I-11 and Intermountain West Corridor Study

Planning and Environmental Linkages Questionnaire and Checklist: Arizona Corridor Segments

Prepared for

NEVADA DOT and ADOT

December 2014

Planning and Environmental Linkages Questionnaire and Checklist

Interstate 11 and Intermountain West Corridor Study – Arizona Corridor Segments

BACKGROUND

The Nevada Department of Transportation (NDOT) and the Arizona Department of Transportation (ADOT) seek to follow the Planning and Environmental Linkage (PEL) process in conducting the Interstate 11 (I-11) and Intermountain West Corridor Study (the Study) that have been scoped to more directly inform the National Environmental Policy Act (NEPA) process for the project(s) that ultimately become part of the State Transportation Improvement Programs (STIPs). Effective, conceptual-level transportation planning studies that follow the PEL process provide opportunities both to identify important issues of concern early and to build agency, stakeholder, and public understanding of the project. Such early, integrated planning is not driven solely by regulatory requirements and the quest for more efficient and effective processes, although those are desirable results. Transportation and environmental professionals—as well as those in metropolitan planning organizations, state and federal resource agencies, and nongovernmental organizations—are finding that early collaboration helps achieve broader transportation and environmental stewardship goals through better decisions regarding programs, planning, and projects.

This document has been specifically prepared for the Study (Arizona PEL Package). The three-part series of checklists have been prepared for each study area segment, and combined to deliver a PEL package for Nevada and Arizona:

- Arizona PEL Package
  - Southern Arizona Future Connectivity Corridor (Mexico border to I-10/I-8 interchange near Casa Grande)
  - Phoenix Metropolitan Area Section (Casa Grande to Wickenburg)
  - Northern Arizona Section (Wickenburg to Nevada state line)
- Nevada PEL Package
  - Las Vegas Metropolitan Area Section (Arizona state line to western edge of Las Vegas Metropolitan Area)
  - Northern Nevada Future Connectivity Corridor (Las Vegas Metropolitan Area to northern Nevada border)

Separate documents are prepared for each study area segment to reflect the differences in environmental conditions and anticipated timing for implementation. By completing separate PEL Questionnaires and Checklists, more detailed and geographic-specific information can be documented, lending toward a more informed NEPA process. This document, and all others referenced in this document, can be obtained by contacting the agency project managers (Sondra Rosenberg – NDOT, Michael Kies – ADOT; contact information on page 5) or referencing the NDOT and ADOT agency websites. Appended to this document are the following reference items:

- Appendix A: Purpose and Need Statement, August 2014
- Appendix B: Level 1 and Level 2 evaluation process analysis inputs and meeting summaries from Arizona Game and Fish Department and The Nature Conservancy, 2013-2014
- Appendix C: Letters/comments received from jurisdictions, environmental agencies and non-governmental organizations

- Appendix D: Project Engagement Summary Report

Other relevant study documents not attached, but available on-line or upon request:

- Phase I Corridor Vision
  - Corridor Vision Summary
- Phase II Corridor Justification
  - Existing Natural and Built Environment Technical Memorandum
  - Corridor Justification Report
- Phase III Corridor Concept
  - Level 1 Evaluation Results Summary
  - Southern Arizona Future Connectivity Corridor Feasibility Assessment Report
  - Northern Nevada Future Connectivity Corridor Feasibility Assessment Report
  - Level 2 Evaluation Results Summary
  - Business Case
  - Implementation Program
  - Corridor Concept Report
- Outreach
  - Public Involvement Plan

This document has been developed based on the adopted PEL Questionnaire and Checklist by ADOT dated February 2012 to provide guidance, particularly to transportation planners and NEPA specialists, regarding how to most effectively link the transportation planning and NEPA processes. By considering the questions and issues raised in this questionnaire, transportation planners will become more aware of potential gaps in their subarea or corridor studies, better understand the needs of future users of the studies, and be reminded of the benefits of wider and/or deeper collaboration with agencies, the public, and other stakeholders. NEPA specialists who fill out the checklist will assume a new role in the transportation planning process: becoming advocates for early awareness of environmental issues before the NEPA process begins.

The following PEL questionnaire and checklist have been used as tools to guide proper documentation and selection of information gathered during the planning process that can later be made available for input, review, and possible incorporation by reference during the NEPA project development process.

This questionnaire and checklist will be used to effectively influence the scope, content, and process employed for ADOT transportation planning studies that focus on specific transportation corridors or on transportation network subareas (versus statewide transportation studies). Completion of this questionnaire and checklist will support the PEL process and serve dual objectives:[1]

- provide guidance to transportation planners on the level of detail needed to ensure that information collected and decisions made during the transportation planning study can be used during the NEPA process for a proposed transportation project

[1] Objectives are based on the Federal Highway Administration's online document: *Case Studies: Colorado: Colorado Department of Transportation: Tools and Techniques to Implement PEL*, <www.environment.fhwa.dot.gov/integ/case_colorado2.asp> (accessed October 24, 2011).

- provide the future NEPA study team with documentation on the outcomes of the transportation planning process, including the history of decisions made and the level of detailed analysis undertaken

Major issues to consider when conducting a transportation planning study that links to the future NEPA process include:[2]

- identifying the appropriate level of environmental analysis for the study
- identifying the appropriate level of agency, stakeholder, and public involvement
- defining unique study concurrence points for seeking agreement from relevant resource agencies, stakeholders, and members of the public
- developing a process to ensure that the study will be recognized as valid within the NEPA process
- identifying when to involve resource agencies in the study, and to what extent they influence decision making
- identifying how to persuade U.S. Department of Transportation reviewers to accept the use of these studies in the NEPA process

These issues will be considered throughout the Study process. Users of this *Planning and Environmental Linkages Questionnaire and Checklist* should review the entire document at the beginning of the study to familiarize themselves with whatever local and general issues may be operative. The questionnaire is provided in two parts: one to be completed by transportation planners at the beginning of the study and one to be completed at the end. The checklist (Part 3) should be used by NEPA specialists throughout the study and should be finalized at the end of the study.

This document is a companion to the study's final report and documents how the study meets the requirements of 23 C.F.R. § 450.212 or § 450.318 (Subpart B: Statewide Transportation Planning and Programming or Subpart C: Metropolitan Transportation Planning and Programming, respectively).

The flowchart below outlines the major inputs, decision points, and outcomes that occur during implementation of a transportation planning study using the PEL process that will be adhered to on this study.

[2] Further guidance is available in the Federal Highway Administration's *Guidance on Using Corridor and Subarea Planning to Inform NEPA*, dated April 5, 2011, available online at <www.environment.fhwa.dot.gov/integ/corridor_nepa_guidance.pdf>.

	Transportation Planners	Both	NEPA Specialists
PEL Launch	Review Part 1 and Part 2 of questionnaire Complete Part 1 of questionnaire	Become familiar with local and general issues Modify study scope to include or deepen analysis of specific resources or environmental issues	Review checklist Advocate inclusion of resources and issues Seek resource agency assistance in changing study scope
Analysis and Comment	Define, clarify, analyze,and screen modes,corridors, and alternatives (including no-action alternative) Involve relevant stakeholders, agencies, and public in comments and reviews to ensure later acceptability and defensibility in NEPA	Become familiar with local and general issues Modify study scope to include or deepen analysis of specific resources or environmental issues	Continue to advocate addressing collection and analysis of data pertinent to effective application in NEPA process
PEL Completion	Complete Part 2 of questionnaire	Include questionnaire and checklist in appendix to study Document relevant findings for use in later NEPA documents	Complete checklist (Part 3)

Beginning of NEPA Process

NEPA specialists review completed PEL questionnaire and checklist and confirm that study recommendations and analyses can support the anticipated NEPA process(es) and document type(s), including, if applicable, incorporation into the content of a Notice of Intent

Questionnaires for Transportation Planners:

Southern Arizona Future Connectivity Corridor

Questionnaire for Transportation Planners – Part 1: Southern Arizona Future Connectivity Corridor

This part of the questionnaire should be completed by transportation planners at the beginning of the transportation planning study. Please note that planners should also review Part 2 of the questionnaire to understand what additional issues will need to be considered and documented as the study progresses.

Project identification
What is the name of the study? What cities and counties does it cover? What major streets or highways are covered? For corridor studies, what are the intended termini?
Name of the study: I-11 and Intermountain West Corridor Study Intended termini: The current surface transportation bill, Moving Ahead for Progress in the 21st Century Act (MAP-21), defines US 93 between Phoenix, Arizona and Las Vegas, Nevada as a high priority corridor and designates it as future I-11. This study includes detailed corridor planning on this Congressionally Designated segment, spanning from the Las Vegas metropolitan area to the Phoenix metropolitan area. Higher level corridor visioning to determine intended corridor connection points will be studied in northern Nevada and southern Arizona. The corridor is divided to five sections as described below: • Southern Arizona Future Connectivity Corridor (Mexico to Casa Grande) • Phoenix Metropolitan Area (Casa Grande to Wickenburg) • Northern Arizona/Southern Nevada (Wickenburg to Las Vegas) • Las Vegas Metropolitan Area • Northern Nevada Future Connectivity Corridor (Beyond the Las Vegas Metropolitan Area)
Who is the study sponsor?
Arizona Department of Transportation (ADOT) and Nevada Department of Transportation (NDOT)
Briefly describe the study and its purpose.
In the federal legislation referred to as Moving Ahead for Progress in the 21st Century (MAP-21), Congress identified the US 93 Corridor from Wickenburg, Arizona to Las Vegas, Nevada as a National Highway System (NHS) High Priority Corridor and designated it as Interstate-11 (I-11). High Priority Corridor designation in NHS recognizes the importance of the corridor to the nation's economy, defense, and mobility. This is the latest action in a decades-long effort by the federal government and states in the Intermountain West to develop a transportation corridor between the Rocky Mountains and the Cascade Range/Sierra Nevada Mountains linking Mexico to Canada. This effort includes the identification of the CANAMEX Trade Corridor as High Priority Corridor 26 in the NHS and efforts by Arizona and Nevada to pursue a direct, contiguous, interstate transportation corridor that connects major metropolitan areas in the intermountain west. The purpose of this long-range planning study is to evaluate the need for an interstate corridor in this region and, if warranted, establish a corridor vision and a reasonable range of alternatives to carry forward to future studies. This corridor has the potential to become a new north-south, high-capacity transportation route through the Intermountain West. This would greatly improve commerce, tourism and international trade opportunities across the western United States. The study area for this project includes the entire states of Nevada and Arizona, although more detailed planning will occur in concentrated study segments. The principal goal of this project is to identify and establish the most feasible route and transportation connections for the portion of the study corridor between the Las Vegas and Phoenix metropolitan areas, with options for extensions to the north and south. Because of the length and varying characteristics of the Congressionally Designated Corridor, this segment is divided into three sections. Breaking into sections allows separate (but closely coordinated) teams to work on these different sections concurrently, providing more efficiency and earlier delivery. Two additional corridor segments will allow higher-level visioning for the potential extensions beyond the Las Vegas and Phoenix metropolitan areas. The study will include two levels of analysis: 1. Detailed corridor planning for the Congressionally Designated I-11 segment between (and including) the Las Vegas and Phoenix metropolitan areas, and 2. A higher-level visioning approach to determine corridor connections from the Phoenix metropolitan area to Mexico, and from the Las Vegas metropolitan area to the northern boundary of Nevada.

Who are the primary study team members (include name, title, organization name, and contact information)?

Sondra Rosenberg, PTP	NDOT	Federal Programs Manager	(775) 888-7241	SRosenberg@dot.state.nv.us
Michael Kies, PE	ADOT	Director of Planning and Programming	(602) 712-8140	mkies@azdot.gov
Bardia Nezhati, PE	CH2M HILL	Project Manager	(702) 953-1274	Bardia.Nezhati@ch2m.com
Dan Andersen	CH2M HILL	Project Communication & Outreach	(702) 953-1246	Dan.Andersen@ch2m.com
Jennifer Roberts, PE	CH2M HILL	Project Planner/Engineer	(720) 286-0912	Jennifer.Roberts@ch2m.com
Jaclyn Kuechenmeister, AICP	CH2M HILL	Project Planner	(480) 377-6210	Jaclyn.Kuechenmeister@ch2m.com
John McNamara, AIA, FAICP	AECOM	Deputy Project Manager	(602) 549-5566	John.McNamara@aecom.com
Peggy Fiandaca, AICP	PSA	Meeting Facilitation	(480) 816-1811	Peggy@PSAPlanning.com
Audra Koester Thomas	PSA	Tribal/Public/Stakeholder Involvement	(480) 816-1811	Audra@PSAPlanning.com

Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).

Yes, all interested public agency and private organizations are invited to participate in a Stakeholder Partners group that is asked to provide data and other input, and to share their opinions and ideas on decision points throughout the process.

The Core Agency Partners (CAP)—representatives from NDOT, ADOT, Federal Highway Administration, Federal Railroad Administration, Maricopa Association of Governments, and Regional Transportation Commission of Southern Nevada—carefully consider all recommendations from the Stakeholder Partners, and make final recommendations to the Project Sponsors, NDOT and ADOT.

Focus Groups are formed with subject matter experts from the Core Agency Partners and Stakeholder Partners. These groups are asked to provide data and input into specific topics, and make recommendations for the Stakeholder Partners to consider.

The Public has opportunities to learn about the study and share their opinions via public meetings, a project website, a project hot-line, and other means.

Core Agency Partner representatives include:

Thor Anderson	ADOT	Abdelmoez Abdalla	FHWA NV	Tom Greco	NDOT
Brent Cain	ADOT	Susan Klekar	FHWA NV	Tracy Larkin-Thomason	NDOT
Todd Emery	ADOT	Christina Leach	FHWA NV	Melvin McCallum	NDOT
Asad Karim	ADOT	Greg Novak	FHWA NV	Sondra Rosenberg	NDOT
Michael Kies	ADOT	Kyle Gradinger	FRA	Kevin Verre	NDOT
Misty Klann	ADOT	Andy Nothstine	FRA	Mike Hand	RTC
Carlos Lopez	ADOT	David Valenstein	FRA	Raymond Hess	RTC
Scott Omer	ADOT	Bob Hazlett	MAG	Martyn James	RTC
Steve Call	FHWA	Tim Strow	MAG	Andrew Kjellman	RTC
Ed Stillings	FHWA AZ	Steve Cooke	NDOT	Fred Ohene	RTC
Rebecca Yedlin	FHWA AZ	Cleveland Dudley	NDOT	Tina Quigley	RTC

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.

The concept of an access controlled, high capacity transportation facility connecting Phoenix and Las Vegas (with connections further north) has been around for decades, initiated with the CANAMEX corridor discussions in 1991 and cited in such articles as the 1997 "Interstate 2000: Improvements for the Next Millennium" written in the contractor-trade publication *Roads and Bridges*. A timeline of key influential decisions regarding different elements of corridor development are listed below, followed by lists of relevant transportation planning studies.

Timeline of Key Corridor Decisions

- Approximately 1991: Arizona forms a coalition with Nevada, Utah, Idaho, and Montana to explore a CANAMEX Corridor.
- 1995: TEA 21 designated the CANAMEX Corridor as a High Priority Corridor (number 26), making it eligible for funding. The Corridor consisted of I-19, I-10, US 93 (Phoenix to Las Vegas), and I-15 (Las Vegas though Utah, Idaho, and Montana).
- 1998: Nevada, Arizona, and FHWA begin a routing study for a bridge bypassing Hoover Dam, the need for which was realized in the 1960s.
- 1999: Arizona leads the development of the CANAMEX Coalition, with five governors signing the Memorandum of Understanding.
- 2001: Route selected for the bridge bypassing Hoover Dam, by FHWA. The Bypass became urgent after the route across the dam was closed to trucks after 9/11.
- 2001: CANAMEX Corridor Plan completed.
- 2001: Study begins for a new route bypassing Boulder City, connecting the bridge bypassing Hoover Dam to I-515 in Henderson.
- 2005: Record of Decision (ROD) received for the Environmental Impact Statement (EIS) for the Boulder City Bypass, which will relocate US 93 to the new route when constructed.
- 2005: Construction of Hoover Dam Bypass bridge begins, named Mike O'Callaghan–Pat Tillman Memorial Bridge.
- 2006: I-10/Hassayampa Valley Regional Transportation Planning Framework Study started, completed in 2007.

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites. (continued)

- 2007: I-8 and I-10/Hidden Valley Regional Transportation Planning Framework Study stated, completed in 2009.
- Approximately 2007: Various businesses and local governments, from Nevada and Arizona, formed to push for a freeway between Phoenix and Las Vegas, made possible by the new Mike O'Callaghan–Pat Tillman Memorial Bridge. This led to the formation of the CAN-DO Coalition (Connecting Arizona and Nevada - Delivering Opportunities).
- 2007-2009: Hassayampa Freeway, to serve as a bypass route for Phoenix, recommended in the regional framework studies.
- 2008: A Brookings Institution report (Mountain Megas: America's Newest Metropolitan Places and a Federal Partnership to Help Them Prosper) identified the freeway between Phoenix and Las Vegas as a "pressing need".
- 2010: Mike O'Callaghan–Pat Tillman Memorial Bridge opens.
- 2012: MAP-21transportation funding bill includes I-11, amending the TEA-21 text by adding Interstate Route I-11 to it.
- 2012: Nevada and Arizona DOTs begin a corridor study for the proposed I-11 and Intermountain West Corridor.

Arizona led initiatives:

CANAMEX Corridor Planning	ACA	Various
US 93 Corridor Planning	ADOT	Various
Arizona Wildlife Linkages Assessment	ADOT	2006
bqAZ Statewide Mobility Reconnaissance Study	ADOT	2008
Arizona Multimodal Freight Analysis Study	ADOT	2009
bqAZ Statewide Transportation Planning Framework Program	ADOT	2010
bqAZ Statewide Rail Framework Study	ADOT	2010
Wickenburg Bypass	ADOT	2010
Arizona State Rail Plan	ADOT	2011
What Moves you Arizona, LRTP	ADOT	2011
Arizona-Sonora Border Master Plan	ADOT	2013
Logistics Capacity Study of the Guaymas-Tucson Corridor	CANAMEX Task Force	2006
I-10/Hassayampa Valley Transportation Framework Study	MAG	2008
I-8 and I-10/ Hidden Valley Transportation Framework Study	MAG	2009
Commuter Rail System Study	MAG	2010
Hassayampa Framework Study for the Wickenburg Area	MAG	2011
Freight Transportation Framework Study	MAG	2012
Regional Transportation Plan Update	MAG	2013
Parkway Corridor Feasibility Studies	MCDOT	Various
2040 Regional Transportation Plan Update	PAG	2012
Regionally Significant Routes for Safety and Mobility	Pinal County	2008

Nevada led initiatives:

An Economic Development Agenda for Nevada	GOED	2011
Moving Nevada Forward: Economic Development	GOED	2012
US 395 Washoe County Study	NDOT	2002
I-515 Corridor Study	NDOT	2004
Boulder City Bypass Phase I and Phase II EIS	NDOT	2005
US 395 Southern Sierra Corridor Study	NDOT	2007
US 50 East Corridor Study	NDOT	2007
Statewide Transportation Plan – Moving Nevada Through 2028	NDOT	2008
I-80 Corridor Study	NDOT	2009
Statewide Integrated Transportation Reliability Program	NDOT	2010
Apex to Mesquite and Moapa Valley Corridor Study	NDOT/RTCSNV	2011
I-15 Corridor System Master Plan	NDOT	2012
Draft Southern Nevada Outerbelt Feasibility Study Part I	NDOT	2012
Nevada Statewide Rail Plan	NDOT	2012
Connecting Nevada: Planning Our Transportation Future	NDOT	2013
West Valley North-South Critical Facilities Study – Phase 1	RTCSNV	2009
Southern Nevada Regional Transportation Plan	RTCSNV	2012
Washoe County Regional Transportation Plan	RTCWC	2008

Federal initiatives:

Hoover Dam Bypass Environmental Impact Statement	FHWA	2001
West-Wide Energy Corridor Programmatic EIS	US DOE	2008
Solar Energy Development Programmatic EIS	US DOE	2012
America's Freight Transportation Gateways	US DOT	2009

What current or near-future planning (or other) studies in the vicinity are underway or will be undertaken? What is the relationship of this study to those studies? Provide contact names and locations of the studies and study websites.

North-South Corridor Study	ADOT	Corridor study on potentially intersecting freeway
Arizona Passenger Rail Corridor Study	ADOT	Passenger rail corridor could become a multimodal component of I-11 corridor
US 93 Corridor Projects	ADOT	Near-term improvements could contribute to the I-11 corridor
I-10 Widening Studies	ADOT	Near-term improvements could contribute to the I-11 corridor
I-40/US 93 TI DCR/Environmental Studies	ADOT	Study recommendations could contribute to the I-11 corridor
SR 95 Realignment Study, DCR/EIS	ADOT	Study recommendations provide an I-11 corridor alternative
Arizona Governor's Border Trade Alliance	AZ Governor's Office	Inform study on Arizona's current trade coordination initiatives with Mexico
Southwest Multi-State Rail Planning Study	FRA	Study findings can provide input into passenger rail demand in Southwest Triangle
Boulder City Bypass PPP	NDOT	Corridor could become a component of the I-11 corridor
USA Parkway Environmental Study	NDOT	Corridor could become a component of the I-11 corridor
East-West Corridor Study	Pinal County	Corridor could become a component of the I-11 corridor

Study objectives

What are your desired outcomes for this study? (Check all that apply.)

- ☒ Stakeholder identification
- ☒ Stakeholder roles/responsibilities definition
- ☒ Travel study area definition
- ☐ Performance measures development
- ☒ Development of purpose and need goals and other objectives
- ☒ Alternative evaluation and screening
- ☒ Alternative travel modes definition
- ☒ Operationally independent segments
- ☒ Scheduling of infrastructure improvements over short-, mid-, and long-range time frames
- ☐ Environmental impacts
- ☐ Mitigation identification
- ☐ Don't know
- ☐ Other _____

Have system improvements and additions that address your transportation need been identified in a fiscally constrained regional transportation plan?

Some projects along the proposed route, such as the Boulder City Bypass, are programmed in regional transportation plans.

Will a purpose and need statement[3] be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

Yes. Based on information gathered and analyzed, a Purpose and Need statement was formulated, providing the foundation for future NEPA actions (Appendix A).

The Purpose and Need provides a high-level examination of deficiencies in the north-south transportation connectivity in the region in the context of mobility, trade legislation, and economic development. A more detailed, data-driven analysis of factors, such as project status, travel patterns and capacity, system linkage, population and employment growth trends, multimodal transportation demand, legislative mandates, social/economic development impacts, multimodal and intermodal relationships, safety needs, roadway deficiencies, and environmental impacts will need to be undertaken during a future NEPA evaluation.

Establishment of organizational relationships

Is a partnering agreement in place? If so, who are signatories (for example, affected agencies, stakeholders, organizations)? Attach the partnering agreement(s).

Yes. Both NDOT and ADOT have a signed agreement in place that defines each agency's financial obligations for conducting this corridor study.

What are the key coordination points in the decision-making process?

The CAP and Stakeholder Partners were appraised at key milestones of the study effort, including study introduction, corridor visioning, preliminary business case foundation, goals and objectives, corridor justification report, evaluation process (universe of alternatives, level 1 evaluation, level 2 evaluation), corridor recommendations, final business case, purpose and need, and implementation plan. Public outreach occurred throughout the process on the project website and public information meetings were held at critical milestones (i.e. level 1 & 2 evaluations) to obtain optimal feedback.

[3] For an explanation of purpose and need in environmental documents, please see the Federal Highway Administration's (FHWA's) "NEPA and Transportation Decisionmaking: The Importance of Purpose and Need in Environmental Documents," <Purpose and Need>. This website provides links to five additional resources and guidance from FHWA that should be helpful in understanding the relationship between goals and objectives in transportation planning studies and purpose and need statements of NEPA documents.

Planning assumptions and analytical methods
Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?
Yes, the study will evaluate existing, interim, and ultimate improvements for the corridor. The ultimate improvements for the whole corridor are predicted to take more than 20 years to complete.
What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?
NDOT and ADOT will provide appropriate baseline traffic forecasts based on their statewide-specific travel demand models.
Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods[4]*? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?*
Yes, procedures outlined in FHWA's toolbox for preparing traffic forecasts will be followed.
Do the travel demand models base their projections on differentiations between vehicles?
Yes. The model predicts personal vehicles and commercial vehicles (light or heavy trucks).
Data, information, and tools
Is there a centralized database or website that all State resource agencies may use to share resource data during the study?
Yes. There is a project SharePoint site that is used for storage of information in addition to a project Website which will be maintained through the life of this project. The site addresses are as follows: – SharePoint: https://deliver.ch2m.com/projects/457967/default.aspx – Website: www.I11study.com

[4] FHWA November 2011 publication: <Traffic Analysis Tools and Methods>

Questionnaire for Transportation Planners – Part 2: Southern Arizona Future Connectivity Corridor

This part of the questionnaire should be completed by transportation planners at the end of the transportation planning study. This completed document should become an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318.

Purpose and need for this study
How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?
The study evaluated alternatives for a potential future I-11 and Intermountain West Corridor based on Goals and Objectives developed with input from the Core Agency Partners (CAP) and Stakeholder Partners. Meetings were held during the early part of the study to interactively formulate and build consensus. The following overall factors guided the development and evaluation of alternatives: – Legislation – Is there a federal, state, or local governmental mandates for the action? – System Linkage – Is the proposed project a "connecting link?" How does it fit in the transportation system? – Trade Corridor - How will the proposed facility enhance the efficient movement of freight in the study corridor? – Modal Interrelationships – How will the proposed facility interface with and serve to complement airports, rail and port facilities, mass transit services, etc.? – Capacity – Is the capacity of the present facility inadequate for the present traffic? Projected traffic? What capacity is needed? What is the level(s) of service for existing and proposed facilities? – Economics – Projected economic development/land use changes indicating the need to improve or add to the highway capacity – Project Status—Project history, including actions taken to date, other agencies and governmental units involved, action spending, schedules, etc.
What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?
Key coordination milestones included the following. Each coordination effort included meetings with the CAP and Stakeholder Partners, with the Sponsoring Partners (ADOT and NDOT) serving as the ultimate decision makers. CAP meetings occurred on a joint teleconference between multiple locations. Stakeholder Partner meetings sometimes occurred jointly, or individually – depending on the meeting content. Public outreach efforts are noted by * meeting topics. – Study introduction (August 2012)* – Focus group meetings (January/February 2013) – Business case foundation (March 2013) – Corridor goals and objectives (June 2013) – Evaluation process/criteria and universe of alternatives (July 2013) – Level 1 screening results and Level 2 screening criteria (September 2013)* – Level 2 screening results and preliminary corridor recommendations (November 2013) – Final recommendations* (February 2014) – Implementation plan, purpose and need, final business case (May 2014)* Additional coordination occurred with specific groups, as required, including but not limited to environmental stakeholders, utility users, and railroad companies. Arizona Game and Fish Department, The Nature Conservancy, and the Sonoran Institute were integral partners to the evaluation process, providing supplemental data resources.
How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?[5]
Information from this study can be directly referenced in future NEPA documents. Findings from this study are structured in separate reports, located on the project website (http://i11study.com/wp/?page_id=237) and include: – *Corridor Vision Summary* – *Corridor Justification Report* – *Existing and Natural Built Environment Technical Memorandum* – *Level 1 Evaluation Results Summary* – *Feasibility Assessment Report* – *Final Business Case*

[5] For an explanation of the types of documents needed under the NEPA process and the nature of the content of those documents, please see "NEPA Documentation: Improving the Quality of Environmental Documents,"<Documentation>.

- *Purpose and Need*
- *Implementation Program*
- *Corridor Concept Report*

Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.

FHWA (Ed Stillings, Rebecca Yedlin) participated in the CAP meetings and discussions of how the study should be implemented and how PEL should be incorporated. Decisions were made by the Sponsoring Partners, with support from the CAP and Stakeholder Partners. The Stakeholder Partners group included a range of project stakeholders, including resource and regulatory agencies. Acceptance on major decisions was sought from this group, not concurrence. Key milestones where feedback was requested are outlined on the previous page. Study findings and recommendations were acceptable to agencies and are well documented in the study documents.

The public and stakeholder outreach is documented in a Project Engagement Summary Report (incorporated by reference); in-person and virtual public meetings were held at four key points throughout the process. The study involved coordination and interviews with agencies identifying issues and understanding needs and concerns in the corridor (rather than concurrence).

Establishment of organizational relationships – tribes and agencies[6]*

Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[7]
*Tribal**			
Tohono O'odham Nation	November 1, 2012; March 13, 2013; July 16, 2013; August 13, 2013; September 6, 2013; October 10, 2013; November 22, 2013; March 19, 2014; May 21, 2014	Stakeholder Partner; tribal outreach/ consultation; member of Inter-Tribal Council of Arizona	Coordination required related to specific alignment routing at a later date; concern regarding tribal resources.
Pascua Yaqui Tribe			
Federal			
Bureau of Indian Affairs	March 4, 2014	Tribal outreach/ consultation	Keep BIA informed of project progress during this and subsequent study efforts.
Bureau of Land Management	July 16, 2013; August 13, 2013; October 10, 2013; March 19, 2014; May 21, 2014	Stakeholder Partner	None identified.
Bureau of Reclamation		Stakeholder Partner	Coordination required regarding potential corridor intersection with Tucson Mitigation Corridor.
Federal Highway Administration	August 2, 2012; September 5 2012; March 26, 2013; June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 14, 2014, June 11, 2014	Core Agency Partner	None identified.
Federal Railroad Administration		Core Agency Partner	Identify gaps in the existing rail network and spot improvements that can serve the I-11 corridor rather than defining all new corridors.
National Park Service	July 16, 2013; August 13, 2013; October 10, 2013; March 19, 2014; May 21, 2014	Stakeholder Partner	Concern regarding potential impacts to Saguaro National Park.
U.S. Army Corps of Engineers		Stakeholder Partner	None identified.
U.S. Environmental Protection Agency		Stakeholder Partner	None identified.
U.S. Forest Service		Stakeholder Partner	None identified.
U.S. Fish and Wildlife Service		Stakeholder Partner	Concern for impact to important bird areas and impact to sensitive species.

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[6] Users may add rows to this table to accommodate additional tribes and agencies. Unused rows may be deleted.

[7] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Establishment of organizational relationships – tribes and agencies*			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[8]
State			
Arizona Department of Environmental Quality	June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 21, 2014	Stakeholder Partner	Minimize adding negative air quality impacts to already congested/non-attainment areas.
Arizona Game and Fish Department		Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species.
Arizona State Land Department		Stakeholder Partner	None identified.
*County**			
Pima County, Department of Transportation	June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 21, 2014	Stakeholder Partner	Pima County has done a preliminary study on options for a corridor bypass around the metropolitan area (July 2013).
*Regional**			
Pima Association of Governments	June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 21, 2014	Stakeholder Partner	Approved resolution for corridor connection through PAG region (with a connection to Nogales).
Local			
All cities and towns within the study area segment were contacted and invited to participate. No specific concerns were voiced from any of these entities. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, participants, and input.			
Public			
Members of the public	October 23, 2012; October 10, 2013; February 2014; June 18, 2014	Refer to Project Engagement Summary Report.	
Stakeholders			
The Nature Conservancy	June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 21, 2014	Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species.
Sonoran Institute			Concern for wildlife connectivity and impact to sensitive species; desire to incorporate solar energy transmission as part of multimodal transportation corridor.
Sierra Club		Stakeholder Partner	Concern about impact to sensitive species; would like to see accommodation or preference for rail transportation.
List of stakeholders entails over 2,300 entities and is part of project file		Refer to Project Engagement Summary Report.	

