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memorandum

date	May 17, 2019
to	Diane De Felice, Brownstein Hyatt Farber Schreck, LLP
cc	
from	Travis Marella and Greg Ainsworth, ESA
subject	Biological Resources Survey for the Cadiz Valley Water Conservation, Recovery and Storage Project: Revised Pipeline Right of Way Segment.

This letter report documents the findings of a biological resources and jurisdictional drainages survey conducted for the Cadiz Valley Water Conservation, Recovery and Storage Project (Project). The survey was focused on the revised pipeline right of way (ROW) segment. Please find below an overview of the existing conditions within this area as well as the methods and results of the survey.

Methodology

A biological resources survey was conducted by ESA biologists Travis Marella and Greg Ainsworth on December 28, 2017. The entirety of the revised pipeline segment was traversed, including an approximate 50-foot buffer on each side of the alignment. A total of nine ephemeral washes, ranging from approximately five to 100 feet wide, cross the revised pipeline alignment segment. The habitat within these washes were characterized and the limits of State-agency jurisdiction (i.e., California Department of Fish and Wildlife [CDFW] and Regional Water Quality Control Board [RWQCB]) were delineated. Photos were taken along the revised alignment that were surveyed and at each wash crossing. In addition to delineating potential State-jurisdictional washes, special attention was afforded to assessing the potential for other sensitive biological resources to be present, most notably, any burrows capable of supporting desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*) and American badger (*Taxidea taxus*), including any sign of these species such as (but not limited to) scat, tracks and carcasses, as well as, the overall habitat value for supporting these species and other State- or federally-listed species that have been historically recorded in the region of the Project. In addition, the assessment evaluated the habitat potential for supporting special-status plants that were evaluated within the well-field and conveyance pipeline alignment by ESA in May 2017.

Results

As with the majority of the Cadiz well-field and conveyance pipeline alignment, the habitat consists entirely Mojave creosote bush scrub. This community is dominated by creosote bush (*Larrea tridentata*) and burrobush (*Ambrosia dumosa*), and is characterized by widely spaced, tall shrubs, usually separated by bare ground. The washes that cross the revised alignment segment are characterized as Mojave wash scrub and have higher concentrations of creosote. Dominant perennials observed within the washes include creosote, burrobush, arrow

weed (*Pluchea sericea*), wash rabbitbrush (*Chrysothamnus paniculatus*), smoke tree (*Dalea spinosa)* and bladderpod (*Isomerus arborea*).

The nine ephemeral washes that cross the revised alignment segment are within the jurisdictional authority of the CDFW and RWQCB.

No sign of desert tortoise, burrowing owl, American badger or any other special-status animal species were observed along the revised alignment segment or in any of the drainages. Based on the overall habitat in the general area and a close review of aerial imagery, the area has a low potential to support special-status wildlife species. In particular, the potential for desert tortoise to occur is considered low, because the areas that were surveyed are at an elevation that is considered too low for desert tortoise, but more importantly, no sign of desert tortoise, including any burrows capable of supporting the species, were observed. Small, approximate 2-to-3-inch reptile burrows were observed within the survey area, none of which could support desert tortoise, burrowing owl or American badgers. The potential for rare plants to occur is similar as determined in the Rare Plant Survey Report prepared by ESA on May 15, 2017 for the wellfield and conveyance pipeline alignment, since the habitat is the same.

Conclusions

No special-status wildlife species, including desert tortoise, are expected to occur along the revised alignment segment. The revised alignment will cross 9 desert washes, including Schuyler Wash, which carried substantial flows during the winter of 2016/17. The extent of CDFW's and RWQCB's jurisdiction of the washes could increase if these agencies decide to take the outer limits of the braided washes that supported historic flows; however, ESA believes their jurisdiction should be limited to the extent delineated on the attached maps.

