

# Potential Wildlife Crossing Structures at Avra Valley/I-10



## UNDERPASS DESIGN

### Before

left Looking east from the Tucson Mountains towards the underpass (actual photo).

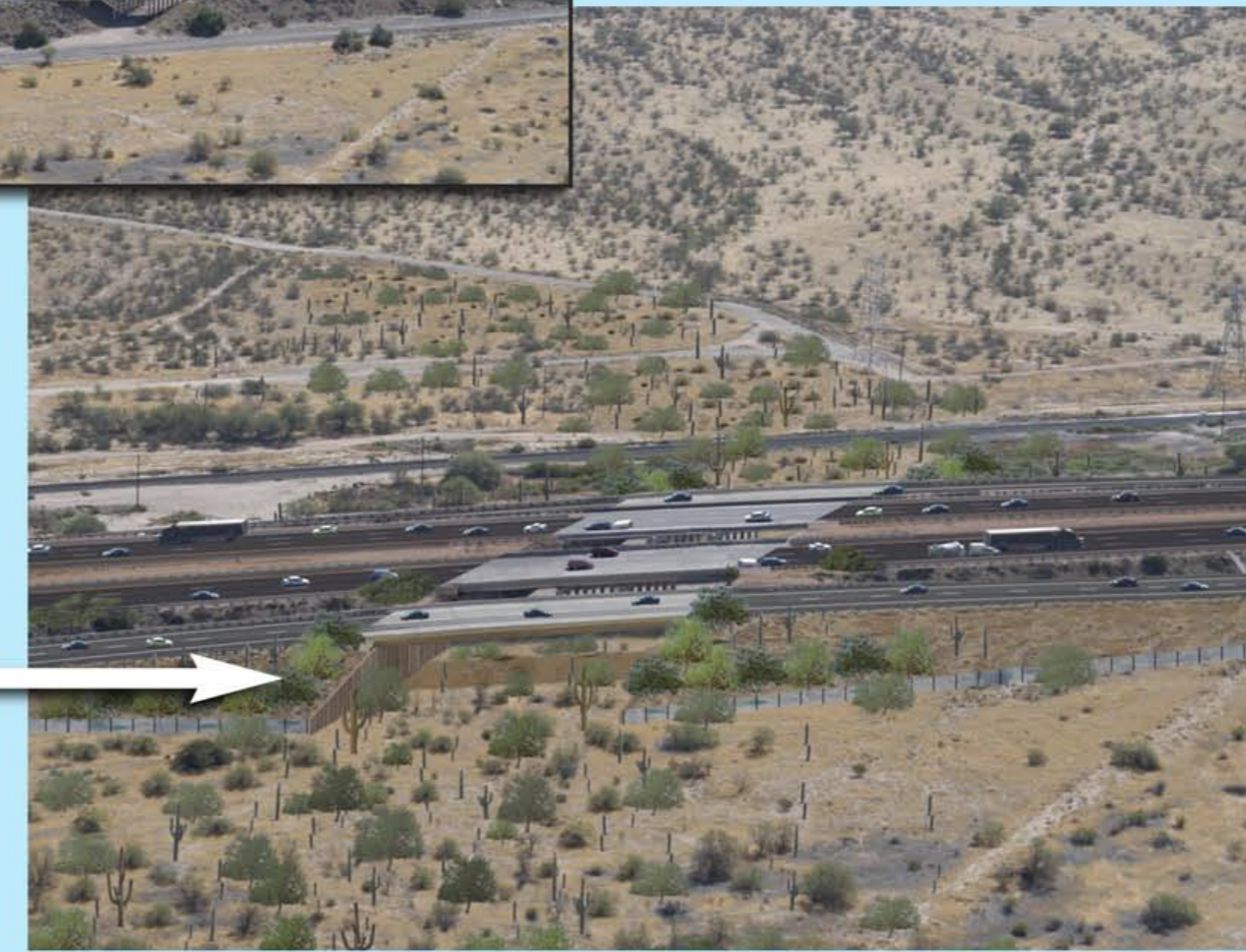
### After Underpass Design

below Rendering of crossing structure using the existing underpass with elevated frontage roads, expansion in the width of underpass, fencing and revegetation.



