

# RECLAMATION

*Managing Water in the West*

## **Draft Environmental Assessment**

### **Central Arizona Project Canal Trail: Pinal-Pima County Line to Park Link Drive (Park Link Segment)**

**Pinal County, Arizona**



**U.S. Department of the Interior  
Bureau of Reclamation  
Phoenix Area Office  
Glendale Arizona**

**April 2018**

## **Mission Statements**

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

## ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ACS	Archaeological Consulting Services, Ltd.
AGFD	Arizona Game and Fish Department
ASLD	Arizona State Land Department
ASM	Arizona State Museum
BE	Biological Evaluation
BLM	Bureau of Land Management
CAP	Central Arizona Project
CAWCD	Central Arizona Water Conservation District
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
County (the)	Pinal County Open Space and Trails
DOI	Department of the Interior
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
ESA	Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
IPaC	Information, Planning, and Conservation System
ITAs	Indian trust assets
LLNB	Lesser long-nosed bat
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
O&M	Operations & Maintenance
O&M Agreement	CAP Operations & Maintenance Agreement
OHV	off-highway vehicle
RCRA	Resource Conservation and Recovery Act
Right-of-Way Policy	Interim CAP Right-of-way Land Use Policy
Reclamation	Bureau of Reclamation
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SWFL	southwestern willow flycatcher
USFWS	U.S. Fish and Wildlife Service
WestLand Resources, Inc.	WestLand
YBCU	yellow-billed cuckoo

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## **Chapter 1. Introduction, Background, Purpose and Need**

### **1.1. Introduction**

The Bureau of Reclamation (Reclamation) has prepared this Draft Environmental Assessment (EA) to analyze the potential effects for a proposal by Pinal County Open Space and Trails (the County) to provide access to approximately 10.5 miles of recreational trail, which would be located along 9.8 miles of the Central Arizona Project (CAP) canal maintenance road and would include the construction of 0.7 miles of new trail to connect existing maintenance roads (*Figure 1*). This portion of the trail begins at the Pinal-Pima County Line at the southern end and extends north to Park Link Drive (the Park Link Segment project). The County's proposal includes an installation of a trailhead and its associated parking lot at the end of Nona Road on the north side of the road (*Figure 1*).

The EA was prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR parts 1500-1508), Department of the Interior (DOI) NEPA regulations (43 CFR part 46) Reclamation's NEPA Handbook, and internal directives and standards.

### **1.2. Background**

As part of the original plan for the construction of the CAP canal, Reclamation anticipated the development of a recreational trail along the entire 336-mile length of the canal that would accommodate walking, bicycling, jogging, and equestrian use. The trail was considered before portions of the CAP canal were constructed and included in the Environmental Impact Statement (EIS) for the CAP Granite Reef Aqueduct (January 1974). It was revisited in subsequent EISs for the Tucson Aqueduct Phases A and B. The Records of Decision were issued February 1983 and August 1984, respectively. The EISs examined a proposed trail along the downslope corridor of the canal. In 2003, the recreation trail along the CAP was designated as a National Recreation Trail by the U.S. Secretary of the Interior.

More than 100 miles of the CAP canal is located in Pinal County, Arizona, and the proposed trail alignment would run adjacent to a majority of the CAP canal, extending for approximately 87 miles in total. The proposed CAP canal Trail (herein referred to as the CAP Trail) was first discussed in the Pinal County Trails Plan in 2005, and was later incorporated into the Pinal Open Space and Trails Master Plan in 2007 as one of three primary trail corridors in Pinal County. In 2008, Pinal County prepared a CAP Trail Master Plan in partnership with Pima County that included plans for the stretch of the CAP Trail that extends from the south Pinal County border to Picacho Peak. The CAP Trail was also identified in the Pinal County Comprehensive Plan in 2009, and in the Master Plan for the Pinal County Segment of the CAP National Recreation Trail in 2015.

In 2016, the County entered into a Recreational Land Use Agreement with Reclamation to develop, operate, and maintain the portion of the CAP Trail within Pinal County. The agreement breaks the Pinal County portion of the CAP Trail into eleven segments, each of which will have a different set of partners that will work with Pinal County over the long-term to construct the CAP Trail. The proposed trail alignment discussed in this EA is the Park Link Segment, and is the first segment

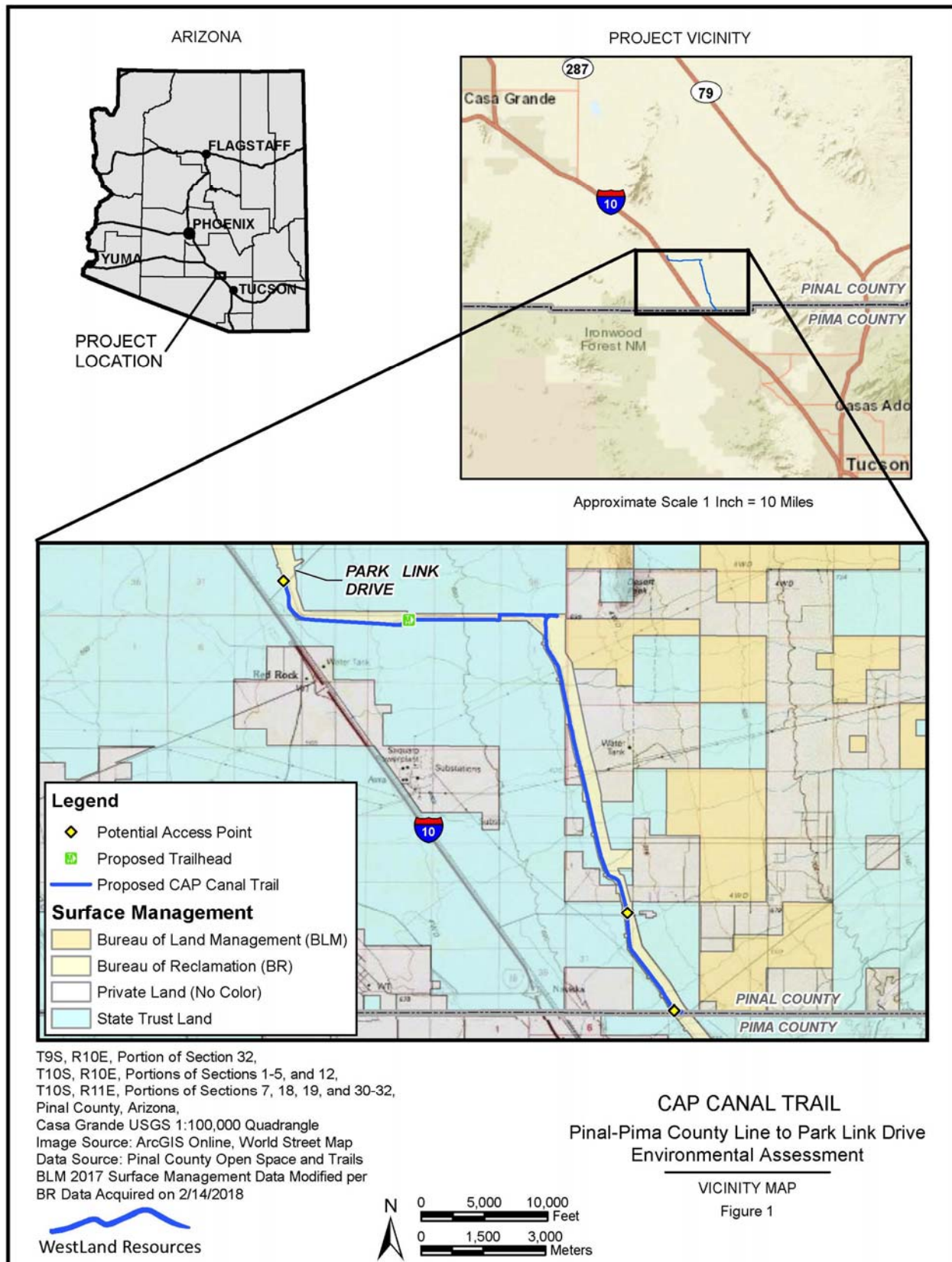
of the CAP Trail planned for construction within Pinal County. The remaining segments will undergo NEPA evaluation as the site-specific project details are developed.