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[8] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Planning assumptions and analytical methods
Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?
Yes, the study used growth projections identified as part of the ADOT Statewide Travel Demand Model to understand existing and future congestion. Additionally, demographic trends were analyzed using population and employment estimates and growth rates from the Arizona Department of Administration (2012), Arizona Commerce Authority (2013), Tucson Regional Economic Opportunities (2006), US Bureau of Economic Analysis (2012), US Bureau of Labor Statistics (2001, 2011), and US Census Bureau (1990, 2000, 2005, 2010, 2011).
What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?
Future-year policy and data assumptions are discussed in an appendix of the *Level 2 Evaluation Results Summary*. Traffic forecasts for the study were derived from ADOT's Statewide Travel Demand Model. The planning assumptions, on which the Statewide TDM is based, were carried forward. Planning-level cost estimates were derived using NDOT's "Wizard" cost estimating tool, utilizing actual per mile quantity costs that reflect recent investments made by both ADOT and NDOT.
Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?
Yes. The study compiles recommendations from an exhaustive list of previous statewide and corridor level planning studies, and incorporates assumptions of long-range transportation plans and regional transportation plans. The planning assumptions are consistent with the purpose and need.

Data, information, and tools
Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?
Yes. There is a project portal (SharePoint site) that is used for storage of information and data sharing (https://deliver.ch2m.com/projects/457967/default.aspx). In addition, a project website was maintained through the life of the project, which makes reports and important data available to project partners and stakeholders via a password-protected link, and publically-available reports available for download by the public at-large (www.I11study.com).
Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis[9]?
Yes. This study process was structured to facilitate a high-level analysis of the recommended corridor alternatives that would support a future NEPA project-level analysis. However, due to the long-range and high-level nature of the study, more detailed analysis will be necessary during project development.
Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.
ADOT updates traffic and socioeconomic data regularly (the statewide travel demand model was recently updated to reflect the most recent population and employment projections).
Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?
Yes. Additional data collection will be necessary for some considerations such as water quality/water resources, air quality, cultural resources, noise evaluation, and land use evaluation. Regarding biology and wildlife connectivity, the Arizona Game and Fish Department and The Nature Conservancy have partnered with ADOT assist in environmental issue identification throughout the alternatives evaluation process. While their data is not mapped as part of this effort, detailed analyses performed by both organizations are included as part of the project's Level 1 and Level 2 analysis reports (full documentation located in the report's appendices) and should be used as reference during initial NEPA issue definition.

[9] For an explanation of the types of information needed to evaluate impacts in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Impacts,"<Analysis of Impacts>. This website provides links to six additional resources and guidance that should be helpful in understanding the types of impacts that need to be assessed, their context, and their intensity.

Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?
The study utilized existing environmental, travel demand, and socioeconomic data obtained from a variety of sources. The sources of this data were verified by the CAP as representing the best available information. These include: ADOT travel demand model, US census data, and environmental analyses run by the Arizona Game and Fish Department and The Nature Conservancy (using their analysis models).
In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that NEPA specialists may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.
Coordination should occur with the Arizona Game and Fish Department and The Nature Conservancy to reference environmental data compilation and analysis for this study; their analytical databases are not yet available for public consumption, requiring agency staff to run the analysis models. Both organizations provided detailed analysis reports to present internal findings.

Examine the Checklist for NEPA specialist, at the back of this document, for more detail about potential impacts that could be mapped. Below is an abbreviated list of resources that could occur in the study area and may be knowable at this time and at the study's various analytical scales:

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wetland areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Prime or unique farmland or farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Visual resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Section 4(f)[10] wildlife and/or waterfowl refuge, historic site, recreational site, park	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Section 6(f)[11] resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Title VI/ Environmental justice populations[12]	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Sensitive noise receivers[13]	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Other (list) _____	☐ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☐ Not applicable

[10] Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <Section 4(f)>.

[11] Section 6(f) of the Land and Water Conservation Fund Act

[12] refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

[13] under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

Development of alternatives
Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,[14] or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?
Yes. The project's CAP and Stakeholder Partners were engaged in the study process from the onset and participated at regular milestones. Milestone meetings included presentation and discussion of the following topics: a) populate a universe of alternatives; b) develop relevant qualitative and quantitative evaluation criteria; c) share and discuss the results of Level 1 screening process; d) share and discuss the results of Level 2 screening process; and, 2) share recommended corridor alternatives for that will move forward into the NEPA process. Input was solicited from the CAP and Stakeholder Partners after each meeting. Their input was used to refine process inputs and technical documentation before moving to the next level of study. Additionally, in-person public meetings were held in October 2012, October 2013, and June 2014, with virtual public meeting in February and June 2014, to share the results of the alternatives screening processes with the general public and invite comments.
Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?
The outreach process included a series of CAP meetings, Stakeholder Partner meetings, public information meetings, and focus groups. Depending on the topic, these meetings either occurred as a joint meeting of several locations via teleconference/web meeting, or they were conducted in location-specific geographies. The format of the meetings generally included an informative presentation followed by a facilitated discussion. Meetings were held in a physical location, supplemented by a teleconference that allowed input from those unable to attend the meeting in person. Discussion elements were documented in meeting summaries. Meeting participants were provided a window of time for submitting additional comments on the materials presented during the meeting. Input was utilized to refine technical documentation and/or process inputs for the study. Project team members provided responses to all comments. Outreach documentation is compiled as part of the Project Engagement Summary Report.
If the study was a corridor study, describe the range of alternatives or modes of transportation (if any) considered, screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?
Level 1 evaluation was applied to the entire corridor, including the three Congressionally Designated Corridor Sections and the Southern Arizona and Northern Nevada Future Connectivity Corridors. The Level 1 evaluation applied a small number of qualitative criteria to a comprehensive universe of alternatives. The purpose of this first level was to identify fatal flaws and assess whether an alternative meets the Goals and Objectives of the project in order to: • Determine which corridors within the Congressionally Designated Corridor Sections are most feasible to achieve the Goals and Objectives of this project, and • Help identify which corridor options (routes and modes) in the Future Connectivity Corridors are the most promising candidates for long-term connections to the Congressionally Designated Corridor. The Level 2 evaluation utilized many of the same categories as those used for the Level 1 screening, but the measures were quantitative where possible (depending on available data). Those criteria, for which suitable numerical data were not available, were assessed subjectively by professional planning or engineering judgment. Specific Level 2 measures were developed after the conclusion of Level 1 screening, with input from the CAP and Stakeholder Partners. This level of evaluation included an evaluation of multiple modes as part of the I-11 corridor (highway, rail, major utility). Although the quantitative analysis was only conducted for the Congressionally Designated Corridor segments, the multi-use analysis was conducted for the entire corridor. Corridor recommendations differ for each project segment. In some cases, a singular corridor is recommended for further study. In other cases, multiple corridors are recommended for continued evaluation in future studies. The detailed methodology, screening/evaluation criteria, and the recommended corridor(s) are presented in the *Level 1 and Level 2 Evaluation Results Summary* reports, including locations and general design features.

[14] For an explanation of the development of alternatives in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives,"<Alternatives>.

Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?
☒ Are defensible, credible rationale articulated for their being screened out? Yes, *Level 1 and Level 2 Evaluation Results Summary* reports explain the screening results process. Alternatives were screened out if fatal flaws were discovered, or the alternative did not meet the corridor's Goals and Objectives. Detailed documentation are included in the report's appendices, including back-up analysis performed by the Arizona Game and Fish Department and The Nature Conservancy. ☐ Did the study team take into account legal standards[15] needed in the NEPA process for such decisions? Coordination with FHWA occurred to ensure integrity of this process to lay the foundation for future NEPA actions, however coordination with FHWA's legal team on did not. The legal team does not typically review planning studies. ☒ Did the study team have adequate information for screening out the alternatives? Yes.
What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?
Continued coordination with project stakeholders and the public is required to determine specific alignment alternatives in/around the Tucson metropolitan area.

Formally joining PEL with the NEPA process
Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement[16]) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?
The project's Purpose and Need will be published as a standalone document. The range of alternatives studied and recommended for further evaluation is documented in the *Level 1 Evaluation Results Summary, Southern Arizona Feasibility Assessment Report,* and the *Corridor Concept Report*.
Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the NEPA specialists' attention and be made available to them in a timely way?
Yes. Technical documents prepared as part of this study cite references to prior planning studies along with hyperlinks to access the documents on public domains.
List how the study's proposed transportation system would support adopted land use plans and growth objectives.
The recommendations that are included in the study are in response to the needs identified in the adopted land use and planning documents, and long-range and regional transportation planning documents.
What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?
No modifications to the goals and objectives are required.
Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?
Many of the abovementioned topics were not analyzed in detail as part of this study, and therefore detailed and timely review of such data will be required as part of the NEPA process.

[15] 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <FHWA Technical Advisory T 6640.8A>.

[16] While Notices of Intent are required by some federal agencies for environmental assessments, they are optional for FHWA. Please see "3.3.2 Using the Notice of Intent to Link Planning and NEPA," in *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (Federal Highway Administration, April 5, 2011), <Notice of Intent>.

Other issues

Are there any other issues a future NEPA study team should be aware of (mark all that apply)? In the space below the check boxes, explain the nature and location of any issue(s) checked.

- ☒ Public and/or stakeholders have expressed specific concerns
- ☐ Utility problems
- ☐ Access or right-of-way issues
- ☐ Encroachments into right-of-way
- ☒ Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders
- ☐ Contact information for stakeholders
- ☒ Special or unique resources in the area
- ☐ Federal regulations that are undergoing initial promulgation or revision
- ☐ Other _____

This corridor study determined the recommended connection point between the Phoenix metropolitan area and Mexico. The corridor study did not, however, develop or evaluate any specific alignment alternatives within this corridor swath. Communication regarding this next level of study should be clear about the project development process, noting that future studies are not reiterating past work. During the outreach process, many residents expressed concern about this corridor traversing their developed community, as well as the surrounding natural desert areas (see public meeting documentation from October 2013). The Saguaro National Monument is located in the vicinity of potential alignment alternatives. Ensure local neighborhood groups are involved from the onset (e.g., Avra Valley community) and partner with all local cities/towns, Pima and Santa Cruz counties, land management agencies, and PAG.

Concurrence

By signature, we concur that the transportation planning document for the Southern Arizona Connectivity Segment meets or exceeds the following criteria in terms of acceptability for application in NEPA projects:

- ☒ Public involvement (outreach and level of participation)
- ☒ Stakeholder involvement (outreach and level of participation)
- ☒ Resource agencies' involvement and participation
- ☒ Documentation of the above efforts
- ☒ Applicability of the general findings and conclusions for use, by reference, in NEPA documents

Approved by: _____ Date: 12/19/14

SCOTT OMER

Director, Multimodal Planning Division

Arizona Department of Transportation

Approved by: _____ Date: 12/19/14

DALLAS HAMMIT

State Engineer

Arizona Department of Transportation

Approved by: _____ Date: 1/27/2015

KARLA PETTY

Division Administrator – Arizona

Federal Highway Administration

Checklist for NEPA Specialists – Part 3: Southern Arizona Future Connectivity Corridor

By completing this checklist, NEPA specialists will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of NEPA specialists during the study's various stages is laid out in the flowchart on page 4. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of biological resources meant to identify fatal flaws, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 Evaluation Results Summary.*
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of wildlife linkages meant to identify fatal flaws, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 Evaluation Results Summary*.
Invasive species	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Invasive species should be investigated during final design and standard mitigation techniques applied.
Wetland areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level review of wetland areas meant to identify fatal flaws, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level review of riparian areas meant to identify fatal flaws, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level identification of 100-year floodplain locations, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Clean Water Act Sections 404/401 waters of the United States	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Waters of the U.S. located in area, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*; impacts dependent upon development and analysis of specific corridor alternatives.
Prime or unique farmland	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Sole-source aquifers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Existing and Natural Built Environment Technical Memorandum*; Upper Santa Cruz and Avra Basin Aquifer present in this area per EPA Region 9 categorization.
Wild and scenic rivers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Limited review conducted; no known wild or scenic rivers.
Visual resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No scenic byways.
Cultural resources				
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Archaeological resources present in study area; impacts dependent upon development and analysis of specific corridor alternatives.
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Historical resources present in study area; impacts dependent upon development and analysis of specific corridor alternatives.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Section 4(f) historic site	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*; known historic resource sites in the project area. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Section 4(f) recreational site	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Section 4(f) park	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 Evaluation Results Summary*, and the *Existing and Natural Built Environment Technical Memorandum*; known park sites in the project area (e.g., Picacho Peak State Park). Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Section 6(f) resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Human environment				
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 Evaluation Results Summary*.
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 Evaluation Results Summary*.
Displacements	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Dependent upon development and analysis of specific corridor alternatives.
Access restriction	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Typically interstate freeways are access controlled and this could result in additional restrictions on existing facilities dependent upon development and analysis of specific corridor alternatives.
Neighborhood continuity	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Dependent upon development and analysis of specific corridor alternatives.
Community cohesion	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Dependent upon development and analysis of specific corridor alternatives.
Title VI/Environmental justice populations	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Sensitive noise receivers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Further analysis dependent upon development and review of specific corridor alternatives.
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 2 Evaluation Results Summary*; portions of Pima, Pinal, and Santa Cruz counties are in designated non-attainment areas.

Identification of potential environmental mitigation activities
Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?
Yes, the compilation of information from numerous sources into one planning document will aid the transportation planning process. Understanding the improvements planned throughout the corridor may aid in developing strategic implementation plans for environmental mitigation measures (for example, wildlife crossings). This planning document can be used to inform comments and participation in the development of land use and resource management plans.
With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes, and how formally and frequently should such consultation be undertaken?
ADOT should continue to consult with the project's Stakeholder Partners in Southern Arizona as this project advances into future study phases.
Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?
N/A
To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?
While mitigation measures are generally discussed in relationship to environmental features, no specific mitigation actions were advanced as a result of this study.

Prepared by: Thor Anderson Date: 12-19-14

PEL PROGRAM MANAGER

Multimodal Planning Division, Arizona Department of Transportation

Questionnaires for Transportation Planners:
Phoenix Metropolitan Area Section

Questionnaire for Transportation Planners – Part 1: Phoenix Metropolitan Area Section

This part of the questionnaire should be completed by transportation planners at the beginning of the transportation planning study. Please note that planners should also review Part 2 of the questionnaire to understand what additional issues will need to be considered and documented as the study progresses.

Project identification
What is the name of the study? What cities and counties does it cover? What major streets or highways are covered? For corridor studies, what are the intended termini?
Name of the study: I-11 and Intermountain West Corridor Study Intended termini: The current surface transportation bill, Moving Ahead for Progress in the 21st Century Act (MAP-21), defines US 93 between Phoenix, Arizona and Las Vegas, Nevada as a high priority corridor and designates it as future I-11. This study includes detailed corridor planning on this Congressionally Designated segment, spanning from the Las Vegas metropolitan area to the Phoenix metropolitan area. Higher level corridor visioning to determine intended corridor connection points will be studied in northern Nevada and southern Arizona. The corridor is divided to five sections as described below: • Southern Arizona Future Connectivity Corridor (Mexico to Casa Grande) • Phoenix Metropolitan Area (Casa Grande to Wickenburg) • Northern Arizona/Southern Nevada (Wickenburg to Las Vegas) • Las Vegas Metropolitan Area • Northern Nevada Future Connectivity Corridor (Beyond the Las Vegas Metropolitan Area)
Who is the study sponsor?
Arizona Department of Transportation (ADOT) and Nevada Department of Transportation (NDOT)
Briefly describe the study and its purpose.
In the federal legislation referred to as Moving Ahead for Progress in the 21st Century (MAP-21), Congress identified the US 93 Corridor from Wickenburg, Arizona to Las Vegas, Nevada as a National Highway System (NHS) High Priority Corridor and designated it as Interstate-11 (I-11). High Priority Corridor designation in NHS recognizes the importance of the corridor to the nation's economy, defense, and mobility. This is the latest action in a decades-long effort by the federal government and states in the Intermountain West to develop a transportation corridor between the Rocky Mountains and the Cascade Range/Sierra Nevada Mountains linking Mexico to Canada. This effort includes the identification of the CANAMEX Trade Corridor as High Priority Corridor 26 in the NHS and efforts by Arizona and Nevada to pursue a direct, contiguous, interstate transportation corridor that connects major metropolitan areas in the intermountain west. The purpose of this long-range planning study is to evaluate the need for an interstate corridor in this region and, if warranted, establish a corridor vision and a reasonable range of alternatives to carry forward to future studies. This corridor has the potential to become a new north-south, high-capacity transportation route through the Intermountain West. This would greatly improve commerce, tourism and international trade opportunities across the western United States. The study area for this project includes the entire states of Nevada and Arizona, although more detailed planning will occur in concentrated study segments. The principal goal of this project is to identify and establish the most feasible route and transportation connections for the portion of the study corridor between the Las Vegas and Phoenix metropolitan areas, with options for extensions to the north and south. Because of the length and varying characteristics of the Congressionally Designated Corridor, this segment is divided into three sections. Breaking into sections allows separate (but closely coordinated) teams to work on these different sections concurrently, providing more efficiency and earlier delivery. Two additional corridor segments will allow higher-level visioning for the potential extensions beyond the Las Vegas and Phoenix metropolitan areas. The study will include two levels of analysis: 1. Detailed corridor planning for the Congressionally Designated I-11 segment between (and including) the Las Vegas and Phoenix metropolitan areas, and 2. A higher-level visioning approach to determine corridor connections from the Phoenix metropolitan area to Mexico, and from the Las Vegas metropolitan area to the northern boundary of Nevada.

Who are the primary study team members (include name, title, organization name, and contact information)?

Sondra Rosenberg, PTP	NDOT	Federal Programs Manager	(775) 888-7241	SRosenberg@dot.state.nv.us
Michael Kies, PE	ADOT	Director of Planning and Programming	(602) 712-8140	mkies@azdot.gov
Bardia Nezhati, PE	CH2M HILL	Project Manager	(702) 953-1274	Bardia.Nezhati@ch2m.com
Dan Andersen	CH2M HILL	Project Communication & Outreach	(702) 953-1246	Dan.Andersen@ch2m.com
Jennifer Roberts, PE	CH2M HILL	Project Planner/Engineer	(720) 286-0912	Jennifer.Roberts@ch2m.com
Jaclyn Kuechenmeister, AICP	CH2M HILL	Project Planner	(480) 377-6210	Jaclyn.Kuechenmeister@ch2m.com
John McNamara, AIA, FAICP	AECOM	Deputy Project Manager	(602) 549-5566	John.McNamara@aecom.com
Peggy Fiandaca, AICP	PSA	Meeting Facilitation	(480) 816-1811	Peggy@PSAPlanning.com
Audra Koester Thomas	PSA	Tribal/Public/Stakeholder Involvement	(480) 816-1811	Audra@PSAPlanning.com

Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).

Yes, all interested public agency and private organizations are invited to participate in a Stakeholder Partners group that is asked to provide data and other input, and to share their opinions and ideas on decision points throughout the process.

The Core Agency Partners (CAP)—representatives from NDOT, ADOT, Federal Highway Administration, Federal Railroad Administration, Maricopa Association of Governments, and Regional Transportation Commission of Southern Nevada—carefully consider all recommendations from the Stakeholder Partners, and make final recommendations to the Project Sponsors, NDOT and ADOT.

Focus Groups are formed with subject matter experts from the Core Agency Partners and Stakeholder Partners. These groups are asked to provide data and input into specific topics, and make recommendations for the Stakeholder Partners to consider.

The Public has opportunities to learn about the study and share their opinions via public meetings, a project website, a project hot-line, and other means.

Core Agency Partner representatives include:

Thor Anderson	ADOT	Abdelmoez Abdalla	FHWA NV	Tom Greco	NDOT
Brent Cain	ADOT	Susan Klekar	FHWA NV	Tracy Larkin-Thomason	NDOT
Todd Emery	ADOT	Christina Leach	FHWA NV	Melvin McCallum	NDOT
Asad Karim	ADOT	Greg Novak	FHWA NV	Sondra Rosenberg	NDOT
Michael Kies	ADOT	Kyle Gradinger	FRA	Kevin Verre	NDOT
Misty Klann	ADOT	Andy Nothstine	FRA	Mike Hand	RTC
Carlos Lopez	ADOT	David Valenstein	FRA	Raymond Hess	RTC
Scott Omer	ADOT	Bob Hazlett	MAG	Martyn James	RTC
Steve Call	FHWA	Tim Strow	MAG	Andrew Kjellman	RTC
Ed Stillings	FHWA AZ	Steve Cooke	NDOT	Fred Ohene	RTC
Rebecca Yedlin	FHWA AZ	Cleveland Dudley	NDOT	Tina Quigley	RTC

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.

The concept of an access controlled, high capacity transportation facility connecting Phoenix and Las Vegas (with connections further north) has been around for decades, initiated with the CANAMEX corridor discussions in 1991 and cited in such articles as the 1997 "Interstate 2000: Improvements for the Next Millennium" written in the contractor-trade publication *Roads and Bridges*. A timeline of key influential decisions regarding different elements of corridor development are listed below, followed by lists of relevant transportation planning studies.

Timeline of Key Corridor Decisions

- Approximately 1991: Arizona forms a coalition with Nevada, Utah, Idaho, and Montana to explore a CANAMEX Corridor.
- 1995: TEA 21 designated the CANAMEX Corridor as a High Priority Corridor (number 26), making it eligible for funding. The Corridor consisted of I-19, I-10, US 93 (Phoenix to Las Vegas), and I-15 (Las Vegas though Utah, Idaho, and Montana).
- 1998: Nevada, Arizona, and FHWA begin a routing study for a bridge bypassing Hoover Dam, the need for which was realized in the 1960s.
- 1999: Arizona leads the development of the CANAMEX Coalition, with five governors signing the Memorandum of Understanding.
- 2001: Route selected for the bridge bypassing Hoover Dam, by FHWA. The Bypass became urgent after the route across the dam was closed to trucks after 9/11.
- 2001: CANAMEX Corridor Plan completed.
- 2001: Study begins for a new route bypassing Boulder City, connecting the bridge bypassing Hoover Dam to I-515 in Henderson.
- 2005: Record of Decision (ROD) received for the Environmental Impact Statement (EIS) for the Boulder City Bypass, which will relocate US 93 to the new route when constructed.
- 2005: Construction of Hoover Dam Bypass bridge begins, named Mike O'Callaghan–Pat Tillman Memorial Bridge.
- 2006: I-10/Hassayampa Valley Regional Transportation Planning Framework Study started, completed in 2007.

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites. (continued)

- 2007: I-8 and I-10/Hidden Valley Regional Transportation Planning Framework Study stated, completed in 2009.
- Approximately 2007: Various businesses and local governments, from Nevada and Arizona, formed to push for a freeway between Phoenix and Las Vegas, made possible by the new Mike O'Callaghan–Pat Tillman Memorial Bridge. This led to the formation of the CAN-DO Coalition (Connecting Arizona and Nevada - Delivering Opportunities).
- 2007-2009: Hassayampa Freeway, to serve as a bypass route for Phoenix, recommended in the regional framework studies.
- 2008: A Brookings Institution report (Mountain Megas: America's Newest Metropolitan Places and a Federal Partnership to Help Them Prosper) identified the freeway between Phoenix and Las Vegas as a "pressing need".
- 2010: Mike O'Callaghan–Pat Tillman Memorial Bridge opens.
- 2012: MAP-21 transportation funding bill includes I-11, amending the TEA-21 text by adding Interstate Route I-11 to it.
- 2012: Nevada and Arizona DOTs begin a corridor study for the proposed I-11 and Intermountain West Corridor.

Arizona led initiatives:

CANAMEX Corridor Planning	ACA	Various
US 93 Corridor Planning	ADOT	Various
Arizona Wildlife Linkages Assessment	ADOT	2006
bqAZ Statewide Mobility Reconnaissance Study	ADOT	2008
Arizona Multimodal Freight Analysis Study	ADOT	2009
bqAZ Statewide Transportation Planning Framework Program	ADOT	2010
bqAZ Statewide Rail Framework Study	ADOT	2010
Wickenburg Bypass	ADOT	2010
Arizona State Rail Plan	ADOT	2011
What Moves you Arizona, LRTP	ADOT	2011
Arizona-Sonora Border Master Plan	ADOT	2013
Logistics Capacity Study of the Guaymas-Tucson Corridor	CANAMEX Task Force	2006
I-10/Hassayampa Valley Transportation Framework Study	MAG	2008
I-8 and I-10/ Hidden Valley Transportation Framework Study	MAG	2009
Commuter Rail System Study	MAG	2010
Hassayampa Framework Study for the Wickenburg Area	MAG	2011
Freight Transportation Framework Study	MAG	2012
Regional Transportation Plan Update	MAG	2013
Parkway Corridor Feasibility Studies	MCDOT	Various
2040 Regional Transportation Plan Update	PAG	2012
Regionally Significant Routes for Safety and Mobility	Pinal County	2008

Nevada led initiatives:

An Economic Development Agenda for Nevada	GOED	2011
Moving Nevada Forward: Economic Development	GOED	2012
US 395 Washoe County Study	NDOT	2002
I-515 Corridor Study	NDOT	2004
Boulder City Bypass Phase I and Phase II EIS	NDOT	2005
US 395 Southern Sierra Corridor Study	NDOT	2007
US 50 East Corridor Study	NDOT	2007
Statewide Transportation Plan – Moving Nevada Through 2028	NDOT	2008
I-80 Corridor Study	NDOT	2009
Statewide Integrated Transportation Reliability Program	NDOT	2010
Apex to Mesquite and Moapa Valley Corridor Study	NDOT/RTCSNV	2011
I-15 Corridor System Master Plan	NDOT	2012
Draft Southern Nevada Outerbelt Feasibility Study Part I	NDOT	2012
Nevada Statewide Rail Plan	NDOT	2012
Connecting Nevada: Planning Our Transportation Future	NDOT	2013
West Valley North-South Critical Facilities Study – Phase 1	RTCSNV	2009
Southern Nevada Regional Transportation Plan	RTCSNV	2012
Washoe County Regional Transportation Plan	RTCWC	2008

Federal initiatives:

Hoover Dam Bypass Environmental Impact Statement	FHWA	2001
West-Wide Energy Corridor Programmatic EIS	US DOE	2008
Solar Energy Development Programmatic EIS	US DOE	2012
America's Freight Transportation Gateways	US DOT	2009

What current or near-future planning (or other) studies in the vicinity are underway or will be undertaken? What is the relationship of this study to those studies? Provide contact names and locations of the studies and study websites.

North-South Corridor Study	ADOT	Corridor study on potentially intersecting freeway
Arizona Passenger Rail Corridor Study	ADOT	Passenger rail corridor could become a multimodal component of I-11 corridor
US 93 Corridor Projects	ADOT	Near-term improvements could contribute to the I-11 corridor
I-10 Widening Studies	ADOT	Near-term improvements could contribute to the I-11 corridor
I-40/US 93 TI DCR/Environmental Studies	ADOT	Study recommendations could contribute to the I-11 corridor
SR 95 Realignment Study, DCR/EIS	ADOT	Study recommendations provide an I-11 corridor alternative
Arizona Governor's Border Trade Alliance	AZ Governor's Office	Inform study on Arizona's current trade coordination initiatives with Mexico
Southwest Multi-State Rail Planning Study	FRA	Study findings can provide input into passenger rail demand in Southwest Triangle
Boulder City Bypass PPP	NDOT	Corridor could become a component of the I-11 corridor
USA Parkway Environmental Study	NDOT	Corridor could become a component of the I-11 corridor
East-West Corridor Study	Pinal County	Corridor could become a component of the I-11 corridor

Study objectives

What are your desired outcomes for this study? (Check all that apply.)

- ☒ Stakeholder identification
- ☒ Stakeholder roles/responsibilities definition
- ☒ Travel study area definition
- ☐ Performance measures development
- ☒ Development of purpose and need goals and other objectives
- ☒ Alternative evaluation and screening
- ☒ Alternative travel modes definition
- ☒ Operationally independent segments
- ☒ Scheduling of infrastructure improvements over short-, mid-, and long-range time frames
- ☐ Environmental impacts
- ☐ Mitigation identification
- ☐ Don't know
- ☐ Other _____

Have system improvements and additions that address your transportation need been identified in a fiscally constrained regional transportation plan?

Some projects along the proposed route, such as the Boulder City Bypass, are programmed in regional transportation plans.

Will a purpose and need statement[17] be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

Yes. Based on information gathered and analyzed, a Purpose and Need document was formulated, providing the foundation for future NEPA actions (Appendix A).

The Purpose and Need provides a high-level examination of deficiencies in the north-south transportation connectivity in the region in the context of mobility, trade legislation, and economic development. A more detailed, data-driven analysis of factors, such as project status, travel patterns and capacity, system linkage, population and employment growth trends, multimodal transportation demand, legislative mandates, social/economic development impacts, multimodal and intermodal relationships, safety needs, roadway deficiencies, and environmental impacts will need to be undertaken during a future NEPA evaluation.

Establishment of organizational relationships

Is a partnering agreement in place? If so, who are signatories (for example, affected agencies, stakeholders, organizations)? Attach the partnering agreement(s).

Yes. Both NDOT and ADOT have a signed agreement in place that defines each agency's financial obligations for conducting this corridor study.

What are the key coordination points in the decision-making process?

The CAP and Stakeholder Partners were appraised at key milestones of the study effort, including study introduction, corridor visioning, preliminary business case foundation, goals and objectives, corridor justification report, evaluation process (universe of alternatives, level 1 evaluation, level 2 evaluation), corridor recommendations, final business case, purpose and need, and implementation plan. Public outreach occurred throughout the process on the project website and public information meetings were held at critical milestones (i.e. level 1 & 2 evaluations) to obtain optimal feedback.

[17] For an explanation of purpose and need in environmental documents, please see the Federal Highway Administration's (FHWA's) "NEPA and Transportation Decisionmaking: The Importance of Purpose and Need in Environmental Documents," <Purpose and Need>. This website provides links to five additional resources and guidance from FHWA that should be helpful in understanding the relationship between goals and objectives in transportation planning studies and purpose and need statements of NEPA documents.

