

# RECLAMATION

*Managing Water in the West*

## Planet Ranch Conservation Area

**Finding of No Significant Impact and Supplemental  
Environmental Assessment  
Document No. LC-18-15**

**Boulder City, NV**



**U.S. Department of the Interior  
Bureau of Reclamation  
Lower Colorado Region  
Boulder City, Nevada**

**July, 2018**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

*Cover Photo: Aerial view of Planet Ranch Conservation Area during high flow event in March, 2018. (Arizona Game and Fish Department photo)*

# Contents

Finding Of No Significant Impact.....	FONSI 1
1.0 Purpose of and Need for the Action .....	1
1.1 Introduction .....	1
1.2 Purpose and Need .....	1
1.2.1 Background for the Purpose and Need .....	1
1.2.2 Purpose and Need.....	6
2.0 Description of Alternatives .....	7
2.1 Proposed Action Alternative.....	7
2.2 No Action Alternative.....	8
2.3 Alternatives Considered but not Evaluated Further .....	11
3.0 Affected Environment and Environmental Consequences .....	11
3.1 Affected Environment .....	11
3.2 Environmental Consequences .....	15
3.2.1 Biological Resources.....	15
3.2.2 Floodplains.....	16
3.2.3 Hydrology .....	16
4.0 List of Preparers .....	17
5.0 Public Involvement .....	18
6.0 References.....	18

## List of Figures

Figure 1- Location of Planet Ranch Conservation Area with respect to Colorado River miles and reaches 2	
Figure 2. Planet Ranch Conservation Area- new location of flood control structure and fill. ....	3
Figure 3- Planet Ranch Road during the high flow event in March, 2018. The approximate.....	5
Figure 4- West end of Planet Valley during high flow event of March, 2018 showing concentration .....	6
Figure 5- Flood Control Structure Design.....	9
Figure 6- Flood Control Structure Design showing potential Waters of the U.S. and Fill Areas .....	10
Figure 7-100 Year Floodplain at Planet Ranch. Source: Federal Emergency Management Agency .....	13
Figure 8 -Planet Ranch Conservation Area Critical Habitat.....	14

## List of Acronyms or Abbreviations

Acronym or Abbreviation	Term
2005 Biological Opinion	2005 Biological and Conference Opinion on the LCR MSCP
Bill Williams River NWR	Bill Williams River National Wildlife Refuge
BLM	Bureau of Land Management
cfs	Cubic Feet Per Second
Conservation Area	Planet Ranch Conservation Area
EA	Environmental Assessment
Final EA	Final Environmental Assessment and Finding of No Significant Impact for Planet Ranch Conservation Area
FONSI	Finding of No Significant Impact
LCR	Lower Colorado River
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
MSCP	Multi-Species Conservation Program
NEPA	National Environmental Policy Act of 1969, as amended
Proposed Action	Planet Ranch Conservation Area
Reclamation	Bureau of Reclamation
River	Bill Williams River
Supplemental EA	Supplemental Environmental Assessment for Planet Ranch Conservation Area
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

# Finding Of No Significant Impact (FONSI)

## LC-18-15 for Supplemental Environmental Assessment for Planet Ranch Conservation Area

Boulder City, Nevada

Based on a thorough analysis of the potential environmental impacts presented in the Environmental Assessment (EA), The Bureau of Reclamation finds that implementation of the Proposed Action will not significantly affect the quality of the human environment within or adjacent to the project area, therefore an Environmental Impact Statement will not be prepared.

Accordingly, this FONSI is submitted to document environmental review and evaluation of the Proposed Action Alternative in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended.

Prepared: Faye Stroier Date: July 16, 2018  
Natural Resource Specialist

Recommended: [Signature] Date: 17 Sep 18  
Manager, Environmental Compliance Group

Approved: [Signature] Date: 7/24/18  
Chief, Resources Management Office

## Background

The *Supplemental Environmental Assessment* (Supplemental EA) for Planet Ranch Conservation Area was prepared because the flood control structure described in the March, 2018 *Finding of No Significant Impact and Final Environmental Assessment* (Final EA) for Planet Ranch Conservation Area will be moved approximately 1,000 feet north from the location shown in the Final EA to protect a greater portion of the bank adjacent to backwater ponds. Portions of the flood control structure would be located in an area identified as potential Waters of the (United States (U.S.) in a preliminary jurisdictional determination. Location of the flood control structure in these areas was not analyzed in the Final EA. The Proposed Action and No Action Alternative are described on pages 7 and 8 of the Supplemental EA for Planet Ranch Conservation Area. The Supplemental EA and Final EA are incorporated by reference into this FONSI. All Environmental Commitments contained in the Final EA will be implemented as part of the Proposed Action to reduce or eliminate impacts to resources. The Environmental Commitments can be found on page 22 of the Final EA.

## Environmental Impacts and Findings

The Proposed Action will not result in changes to the impacts described in the Final EA for the following resources: Air Quality, Agricultural Resources, Cultural Resources/Traditional Cultural Properties/Paleontological Resources, Environmental Justice, Geology and Soils, Hazardous Materials, Solid Waste, Health and Human Safety, Land Use and Recreation, Indian Trust Assets, Noise, Public Services/Utilities and Service Systems, Transportation and Traffic, Socioeconomics, Transboundary Impacts, Wild and Scenic Rivers, Wilderness and Water Quality. The determination that there will be no significant impacts to these resources is included in the Final EA on page FONSI 6.

Potential impacts to Biological Resources, Floodplains, and Hydrology were considered in the Supplemental EA. Implementation of the Proposed Action will not result in significant impacts to any of these resources. The reasons for this determination are: All adverse effects to designated critical habitat for southwestern willow flycatcher (*Empidonax traillii extimus*), proposed critical habitat for yellow-billed cuckoo (*Coccyzus americanus*) and northern Mexican gartersnake (*Thamnophis eques megalops*) were analyzed and disclosed as covered actions and activities under the Lower Colorado River Multi-Species Conservation Program.

There would be no adverse impacts to floodplains and the Proposed Action will be in accordance with all floodplain statutes and ordinances. There may be minor changes to the potential hydraulic impacts described in the Final EA. Overall hydrologic impacts are expected to be beneficial as the River would be redirected to the north to allow for a wider, meandering channel that utilizes the historic floodplain.

# Planet Ranch Conservation Area

## Supplemental Environmental Assessment Document No. LC-18-15

Boulder City, NV

prepared by

Bureau of Reclamation  
Lower Colorado Region  
Lower Colorado River  
Multi-Species Conservation Program



U.S. Department of the Interior  
Bureau of Reclamation  
Lower Colorado Region  
Boulder City, Nevada

July 2018

# 1.0 Purpose of and Need for the Action

## 1.1 Introduction

The Bureau of Reclamation (Reclamation) plans to develop the Planet Ranch Conservation Area in Arizona (Conservation Area) (Figures 1 and 2) to create, enhance, and restore native habitat on behalf of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The *Finding of No Significant Impact and Final Environmental Assessment* (Final EA) for Planet Ranch Conservation Area was completed on March 8, 2018 (Reclamation, 2018a). The Final EA is incorporated by reference into this Supplemental EA and is located at: <https://www.usbr.gov/lc/region/g2000/envdocs.html>. Reclamation was the lead Federal agency for preparation of the Final EA, with the Bureau of Land Management (BLM), as a cooperating agency. The BLM issued their own Finding of No Significant impact (FONSI) and decision document for their action of granting a Right of Way to Reclamation for use of up to 10.795 acres of BLM managed lands for Conservation Area activities.