The County is in the process of developing a Management Plan which will identify programs for the effective management of the area and its natural resources, including but not limited to measures to control soil erosion, suppress fires, provide law enforcement, prevent damage to mitigation features, and control vectors and pests.

The CAP canal is managed under the CAP Operations & Maintenance Agreement (O&M Agreement) between Reclamation and Central Arizona Water Conservation District (CAWCD), which includes environmental commitments that are summarized in **Appendix A**. One of the environmental commitments includes an Interim CAP Right-of-way Land Use Policy (Land Use Policy; **Appendix B**). The Land Use Policy designates areas upslope of the CAP canal as mitigation areas, which were set aside to offset impacts associated with the construction of the canal. Lands within 25 feet or more of the upstream toe of any upslope embankment are jointly used for embankment and mitigation.

This EA presents an updated evaluation of potential impacts to the human and natural environment based on current conditions and updated resource data for this segment of the CAP Trail.

Figure 1. Vicinity Map





### 1.3. Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to provide a recreational opportunity within the CAP corridor. Opening up 10.5 miles of trail and constructing the Nona Road trailhead (*Figure 1*) would be in accordance with the long-term goal for a complete trail system, and would fulfill a portion of the Recreation Land Use Agreement between Reclamation and the County to develop the Pinal County CAP Trail. In addition, it would implement a segment of Pinal County's Open Space and Trail Master Plan.

Pursuant to the Recreation Agreement, Reclamation would be able to approve 1) the Management and Development Plan for this portion of the trail, and 2) third-party agreements for the development, operation, and maintenance of the trail.

### 1.4. Public Involvement and Comment

As set forth in the CEQ regulations in 40 Code of Federal Regulations (CFR), Reclamation participates in scoping, or the process of actively soliciting input from the public and other interested federal, state, tribal, and local agencies. Specifically, the scoping process outlined in CFR 1501.7 states, "there should be an early and open process for determining the scope of issues to be addressed and for identifying the process for determining the scope of issues to be addressed during the planning process." During the typical scoping process, Reclamation solicits comments from the public and relevant agencies, then organizes and analyzes the comments received, and distills the comments in order to identify the issues to be addressed during the planning process.

The scoping process for the Park Link Segment of the CAP Trail began on August 1, 2017 when Reclamation mailed a scoping letter to 64 potentially interested agencies, organizations, tribes, and neighbors to the Proposed Action. Reclamation received four comment letters as a result of the scoping process. The Pima County Natural Resources Parks and Recreation Department responded in support of the Park Link Segment project and indicated they would like to receive notification when the Draft EA becomes available. The Gila River Indian Community responded to express interest in participating in the Section 106 process. Residents located near the Proposed Action requested further information on disturbance areas and road construction materials, and also expressed concern over traffic patterns near the access points along Missile Base Road. All scoping comments are provided in *Appendix C*.

## Chapter 2. Proposed Action and Alternatives

### 2.1. Description of the Proposed Action

Reclamation proposes to provide access to 10.5 miles of recreational trail, the Park Link Segment, within the CAP canal corridor between the Pinal-Pima County line and Park Link Drive, which would include opening 9.8 miles of the existing maintenance road of the CAP canal to the public (*Figure 2*), constructing 0.7 miles of new trail to connect the maintenance roads (*Figure 3*), and developing an approximately 1.5-acre trailhead (*Figure 4*). The Proposed Action was developed by the County in accordance with Pinal County's Open Space and Trails Master Plan (Pinal County 2007). The proposed CAP Trail would be designated for pedestrian, equestrian, and bicyclists use only; no motorized recreational vehicles would be allowed.

The north end of the trail would begin at the intersection of Park Link Drive and Nona Road, immediately east of I-10 (*Figure 2*). The trail alignment would follow Nona Road south for approximately 2.3 miles to the proposed trailhead, which would provide parking and trail access (*Figure 2*). The proposed 1.5-acre trailhead would be located within a semi-disturbed area adjacent to Nona Road, and would include grading, the application of an aggregate base surface, and the installation of a ramada, access gate, sign and a post and cable barrier around the trailhead, which will contain vehicles within the designated parking area.

From the trailhead, the proposed trail would continue east along the existing two-track maintenance road located above the underground portion of the CAP canal, commonly referred to as siphon, for 1.4 miles (*Figure 3*). The approximately 5- to 8-foot wide trail would be identified by mile markers and interpretive signs within this section. Minimal vegetation disturbance would occur, as the trail would be located entirely within already-disturbed areas.

After 1.4 miles, the existing two-track maintenance road meets with the security fence surrounding the above-ground portion of the CAP canal on the eastern end of Nona Road (*Figure 3*). To keep the trail outside of the security fence but within the Reclamation right-of-way, a new fence would be constructed along the northern side of the CAP canal approximately 130- to 200-feet south of the current fence line, two small portions of the existing fence would be removed to allow access, and a new trail would be constructed over 0.7 miles to connect to the existing maintenance road at the eastern end of Nona Road. The northern side of the existing fence, which would no longer be connected to the security fence, would be left in place to delineate the boundary of Reclamation land.

The new trail would be 5- to 8-feet wide and would be routed around vegetation where possible. In addition, it would be installed with hand tools to minimize impacts to wildlife habitat. Trail building would be done with common trail building tools (e.g., McLeods, picks, shovels, hand compactors), and no heavy equipment would be used. Trail construction would use existing material on site and follow sustainable trail building methods that have been used for years for primitive, backcountry trails.

The new trail would meet back up with the existing maintenance road near the eastern end of Nona Road and would then curve to the south and up onto the existing maintenance road on top of CAP protection berm, which is an elevated, artificially constructed berm that is immediately outside the

security fence and parallel to the CAP canal. The proposed trail would extend south along the berm to the Pinal-Pima County line for another 6.7 miles. The width of the trail would be limited to the width of the berm for this portion of the trail. New access gates would be installed at the Pinal-Pima County line and at Missile Base Road, in coordination with CAWCD. Since the trail will be established along the existing CAP maintenance road, there will be minimal ground disturbance associated with the establishment of the trail within this section. The designated trail would be located on an existing compacted dirt road, and no surface improvements would be required. Ground disturbance on the trail would be limited to the placement of trail signs.

As part of their O&M Agreement, CAWCD would continue to perform routine maintenance activities along the existing maintenance road, which will also serve as the proposed CAP Trail. CAWCD's O&M activities include, but are not limited to, grading of the maintenance road and maintaining the CAP facilities and fencing. The construction, operation, and maintenance for the Park Link Segment of the CAP Trail would be the responsibility of the County, and would include conducting patrols to identify trespass activity of recreational trail users within the mitigation property.