Planning assumptions and analytical methods
Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?
Yes, the study will evaluate existing, interim, and ultimate improvements for the corridor. The ultimate improvements for the whole corridor are predicted to take more than 20 years to complete.
What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?
NDOT and ADOT will provide appropriate baseline traffic forecasts based on their statewide-specific travel demand models.
Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods[18]*? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?*
Yes, procedures outlined in FHWA's toolbox for preparing traffic forecasts will be followed.
Do the travel demand models base their projections on differentiations between vehicles?
Yes. The model predicts personal vehicles and commercial vehicles (light or heavy trucks).
Data, information, and tools
Is there a centralized database or website that all State resource agencies may use to share resource data during the study?
Yes. There is a project SharePoint site that is used for storage of information in addition to a project Website which will be maintained through the life of this project. The site addresses are as follows: – SharePoint: https://deliver.ch2m.com/projects/457967/default.aspx – Website: www.I11study.com

[18] FHWA November 2011 publication: <Traffic Analysis Tools and Methods>

Questionnaire for Transportation Planners – Part 2: Phoenix Metropolitan Area Section

This part of the questionnaire should be completed by transportation planners at the end of the transportation planning study. This completed document should become an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318.

Purpose and need for this study
How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?
The study evaluated alternatives for a potential future I-11 and Intermountain West Corridor based on Goals and Objectives developed with input from the Core Agency Partners (CAP) and Stakeholder Partners. Meetings were held during the early part of the study to interactively formulate and build consensus. The following overall factors guided the development and evaluation of alternatives: – Legislation – Is there a federal, state, or local governmental mandates for the action? – System Linkage – Is the proposed project a "connecting link?" How does it fit in the transportation system? – Trade Corridor - How will the proposed facility enhance the efficient movement of freight in the study corridor? – Modal Interrelationships – How will the proposed facility interface with and serve to complement airports, rail and port facilities, mass transit services, etc.? – Capacity – Is the capacity of the present facility inadequate for the present traffic? Projected traffic? What capacity is needed? What is the level(s) of service for existing and proposed facilities? – Economics – Projected economic development/land use changes indicating the need to improve or add to the highway capacity – Project Status—Project history, including actions taken to date, other agencies and governmental units involved, action spending, schedules, etc.
What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?
Key coordination milestones included the following. Each coordination effort included meetings with the CAP and Stakeholder Partners, with the Sponsoring Partners (ADOT and NDOT) serving as the ultimate decision makers. CAP meetings occurred on a joint teleconference between multiple locations. Stakeholder Partner meetings sometimes occurred jointly, or individually – depending on the meeting content. Public outreach efforts are noted by * meeting topics. – Study introduction (August 2012)* – Focus group meetings (January/February 2013) – Business case foundation (March 2013) – Corridor goals and objectives (June 2013) – Evaluation process/criteria and universe of alternatives (July 2013) – Level 1 screening results and Level 2 screening criteria (September 2013)* – Level 2 screening results and preliminary corridor recommendations (November 2013) – Final recommendations* (February 2014) – Implementation plan, purpose and need, final business case (May 2014)* Additional coordination occurred with specific groups, as required, including but not limited to environmental stakeholders, utility users, and railroad companies. Arizona Game and Fish Department, The Nature Conservancy, and the Sonoran Institute were integral partners to the evaluation process, providing supplemental data resources.
How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?[19]
Information from this study can be directly referenced in future NEPA documents. Findings from this study are structured in separate reports, located on the project website (http://i11study.com/wp/?page_id=237) and include: – *Corridor Vision Summary* – *Corridor Justification Report* – *Existing and Natural Built Environment Technical Memorandum* – *Level 1 Evaluation Results Summary* – *Level 2 Evaluation Results Summary* – *Final Business Case*

[19] For an explanation of the types of documents needed under the NEPA process and the nature of the content of those documents, please see "NEPA Documentation: Improving the Quality of Environmental Documents,"<Documentation>.

- *Purpose and Need*
- *Implementation Program*
- *Corridor Concept Report*

Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.

FHWA (Ed Stillings, Rebecca Yedlin) participated in the CAP meetings and discussions of how the study should be implemented and how PEL should be incorporated. Decisions were made by the Sponsoring Partners, with support from the CAP and Stakeholder Partners. The Stakeholder Partners group included a range of project stakeholders, including resource and regulatory agencies. Acceptance on major decisions was sought from this group, not concurrence. Key milestones where feedback was requested are outlined on the previous page. Study findings and recommendations were acceptable to agencies and are well documented in the study documents.

The public and stakeholder outreach is documented in a Project Engagement Summary Report (incorporated by reference); in-person and virtual public meetings were held at four key points throughout the process. The study involved coordination and interviews with agencies identifying issues and understanding needs and concerns in the corridor (rather than concurrence).

Establishment of organizational relationships – tribes and agencies[20]*

Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[21]
*Tribal**			
Gila River Indian Community	November 1, 2012; March 13, 2013; July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner; tribal outreach/ consultation; member of Inter-Tribal Council of Arizona	None identified.
Federal			
Bureau of Indian Affairs	March 4, 2014	Tribal outreach/ consultation	Keep BIA informed of project progress during this and subsequent study efforts.
Bureau of Land Management	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Concern regarding proposed corridor alignments traversing planned Vulture Mountains Cooperative Recreation Management Area and proximity to Sonoran Desert National Monument.
Bureau of Reclamation		Stakeholder Partner	None identified.
Federal Highway Administration	August 2, 2012; September 5 2012; March 26, 2013; June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 14, 2014, June 11, 2014	Core Agency Partner	Ensure adequate traffic interchange spacing (minimum two mile spacing in urban areas; 3+ in rural areas).
Federal Railroad Administration		Core Agency Partner	Identify gaps in the existing rail network and spot improvements that can serve the I-11 corridor rather than defining all new corridors.
U.S. Army Corps of Engineers	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	None identified.
U.S. Environmental Protection Agency		Stakeholder Partner	None identified.
U.S. Forest Service		Stakeholder Partner	None identified.
U.S. Fish and Wildlife Service		Stakeholder Partner	Concern for impact to important bird areas and impact to sensitive species.

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[20] Users may add rows to this table to accommodate additional tribes and agencies. Unused rows may be deleted.

[21] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Establishment of organizational relationships – tribes and agencies*			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[22]
State			
Arizona Department of Environmental Quality	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Minimize adding negative air quality impacts to already congested/non-attainment areas.
Arizona Game and Fish Department		Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species, specifically in the vicinity of the Sonoran Desert National Monument and nearby wildlife areas.
Arizona State Land Department		Stakeholder Partner	None identified.
County			
Maricopa County, Department of Transportation	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Ensure mobility coordination with Arizona Parkway corridors in western and southern Maricopa County (e.g., capacity support, routing).
Maricopa County, Department of Parks and Recreation		Stakeholder Partner	Concern regarding proposed corridor alignments traversing planned Vulture Mountains Cooperative Recreation Management Area. Alternative options proposed as part of recommendations, but not studied. Continued coordination required as alignment planning progresses.
Pinal County, Department of Public Works		Stakeholder Partner	Ensure corridor option consistency with planning for high-capacity transportation corridors in Pinal County (e.g., East-West Corridor Study).
*Regional**			
Maricopa Association of Governments	August 2, 2012; September 5 2012; March 26, 2013; June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 14, 2014, June 11, 2014	Core Agency Partner	Ensure corridor option consistency with transportation framework plans accepted by the MAG Regional Council (e.g., Hassayampa and Hidden Valley Transportation Framework Studies; bqAZ Statewide Transportation Planning Framework).
*Local**			
City of Goodyear	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Supports corridor option consistent with MAG transportation framework plans (accepted by the MAG Regional Council) (e.g., Hassayampa and Hidden Valley Transportation Framework Studies).
City of Surprise		Stakeholder Partner	Supports corridor development, but cautions locating corridor that would encourage out of direction travel.
Town of Gila Bend		Stakeholder Partner	Passed Council resolution supporting use of existing corridors (I-8 and SR 85).
Town of Wickenburg		Stakeholder Partner	Supports corridor that does not traverse historic downtown core/prefers bypass.

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[22] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

*Establishment of organizational relationships – tribes and agencies**			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[23]
Public			
Members of the public	October 23, 2012; October 10, 2013; February 2014; June 25, 2014	Refer to Project Engagement Summary Report.	
Stakeholders			
The Nature Conservancy	July 17, 2013; August 14, 2013; October 8, 2013; January 21, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species.
Sonoran Institute			Concern for wildlife connectivity and impact to sensitive species; desire to incorporate solar energy transmission as part of multimodal transportation corridor.
Sierra Club		Stakeholder Partner	Concern about impact to sensitive species; would like to see accommodation or preference for rail transportation.
List of stakeholders entails over 2,300 entities and is part of project file		Refer to Project Engagement Summary Report.	

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

Planning assumptions and analytical methods
Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?
Yes, the study used growth projections identified as part of the ADOT Statewide Travel Demand Model to understand existing and future congestion. Additionally, demographic trends were analyzed using population and employment estimates and growth rates from the Arizona Department of Administration (2012), Arizona Commerce Authority (2013), US Bureau of Economic Analysis (2012), US Bureau of Labor Statistics (2001, 2011), and US Census Bureau (1990, 2000, 2005, 2010, 2011).
What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?
Future-year policy and data assumptions are discussed in an appendix of the *Level 2 Evaluation Results Summary*. Traffic forecasts for the study were derived from ADOT's Statewide Travel Demand Model. The planning assumptions, on which the Statewide TDM is based, were carried forward. Planning-level cost estimates were derived using NDOT's "Wizard" cost estimating tool, utilizing actual per mile quantity costs that reflect recent investments made by both ADOT and NDOT.
Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?
Yes. The study compiles recommendations from an exhaustive list of previous statewide and corridor level planning studies, and incorporates assumptions of long-range transportation plans and regional transportation plans. The planning assumptions and the purpose and need are consistent.

Data, information, and tools
Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?
Yes. There is a project portal (SharePoint site) that is used for storage of information and data sharing (https://deliver.ch2m.com/projects/457967/default.aspx). In addition, a project website was maintained through the life of the project, which makes reports and important data available to project partners and stakeholders via a password-protected link, and publically-available reports available for download by the public at-large (www.I11study.com).

[23] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis[24]?
Yes. This study process was structured to facilitate a high-level analysis of the recommended corridor alternatives that would support a future NEPA project-level analysis. However, due to the long-range and high-level nature of the study, more detailed analysis will be necessary during project development.
Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.
ADOT updates traffic and socioeconomic data regularly (the statewide travel demand model was recently updated to reflect the most recent population and employment projections).
Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?
Yes. Additional data collection will be necessary for some considerations such as water quality/water resources, air quality, cultural resources, noise evaluation, and land use evaluation. Regarding biology and wildlife connectivity, the Arizona Game and Fish Department and The Nature Conservancy have partnered with ADOT assist in environmental issue identification throughout the alternatives evaluation process. While their data is not mapped as part of this effort, detailed analyses are included as part of the project's Level 1 and Level 2 analysis reports (full documentation located in the report's appendices) and should be used as reference during initial NEPA issue definition.
Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?
The study utilized existing environmental, travel demand, and socioeconomic data obtained from a variety of sources. The sources of this data were verified by the CAP as representing the best available information. These include: ADOT travel demand model, US census data, and environmental analyses run by the Arizona Game and Fish Department and The Nature Conservancy (using their analysis models).
In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that NEPA specialists may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.
Coordination should occur with the Arizona Game and Fish Department and The Nature Conservancy to reference environmental data compilation and analysis for this study; their analytical databases are not yet available for public consumption, requiring agency staff to run the analysis models. Both organizations provided detailed analysis reports to present internal findings.

[24] For an explanation of the types of information needed to evaluate impacts in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Impacts,"<Analysis of Impacts>. This website provides links to six additional resources and guidance that should be helpful in understanding the types of impacts that need to be assessed, their context, and their intensity.

Examine the Checklist for NEPA specialist, at the back of this document, for more detail about potential impacts that could be mapped. Below is an abbreviated list of resources that could occur in the study area and may be knowable at this time and at the study's various analytical scales:

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wetland areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Prime or unique farmland or farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Visual resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Section 4(f)[25] wildlife and/or waterfowl refuge, historic site, recreational site, park	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Section 6(f)[26] resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Title VI/ Environmental justice populations[27]	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Sensitive noise receivers[28]	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Other (list) _____	☐ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☐ Not applicable

[25] Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <Section 4(f)>.

[26] Section 6(f) of the Land and Water Conservation Fund Act

[27] refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

[28] under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

Development of alternatives
Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,[29] or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?
Yes. The project's CAP and Stakeholder Partners were engaged in the study process from the onset and participated at regular milestones. Milestone meetings included presentation and discussion of the following topics: a) populate a universe of alternatives; b) develop relevant qualitative and quantitative evaluation criteria; c) share and discuss the results of Level 1 screening process; d) share and discuss the results of Level 2 screening process; and, 2) share recommended corridor alternatives for that will move forward into the NEPA process. Input was solicited from the CAP and Stakeholder Partners after each meeting. Their input was used to refine process inputs and technical documentation before moving to the next level of study. Additionally, in-person public meetings were held in October 2012, October 2013, and June 2014, with virtual public meeting in February and June 2014, to share the results of the alternatives screening processes with the general public and invite comments.
Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?
The outreach process included a series of CAP meetings, Stakeholder Partner meetings, public information meetings, and focus groups. Depending on the topic, these meetings either occurred as a joint meeting of several locations via teleconference/web meeting, or they were conducted in location-specific geographies. The format of the meetings generally included an informative presentation followed by a facilitated discussion. Meetings were held in a physical location, supplemented by a teleconference that allowed input from those unable to attend the meeting in person. Discussion elements were documented in meeting summaries. Meeting participants were provided a window of time for submitting additional comments on the materials presented during the meeting. Input was utilized to refine technical documentation and/or process inputs for the study. Project team members provided responses to all comments. Outreach documentation is compiled as part of the Project Engagement Summary Report.
If the study was a corridor study, describe the range of alternatives or modes of transportation (if any) considered, screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?
Level 1 evaluation was applied to the entire corridor, including the three Congressionally Designated Corridor Sections and the Southern Arizona and Northern Nevada Future Connectivity Corridors. The Level 1 evaluation applied a small number of qualitative criteria to a comprehensive universe of alternatives. The purpose of this first level was to identify fatal flaws and assess whether an alternative meets the Goals and Objectives of the project in order to: • Determine which corridors within the Congressionally Designated Corridor Sections are most feasible to achieve the Goals and Objectives of this project, and • Help identify which corridor options (routes and modes) in the Future Connectivity Corridors are the most promising candidates for long-term connections to the Congressionally Designated Corridor. The Level 2 evaluation utilized many of the same categories as those used for the Level 1 screening, but the measures were quantitative where possible (depending on available data). Those criteria, for which suitable numerical data were not available, were assessed subjectively by professional planning or engineering judgment. Specific Level 2 measures were developed after the conclusion of Level 1 screening, with input from the CAP and Stakeholder Partners. This level of evaluation included an evaluation of multiple modes as part of the I-11 corridor (highway, rail, major utility). Although the quantitative analysis was only conducted for the Congressionally Designated Corridor segments, the multi-use analysis was conducted for the entire corridor. Corridor recommendations differ for each project segment. In some cases, a singular corridor is recommended for further study. In other cases, multiple corridors are recommended for continued evaluation in future studies. The detailed methodology, screening/evaluation criteria, and the recommended corridor(s) are presented in the *Level 1 and Level 2 Evaluation Results Summary* reports, including locations and general design features.

[29] For an explanation of the development of alternatives in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives,"<Alternatives>.

Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?
☒ Are defensible, credible rationale articulated for their being screened out? Yes, *Level 1 and Level 2 Evaluation Results Summary* reports explain the screening results process. Alternatives were screened out if fatal flaws were discovered, or the alternative did not meet the corridor's Goals and Objectives. Detailed documentation are included in the report's appendices, including back-up analysis performed by the Arizona Game and Fish Department and The Nature Conservancy. ☐ Did the study team take into account legal standards[30] needed in the NEPA process for such decisions? Coordination with FHWA occurred to ensure integrity of this process to lay the foundation for future NEPA actions, however coordination with FHWA's legal team on did not. The legal team does not typically review planning studies. ☒ Did the study team have adequate information for screening out the alternatives? Yes.
What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?
Continued coordination with project stakeholders and the public is required to determine specific alignment alternatives in/around the Phoenix metropolitan area, specifically in the Hassayampa Valley area. Such outstanding issues include the determination of the ability of the corridor to traverse the planned BLM Vulture Mountains Cooperative Recreation Management Area, as well as the preferred location of the corridor in or around Wickenburg.

Formally joining PEL with the NEPA process
Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement[31]) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?
The project's Purpose and Need will be published as a standalone document. The range of alternatives studied and recommended for further evaluation is documented in the *Level 1 Evaluation Results Summary, Level 2 Evaluation Results Summary,* and *Corridor Concept Report*.
Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the NEPA specialists' attention and be made available to them in a timely way?
Yes. Technical documents prepared as part of this study cite references to prior planning studies along with hyperlinks to access the documents on public domains.
List how the study's proposed transportation system would support adopted land use plans and growth objectives.
The recommendations that are included in the study are in response to the needs identified in the adopted land use and planning documents, and long-range and regional transportation planning documents.
What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?
No modifications to the goals and objectives are required.
Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?
Many of the abovementioned topics were not analyzed in detail as part of this study, and therefore detailed and timely review of such data will be required as part of the NEPA process.

[30] 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <FHWA Technical Advisory T 6640.8A>.

[31] While Notices of Intent are required by some federal agencies for environmental assessments, they are optional for FHWA. Please see "3.3.2 Using the Notice of Intent to Link Planning and NEPA," in *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (Federal Highway Administration, April 5, 2011), <Notice of Intent>.

Other issues

Are there any other issues a future NEPA study team should be aware of (mark all that apply)? In the space below the check boxes, explain the nature and location of any issue(s) checked.

- ☒ Public and/or stakeholders have expressed specific concerns
- ☐ Utility problems
- ☐ Access or right-of-way issues
- ☐ Encroachments into right-of-way
- ☒ Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders
- ☐ Contact information for stakeholders
- ☒ Special or unique resources in the area
- ☐ Federal regulations that are undergoing initial promulgation or revision
- ☐ Other _____

This study included a lot of concern regarding implementing a new facility versus expanding an existing facility and the impacts of both actions on the natural environment and wildlife. Continue coordination with environmental resource organizations, land management agencies, and local jurisdictions regarding existing and planned development. Town of Wickenburg requests continued engagement regarding alignment options through or around the downtown area. The BLM Vulture Mountains Cooperative Recreation Management Area may be impacted by a proposed corridor and could require extensive evaluation, coordination, and mitigation.

Concurrence

By signature, we concur that the transportation planning document for the Phoenix Metropolitan Planning Section meets or exceeds the following criteria in terms of acceptability for application in NEPA projects:

- ☒ Public involvement (outreach and level of participation)
- ☒ Stakeholder involvement (outreach and level of participation)
- ☒ Resource agencies' involvement and participation
- ☒ Documentation of the above efforts
- ☒ Applicability of the general findings and conclusions for use, by reference, in NEPA documents

Approved by: _____ Date: 12/19/14

SCOTT OMER

Director, Multimodal Planning Division

Arizona Department of Transportation

Approved by: _____ Date: 12/19/14

DALLAS HAMMIT

State Engineer

Arizona Department of Transportation

Approved by: _____ Date: 1/27/2015

KARLA PETTY

Division Administrator – Arizona

Federal Highway Administration

Checklist for NEPA Specialists – Part 3: Phoenix Metropolitan Area Section

By completing this checklist, NEPA specialists will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of NEPA specialists during the study's various stages is laid out in the flowchart on page 4. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of biological resources meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 and 2 Evaluation Results* summaries.
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of wildlife linkages meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 and 2 Evaluation Results* summaries.
Invasive species	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Invasive species should be investigated during final design and standard mitigation techniques applied.
Wetland areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level review of wetland areas meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level review of riparian areas meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level identification of 100-year floodplain locations, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Clean Water Act Sections 404/401 waters of the United States	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Waters of the U.S. located in area, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; impacts dependent upon development and analysis of specific corridor alternatives.
Prime or unique farmland	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Sole-source aquifers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Limited review conducted, documented in the *Existing and Natural Built Environment Technical Memorandum*; no sole source aquifers located in central Arizona, per EPA Region 9 categorization.
Wild and scenic rivers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Limited review conducted; no known wild or scenic rivers.
Visual resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted; known presence of BLM Visual Resource Management Class II.
Designated scenic road/byway	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	No scenic byways.
Cultural resources				
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Archaeological resources present in study area; impacts dependent upon development and analysis of specific corridor alternatives.
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Historical resources present in study area; impacts dependent upon development and analysis of specific corridor alternatives.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; no known Section 4(f) wildlife and/or waterfowl refuges.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Section 4(f) historic site	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*.
Section 4(f) recreational site	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; known planned recreation sites in the project area (e.g., Vulture Mountain Cooperative Recreation Management Area, Buckeye Hills Recreation Area, Sonoran Desert National Monument). Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Section 4(f) park	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; known park sites in the project area (e.g., White Tank Regional Park, Estrella Regional Park). Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Section 6(f) resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Human environment				
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 and Level 2 Evaluation Results Summaries*.
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 and Level 2 Evaluation Results Summaries*.
Displacements	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Impacts unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Access restriction	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Typically interstate freeways are access controlled and this could result in additional restrictions on existing facilities dependent upon development and analysis of specific corridor alternatives.
Neighborhood continuity	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Dependent upon development and analysis of specific corridor alternatives.
Community cohesion	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Dependent upon development and analysis of specific corridor alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Title VI/Environmental justice populations	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 2 Evaluation Results Summary*; dependent upon development and analysis of specific corridor alternatives.
Physical environment				
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Further analysis dependent upon development and review of specific corridor alternatives.
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon development and analysis of specific corridor alternatives.
Sensitive noise receivers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Further analysis dependent upon development and review of specific corridor alternatives.
Air quality	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 2 Evaluation Results Summary*; known air quality concerns in Maricopa County.

Identification of potential environmental mitigation activities
Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?
Yes, the compilation of information from numerous sources into one planning document will aid the transportation planning process. Understanding the improvements planned throughout the corridor may aid in developing strategic implementation plans for environmental mitigation measures (for example, wildlife crossings). This planning document can be used to inform comments and participation in the development of land use and resource management plans.
With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes, and how formally and frequently should such consultation be undertaken?
ADOT should continue to consult with the project's Stakeholder Partners in the Phoenix Metropolitan area as this project advances into future study phases.
Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?
N/A
To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?
While mitigation measures are generally discussed in relationship to environmental features, no specific mitigation actions were advanced as a result of this study.

Prepared by: Shea Anderson Date: 12-19-14

PEL PROGRAM MANAGER

Multimodal Planning Group, Arizona Department of Transportation

Questionnaires for Transportation Planners:
Northern Arizona Section

Questionnaire for Transportation Planners – Part 1: Northern Arizona Section

This part of the questionnaire should be completed by transportation planners at the beginning of the transportation planning study. Please note that planners should also review Part 2 of the questionnaire to understand what additional issues will need to be considered and documented as the study progresses.

Project identification
What is the name of the study? What cities and counties does it cover? What major streets or highways are covered? For corridor studies, what are the intended termini?
Name of the study: I-11 and Intermountain West Corridor Study Intended termini: The current surface transportation bill, Moving Ahead for Progress in the 21st Century Act (MAP-21), defines US 93 between Phoenix, Arizona and Las Vegas, Nevada as a high priority corridor and designates it as future I-11. This study includes detailed corridor planning on this Congressionally Designated segment, spanning from the Las Vegas metropolitan area to the Phoenix metropolitan area. Higher level corridor visioning to determine intended corridor connection points will be studied in northern Nevada and southern Arizona. The corridor is divided to five sections as described below: • Southern Arizona Future Connectivity Corridor (Mexico to Casa Grande) • Phoenix Metropolitan Area (Casa Grande to Wickenburg) • Northern Arizona/Southern Nevada (Wickenburg to Las Vegas) • Las Vegas Metropolitan Area • Northern Nevada Future Connectivity Corridor (Beyond the Las Vegas Metropolitan Area)
Who is the study sponsor?
Arizona Department of Transportation (ADOT) and Nevada Department of Transportation (NDOT)
Briefly describe the study and its purpose.
In the federal legislation referred to as Moving Ahead for Progress in the 21st Century (MAP-21), Congress identified the US 93 Corridor from Wickenburg, Arizona to Las Vegas, Nevada as a National Highway System (NHS) High Priority Corridor and designated it as Interstate-11 (I-11). High Priority Corridor designation in NHS recognizes the importance of the corridor to the nation's economy, defense, and mobility. This is the latest action in a decades-long effort by the federal government and states in the Intermountain West to develop a transportation corridor between the Rocky Mountains and the Cascade Range/Sierra Nevada Mountains linking Mexico to Canada. This effort includes the identification of the CANAMEX Trade Corridor as High Priority Corridor 26 in the NHS and efforts by Arizona and Nevada to pursue a direct, contiguous, interstate transportation corridor that connects major metropolitan areas in the intermountain west. The purpose of this long-range planning study is to evaluate the need for an interstate corridor in this region and, if warranted, establish a corridor vision and a reasonable range of alternatives to carry forward to future studies. This corridor has the potential to become a new north-south, high-capacity transportation route through the Intermountain West. This would greatly improve commerce, tourism and international trade opportunities across the western United States. The study area for this project includes the entire states of Nevada and Arizona, although more detailed planning will occur in concentrated study segments. The principal goal of this project is to identify and establish the most feasible route and transportation connections for the portion of the study corridor between the Las Vegas and Phoenix metropolitan areas, with options for extensions to the north and south. Because of the length and varying characteristics of the Congressionally Designated Corridor, this segment is divided into three sections. Breaking into sections allows separate (but closely coordinated) teams to work on these different sections concurrently, providing more efficiency and earlier delivery. Two additional corridor segments will allow higher-level visioning for the potential extensions beyond the Las Vegas and Phoenix metropolitan areas. The study will include two levels of analysis: 1. Detailed corridor planning for the Congressionally Designated I-11 segment between (and including) the Las Vegas and Phoenix metropolitan areas, and 2. A higher-level visioning approach to determine corridor connections from the Phoenix metropolitan area to Mexico, and from the Las Vegas metropolitan area to the northern boundary of Nevada.

Who are the primary study team members (include name, title, organization name, and contact information)?

Sondra Rosenberg, PTP	NDOT	Federal Programs Manager	(775) 888-7241	SRosenberg@dot.state.nv.us
Michael Kies, PE	ADOT	Director of Planning and Programming	(602) 712-8140	mkies@azdot.gov
Bardia Nezhati, PE	CH2M HILL	Project Manager	(702) 953-1274	Bardia.Nezhati@ch2m.com
Dan Andersen	CH2M HILL	Project Communication & Outreach	(702) 953-1246	Dan.Andersen@ch2m.com
Jennifer Roberts, PE	CH2M HILL	Project Planner/Engineer	(720) 286-0912	Jennifer.Roberts@ch2m.com
Jaclyn Kuechenmeister, AICP	CH2M HILL	Project Planner	(480) 377-6210	Jaclyn.Kuechenmeister@ch2m.com
John McNamara, AIA, FAICP	AECOM	Deputy Project Manager	(602) 549-5566	John.McNamara@aecom.com
Peggy Fiandaca, AICP	PSA	Meeting Facilitation	(480) 816-1811	Peggy@PSAPlanning.com
Audra Koester Thomas	PSA	Tribal/Public/Stakeholder Involvement	(480) 816-1811	Audra@PSAPlanning.com

Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).

Yes, all interested public agency and private organizations are invited to participate in a Stakeholder Partners group that is asked to provide data and other input, and to share their opinions and ideas on decision points throughout the process.

The Core Agency Partners (CAP)—representatives from NDOT, ADOT, Federal Highway Administration, Federal Railroad Administration, Maricopa Association of Governments, and Regional Transportation Commission of Southern Nevada—carefully consider all recommendations from the Stakeholder Partners, and make final recommendations to the Project Sponsors, NDOT and ADOT.

Focus Groups are formed with subject matter experts from the Core Agency Partners and Stakeholder Partners. These groups are asked to provide data and input into specific topics, and make recommendations for the Stakeholder Partners to consider.

The Public has opportunities to learn about the study and share their opinions via public meetings, a project website, a project hot-line, and other means.

Core Agency Partner representatives include:

Thor Anderson	ADOT	Abdelmoez Abdalla	FHWA NV	Tom Greco	NDOT
Brent Cain	ADOT	Susan Klekar	FHWA NV	Tracy Larkin-Thomason	NDOT
Todd Emery	ADOT	Christina Leach	FHWA NV	Melvin McCallum	NDOT
Asad Karim	ADOT	Greg Novak	FHWA NV	Sondra Rosenberg	NDOT
Michael Kies	ADOT	Kyle Gradinger	FRA	Kevin Verre	NDOT
Misty Klann	ADOT	Andy Nothstine	FRA	Mike Hand	RTC
Carlos Lopez	ADOT	David Valenstein	FRA	Raymond Hess	RTC
Scott Omer	ADOT	Bob Hazlett	MAG	Martyn James	RTC
Steve Call	FHWA	Tim Strow	MAG	Andrew Kjellman	RTC
Ed Stillings	FHWA AZ	Steve Cooke	NDOT	Fred Ohene	RTC
Rebecca Yedlin	FHWA AZ	Cleveland Dudley	NDOT	Tina Quigley	RTC

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.

The concept of an access controlled, high capacity transportation facility connecting Phoenix and Las Vegas (with connections further north) has been around for decades, initiated with the CANAMEX corridor discussions in 1991 and cited in such articles as the 1997 "Interstate 2000: Improvements for the Next Millennium" written in the contractor-trade publication *Roads and Bridges*. A timeline of key influential decisions regarding different elements of corridor development are listed below, followed by lists of relevant transportation planning studies.

Timeline of Key Corridor Decisions

- Approximately 1991: Arizona forms a coalition with Nevada, Utah, Idaho, and Montana to explore a CANAMEX Corridor.
- 1995: TEA 21 designated the CANAMEX Corridor as a High Priority Corridor (number 26), making it eligible for funding. The Corridor consisted of I-19, I-10, US 93 (Phoenix to Las Vegas), and I-15 (Las Vegas though Utah, Idaho, and Montana).
- 1998: Nevada, Arizona, and FHWA begin a routing study for a bridge bypassing Hoover Dam, the need for which was realized in the 1960s.
- 1999: Arizona leads the development of the CANAMEX Coalition, with five governors signing the Memorandum of Understanding.
- 2001: Route selected for the bridge bypassing Hoover Dam, by FHWA. The Bypass became urgent after the route across the dam was closed to trucks after 9/11.
- 2001: CANAMEX Corridor Plan completed.
- 2001: Study begins for a new route bypassing Boulder City, connecting the bridge bypassing Hoover Dam to I-515 in Henderson.
- 2005: Record of Decision (ROD) received for the Environmental Impact Statement (EIS) for the Boulder City Bypass, which will relocate US 93 to the new route when constructed.
- 2005: Construction of Hoover Dam Bypass bridge begins, named Mike O'Callaghan–Pat Tillman Memorial Bridge.
- 2006: I-10/Hassayampa Valley Regional Transportation Planning Framework Study started, completed in 2007.