The Final EA included analysis of the potential impacts of a flood control structure that is being designed to protect backwater ponds to be constructed at the Conservation Area. Since issuance of Reclamation's FONSI, further planning for the flood control structure has identified the need for relocation of the structure and placement of fill in an area identified as potential Waters of the United States (U.S.) in a preliminary jurisdictional determination (USACE, 2013). Activities in potential Waters of the U.S. or in the floodplain were not envisioned when the Final EA was prepared, so analysis of any potential impacts to these areas was not included. The purpose of this Supplemental EA is to evaluate the potential impacts of the changes to the flood control structure on the physical and human environment and determine if the impacts would be significant, warranting the preparation of an Environmental Impact Statement.

## 1.2 Purpose and Need

### 1.2.1 Background for the Purpose and Need

Planet Ranch Conservation Area is located in Planet Valley, a broad river valley located on the Bill Williams River (River). The River in Planet Valley has a braided channel that is typically dry. Surface flows only occur during large rain events or when releases from the upstream Alamo Dam exceed approximately 500 cubic-feet per second (cfs) for at least a 24-hour period. The location of the active river channel in the Planet Valley has varied over time. The report: *Hydrologic and Geomorphic Characteristics of the Bill Williams River, Arizona* (House et. al., 1999) documented through aerial photo analysis that prior to the construction of Alamo Dam in 1968, the active river channel migrated back and forth throughout much of the Planet Valley during moderate to large magnitude streamflow events.



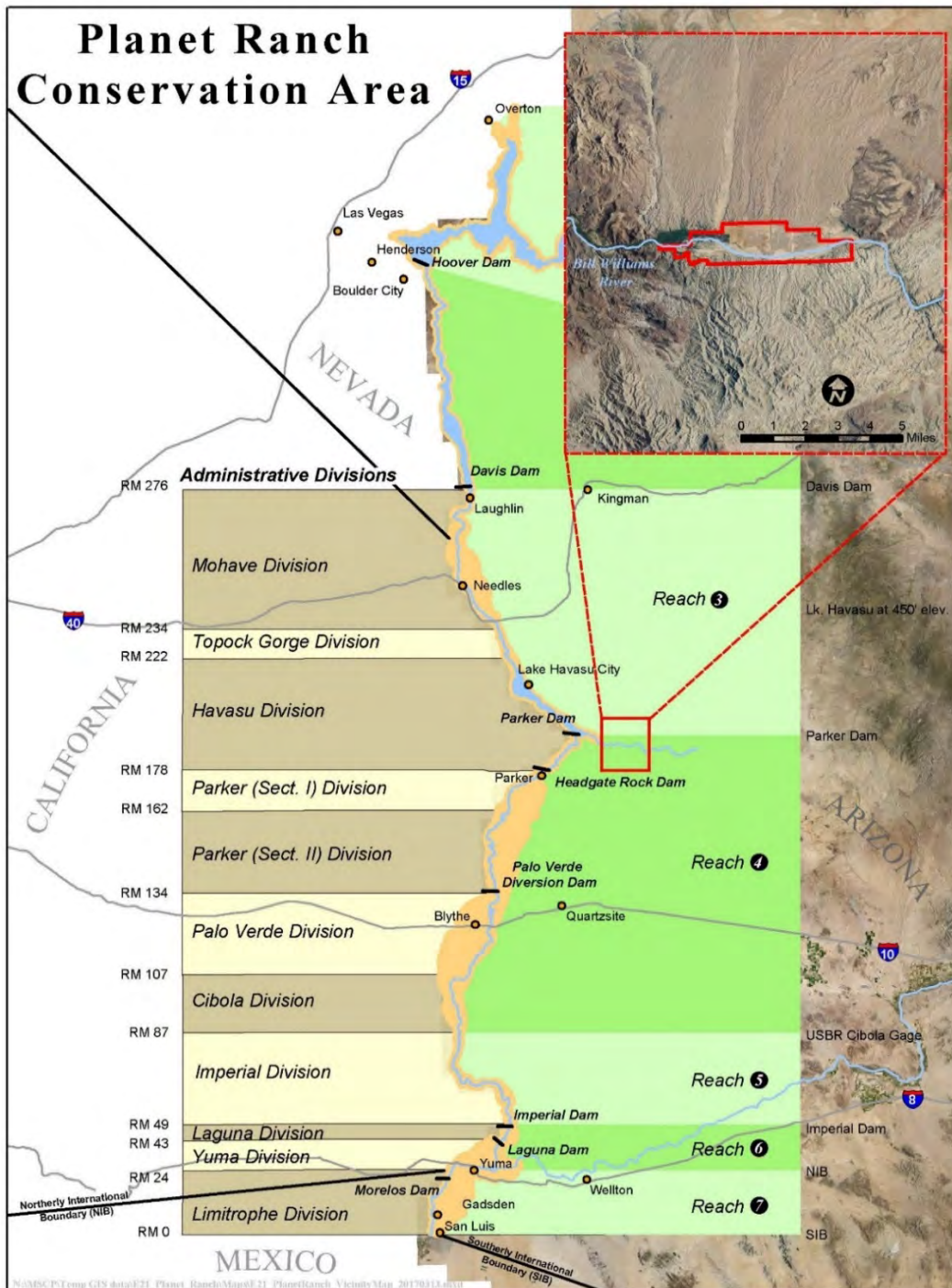


Figure 1- Location of Planet Ranch Conservation Area with respect to Colorado River miles and reaches