ATTACHMENTS:

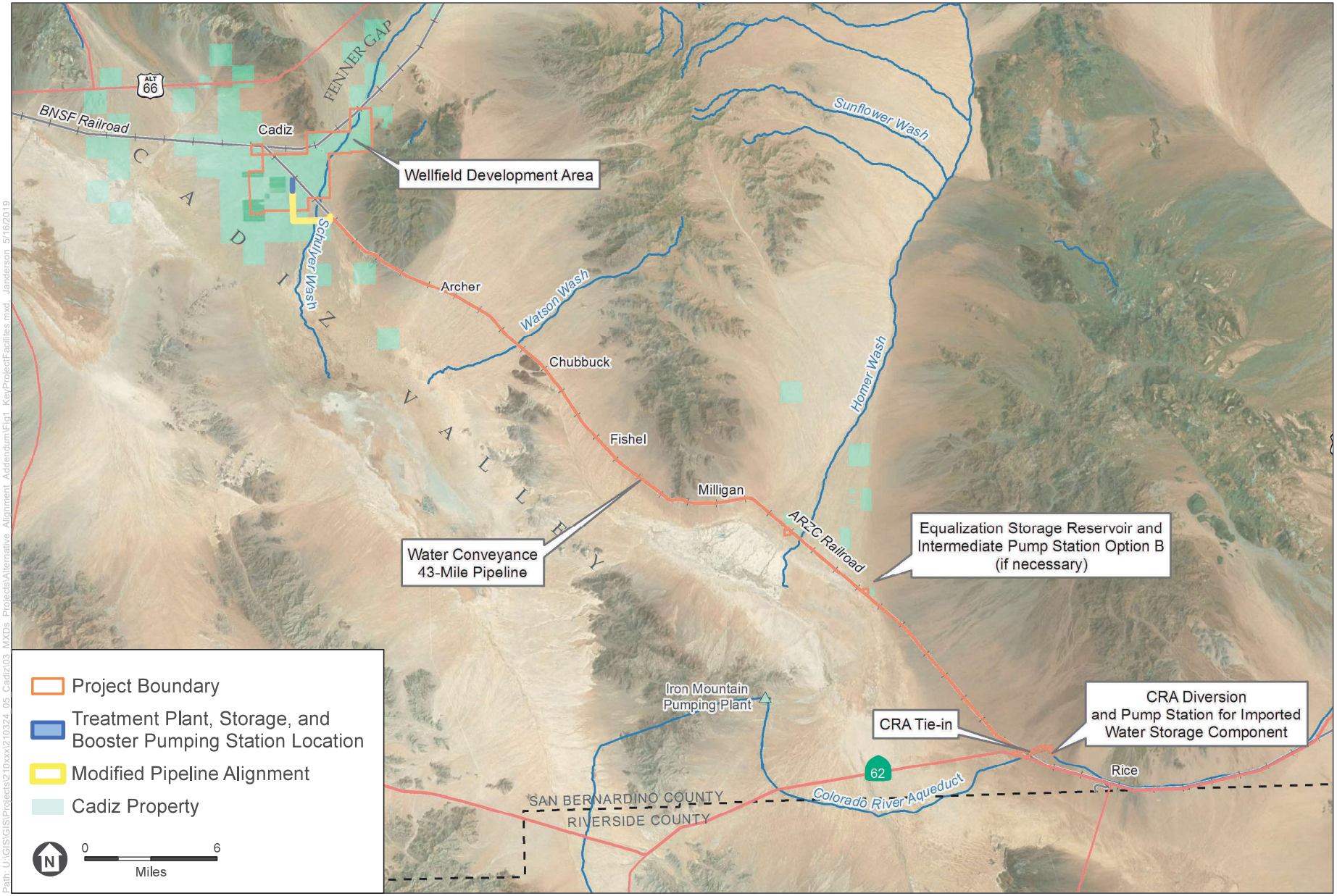
- Photographs
- Figures
- Preliminary Jurisdictional Drainage Map of Revised Pipeline Alignment Segment

PHOTOGRAPHS

Photos 1 and 2. Typical Mojave creosote bush scrub within the survey area.