Figure 2. Aerial Overview

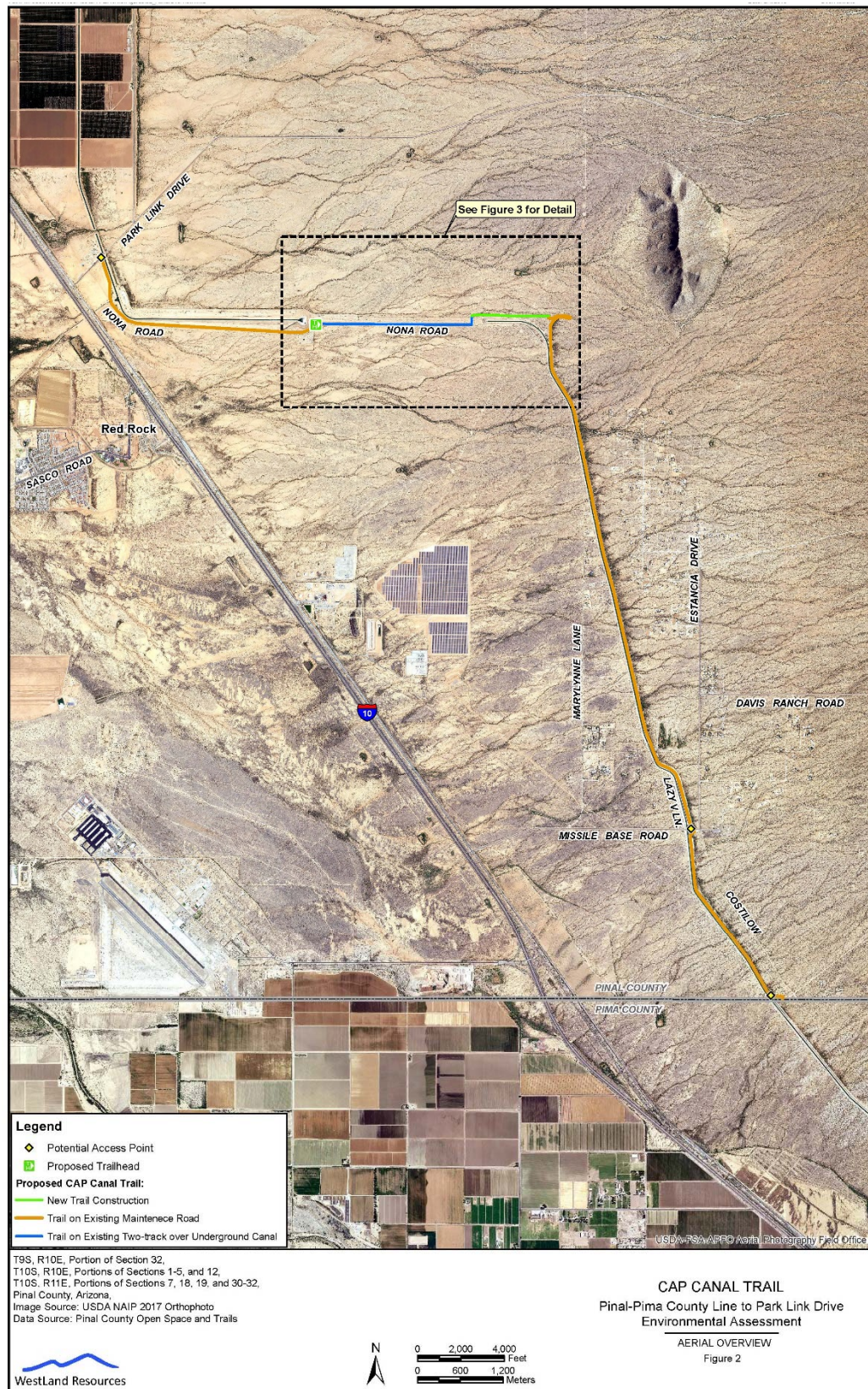




Figure 3. Project Area Along Nona Road

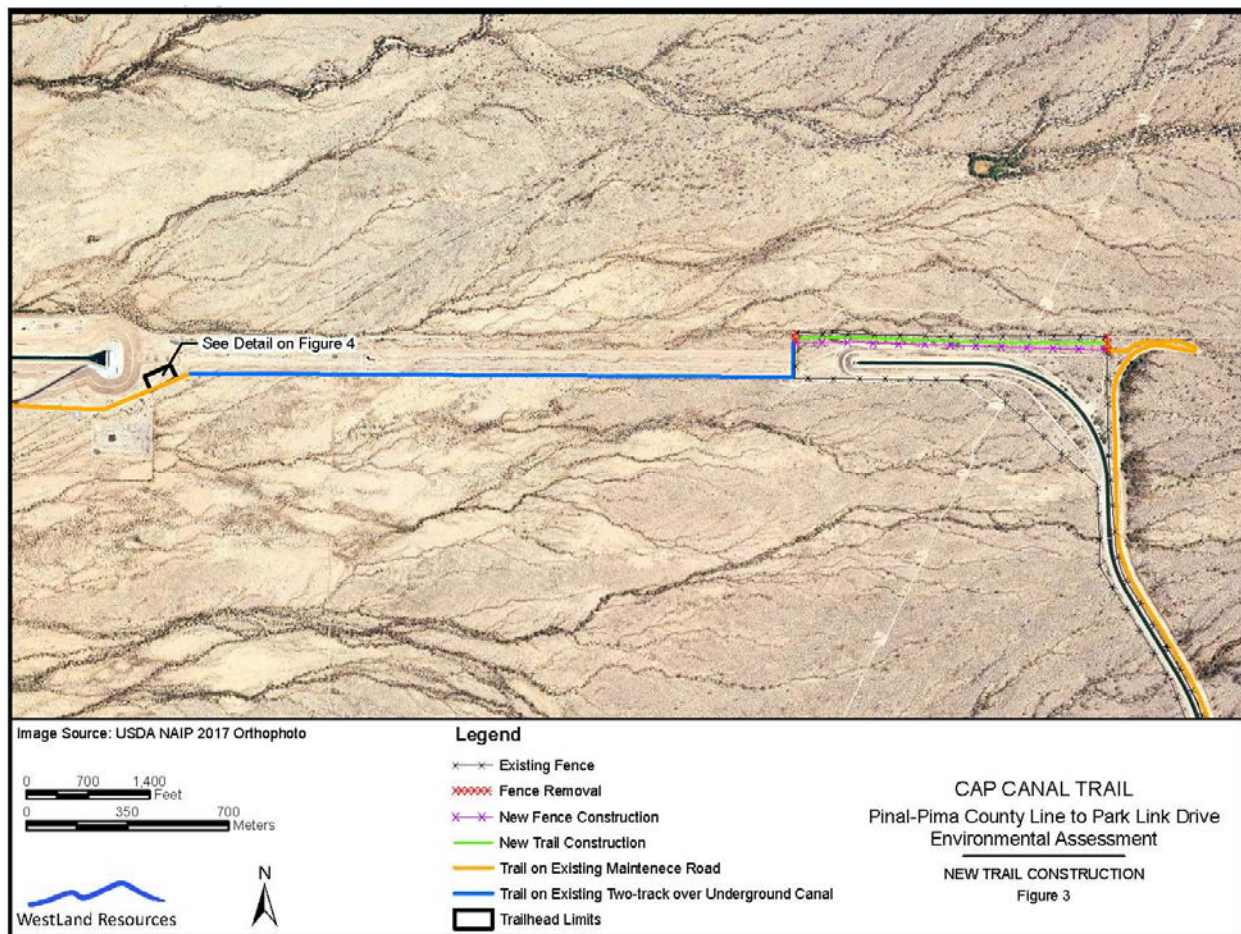
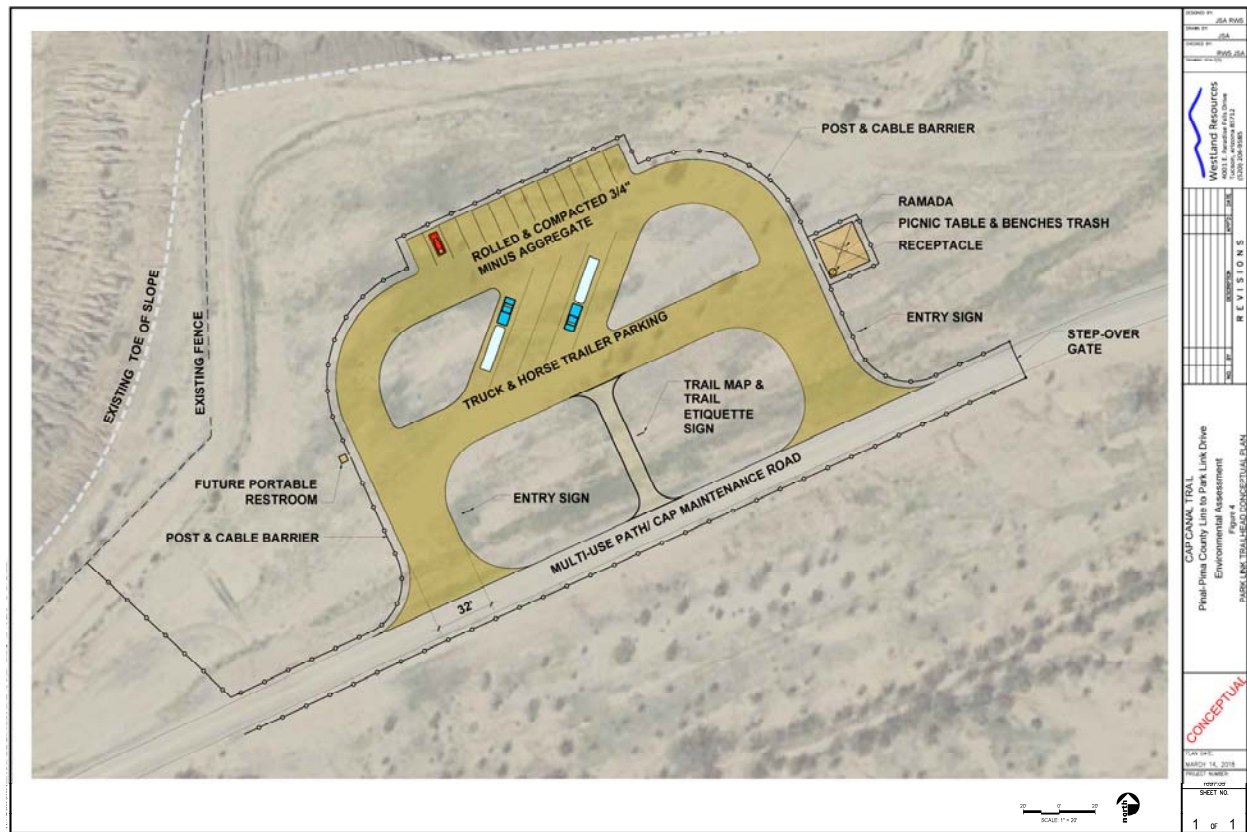