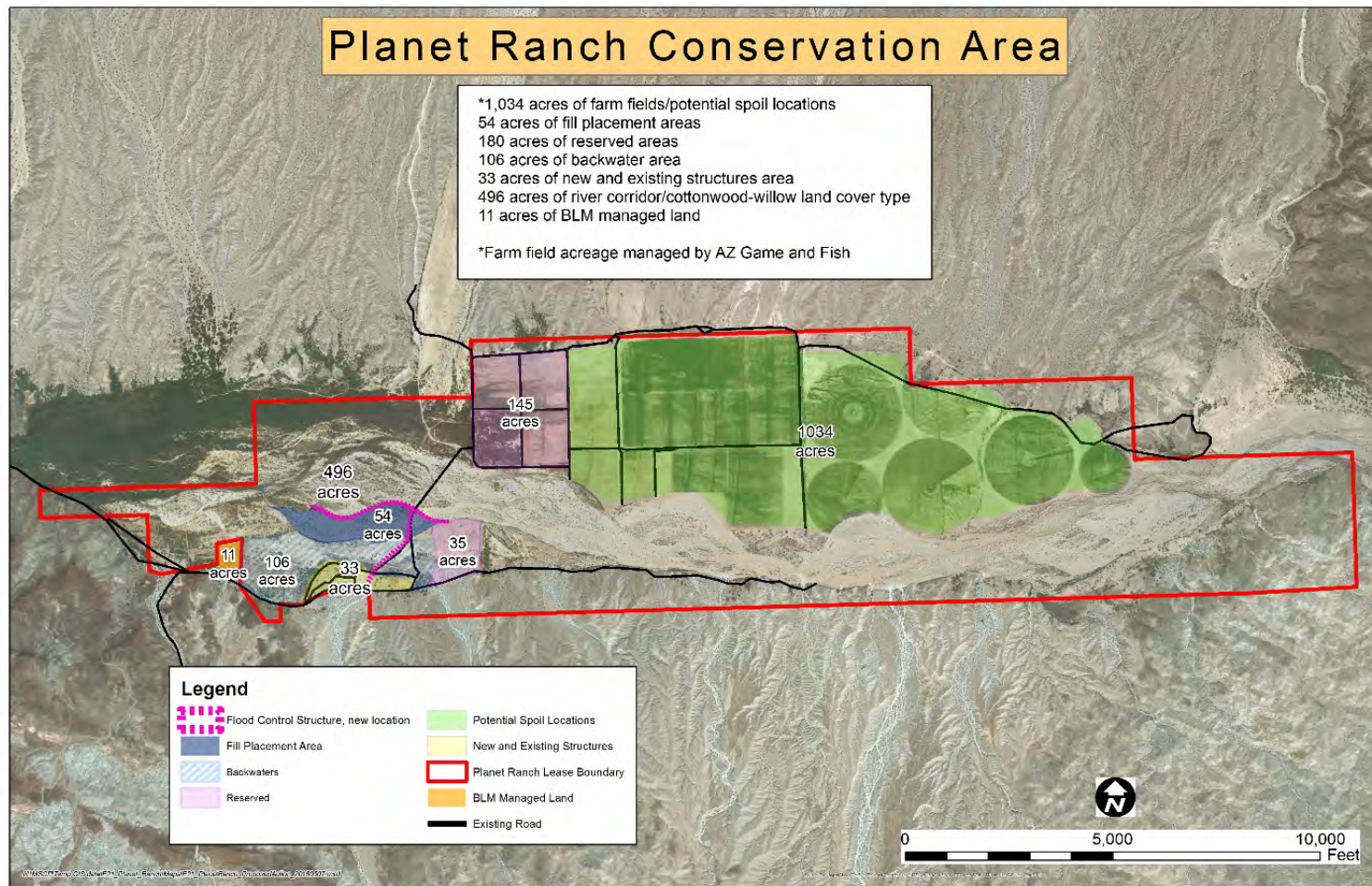


Figure 2. Planet Ranch Conservation Area- new location of flood control structure and fill.



Since construction of Alamo Dam, the River has laterally migrated toward the south within Planet Valley. At this time, the River is entrenched within one narrow channel at the southern end of the Planet Valley and is no longer able to occupy most of the Planet Valley, even during large flow events.

The backwater ponds will be located on a low terrace on the south side of the braided River channel, relatively close to the entrance to Havasu Canyon, a narrow bedrock canyon at the west end of the Planet Valley. The long time existence of this terrace is illustrated by the fact that it was above the active River channel when the channel filled almost the entire Planet Valley in 1953. The geomorphology of the 1953 channel best represents the natural channel as it predates the construction of Alamo Dam and agricultural development at Planet Ranch (Reclamation, 2017a).

The *Bill Williams River Hydraulic and Hydrologic Analysis at Planet Ranch Conservation Area* (Hydraulic and Hydrologic Analysis) (Reclamation, 2017a) was completed to determine if high flow releases from Alamo Dam, runoff from nearby tributaries, and high groundwater could potentially impact the backwater ponds. The Hydraulic and Hydrologic Analysis used the aerial photo analysis conducted by House et al. (1999) to determine if the River is migrating to the southern bank near the location of the backwater pond site and whether alluvial fans associated with nearby tributaries were growing. This analysis documented lateral migration and channel expansion into the 1953 terrace, notably in the 1976 and 2005 aerial photography, where the backwater ponds will be located (Reclamation, 2017a).

The hydraulic model simulations conducted as part of the Hydraulic and Hydrologic Analysis showed that high flows of 5,000 cfs and 7,000 cfs from Alamo Dam would inundate a small portion of the backwater pond location with 10-, 50-, and 100-year recurrence interval flows along the tributaries inundating a greater area of the backwater pond location. Modeled stream velocities and a scour analysis also illustrated the potential for bank erosion at the backwater pond location. A levee or similar flood control structure constructed directly adjacent to the backwater ponds was recommended to prevent inundation or damage to the backwater ponds. A flood control structure at this location was analyzed in the Final EA.

A Value Planning Study was conducted to develop options for the flood control structure and protection of the backwater ponds (Reclamation, 2018b). One of the primary means presented to meet overall objectives was the redirection of the active river channel away from the backwater pond location to better protect the ponds. This recommendation was based on the observation that the angle of the Planet Ranch road (which is aligned perpendicular to the River) and the two 1,800 foot concrete sills, constructed in 1985 as a grade control structure on both sides of the road, likely caused the River to shift further to the south beginning in the 1990's during high flows, rather than braiding across the Planet Valley as it approaches Havasu Canyon. This observation was based on aerial photos from a high flow event in 1992 that show the main channel directly adjacent to the southern floodplain. This was also evidenced in the high flows

in 2005 which caused the River to meander south and erode farmlands that were established after the construction of Alamo Dam (Reclamation, 2018b).

This shift of the river channel to the south and subsequent erosion was recently demonstrated in March, 2018, during a scheduled high flow release from Alamo Dam. During this release, the River flowed south along the upstream concrete sills and along the road bed, causing further erosion near the planned backwater pond location. In Figure 3 below, water is (flowing left to right) being directed south of the sill and channelized in a 400 foot segment rather than crossing the two 1800 foot sills and braiding out across the valley. A 300-400 foot segment of road was washed away, resulting in the need for a temporary road closure and repairs.



Figure 3- Planet Ranch Road during the high flow event in March, 2018. The approximate location of the sills is depicted with the black lines above.



Figure 4- West end of Planet Valley during high flow event of March, 2018 showing concentration of flow on south side of valley.

### 1.2.2 Purpose and Need

The overall purpose and need for the Conservation Area is described in the Final EA on page 13. In summary, development of the Conservation Area will allow Reclamation to create, enhance and restore native habitat through the development of approximately 71 acres of backwater and up to 514 acres of cottonwood-willow (*Populus fremontii*-*Salix* sp.) within the Conservation Area.

The purpose and need for the relocation of the structure and placement of fill is to protect the backwater ponds and place the flood control structure so the overall purposes of the Conservation Area and the goals of the LCR MSCP may be met. Placing the flood control structure farther away from the backwater ponds would provide greater assurance that they would not be damaged in a high flow event. Rebuilding the eroded bank, which includes raising a portion of the Planet Ranch road, would help to redirect the River to its braided pre-1990's channel. The channel in its southern location is approximately 400 feet wide during high flow events. Redirecting the River to the north to its pre-1990's channel will allow for a wider, meandering channel, 1,200 to 1,500 feet wide during high flow events, creating potential for a greater area of riparian habitat enhancement. It would also reduce maintenance costs to Planet Ranch road, which is often damaged during high flow events; the backwater ponds; and other conservation area facilities. It would also eliminate the need to realign a portion of the Planet Ranch road, which would have been realigned to accommodate the previous flood control structure location.

