

**PANEL SESSION PRESENTATION AND DISCUSSION**

**ARIZONA STATE ROUTES 77 AND 86: SUCCESSES AND CHALLENGES OF IMPLEMENTING WILDLIFE CONNECTIVITY ON THE EDGE OF A HIGHLY URBANIZED METROPOLITAN AREA**

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## **ABSTRACT**

In 2006, Pima County voters approved the Regional Transportation Authority Plan (RTA), funded by a 20-year ½-cent sales tax that includes \$45 million in dedicated monies for transportation-related projects that address wildlife linkage issues. Soon thereafter, the RTA Wildlife Linkages Working Group was formed and tasked with distributing these monies over the 20-year life of the plan.

The State Route 77 (SR77) Wildlife Crossings project is the largest funded project to date (\$8.2 million) and includes two crossings (one overpass and one underpass) and associated fencing and related amenities across what will soon be a 6-lane divided highway that bisects the Santa Catalina-Tortolita Mountains wildlife linkage. The project is located in a fast-urbanizing area within the Town of Oro Valley and unincorporated Pima County (greater Tucson metropolitan area) and has involved the collaboration of multiple jurisdictions, agencies, and community organizations, including Arizona Department of Transportation, Arizona Game and Fish Department, Pima County Department of Transportation, Town of Oro Valley, Regional Transportation Authority, Coalition for Sonoran Desert Protection, Sky Island Alliance, and Tucson Audubon Society. Other funded projects include two underpasses across State Route 86 (SR86) on the Tohono O’odham Nation, a detailed wildlife linkages assessment of Pima County, project-specific roadkill surveys to guide the placement of wildlife crossings, and a series of smaller underpass projects around the region.

The goal of this session will be to present a case study of the first two major wildlife crossings projects in the Sonoran Desert. Objectives of the session will include discussing the many significant challenges that have been overcome; highlighting unique aspects of the projects related to their location in a semi-urban “gateway” area; discussing the unique ecological, land-use, and transportation issues in the project areas; and presenting a varied list of lessons learned from the different perspectives of the presenters that can be applied in other communities.

The SR77 Wildlife Crossings project is based on the best available ecological and transportation science, including the science-based Sonoran Desert Conservation Plan, a detailed wildlife linkage design completed by researchers at Northern Arizona University, a roadkill survey conducted by the Arizona Game and Fish Department, and ongoing wildlife monitoring by the Coalition for Sonoran Desert Protection. The details of the crossings and associated fencing are based on the latest knowledge of wildlife movement and effective structure design, including recent research conducted by the Arizona Game and Fish Department (and funded by the RTA) specific to wildlife and wildlife movement in the Sonoran Desert, a very different ecosystem than where most wildlife crossings (in the U.S., Canada, Europe, etc.) have been built in the past.

The SR86 Wildlife Crossings project is the only project to date located on the Tohono O’odham Nation and addresses wildlife movement in the Kitt Peak Linkage west of Tucson. Two existing box culverts will be replaced with underpasses designed for wildlife movement when SR86 is widened to include paved shoulders and clear zones. A future overpass is also planned west of the underpasses to facilitate bighorn sheep movement.

Building on the previous paper presentation, which will include a contextual history and brief overview of both the SR77 and SR86 Wildlife Crossing projects, the moderator will facilitate a roundtable discussion among the presenters. This discussion will cover topics such as: how the presenters have been involved in the projects; unique challenges and opportunities that have arisen during project implementation; how various agencies, jurisdictions, and organizations have collaborated on various aspects of the projects, from the proposal stage to construction; how science was specifically used to inform and improve the projects; interactions with the larger community and landowners impacted by the projects; public outreach and education efforts; and lessons learned. The panel will conclude by taking questions from the audience.

Due to the varied representation of the presenters, this panel session will be applicable to transportation planners, transportation engineers, wildlife biologists, regional planning agencies, local land use planners, and non-governmental personnel.