Figure 4. Conceptual Trailhead Design Along Nona Road



## 2.2. Proposed Action Location

The Proposed Action is located in Pinal County, entirely within lands managed by Reclamation. The trail would begin at the Pima-Pinal County boundary and extend north along the CAP canal, ending at Park Link Drive. The proposed activities are within an approximately 20-foot-wide corridor that extends for 10.5 miles within portions of Section 32 in Township 9 South, Range 10 East, portions of Sections 1-5 and 12 in Township 10 South, Range 10 East, and portions of Sections 7, 18, 19, and 30-32 of Township 10 South, Range 11 East of the Gila and Salt River Baseline and Meridian (*Figure 1*).

## 2.3. No Action Alternative

Under the No Action Alternative, Pinal County would not be authorized to open the maintenance road for recreational trail use, the 0.7-mile stretch near the eastern end of Nona Road would not be constructed, no trailhead or parking area would be developed along Nona Road near the CAP canal, and no trail signs would be installed. CAWCD would continue to maintain the road so they can access the CAP canal.

Selection of the No Action Alternative would not meet the identified need for the Proposed Action.

## Chapter 3. Affected Environment and Environmental Consequences

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes direct, indirect, and cumulative effects of the Proposed Action on the physical, biological, and socioeconomic resources within the project area, which includes the proposed trail alignment, the mitigation banks adjacent to the trail, and the proposed trailhead. The CEQ defines direct effects as those that are caused by the action and occur at the same time and place, indirect effects as those that are caused by the action and occur later in time or farther removed in distance, and addresses cumulative effects in much more detail.

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts were determined by combining the impacts of the alternatives on the affected environment with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects within the vicinity of the project area. The geographic scope for this analysis includes actions both within and outside of project area. The temporal scope includes projects within a range of approximately ten years. Given this, the following projects were identified for the purpose of conducting the cumulative effects analysis, listed from past to future:

- Construction of the CAP canal (past)
- Ongoing maintenance activities along the road (trail alignment) (present)
- Grazing on Arizona State Land Department (ASLD) and Bureau of Land Management (BLM) land east of the CAP (present)
- CAP Trail extension north and south, and creation of complementary trails along the CAP canal outside of the CAP right-of-way (future)
- Construction and operation of a 2,726.31-acre photovoltaic solar facility north of the CAP siphon by SunPower Corporation (future)

### 3.1. Resources Eliminated from Further Study

The following resources were considered but are not addressed further in this EA because they were determined to not be present or would sustain minimal or no impacts from the Proposed Action.

#### 3.1.1. Air Quality

The Park Link Segment project is located within an attainment area identified by Region IX of the, Environmental Protection Agency (EPA) under the Clean Air Act for National Air Ambient Quality Standards. A small portion (less than 0.6 miles) of the northern end of the trail is located within the West Pinal PM10 Nonattainment Area. The Proposed Action would not require an air permit because project activities would not contribute to increased particulate matter or other pollutants monitored by Arizona Department of Environmental Quality. Use of the existing maintenance road as a recreational trail would not affect air quality within the surrounding area. Construction of the parking lot, which would consist of clearing, grading, and applying an aggregate base for the 1.5-acre trailhead area, would be short-term in duration (3 to 4 days) and it is not expected to impact air quality. A water truck would be on site to provide dust control during

construction activities. Due to the limited and temporary nature of the impacts, air quality was eliminated from further study in this EA.

### **3.1.2. Water Resources**

The Park Link Segment project does not require the use or relocation of surface or groundwater. The Proposed Action would use the existing road for recreational activities and an existing degraded 1.5-acre site for a parking lot at the northern end of the trail. Water used for dust control during construction of the parking lot would be obtained from the existing municipal water supply and trucked to the site. The Proposed Action would have no effect on water quality or quantity in the area; therefore, water resources were eliminated from further study in this EA.

### **3.1.3. Geology and Soils**

Except for a short segment (0.7 mile) of new trail, the Proposed Action would occur on a moderately compacted dirt road located on top of the existing road that parallels the CAP canal between the Pima-Pinal County boundary and Park Link Drive. A trailhead would be graded and stabilized with aggregate base as previously described, which represents a negligible loss of open soil. The existing road supports light vehicle use for CAP maintenance purposes and routine grading. The Proposed Action would not increase motorized vehicle use or cause changes in the topography, soils, or geologic composition of the surrounding area. Therefore, geology and soils were eliminated from further study in this EA.

### **3.1.4. Floodplains and Wetlands**

The Proposed Action is located within a Zone X floodplain, with a less than 0.2% annual flood chance. The project would not adversely affect the floodplain, and the construction would primarily impact previously disturbed areas. The surface of the trailhead would be constructed of water permeable aggregate, and the trail would be designated over an existing compacted dirt road. Therefore, the construction would not impact the functionality of the floodplain. No wetlands are located within the proposed alignment; therefore, the Proposed Action would not impact wetlands.

### **3.1.5. Socioeconomic**

The Proposed Action would not have an immediate socioeconomic impact on the local area or Pinal County. However, there is a potential for a minimal beneficial effect on Pinal County's economy as their Open Space and Trails Master Plan is realized (The Trust for Public Land 2012).

### **3.1.6. Environmental Justice**

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations," directs federal agencies to review and develop strategies that address disproportionately high and adverse human health or environmental impacts on minority and low-income populations. The semi-rural area within a mile of the Proposed Action has a population of 513 people. Within this population, 88 percent identify as white and 18 percent identify as a minority, which is far below the state average (EPA 2018).<sup>1</sup> Only 17 percent of the population within one mile of the Proposed Action is considered low income, which is less than

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<sup>1</sup> Approximately 43 percent of Arizona consists of minority populations (EPA 2018).



half of the state average (EPA 2018).<sup>2</sup> No disproportionately high and adverse human health or environmental impacts would result from the Proposed Action. The Proposed Action would not adversely affect any minority or low-income populations. Therefore, environmental justice has been eliminated from further study in this EA.

### **3.1.7. Indian Trust Assets**

Indian trust assets (ITAs) are legal interests in property held in trust by the United States through the Department of the Interior (DOI) for federally recognized Indian tribes or individual tribal members. Secretarial Order 3175 (incorporated into the Departmental Manual at 512 DM 2) requires that when proposed actions of a DOI agency might affect trust assets, the agency must address those potential impacts in planning and decision documents and the agency consult with the tribal government whose trust assets are potentially affected. The project area is located on uninhabited Federal land. No ITAs have been identified in this area. Indian trust assets were excluded from further review.