## 2.0 Description of Alternatives

### 2.1 Proposed Action Alternative

The Final EA provides a detailed description of the design, implementation, operation, and maintenance of the Conservation Area on pages EA 15-25. The Conservation Area will include backwater ponds, housing and structures, the River corridor, and areas reserved for Reclamation future uses. The Conservation Area as described in the Final EA will remain the same with the exception of the Proposed Action described below.

#### **Proposed Action**

The Final EA describes the use of vegetation barriers, sheet pile, earthen berms, rock riprap or other similar methods to protect the backwater ponds from high flow events on the River and tributary drainages on page EA 17. It describes the flood control structure as following the edge of the potential Waters of the U.S. Under the Proposed Action, the flood control structure would be moved approximately 1,000 feet north from the location shown in the Final EA (EA Figures 4 and 5) to protect a greater portion of the bank adjacent to the backwater ponds. Portions of the flood control structure, associated fill, and a haul road would now be partially within potential Waters of the U.S. Through coordination with the U.S Army Corps of Engineers (USACE) it has been determined that this action may be authorized under Nationwide Permit number 27: “Aquatic Habitat Restoration, Enhancement, and Establishment Activities”.

The flood control structure would protect the backwater ponds from high flows on the River and flooding of the large tributary drainage located east of the backwater pond site. It would include a fill area to rebuild the former River bank, a soil cement embankment, a sheet pile wall adjacent to the River corridor, and a soil embankment (Figure 5). The flood control structure is being designed to withstand 7,000 cfs releases from Alamo Dam and the 100 year floods from adjacent drainages.

Excavated material from pond construction would be used to rebuild the area of the bank (previously irrigated farmland) that has eroded since 1992 and construct a flood control structure. The area where this material will be placed (Fill Area 1, Figure 5) is approximately 84 acres, of which 53.48 acres are classified as potential Waters of the U.S. Approximately 500,000 cubic yards of material will be placed in Fill Area 1. Approximately 364,000 cubic yards of the Fill Area 1 material would be placed within the potential Waters of the U.S. The northern boundary of the Fill Area 1 would be stabilized with an earthen berm and armored with a soil cement embankment measuring approximately 2,700 linear feet and a sheet pile wall measuring approximately 1,300 linear feet. The total length of this soil cement and sheet pile erosion control structure would be shorter in length than the embankment described in the Final EA (approximately 4,000 feet vs. the original approximate 6,850 feet). Once construction of this erosion control structure is complete, Fill Area 1 will be stabilized with native vegetation.

The flood control structure would be oriented to deflect tributary flows away from the backwater pond location. The east end of the fill area would be at an elevation of approximately 607 feet, preventing water from flowing south along Planet Ranch road in this location but allowing tributary flows from the south to enter the River channel and also directing flow north across the concrete sill. The approximately 1,300 foot long by 3-4 foot high sheet pile wall along the River corridor will function as a weir for overland flow coming from the drainage basins to the south. A portion of the Planet Ranch road would no longer need to be relocated as described in the Final EA, but approximately 900 feet of the road would be raised to the level of the fill.

Fill may also be placed along the northern edge of the backwater ponds (shown as “Potential fill area on Figure 5). It would provide bank stabilization and a transition area from the higher elevation backwater pond site to the cottonwood-willow area. A 50 foot wide native surface temporary haul route would be utilized to haul excess fill to Fill Area 2. Four hundred linear feet of this haul route would cross the potential Waters of the U.S (Figure 6).

Excavated material not needed for bank rebuilding would be used within the construction area to elevate backwaters, cover the pond bottoms, build fences, roads, and other facilities. Any remaining excess fill would be deposited in the Reserved Area and/or the potential spoils area/agriculture fields as described in the Final EA. These areas are shown on Figure 2 and as Fill Area 2 on Figure 6.

## **2.2 No Action Alternative**

Under this alternative, the Conservation Area would be designed, implemented, operated, and maintained as described in the Proposed Action in the Final EA. Vegetation barriers, sheet pile, earthen berms, rock riprap or other similar methods would be used to protect the backwater ponds from high flow events on the River and tributary drainages. However, the flood control structure would be constructed at its originally planned location, and no fill or structures would be placed in the potential Waters of the U.S.

As described in Section 1.2.1 of this EA, the backwater ponds would be more vulnerable to erosion and damage during high flow events due to the potential for erosion of the bank below the backwater ponds. Damage to the ponds could result in harm to the LCR MSCP species benefiting from the backwater ponds. It would also result in higher construction costs given the longer alignment of the flood control structure described in the Final EA, as well as higher long term maintenance costs associated with the backwater ponds and the Planet Ranch road. Under this alternative, the River would likely remain in its narrower, more southern channel, rather than being restored to a wider, braided channel.