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites. (continued)

- 2007: I-8 and I-10/Hidden Valley Regional Transportation Planning Framework Study stated, completed in 2009.
- Approximately 2007: Various businesses and local governments, from Nevada and Arizona, formed to push for a freeway between Phoenix and Las Vegas, made possible by the new Mike O'Callaghan–Pat Tillman Memorial Bridge. This led to the formation of the CAN-DO Coalition (Connecting Arizona and Nevada - Delivering Opportunities).
- 2007-2009: Hassayampa Freeway, to serve as a bypass route for Phoenix, recommended in the regional framework studies.
- 2008: A Brookings Institution report (Mountain Megas: America's Newest Metropolitan Places and a Federal Partnership to Help Them Prosper) identified the freeway between Phoenix and Las Vegas as a "pressing need".
- 2010: Mike O'Callaghan–Pat Tillman Memorial Bridge opens.
- 2012: MAP-21transportation funding bill includes I-11, amending the TEA-21 text by adding Interstate Route I-11 to it.
- 2012: Nevada and Arizona DOTs begin a corridor study for the proposed I-11 and Intermountain West Corridor.

Arizona led initiatives:

CANAMEX Corridor Planning	ACA	Various
US 93 Corridor Planning	ADOT	Various
Arizona Wildlife Linkages Assessment	ADOT	2006
bqAZ Statewide Mobility Reconnaissance Study	ADOT	2008
Arizona Multimodal Freight Analysis Study	ADOT	2009
bqAZ Statewide Transportation Planning Framework Program	ADOT	2010
bqAZ Statewide Rail Framework Study	ADOT	2010
Wickenburg Bypass	ADOT	2010
Arizona State Rail Plan	ADOT	2011
What Moves you Arizona, LRTP	ADOT	2011
Arizona-Sonora Border Master Plan	ADOT	2013
Logistics Capacity Study of the Guaymas-Tucson Corridor	CANAMEX Task Force	2006
I-10/Hassayampa Valley Transportation Framework Study	MAG	2008
I-8 and I-10/ Hidden Valley Transportation Framework Study	MAG	2009
Commuter Rail System Study	MAG	2010
Hassayampa Framework Study for the Wickenburg Area	MAG	2011
Freight Transportation Framework Study	MAG	2012
Regional Transportation Plan Update	MAG	2013
Parkway Corridor Feasibility Studies	MCDOT	Various
2040 Regional Transportation Plan Update	PAG	2012
Regionally Significant Routes for Safety and Mobility	Pinal County	2008

Nevada led initiatives:

An Economic Development Agenda for Nevada	GOED	2011
Moving Nevada Forward: Economic Development	GOED	2012
US 395 Washoe County Study	NDOT	2002
I-515 Corridor Study	NDOT	2004
Boulder City Bypass Phase I and Phase II EIS	NDOT	2005
US 395 Southern Sierra Corridor Study	NDOT	2007
US 50 East Corridor Study	NDOT	2007
Statewide Transportation Plan – Moving Nevada Through 2028	NDOT	2008
I-80 Corridor Study	NDOT	2009
Statewide Integrated Transportation Reliability Program	NDOT	2010
Apex to Mesquite and Moapa Valley Corridor Study	NDOT/RTCSNV	2011
I-15 Corridor System Master Plan	NDOT	2012
Draft Southern Nevada Outerbelt Feasibility Study Part I	NDOT	2012
Nevada Statewide Rail Plan	NDOT	2012
Connecting Nevada: Planning Our Transportation Future	NDOT	2013
West Valley North-South Critical Facilities Study – Phase 1	RTCSNV	2009
Southern Nevada Regional Transportation Plan	RTCSNV	2012
Washoe County Regional Transportation Plan	RTCWC	2008

Federal initiatives:

Hoover Dam Bypass Environmental Impact Statement	FHWA	2001
West-Wide Energy Corridor Programmatic EIS	US DOE	2008
Solar Energy Development Programmatic EIS	US DOE	2012
America's Freight Transportation Gateways	US DOT	2009

What current or near-future planning (or other) studies in the vicinity are underway or will be undertaken? What is the relationship of this study to those studies? Provide contact names and locations of the studies and study websites.

North-South Corridor Study	ADOT	Corridor study on potentially intersecting freeway
Arizona Passenger Rail Corridor Study	ADOT	Passenger rail corridor could become a multimodal component of I-11 corridor
US 93 Corridor Projects	ADOT	Near-term improvements could contribute to the I-11 corridor
I-10 Widening Studies	ADOT	Near-term improvements could contribute to the I-11 corridor
I-40/US 93 TI DCR/Environmental Studies	ADOT	Study recommendations could contribute to the I-11 corridor
SR 95 Realignment Study, DCR/EIS	ADOT	Study recommendations provide an I-11 corridor alternative
Arizona Governor's Border Trade Alliance	AZ Governor's Office	Inform study on Arizona's current trade coordination initiatives with Mexico
Southwest Multi-State Rail Planning Study	FRA	Study findings can provide input into passenger rail demand in Southwest Triangle
Boulder City Bypass PPP	NDOT	Corridor could become a component of the I-11 corridor
USA Parkway Environmental Study	NDOT	Corridor could become a component of the I-11 corridor
East-West Corridor Study	Pinal County	Corridor could become a component of the I-11 corridor

Study objectives

What are your desired outcomes for this study? (Check all that apply.)

- ☒ Stakeholder identification
- ☒ Stakeholder roles/responsibilities definition
- ☒ Travel study area definition
- ☐ Performance measures development
- ☒ Development of purpose and need goals and other objectives
- ☒ Alternative evaluation and screening
- ☒ Alternative travel modes definition
- ☒ Operationally independent segments
- ☒ Scheduling of infrastructure improvements over short-, mid-, and long-range time frames
- ☐ Environmental impacts
- ☐ Mitigation identification
- ☐ Don't know
- ☐ Other _____

Have system improvements and additions that address your transportation need been identified in a fiscally constrained regional transportation plan?

Some projects along the proposed route, such as the Boulder City Bypass, are programmed in regional transportation plans.

Will a purpose and need statement[32] be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

Yes. Based on information gathered and analyzed, a Purpose and Need document was formulated, providing the foundation for future NEPA actions (Appendix A).

The Purpose and Need provides a high-level examination of deficiencies in the north-south transportation connectivity in the region in the context of mobility, trade legislation, and economic development. A more detailed, data-driven analysis of factors, such as project status, travel patterns and capacity, system linkage, population and employment growth trends, multimodal transportation demand, legislative mandates, social/economic development impacts, multimodal and intermodal relationships, safety needs, roadway deficiencies, and environmental impacts will need to be undertaken during a future NEPA evaluation.

Establishment of organizational relationships

Is a partnering agreement in place? If so, who are signatories (for example, affected agencies, stakeholders, organizations)? Attach the partnering agreement(s).

Yes. Both NDOT and ADOT have a signed agreement in place that defines each agency's financial obligations for conducting this corridor study.

What are the key coordination points in the decision-making process?

The CAP and Stakeholder Partners were appraised at key milestones of the study effort, including study introduction, corridor visioning, preliminary business case foundation, goals and objectives, corridor justification report, evaluation process (universe of alternatives, level 1 evaluation, level 2 evaluation), corridor recommendations, final business case, purpose and need, and implementation plan. Public outreach occurred throughout the process on the project website and public information meetings were held at critical milestones (i.e. level 1 & 2 evaluations) to obtain optimal feedback.

[32] For an explanation of purpose and need in environmental documents, please see the Federal Highway Administration's (FHWA's) "NEPA and Transportation Decision-making: The Importance of Purpose and Need in Environmental Documents," <Purpose and Need>. This website provides links to five additional resources and guidance from FHWA that should be helpful in understanding the relationship between goals and objectives in transportation planning studies and purpose and need statements of NEPA documents.

Planning assumptions and analytical methods
Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?
Yes, the study will evaluate existing, interim, and ultimate improvements for the corridor. The ultimate improvements for the whole corridor are predicted to take more than 20 years to complete.
What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?
NDOT and ADOT will provide appropriate baseline traffic forecasts based on their statewide-specific travel demand models.
Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods[33]*? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?*
Yes, procedures outlined in FHWA's toolbox for preparing traffic forecasts will be followed.
Do the travel demand models base their projections on differentiations between vehicles?
Yes. The model predicts personal vehicles and commercial vehicles (light or heavy trucks).
Data, information, and tools
Is there a centralized database or website that all State resource agencies may use to share resource data during the study?
Yes. There is a project SharePoint site that is used for storage of information in addition to a project Website which will be maintained through the life of this project. The site addresses are as follows: – SharePoint: https://deliver.ch2m.com/projects/457967/default.aspx – Website: www.I11study.com

[33] FHWA November 2011 publication: <Traffic Analysis Tools and Methods>

Questionnaire for Transportation Planners – Part 2: Northern Arizona Section

This part of the questionnaire should be completed by transportation planners at the end of the transportation planning study. This completed document should become an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318.

Purpose and need for this study
How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?
The study evaluated alternatives for a potential future I-11 and Intermountain West Corridor based on Goals and Objectives developed with input from the Core Agency Partners (CAP) and Stakeholder Partners. Meetings were held during the early part of the study to interactively formulate and build consensus. The following overall factors guided the development and evaluation of alternatives: – Legislation – Is there a federal, state, or local governmental mandates for the action? – System Linkage – Is the proposed project a "connecting link?" How does it fit in the transportation system? – Trade Corridor - How will the proposed facility enhance the efficient movement of freight in the study corridor? – Modal Interrelationships – How will the proposed facility interface with and serve to complement airports, rail and port facilities, mass transit services, etc.? – Capacity – Is the capacity of the present facility inadequate for the present traffic? Projected traffic? What capacity is needed? What is the level(s) of service for existing and proposed facilities? – Economics – Projected economic development/land use changes indicating the need to improve or add to the highway capacity – Project Status—Project history, including actions taken to date, other agencies and governmental units involved, action spending, schedules, etc.
What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?
Key coordination milestones included the following. Each coordination effort included meetings with the CAP and Stakeholder Partners, with the Sponsoring Partners (ADOT and NDOT) serving as the ultimate decision makers. CAP meetings occurred on a joint teleconference between multiple locations. Stakeholder Partner meetings sometimes occurred jointly, or individually – depending on the meeting content. Public outreach efforts are noted by * meeting topics. – Study introduction (August 2012)* – Focus group meetings (January/February 2013) – Business case foundation (March 2013) – Corridor goals and objectives (June 2013) – Evaluation process/criteria and universe of alternatives (July 2013) – Level 1 screening results and Level 2 screening criteria (September 2013)* – Level 2 screening results and preliminary corridor recommendations (November 2013) – Final recommendations* (February 2014) – Implementation plan, purpose and need, final business case (May 2014)* Additional coordination occurred with specific groups, as required, including but not limited to environmental stakeholders, utility users, and railroad companies. Arizona Game and Fish Department, The Nature Conservancy, and the Sonoran Institute were integral partners to the evaluation process, providing supplemental data resources.
How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?[34]
Information from this study can be directly referenced in future NEPA documents. Findings from this study are structured in separate reports, located on the project website (http://i11study.com/wp/?page_id=237) and include: – *Corridor Vision Summary* – *Corridor Justification Report* – *Existing and Natural Built Environment Technical Memorandum* – *Level 1 Evaluation Results Summary* – *Level 2 Evaluation Results Summary*

[34] For an explanation of the types of documents needed under the NEPA process and the nature of the content of those documents, please see "NEPA Documentation: Improving the Quality of Environmental Documents,"<Documentation>.

- *Final Business Case*
- *Purpose and Need*
- *Implementation Program*
- *Corridor Concept Report*

Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.

FHWA (Ed Stillings, Rebecca Yedlin) participated in the CAP meetings and discussions of how the study should be implemented and how PEL should be incorporated. Decisions were made by the Sponsoring Partners, with support from the CAP and Stakeholder Partners. The Stakeholder Partners group included a range of project stakeholders, including resource and regulatory agencies. Acceptance on major decisions was sought from this group, not concurrence. Key milestones where feedback was requested are outlined on the previous page. Study findings and recommendations were acceptable to agencies and are well documented in the study documents.

The public and stakeholder outreach is documented in a Project Engagement Summary Report (incorporated by reference); in-person and virtual public meetings were held at four key points throughout the process. The study involved coordination and interviews with agencies identifying issues and understanding needs and concerns in the corridor (rather than concurrence).

Establishment of organizational relationships – tribes and agencies[35]*

Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[36]
*Tribal**			
Hualapai Indian Tribe	November 1, 2012; March 13, 2013; July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner; tribal outreach/ consultation; member of Inter-Tribal Council of Arizona	Concern regarding potential cultural resource impacts.
Federal			
Bureau of Indian Affairs	March 4, 2014	Tribal outreach/ consultation	Keep BIA informed of project progress during this and subsequent study efforts.
Bureau of Land Management	July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Prefers utilization of US-93 to avoid impact to undisturbed areas; potential historic and cultural issues, ACECs, and desert tortoise habitat.
Bureau of Reclamation		Stakeholder Partner	None identified.
Federal Highway Administration	August 2, 2012; September 5 2012; March 26, 2013; June 27, 2013; July 30, 2013; September 24, 2013; January 15, 2014; March 12, 2014; May 14, 2014, June 11, 2014	Core Agency Partner	Ensure adequate traffic interchange spacing (minimum two mile spacing in urban areas; 3+ in rural areas).
Federal Railroad Administration		Core Agency Partner	Identify gaps in the existing rail network and spot improvements that can serve the I-11 corridor rather than defining all new corridors.
U.S. Army Corps of Engineers	July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	None identified.
U.S. Environmental Protection Agency		Stakeholder Partner	None identified.
U.S. Forest Service		Stakeholder Partner	None identified.
U.S. Fish and Wildlife Service		Stakeholder Partner	Concern for impact to important bird areas and impact to sensitive species.

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[35] Users may add rows to this table to accommodate additional tribes and agencies. Unused rows may be deleted.

[36] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

.Establishment of organizational relationships – tribes and agencies*			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.[37]
State			
Arizona Department of Environmental Quality	July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Minimize adding negative air quality impacts to already congested/non-attainment areas.
Arizona Game and Fish Department		Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species.
Arizona State Land Department		Stakeholder Partner	None identified.
County			
All counties within the study area segment were contacted and invited to participate. No specific concerns were voiced from any of these entities. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, participants, and input.			
*Regional**			
Central Yavapai Metropolitan Planning Organization	July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner	Would like to see east-west connectivity to Corridor through north/central Arizona.
Local			
All cities and towns within the study area segment were contacted and invited to participate. No specific concerns were voiced from any of these entities. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, participants, and input.			
Public			
Members of the public	October 23, 2012; October 10, 2013; February 2014; June 2014	Refer to Project Engagement Summary Report.	
Stakeholders			
The Nature Conservancy	July 17, 2013; August 13, 2013; October 9, 2013; January 23, 2014; March 19, 2014; May 21, 2014	Stakeholder Partner; assistance in detailed analysis for screening process	Concern for wildlife connectivity and impact to sensitive species.
Sonoran Institute			Concern for wildlife connectivity and impact to sensitive species; desire to incorporate solar energy transmission as part of multimodal transportation corridor.
Sierra Club		Stakeholder Partner	Concern about impact to sensitive species; would like to see accommodation or preference for rail transportation.
List of stakeholders entails over 2,300 entities and is part of project file		Refer to Project Engagement Summary Report.	

**Note: Numerous stakeholders were consulted as part of this process; only participatory tribes, agencies, and municipalities are reflected in this table. Refer to the Project Engagement Summary Report for a comprehensive list of meetings, stakeholders, and input. Coordination with all entities involved to date should be maintained in future planning and design efforts.*

[37] If the transportation planning study final report does not adequately document interactions (for example, meeting notes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Planning assumptions and analytical methods
Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?
Yes, the study used growth projections identified as part of the ADOT Statewide Travel Demand Model to understand existing and future congestion. Additionally, demographic trends were analyzed using population and employment estimates and growth rates from the Arizona Department of Administration (2012), Arizona Commerce Authority (2013), US Bureau of Economic Analysis (2012), US Bureau of Labor Statistics (2001, 2011), and US Census Bureau (1990, 2000, 2005, 2010, 2011).
What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?
Future-year policy and data assumptions are discussed in Appendix H of the *Level 2 Evaluation Results Summary*. Traffic forecasts for the study were derived from ADOT's Statewide Travel Demand Model. The planning assumptions, on which the Statewide TDM is based, were carried forward. Planning-level cost estimates were derived using NDOT's "Wizard" cost estimating tool, utilizing actual per mile quantity costs that reflect recent investments made by both ADOT and NDOT.
Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?
Yes. The study compiles recommendations from an exhaustive list of previous statewide and corridor level planning studies, and incorporates assumptions of long-range transportation plans and regional transportation plans.

Data, information, and tools
Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?
Yes. There is a project portal (SharePoint site) that is used for storage of information and data sharing (https://deliver.ch2m.com/projects/457967/default.aspx). In addition, a project website was maintained through the life of the project, which makes reports and important data available to project partners and stakeholders via a password-protected link, and publically-available reports available for download by the public at-large (www.I11study.com).
Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis[38]?
Yes. This study process was structured to facilitate a high-level analysis of the recommended corridor alternatives that would support a future NEPA project-level analysis. However, due to the long-range and high-level nature of the study, more detailed analysis will be necessary during project development.
Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.
ADOT updates traffic and socioeconomic data regularly (the statewide travel demand model was recently updated to reflect the most recent population and employment projections).
Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?
Yes. Additional data collection will be necessary for some considerations such as water quality/water resources, air quality, cultural resources, noise evaluation, and land use evaluation. Regarding biology and wildlife connectivity, the Arizona Game and Fish Department and The Nature Conservancy have partnered with ADOT to assist in environmental issue identification throughout the alternatives evaluation process. While their data is not mapped as part of this effort, detailed analyses are included as part of the project's Level 1 and Level 2 analysis reports (full documentation located in the report's appendices) and should be used as reference during initial NEPA issue definition.
Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?
The study utilized existing environmental, travel demand, and socioeconomic data obtained from a variety of sources. The sources of this data were verified by the CAP as representing the best available information. These include: ADOT travel demand model, US census data, and environmental analyses run by the Arizona Game and Fish Department and The Nature Conservancy (using their analysis models).

[38] For an explanation of the types of information needed to evaluate impacts in environmental documents, please see FHWA's "NEPA and Transportation Decision-making: Impacts,"<Analysis of Impacts>. This website provides links to six additional resources and guidance that should be helpful in understanding the types of impacts that need to be assessed, their context, and their intensity.

In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that NEPA specialists may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.
Coordination should occur with the Arizona Game and Fish Department and The Nature Conservancy to reference environmental data compilation and analysis for this study; their analytical databases are not yet available for public consumption, requiring agency staff to run the analysis models. Both organizations provided detailed analysis reports to present internal findings.

Examine the Checklist for NEPA specialist, at the back of this document, for more detail about potential impacts that could be mapped. Below is an abbreviated list of resources that could occur in the study area and may be knowable at this time and at the study's various analytical scales:

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Wetland areas	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Prime or unique farmland or farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Visual resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Designated scenic road/byway	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Section 4(f)[39] wildlife and/or waterfowl refuge, historic site, recreational site, park	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Section 6(f)[40] resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Title VI/ Environmental justice populations[41]	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Sensitive noise receivers[42]	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Air quality	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable
Other (list) _____	☐ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☐ Not applicable

[39] Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <Section 4(f)>.

[40] Section 6(f) of the Land and Water Conservation Fund Act

[41] refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

[42] under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

Development of alternatives
Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,[43] or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?
Yes. The project's CAP and Stakeholder Partners were engaged in the study process from the onset and participated at regular milestones. Milestone meetings included presentation and discussion of the following topics: a) populate a universe of alternatives; b) develop relevant qualitative and quantitative evaluation criteria; c) share and discuss the results of Level 1 screening process; d) share and discuss the results of Level 2 screening process; and, 2) share recommended corridor alternatives for that will move forward into the NEPA process. Input was solicited from the CAP and Stakeholder Partners after each meeting. Their input was used to refine process inputs and technical documentation before moving to the next level of study. Additionally, in-person public meetings were held in October 2012, October 2013, and June 2014, with virtual public meeting in February and June 2014, to share the results of the alternatives screening processes with the general public and invite comments.
Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?
The outreach process included a series of CAP meetings, Stakeholder Partner meetings, public information meetings, and focus groups. Depending on the topic, these meetings either occurred as a joint meeting of several locations via teleconference/web meeting, or they were conducted in location-specific geographies. The format of the meetings generally included an informative presentation followed by a facilitated discussion. Meetings were held in a physical location, supplemented by a teleconference that allowed input from those unable to attend the meeting in person. Discussion elements were documented in meeting summaries. Meeting participants were provided a window of time for submitting additional comments on the materials presented during the meeting. Input was utilized to refine technical documentation and/or process inputs for the study. Project team members provided responses to all comments. Outreach documentation is compiled as part of the Project Engagement Summary Report.
If the study was a corridor study, describe the range of alternatives or modes of transportation (if any) considered, screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?
Level 1 evaluation was applied to the entire corridor, including the three Congressionally Designated Corridor Sections and the Southern Arizona and Northern Nevada Future Connectivity Corridors. The Level 1 evaluation applied a small number of qualitative criteria to a comprehensive universe of alternatives. The purpose of this first level was to identify fatal flaws and assess whether an alternative meets the Goals and Objectives of the project in order to: • Determine which corridors within the Congressionally Designated Corridor Sections are most feasible to achieve the Goals and Objectives of this project, and • Help identify which corridor options (routes and modes) in the Future Connectivity Corridors are the most promising candidates for long-term connections to the Congressionally Designated Corridor. The Level 2 evaluation utilized many of the same categories as those used for the Level 1 screening, but the measures were quantitative where possible (depending on available data). Those criteria, for which suitable numerical data were not available, were assessed subjectively by professional planning or engineering judgment. Specific Level 2 measures were developed after the conclusion of Level 1 screening, with input from the CAP and Stakeholder Partners. This level of evaluation included an evaluation of multiple modes as part of the I-11 corridor (highway, rail, major utility). Although the quantitative analysis was only conducted for the Congressionally Designated Corridor segments, the multi-use analysis was conducted for the entire corridor. Corridor recommendations differ for each project segment. In some cases, a singular corridor is recommended for further study. In other cases, multiple corridors are recommended for continued evaluation in future studies. The detailed methodology, screening/evaluation criteria, and the recommended corridor(s) are presented in the *Level 1 and Level 2 Evaluation Results Summary* reports, including locations and general design features.

[43] For an explanation of the development of alternatives in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives,"<Alternatives>.

Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?
☒ Are defensible, credible rationale articulated for their being screened out? Yes, *Level 1 and Level 2 Evaluation Results Summary* reports explain the screening results process. Alternatives were screened out if fatal flaws were discovered, or the alternative did not meet the corridor's Goals and Objectives. Detailed documentation are included in the report's appendices, including back-up analysis performed by the Arizona Game and Fish Department and The Nature Conservancy. ☐ Did the study team take into account legal standards[44] needed in the NEPA process for such decisions? Coordination with FHWA occurred to ensure integrity of this process to lay the foundation for future NEPA actions, however coordination with FHWA's legal team on did not. The legal team does not typically review planning studies. ☒ Did the study team have adequate information for screening out the alternatives? Yes.
What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?
Although the routing through or around Wickenburg is part of the Phoenix Metropolitan Area Section, Wickenburg forms the terminus between the two study areas, and the location of the corridor in this vicinity is seen as unresolved issue with public stakeholders.

Formally joining PEL with the NEPA process
Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement[45]) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?
The project's Purpose and Need will be published as a standalone document. The range of alternatives studied and recommended for further evaluation is documented in the *Level 1 Evaluation Results Summary, Level 2 Evaluation Results Summary,* and *Corridor Concept Report*.
Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the NEPA specialists' attention and be made available to them in a timely way?
Yes. Technical documents prepared as part of this study cite references to prior planning studies along with hyperlinks to access the documents on public domains.
List how the study's proposed transportation system would support adopted land use plans and growth objectives.
The recommendations that are included in the study are in response to the needs identified in the adopted land use and planning documents, and long-range and regional transportation planning documents.
What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?
No modifications to the goals and objectives are required.
Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?
Many of the abovementioned topics were not analyzed in detail as part of this study, and therefore detailed and timely review of such data will be required as part of the NEPA process.

[44] 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <FHWA Technical Advisory T 6640.8A>.

[45] While Notices of Intent are required by some federal agencies for environmental assessments, they are optional for FHWA. Please see "3.3.2 Using the Notice of Intent to Link Planning and NEPA," in *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (Federal Highway Administration, April 5, 2011), <Notice of Intent>.

Other issues
Are there any other issues a future NEPA study team should be aware of (mark all that apply)? In the space below the check boxes, explain the nature and location of any issue(s) checked. ☒ Public and/or stakeholders have expressed specific concerns ☐ Utility problems ☐ Access or right-of-way issues ☐ Encroachments into right-of-way ☒ Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders ☐ Contact information for stakeholders ☐ Special or unique resources in the area ☐ Federal regulations that are undergoing initial promulgation or revision ☐ Other _____
Continue coordination on potential impacts to the natural environment with improvements to the US-93 corridor. Town of Wickenburg requests continued engagement regarding alignment options through or around the downtown area.

Concurrence

By signature, we concur that the transportation planning document for the Northern Arizona Section meets or exceeds the following criteria in terms of acceptability for application in NEPA projects:

- ☒ Public involvement (outreach and level of participation)
- ☒ Stakeholder involvement (outreach and level of participation)
- ☒ Resource agencies' involvement and participation
- ☒ Documentation of the above efforts
- ☒ Applicability of the general findings and conclusions for use, by reference, in NEPA documents

Approved by: _____ Date: 12/19/14

SCOTT OMER

Director, Multimodal Planning Division

Arizona Department of Transportation

Approved by: _____ Date: 12/19/14

DALLAS HAMMIT

State Engineer

Arizona Department of Transportation

Approved by: Karla Petty Date: 1/27/2015

KARLA PETTY

Division Administrator – Arizona

Federal Highway Administration

Checklist for NEPA Specialists – Part 3: Northern Arizona Section

By completing this checklist, NEPA specialists will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of NEPA specialists during the study's various stages is laid out in the flowchart on page 4. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of biological resources meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 and 2 Evaluation Results Summaries.*
Wildlife corridors	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	a. High level review of wildlife linkages meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow. b. Arizona Game and Fish Department and The Nature Conservancy provided detailed environmental screening inputs; located in the appendix to the *Level 1 and 2 Evaluation Results Summaries.*
Invasive species	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Invasive species should be investigated during final design and standard mitigation techniques applied.
Wetland areas	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time. High level review of wetland areas meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; dependent upon determination of specific improvements to US-93 corridor.
Riparian areas	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level review of riparian areas meant to identify fatal flaws, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum.* Detailed analyses should follow based on development and analysis of specific alignment alternatives.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
100-year floodplain	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	High level identification of 100-year floodplain locations, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*. Detailed analyses should follow based on development and analysis of specific alignment alternatives.
Clean Water Act Sections 404/401 waters of the United States	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Waters of the U.S. located in area, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; impacts dependent upon development and analysis of specific corridor alternatives.
Prime or unique farmland	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Farmland of statewide or local importance	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Sole-source aquifers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Limited review conducted, documented in the *Existing and Natural Built Environment Technical Memorandum*; no sole source aquifers located in central Arizona, per EPA Region 9 categorization.
Wild and scenic rivers	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	☐ Yes ☐ No ☐ Unknown ☒ Not applicable	Limited review conducted; no known wild or scenic rivers.
Visual resources	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Designated scenic road/byway	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Portions of US-93 corridor designated scenic byways.
Cultural resources				
Archaeological resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Archaeological resources present in study area; impacts dependent upon determination of specific improvements to US-93 corridor.
Historical resources	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Historical resources present in study area; impacts dependent upon determination of specific improvements to US-93 corridor.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; no known Section 4(f) wildlife and/or waterfowl refuges.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Section 4(f) historic site	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*.
Section 4(f) recreational site	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; known planned recreation sites in the project area (Lake Mead National Recreation Area). Detailed analyses should follow based on upon determination of specific improvements to US-93 corridor.
Section 4(f) park	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 1 and Level 2 Evaluation Results Summaries*, and the *Existing and Natural Built Environment Technical Memorandum*; no known Section 4(f) parks.
Section 6(f) resource	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Human environment				
Existing development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 and Level 2 Evaluation Results Summaries*.
Planned development	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted based on local general/comprehensive plan documents, documented in the *Level 1 and Level 2 Evaluation Results Summaries*.
Displacements	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Access restriction	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Typically interstate freeways are access controlled and this could result in additional restrictions on existing facilities including portions of the US-93 corridor.
Neighborhood continuity	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.
Community cohesion	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Dependent upon determination of specific improvements to US-93 corridor particularly in the vicinity of Wickenburg.
Title VI/Environmental justice populations	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor.

Checklist for NEPA specialists

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Physical environment				
Utilities	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Further analysis dependent upon determination of specific improvements to US-93 corridor.
Hazardous materials	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Unknown at this time; dependent upon determination of specific improvements to US-93 corridor..
Sensitive noise receivers	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	☐ Yes ☐ No ☒ Unknown ☐ Not applicable	Further analysis dependent upon determination of specific improvements to US-93 corridor.
Air quality	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☐ Yes ☒ No ☐ Unknown ☐ Not applicable	☒ Yes ☐ No ☐ Unknown ☐ Not applicable	Limited review conducted, documented in the *Level 2 Evaluation Results Summary* no known air quality concerns.

Identification of potential environmental mitigation activities
Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?
Yes, the compilation of information from numerous sources into one planning document will aid the transportation planning process. Understanding the improvements planned throughout the corridor may aid in developing strategic implementation plans for environmental mitigation measures (for example, wildlife crossings).
With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes, and how formally and frequently should such consultation be undertaken?
ADOT should continue to consult with the project's Stakeholder Partners as corridor improvements to US-93 continue.
Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?
N/A
To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?
While mitigation measures are generally discussed in relationship to environmental features, no specific mitigation actions were advanced as a result of this study.

Prepared by: Shoz Anderson Date: 12-19-14

PEL PROGRAM MANAGER

Multimodal Planning Group, Arizona Department of Transportation

Appendix A:

Purpose and Need Statement, August 2014

I-11 and Intermountain West Corridor Study

Purpose and Need Statement

Prepared for

Nevada DOT and ADOT

August 2014

DISCLAIMER

The contents of this planning document are based on information available to the Arizona Department of Transportation and the Nevada Department of Transportation (herein referred to as the Sponsoring Agencies) as of the date of this document. Accordingly, this document may be subject to change.

The Sponsoring Agencies' acceptance of this document as evidence of fulfillment of the objectives of this planning study does not constitute endorsement/approval of any recommended improvements nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project-level environmental impact assessments and/or studies of alternatives will be necessary.

The Sponsoring Agencies do not warrant the use of this document, or any information contained in this document, for use or consideration by any third party. The Sponsoring Agencies accept no liability arising out of reliance by a third party on this document, or any information contained in this document. Any use or reliance by third parties is at their own risk.