Photo 3. View of evidence of heavy flows in Schuyler Wash from the winter of 2016/17

Figures



SOURCE: Bing Maps, 2011; ESRI, 2010; Cadiz Inc., 2011; and ESA, 2011

Cadiz Groundwater Project

Figure 1
Project Location and Facilities

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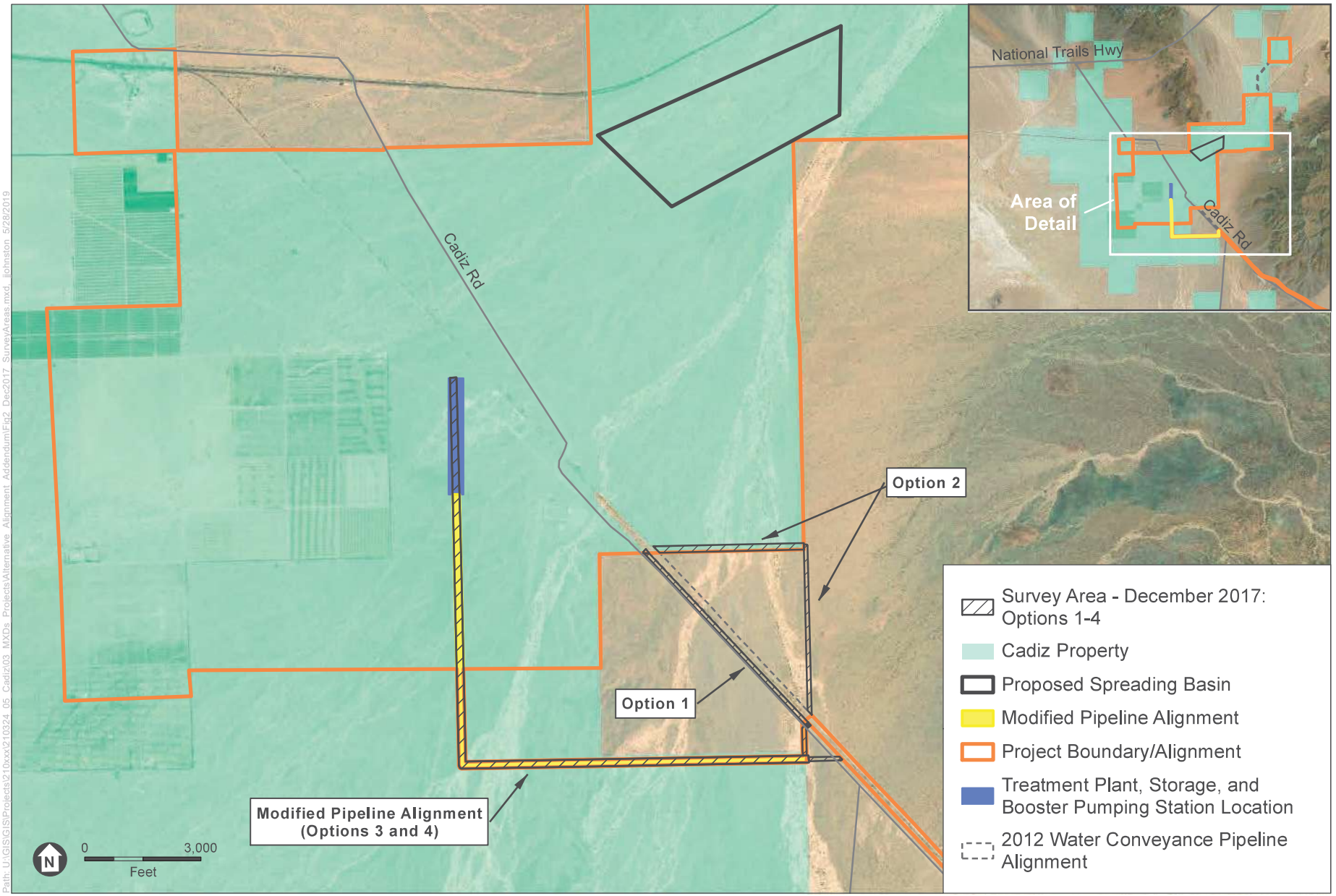