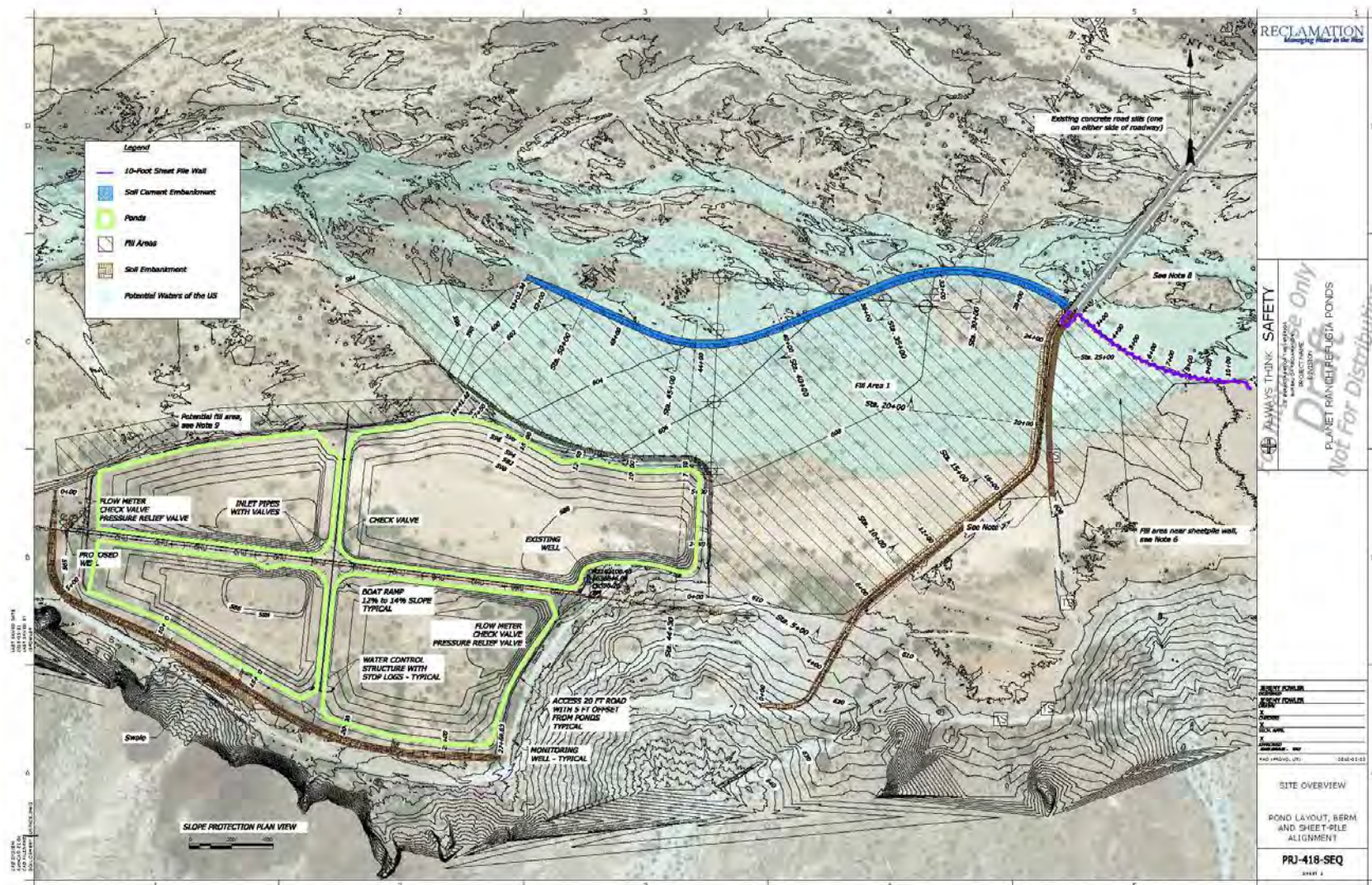


Figure 5- Flood Control Structure Design



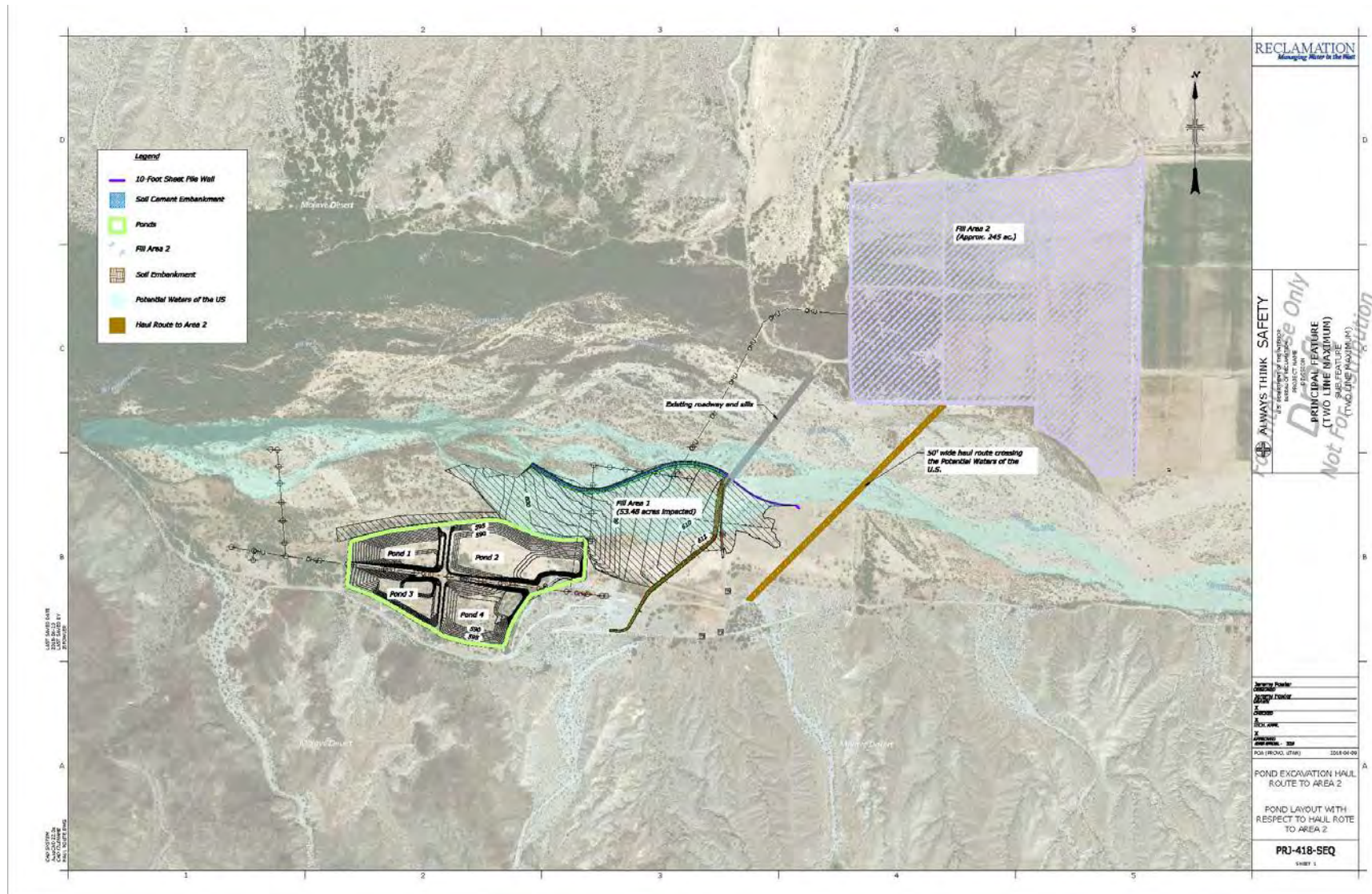


Figure 6- Flood Control Structure Design showing potential Waters of the U.S. and Fill Areas

## **2.3 Alternatives Considered but not Evaluated Further**

The Value Planning Study (Reclamation, 2018b) developed numerous options for meeting the overall objectives of bank stabilization and protection of the backwater ponds. Options included such things as changes to the backwater pond design and location, and different options for erosion and bank protection. The Proposed Action was developed by selecting the options that best fit the purpose and need for the Conservation Area while maximizing protection of the backwater pond area. The reasons for selecting these specific options as the Proposed Action and not evaluating the other options further are summarized below.

The current plan described in the Final EA for the backwater area includes water drainage from the backwater ponds into the cottonwood-willow habitat directly north of the backwater pond area to benefit this habitat. The location for the backwater ponds was originally selected because of its close proximity to this habitat and the fairly shallow depth to groundwater, allowing the backwater pond water to rapidly infiltrate and replenish the groundwater in this location. The backwater ponds and the cottonwood-willow habitat they would benefit are in close proximity to the downstream Bill Williams River National Wildlife Refuge (Bill Williams River NWR) which supports large stands of naturally regenerating cottonwood-willow forests.