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Purpose and Need Statement

The purpose of the proposed action is to provide an access-controlled, north-south transportation corridor that will connect important metropolitan areas and markets in the Intermountain West with Mexico and Canada to support improved regional mobility for people and freight, and provide enhanced opportunities for trade and economic development. The need for the proposed action is demonstrated through a combination of the factors listed below and described in the remainder of this document.

- Federal legislation supports the proposed action.
- Current and projected congestion inhibits the free-flow movement of people and goods.
- System linkage gaps inhibit mobility and connectivity in the southwest triangle megaregion.
- Project status and public policy supports the proposed action.

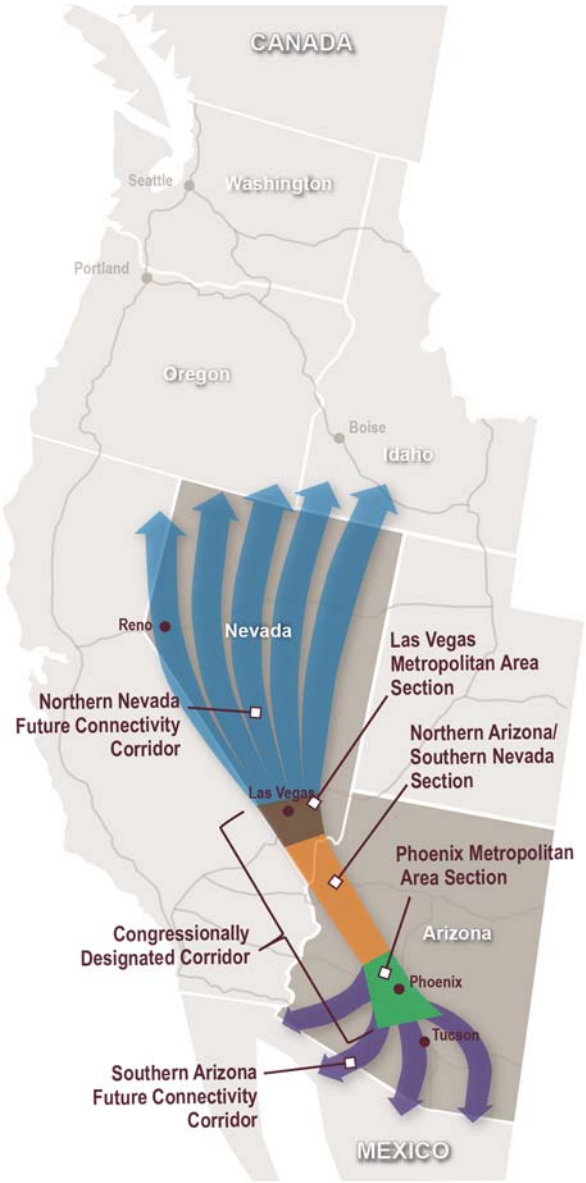
Project Overview

In the federal surface transportation law, Moving Ahead for Progress in the 21st Century (MAP-21), Congress identified the U.S. Highway 93 (US 93) Corridor from Phoenix, Arizona, to Las Vegas, Nevada, as a High Priority Corridor in the National Highway System and designated it Interstate-11 (I-11). The High Priority Corridor designation recognizes the importance of the corridor to the nation's economy, defense, and mobility. The federal Interstate designation is the latest action in a decades-long effort by the federal government and states in the Intermountain West to develop a mulitimodal transportation corridor between the Rocky Mountains and the Cascade Range/Sierra Nevada Mountains linking Mexico to Canada. States included in the Intermountain West are Arizona, Nevada, Idaho, Oregon, Utah, and Washington.

In addition to actions at the federal level, Arizona and Nevada have actively pursued a direct, contiguous, transportation corridor that connects major metropolitan areas in their states. The Arizona Department of Transportation (ADOT) and the Nevada Department of Transportation (NDOT) are undertaking the *I-11 and Intermountain West Corridor Study*, in consultation with the Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA), and in partnership with the Maricopa Association of Governments (MAG) and the Regional Transportation Commission of Southern Nevada (RTC).

The I-11 portion of the Corridor refers to the Congressional designation between Phoenix and Las Vegas. The Intermountain West Corridor is inclusive of the Congressionally Designated Corridor and extends south of Phoenix to the Mexican border and north of Las Vegas to the Canadian border. However, the focus of this study is only the portion of the Intermountain West Corridor within Arizona and Nevada. **Figure 1** shows the two-state study area within the larger Intermountain West region

Figure 1. I-11 and Intermountain West Corridor Study Area



and the I-11 Congressionally Designated Corridor between Phoenix and Las Vegas.

Because of its length and varying characteristics, the study area is divided into the following five segments with three segments requiring detailed corridor planning and two segments (north of the Las Vegas and south of Phoenix metropolitan areas) requiring higher-level visioning for potential extensions:

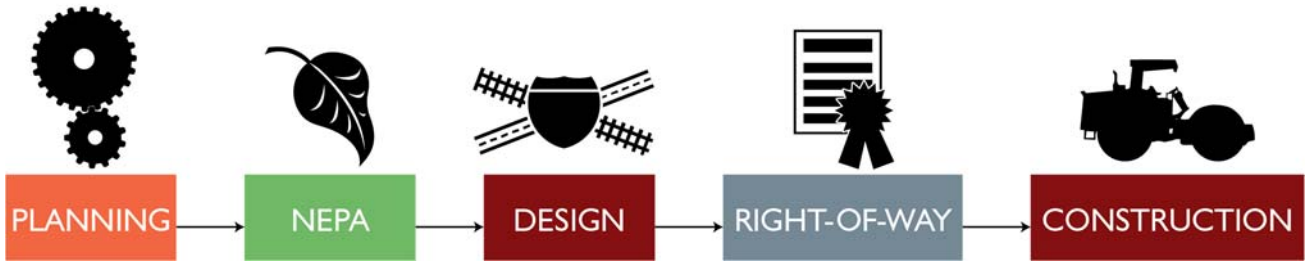
- Southern Arizona Future Connectivity Corridor—Mexico to Casa Grande
- Congressionally Designated Corridor—Phoenix Metropolitan Area Section (Casa Grande to Wickenburg)
- Congressionally Designated Corridor—Northern Arizona/Southern Nevada Section (Wickenburg to Las Vegas Metropolitan Area)
- Congressionally Designated Corridor—Las Vegas Metropolitan Area Section
- Northern Nevada Future Connectivity Corridor—Beyond Las Vegas Metropolitan Area

The purpose of this long-range planning study is to evaluate the need for a multimodal corridor in the Intermountain West region, and if warranted, establish a corridor vision and a reasonable range of alternatives in Arizona and Nevada to carry forward to further study. Because I-11 will be a key transportation connection that is part of a larger context of trade and regional development, the "need" for the project extends beyond the Congressionally designated I-11 termini to encompass the Intermountain West region.

Study Process

This project is following the Planning and Environmental Linkages (PEL) processes developed by the states of Arizona and Nevada, in accordance with FHWA guidance. The PEL process incorporates National Environmental Policy Act (NEPA) practices into long-range transportation planning studies. As long as NEPA requirements are met, the PEL process allows planning findings and decisions to inform future NEPA documents. The PEL process takes into account environmental, community, and economic goals throughout the project life cycle, from the planning stage (current study) through NEPA, design, right-of-way acquisition, and construction (**Figure 2**).

Figure 2. Project Development Process



The planning study has many components that will be documented during the PEL process, including the following areas:

- Draft Purpose and Need Statement, including goals and objectives (the focus of this document)
- An overview of the environmental setting
- Identification of a study area and general modes to be studied
- Identification of a range of alternative solutions
- Identification of screening criteria and the elimination of infeasible alternatives
- Identification of a reasonable range of alternatives
- Identification of sensitive areas, unresolved issues, and potential mitigation to inform future NEPA studies
- Stakeholder and public involvement

The PEL process does not guarantee a specific outcome, but it does promote greater communication within and among transportation and resource agencies, leading to improved decision-making and facilitating a smoother transition to future project development.[1] ADOT and NDOT have worked with FHWA to incorporate federal PEL guidance into this state Department of Transportation-led study. At the conclusion of the study, ADOT and NDOT will address and complete a series of PEL Questionnaires and Checklists summarizing study findings by major corridor segment for FHWA approval.

As noted in FHWA's guidance (http://environment.fhwa.dot.gov/integ/index.asp), PEL studies should develop a corridor vision, objectives, or purpose and need statement. For this study, ADOT and NDOT produced a Goals and Objectives Statement that was used to evaluate alternative corridors, and was later formalized into this Purpose and Need Statement. An overview of the Goals and Objectives Statement and its relationship to this Purpose and Need Statement is found at the end of this document.

Overview of Purpose and Need Statement

Because this Purpose and Need Statement is being prepared during the PEL Study phase and covers a study area that extends from southern Arizona to northern Nevada, the purpose statement and the need factors are appropriately high level (**Figure 3**). Engineering deficiencies such as high crash rates and geometric deficiencies are not discussed in this document. These issues will be evaluated along with other transportation deficiencies in future Purpose and Need Statements for the Arizona and Nevada segments of independent utility identified as part of this study that must be addressed to attain the standards of the limited access I-11 designated by Congress. This document would not serve as a Planning Level Purpose and Need Statement for other states in the Intermountain West that are interested in making improvements to the highways that are part of the CANAMEX Corridor. See "Federal Legislation Supporting the Proposed Action" section for more information about the CANAMEX Corridor.

Figure 3. Purpose and Need Statement

EA = environmental assessment
EIS = environmental impact statement

Note: A categorical exclusion could be applicable (e.g., if operational improvements were only recommended), however it is more likely that a new corridor or additional capacity will be needed, triggering the need for an EIS or EA.

Description of the Proposed Action

ADOT and NDOT, in consultation with the FHWA and FRA, and in partnership with MAG and RTC, are studying a high-capacity, limited-access, multi-use transportation corridor connecting the Phoenix and Las Vegas metropolitan areas and connecting Phoenix to the Mexican border and Las Vegas to the northern Nevada state line. The corridor could fill in a critical missing link in north-south transportation connectivity in the Intermountain West.

Need for the Proposed Action

The need for the proposed action is demonstrated through a combination of the factors described below. The remainder of this document discusses the need factors.

Federal Legislation Supporting the Proposed Action

The federal government and various states in the Intermountain West have a long history of working toward developing a Mexico–Canada transportation corridor. The genesis of the need for improved transportation infrastructure in the Intermountain West was President Clinton's signing of the North American Free Trade Agreement (NAFTA) on December 8, 1993. As of 2013, the NAFTA partners—Canada, the United States, and Mexico—have a combined population of roughly 470 million[2] and an estimated combined gross domestic product of almost

[1] http://www.environment.fhwa.dot.gov/strmlng/newsletters/apr07nl.asp

[2] http://www.worldpopulationstatistics.com/north-america-population-2013/

20 trillion U.S. dollars.[3] Since 1993, trade among the NAFTA partners has nearly quadrupled[4], and employment in North America has grown by almost 40 million jobs. Eighty-two percent of Mexico's exports go to the U.S. NAFTA has made integrated manufacturing very attractive. This is the process whereby U.S. manufacturing companies work with Mexican companies to manufacture goods, often transporting components across the border multiple times during production. Strong trade growth with Mexico is expected to continue well into the future. Unfortunately, the Intermountain West is not well positioned to take advantage of the full range of opportunities that NAFTA has created, because it does not have an Interstate corridor connecting the U.S., Mexico, and Canada. When compared to states such as California and Texas, which contain portions of the Interstate System that link Mexico to Canada, the Intermountain West states have lagged in reaping NAFTA-related economic benefits. As an example, Texas's trade with Mexico is nearly 10 times greater than the trade between Arizona and Mexico.

To address this issue, Congress identified the CANAMEX Trade Corridor as High Priority Corridor 26 in the 1995 National Highway System Designation Act. The CANAMEX corridor, shown in **Figure 4**, was defined from Nogales, Arizona, through Las Vegas, Nevada, to Salt Lake City, Utah, to Idaho Falls, Idaho, to Great Falls, Montana, to the Canadian border as follows:

A. In the State of Arizona, the CANAMEX Corridor shall generally follow:
   i. I-19 from Nogales to Tucson;
   ii. I-10 from Tucson to Phoenix; and
   iii. United States Route 93 in the vicinity of Phoenix to the Nevada Border [I-11].

B. In the State of Nevada, the CANAMEX Corridor shall follow:
   i. United States Route 93 from the Arizona Border to Las Vegas [I-11]; and
   ii. I-15 from Las Vegas to the Utah Border.

Gaps between the Interstate Highways on this route make the designated CANAMEX corridor underused and inefficient. The most significant gaps in the corridor are in the segment between Mexico and Las Vegas, especially in the highly congested areas in and around Tucson, Phoenix, and Las Vegas. Highly congested Interstate routes in these metropolitan areas, the lack of a direct Interstate connection to US 93 and to I-15, and the lack of a fully developed, access-controlled US 93 corridor create a substantial barrier to trade and connectivity in the Intermountain West. Congress confirmed the importance of CANAMEX by designating a 300-mile segment of it as a National Highway System High Priority Corridor (I-11) in MAP-21 from the Phoenix metropolitan area to the Las Vegas metropolitan area. The I-11 designation is a critical first step in addressing the lack of a continuous, access-controlled corridor in this region that has prevented the realization of an effective CANAMEX Trade Corridor that would fulfill the promise of NAFTA in the Intermountain West. Section 103 of MAP-21 confirms this by stating, "highways on the Interstate System shall be located so as to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers; to serve the national defense; and to the maximum extent practicable, to connect at suitable border points with routes of continental importance in Canada and Mexico."[5]

The need for transportation infrastructure to support trade in the Intermountain West is much broader than can be met by CANAMEX alone. The Intermountain West between the Rocky Mountains and the Cascade Range/ Sierra Nevada Mountains spans nearly 1,000 miles. Las Vegas being near the middle of the region has the potential to serve as a gateway that could provide more than one trade route to Canada. Congress has recognized the importance of additional north-south transportation connectivity in the region by creating designations for three corridors in addition to CANAMEX; these are listed below and shown in Figure 4:

- High Priority Corridor 68 from Las Vegas to Reno using US 95/I-580
- High Priority Corridor 19 from Reno to Canada via US 395
- High Priority Corridor 43 using US 95 from the Idaho/Oregon state border to Canada

[3] http://www.indexq.org/economy/gdp.php

[4] http://www.worldaffairs.org/events/chapters/sacramento-chapter/event/1293

[5] http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt557.pdf; page 21

Figure 4. Federal Highway Administration High-Priority Corridors

In addition to the important economic role Las Vegas plays in Nevada and the Intermountain West region, Reno is becoming an important inland trade distribution center, is a major tourist destination, and is Nevada's second largest economic center. In addition, Portland, Boise, Seattle, Vancouver, and Calgary are critical economic and trade centers that could be more efficiently accessed from the Intermountain West by developing these High Priority Corridors. These designations are further evidence of a Congressional desire for improved north-south transportation connectivity, trade, and economic development in the Intermountain West region.

Current and Projected Congestion Inhibits the Free-flow Movement of People and Goods

In 2012, the U.S. Conference of Mayors published a report on the outlook of U.S. metropolitan economies and the critical role of transportation infrastructure. The metropolitan areas of Las Vegas and Phoenix rank in the top 50 cities for congestion costs per auto commuter, with Las Vegas ranked 41st and Phoenix 16th. In 2010, the annual congestion cost per auto commuter was $532 in Las Vegas and $821 in Phoenix. Focusing on specific congestion locations, four locations in Arizona, two in Nevada, and seven in Southern California, appear in FHWA's annual report on congestion at freight significant highway locations, shown on **Figure 5**. Most of the locations monitored are urban Interstate interchanges, and they are ranked according to congestion's impact on freight. Those in Arizona and Nevada include:[6]

- I-17 at I-10 in Phoenix (64th)
- I-15 at I-515 in Las Vegas (98th)
- I-10 at I-19 in Tucson (190th)
- I-10 at SR 51/SR 202 in Phoenix (147th)
- I-17 at I-40 in Flagstaff (179th)
- I-80 at US 395 in Reno (153rd)

Figure 5. Freight Bottlenecks

Currently, congestion exists through Tucson, Phoenix, Las Vegas, and Reno, and the segment of US 93 near Wickenburg is approaching capacity. **Figure 6** shows existing congestion on the major highways in Arizona and Nevada. The most congested areas in the Arizona and Nevada study area tend to be along segments of urban Interstates and associated interchanges. However, traffic modeling, which assumes that transport and trade in the region continue as forecast by the U.S. Department of Transportation and that the recent growth in the region continues without major structural changes, suggests that, without improvements, higher congestion levels would also be experienced on rural highway segments (**Figure 7**). The traffic modeling determined that about 28 percent of highways in the region would be unacceptably congested by 2040. Unacceptably congested means a level of service, which is a measure of a highway's ability to handle traffic demand, between D and F on a scale from A to F in order of decreasing operational quality. The traffic modeling also determined that if trade with Mexico expands in the future, up to 43 percent of the highways in the region could be unacceptably congested (**Figure 8**). (The National Highway System map includes a short deviation from US 93 north of Las Vegas—NV 318 to NV 6 and back to US 93—however, for ease of describing alternative alignments and routes in this study, Figures 6 – 8 refer only to US 93.)

[6] American Transportation Research Institute. 2011. *FPM Congestion Monitoring at 250 Freight Significant Highway Locations.* Available at: http://atri-online.org/2011/10/01/fpm-congestion-monitoring-at-250-freight-significant-highway-locations/.

Figure 6. Existing Congestion on Major Highways in Arizona and Nevada

Figure 7. Future Congestion on Major Highways in Arizona and Nevada under the Baseline Condition

Higher congestion levels are expected in the future, based on traffic modeling which assumes that transport and trade in the region continue, as forecast by the U.S. Department of Transportation, and that the recent growth in the region continues without major structural changes.

Figure 8. Future Congestion on Major Highways in Arizona and Nevada Assuming Integrated Manufacturing and Trade with Mexico Expands

The traffic modeling also determined that if trade with Mexico expands in the future, up to 43 percent of the highways in the region could be unacceptably congested.

The congestion impacts to trade and mobility extend beyond Arizona and Nevada. The range of current and anticipated trends in U.S. trade, both domestically and with Mexico and Asia suggests that the Western U.S. will experience significant sustained growth in the regional economy, accompanied by corresponding growth in travel demand. Because of the projected congestion on I-5 and other north-south routes in California, there is an emerging need for an alternative to those corridors to improve the flow of goods and to minimize the disruption that could result from a highway closure, whether caused by construction or a disaster such as an earthquake.

Robust and growing trade with Asian economies, much of which is shipped through California ports, is expected to increasingly strain the ability of California's already congested north-south highway system to efficiently distribute trade goods. Combined, the Port of Los Angeles and the Port of Long Beach are the busiest in the U.S. and the 7th busiest in the world for containerized cargo,[7] with the Port of Long Beach alone handling more than $140 billion worth of goods each year.[8] Based on the Port of Los Angeles and the Port of Long Beach business plan, container volumes are projected to triple between 2011 and 2035.[9] About 41 percent of imported goods leave Los Angeles by truck, and another 14 percent generally moves on short-haul rail trips to locations where the freight is transferred to trucks. These percentages are projected to increase to 56 percent and 21 percent, respectively, by 2040.[10] California's primary north-south route, I-5, and the primary connection to Nevada, I-15, are highly congested. Large segments of US 395 are projected to be congested. Significant stretches of the California highways are in highly developed urban areas, where potential for expansion is severely constrained.

Because supply chains are generally structured to minimize transportation costs, there will be an incentive for shippers to seek alternatives to increasingly congested conditions. Growing manufacturing costs in China, combined with rising transportation costs at home, are likely to make integrated manufacturing a more competitive option and manufacturing facilities in Mexico can be expected to increase. There is also likely to be further expansion and development of Mexican ports, such as the Port of Guaymas or the proposed Port at Punta Colonet. These factors have the potential to increase freight traffic through Arizona land ports of entry and the Intermountain West. Moving freight east from California's ports on I-8, I-10, I-40, and I-80, which are projected to have less congestion than California's existing north-south routes, to an inland north-south corridor could provide an important trade alternative. Unfortunately, neither Arizona nor Nevada has adequate north-south transportation infrastructure to provide for this alternative. In fact, the nearest viable north-south Interstate route alternative to I-5 and I-15 is I-25, which is nearly 760 miles from the California ports, shown on **Figure 9**.

Figure 9. North-South Interstates in the Western U.S.

[7] World Shipping Council. 2011. Available at: http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports.

[8] Port of Long Beach. 2013. Biography of Larry Cottrill, Director of Master Planning, Port of Long Beach, California. Available at: http://www.polb.com/contact/staff/directors/cottrill.asp

[9] Southern California Association of Governments. 2012. *2012-2035 Regional Transportation Plan*. Available at: http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx.

[10] FHWA. 2012. *Freight Analysis Framework Version 3 (FAF3)*.

If the Intermountain West is to support projected trade growth, the need exists to improve regional mobility in Arizona and Nevada and to provide an alternative to the limited number of north-south Interstate corridors in the western U.S.

System Linkage Gaps Inhibit Mobility and Connectivity in the Southwest Triangle Megaregion

Beyond the need for better linkages to capitalize on trade trends, is a need to address the lack of efficient north-south connectivity and mobility between the region's important metropolitan and economic areas, particularly in Arizona and Nevada. These areas are shown on **Figure 10** and described in the text that follows. Arizona's Sun Corridor, which comprises the Phoenix, Tucson, Prescott, and Nogales metropolitan areas, has nearly 6 million people. The Sun Corridor is one of the fastest growing regions in the country, and its population is forecast to double by 2040. The Las Vegas region, including the greater Mojave Region, has about 2.2 million people, and the Reno area has about 420,000 people. The Conference of Mayors projects that, in the next 30 years, the population in Las Vegas will increase by 67 percent.[11] Development trends in Arizona and Nevada indicate that the economies of both states are expected to continue to outpace the U.S. average. The Phoenix and Las Vegas metropolitan areas are the largest contributors to each state's economy, followed by Tucson and Reno. These cities are linked by tourism, trade, and the desire to enhance economic development between them. Yet these metropolitan areas are connected by an inadequate patchwork of highly congested Interstate freeways and two-lane highways that lack basic amenities and are not access controlled.

Figure 10. The Southwest Triangle: Expanding Megaregion

Source: Metropolitan Research Center, University of Utah, Brookings Mountain West, June 2010.

By improving the connection between Phoenix and Las Vegas, which would intersect I-8, I-10, I-40, and I-15 connecting Southern California, Arizona, and Nevada, a critical leg of the I-11 and Intermountain West Corridor would be established, as would the missing third leg of what is known as the Southwest Triangle Megaregion (Figure 10). The Southwest Triangle Megaregion includes the Sun Corridor and greater Mojave Region and the urban area in Southern California between San Diego and Santa Barbara. Combined, this megaregion has a population of nearly 30 million people. The Southwest Triangle is on a trajectory to become a leading American region that maintains links to the world's fastest emerging economies in Asia (through the Port of Los Angeles and the Port of Long Beach) and in Latin America (through Arizona's connection to Mexico). This megaregion is linked by transportation, economy, and environment and shares numerous economic interdependencies in sectors such as defense, logistics, healthcare, entertainment, tourism, and technology. Surrounded by deserts, Las Vegas and the Sun Corridor are actively engaged in wind and solar research and development, equipment manufacturing, and green energy production, all of which have major market potential in California in addition to their home states, but are dependent on improved transportation and utility infrastructure to implement.

The Sun Corridor–Las Vegas leg of the Southwest Triangle Megaregion intersects with four important Interstates (I-8, I-10, I-40, and I-15) and has the potential for tremendous economic growth. However, the lack of efficient north-south connectivity on this leg hampers Arizona and Nevada from fully benefiting from the potential

[11] IHS Global Insight 2012. *U.S. Metro Economies.* Available at: http://usmayors.org/metroeconomies/2014/0114-briefing.pdf.

synergies that these connections make possible. Phoenix and Las Vegas are the only major metropolitan areas in the country not connected by a contiguous, access-controlled Interstate highway. Additionally, there is no passenger rail or direct freight rail connection between these cities, which are among the largest and fastest growing metropolitan areas in the country. Ease of mobility is a key component of economic growth, and completing the missing leg of the Southwest Triangle is a critical need for these closely linked metropolitan areas to achieve enhanced economic integration within the entire megaregion.

Project Status and Public Policy in Support of the Proposed Action

From the CANAMEX Trade Corridor designation to ADOT's current capacity expansion project on US 93 between the I-40/US 93 Interchange in Kingman and Wickenburg, numerous studies and construction projects have furthered the development of the I-11 and Intermountain West Corridor. For more than two decades, Arizona, Nevada, and local planning entities in both states have been advocating improving the transportation infrastructure that connects the two states. In 2007, MAG and ADOT launched a long-term transportation planning effort for the Phoenix Metropolitan Area and the State of Arizona titled *bqAZ: Building a Quality Arizona*.[12] As part of this effort, transportation framework studies were completed identifying the long-range transportation vision. In 2008 and 2009, the MAG Regional Council accepted the findings of the initial two framework studies[13] [14], and subsequently incorporated into the Regional Transportation Plan[15] as an illustrative corridor, the 152-mile Hassayampa Freeway corridor. In 2010, the Arizona State Transportation Board accepted the findings of the Statewide Transportation Planning Framework Program, which identified a proposed Interstate corridor along the Hassayampa Freeway and the replacement of US 93 by a future Interstate route in Arizona.

In Nevada, various committees of the State Legislature took up the matter of a proposed Interstate corridor connecting Las Vegas and Phoenix. In 2010, the Assembly House Development and Promotion of Logistics and Distribution Centers and Issues Concerning Infrastructure and Transportation studied the proposed Interstate and drafted a resolution asking Congress and the FHWA to designate US 93 as a future Interstate Highway. The resolution proclaimed that the Interstate Highway would begin at the border of Mexico (south of Tucson), continue through Las Vegas and Reno, and end at the border of Canada (north of Seattle). By designating it an Interstate Highway, it would connect to the I-40 east-west corridor and assist in making Nevada a major manufacturing distribution hub in the West. In 2011, the State Legislature passed Assembly Joint Resolution No. 6[16], from the Senate Committee on Transportation and the Assembly Committee on Commerce and Labor, requesting that Congress and the FHWA designate part of US 93 as an Interstate Highway.

Both states have already made significant investments toward fulfilling the vision of an I-11 Corridor. ADOT has invested nearly $500 million to upgrade most of the US 93 corridor to a four-lane divided highway. The Central Federal Lands Highway Division, with support from NDOT and ADOT, constructed the Mike O'Callaghan–Pat Tillman Memorial Bridge (Hoover Dam Bypass), and NDOT fast-tracked the design and construction of a project to widen US 93 to two lanes in each direction between the bridge and Boulder City, Nevada. NDOT and the RTC of Southern Nevada, in conjunction with FHWA, are currently developing the Boulder City Bypass, an alignment around Boulder City that will connect US 93 to the Hoover Dam Bypass. Despite these efforts, significant deficiencies remain:

- There is no high-capacity, access-controlled highway between I-10 and US 93 (western Phoenix Metropolitan Area).
- US 93 is not access-controlled; about 45 miles of the US 93 corridor is still a two-lane highway.

[12] Arizona Council of Government and Metropolitan Planning Organization Association. 2007. *Building a Quality Arizona* (*bqAZ) Statewide Mobility Reconnaissance Study*. Available at: http://www.bqaz.org/reconReports.asp?mS=m2.

[13] MAG. 2008. Interstate 10/Hassayampa Valley Transportation Framework Study. Available at: http://www.bqaz.org/hasOverview.asp?mS=m3.

[14] MAG. 2009. Interstates 8 and 10/Hidden Valley Transportation Framework Study. Available at: http://www.bqaz.org/hiddReports.asp?mS=m4.

[15] MAG. 2010. Regional Transportation Plan. Available at: http://www.azmag.gov/Projects/Project.asp?CMSID2=1126&MID=Transportation.

[16] State of Nevada. 2011. Assesmbly Join Resolution No. 6. Available at: http://www.interstate11.org/i11/documents/ajr6_en.pdf.

- The north-south Interstate highways in Tucson, Phoenix, and Las Vegas are growth-constrained and will not be able to keep up with predicted increases in congestion.
- There is a lack of contiguous north-south Interstate connectivity with major east-west Interstates (I-8, I-10, I-40, I-15, and I-80).
- The region has no north-south passenger rail and poor freight rail connectivity.
- The north-south transportation infrastructure in both states is insufficient to support projected increases in truck traffic generated by trade with Mexico.

In summary, the need for improved north-south connectivity in the Intermountain West, particularly between Arizona and Nevada, to enhance trade, economic development, efficient mobility, and provide an alternative route for freight movement is so vital that Congress has designated several High Priority Corridors in the region. Additionally, state governments along with local planning agencies have made substantial effort and investment toward the vision of a continuous, access-controlled, north-south transportation corridor in the Intermountain West.

Purpose of the Proposed Action

The purpose of the proposed action is to provide an access-controlled, north-south transportation corridor that will connect important metropolitan areas and markets in the Intermountain West with Mexico and Canada to support improved regional mobility for people and freight, and provide enhanced opportunities for trade and economic development.

Additional Goals and Objectives

Overview

A Goals and Objectives Statement was developed during the alternatives analysis phase of the study to provide a broad vision for the project and to communicate the full range of factors for evaluating the potential benefits of the I-11 and Intermountain West Corridor, particularly the segments in Arizona and Nevada. The information in the Goals and Objectives Statement was obtained largely from the *I-11 and Intermountain West Corridor Study Corridor Justification Report*[17] and input received from project stakeholders. This information and input were used to develop this Purpose and Need Statement. Additional goals and objectives not included in the project purpose are summarized below and are included in this document as issues to consider as the project develops. The full Goals and Objectives Statement is in Appendix A of the Technical Memorandum: Level 1 Evaluation Results Summary.[18]

Non-Transportation System Linkage

Beyond its ability to strengthen ground-based transportation, the I-11 and Intermountain West Corridor could enhance the economies of Phoenix, Las Vegas, and the region by also transporting electricity, fuel, water, commodities (by pipeline), and telecommunication data. Environmental groups participating in the study informed the project team that a statewide assessment has been conducted in Arizona to identify renewable energy development areas. The assessment identified ample land near the I-11 Corridor suitable for renewable energy production. In addition, the Arizona Solar Working Group, consisting of environmental and wildlife advocates, utility companies, and solar energy developers, has been working to evaluate possible corridors for renewable energy transmission throughout Arizona. From the analyses already conducted, it appears the I-11 Corridor has suitable characteristics not only for the production of renewable energy, but also to accommodate transmission lines to transfer the power with low ecological impacts.

[17] *I-11 and Intermountain West Corridor Study. Corridor Justification Report.* 2013. Prepared for Nevada Department of Transportation and Arizona Department of Transportation. Prepared by CH2M HILL and AECOM. August.