SOURCE: ESRI

Cadiz Groundwater Project

Figure 2
Survey Areas, December 2017

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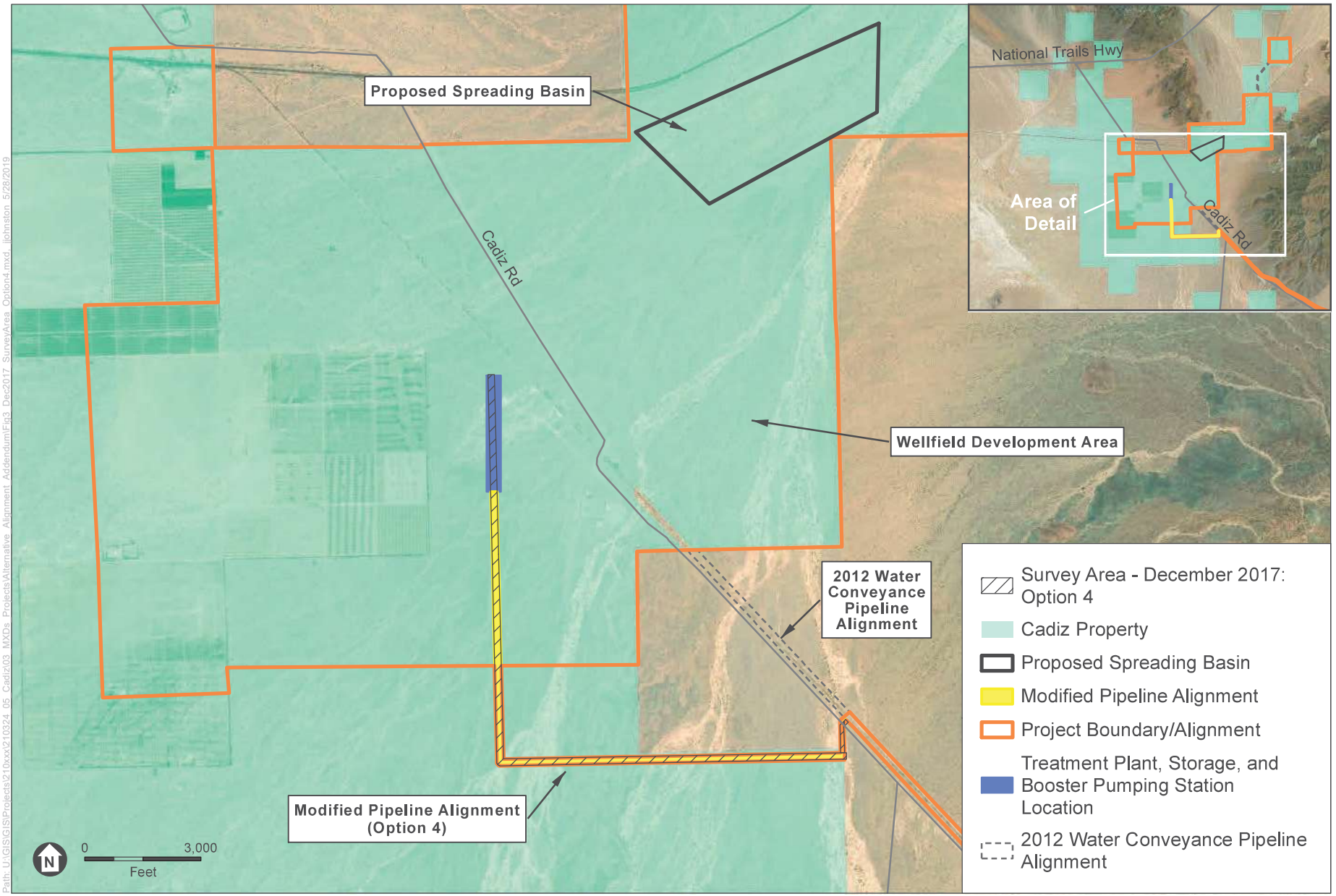

SOURCE: ESRI

Cadiz Groundwater Project

Figure 3
Survey Area, December 2017: Option 4

Preliminary Jurisdictional Drainage Map of Revised Pipeline Alignment Segment

SOURCE: ESRI

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Figure 1
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 1

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SOURCE: ESRI

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Figure 2
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 2