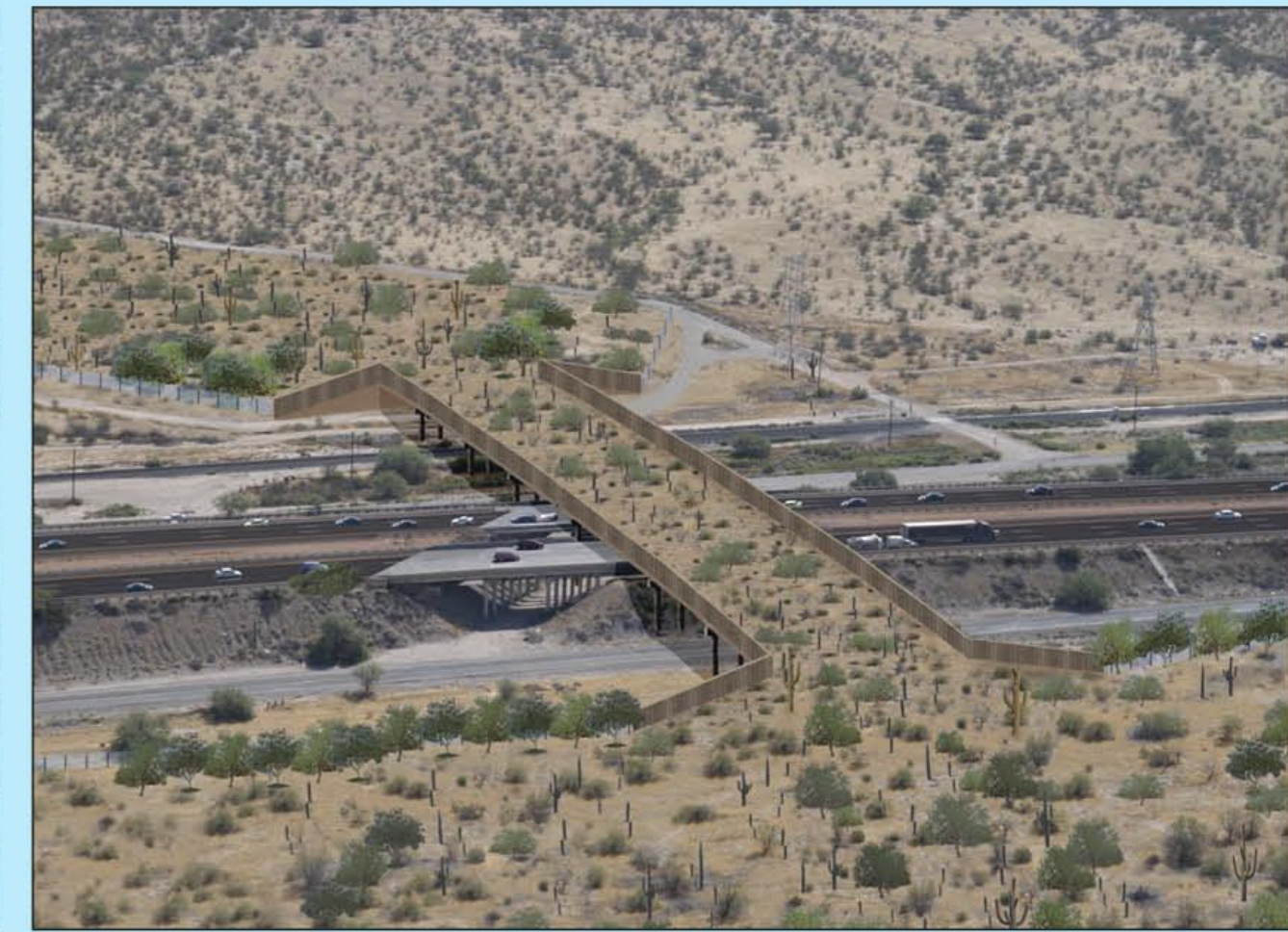
## BEFORE

left Looking west through underpass towards the Tucson Mountains. Abandoned rail tracks and the frontage road are in the foreground.