[18] Appendix A of the *Technical Memorandum: Level 1 Evaluation Results Summary*. 2014. Prepared for Nevada Department of Transportation and Arizona Department of Transportation. Prepared by CH2M HILL and AECOM. March.

Trade

The proposed action would connect Mexican ports and manufacturing areas with Arizona's and Nevada's largest manufacturing and economic activity centers to support regional, national, and international trade. Given Arizona's and Nevada's strong freight flows to California, Mexico, and Canada, the I-11 and Intermountain West Corridor is expected to increase the efficiency of freight movement to and from both states and to enhance the region's economy. Moreover, development of the I-11 Corridor is an important first step in positioning Arizona and Nevada strategically to benefit from the port activity in the region. Alternatives to the Ports of Los Angeles and Long Beach and the increasingly congested north-south Interstate freeways in California are likely to stimulate demand for additional north-south routes such as the I-11 Corridor to accommodate the movement of freight.

Modal Interrelationships

The I-11 Corridor and adjacent areas have established multimodal connections and a commitment from Arizona and Nevada, at the planning level, to continue promoting multimodal opportunities in the study area. A multimodal north-south transportation corridor would enhance connections with ports, rail intermodal facilities, and the region's airports. About half the bilateral flow of trade through Arizona's border crossings with Mexico, by value and volume, were multimodal.[19] Despite that, the lack of connections and transportation infrastructure linking Mexico, Phoenix, and Las Vegas make freight flows from and to Latin American/Mexico more attractive through Texas border crossings than through Arizona border crossings, such as Nogales.

Economics

Economic growth is strongly and positively correlated with overall transportation demand, both for freight and personal vehicles. Development trends in Arizona and Nevada indicate that the economies of both states are expected to continue to outpace the U.S. average. To enhance the region's competitiveness, a robust transportation system is needed to facilitate the growth of business and its attraction to the area and to offer a means to connect to other markets. Industry targets such as aerospace, aviation, and defense; advanced manufacturing; mining, materials, and manufacturing; transportation and logistics; and tourism, gaming, and entertainment are critically dependent upon their supply chain and the regional movement of people and finished goods. Both states recognize that to be successful in their economic development endeavors, many simultaneous strategies—including developing the transportation systems that these industry clusters require—must be implemented.

[19] FHWA. 2012. *Freight Analysis Framework Version 3 (FAF3).*

Appendix B:

Level 1 and Level 2 Evaluation Process Analysis Inputs and Meeting Summaries from AGFD and TNC, 2013-2014

Level 1 Evaluation Coordination Meeting

Arizona Game and Fish Department and The Nature Conservancy

August 6, 2013
AGFD Headquarters
5000 W. Carefree Hwy
Phoenix, Arizona 85086

Meeting Agenda

The purpose of the meeting was discuss data availability and coordination potential on obtaining a more detailed analysis of the environmental criteria for the Level 2 screening for Arizona corridor alternatives for the I-11 and Intermountain West Corridor Study.

1. Arizona Game and Fish Department (AGFD) brief discussion of pilot GIS based/data driven project evaluation tool for I-11 project
2. Arizona Department of Transportation (ADOT) discussion of desired input/data from AGFD for corridor evaluation
3. Geographic information systems (GIS)-based project boundaries
4. Timelines
    a. Phoenix Metropolitan Area
    b. Northern Arizona
    c. Southern Arizona
5. Further discussion

GIS-based Data

AGFD GIS data is compiled on a one-square mile hex grid. This data is generally used to identify polygons of environmental constraint or opportunity, not corridor-driven analyses. They will try to run an analysis to identify areas of disturbance within 0-10 miles of the corridor. The Nature Conservancy (TNC) will run a similar analysis with their datasets. Both will report outcomes in a tabular format, noting opportunities and constraints as specifically as possible (per corridor segment).

Level 2 Evaluation Criteria

AGFD will consider how to account for the benefit of recreational access along the corridor. While not relative to the evaluation criteria, AGFD and TNC will also note opportunities for enhanced wildlife linkages, to be considered further during design and implementation.

Outcome

The AGFD and TNC will work together to provide detailed input on environmentally-sensitive areas, mitigation techniques, and opportunities. While it is difficult to quantify direct, indirect, and cumulative impacts for a corridor that might change alignments in the future, they will provide input based on the alternatives, as they stand today, and will also provide a narrative that speaks to the larger context of constructing a transportation corridor within the areas of influence under study.

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GAME AND FISH DEPARTMENT
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September 13, 2013

Michael Kies, P.E.
Project Manager
Arizona Department of Transportation
206 S. 17th Avenue
Phoenix, AZ 85007

RE: Arizona Game and Fish Department Level 1 Analysis for Interstate 11 and Intermountain West Corridor in Arizona

Dear Mr. Kies:

The Arizona Game and Fish Department (AGFD) appreciates the opportunity to partner with the Arizona Department of Transportation (ADOT) on the Interstate 11 and Intermountain West Corridor Study (Study). AGFD's analysis and input early in the study process will assist ADOT in analyzing the potential impacts to wildlife and wildlife-dependent recreation from the alternatives under consideration. The result can assist ADOT in designing a north-south multi-modal transportation corridor that minimizes impacts to Arizona's environment and natural resources.

AGFD understands that the first goal of the Level 1 Analysis is to reduce the number of alternatives by identifying those with fatal flaws or significant issues that may be incompatible with the objectives of the Study in Priority Sections 1, 2, 3 and Southern Arizona. The second goal is to identify promising candidates for long term connections in Priority Section 1 (Phoenix). We are restricting our comments to segments and alternatives located in Arizona.

AGFD has identified three segments with fatal flaws and six segments with significant concerns.

Segment 7, Alternative B bisects Buenos Aires National Wildlife Refuge. The Department believes that an interstate/multi-modal corridor is incompatible with a wildlife refuge. We also note that Alternative B has the potential to impact the Tucson Mitigation Corridor. The Corridor is Bureau of Reclamation mitigation for impacts to wildlife from the Tucson Aqueduct Project.

The Arizona Game and Fish Commission in a resolution dated December 14, 2007 passed a resolution opposing a proposed I-10 bypass route in an area included within Alternative B.

Segment 17 is included in alternatives G, H, KK, LL, MM. Segment 17 bisects the proposed Vulture Mountains County Park. The Department believes that an interstate/multi-modal corridor is incompatible with a county park. The Vulture Mountains are a popular area for outdoor recreation, including hunting and wildlife viewing. It is expected that recreational use of the area will increase as the population in the surrounding area grows. As a result the value of the Vulture Mountains as a location for outdoor recreational opportunities will increase. An interstate will significantly decrease recreational opportunities in the proposed park and the region. The Vulture Mountains are also important wildlife habitat, including for nesting raptors.

Segment 81, Alternative JJ bisects Organ Pipe Cactus National Monument and habitat for the endangered Sonoran pronghorn. AGFD believes an interstate-multi-modal corridor is incompatible with both a monument and endangered species habitat.

AGFD has significant concerns with Segments 34, 44 and 45 which are part of alternatives N and P. All three of these segments pass through and in close proximity to the Black Mountains. The Black Mountains are prime habitat for bighorn sheep and Sonoran Desert tortoise. An interstate/multi-modal corridor will have significant impacts to these species and other wildlife species in the Black Mountains. AGFD recommends the study carefully examine the balance between the transportation benefits from these segments with the wildlife impacts and potential mitigation costs.

AGFD has significant concerns with Segments 37 and 38 which are parts Alternative R and OO. These segments follow narrow valleys between and through mountain ranges. These segments also bisect Chino Valley, important American pronghorn habitat. These segments will result in significant loss of quality wildlife habitat and present considerable connectivity challenges. AGFD recommends the study carefully examine the balance between the transportation benefits from these segments with the wildlife impacts and potential mitigation costs.

AGFD has significant concerns with Segment 91 part of Alternative OO and Segment 94 part of Alternative PP. Both segments bisect large blocks of quality, unfragmented wildlife habitat. Large blocks of unfragmented habitat are of great value to wildlife and, as Arizona's population grows, are becoming increasingly rare. AGFD recommends the study carefully examine the balance between the transportation benefits from these segments with the wildlife impacts and potential mitigation costs.

AGFD would also like to note that Segment 86 is in the vicinity of Powers Butte and Arlington Wildlife Areas. Depending on the exact location of the interstate alignment, this segment could have significant impacts to AGFD properties.

All potential locations of Interstate 11 will create a barrier to wildlife movement. It is not possible to analyze wildlife connectivity at this scale of analysis. However, we would like to note that Segments 9, 14, 15, 17, 22, 27, 30, 33, 84 and 87 traverse areas identified by AGFD as priority areas for maintaining connectivity.

At his level of analysis it is difficult for AGFD to identify promising candidates for long term connections. However, because a newly developed road results in significant habitat loss,

fragments unfragmented habitat and encourages new development in undeveloped areas, we will generally prefer the expansion of existing roads over the development of new roads.

Thank you for the opportunity to provide comments for the Level 1 Analysis. AGFD looks forward to continuing to partner with ADOT on this important Study. If you have any questions, please contact me at 928-341-4047 or bknowles@azgfd.gov.

Sincerely

William Knowles

cc: Pat Barber, Regional Supervisor, Region IV
Joyce Francis, Chief, Habitat Branch
Laura Canaca, PEP Supervisor, Habitat Branch

AGFD # M13-08164151

The Nature Conservancy
Protecting nature. Preserving life.™

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September 18, 2013

Michael Kies
Director of Planning and Programming
Arizona Department of Transportation
206 S. 17th Avenue, Mail Drop: 310B
Phoenix, AZ 85007

Dear Mr. Kies:

On behalf of The Nature Conservancy in Arizona, thank you for the opportunity to provide comments on the proposed *Interstate 11 Corridor-Wide Alignment Alternatives*. Our analysis and comments are focused on assisting with the Level 1 Planning and Environment Linkage review (PEL). Use of the PEL process represents a significant advancement towards more integrated infrastructure planning, which should yield better planning tools and improvement in project delivery times while avoiding and minimizing impacts to natural resources.

Detailed comments and our evaluation for each alignment as well as supporting materials, such as analytical methods, criteria, and datasets are provided in **Appendices A-D** (attached). Below is a brief summary of our findings.

We systematically evaluated 61 proposed alignment segments for the Arizona portion of I-11. Of those, we concluded that 39% have either limited impacts to wildlife and water resources or impacts that could be offset through mitigation measures. For 49% of the segments we concluded that there is an opportunity to improve both passage of wildlife around existing roadways and motorist safety using practices already adopted by the Arizona Department of Transportation.

Only 12% of the segments were identified as having significant impacts to wildlife or water resources important to wildlife that would not be offset by mitigation options. In these cases, proposed alignments would result in significant habitat loss or fragmentation and have adverse impacts to wildlife in areas acquired, designated, and managed for conservation purposes (ex. National Wildlife Refuges), would adversely impact wildlife and habitat not well represented elsewhere in the state or needed to ensure that wildlife populations are sustainable into the future, or have adverse impacts to Threatened and Endangered or special status species.

The Nature Conservancy
Protecting nature. Preserving life.™

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azconservation.org

The areas of most concern from a conservation standpoint and for which we are recommending they not be carried forth to the Level II Review, include alignments through Organ Pipe Cactus National Monument and the Buenos Aires National Wildlife Refuge in southern Arizona, and those proposed to enter and traverse the Williamson and Big Chino Valleys and Burro Creek area in north, central Arizona. For some alignments, such as those that would cross the Upper San Pedro River Valley, the potential to offset impacts would depend upon more specific details of the alignment including access points.

If you have questions regarding our recommendations or the background information, please do not hesitate to contact me. I can be reached at rmarshall@tnc.org or 520-237-8778.

Sincerely,

Rob Marshall
Director, Center for Science & Public Policy

Cc:
Governor Jan Brewer
Congressman Paul Gosar
Larry Voyles, Director, Arizona Game & Fish Department
Scott Higginson, Executive Director Interstate 11 Coalition

Appendix A. Methods and Criteria

We designed our analysis to facilitate one of the primary purposes of the Level 1 PEL review, to distinguish infrastructure alignment alternatives that may be incompatible with the long-term sustainability of important natural resources from those alternatives that may have limited impacts or impacts that otherwise may be avoided, minimized, or offset. At this level of analysis two primary factors were used to distinguish the scope and magnitude of potential impacts. The first is the change in baseline infrastructure conditions for the proposed alignment area, which is used to determine the scope of change and magnitude of impacts such as habitat loss or fragmentation. An example would be the conversion of an existing paved, two-lane undivided road into a four-lane divided highway. The second is the regional importance of wildlife resources in the area, including core habitat needed to sustain wildlife populations into the future as well as movement corridors.

To facilitate our analysis we compiled 22 datasets covering transportation, land management status, including lands designated and managed expressly for conservation purposes, the distribution of important habitats for wildlife, wildlife movement corridors, threatened and endangered species, and areas with important surface waters (see **Appendix B**).

To standardize our assessment, we identified ten types of direct and indirect impacts to wildlife and four assessment categories. The assessment categories indicate the level of impact and whether or not impacts can be offset through mitigation (see **Appendix C**). They include:

1. Segments with limited impacts to wildlife
2. Segments with significant impacts to wildlife but mitigation to offset impacts is feasible
3. Segments with significant impacts to wildlife likely, but mitigation options unlikely to offset impacts
4. Opportunity to improve wildlife linkages

Our transportation system was not originally designed to facilitate daily, seasonal, or annual movement patterns by wildlife. We added a fourth assessment category – opportunity to improve wildlife linkages – to indicate where proposed improvements to existing roadways present an opportunity to improve wildlife passage over existing conditions. This assessment was made using data from the Arizona Game and Fish Department on wildlife linkages. We compared that data to existing roadways for which improvements have been proposed and noted in **Appendix D** the alignments where improvements to wildlife passage and motorist safety should be evaluated. Identification of these opportunities early in the process enables ADOT to evaluate wildlife crossing needs and incorporate design features early in the planning process. Where this has been done elsewhere in the state there have been substantial benefits both to motorist safety and wildlife passage.

We assessed each alignment segment by systematically evaluating wildlife and related resource data layers against the alignment location and change in baseline infrastructure conditions to

determine the importance of the wildlife resource and nature of potential impacts. **Appendix C** shows how the impact criteria relate to the assessment categories. For example, proposed alignments that would have limited direct or indirect impacts to wildlife were indicated as such. In the cases where wildlife habitat loss would result in significant impacts, there are two potential assessments: (1) impacts may be offset through mitigation measures or (2) mitigation measures are unlikely to offset impacts. Significant impacts do not categorically rule out a particular alignment. It's the regional significance of the wildlife resources and the importance of the habitat for the long-term sustainability of wildlife populations that determines whether impacts can be offset.

Finally, **Appendix D** provides our assessment for each proposed alignment along with descriptive information on the nature of impacts and the specific resources that would be impacted.

Appendix B. List of Datasets Used

Transportation
- Proposed Segments
  - Provided by ADOT
- Existing Highways and Roads
  - TIGER Rds
  - USGS Topo
- 2009 State Framework

Ownership/Conservation Lands:
- Military Lands
  - ALRIS, ownership data
- Tribal Lands
  - ALRIS, ownership data
- Protected Areas
  - Protected Areas Database v2 (PAD-US), Conservation Biology Institute http://consbio.org/products/projects/pad-us-cbi-edition

Important Habitats:
- USFWS Designated Critical Habitat
  - http://criticalhabitat.fws.gov/crithab/, latest update from USFWS, Feb, 2013
- Important Grasslands
  - TNC Grasslands Assessment http://azconservation.org/downloads/category/grassland_assessment
- BLM Tortoise Habitat
  - Tortoise habitat identified by BLM policy to avoid development or mitigate for losses
  - Final Report on "Compensation for the Desert Tortoise" Instructional Memorandum, 1991.
- TNC Habitat Conservation Priorities
  - TNC Ecoregional Assessments Roll-up, Dec. 2007 http://azconservation.org/downloads/category/ecoregional_assessment
- Pima County Habitat Protection Priorities
  - Pima County 2004 Bond- lands identified in the Sonoran Desert Conservation Plan
- Pinal County Existing Open Spaces
  - Arizona State Office, Engineering & Mapping Sciences Group, 2008
- Flat-tailed Horned Lizard Management Areas
  - Flat-tailed Horned Lizard Interagency Coordinating Committee. 2003. Flat-tailed horned lizard rangewide management strategy, 2003 revision. 78 pp. plus appendices.

Wildlife Linkages:
- Arizona Missing Linkages (modeled)
  - NAU Study 2007-2008

Detailed Linkage Designs (modeled)

AGFD 2012

Pinal Linkages Workshop

AGFD 2013

Arizona Wildlife Linkages Workshop

2006

Black Bear Connectivity Study in the Sky Islands (modeled)

Atwood, Todd C.; Young, Julie K.; Beckmann, Jon P.; Breck, Stewart W.; Fike, Jennifer A.; Rhodes, Jr., Olin; and Bristow, Kirby D., "Modeling Connectivity of Black Bears in a Desert Sky Island Archipelago" (2011). USDA National Wildlife Research Center – Staff Publications. Paper 1013. http://digitalcommons.unl.edu/icwdm_usdanwrc/1013

Important Hydrological Features:

Cienegas

TNC Freshwater Assessment, http://azconservation.org/downloads/category/freshwater_assessment

Perennial Flows

TNC Freshwater Assessment http://azconservation.org/downloads/category/freshwater_assessment

Groundwater basins connected to surface water flow

Anning, D.W., and Konieczki, A.D., 2005. Classification of Hydrogeologic Areas and Hydrogeologic Flow Systems in the Basin and Range Physiographic Province, Southwestern United States. U.S. Geological Survey Professional Paper #1702, 37p.

Appendix C. Criteria Used to Assess Impacts to Wildlife and Assessment Categories for Proposed Alignments

		Assessment Categories			
		Significant Impacts to Wildlife Likely - Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely – Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**
Direct Impacts to Wildlife and Wildlife Habitat					
1.	Habitat loss or fragmentation for Threatened and Endangered or special status species	X	X		
2.	Habitat loss or fragmentation for core wildlife habitat not represented or limited elsewhere in state	X	X		
3.	Habitat loss or fragmentation for area acquired and/or managed for conservation purposes	X	X		
4.	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept.	X	X	X	
5.	Direct impacts limited			X	X
Indirect Impacts to Wildlife and Wildlife Habitat					
6.	Adverse impacts to wildlife and habitat from incompatible activities (e.g., development, groundwater pumping)	X	X		
7.	Adverse impact to habitat acquired or identified for mitigation purposes	X	X		
8.	Adverse impacts to surface waters designated as “Outstanding Waters/Wild or Scenic Rivers”	X	X		
9.	Limits or precludes habitat management options such as use of controlled fire	X	X		
10.	Indirect impacts limited				X

Appendix D. Detailed Evaluation of Proposed I-11 Alignments, Including Overall Assessment and Supporting Information, Organized by Assessment Category and Location of Proposed Alignments

I. Segments with Limited Impacts to Wildlife

Proposed Segment	**Proposed Change in Infrastructure**	***Assessment***				**Description**
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Phoenix Alignments						
Segment 24 & 21 – South Mtn Freeway/I10/SR101 and I-10	State highways and U.S. interstate to U.S. interstate				X	Direct impacts limited
Segments 25 & 26 – US 60	State highways to U.S. interstate				x	Direct impacts limited
Segment 85 – SR 30	State highway to U.S. interstate				X	Direct impacts limited

II. Segments where there are Opportunities to Improve Wildlife Linkages

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely- Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely- Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Northern Arizona Alignments						
Segment 35 & 90 – I-40	U.S. highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Warm Springs- Hualapai Mtns, Warm Springs – Aubrey Peak, Hualapai – Cerbat)
Segment 36 – US 93	U.S. highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Hualapai Mtns – Bagdad; Tres Alamos Wilderness – Prescott National Forest)
Segment 39 – SR 89	State highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Big Black Mesa – Hell Canyon)
Segment 40 – I-17	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Northern I17 Corridor)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely- Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely- Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segments 41,42,43 – I-40	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (I40- 93 – Kingman; Grand Canyon – Prescott National Forest; Garland – Arizona Divide; Hualapai - Cerbat)
Segments 44 & 45 -SR 68	State highway to U.S. interstate			X		Habitat loss or fragmentation for area acquired and/or managed for conservation purposes (Black Mountains ACEC) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Hualapai-Cerbat; Mount Perkins – Warm Springs)
Segment 46 – US 93	U.S. highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage (Mount Tipton – Mount Perkins; Black Mts - Cerbat)
Segment 95 – US 93	U.S. highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Hualapai Mtns – Bagdad; I-40-US 93- Kingman)
Phoenix Alignments						

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely- Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely- Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segments 10 & 83 - I-8	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Vekol Wash, Estrella Mtns- Vekol Wash, Table Top Mtns – Little Table Top Mtns, Maricopa Mtns- Table Top Mtns; South Maricopa Mtns – Sand Tanks; Gila River – Lake Saint Claire; Greene Wash and Reservoir)
Segments 11 & 12 - I10	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Gila River; Queen Creek to Gila River Indian Community)
Segment 13 I10/I17	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Gila – Salt River Corridor Granite Reef Dam)
Segments 19,20 – SR-85	State highway to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Gila Bend – Sierra Estrella)
Segment 27 – US 60	State highway to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Harcuvar Mtns – Harquahala Mtns; Granite Wash – Little Harquahala Mtns; Ranegras Plain; Wickenburg-Hassayampa)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 28 & 89 – I17	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Bradshaw Mtns – Agua Fria National Monument)
Segment 29 – US93	State highway to U.S. interstate			X	x	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Chino Valley; Wickenburg-Hassayampa; White Tanks – Belmonts – Vultures - Hieroglyphics)
Southern Arizona Alignments						
Segment 1 – SR 191 Douglas Connection	U.S. highway to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Black Bear Linkage Study)
Segments 2,4,6,8 - I-10	U.S. interstate to U.S. interstate			X	X	Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept.
Segment 5 – I-19 Nogales Connection	U.S. interstate to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Tumacacori-Santa Rita; Santa Rita-Sierrita, Black Bear Linkage Study)
Segment 79 – I-8	U.S. interstate to U.S. interstate			X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept (for Bighorn Sheep and Sonoran Pronghorn; Sentinel Plain)

III. Segments where Significant Impacts to Wildlife are Likely but Mitigation to Offset Impacts is Feasible

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Northern Arizona Alignments						
Segments 30 & 33 – SR 95	State highway to U.S. interstate		X			Habitat loss or fragmentation for area acquired and/or managed for conservation purposes (Bill Williams National Wildlife Refuge) Habitat loss or fragmentation for Threatened and Endangered or special status species (direct impact to Southwestern Willow Flycatcher; indirect impact to critical aquatic and breeding habitat for Bonytail Chub, Razorback Sucker) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (for bighorn sheep; Bill Williams – Aubrey Hills; The Needles – Mohave Mtns)
Segment 34 – SR 95 Realignment	Rural roads to U.S. interstate		X			Adverse impact to habitat acquired or identified for mitigation purposes (BLM habitat designated for desert tortoise management, mitigation required if impacted) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Mount Perkins – Warm Springs)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 91 – Chicken Springs Rd	Minor road to U.S. interstate		X			Adverse impact to habitat acquired or identified for mitigation purposes (BLM habitat designated for desert tortoise management, mitigation required if impacted) Adverse impacts to wildlife and habitat from incompatible activities (e.g., development, groundwater pumping; impacts to Big Sandy River, Lower Bill Williams River Basins where groundwater is connected to surface flows)
Phoenix Alignments						
Segments 14,15,16,17,18, 84, 86 – Hassayampa Freeway	New construction & minor roads to U.S. interstate		X	X		Adverse impact to habitat acquired or identified for mitigation purposes (BLM habitat designated for desert tortoise management, mitigation required if impacted) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (White Tanks – Belmonts – Vultures – Hieroglyphics; Wickenburg – Hassayampa; Gila Bend – Sierra Estrella) Indirect effects possible to the Vulture Mountains Recreational Area, a planned regional park in Maricopa County, that would include TNC's Hassayampa River Preserve

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 22 – Sun Valley Pkwy	New construction & minor roads to U.S. interstate		X			Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (White Tanks – Belmonts – Hieroglyphics)
Segment 23,87,88– SR 303	New construction & state highway to U.S. interstate		X	X		Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept.(in Rainbow Valley for bighorn sheep; Gila/Salt River Corridor Granite Reef Dam; Gila River; North Maricopa Mtns – Sierra Estrella Mtns)
Segment 82 – SR 303 Ext – Vekol Valley	New construction & minor roads to U.S. interstate		X	X		Adverse impact to habitat acquired or identified for mitigation purposes (BLM habitat designated for desert tortoise management, mitigation required if impacted) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Vekol Wash, Estrella Mtns- Vekol Wash, Sonoran Desert National Monument-Palo Verde Hills, Maricopa Mtns- Table Top Mtns)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Southern Arizona Alignments						

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 3 – Naco Connection	State highway to U.S. interstate; possible new construction		X			Adverse impacts depend upon the specific alignment and access points and range from impacts that could be offset by mitigation to those that are unlikely to be offset by mitigation. Adverse impacts to areas acquired and/or managed for conservation purposes (San Pedro River NCA; properties owned by The Nature Conservancy); Habitat loss or fragmentation for Threatened and Endangered or special status species (indirect impact to critical aquatic habitat for Huachuca water umbel) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Ft. Huachuca, Whetstones –San Pedro, Black Bear Linkage Study) ***Note:*** New development and associated groundwater pumping facilitated by a new transportation corridor *within the Upper San Pedro River Basin* would have adverse impacts to wildlife and habitat on the San Pedro River. Given the current status of groundwater and surface flows and efforts to mitigate for existing conditions in the Upper San Pedro, we believe that mitigation would not be feasible to offset impacts associated with a new transportation corridor.

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segments 9, 80 – I-95 & San Luis Connection	State highway to U.S. interstate		X	X		Habitat loss or fragmentation for Threatened and Endangered or special status species (Yuma desert management area for flat-tailed horn lizard, a special status species) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (for bighorn sheep and mule deer, Trigo Mtns – Kofa Mtns)

IV. Segments where Significant Impacts to Wildlife are Likely but Mitigation Unlikely to Offset Impacts

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Northern Arizona Alignments						
Segment 37 – Chino Valley	New construction	X				Habitat loss or fragmentation for core wildlife habitat not represented or limited elsewhere in state (GMU 19b is core habitat for one of largest state populations of pronghorn and intact grasslands) Adverse impacts to wildlife and habitat from incompatible activities (e.g., development, groundwater pumping; impacts to Big Chino and Kirkland Creek Basins where groundwater is connected to surface flows linked to Williamson Valley Wash and the Verde River) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Granite Mts – Black Hills)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segments 38,92,93– I17 Fain Road Connector	New construction & state highway to U.S. interstate	X				Habitat loss or fragmentation for core wildlife habitat not represented or limited elsewhere in state (GMU 19b is core habitat for one of largest state populations of pronghorn and intact grasslands) Adverse impacts to wildlife and habitat from incompatible activities (e.g., development, groundwater pumping; impacts the Little Chino Basin where groundwater is connected to surface flows linked to the Verde River) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Granite Mtns – Black Hills)

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely- Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely- Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 94	New construction	X				Habitat loss or fragmentation for area acquired and/or managed for conservation purposes (Burro Creek Riparian and Cultural ACEC, Upper Burro Creek wilderness BLM) Adverse impacts to wildlife and habitat from incompatible activities (e.g., development, groundwater pumping; impacts the Burro Creek, Big Sandy River, Big Chino and Kirkland Creek Basins where groundwater is connected to surface flows linked to the Williamson Valley Wash and the Verde River) Habitat loss or fragmentation for core wildlife habitat not represented or limited elsewhere in state (grasslands, perennial surface waters- Burro Creek, Frances Creek- home to 5-6 native fish species)
Southern Arizona Alignments						

Proposed Segment	Proposed Change in Infrastructure	*Assessment*				Description
		Significant Impacts to Wildlife Likely-Mitigation Unlikely to Offset Impacts	**Significant Impacts to Wildlife Likely-Mitigation Feasible**	**Opportunity to Improve Wildlife Linkages**	**Limited Impacts to Wildlife**	
Segment 7 – Sasabe Connection	State highway to U.S. interstate	X				Habitat loss or fragmentation for area acquired and/or managed for conservation purposes (Buenos Aires NWR, Pima Co. Conservation Areas, Ironwood National Monument) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (Mexico – Tumacacori – Baboquivari, Coyote – Ironwood – Tucson) Adverse impact to habitat acquired or identified for mitigation purposes (Central Arizona Project mitigation corridor)
Segment 81 – SR-85	State highway to U.S. interstate	X				Habitat loss or fragmentation for area acquired and/or managed for conservation purposes (Organ Pipe National Monument, Cabeza Prieta National Wildlife Refuge; military land with high integrity conservation lands in the Barry Goldwater Range) Habitat loss or fragmentation for wildlife linkage area identified by AZ Game & Fish Dept. (SR85 – Sonoran Pronghorn) Habitat loss or fragmentation for Threatened and Endangered or special status species (Sonoran Pronghorn)

Level 2 Evaluation Coordination Meeting

Arizona Game and Fish Department and The Nature Conservancy

October 21, 2013
AGFD Headquarters
5000 W. Carefree Hwy
Phoenix, Arizona 85086

Meeting Agenda

The purpose of the meeting was to understand and come to consensus on refining the Level 2 evaluation criteria for the wildlife and environmental categories, as well as agree on what AGFD/TNC can provide in the appropriate timeframe.

1. Appropriate buffer widths around alignments
2. Evaluating impacts to outdoor recreation as an economic development initiative
3. Discussion and agreement on evaluation criteria
4. Scale of wildlife movement corridor analysis
5. Timeline/deadlines
6. Further discussion

Appropriate Buffer Widths

Direct impacts to different environmental features requires differing buffer widths. Indirect impacts requires even larger buffers to be considered. AGFD/TNC will document impacts that will inform future NEPA processes, although more detailed evaluation will be required at a later point in time. A broad range of impacts will be reviewed within a one-mile buffer of existing corridor alignments.

It was noted that impacts are magnified when highway and rail are placed in close proximity, forming a "moving fence" to wildlife movement.

Reference the Sonoran Parkway EIS for segments 84 and 87.

Impact to Outdoor Recreation

It is difficult to quantify to the impacts to outdoor recreational opportunities, but AGFD will consider how to present this information for incorporation into the Level 2 evaluation. Game species provide an economic benefit to the state via hunting/fishing permits.

Level 2 Evaluation Criteria

Suggest altering environmental-related criteria to quantify "acres of core habitat lost." Documentation needs to capture information of quality and context of transportation corridors. New roads on undisturbed lands have different environmental impacts than improvements to existing infrastructure.

Suggest broadening the "land ownership" evaluation criteria to also include other areas of conservation, wilderness areas, national monuments, county parks, etc.

Schedule/Timelines

AGFD and TNC to complete core data analyses by December 9, 2013.