When the Planet Ranch area was acquired for the development of the Conservation Area, the LCR MSCP received credit for 396 acres of cottonwood-willow habitat located on the Bill Williams River NWR because of the resulting decreased irrigation for agricultural uses. The addition of groundwater from backwater pond drainage has potential to benefit this downstream habitat because of its close proximity. Of equal importance, the redirection of the River to a braided pattern in the northern channel would benefit a larger riparian area during flood events. The current backwater pond location and design maximizes the potential for development of cottonwood-willow habitat and would best meet the overall purpose and need for the Conservation Area which is to create, enhance, and restore native habitat on behalf of the LCR MSCP.

## **3.0 Affected Environment and Environmental Consequences**

### **3.1 Affected Environment**

The Conservation Area will be developed as described in the Final EA with the exception of the changes described in the Proposed Action. These are specific, localized changes, so the affected environment/analysis area for the Proposed Action is limited to the portions of the potential Waters of the U.S., floodplain, and critical habitat that could be impacted by the Proposed

Action. A complete summary of the affected environment at the Conservation Area can be found in Section 3 of the Final EA.

To facilitate compliance with Section 404 of the Clean Water Act, a preliminary jurisdictional determination was made by the USACE in 2013 (USACE, 2013). The preliminary jurisdictional determination identified potential Waters of the U.S. and potential wetlands within the boundaries of Planet Ranch. No Proposed Action activities would take place in the potential wetlands so they are not discussed further in this document.

The Proposed Action would place 364,000 cubic yards of fill within 53.48 acres of potential Waters of the U.S. As discussed in Section 1.2.1, the River channel in this location typically only has surface flows during large rain events or when releases from the upstream Alamo Dam exceed approximately 500 cubic-feet per second (cfs) for at least a 24-hour period. This area has been extensively modified in the past, most notably with the development of farm fields between 1953 and 1964.

Four hundred feet of the temporary haul route and a minor amount of fill associated with Fill Areas 1 and 2 would be located within the 100 year floodplain as mapped by the Federal Emergency Management Agency (Figure 7). Federal activities within the 100 year floodplain require consideration of Executive Order (EO) 11988 “Floodplain Management”. This EO requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The State of Arizona has a floodplain management program (Arizona Department of Water Resources, 2018) to reduce future flood risks within the 100 year floodplain. Requirements for floodplain management in Arizona are found in the Arizona Revised Statutes (Arizona Revised Statutes). Mojave County implements the Arizona Statute through a flood control district and a flood control ordinance (Mohave County, 2014).

The proposed flood control structure would be located in previously farmed areas that are designated critical habitat<sup>1</sup> for Southwestern willow flycatcher (*Empidonax traillii extimus*) and proposed critical habitat for yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (Figure 8). The habitat consists of an open park like cottonwood-willow habitat and lacks the dense riparian vegetation necessary to support the southwestern willow flycatcher and yellow-billed cuckoo. No southwestern willow flycatchers or yellow-billed cuckoo have been detected nesting where construction is proposed (see Final EA page 41).

The proposed haul route (Figures 6 and 8) would cross northern Mexican gartersnake (*Thamnophis eques megalops*) proposed critical habitat. The haul route would be located in a dry sparsely vegetated portion of the river channel. The primary habitat for northern Mexican gartersnake includes marsh and a 30 meter buffer from the waters’ edge which is not present along the haul route.

---

<sup>1</sup> Critical habitat is a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection (USFWS, 2015)



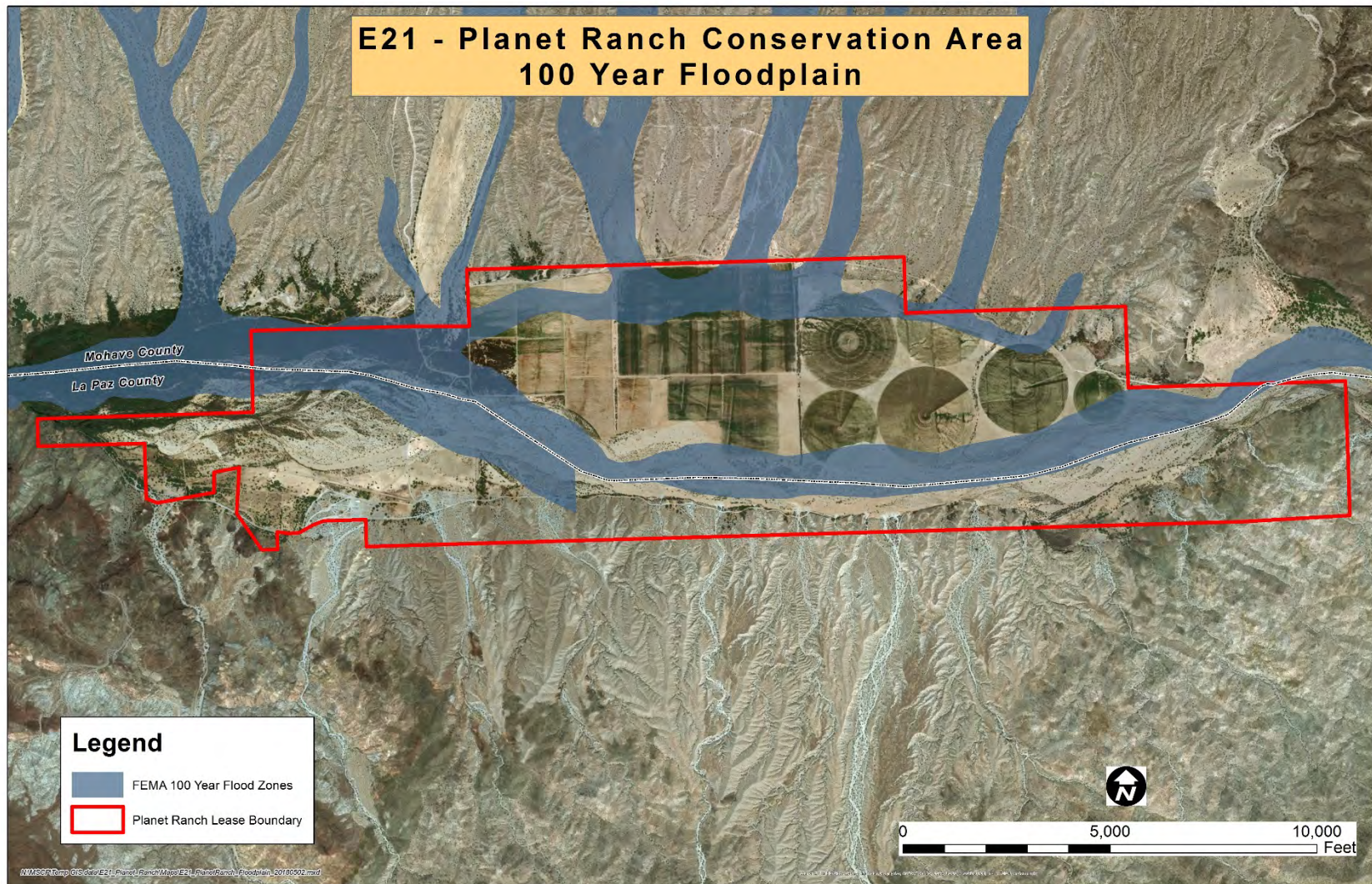


Figure 7-100 Year Floodplain at Planet Ranch. Source: Federal Emergency Management Agency



