

# MEMO



**To:** Project File  
**From:** Joshua Matthews  
**Date:** May 26, 2015  
**Re:** Tempe Streetcar Ecosystems and Natural Resources Technical Memo

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## 1.0 INTRODUCTION

This Ecosystems and Natural Resources Technical Memo is being prepared to support the Environmental Assessment (EA) for the Tempe Streetcar project in Tempe, Arizona. A description of the affected environment is presented in Section 2.0 to provide information about the baseline conditions in the corridor. Section 3.0 describes the methodology used to conduct the impact evaluation. The potential operational and construction impacts and mitigation for the alternatives being considered are discussed in Section 4.0. Section 5.0 summarizes the cumulative impacts from project construction and operation, and Section 6.0 includes a bibliography.

## 2.0 AFFECTED ENVIRONMENT

### 2.1 REGULATORY SETTING

Environmental regulations that address ecosystems and natural resources associated with the Build and No-Build Alternatives are summarized below.

#### **2.1.1 Endangered Species Act of 1973, as Amended**

The Endangered Species Act (ESA) of 1973, as amended, provides for the listing and protection of species designated as threatened, endangered, candidate, or proposed. Under Section 7 of the ESA, lead federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that their actions do not jeopardize the continued existence of threatened or endangered species, or result in the destruction of any designated critical habitat upon which they depend. As defined under Section 9 of the ESA, it is unlawful for any person to “take” a threatened or endangered species without a special permit. A “take” is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The USFWS has the authority under the Section 7 consultation process to issue an “incidental take” permit for a threatened or endangered species so long as the proposed activity does not jeopardize the species’ survival or recovery.

### **2.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, was implemented for the protection of migratory birds and is administered by the USFWS. Specific provisions of the statute include establishment of a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory bird or any part, nest, or egg of any such bird" (16 United States Code 703).

The list of migratory birds protected by the Act includes most bird species native to the United States. Any project-related activities such as bridge demolition and reconstruction that remove or destroy active nests (i.e., eggs or young present) of migratory species would violate the MBTA.

### **2.1.3 The Bald and Golden Eagle Protection Act (16 U.S.C. 668) as Amended**

The Bald and Golden Eagle Protection Act (BGEPA) prohibits any form of possession or take of bald or golden eagles, including any part, nest, or egg; unless allowed by permit. The BGEPA defines "take" as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

### **2.1.4 Clean Water Act**

Wetlands are biologically diverse areas providing important hydrologic functions. Wetlands are defined as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas (U.S. Army Corps of Engineers 1987).

Wetlands are protected under Executive Order 11990 and Section 404 of the Clean Water Act. These regulations require federal agencies to avoid adversely impacting wetlands when practicable alternatives exist and to minimize adverse effects and provide mitigation for those impacts that are unavoidable. The CWA defined Waters of the United States (WUS) to include tributaries to navigable waters, interstate wetlands, wetlands which could affect interstate or foreign commerce, and wetlands adjacent to other WUS. The USACE may issue either individual, site-specific permits (standard permit, letter of permission) or general permits (regional or nationwide) for discharges of dredged or fill material into WUS.

### **2.1.5 Arizona Revised Statutes Title 17**

Arizona Revised Statutes (ARS) Title 17 (Game and Fish) and associated rules regulate the lawful taking and handling of wildlife and establish the Arizona Game and Fish Department (AGFD) as the agency responsible for managing wildlife populations in the state. ARS 17 does not establish a permit mechanism, but AGFD does provide volunteer guidance on the inventory, handling, and mitigation of wildlife resources. The AGFD formerly listed 34 species as Wildlife of Special Concern in Arizona (WSCA) in Maricopa County (AGFD 2014b). The AGFD categories are advisory and provided no legal protection for take of such species or modification of their habitat.

### **2.1.6 Arizona Native Plant Law**

The Arizona Department of Agriculture (ADA) administers the Arizona Native Plant Law, a series of statutes which protect native plants from theft, vandalism, or unnecessary destruction (7 Arizona Revised Statutes § 3-903, Arizona Native Plants). Prior to the destruction of any protected native plants, the landowner must first notify the ADA. Native vegetation planted for landscaping purposes does not qualify for protection under the Arizona Native Plant Law.