## **3.2. Land Use and Recreation**

### **3.2.1. Affected Environment – Land Use and Recreation**

The project will occur within Reclamation right-of-way for the Central Arizona Project. The majority of the project occurs on an existing maintenance road for the CAP canal or on a two-track road that extends the length of the siphon. Additionally, the proposed trailhead is located on 1.5 acres of land that has been disturbed for the construction of the siphon and its on-going maintenance (*Figure 3*). Paved and unpaved roads occur in the area, providing road access points to the proposed trail. East Missile Base Road is a paved road that intersects with the proposed CAP Trail about 1.5 miles north of the Pima County line. Nona Road is an unpaved road that intersects Park Link Drive and serves as a maintenance road for the CAP canal along the northern portion of the project.

Areas upslope of the CAP canal were designated as mitigation areas under Reclamation's Land Use Policy, and were set aside to offset impacts associated with the construction of the canal itself. Lands within 25 feet or more of the upstream toe of any upslope dike are jointly used for embankment and mitigation. Pursuant the O&M Agreement, Reclamation will consult with the U.S. Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department (AGFD) on the potential impacts to the mitigation corridor.

Current adjacent land uses include agriculture, recreation (off-highway vehicles, horseback riding, and hunting), residential development, utility corridors and grazing.

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<sup>2</sup> An average of 39 percent of the state is considered low income (EPA 2018).

### **3.2.2. Environmental Consequences – Land Use and Recreation**

#### **Proposed Action**

Under the Proposed Action, pedestrians, cyclists, and equestrians would have access to the road on the berm adjacent to the CAP canal for recreational purposes. The proposed trail is considered a low-impact project. The Proposed Action would have the beneficial effect of adding recreational opportunities for area residents. These increased recreational opportunities would not impact the grazing that occurs on adjacent ASLD and BLM lands. CAWCD maintenance crews would be able to continue to use the existing maintenance road for the CAP.

The proposed trailhead to be located along Nona Road would be the only access point designated to accommodate recreation users' vehicles. Other access points, which do not include trailheads or designated parking, are located at Park Link Drive, the intersection with Missile Base Road and at the Pinal-Pima County line (*Figure 2*).

#### **No Action Alternative**

Under the No Action Alternative, CAWCD maintenance crews would continue to use the existing road for operations and maintenance. The existing dirt road would not be open for public access and would not be available for recreational purposes. The approximately 1.5 acres designated for the trailhead parking area would not be developed. There would be no change in land use on or adjacent to the proposed CAP Trail alignment.

#### **Cumulative Impacts**

The CAP Trail is expected to serve as a long-distance, non-motorized, multi-use recreational trail corridor connecting to future planned trails, such as the Maricopa County Regional Trail System and the Eastern Pima County Trail System, and facilitating a larger regionally-connected trail system, per the Pinal County Open Space and Trails Master Plan (Pinal County 2007). Pinal County is one of the country's fastest growing counties, increasing by 109 percent from 2000 to 2010. Thus, the Proposed Action, in conjunction with the larger planned activities, would provide additional recreational opportunities for present and future residents in the region (The Trust for Public Land 2012). In the future, the trail will extend north to Picacho Peak and south past the Pinal/Pima County line to meet the Tangerine Road to Pinal County Line portion of the CAP Trail. This portion of trail is currently undergoing NEPA review and, once access between the two segments has been approved, will provide a continuous trail into Pima County. The project will have no impact on the operation and maintenance activities of the CAP canal.

Land use in the area may be affected if construction and operation of the planned 2,726-acre photovoltaic facility by the SunPower Corporation on ASLD land to the north of the CAP siphon goes forward. In particular, grazing, hunting, and OHV recreation will no longer be available within the facility. A portion of the proposed solar project will be located along the length of most of the siphon.

### **3.2.3. Management/Conservation Measures – Land Use and Recreation**

The County's O&M plan will incorporate the following mitigation and management measures:

- Posting and maintaining public information signs at trail access points.

- Removing trash and waste along the trail and at the trailhead.
- Maintaining the post and cable fencing at the trailhead in order to minimize vehicles from traveling off-road.
- Conducting patrols to identify trespass activities within the mitigation corridor.
- Recommending remedial measures to reduce opportunities for trespass.

### **3.3. Biological Resources: Vegetation**

#### **3.3.1. Affected Environment – Vegetation**

The Proposed Action area is mapped by Brown and Lowe (1980) within the Lower Colorado subdivision and the Arizona Upland subdivision of Sonoran Desertscrub. A site visit was conducted by AGFD and WestLand Resources, Inc. (WestLand) biologists on June 20, 2017, to assess the physical and biological features present. Dominant species occurring within the vicinity of the Proposed Action are typical of the Sonoran Desertscrub community (Turner and Brown 1994), and include, but are not limited to, velvet mesquite (*Prosopis velutina*), blue paloverde (*Parkinsonia florida*), whitethorn acacia (*Acacia constricta*), creosotebush (*Larrea tridentata*), triangleleaf bursage (*Ambrosia deltoidea*), saguaro (*Carnegiea gigantea*), cholla species (*Cylindropuntia* sp.), and prickly pear species (*Opuntia* sp.). The slopes of the CAP berm where runoff collects contains the densest concentration of vegetation.

The Park Link Segment project lies within the flats of an alluvial plain west of the Tortolita Mountains. There are a number of nearby mountain ranges, including Picacho Peak and the Santa Catalina Mountains. Topography changes in the immediate vicinity consist primarily of small drainages and fairly flat terrain. Surface drainage through the vicinity of the Proposed Action is characterized by sheet flow and widely braided ephemeral drainage systems. The majority of the alignment is located on the raised berm which is directly east the CAP canal (**Figure 2**). One of the objectives of the berm was the accumulation and retention of water after precipitation events to stimulate and support the growth of xeroriparian vegetation. This community within the lower Sonoran Desert is typically associated with natural desert drainages, also known as desert washes.

Pursuant the O&M Agreement, Reclamation will consult with AGFD and USFWS to discuss potential impacts of the Proposed Action to the adjacent mitigation land.

#### **3.3.2. Environmental Consequences – Vegetation**

##### **Proposed Action**

The Proposed Action would result in minimal disturbance of vegetation along the CAP canal with the majority of the Proposed Action occurring on already disturbed land. A majority of the trail goes along the mitigation property on an existing maintenance road; therefore, no vegetation will be disturbed or removed within this portion of the trail. The 0.7-mile section of new trail will result in the minimal removal of vegetation, such as creosote and other small shrubs, but large mature woody vegetation, like mesquite and ironwood (*Olneya tesota*), would be avoided (**Figure 3**). The trailhead parking lot and the two-track road leading from it have been previously disturbed resulting in the presence of only a few creosote bushes. The vegetation within these areas will be removed as part of the Proposed Action.

The spread of non-native and noxious plants by providing access to the public is a concern, but it is understood that the successful germination and establishment of various species of unwanted plants varies and can be relatively low. Unwanted seeds can be distributed along the trail by the shoes of joggers, treads of bike tires, and by horses defecating. Over time their establishment can increase and lead to impacts by spreading down into the mitigation corridor. An invasive species survey along the proposed trail was not conducted; however, buffelgrass (*Cenchrus ciliare*) is an invasive plant species found in disturbed areas, especially along roads, and in steep rocky hillsides in the Sonoran Desertscrub biotic community.

### **No Action Alternative**

Under the No Action Alternative, there would be no direct impact to vegetation, since the Park Link Segment would not be opened for recreational use. Creosote bushes growing in the trailhead parking area would continue to persist for the foreseeable future, and other sparse shrubs and grasses would remain undisturbed. No vegetation disturbance would occur where the new trail segment has been proposed (*Figure 3*).

### **Cumulative Impacts**

Historically, the construction of the CAP canal resulted in high levels of vegetation removal and disturbance along the alignment. The loss of vegetation in the area would be a cumulative disturbance associated with nearby land development, agriculture, off-road vehicle use, cattle grazing, and other human influences.