Other

The Arizona Solar Working Group is interested in utilizing the corridor for power transmission. However, renewable energy as a whole has several limiting factors, including access to energy generation locations and power transmission. It is not part of this study to plan for access points, however the potential exists to co-utilize this corridor for transmission.

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December 6, 2013

Michael Kies
Director of Planning and Programming
Arizona Department of Transportation
206 S. 17th Avenue, Mail Drop: 310B
Phoenix, AZ 85007

Dear Mr. Kies:

On behalf of The Nature Conservancy in Arizona, thank you for the opportunity to provide level 2 comments on the proposed *Interstate 11 Corridor-Wide Alignment Alternatives*. Our analysis and comments are focused on assisting with the Level 2 Planning and Environment Linkage review (PEL), specifically on describing impacts and identifying options for offsetting impacts. Use of the PEL process represents a significant advancement towards more integrated infrastructure planning, which should yield better planning tools and improvement in project delivery times while avoiding and minimizing impacts to natural resources.

Detailed comments and our evaluation for each alignment, as well as supporting materials such as analytical methods, assessment criteria, and map of the alignments evaluated, are provided in **Appendices A-E** (attached). Below is a brief summary of our findings.

We systematically evaluated 23 proposed segments for the Arizona portion of I-11. Of those, we concluded that two segments (9%) would have limited impacts to wildlife and water resources; 10 of the segments (43%) present opportunities to improve both motorist safety and passage of wildlife around existing roadways using practices already adopted by the Arizona Department of Transportation; and 6 segments (26%) would have significant impacts to wildlife or water resources that could be offset through mitigation measures.

Only five segments (22%) were identified as having significant impacts that would be difficult or infeasible to offset with mitigation measures. These alignments would result in significant habitat loss or degradation, adversely impact Threatened and Endangered or special status species, adversely impact wildlife in areas acquired, designated, and managed for conservation purposes, adversely impact wildlife and habitat not well represented elsewhere in the state and necessary to ensure that populations remain sustainable into the future, or adversely impact perennial surface waters and riparian areas important to wildlife.

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From a conservation standpoint the segments of most concern are those that include the construction of new routes and those that would expand existing infrastructure in proximity to perennial surface water and riparian habitat. We recommend the following segments be avoided: Chicken Springs Road (#91), segment 82 in the Vekol Valley, and segments 17, 22, and 29 west of Phoenix. If alternatives to segments 17, 22, and 29 are not feasible, there are more opportunities to minimize impacts for segments 17-18 than for 22-29 because of the greater distance of segments 17-18 from perennial surface water and riparian habitat. In some cases, expansion of existing routes would result in considerably less environmental impact than routes requiring new construction. For example, segments 95-43 are preferred over 91-35, and segments 10-83-19 are preferred over 14-84-15-86.

In the supporting materials, we provide information regarding options to offset impacts, including working with BLM's Desert Tortoise Mitigation Policy. There are additional opportunities to provide off-site compensation for loss of native habitat across the regional scale, including Arizona Game & Fish Department's Wildlife and Wildlife Habitat Compensation Policy, Federal Highway Administration's Eco-logical Framework, and new guidelines and policies from the Department of Interior and the Bureau of Land Management on regional mitigation. We would we happy to work with you and other partner agencies on data and tools that can be used to help evaluate and implement these opportunities.

If you have questions regarding our recommendations or the background information, please do not hesitate to contact me. I can be reached at rmarshall@tnc.org or 520-237-8778.

Sincerely,

Rob Marshall
Director, Center for Science & Public Policy

Cc:
Governor Jan Brewer
Congressman Paul Gosar
Larry Voyles, Director, Arizona Game & Fish Department
Scott Higginson, Executive Director Interstate 11 Coalition

Appendix A. Methods and Criteria

We designed our analysis to facilitate the purposes of the Level 2 PEL review, namely to complete a quantitative analysis of potential impacts of the proposed segments on environmentally sensitive areas, and to identify potential mitigation strategies and opportunities to offset impacts where they are unavoidable.

Two primary factors were used to distinguish the scope and magnitude of potential impacts. The first is the change in baseline infrastructure conditions for the proposed segment, which is necessary to determine the magnitude of impacts, such as habitat loss or fragmentation, relative to current conditions. In order to do this, we categorized all segments into one of three groups: existing, expand, and new. Those segments characterized as 'existing' include all interstates and divided limited-access highways. We classified segments as 'expand' for those areas with paved road infrastructure that would need to be expanded in order to accommodate the requirements of a multi-modal corridor. 'New' segments would require construction of paved roads in area with minimal infrastructure (e.g., unimproved dirt roads or trails). **Appendix B** is a map of the proposed segments shown by these categories.

The second factor is to quantify the potential direct and indirect impacts to wildlife resources of regional importance in the area. We evaluated potential impacts of the proposed segments on 9 conservation and wildlife criteria. These criteria were developed to correspond with Level 2 "environmental sustainability" criteria established for this corridor study. Specifically, we quantified adverse direct or indirect impacts to:

1. ESA species
2. BLM Desert Tortoise Lands
3. Areas managed for conservation purposes
4. Core wildlife habitat not represented or limited elsewhere in state
5. Perennial surface waters important to wildlife
6. Relatively intact riparian and xero-riparian habitat
7. Relatively intact Sonoran Desert Habitat
8. Relatively intact Mojave Desert Habitat
9. Wildlife Corridor/Linkage or Unfragmented Habitat Blocks

Using the best available data for these resources (see **Appendix C** for a list of these data sets), we quantified direct impacts within 1000 feet (500 foot buffer either side) of the proposed segments and indirect impacts within 2000 meters (1000 meter buffer either side, drawn beyond the direct impacts buffer). Following Council of Environmental Quality criteria[1], we define direct effects/impacts as those "…that are caused by the action and occur at the same time and place", and indirect effects/impacts as those "…that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable", including indirect effects on urban and suburban growth patterns. This distance of 1000 feet for direct impacts was chosen based on consultations with ADOT on the probable width that would be

impacted with construction or other activities. We estimated indirect impacts within 2000 meters of the segment based on field research of threatened desert tortoises in the Mojave Desert[2] and a global analysis of birds[3] that indicate that these animals avoid or exhibit lower population densities within 1000 meters of roads. The effects zone for mammals has been measured to much larger distances[3] and we elected to evaluate this effect using data related to the fragmentation effect of road construction (i.e., linkages and unfragmented blocks). We note that these distances are preliminary and subject to change once more precise alignments are drawn. Their primary value is to offer a comparative analysis of the impact of segments relative to one another.

To standardize our assessment, we evaluated all of these impacts in relation to the regional importance of the resource and the feasibility of offsetting impacts. **Appendix D** summarizes our impacts assessment, sorting segments with the least impacts to the most impacts. It allows for a direct comparison of the potential impact of each segment in relation to one another. The last column in Appendix D also provides our recommendation in terms of mitigation strategies and opportunities to offset impacts. For example, proposed alignments that would have limited direct or indirect impacts to wildlife were indicated as such. In the cases where wildlife habitat loss would result in significant impacts, there are two potential assessments: (1) impacts may be offset through mitigation measures or (2) mitigation measures are unlikely to offset impacts. Significant impacts do not categorically rule out a particular alignment. It's the regional significance of the wildlife resources and the importance of the habitat for the long-term sustainability of wildlife populations that determines whether impacts can be offset. Given that our transportation system was not originally designed to facilitate movement patterns by wildlife, we also indicate which segments present an opportunity to improve wildlife passage over existing conditions. This assessment was made using data from the Arizona Game and Fish Department on wildlife linkages.

Categories in **Appendix D** include:

1. Segments with **limited impacts** to wildlife
2. Segments with opportunities to **study and/or improve wildlife linkages**
3. Segments with significant impacts to wildlife but where options to **minimize and/or offset** these impacts are feasible
4. Segments with significant impacts to wildlife that should be **avoided** because mitigation options are unlikely to offset impacts

Appendix E provides a more descriptive narrative for each segment, summarizing the nature of the impacts, including specific resources that would be impacted, and options and opportunities to avoid these impacts or minimize and offset where impacts are unavoidable.

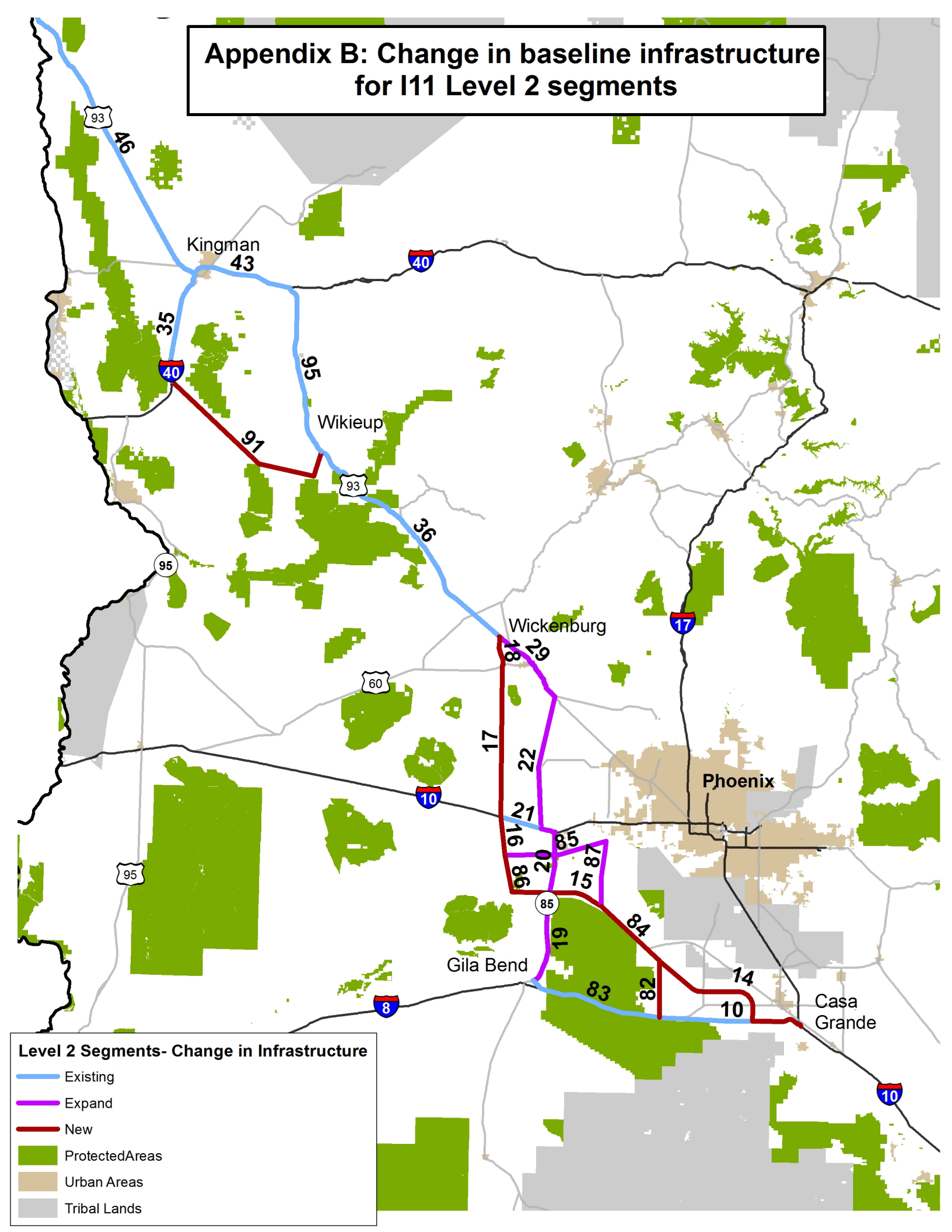
References

[1]Council for Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR §§ 1500-1508.

[2]Borman, WI and M Sazaki. 2006. A highway's road-effect zone for desert tortoises (Gopherus agassizii). Journal of Arid Environments 65: 94-101.

[3]Benitez-Lopez A, R Alkemade, and PA Verweij. 2010. The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. Biological Conservation 143: 1307-1316.

Appendix B: Change in baseline infrastructure for I11 Level 2 segments



Appendix C. Definitions of Resource Criteria and List of Source Datasets

1) ***ESA Species***: Species with following statuses under Endangered Species Act: Endangered, Threatened, Candidate, or Proposed
    a. USFWS Designated Critical Habitat; http://criticalhabitat.fws.gov/crithab/, latest update from USFWS, Feb, 2013
    b. Heritage Data Management System, data requested from AGFD, Nov 2013
2) ***BLM Desert Tortoise Lands***: Category 1 and 2 lands under BLM Desert Tortoise Mitigation Policy to avoid development or mitigate for losses.
    a. Updated GIS data requested from BLM, Nov 2013
    b. Tortoise habitat identified by BLM policy to avoid development or mitigate for losses; Final Report on "Compensation for the Desert Tortoise" Instructional Memorandum, 1991.
3) Areas managed for conservation purposes
    a. Protected Areas Database v2 (PAD-US), Conservation Biology Institute; http://consbio.org/products/projects/pad-us-cbi-edition
4) Core wildlife habitat not represented or limited elsewhere in state
    a. TNC Grasslands Assessment; http://azconservation.org/downloads/category/grassland_assessment
    b. TNC Habitat Conservation Priorities; TNC Ecoregional Assessments Roll-up, Dec. 2007; http://azconservation.org/downloads/category/ecoregional_assessment
5) Perennial surface waters important to wildlife
    a. TNC Freshwater Assessment; http://azconservation.org/downloads/category/freshwater_assessment
    b. Groundwater basins connected to surface water flow; Anning, D.W., and Konieczki, A.D., 2005. Classification of Hydrogeologic Areas and Hydrogeologic Flow Systems in the Basin and Range Physiographic Province, Southwestern United States. U.S. Geological Survey Professional Paper #1702, 37p.
6) ***Relatively intact riparian and xero-riparian habitat***: Identified for segments where majority of lands within direct impact buffer (1000 feet) are relatively intact (areal extent of human use <25%).
    a. USGS ReGAP vegetation data, modified by AGFD for SWAP, 2010
    b. TNC Human Use Intensity dataset, 2013
7) ***Relatively intact Sonoran Desert Habitat***: Identified for segments where majority of lands within direct impact buffer (1000 feet) are relatively intact (areal extent of human use <25%).
    a. USGS ReGAP vegetation data, modified by AGFD for SWAP, 2010
    b. TNC Human Use Intensity dataset, 2013
8) ***Relatively intact Mojave Desert Habitat***: Identified for segments where majority of lands within direct impact buffer (1000 feet) are relatively intact (areal extent of human use <25%).

a. USGS ReGAP vegetation data, modified by AGFD for SWAP, 2010
b. TNC Human Use Intensity dataset, 2013

9) ***Wildlife Corridor/Linkage or Unfragmented Habitat Block***: Wildlife corridors are identified from sources (a-c) below. Unfragmented habitat blocks are contiguous blocks of native habitat with highest landscape integrity (areal extent of human use <5%) (TNC 2013).
   a. Arizona Missing Linkages (modeled); NAU Study 2007-2008
   b. Detailed Linkage Designs (modeled); AGFD 2012
   c. County Level Linkage Assessments; AGFD, http://www.azgfd.gov/w_c/conn_whatGFDoing.shtml)
   d. TNC Human Use Intensity dataset, 2013

Appendix D. Criteria Used to Assess Impacts and Evaluate Options to Offset Impacts for Proposed Level II Segments. Green boxes indicate direct impacts found; cross-hatching indicates indirect impacts. Segments are sorted by 'Options to Offset' and then geographically from North to South.

Segment #	Segment Name	Segment Type	ESA Species	BLM Desert Tortoise Lands	Conservation Managed Area	Core/Limited Wildlife Habitat	Perennial Surface Waters	Riparian/Xero-Riparian Habitat	Sonoran Desert Habitat	Mojave Desert Habitat	Linkage/Unfrag. Habitat	Options to Offset
21	I-10	Existing										Impacts Limited
16	Hassy Fwy	New										Impacts Limited
46	US 93	Existing										Wildlife Linkages
43	I-40	Existing										Wildlife Linkages
95	US 93	Existing										Wildlife Linkages
35	I-40	Existing										Wildlife Linkages
36	US 93	Existing										Wildlife Linkages
87	SR 303	Expand										Wildlife Linkages
19	SR85	Expand										Wildlife Linkages
14	Hassy Fwy	New										Wildlife Linkages
83	I-8	Existing										Wildlife Linkages
10	I-8	Existing										Wildlife Linkages
18	Hassy Fwy	New										Minimize & Offset
20	SR85	Expand										Minimize & Offset
85	SR 30	Expand										Minimize & Offset
86	Hassy Fwy	New										Minimize & Offset
15	Hassy Fwy	New										Minimize & Offset
84	Hassy Fwy	New										Minimize & Offset
91	Chicken Sprs	New										Avoid
29	Hwy 60	Expand										Avoid
22	Sun Valley P	New/ Expand										Avoid
17	Hassy Fwy	New										Avoid
82	Vekol Valley	New										Avoid

Appendix E. Detailed Evaluation of Proposed I-11 Alignments, Including Overall Impact Assessment and Options for Offsetting impacts. Segments are sorted by recommended option, then from North to South.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
21	I-10 (9 miles)	Existing	N				X	Minimal new impacts.
16	Hassayampa Freeway (12 miles)	New	N				X	Minimal new impacts.
46	US 93 (70 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. This segment is in Mohave County, which has not yet completed a County-level Stakeholder Assessment; additional studies for wildlife connectivity are advised. ***Note:*** If the new multi-modal footprint is significantly greater than the existing highway, habitat loss or degradation to ESA Endangered and Candidate species, Bonytail Chub, Razorback Sucker and Sonoran Desert Tortoise, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
43	I-40 (23 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. This segment is in Mohave County, which has not yet completed a County-level Stakeholder Assessment; additional studies for wildlife connectivity are advised. ***Comparison***: Segments 95 & 43 have fewer impacts than 91 & 35. Existing routes offer transportation connectivity with less impact. ***Note:*** If the new multi-modal footprint is significantly greater than the existing interstate, habitat loss or degradation to Candidate species, Sonoran Desert Tortoise, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
95	US 93 (32 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. This segment is in Mohave County, which has not yet completed a County-level Stakeholder Assessment; additional studies for wildlife connectivity are advised. ***Comparison***: Segments 95 & 43 have fewer impacts than 91 & 35. Existing routes offer transportation connectivity with less impact. ***Note:*** If the new multi-modal footprint is significantly greater than the existing highway, habitat loss or degradation to ESA Candidate species, Sonoran Desert Tortoise, and to an area acquired and/or managed for conservation purposes (Carrow-Stephens Ranches ACEC) could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
35	I-40 (25 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. This segment is in Mohave County, which has not yet completed a County-level Stakeholder Assessment; additional studies for wildlife connectivity are advised. ***Comparison***: Segments 95 & 43 have fewer impacts than 91 & 35. Existing routes offer transportation connectivity with less impact. ***Note:*** If the new multi-modal footprint is significantly greater than the existing interstate, habitat loss or degradation to Candidate species, Sonoran Desert Tortoise, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
36	US 93 (65 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. ***Note:*** This segment traverses the groundwater basin supporting perennial surface flows in Burro Creek, Big Sandy River, Santa Maria River and Upper Hassayampa River. The Water Resources Development Commission in 2011 (WRDC 2011) found that water demand in the Hassayampa basin would exceed supplies by 2035 under a low-growth scenario. Given the current status of groundwater and surface flows in the Hassayampa basin, additional development and associated groundwater pumping facilitated by a new transportation corridor would increase impacts to wildlife and habitat above baseline conditions assessed by the WRDC. Given the rarity of perennial surface water, riparian habitat, and associated wildlife, it would be difficult if not infeasible to offset impacts through mitigation measures. Additionally, if the new multi-modal footprint is significantly greater than the existing highway, habitat loss or degradation to ESA Endangered and Candidate Species, Southwestern Willow Flycatcher, Roundtail Chub, and Sonoran Desert Tortoise, and to areas acquired and/or managed for conservation purposes (Burro Creek and Poachie Desert Tortoise ACECs) are likely to occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
87	SR 303 (14 miles)	Expand	N			X		Opportunity to study and improve wildlife linkages.
19	SR-85 (21 miles)	Expand	Y		X	X		Opportunity to study and improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. ***Note:*** If the new multi-modal footprint is significantly greater than the existing highway, habitat loss or degradation to ESA Candidate species, Tucson-Shovel-nosed Snake, and to desert tortoise habitat could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.
14	Hassayampa Freeway (32 miles)	New	N			X		Opportunity to study and improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
83	I-8 (29 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. ***Note:*** If the new multi-modal footprint is significantly greater than the existing interstate, habitat loss or degradation to ESA Candidate species, Sonoran Desert Tortoise, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
10	I-8 (33 miles)	Existing	Y		X	X		Opportunity to study and improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. ***Note:*** If the new multi-modal footprint is significantly greater than the existing interstate, habitat loss or degradation to ESA Candidate species, Sonoran Desert Tortoise, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
18	Hassayampa Freeway (7 miles)	New	N		X	X		We recommend minimizing and offsetting impacts for this segment, including conducting studies to improve wildlife linkages. ***Comparison***: Segments 17 & 18 have fewer impacts than 22 & 29. There are options to offset impacts to habitat resources in the 17/18 area, whereas impacts to rivers and riparian areas along the segment 29 route would be difficult to offset. ***Note:*** This segment traverses the groundwater basin supporting the Hassayampa River near Wickenburg. The Water Resources Development Commission in 2011 found that water demand in the basin would exceed supplies by 2035 under a low-growth scenario. Given the current status of groundwater and surface flows in the Hassayampa basin, additional development and associated groundwater pumping facilitated by a new transportation corridor would increase impacts to wildlife and habitat above baseline conditions assessed by the WRDC. Given the rarity of perennial surface water, riparian habitat, and associated wildlife, it would be difficult if not infeasible to offset impacts through mitigation measures.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
20	SR-85 (17 miles)	Expand	Y		X	X		We recommend minimizing and offsetting impacts for this segment, including conducting studies to improve wildlife linkages. Habitat loss or degradation to ESA Endangered and Proposed Threatened species, Yuma Clapper Rail and Western Yellow-Billed Cuckoo, to desert tortoise habitat, and to areas acquired and/or managed for conservation purposes (Gila River and Robbins Butte Wildlife Areas) could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.
85	SR 30 (23 miles)	Expand	Y		X	X		We recommend minimizing and offsetting impacts for this segment, including conducting studies to improve wildlife linkages. Habitat loss or degradation to ESA Endangered and Proposed Threatened species, Yuma Clapper Rail and Western Yellow-Billed Cuckoo, could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
86	Hassayampa Freeway (16 miles)	New	Y		X	X		We recommend minimizing and offsetting impacts for this segment and also conducting studies to improve wildlife linkages. The level of new construction required to establish an interstate along this segment would result in habitat loss or degradation to ESA Endangered and Candidate species, Southwestern Willow Flycatcher, Yuma Clapper Rail and Sonoran Desert Tortoise, to areas acquired and/or managed for conservation purposes (Arlington and Powers Butte Wildlife Areas), and to native habitat, in particular riparian, xero-riparian, and Sonoran Desert habitats could occur. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
15	Hassayampa Freeway (12 miles)	New	Y		X	X		We recommend minimizing and offsetting impacts for this segment and also conducting studies to improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. The level of new construction required to establish an interstate along this segment could result in habitat loss or degradation to desert tortoise habitat and native habitat, in particular riparian, xero-riparian, and Sonoran Desert habitats. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. Additionally, new construction would have the effect of isolating wildlife populations in the northern portion of the Sonoran Desert National Monument (i.e., north of I-8), from the critical native habitats in Buckeye Hills. The extent of this effect and options for restoring connectivity should be carefully studied.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
84	Hassayampa Freeway (19 miles)	New	Y		X	X		We recommend minimizing and offsetting impacts for this segment and also conducting studies to improve wildlife linkages. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 14, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. The level of new construction required to establish an interstate along this segment could result in habitat loss or degradation to native habitat, in particular xero-riparian and Sonoran Desert habitats and to ESA Candidate species, Sonoran Desert Tortoise. If these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. Construction of an interstate along this route would the effect of isolating wildlife populations in the northern portion of the Sonoran Desert National Monument (i.e., north of I-8), from the critical native habitats in Buckeye Hills. The extent of this effect and options for restoring connectivity should be carefully studied.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
91	Chicken Springs Rd (42 miles)	New	Y	X	X			We recommend that the construction of an interstate along this segment should be avoided because of the direct and indirect impacts to the resources in this area cannot be adequately mitigated. If, however, these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation, including conducting studies to improve wildlife linkages. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. ***Comparison***: Segments 95 & 43 have fewer impacts than 91 & 35. Existing routes offer transportation connectivity with less impact. Construction of an interstate along this segment would fragment an area of regional importance, at 357,760 acres representing the 11th largest unfragmented intact area in the state and the 4th largest in the Apache Highlands (TNC 2013). This area also straddles the boundaries of three ecoregions (Apache Highlands, Sonoran Desert, Mojave Desert), indicating its importance to landscape scale habitat connectivity and potentially to resilience. This segment would also fragment two areas identified as ecologically core areas in the 2010 TNC Mojave Desert Ecoregional Assessment (Randall et al. 2010). Habitat loss or degradation to ESA Endangered and Candidate species, Southwestern Willow Flycatcher, Yuma Clapper Rail, Sonoran Desert Tortoise, and Roundtail Chub, to rare plant species, White Margined Penstemon, to an area acquired and/or managed for conservation purposes (McCracken Desert Tortoise ACEC), and to perennial waters (Big Sandy River) important to wildlife could occur. ***Note:*** The November 2013 revision to this segment traverses the Bill Williams groundwater basin supporting the Big Sandy River. The Water Resources Development Commission in 2011 found that water demand within this basin would exceed supplies by 2035 under a low-growth scenario. Given the current status of groundwater and surface flows in the Bill Williams basin, additional development and associated groundwater pumping facilitated by a new transportation corridor would increase impacts to wildlife and habitat above baseline conditions assessed by the WRDC. Given the rarity of perennial surface water, riparian habitat, and associated wildlife, it would be difficult if not infeasible to offset impacts through mitigation measures.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
29	US93 (26 miles)	Expand	Y	X	X	X		We recommend that the expansion of this segment should be avoided because direct and indirect impacts to the perennial waters and associated riparian areas that support important wildlife, including threatened and endangered species, cannot be adequately mitigated. If, however, these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation, including conducting studies to improve wildlife linkages. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. ***Comparison***: Segments 17 & 18 have fewer impacts than 22 & 29. There are options to offset impacts to habitat resources in the 17/18 area, whereas impacts to rivers and riparian areas along the segment 29 route cannot be offset. ***Note:*** This segment traverses the groundwater basin supporting the Lower Hassayampa River near Wickenburg. The Water Resources Development Commission in 2011 found that water demand in the basin would exceed supplies by 2035 under a low-growth scenario. Given the current status of groundwater and surface flows in the Hassayampa basin, additional development and associated groundwater pumping facilitated by a new transportation corridor would increase impacts to wildlife and habitat above baseline conditions assessed by the WRDC. Given the rarity of perennial surface water, riparian habitat, and associated wildlife, it would be difficult if not infeasible to offset impacts through mitigation measures. Additionally, habitat loss or degradation to perennial surface waters (Hassayampa River) and riparian areas important for wildlife, notably ESA Endangered and Proposed Threatened species, Bonytail, Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, to ESA Candidate species Sonoran Desert Tortoise, to an area acquired and/or managed for conservation purposes (Hassayampa River Preserve), and to a genetically distinct and resilient population of Lowland Leopard Frog (Savage et al. 2011) could occur.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
22	Sun Valley Pkwy (30 miles)	New & Expand	Y	X	X	X		We recommend that the construction of an interstate along this segment should be avoided because of the direct and indirect impacts to the resources in this area cannot adequately be mitigated. If, however, these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation, including conducting studies to improve wildlife linkages. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. ***Comparison***: Segments 17 & 18 have fewer impacts than 22 & 29. There are options to offset impacts to habitat resources in the 17/18 area, whereas impacts to rivers and riparian areas along the segment 29 route would be difficult to offset. Habitat loss or degradation to ESA Candidate species, Sonoran Desert Tortoise, and to native habitat, in particular xero-riparian and Sonoran Desert habitats could occur. ***Note:*** We classified southern half of this segment as 'expand' because there is existing infrastructure and northern half as 'new'.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
17	Hassayampa Freeway (33 miles; 3 options, spaced 5km apart)	New	Y	X	X	X		We recommend that the construction of an interstate along this segment should be avoided because of the direct and indirect impacts to the resources in this area cannot adequately be mitigated. We evaluated alternative parallel alignments 3 miles to west and 3 miles to east of this segment and found similar impacts. If, however, these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation, including conducting studies to improve wildlife linkages. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. ***Comparison***: Segments 17 & 18 have fewer impacts than 22 & 29. There are options to offset impacts to habitat resources in the 17/18 area, whereas impacts to rivers and riparian areas along segments 22 & 29 route cannot be offset. Habitat loss or degradation to ESA Candidate species, Sonoran Desert Tortoise, to an area acquired and/or managed for conservation purposes (Vulture Mountains ACEC), and to native habitat, in particular xero-riparian and Sonoran Desert habitats could occur depending on final alignment.

Proposed Segment Number	Proposed Segment Name	Proposed Change in Infrastructure	Are Resources covered by Statute, Regulation, or Policy Impacted?	Opportunities				Assessment & Recommendation Description
				Avoid Impacts	Minimize & Offset Impacts*	Study & Improve Wildlife Linkages+	Impacts Limited	
82	SR 303 Ext – Vekol Valley (13 miles)	New	Y	X	X	X		We recommend that the construction of an interstate along this segment should be avoided because of the direct and indirect impacts to the resources in this area cannot adequately be mitigated. If, however, these impacts are unavoidable, measures should be taken to minimize or offset loss or degradation, including conducting studies to improve wildlife linkages. Opportunities exist to offset impacts to Sonoran Desert Tortoise habitat through existing BLM Desert Tortoise Mitigation Policy. ***Comparison***: Segments 10, 83, & 19 have fewer impacts than 10, 82, 84, & 15. Existing routes offer transportation connectivity with less impact to wildlife connectivity than new routes north of Sonoran Desert National Monument. Habitat loss or degradation to desert tortoise habitat and to native habitats, in particular riparian, xero-riparian, and Sonoran Desert habitats could occur. Additionally, the Vekol Valley is important habitat for Sonoran Desert Toads, representing the northern extent of this species' range (Sullivan et al. 1996). Similar to Segments #84 and 15 construction of an interstate along this route could contribute to isolating the northern portion of the Sonoran Desert National Monument (i.e., north of I-8). The extent of these effects and options for mitigation should be carefully studied.

* Any new construction, whether minor or major expansion of existing routes or construction of entirely new roads, could result in habitat loss or degradation to native habitat, in particular riparian, xero-riparian, Sonoran and Mojave Desert habitats. Methods to offset impacts to these native habitats should be considered for every route.