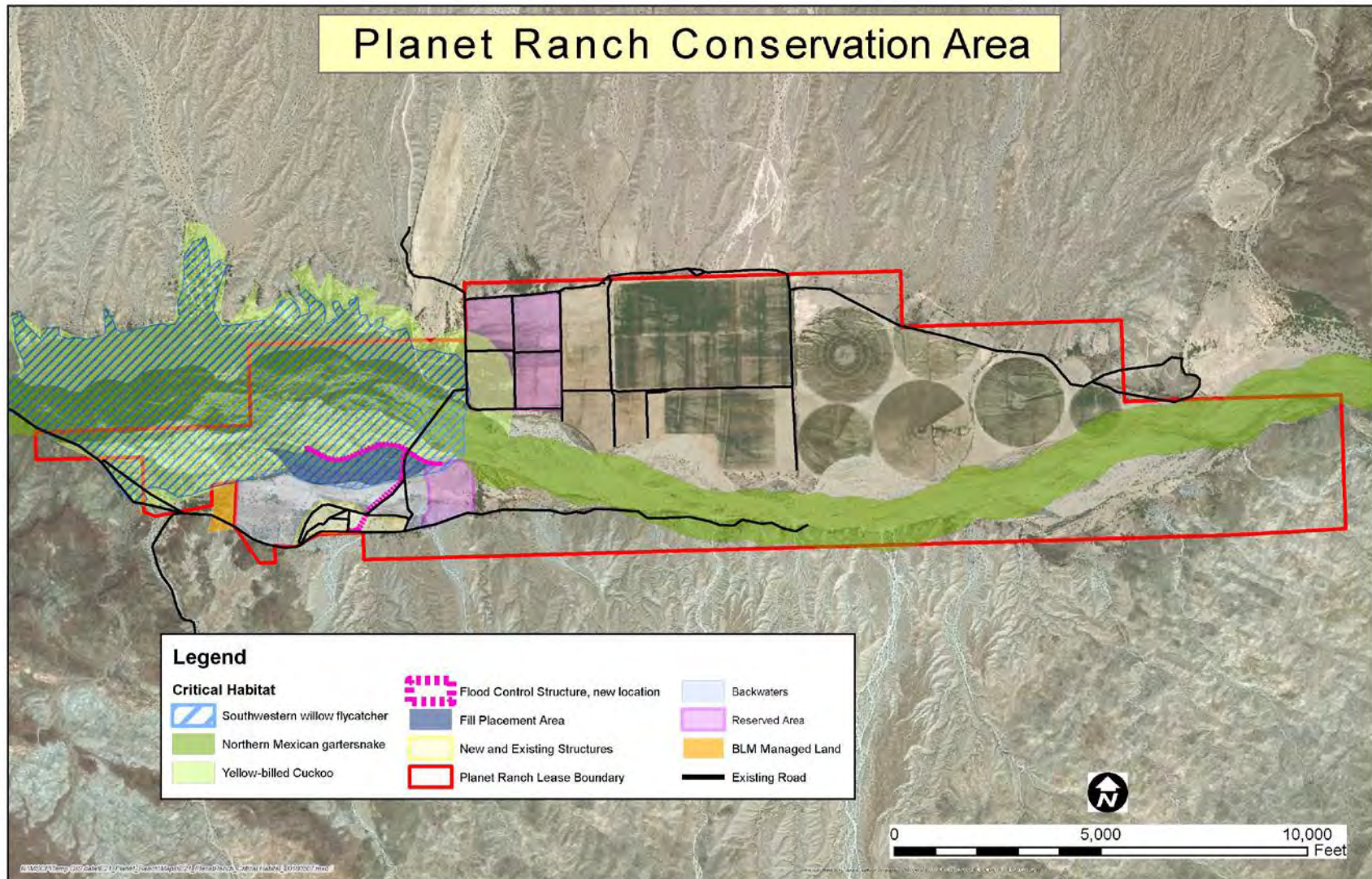


Figure 8 -Planet Ranch Conservation Area Critical Habitat.

## **3.2 Environmental Consequences**

Although the construction of the flood control structure was not envisioned in potential Waters of the U.S. or floodplains when the Final EA was completed, the potential impacts of the flood control structure at its previous location were fully analyzed. There would be no change to the impacts described in the EA for the following resources: Air Quality, Agricultural Resources, Cultural Resources/Traditional Cultural Properties/Paleontological Resources, Environmental Justice, Geology and Soils, Hazardous Materials, Solid Waste, and Health and Human Safety, Land Use and Recreation, Indian Trust Assets, Noise, Public Services/Utilities and Service Systems, Transportation and Traffic, Socioeconomics, Transboundary Impacts, Wild and Scenic Rivers, Wilderness, and Water Quality.

The potential impacts of the Proposed Action are considered further for the resources listed below. The impacts of the No Action Alternative are described under the Proposed Action in the Final EA and are incorporated here by reference.

### **3.2.1 Biological Resources**

The flood control structure would impact approximately 84 acres of cottonwood- willow habitat, which is designated critical habitat for southwestern willow flycatcher and proposed critical habitat for yellow-billed cuckoo.

Surveys for southwestern willow flycatchers and yellow-billed cuckoo have been conducted and are documented in the Final EA on page 41. This information is incorporated here by reference. No southwestern willow flycatchers or yellow-billed cuckoo have been detected nesting where construction is proposed due to the open park like structure of the habitat.

There would be a short term negative impact to potential forging habitat with the loss of the 84 acres. Once the flood control structure is complete, native vegetation would stabilize the 84 acres of fill and once again provide potential forging habitat. The flood control structure may have beneficial effects to the 496 acres of river corridor cottonwood willow land cover type in the main river channel by diverting flows back to the historic river channel.

Impacts and effects of implementation of the LCR MSCP on Southwestern willow flycatcher and yellow-billed cuckoo were considered and disclosed in the Biological and Conference Opinion on the LCR MSCP (2005 Biological Opinion) (USFWS, 2005) and the LCR MSCP Final Programmatic Environmental Impact Statement/Environmental Impact Report (Reclamation et. al. 2004) . Yellow-billed cuckoo coverage became effective on November 3, 2014 when it was listed as threatened.

The potential effects to southwestern willow flycatcher proposed critical habitat were included in the 2005 Biological Opinion. Final critical habitat was designated in 2013. The impacts analyzed for the proposed critical habitat are essentially the same as for designated critical

habitat. The potential effects from construction and operation of conservation areas is in that analysis. The avoidance and minimization measures included in the LCR MSCP Conservation Plan and 2005 Biological Opinion will be implemented.

The potential effects to Yellow-billed cuckoo proposed critical habitat was included in the 2005 Biological Opinion. The potential effects from construction and operation of conservation areas is in that analysis. The avoidance and minimization measures included in the LCR MSCP Conservation Plan and 2005 Biological Opinion will be implemented.

The proposed haul route would be a temporary native surface route that crosses a dry portion of the river channel and proposed critical habitat for northern Mexican gartersnake. The route would not impact existing habitat for the snake. It is anticipated that the dry, sandy sparsely vegetated portion of the river channel used for the route will revert back to pre-construction conditions after Proposed Action implementation is concluded. No impacts to the northern Mexican gartersnake or the proposed critical habitat are anticipated.