Although, the use of the Park Link Segment of the CAP Trail would increase access to the area, the incremental increases in impacts over existing recreational use and disturbance would be negligible. Trespass into the CAP canal mitigation area adjacent to the CAP Trail alignment by recreationists could lead to damage through the creation of unauthorized trails, disposal of trash and other debris, erosion, and damage to vegetation. This would reduce the quality of the habitat that was set aside as mitigation for the construction of the CAP canal. The extension of the trail north and south along the CAP canal could, over time, increase the number of recreation users along this portion of the trail resulting in potential impacts to vegetation.

#### **3.3.3. Management/Conservation Measures – Vegetation**

Management and mitigation measures to reduce potential adverse effects to native vegetation include:

- Removing trash and waste along the trail and at the trailhead.
- Maintaining the fence line at the parking lot to minimize vehicles from traveling off-road.
- Requiring remedial measures to reduce trespass opportunities
- Conducting patrols to identify trespass activity within the mitigation corridor.
- Washing all equipment prior to beginning any construction activities associated with the Proposed Action. This will help to minimize the potential for the introduction and/or spread of invasive plant species.

### **3.4. Biological Resources: Terrestrial Wildlife**

#### **3.4.1. Affected Environment – Terrestrial Wildlife**

Terrestrial wildlife in the area is typical of those species associated with Lower Colorado Subdivision and the Arizona Upland subdivision of Sonoran Desertscrub. Resident and migrant birds that may be observed near the proposed trail include Gambel's quail (*Callipepla gambelii*), white-winged dove (*Zenaida asiatica*), Gila woodpecker (*Melanerpes uropygialis*), and the mourning dove (*Zenaida macroura*). Mammal species that may occur within the Proposed Action area include antelope jackrabbit (*Lepus alleni*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and javelina (*Pecari tajacu*). Common lizards in the Proposed Action area include the zebra-tailed lizard (*Callisaurus draconoides*), tiger whiptail (*Aspidoscelis tigris*), and side-blotched lizard (*Uta stansburiana*). The variety of small mammals provides an abundant prey source for several species of snakes, including the Mohave rattlesnake (*Crotalus scutulatus*), Tiger Rattlesnake (*Crotalus tigris*), coachwhip (*Masticophis flagellum picues*), and gophersnake (*Pituophis catenifer*). Amphibians with the potential to occur in the vicinity include the Sonoran Desert Toad (*Incilius alvarius*), Woodhouse's toad (*Bufo woodhousii*), and red-spotted toad (*Bufo punctatus*).

As a result of population growth and development in Arizona, identifying and preserving wildlife movement corridors have become a priority. In April 2004, there was a wildlife connectivity workshop, called the Arizona Missing Linkages: Biodiversity at the Crossroads, where stakeholders and experts in wildlife management and land-use planning mapped important wildlife linkages and areas of known wildlife movement (Beier et al. 2006). Identified linkages were prioritized based on biological importance and conservation threats. The Ironwood-Picacho Linkage, associated with the CAP siphon within the project area, was one of the eight identified as a priority.

#### **3.4.2. Environmental Consequences – Terrestrial Wildlife**

##### **Proposed Action**

Small mammal and reptile mortality may increase as a result of additional trail use by bicycle and equestrian riders and additional vehicular patrols. The minimal vegetation removal associated with of the new trail segment will likely result in the loss of some habitat. Direct impacts to birds and large mammals are not anticipated, as the trail would be located on existing access roads, and trail traffic would not pose a danger to birds or large mammals. Increased patrol activities could minimally contribute to increased small mammal and reptile mortality that is presently occurring and will continue to occur from ongoing maintenance activities.

The Proposed Action would have minor impacts to the Ironwood-Picacho Linkage at the CAP siphon. The level of impact would likely rise as the rest of the trail segments get developed and recreational use increases. Construction of the trailhead parking lot would result in short-term impacts from noise, disturbance, and human presence. While the long-term presence and utilization of the trailhead and adjoining recreational trail would further degrade its suitability for wildlife connectivity (Rodríguez et al. 1996, Clevenger and Waltho 2000). Regular human presence at other CAP wildlife crossing structures has also resulted in decreased wildlife utilization (T. Bommarito pers. obs.).

### **No Action Alternative**

Under the No Action Alternative, there would be no direct effect to terrestrial wildlife because no project would be implemented. There would be no new loss of or disturbance to mammals, reptiles, amphibians, or birds because the trail would not be opened. There would be no disturbance to habitat from the minimal removal of vegetation during the development of the 0.7-mile new trail segment on the eastern extent of Nona Road.

### **Cumulative Impacts**

Historically, the construction of the CAP canal resulted in the loss of wildlife habitat and disruption to wildlife movement within the Proposed Action area. In addition, ongoing road maintenance has also contributed to wildlife disturbances. The proposed project when combined with past, present, and reasonably foreseeable future projects would have an adverse impact on wildlife connectivity, although the incremental contribution of the trail would be minor. The effects to wildlife from construction of the CAP Trail Park Link Segment would be part of a cumulative disturbance associated with land development, agriculture, off-road vehicle use, and other existing human influences affecting the area. The extension of the CAP Trail to the north and south could increase the number of recreation users to this portion of the trail. This could then result in potential impacts to terrestrial wildlife.

#### **3.4.3. Management/Conservation Measures – Terrestrial Wildlife**

Management and conservation measures to reduce potential adverse effects to wildlife include:

- Posting public information signs.
- Removing trash and waste along the trail and at the trailhead.
- Maintaining the fence line at the trailhead to minimize vehicles from traveling off-road.
- Conducting patrols to identify trespass activity within the mitigation corridor.
- Requiring remedial measures to reduce opportunities for trespass.

### **3.5. Special-Status Species**

#### **3.5.1. Affected Environment – Special-Status Species**

A Biological Evaluation (BE) was prepared by WestLand (2017) and reviewed by the AGFD biologist to evaluate the potential occurrence of special-status species, including federally listed species and state-listed species of concern, within and adjacent to the Proposed Action. The USFWS Information, Planning, and Conservation System (IPaC) generated a report of species and critical habitat to be considered under Section 7 of the Endangered Species Act (ESA). The AGFD Online Review Tool was accessed to identify species occurrence records within 3 miles of the project area. Reclamation reviewed the BE and adopted the evaluation. Additionally, Reclamation will consult with USFWS and AGFD to discuss the potential effects of the project to the adjacent mitigation land.

Within the BE, the ESA-listed and other special-status species were evaluated to determine if they occur within the project area. The screening analysis and determinations were based on a review of species occurrence records using the AGFD Online Review Tool, habitat requirements, and distribution and geographic ranges in relation to the Proposed Action.

The USFWS IPaC report identified one federally listed species that has since been delisted<sup>3</sup>: the lesser long-nosed bat (*Leptonycteris yerbabuenae*; LLNB). No proposed or designated critical habitat is located within the Proposed Action.

The AGFD Online Review Tool identified non-ESA-listed special-status species that have some potential to occur. These species include the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), the golden eagle (*Aquila chrysaetos*), the Sonoran desert tortoise (*Gopherus morafkai*), the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*), and the Western burrowing owl (*Athene cunicularia hypugaea*).

### **3.5.2. Environmental Consequences – Special-Status Species**

#### **Proposed Action**

The Proposed Action would have no effect to the delisted LLNB, as no breeding habitat is present and no foraging vegetation such as saguaros or agave would be removed. Disturbance would be limited to the 0.7-mile new trail segment and the presence of cyclists, hikers, or equestrians. Additionally, no lighting structures would be incorporated into the trailhead design.

The Tucson Shovel-nosed snake may occur, but it is unlikely that it would be affected since ground disturbance will be minimal.

The Sonoran desert tortoise, a species cooperatively managed under a Candidate Conservation Agreement, is known to occur near the project area. The likelihood of impact is minimal because the extent of the ground disturbance is localized and short-term. Restricting recreationists to the trail will help minimize future contact and impacts to the species.