## **BIOGRAPHICAL SKETCHES OF PRESENTERS**

### **Carolyn Campbell, Presenter and Co-Organizer**

*Coalition for Sonoran Desert Protection, Executive Director*

Carolyn has served as the Executive Director of the Coalition for Sonoran Desert Protection since 1998, providing a critical voice for Sonoran Desert land and wildlife conservation. The Coalition is comprised of 40 member groups and seeks to achieve the long-term conservation of biological diversity and ecological function of the Sonoran Desert through comprehensive land-use planning, with primary emphasis on Pima County's Sonoran Desert Conservation Plan. Carolyn has a B.S. in Political Science from Arizona State University. Notable committee appointments include Vice Chair of Pima County's Bond Advisory Committee and member of the RTA's Wildlife Linkages Working Group in Pima County.

### **Jim DeGroot, Presenter**

*Regional Transportation Authority, Transportation Services Director*

Mr. DeGroot is the Director of Transportation Services for Pima Association of Governments (PAG). He is a Professional Engineer, and a graduate of the University of Arizona, College of Civil Engineering. Mr. DeGroot has over 30 years of local government and private sector public works experience. Prior to joining Pima Association of Governments in 2007, Mr. DeGroot served as Assistant Town Manager for the Town of Marana. During his career he has worked with most of the local governments within the PAG region, including engagements with the City of Tucson and Pima County. He served as the Town Engineer for the Towns of Oro Valley and Sahuarita.

### **Rick Ellis, Presenter**

*Pima County Department of Transportation, Engineering Division Manager*

Rick Ellis graduated from the University of Arizona in 1991 with a Bachelors degree in Civil Engineering. He worked for the Washington State Department of Transportation in Seattle, Washington for approximately 12 years in a variety of design, inspection, project and office management positions. He returned to Tucson in 2003 and is currently the Engineering Division Manager within Pima County Department of Transportation. He is the Chair of the Regional Transportation Authority's Wildlife Linkages Working Group in Pima County, AZ.

**Karen Howe, Presenter**

*Tohono O'odham Nation, Natural Resources Department, Ecologist*

Karen Howe is the Tribal Ecologist and Supervisor for the Wildlife and Vegetation Management Program, Department of Natural Resources of the Tohono O'odham Nation. Karen has an extensive background in coordinating NEPA compliance on the Nation with multiple county, state, and federal agencies. She specializes in multidisciplinary projects that integrate science, planning, policy development and education with traditional ecological knowledge. Over the past 7 years, Karen has worked with a variety of agencies including the Arizona Department of Transportation and the U.S. Customs and Border Protection analyzing factors influencing wildlife movement across vehicle barriers, pedestrian fences, and highways. Karen attended Northern Arizona University.

**Kathleen Kennedy, Moderator and Co-Organizer**

*Coalition for Sonoran Desert Protection, Program and Development Coordinator*

Kathleen Kennedy has managed the program areas and fundraising efforts of the Coalition for Sonoran Desert Protection since 2007. She graduated from Northern Arizona University in 2000 with a B.S. in Geology and from the University of Montana in 2005 with a M.S. in Environmental Studies. Kathleen's responsibilities within the Coalition include researching, writing, and coordinating the Coalition's position statements, along with implementing the Coalition's fundraising plan and development activities. Before joining the Coalition, she worked for the Town of Marana as an Environmental Projects Coordinator and for the USDA-ARS Southwest Watershed Research Center as a Hydrologic Technician.

**Robin Raine, Presenter**

*Arizona Department of Transportation, Senior Project Manager*

Robin Raine is a professional civil engineer and a Senior Project Manager with ADOT. She attended high school in Tucson, AZ and received her Bachelor's Degree in Civil Engineering from MIT in 1981. After four years in the USAF and three years on Cape Canaveral in Florida, she returned to Arizona and has worked as a civil designer and project manager for transportation projects in both the private and public sectors.

**Ray Schweinsburg, Presenter**

*Arizona Game and Fish Department, Research Program Supervisor*

Ray Schweinsburg has been involved in roadway ecology habitat connectivity studies since the mid-1990s, was a founding member of the Arizona Wildlife Linkages Workgroup, and has been involved in one way or another in almost every habitat connectivity project in Arizona. He is presently a Research Program Supervisor for the Arizona Game and Fish Department Contracts Branch.