## **2.2 STUDY AREA SETTING**

The Tempe Streetcar study area occurs within the highly urbanized setting of the City of Tempe. The environmental setting for the project occurs within the Basin and Range physiographic province at an average elevation of 1,165 feet above mean sea level. The local topography is relatively flat with the Salt River and the Tempe Town Lake located to the north and Hayden Butte to the northeast of downtown Tempe. The project falls within the Lower Colorado River Valley Subdivision of the Sonoran Desert, a biotic region characterized by high temperatures and low precipitation throughout most of the year (Brown 1994). Dominant vegetation associated with this Subdivision consists of drought-tolerant desert scrub species that vary according to water availability. Due to the high degree of urbanization within the study area, most naturally occurring desert scrub vegetation has been removed.

### **2.2.1 Vegetation**

Historically, native vegetation associated with the Tempe Streetcar study area would have consisted of Sonoran Desert scrub species such as drought-tolerant shrubs and trees, various species of cacti, and herbaceous winter annuals (Brown 1994). The study area, however, occurs within a highly urbanized corridor and most of the vegetation is ornamental (non-native species) or weedy in origin. For example, many segments of Mill Avenue curbsides and median are characterized by landscaped borders or lawns planted with palm trees, elm trees, and various species of shrubs and herbaceous perennials. There are several palo verde (*Cercidium* sp.) trees that occur as part of the landscaping within the study area. A large expanse of turf grass and shade tree plantings occur at the Tempe Beach Park located at Mill Avenue and

Rio Salado Parkway, Birchett Park located at Mill Avenue and Apache Boulevard, and Daley Park located at College Avenue and Encanto Drive. In addition, there are some native palo verde trees and mesquite (*Prosopis sp.*) along the south side of Rio Salado Parkway east of Mill Avenue.

### **2.2.2 Wetlands**

There are no wetlands located within the study area. No further analysis is required.

### **2.2.3 Ecologically Sensitive Areas**

The study area is not located in or near woodlands, prairies, marshes, bogs, streams, scenic areas, landforms and geological formations, or pristine natural areas. No further analysis is required.

### **2.2.4 Wildlife**

No large mammals are expected to persist within the study area due to the high degree of urbanization. Alternatively, smaller mammals such as rodents that are adapted to urban conditions are likely to occur within the study area. A wide variety of birds exploiting diverse urban habitats and food resources also inhabit the area. Common birds that occur within the study area and were observed in various landscaped settings include: white-winged dove (*Zenaida asiatica*), morning dove (*Zenaida macroura*), inca dove (*Scardafella inca*), house sparrow (*Passer domesticus*), great-tailed grackle (*Quiscalus mexicanus*), pigeon (*Columba livia*), and northern mockingbird (*Mimus polyglottos*). Finally, smaller reptiles such as lizards can be expected to inhabit abandoned lots and landscaped sites located within the study area.

### **2.2.5 Threatened and Endangered Species**

A list of federally protected species with the potential to occur in the project area was obtained from the USFWS Environmental Conservation Online System – Information, Planning and Conservation (IPaC) system on November 26, 2014. The list (Appendix F) was reviewed by a qualified biologist to determine species with the potential to occur within the study area. There are five threatened and endangered species and three candidate species listed for the study area. In addition, designated or proposed critical habitat does not occur within the study area. An assessment of habitat requirements and potential for occurrence for each of the federally listed species is found in Table 1.