The cactus ferruginous pygmy owl, burrowing owl and golden eagle are protected under the Migratory Bird Treaty Act (MBTA). The golden eagle is also protected by the Bald and Golden Eagle Protection Act. It is unlikely that the ferruginous pygmy owl and golden eagle would be affected since their preferred nesting habitat would not be disturbed and new ground disturbance and vegetation removal would be minimal. The burrowing owl would only be disturbed if an active burrow is identified along the 0.7-mile new segment or the trailhead parking area. If in the unlikely instance that burrowing owls are present, passive or active exclusion measures will be employed to minimize effects from potential human disturbances associated with the trail. Thus, there would be no adverse effect to migratory birds as considered under MBTA.

#### **No Action Alternative**

Under the No Action Alternative, there would be no direct impact to federally listed, recently delisted, or special-status species because the proposed trail would not be opened. Normal maintenance operations by CAWCD would continue along the existing maintenance road for the CAP canal.

#### **Cumulative Impacts**

The proposed project, when combined with past, present, and reasonably foreseeable projects, would have little to no effect on federally listed, recently delisted and sensitive species within the

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<sup>3</sup> Note: LLNB has been delisted as of May 18, 2018.

area. Adverse effects to those species are associated with current and on-going activities, such as land development, agriculture, and other human influence throughout the area. The future actions include land development, the proposed solar field, and agriculture, as well as the extension of the trail, which could increase the number of recreation users along this portion of the trail.

### **3.5.3. Management/Conservation Measures – Special-Status Species**

Additional management and conservation measures to reduce potential adverse effects to special-status species include:

- Surveying for active bird nest(s) immediately prior (within 48 hours) to ground disturbance. No developmental activities will occur within an appropriate buffered distance from the active nest until the young birds have fledged from the nest. If an active nest is discovered, Reclamation will determine the appropriate buffered distance.
- Conducting a burrowing owl survey, no more than 90 days prior to constructing the trailhead and opening the trail. Pinal County and/or any third-party agreement entity would notify Reclamation and CAWCD if burrowing owls are found so the agencies can assist and/or recommend appropriate action.
- Compiling with the “Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects” (AGFD 2014).
- Maintaining the post and cable fencing. Restricting recreationists to the existing trail/maintenance road would reduce the likelihood of tortoise mortalities.

## **3.6. Cultural Resources**

### **3.6.1. Affected Environment – Cultural Resources**

Section 106 of the National Historic Preservation Act (36 CFR Section 800) requires that federal agencies consider and evaluate the effect that federal projects may have on historic properties. Historic properties include any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register of Historic Places (NRHP). Previous surveys of the project area were reviewed to determine whether cultural resources that might be eligible for inclusion in the NRHP are present and that could be adversely affected by the Proposed Action.

The Proposed Action alignment may have an effect on five known archaeological sites (**Table 1**). These sites were identified and documented during Class III cultural resources surveys conducted prior to the construction of the CAP canal (i.e., Czaplicki 1984) and for other purposes. Recently, Reclamation contracted with Archaeological Consulting Services, Ltd. (ACS) to revisit, remap, and re-assess previously recorded archaeological sites in the vicinity of the CAP canal (Mitchell et al 2016; Punzmann et al. 2010). ACS revisited two sites —AZ AA:7:66(ASM) and AZ AA:7:68(ASM)—within the current project area. Both sites were attributed to prehistoric Hohokam occupation. The reassessment determined that both sites were disturbed by the construction of the CAP canal. In consultation with Reclamation and the Arizona State Historic Preservation Office (SHPO), both sites were determined eligible for the NRHP, though the portions of the sites within the CAP canal right-of-way were found to be largely destroyed.



AZ T:14:61(ASM), the route for the Butterfield Overland Stage (Rawson et al. 2006; Stone 2002), has been projected to be within the vicinity of this project, but no archaeological projects have ground-truthed its location in the project area. The site has been determined eligible for the NRHP (ASM Site Card). Previous surveys in this area (i.e. Czaplicki 1984; Punzmann et al. 2010) did not record the site. However, the site may have been impacted by the construction of Nona Road, a paved two lane rural access route.

The remaining two sites are historical utilities. AZ AA:8:366(ASM) is an electrical transmission line determined not eligible for the NRHP by SHPO (ASM Site Card; Lindeman 1997; Tactikos 2012). AZ AA:11:237(ASM) is a historical El Paso Natural Gas pipeline that is exempt from Section 106 review according to a 2002 ruling by the Advisory Council on Historic Preservation (ACHP 2002; Castaneda 2004).

**Table 1. Archaeological Sites within the Project Area**

	Site Type	NRHP Eligibility <sup>1</sup>	Land Jurisdiction	Previous Mitigation Activities	Citation
AZ T:14:61(ASM) – Butterfield Overland Stage Route	Historic stage coach route	Determined eligible (a)	Reclamation	Unknown	Rawson et al. (2006); Stone (2002)
AZ AA:7:66(ASM)/ NA18020	Hohokam artifact scatter	Determined eligible (d) Portion of site within CAP ROW is determined to be a non-contributing element to its NRHP eligibility	Reclamation	Partial surface collection	Czaplicki (1984); Mitchell et. al. (2016); Punzmann et. al. (2010)
AZ AA:7:68(ASM) / NA18022 – Red Rock Reservoir Site	Hohokam habitation/ resource processing	Determined eligible (d) Portion of site within CAP ROW is determined to be a non-contributing element to its NRHP eligibility	Reclamation	Testing	Czaplicki (1984); Mitchell et. al. (2016); Punzmann et. al. (2010)
AZ AA:8:366(ASM) – Saguaro-Oracle 115kV Transmission Line	Historic electrical transmission line	Determined not eligible	Reclamation	None	Lindeman (1997); Tactikos (2012)
AZ AA:11:237(ASM)	Natural gas pipeline	Exempt from Section 106 review	Reclamation	None	Buckles et al. (2011)

<sup>1</sup> NRHP eligibility criteria for evaluation (a) = associated with events that have made a significant contribution to the broad patterns of our history; (d) = have yielded or may be likely to yield, information important in history or prehistory.

### 3.6.2. Environmental Consequences - Cultural Resources

#### Proposed Action

The majority of the proposed alignment uses existing linear features, such as a) the CAP maintenance road, b) an existing two-track road, and c) the shoulder of Nona Road, to minimize impacts from the trail development. Four areas of the trail are not located on the existing maintenance road for the CAP. Three of these areas have been previously disturbed during the construction of the CAP canal: 1) the two-track road spanning the portion of the trail where the canal is located underground, 2) the proposed trailhead, and 3) a short path along an existing two-

track connecting the trailhead to the maintenance road. Additional disturbance, which is limited to vegetation clearing, would occur along a new trail segment less than a mile in length. All four areas are within the corridor inventoried prior to construction of the CAP canal. While the entire CAP canal area was surveyed for cultural resources almost 40 years ago (Czaplicki 1984), Arizona SHPO guidelines on old survey data (SHPO 2004) suggest that the areas of new ground disturbance be re-surveyed. WestLand was recently contracted to conduct an inventory of the areas of new ground disturbance (Stone and King 2018), which did not identify any cultural resources.

The majority of the proposed trail alignment has been heavily disturbed by construction of the CAP canal and road and utility construction. Further, areas of new disturbance have recently been surveyed for cultural resources and none were found (Stone and King 2018). As such, it is highly unlikely that *in situ* artifacts or archaeological features would be present within the project area or that implementation of the Proposed Action would have a direct impact on any potentially NRHP-eligible components of the three sites identified in **Table 1**.

Indirect impacts to the archaeological sites that occur immediately adjacent to (outside of) the project area could include vandalism, unplanned visitation by trail users, and off-trail travel by maintenance and/or emergency services vehicles. In order to reduce potential impacts to adjacent cultural sites, the Proposed Action includes the posting of signs to indicate the prohibition of off trail use and the implementation of a monitoring program for unauthorized visitation and/or disturbance to the archaeological sites in the immediate vicinity of the Proposed Action.

### **No Action Alternative**

The No Action Alternative would not impact cultural sites. The proposed trail would not be open for recreational use. CAWCD vehicles would continue to use the existing dirt road for operation and maintenance purposes.

### **Cumulative Impacts**

The Proposed Action would not contribute to any cumulative impact on cultural resources. The extension of the CAP Trail north and south could increase the number of recreation users along this portion of the trail resulting in potential impacts to adjacent cultural sites.