The USFWS concurred on April 24, 2018 that the development of Planet Ranch Conservation Area is a covered action under the LCR MSCP.

### **3.2.2 Floodplains**

The fill placed in Fill Areas 1 and 2 would be contoured to blend with existing topography and stabilized with native vegetation and would not create adverse impacts. The temporary haul route would cross the floodplain but there would be no fill or structures associated with the haul route. The haul route is not anticipated to impact the function of the floodplain. Activities within the floodplain are in accordance with the Arizona statute and the Mohave County flood control ordinance. Written authorization for this activity for the counties in which the Conservation Area is located is not required as it meets one of the Statutory Exemptions outlined in the Arizona Revised Statutes and the Mojave County flood control ordinance. The Conservation Area is located on land owned by the Arizona Game and Fish Department, a public agency, and associated with the development of a public recreation facility.

### **3.2.3 Hydrology**

The Final EA documented the results of a model simulation conducted to determine if there would be hydrologic impacts from the proposed flood control structure (Reclamation, 2017b). These simulations incorporated a levee aligned directly along the northern edge of the pond site rather than the Proposed Action location. The simulations showed that at low river discharges, the river water surface elevation would not be high enough to make contact with the levee and there would be no effect on river hydraulics. This is expected to be true for the Proposed Action also.

Simulation of river hydraulics at a 7,000 cfs flow release from Alamo Dam showed that overall, the levee would force the flow to shift towards the northern part of the River channel.

The levee was predicted to have very little impact on the flood inundation of the River; decreasing the inundation area by 49.9 acres or 3% for a 7,000 cfs flow. The decrease in inundation was primarily on the south side of the levee, with a slight increase in inundation in low areas along the River channel north of the levee. The location of the soil cement embankment and Fill Area 1 would likely result in further reduction of the inundation area south of the levee and Fill Area 1, but may result in an increase in inundation north of the structure, as more water would be shifted to the northern part of the River channel. This is considered to be a beneficial impact, as more water would be directed to the cottonwood-willow habitat during high flows. Under the Proposed Action the routing of flows north along the concrete sills during high tributary flow events is also expected to have a similar beneficial impact to cottonwood-willow habitat as water is dispersed across a wider, braided channel.

The high flow release model simulation predicted an average increase in water surface elevation of approximately 0.3 feet at the beginning of the curved alignment of the levee, and an average decrease of 0.2 feet downstream of the structure. An increase in water surface at the beginning of the curved alignment of the soil cement embankment is also expected under the Proposed Action, however the water surface elevation is expected to decrease upstream, as the soil cement embankment would be shorter than anticipated in the model simulations.

The model simulation also predicted a slight increase in flow velocity (maximum change of 1.25 feet per second) in the main channel along the levee alignment while a decrease was seen in upstream slack-water and downstream flow expansion areas (maximum change of -0.49 feet per second). This decrease in flow velocity is also expected at the upstream portion of the curved alignment of the soil cement embankment. The decrease would likely not be as pronounced at the downstream portion of the soil cement embankment because of its shorter length and overall alignment. Flow velocities in the main channel under the Proposed Action are not expected to differ much from the model simulations because of the wide River channel.

Due to the broad River valley, any hydraulic effects from the levee are predicted to dissipate as the River enters Havasu Canyon. These conclusions apply to the Proposed Action as well.

In conclusion, the changes to the potential hydraulic impacts described in the Final EA would be minor under the Proposed Action. Overall hydrologic impacts are expected to be beneficial as the River would be redirected to the north and allow for a wider, braided channel that utilizes more of the historic floodplain.

## **4.0 List of Preparers**

Jeremy Brooks  
LCR MSCP Site Development Coordinator  
Bureau of Reclamation, Multi-Species Conservation Program



Mark Slaughter  
Archaeologist  
Bureau of Reclamation, Lower Colorado Regional Office

Faye Streier  
Natural Resources Specialist- National Environmental Policy Act Coordinator  
Bureau of Reclamation, Lower Colorado Regional Office

Andrew Trouette  
Natural Resources Specialist – Biologist  
Bureau of Reclamation, Lower Colorado Regional Office

## 5.0 Public Involvement

A notice of the availability of the FONSI and Final EA will be sent to an interested parties list.

The FONSI and Final EA will be posted on Reclamation's internet site at:  
<http://www.usbr.gov/lc/region/g2000/envdocs.html>.

A news release regarding the availability of the FONSI and Final EA will be sent to newspapers and other media. The news release will also be posted on Reclamation's website at  
<http://www.usbr.gov/newsroom/newsreleases>.

## 6.0 References

Arizona Department of Water Resources. 2017. Floodplain Management and Flood Warning.  
Accessed 5/3/18 at <https://new.azwater.gov/floodplain-management>.

Arizona Revised Statutes. Chapter 21, Article 21, §48-3601 to 48-3628.

Executive Order 11988. Floodplain Management. 42 FR 26951, 3 CFR. Page 117. 1977.

Mohave County Flood Control District. 2014. Mohave County Flood Control Ordinance-2014.  
Mohave County Board of Supervisors Ordinance 2014-01.

P.K. House, M. L. Wood, and P.A. Pearthree. 1999. Hydrologic and Geomorphic Characteristics  
of the Bill Williams River, Arizona. Arizona Geological Survey Open-File Report 99-4.  
Tucson, AZ

U.S. Army Corps of Engineers. 2013. Preliminary Jurisdictional Determination regarding  
presence/absence of geographic jurisdiction (SPL-2013-00182-WHM). Arizona.

U.S. Bureau of Reclamation. 2018a. Finding of No Significant Impact and Final Environmental Assessment, Planet Ranch Conservation Area. Boulder City, Nevada.

\_\_\_\_\_. 2018b. Final Value Planning Report- Planet Ranch Conservation Area, Parker, Arizona. Denver, Colorado

\_\_\_\_\_. 2017a. Bill Williams River hydraulic and hydrologic analysis at Planet Ranch Conservation Area, Planet Ranch, Arizona. Technical Report No. SRH-2017-29. Denver, Colorado.

\_\_\_\_\_. 2017b. Bill Williams River hydraulic and hydrologic analysis at Planet Ranch Conservation Area, Planet Ranch, Arizona. Technical Report No. SRH-2017-29. Supplemental Hydraulic Model Simulation. Denver, Colorado.

U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, the Metropolitan Water District of Southern California. 2004. LCR MSCP, Volume I, Final Programmatic Environmental Impact Statement/Environmental Impact Report. December 17. Available at: [http://www.lcrmscp.gov/publications/voli\\_env\\_impact\\_st\\_dec04.pdf](http://www.lcrmscp.gov/publications/voli_env_impact_st_dec04.pdf).

U.S Fish and Wildlife Service. 2015. Listing and Critical Habitat, Frequently Asked Questions. Accessed 6/27/18 at: <https://www.fws.gov/endangered/what-we-do/critical-habitats-faq.html>

\_\_\_\_\_. 2005. Biological and Conference Opinion on the LCR MSCP, Arizona, California and Nevada. Phoenix, AZ.