**Table 1. Threatened and Endangered Species for the Project Corridor**

Species Common Name Scientific Name	Status <sup>1</sup>	Habitat Requirements	Potential for Occurrence
<b>Birds</b>			
California Least tern <i>(Sterna antillarum browni)</i>	E	Open, bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems.	None. No suitable habitat within the study area.
Southwestern Willow flycatcher <i>(Empidonax traillii extimus)</i>	E	Cottonwood/willow and tamarisk riparian vegetation communities along rivers and streams.	None. No suitable riparian habitat within the study area.
Sprague's Pipit <i>(Anthus spragueii)</i>	C	Strong preference for native grasslands with vegetation of intermediate height and lacking woody shrubs.	None. No native grasslands occur within the study area.
Yellow-Billed Cuckoo <i>(Coccyzus americanus)</i>	T	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	None due to lack of suitable riparian habitat within study area.
Yuma Clapper rail <i>(Rallus longirostris yumanensis)</i>	E	Fresh water and brackish marshes.	None. No suitable marshland habitat within the study area.
<b>Fishes</b>			
Roundtail chub <i>(Gila robusta)</i>	C	Cool to warm waters of rivers and streams, often occupy the deepest pools and eddies of large streams.	None. No suitable aquatic habitat within the project area.
<b>Mammals</b>			
Lesser Long-Nosed bat <i>(Leptonycteris curasoae yerbabuena)</i>	E	Desert scrub habitat with agave and columnar cacti present as food plants.	None. No suitable desert scrub habitat within the study area.
<b>Reptiles</b>			
Sonoran desert tortoise <i>(Gopherus morafkai)</i>	C	Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran desert scrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.	None. No suitable habitat within the study area.

Source: U.S. Fish and Wildlife Service, Environmental Conservation Online System – Information, Planning and Conservation (ECOS-IPaC) system. Accessed on November 26, 2014.

<sup>1</sup>Status Definitions: E: Endangered; T: Threatened; C: Candidate

### **2.2.6 Migratory Birds**

The Arizona Game and Fish Department's (AGFD) *On-Line Environmental Review Tool* was accessed on November 25, 2014 to determine special status species occurrences and critical habitat within approximately 2 miles of the project vicinity (Appendix A). The AGFD identified the bald eagle (wintering population), as occurring within 2-miles of the study area. In 2011, when Valley Metro first evaluated the proposed project for potential impacts to threatened and endangered species as well as other protected wildlife AGFD provided a letter dated May 23, 2011 that wintering Bald Eagles have been spotted in the vicinity of the project (Appendix C). Although the Bald Eagle has been delisted they are protected under the Bald and Golden Eagle Act, and AGFD recommended that Valley Metro contact the USFWS to determine potential impacts on the Bald Eagle. Valley Metro contacted the USFWS's Arizona Ecological Services Field Office by phone to solicit information on the bald eagles occurring within the project vicinity and learned that there is a breeding pair of eagles nesting along the Salt River bed approximately 4.5 miles east of the downtown Tempe portion of the streetcar project. Valley Metro submitted a letter to the USFWS requesting their review of the proposed project and if they have any specific concerns or suggestions pertaining to the proposed project on Bald Eagles (Appendix D). In a response letter dated July 11, 2011, the USFWS stated that bald eagles are known to occur nearby along the Salt River between the Loop 101 and 202 interchange and Sky Harbor International Airport; the study area does not have any habitat in which the bald eagle rely upon; and that the project is a long-distance from any known nesting area. The USFWS concluded that if the proposed project occurs within the City of Tempe's existing infrastructure as described in Valley Metro's letter that a Bald and Golden Eagle Act permit is not required (Appendix E). Although the proposed project is now heading east on Rio Salado Parkway for approximately one half mile the project remains within Tempe's existing infrastructure and the existing conditions have not changed since the letters were submitted, the conclusions of the USFWS are still valid.

## **3.0 METHODOLOGY FOR IMPACT EVALUATION**

A combination of literature review and field survey was conducted to document biological resources (vegetation, wetlands, wildlife, threatened and endangered species, and special- status species) located within the study area. In addition, the AGFD was contacted to provide them with the opportunity to review and comment on the project. Published lists of threatened, endangered, proposed or candidate species, as well as other special-status species for Maricopa County, were also analyzed by a qualified biologist to determine species with potential for occurrence within the study area. Key elements of the Build Alternative such as street/trackwork, station construction, and traction power substations were analyzed to determine the potential for impact on biological resources. Finally, due to the linear construction footprint of this project, special emphasis was given to those resources located near elements of the Build Alternative.

## **4.0 POTENTIAL OPERATIONAL AND CONSTRUCTION IMPACTS AND MITIGATION**

### **4.1 IMPACTS**

#### **4.1.1 No-Build Alternative**

The No-Build Alternative would result in no direct project-related impacts on ecosystems and natural resources.