### **3.6.3. Management/Conservation Measures – Cultural Resources**

Management and mitigation measures to reduce potential adverse effects to cultural resources include:

- Installing signage along the trail and at the trailhead indicating that public access is restricted to the trail corridor itself.
- Preventing project-related ground disturbance from occurring outside the proposed trail corridor.
- Conducting periodic archaeological site assessments to determine if cultural resources are being impacted by the recreational trail users. If archaeological resources are being impacted, Reclamation would coordinate with CAWCD, Pinal County, and any third-party agreement entity.

## Chapter 4. Environmental Laws and Directives Considered

The federal laws, permits, licenses, and policy requirements included in **Table 2** have directed, limited, or guided the NEPA analysis within this EA.

**Table 2. Potential Regulatory Requirements**

<b>Law, Regulation, or Executive Order</b>	<b>Method of Compliance</b>
National Environmental Policy Act	Developed Environmental Assessment (EA).
Endangered Species Act	Biological Evaluation and informal consultation with USFWS and AGFD regarding the mitigation property. Considered in EA under Section 3.5.
Migratory Bird Treaty Act	Considered in EA under 3.5 (specifically in relation to the burrowing owl).
Executive Order 12898 Environmental Justice	Considered in the EA under Section 3.1.8.
National Historic Preservation Act	Coordination with State Historic Preservation Office and Tribes. Considered in EA under Section 3.6.
Clean Air Act	Considered in EA under Section 3.1.1.
Fish and Wildlife Coordination Act (FWCA)	Not a water resource project under the purview of FWCA.
Clean Water Act	No waters of the U.S. would be impacted by this project.
Resource Conservation and Recovery Act (RCRA)	The proposed project is not expected to generate hazardous waste as defined and regulated under RCRA. Nonhazardous solid waste would be disposed of in accordance with State and Federal regulations at an approved landfill. Spills and disposal of petroleum contaminated media would be managed in accordance with State and Federal requirements. Vehicles and heavy equipment use would be restricted to existing road and proposed parking area.
Executive Order 11988 - Floodplain Management	Considered in EA under Section 3.1.4. No new construction would occur within the floodplain.
Executive Order 11990 - Wetlands	Considered in EA under Section 3.1.4. The project would not impact wetlands.
Secretarial Order 3175 (incorporated into Departmental Manual at 512 DM 2) - ITA	Considered in EA under Section 3.1.9.

## **Chapter 5. Consultation and Coordination**

Agency Consultation: USFWS (online), AGFD, SHPO

Project information was provided to the following stakeholders:

- Pinal County Open Space and Trails Department
- Pima County Natural Resources Parks and Recreation
- Hopi Tribe
- Tohono O’odham Nation
- Gila River Indian Community
- CAWCD

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## Chapter 7. References

- Advisory Council on Historic Preservation (ACHP). 2002. Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines. *Federal Register* 67(66):1, 2.
- Arizona Game and Fish Department (AGFD). 2014. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.
- Beier, P., D. Majka, and T. Bayless. 2006. Arizona Missing Linkages: Ironwood-Picacho Linkage Design. Report to Arizona Game and Fish Department. School of Forestry, Northern Arizona University.
- Brown, D. E., and C. Lowe. 1980. “Biotic Communities of the Southwest [Map].” *General Technical Report RM-78*.
- Buckles, Avi, A. Granger, Christine Jerla, Tom Klimas, and Mary Prasciunas. 2011. *A Cultural Resources Inventory for the Proposed Marana Tap to Sandario Tap Transmission Line Rebuild Project, Pima County, Arizona*. Cultural Resources Report 2009-17. WestLand Resources, Inc., Tucson.
- Castaneda, Christopher J. 2004. History beneath the Surface: Natural Gas Pipelines and the National Historic Preservation Act. *The Public Historian*, Vol 26, No. 1, pp 105-121. University of California Press, Oakland.
- Clevenger, A. P., N. Waltho. 2000. Factors influencing the effectiveness of wildlife underpasses in Banff National Park, Alberta, Canada. *Conservation Biology* 14: 47–56.
- Czaplicki, Jon S. (compiler). 1984. *A Class III Survey of the Tucson Aqueduct Phase a Corridor, Central Arizona Project: An Intensive Archaeological Survey in the Lower Santa Cruz River Basin, Picacho Reservoir to Rillito, Arizona*. Archaeological Series 165. Arizona State Museum, University of Arizona, Tucson.
- Lindeman, Michael W. 1997. *An Archaeological Survey of the Saguaro-Oracle and Coolidge-Oracle 115kV Transmission Lines*. Technical Report No 97-13. Center for Desert Archaeology, Tucson.
- Mitchell, Douglas R., Peg Davis, Emily H. Keppler, Jennifer Rich, Walter Punzman, Zach Rothwell, Kristin David, Thomas Jones, Gary Huckleberry, and Andrea Gregory. 2016. *Cultural Resources Resurvey, Relocation, Assessment, and Evaluation of 117 Archaeological Sites for the Fannin-McFarland and Tucson Aqueducts, Central Arizona Project Canal, Maricopa, Pinal, and Pima Counties, Arizona*. Archaeological Consulting Services, Ltd., Tempe.
- Pinal County. 2007. “Pinal County Open Space and Trails Master Plan.” *First adopted in 2001, updated in 2007*.

- Punzmann, Walter R., Paige B. Florie, and Glenda Luhnnow. 2010 *Cultural Resources Assessment of 59 Archaeological Sites Along Reaches 1 and 2 of the Tucson Aqueduct (Phase A) Portion of the CAP Canal*. Archaeological Consulting Services, Ltd., Tempe.
- Rawson, Paul M., Morgan Rieder, and Michael J. Boley. 2006. *Class III cultural resources survey, SFPP, LP, El Paso to Phoenix Expansion Project, Arizona portion: Addendum, Cochise and Pima Counties, Arizona*. WSA Technical Report No. 2006-12. William Self Associates, Inc., Tucson.
- Rodríguez, A., G. Crema, M. Delibes. 1996. Use of non-wildlife passages across a high-speed railway by terrestrial vertebrates. *Journal of Applied Ecology* 33: 1527–1540.
- State Historic Preservation Office (SHPO). 2004. *SHPO Position on Relying on Old Archaeological Survey Data*. SHPO Guidance Point No. 5.
- Stone, Bradford W. 2002. *Cultural Resources Survey of a Proposed 120 Acre Expansion Area for the Existing Tanner Companies (Yuma), Inc. Aggregate Materials Source Pit and Processing Site (#CM0040), Approximately 15 Miles Northeast of Yuma, Southwestern Yuma County, Arizona*. Project Report 2001-143. Archaeological Research Services, Inc., Tempe.
- Stone, Bradford W. and Anna M. King. 2018. *Cultural Resources Inventory for a Proposed Multi-Use Trail along the Central Arizona Project Canal, Pinal County, Arizona*. Cultural Resources Report 2017-104. WestLand Resources, Inc., Tucson.
- Tactikos, Joanne C. 2012. *A Class III Cultural Resource Assessment of Approximately 740 acres of Arizona State Trust Land for the Tortolita Solar Project near Marana, Pinal County, Arizona*. Archaeological Consulting Services, LTD., Tempe.
- The Trust for Public Land. 2012. “The Economic Benefits of Open Space and Trails in Pinal County, Arizona.”
- Turner, R. M., and D. E. Brown. 1994. “Sonoran Desertscrub (Arizona Upland Subdivision).” In *Biotic Communities: Southwestern United States and Northwestern Mexico*, ed. D. E. Brown. Salt Lake City, Utah: University of Utah Press, 200–203.
- U.S. Environmental Protection Agency (EPA). 2018. “EJSCREEN Report (Version 2017).” accessed February 14, 2018. [www.epa.gov/ejscreen](http://www.epa.gov/ejscreen).
- WestLand Resources Inc. 2017. “*Biological Evaluation for the Central Arizona Project Trail: Pima-Pinal County Line to Park Link Drive*.” Prepared for Bureau of Reclamation. WestLand Resources, Inc. Tucson, Arizona