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SOURCE: ESRI

Cadiz Groundwater Project

Figure 3
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 3

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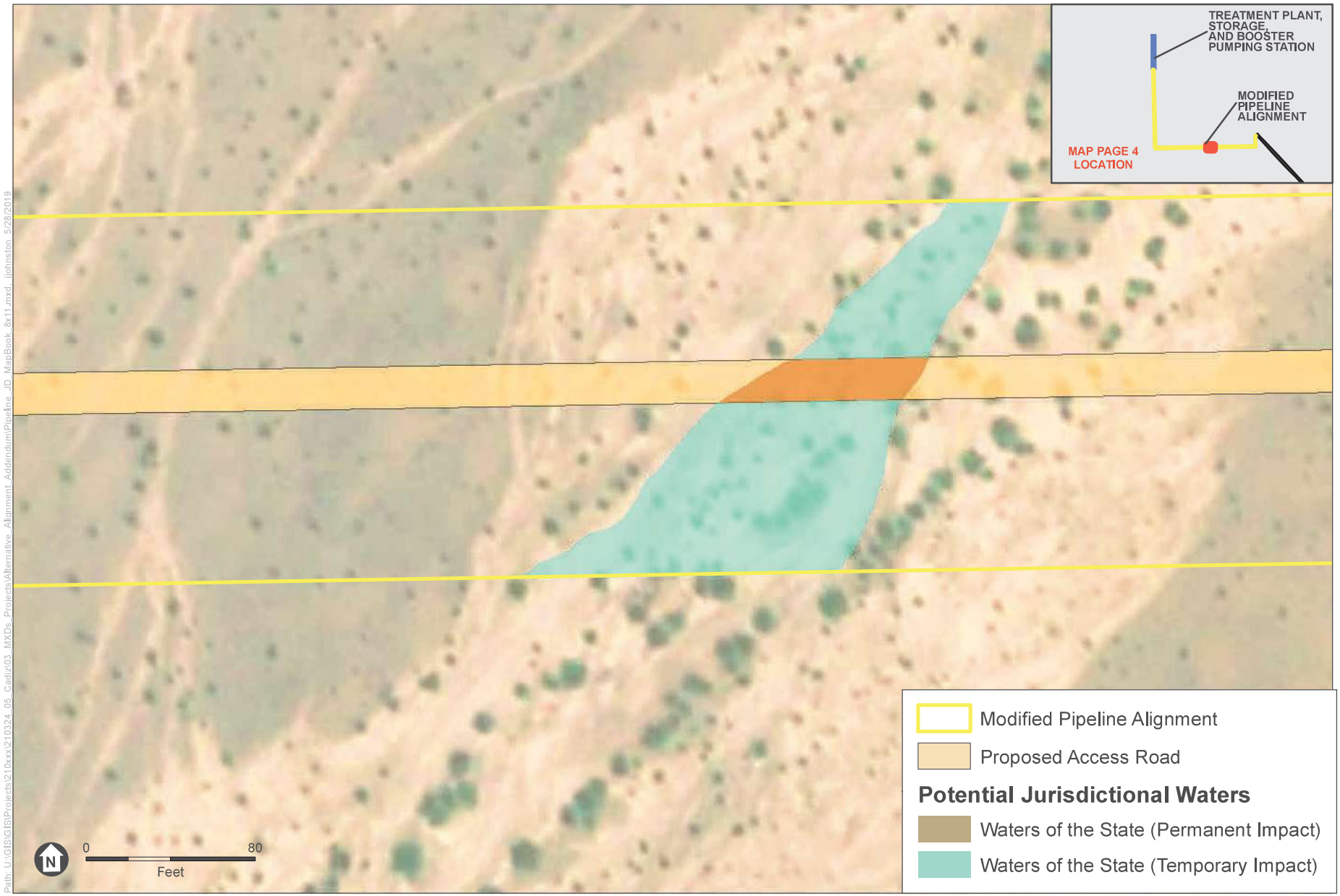

