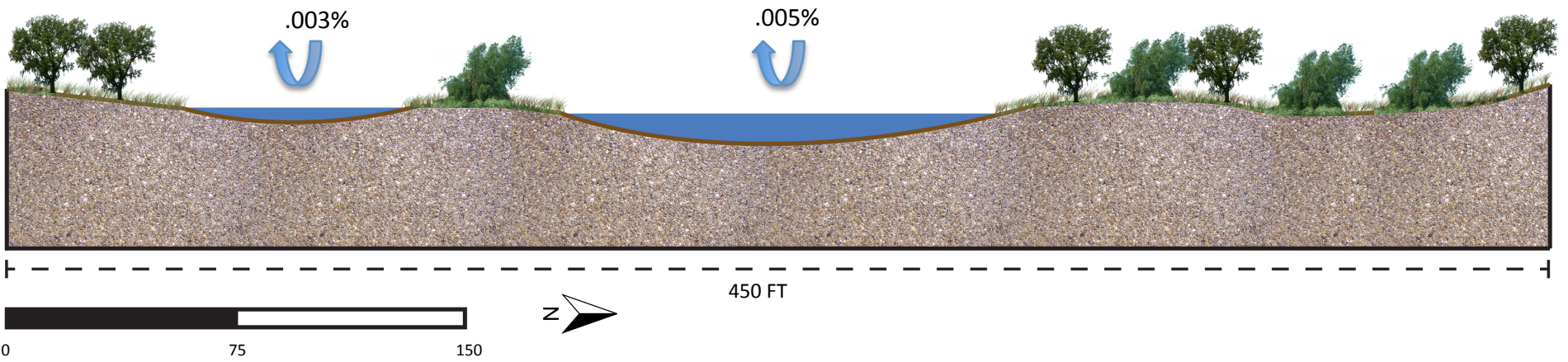
Close up



Close Up



Wet Meadow



Glimpse of the Design



Before

After



Birds

- Great, Snowy, and Cattle Egrets, and Great-blue Herons. There may also be nesting Black-crowned Night Herons hidden in the thick foliage; they certainly frequent the Main Drain. The cattails in the Main Drain below the cottonwoods are a good place for Yellow-headed Blackbirds, Common Yellowthroats, and Marsh Wrens.
- Least Bitterns, Common Moorhens, and Yellow-headed Blackbirds. In fall and winter, if the cattails haven't been eradicated (to improve flow), you'll find Soras and wintering sparrows in them.



Thank You



An aerial photograph of a wetland landscape, showing a winding waterway or canal cutting through a flat, marshy area. The terrain is dark and textured, suggesting dense vegetation or water. The sky is a uniform, dark grey, and the overall image has a high-contrast, almost monochromatic appearance.

References

- http://en.wikipedia.org/wiki/Wet_meadow
- http://www.usbr.gov/projects/Project.jsp?proj_Name=Yuma%20Project
- http://southwestbirders.com/swb_birdfinding_main_drain.htm
- <http://welltonmohawk.sdsu.edu/>
- http://www.usbr.gov/projects/Project.jsp?proj_Name=CRBSCP+-+Desalting+Complex+Unit+-+Title+I#Group544440
- <http://water.epa.gov/polwaste/nps/agriculture.cfm>