#### **4.1.2 Build Alternative**

##### ***4.1.2.1 Vegetation***

Construction and operation of the Build Alternative would occur mostly within existing road right-of-way and developed sites and would require the removal of planted landscape vegetation consisting of native and non-native species. In addition, a small portion of native vegetation would be removed along Rio Salado Parkway east of Mill Avenue for new right-of-way. However, these impacts are anticipated to be minimal due to the limited density of vegetation within the Build Alternative project area.

##### ***4.1.2.2 Wildlife***

The project area for the Build Alternative occurs within highly disturbed urban habitat associated with roadways and developed sites. Construction activities could have short-term effects on wildlife that use the project area, as they may be deterred by the equipment and vehicles. However, impacts to wildlife would be minimal considering the temporary nature of the impacts. Additionally, removal of vegetation will have minor, short-term effects on wildlife using the site. Overall, the amount of urban habitat available in the project area is small in comparison to the amount of similar urban habitat available in the project area vicinity. Furthermore, the project will conform to Valley Metro's Urban Design Guidelines and Standard Design Criteria that provides an enhanced streetscape 350 feet on either side of a station platform and landscaping within and around park-and-ride facilities per the City of Phoenix Zoning Ordinance. These documents include methods to enhance and maintain vegetation through incorporation of landscaping elements into the project features. As a result, project landscape elements may provide enhanced vegetation and wildlife resources and a beneficial long-term impact to wildlife.

##### ***4.1.2.3 Threatened and Endangered Species***

No suitable habitat for federally-listed species occurs within the project area; therefore, the project will not result in adverse effects to those species.

#### **4.1.2.4 Migratory Birds**

Although wintering Bald Eagles occur in the vicinity of the project there is no suitable foraging or nesting habitat within the project area and the project will occur within existing Tempe infrastructure. Therefore, the project will have no impact on the Bald Eagle.

#### **4.1.2.5 Arizona Wildlife Species of Concern**

Construction of street/trackwork, stops, and traction power substations would be located almost exclusively within existing paved areas and otherwise developed sites. No impacts to these species are anticipated due to the urbanized nature of the area and because the streetcar will be operating almost exclusively within the existing transportation corridors within Tempe. Additionally, no suitable habitat for these species is located within the study area or within the portion of Tempe Town Lake immediately north of the proposed project. Although the AGFD identified the potential for a bat colony to occur within the area, any impacts to a bat colony will be minimal. Although some palm trees will be removed from the median along Apache Boulevard, this change is expected to offset by the large amount of palm trees that will be maintained in the area. Additionally, removal of vegetation will have minor, long-term effects on wildlife using the site. However, the amount of urban habitat available in the project area is small in comparison to the amount of similar urban habitat available in the project area vicinity. The Build Alternative may impact individual bats, but is not likely to result in a trend toward federal listing under the ESA or loss of viability.

## **4.2 MITIGATION**

No mitigation measures are required for the Build Alternative.

## **5.0 INDIRECT EFFECTS AND CUMULATIVE IMPACTS**

Secondary effects are defined by the Council on Environmental Quality (CEQ) as impacts that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 Code of Federal Regulations [C.F.R.] 1508.8).

Secondary effects can be impacts that occur over time, or are geographically removed from a direct relationship to the Build Alternative. Changes in surface or groundwater quality that may or may not have occurred if the Build Alternative was, or was not built represent a potential secondary effect.

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....” (40 C.F.R. 1508.7).

Generally, cumulative impacts of a project do not occur unless, first, a direct impact is identified. Direct biological impacts are not anticipated to occur because the study area is previously disturbed and occurs within a highly urbanized area. Indirect effects, such as

induced growth or changes in land use patterns, will also not impact biological resources as none exist within the study area.

## **6.0 BIBLIOGRAPHY**

Brown, D.E., 1994. *Biotic Communities of the Southwestern United States and Northwestern Mexico*. University of Utah Press, Salt Lake City, UT. 1994.

U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-087-1*. U.S. Army Corps of Engineers, Vicksburg, MS.