SOURCE: ESRI

Cadiz Groundwater Project

Figure 4
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 4

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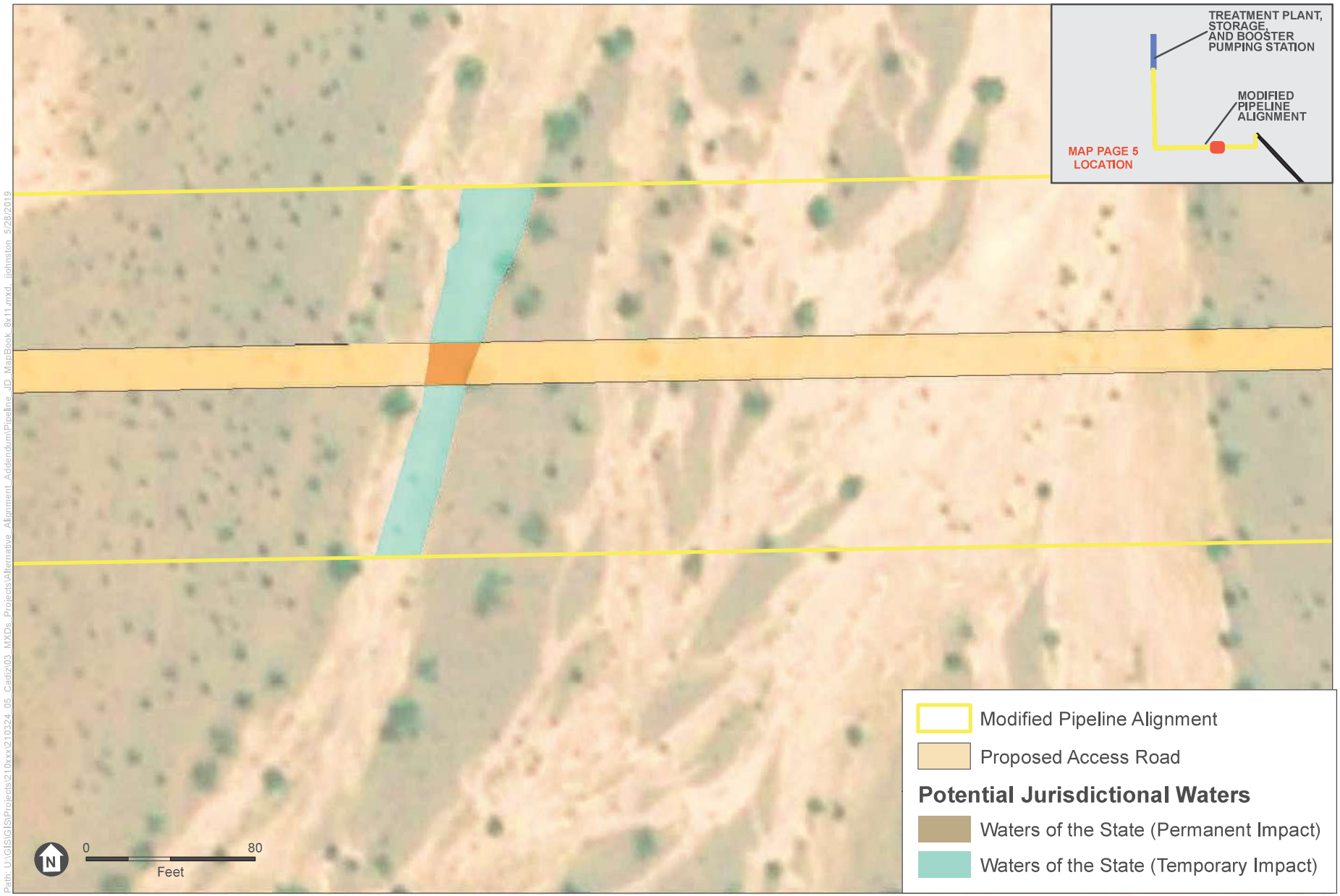

SOURCE: ESRI

Cadiz Groundwater Project

Figure 5
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 5

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SOURCE: ESRI

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Figure 6
Modified Pipeline Alignment – Potential Jurisdictional Waters
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SOURCE: ESRI

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Figure 7
Modified Pipeline Alignment – Potential Jurisdictional Waters
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SOURCE: ESRI