## AFTER UNDERPASS DESIGN

above Rendering of crossing structure using the existing underpass with elevated frontage roads, expansion in the width of underpass, fencing and revegetation.



## AFTER OVERPASS DESIGN

above Rendering of crossing structure extending over the rail tracks, frontage roads and I-10 with fencing.

Bobcat tracks found January 2009 in the Avra Valley Rd./I-10 underpass. Sky Island Alliance.



## Critical Landscape Connections

The Conservation Lands System (CLS) was developed for Pima County's Sonoran Desert Conservation Plan by the county's Science Technical Advisory Team which included scientists from federal and state agencies, the University of Arizona, and non-governmental organization biologists. The CLS was adopted into Pima County's Comprehensive Land Use Plan in 2001, along with natural resource policies to protect these lands, and represents those lands that are valuable for their contribution to maintaining biological diversity in Pima County. One element of the CLS is *Critical Landscape Connections*.

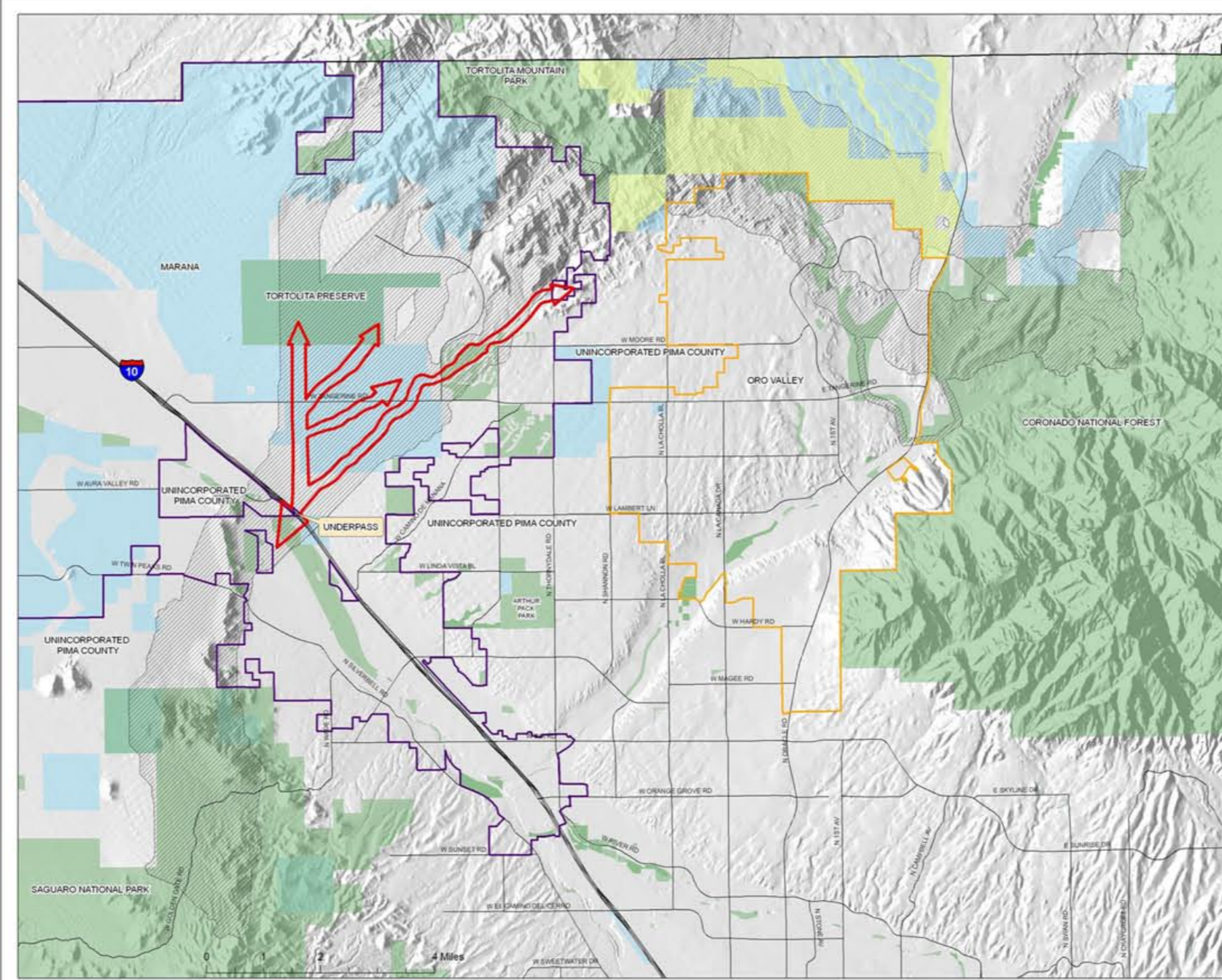
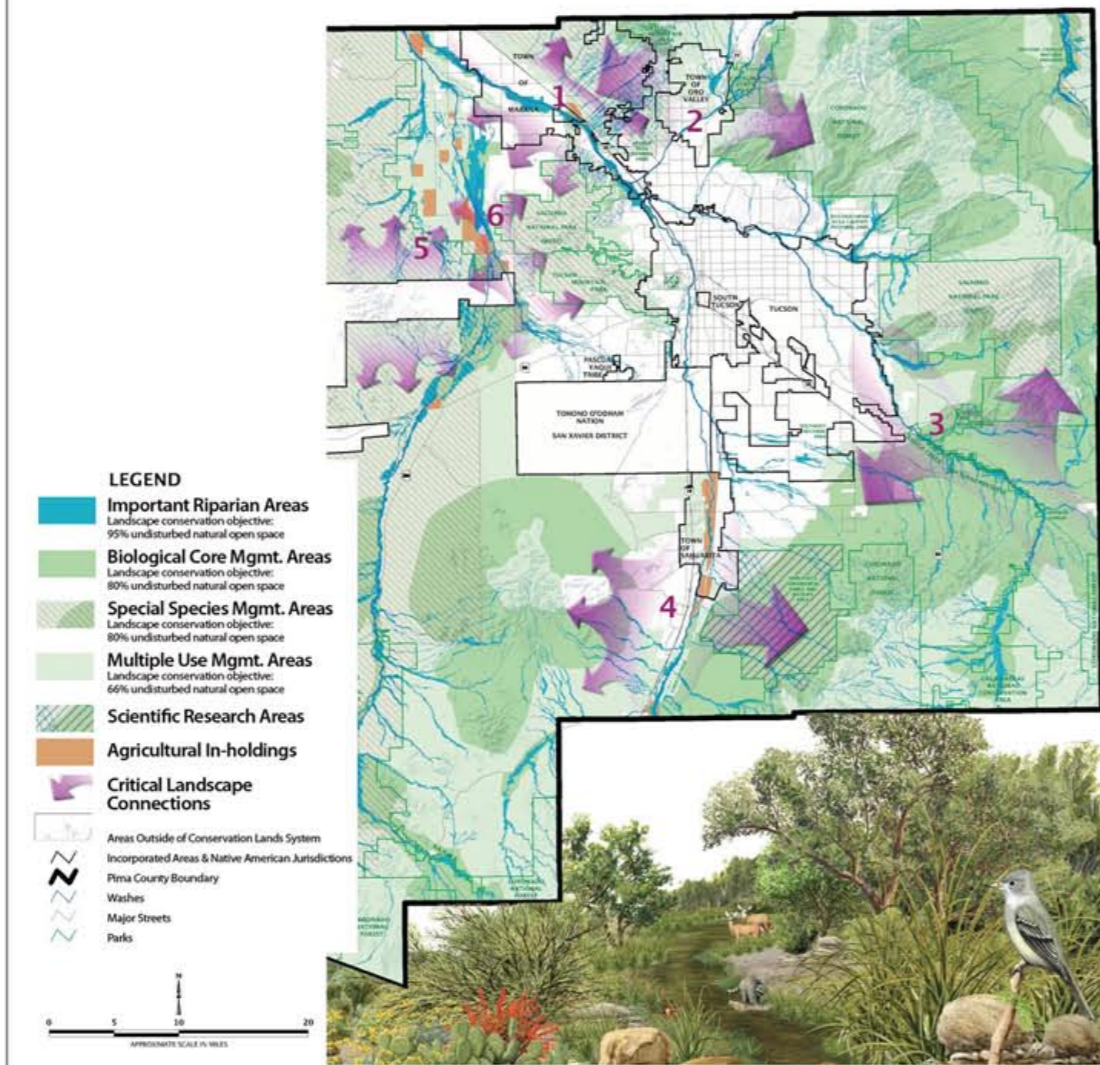
While connectivity is built into the preserve system, Critical Landscape Connections are areas that link large reserves or preserve areas "but which also contain potential or existing barriers that tend to isolate major conservation areas." These Critical Landscape Connections, and linkages in general, facilitate wildlife movement between the larger conservation areas and provide for feeding, resting, and dispersal, though they may not be of sufficient size to provide for all of a species' life requirements, such as nesting. Degradation of linkages could potentially isolate the major conservation areas if enhancements are not made to remove existing and prevent future barriers. These barriers include, but are not limited to, railroads, agricultural fields, the CAP Canal and, in particular, a network of highways and other roads.