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Figure 8
Modified Pipeline Alignment – Potential Jurisdictional Waters
Map Page 8

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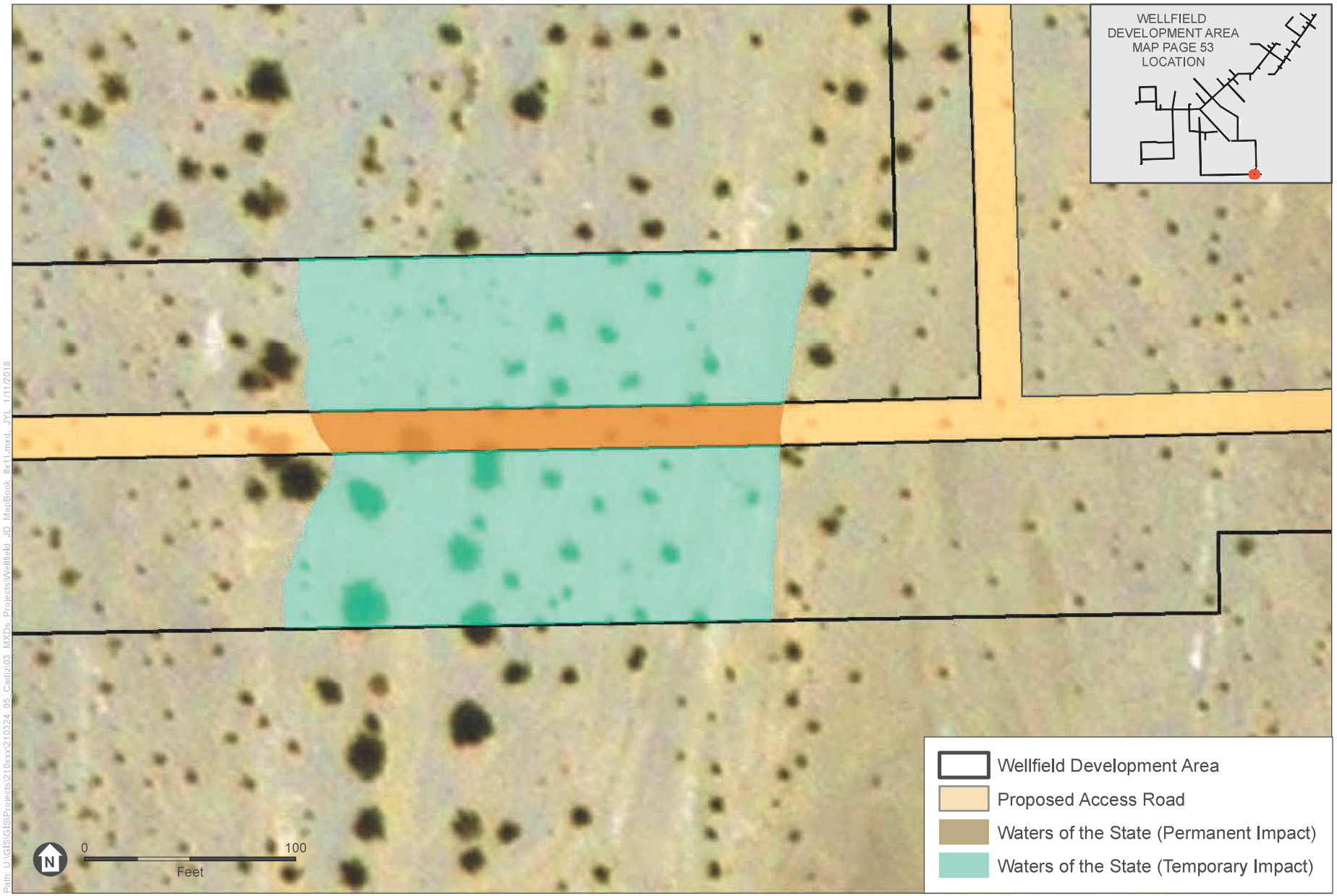

SOURCE: ESRI

Cadiz Groundwater Project

Figure 9
Modified Pipeline Alignment – Potential Jurisdictional Waters
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