Conservation Guidelines for Critical Landscape Connections, found within the *Pima County Comprehensive Plan Regional Plan Policies - Environmental Element*, state:

"Conservation Guidelines: Land-use changes in these broadly defined areas should protect existing biological linkages. Where they occur, barriers to the movement of native fauna and pollination of native flora across and through the landscape should be removed and fragmented corridors of native biological communities should be restored. Opportunities to remove barriers and restore corridor connectivity may arise as part of other, non-land use related activities (e.g., new construction for or upgrade of infrastructure services). Such opportunities should be pursued. High priority shall be given to identifying, preserving, and re-establishing the connection between native biological communities especially where natural connectivity is most constrained."

## Pima County Conservation Lands System PRIORITY BIOLOGICAL RESOURCES of the SONORAN DESERT CONSERVATION PLAN

Providing Sustainable Development Guidelines as Adopted in the Pima County Comprehensive Plan



## Tucson-Tortolita-Santa Catalina Linkages

Below are excerpts from the *Arizona Missing Linkages, Tucson-Tortolita-Santa Catalina Mountains Linkage* report; Beier, P. Garding, E. Majka, D. 2008

"In April 2004, a statewide workshop called 'Arizona Missing Linkages: Biodiversity at the Crossroads' brought together over 100 land managers and biologists from federal, state, and local agencies, academic institutions, and non-governmental organizations to delineate habitat linkages critical for preserving the State's biodiversity."

"The workshop was convened by the Arizona Wildlife Linkage Workgroup, a collaborative effort led by Arizona Game and Fish Department, Arizona Department of Transportation, Federal Highways Administration, US Forest Service, Bureau of Land Management, US Fish and Wildlife Service, Sky Island Alliance, Wildlands Project, and Northern Arizona University. The Workgroup prioritized the potential linkages based on biological importance and the conservation threats and opportunities in each area."

"Eight linkage designs were produced in 2006. In 2007, eight additional linkages within 5 miles of an incorporated city were selected for linkage design planning. The Tucson-Tortolita-Santa Catalina Mountains Linkage is one of these 'urban' linkages."

"To begin the process of designing this linkage, academic scientists, agency biologists, and conservation organizations identified 21 focal species that are sensitive to habitat loss and fragmentation, including 12 reptiles and amphibians, 1 bird, and 8 mammals. These focal species cover a broad range of habitat and movement requirements. Some require huge tracts of land to support viable populations (e.g. mountain lion). Some species are habitat specialists (e.g. Gila Monster), and others are reluctant or unable to cross barriers such as freeways (e.g. mule deer, desert tortoise). Some species are rare and/or endangered (desert tortoise) while others like javelina are common but still need gene flow among populations. All the focal species are part of the natural heritage of this mosaic of Sonoran Desert. Together, these 21 species use diverse habitats, so that the linkage design should address connectivity needs for other species as well."