+ For detailed information on Opportunities to Improve Wildlife Linkages examine data and reports available from AZ Game and Fish Department (at http://www.azgfd.gov/w_c/conn_whatGFDoing.shtml), and consult with experts at AZ Game and Fish Department. Additional studies for wildlife connectivity are advised for all proposed segments, in particular for those segments where new construction is planned and in Mohave County, which has not yet completed a County-level Stakeholder Assessment.

References:

Randall, J.M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J, MacKenzie, K. Klausmeyer, and S. Morrison. 2010. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at: http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html.

Savage AE, Sredl MJ, Zamudio KR. 2011. Disease dynamics vary spatially and temporally in a North American amphibian. Biol Conserv 144:1910–1915.

Sullivan, B. K., R. W. Bowker, K. B. Malmos, and E. W. A. Gergus. 1996. Arizona distribution of three Sonoran Desert anurans: Bufo retiformis, Gastrophryne olivacea, and Pternohyla fodiens. Great Basin Naturalist 56: 38-47.

Water Resources Development Commission. WRDC. 2011. Water Resources Development Commission Final Report: Volume II Committee Reports.

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December 9, 2013

Mr. Michael Kies, PE
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, AZ 85007

Re: Evaluation for Interstate 11 and Intermountain West Corridor Study, Level 2 Evalaution

Dear Mr Kies:

The Arizona Game and Fish Department (Department) has reviewed the information on the Interstate 11 Intermountain West multimodal Corridor provided via e-mail, at an October 21, 2013 meeting with staff from the Arizona Department of Transportation (ADOT), the Nature Conservancy (TNC) and AECOM and at the November 21, 2013 Environmental and Resource Agency Coordination meeting. The results of our evaluation of the potential impacts to wildlife, wildlife habitats and wildlife-dependent recreation are below.

The Department understands that the current vision is for a multi-modal corridor from the Arizona-Mexico border to the U.S.-Canada border. The Level 1 analysis consisted of a fatal flaw evaluation of broad corridors from the Arizona-Mexico border through Nevada. The Department provided Level 1 comments in a letter dated September 13, 2013. The Level 2 evaluation focuses on more detailed corridors between Casa Grande, Arizona and Las Vegas Nevada. The results of the evaluation will be used by ADOT and Nevada Department of Transportation (NDOT) to inform the development of alternatives for National Environmental Policy Act (NEPA) environmental impact analysis.

The Department's evaluation is limited to the state of Arizona. Each segment was categorized as existing (existing interstate or 4 lane highway, segments 10, 11, 21, 29, 35, 36, 43, 46, 83 and 95), expand (an improved road exists on the alignment, segments 19, 20, 29, 85) and new (there is no current road, segments 14, 15, 16, 18, 82, 84 and 91). Segments 17, 22, 86 and 87 consist of new and expand sections.

Our evaluation centers on a GIS-based evaluation tool we are developing. One-mile hexagons covering the state are populated with values from the models and data developed for the State Wildlife Action Plan (SWAP: Species of Economic and Recreational Importance (SERI), Species of Greatest Conservation Need (SGCN), Unfragmented Habitat Blocks (Unfrag), Species and Habitat Conservation Guide (SHCG). These data are all viewable in HabiMap which can be found at http://habimap.org/habimap. Figure 1 is an example of a map generated by HabiMap and used in the evaluation. The hexagons were also populated with values from a

Interstate 11 Evaluation
Michael Kies

Floodplains shapefile developed Federal Emergency Management Agency's (FEMA) Q3 Flood data, Streams shapefile developed by the Arizona State Land Department (ASLD) from DLG data, Perennial waters shapefile developed by Arizona Department of Environmental Quality, Critical Habitats shapefile developed by U.S. Fish and Wildlife Service and Vegetation raster developed by Southwest Regional GAP Analysis Project. The one-mile hexagons that intersected the segment alignments provided by ADOT were used to generate the quantative data used in the Department's analysis.

The Department is also developing a map of undisturbed habitats in the state. This draft map was used in a preliminary analysis of the potential loss of undisturbed habitats.

It is difficult to assess wildlife connectivity and linkages at this scale of analysis. We counted the linkages identified in the County Wildlife Linkages Stakeholder Assessments and Arizona Wildlife Linkages that were crossed by the segments. We also noted if the segments were creating new fragmentation and if the new fragmentation would isolate a habitat block (completely surrounded by barriers). In general, new roads will require mitigation for lost wildlife connectivity; expand and existing roads create opportunities to improve wildlife connectivity.

Department staff used the data for evaluating the Level 2 Evaluation Criteria 7 A – C and E and 8C. Descriptions are in Table 2 below. The results were categorized as high (significant impacts to wildlife) medium (impacts to wildlife, potential to minimize impacts) and low (limited impacts to wildlife). Each segment was given an overall rating of high, medium or low. High segments are considered sensitive areas. The overall results are in Table 1, the evaluation criteria results are in Table 2.

Several segments were difficult to categorize and require further explanation. Segment 17 is difficult to analyze because the impacts change depending on the location of the alignment relative to the existing two lane roads. Currently the segment passes through undisturbed habitat. However the private land in the southern portion has approved development plans and could be developed by the time of construction. This would change the categorization to low. The northern BLM lands are a sensitive area. The Department still believes that an interstate through a proposed county park with the significant loss of recreational opportunities, including lost hunting opportunities, loss of wildlife habitats and new fragmentation constitutes a fatal flaw. We would prefer an alignment that turns to the west of the Vulture Mountains for Segment 17. There will still be impacts to wildlife and wildlife habitats, but they will less significant than the current Segment 17.

The Sonoran Desert National Monument (SDNM) has significant barriers to the west (SR 85) and south (I – 8). Segments 15 and 84 will create a new barrier to the north. Given the existing and proposed develop to the east, the northern section of SDNM would be surrounded by significant barriers, isolating the monument from other wildlife habitats. This would be a significant impact to wildlife, wildlife habitats and wildlife-dependent recreation.

Segment 29 is categorized as high because of its proximity to high quality riparian habitat in the Hasayampa River Preserve. However an interstate expansion that avoids impacts to this habitat could be acceptable.

Segment 91 is considered the most sensitive area and the segment with the most significant impacts. This segment fragments a 1,300,000 acre block of undisturbed habitat, would result in the direct loss of undisturbed habitat and could result in the loss of recreational opportunities, including hunting opportunity.

In general, the Department prefers the use of existing interstates and 4 lane divided highways, especially, SR 85 and US 93. New construction will fragment existing habitat blocks, create wildlife connectivity impacts and result in the direct loss of undisturbed habitat. Arizona Game and Fish Commission policy A2.16 directs the Department to seek compensation at the 100% level for habitat loss. New construction could result in considerable compensation costs.

The Department greatly appreciates ADOT's willingness to share information and meet with Department staff to discuss the evaluation of the proposed interstate/multi-modal corridor. Our early and informed involvement provided us an opportunity to provide ADOT with a detailed evaluation of the proposed segments. We look forward to continuing to work with ADOT as this project moves forward.

If you have any questions or wish further information please contact Bill Knowles at 928-341-4047 or bknowles@azgfd.gov.

Sincerely

Joyce M. Francis

Joyce Francis
Habitat Branch Chief

cc: Jim DeVos, Assistant Director WMD
Jim Hinkle, Assistant Director Field Ops
Pat Barber Regional Supervisor Region IV
Rod Lucas Regional Supervisor Region VI
Tom Finley Regional Supervisor Region III
Bill Knowles, Habitat Program Manager, Region IV
Thor Anderson, ADOT
Dan Andersen CH2M Hill
Jaclyn Kuechenmeisterv, AECOM

Interstate 11 Evaluation
Michael Kies

Figure 1. An example of a HabiMap map of habitat blocks and Segment 91

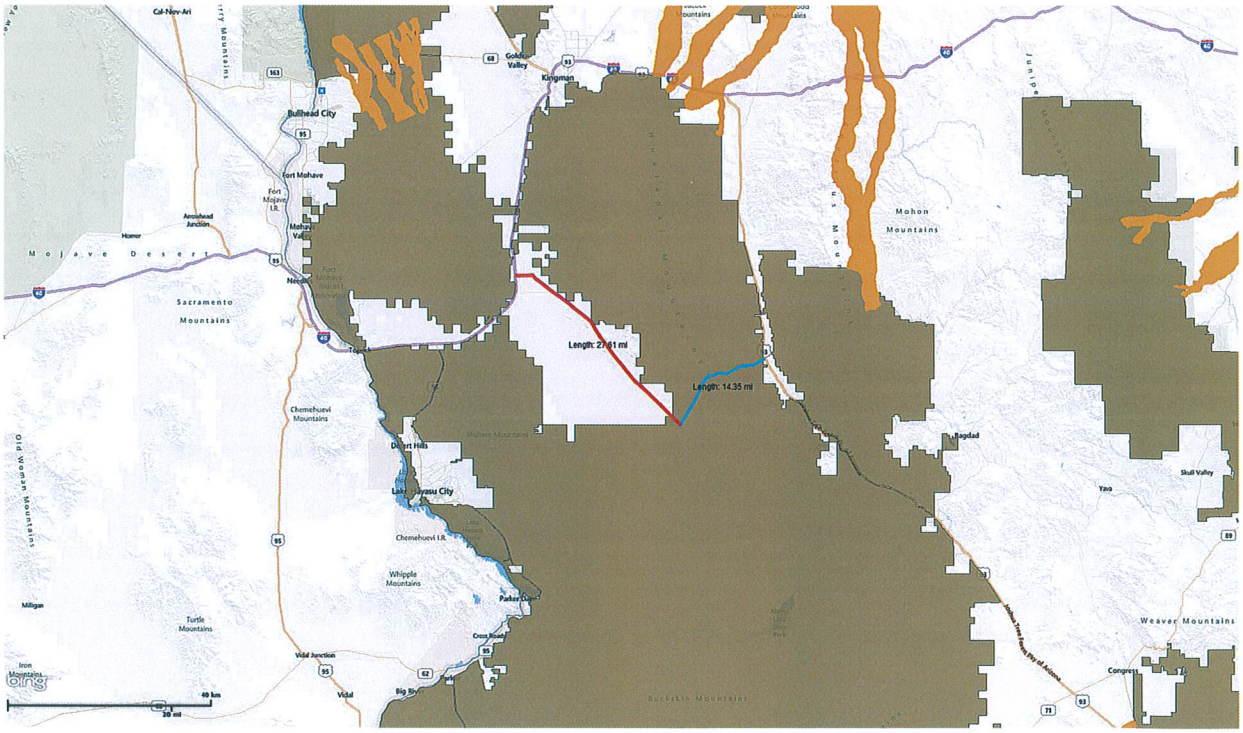

Table 1. Overall Assessment for each Segment

		OVERALL ASSESSMENT		
		Significant Impacts to Wildlife Sensitive Areas	**Impacts to Wildlife are Likely Minimzied with Potential Strategies to Offset Impacts**	**Limited Impacts to Wildlife and Opportunities to Offset and Enhance**
SEGMENT NAME	**SEGMENT NO**			
I-8	10			X
I-10	11			X
Hassayampa Freeway	14		X	
Hassayampa Freeway	15	X		
Hassayampa Freeway	16			X
Hassayampa Freeway	17	X		
Hassayampa Freeway	18		X	
SR 85	19			X
SR 85	20			X
I-10	21			X
Sun Valley Pkwy	22	X		
US 93	29	X		
I-40	35			X
US 93	36			X
I-40	43			X
US 93	46			X
SR 303 Ext- Vekol Valley	82	X		
I-8	83			X
Hassayampa Freeway	84	X		
SR 30	85			X
Hassayampa Freeway	86	X		
SR 303	87		X	
Chicken Springs Road	91	X		
US 93	95			X

Table 2. Sensitivity Categorizations for each segment for each evaluation categorization

			Sensitivity Categorizationn (Low/Moderate/High)				
		Proposed Change in Infrastructure	**How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative?**	**How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?**	**How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?**	**How many linear miles and/or acres of waterways, floodplains, and acquifers are impacted?**	**How does this alternative impacts outdoor recreational opportunities, including access?**
[redacted]							
I-8	10	Existing	Low	Low	Low	Low	Low
I-10	11	Existing	Low	Low	Low	Low	Low
Hassayampa Freeway	14	New	Moderate	Moderate	Low	Moderate	Low
Hassayampa Freeway	15	New	High	Moderate?	High	Moderate	High
Hassayampa Freeway	16	New	Low	Low	Low	Low	Low
Hassayampa Freeway	17	Partial New	High	High	High	Moderate	High
Hassayampa Freeway	18	New	High	Moderate	Low	Moderate	Moderate
SR 85	19	Expand	Low	Low	Low	Moderate	Low
SR 85	20	Expand	Low	High	Moderate	High	Low
I-10	21	Existing	Low	Low	Low	Moderate	Low
Sun Valley Pkwy	22	Partial New	High	Moderate	High	Moderate	Moderate
US 93	29	Existing	Moderate	High	High	High	Moderate
I-40	35	Existing	Low	Low	Low	Moderate	Low

US 93	36	Existing	Low	High	Low	High	Low
I-40	43	Existing	Low	Moderate	Low	Low	Low
US 93	46	Existing	Low	High	Low	High	Low
SR 303 Ext- Vekol Valley	82	New	High	High	Moderate	Moderate	High
I-8	83	Existing	Moderate	Moderate	Low	Moderate	Low
Hassayampa Freeway	84	New	High	Moderate	High	Moderate	High
SR 30	85	Expand	Low	High	Low	High	Low
Hassayampa Freeway	86	Partial New	High	High	High	High	High
SR 303	87	Partial New	Low	Low	Moderate	High	Low
Chicken Springs Road	91	New	High	High	High	High	Moderate
US 93	95	Existing	Low	High	Low	High	Low

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December 27, 2013

Mr. Michael Kies, PE
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, AZ 85007

Re: Methods for Evaluation for Interstate 11 and Intermountain West Corridor Study, Level 2 Evaluation

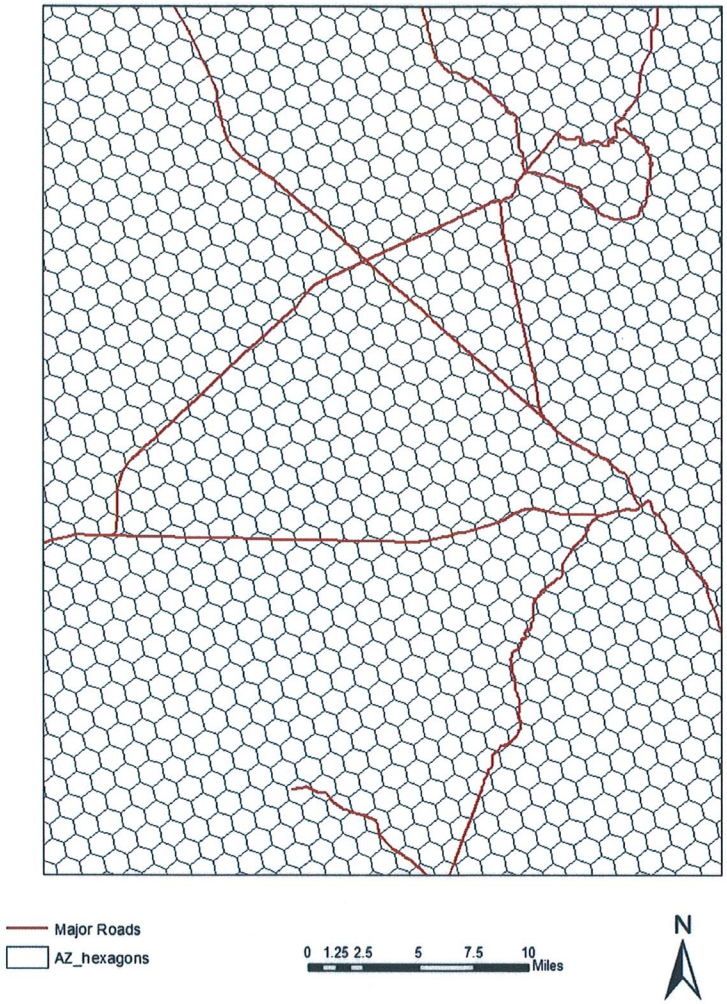
Dear Mr Kies:

The Arizona Game and Fish Department (Department) submitted a letter on December 9, 2013 with the results of our evaluation of the potential impacts to wildlife and wildlife-dependent recreation from the alternative segments for the Interstate 11 and Intermountain West Corridor Study, Level Two Analysis. In order for the evaluation to be available for your internal meetings on December 9, the methods discussion was minimal. Upon reflection we determined that it would be beneficial to provide you with a more thorough discussion of the methods employed in the evaluation.

The Department has long recognized that geographic Information Systems (GIS) and spatial data are powerful tools for wildlife conservation. Our online HabiMap is a web-based viewer that contains more than 300 layers of data and conservation models developed to inform the State Wildlife Action Plan (SWAP; AGFD 2012). The GIS based models and query tools within HabiMap are provided to allow planners and developers to access spatial explicit wildlife data at a statewide. However, we realize data at that coarse of a scale can be difficult to use and interpret at the local or regional scale. Therefore, we, in conjunction with The Nature Conservancy, have been developing an approach to facilitate use and analysis of HabiMap datasets and models, in addition to other datasets, to assist in project evaluation at a local or regional scale. The Interstate 11 (I-11) project provided us an opportunity to further develop an analytical approach, flexible enough to use evaluation criteria established by a project proponent (ADOT), that utilizes our wildlife related spatial datasets and models; that can be expanded as data and information becomes available; and is repeatable and standardized for future project review.

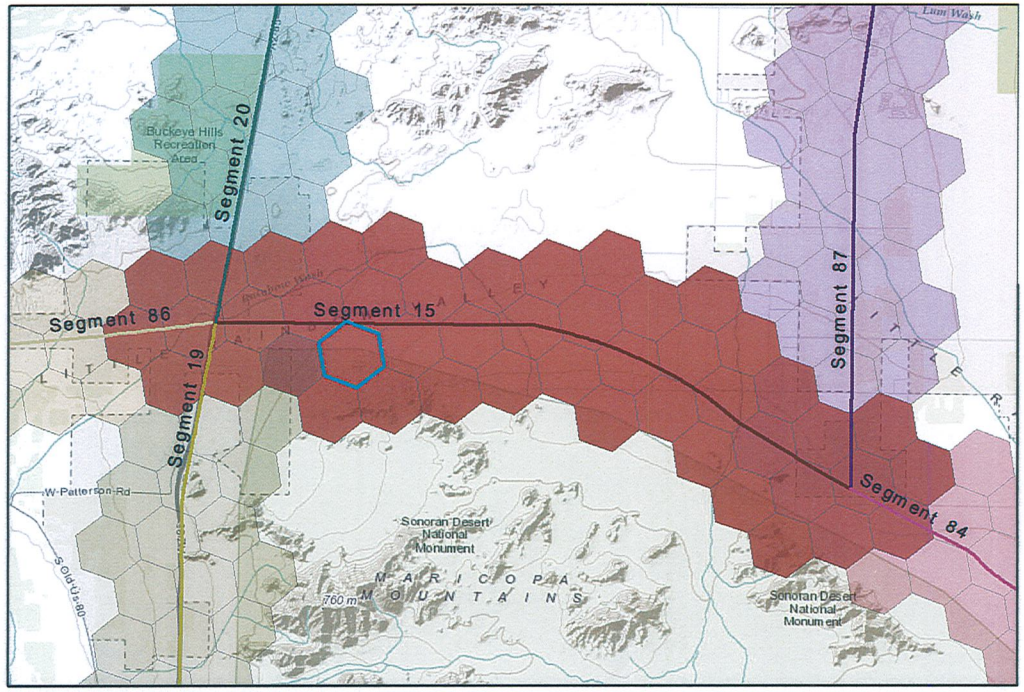
This new process is based on 1 square mile hexagons covering the state of Arizona. Figure 1 provides an example of the hexagons in the Wickenburg area. Each hexagon is attributed with available wildlife data including values from the models in HabiMap. The method to populate the hexagons depends on the type and spatial resolution of the data. For the 30 meter pixel raster

Figure 1. Example of 1 mile hexagons in the Wickenburg Area



data used in HabiMap, usually the maximum of the pixel values within the hexagon was used. On occasion, if the data supported it, the mean of the pixels contained within the hexagon was added as an attribute (See Figure 2). The attributes from polygons were transferred to overlapping hexagons. Where applicable, acres of overlap between the polygon and the hexagon were also added as an attribute (See Figure 3). Finally, the number of species occurring or having potential habitat in the hexagon were counted and added to the attributes. For the I-11 evaluation, a one mile buffer was used. This means that any hexagon within one mile of the segment was considered to be directly impacted. Although this is coarser than ideal, it is the best fit for the one square mile hexagons. As the segments are refined into actual alignments, we will also be refining our data to actual impacts.

Figure 2. Hexagons along segment 15 with attribute table showing SWAP scores



Summmary of SWAP scores by hexagon
(scores shown are maximum values in the hex):

Hex ID	SGCN	Unfragment	Riparian	SERI	Sportfish	SHCG
1914605	4	1	0	1	0	1
1916113	4	2	0	1	0	1
1917618	3	1	0	1	0	1
1917619	4	1	0	1	0	1
1917620	4	1	0	1	0	1
1919125	4	2	0	1	0	1
1919127	4	1	0	1	0	1

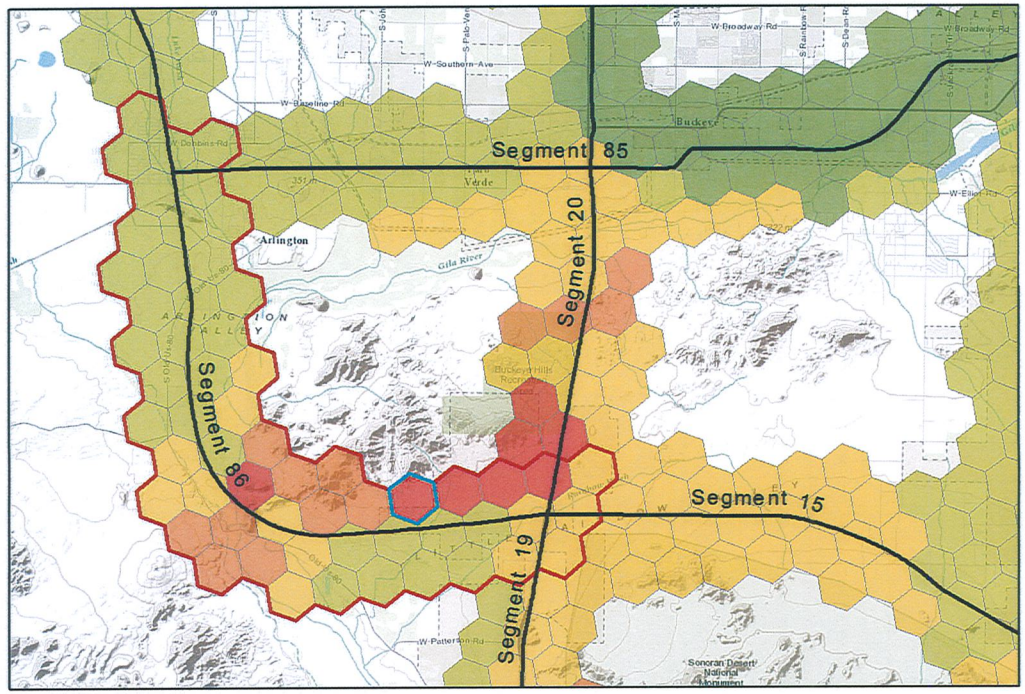
Subset of the acreage summaries that were calculated for the highlighted hexagon:

Modeled Linkage	Linkage Acres
Buckeye Hills East - Sonoran Desert Nat Mon	640
Gila Bend - Sierra Estrella Linkage Design	408

Game Species	Game Acres
Gambels Quail	640
Mountain Lion	640
Mule Deer Summer Range	640
Whitew ing Dove	640

Conservation Area	Conservation Type	Manager	Conservation Acres
Sonoran Desert N.M.	Natl Monument	BLM	3

Figure 3. Hexagons showing attributes for polygonal data



Summmary of SERI Species acres that intersect the 1 mile hexagon buffer on Segment 86:

Species	Class	Density	Acres	Seg_No
Bighorn Sheep		Sparse density	3,777	86
Bighorn Sheep		Very sparse	140	86
Gambels Quail	Primary range		33,849	86
Gambels Quail	Secondary range		3,266	86
Javelina		Sparse density	1,735	86
Mule Deer Summer Range		Very Sparse	7,572	86
Whitewing Dove	Primary Range		37,115	86

SERI species acres that intersect the highlighted hexagon:

Hex ID	Species	Class	Density	Acres
1914602	Bighorn Sheep	<Null>	Sparse density	117
1914602	Gambels Quail	Primary range	<Null>	640
1914602	Javelina	<Null>	Sparse density	19
1914602	Mule Deer Summer Range	<Null>	Very Sparse	23
1914602	Whitewing Dove	Primary Range	<Null>	640

After much discussion, the team decided the development of the process had not progressed enough to create a score for each evaluation criteria or segment. Therefore we categorized the results for each of segment evaluation criteria as low, medium or high. Department staff reviewed the results and determined the ranking. We were not prepared to develop thresholds at this time, therefore we used the expert opinion of Department staff for the ranking, based on quantitative values in relation to other segments, i.e. if the number of ESA species ranged between 0 and 4 among the segments, segments with 0 or 1 ESA species were ranked low, segments with 2 ESA species were ranked medium, and segments with 3-4 ESA species were ranked high. Because the quantitative values for most criteria did not account for the level of expected disturbance (new road segments would result in the highest amount of actual disturbance and fragmentation to habitat, while existing segments would result in the least amount of actual disturbance and fragmentation), this qualitative value was factored into each evaluation criteria ranking after the quantitative ranking was established. For example, if a number of criteria for a specific segment were ranked "high" based on quantitative values, but the segment was comprised entirely of existing roadway, the ranking was lowered to "medium" to reflect the lesser amount of expected disturbance and fragmentation; if a number of criteria for a segment ranked "medium" based on quantitative values, but the segment was comprised of entirely "new" roadway, the overall ranking for this segment was increase to "high" to reflect the highest amount of expect habitat disturbance and fragmentation. We have provided Table 3 with detailed information on the metrics associated with each dataset(s) used for each Level 2 Evaluation Criteria (ADOT). A segment by segment summary with AGFD evaluation comments is provided in Table 4.

The Department hopes this follow up letter increases your understanding of our evaluation process and the results. We continue to look forward to partnering with ADOT on this important transportation project. If you have further questions or wish to further discuss our evaluation, please contact Bill Knowles at 929-341-4047 or bknowles@azgfd.gov.

Sincerely.

Joyce M. Francis

Joyce Francis
Habitat Branch Chief

cc: Jim DeVos, Assistant Director WMD
Jim Hinkle, Assistant Director Field Ops
Pat Barber Regional Supervisor Region IV
Rod Lucas Regional Supervisor Region VI
Tom Finley Regional Supervisor Region III
Bill Knowles, Habitat Program Manager, Region IV
Thor Anderson, ADOT
Dan Andersen CH2M Hill
Jaclyn Kuechenmeisterv, AECOM

Table 1. Links to Resources

Arizona State Wildlife Action Plan (SWAP)	http://www.azgfd.gov/w_c/swap.shtml
HabiMap	http://habimap.org/
Wildlife Linkages/Connectivity	http://www.azgfd.gov/w_c/conn_whatGFDoing.shtml
HDMS/Environmental Online Tool	http://www.azgfd.gov/hgis/
Southwest ReGap	http://swregap.nmsu.edu/default.htm
USFWS Critical Habitat	http://crithab.fws.gov/crithab/
Protected Areas Database (PAD-US)	http://consbio.org/products/projects/2
Nat'l. Conservation Easement Database (NCED)	http://nced.conservationregistry.org/

Table 2. Data Sets, Types and Sources Used in Analysis and Analytical

Data Set*	Data Type	Source**	Analytical Method
Corridors	Polygons	AGFD County/Missing Linkages	See text below
Unfragmented	Polygons	AGFD model in HabiMap	See text below
SGCN	30 m pixel	AGFD model in HabiMap	Count of species intersecting the 1 mile hexagon buffer of each segment
SERI	Polygons	AGFD Game species polygons	Count of species intersecting the 1 mile hexagon buffer of each segment
Special Status Sp.	Polygons	HDMS	Count of species within 3 mile buffer of each segment
Critical Habitat	Polygons	USFWS	Sum of acres of critical habitat intersecting the 1 mile hexagon buffer for each segment by species
Undev.Habitat	30 m pixel	AGFD model	Sum of acres of undeveloped habitat intersecting the one mile hexagon buffer. % of total acres of hexagons for segment
Habitat Type	30 m pixel	Southwest ReGap (modified)	Acres of each habitat type within 1 mile buffer of each segment
Cons. Areas	Polygons	AGFD/BLM/NCED/PAD-US	Sum of acres of Conservation Area intersecting the 1 mile hexagon buffer for each segment by Conservation Area
Floodplains	Polygons	FEMA	Sum of acres of Floodplains intersecting the 1 mile hexagon buffer for each segment
Perennial Streams	Polylines	ADEQ	Miles of Perennial Streams intersecting the 1 mile hexagon buffer for each segment

* SGCN = Species of Greatest Conservation Need From Statewide Action Plan
SERI = Species of Economic and Recreational Importance
Undev. Habitat = Undeveloped Habitat
Cons. Areas = Areas with Conservation Investment/Dedicated to Conservation

** HDMS = Heritage Data Management System
USFWS = US Fish and Wildlife Service
NCED = National Conservation Easement Database
FEMA = Federal Emergency Management Agency
ADEQ = Arizona Department of Environmental Quality
PAD-US Protected Areas Database-US

Table 4. Evaluation of I-11 Level 2 Segments

Table 3. Results of analysis for each evaluation criteria. Note: Calculations are based on segments as provided in the GIS shapefile by ADOT on 10/15/13

		7A		7B																7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*						*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**														
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**			Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**			Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
10	Existing	9	1 block 767,000 acres	8	47	8	5	1		21,070 (38%)		669		17,108	16,368	28			43	13,214 SDNM		0	No new impacts
11	Existing	4	0 blocks	8	36	4	4	1		0 (0%)		327		1,665	7,131				128	0		0	No new impacts
14	New	6	0 blocks	8	43	8	4	1		13,252 (25%)	43	399		4,028	19,186				100	0		0	No new impacts
15	New	2	1 block in combination with Segment 84, 140,000 acres in SDNM Block would be isolated with existing fragmentation at SR 85 and MC 238	7	38	7	1	1		6,569 (19%)		242		242	16,639					3,741 SDNM	743	0	Reduce access to SDNM
16	New	0	0 blocks	8	36	3	0	0		3,108 (11%)		584		213	12,113					0	176	0	No new impacts

		7A		7B																7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*		*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**																	
Segment No	**Proposed Change in infra-structure**			*SWAP Species*- **potential, historic or current habitat**	Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**	Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
			Depends on alignment, two small blocks (33,900 and 18,300)are fragmented by Wickenburg Way a low volume two lane improved road, 3 blocks (213,500, 70,300 and 105,900 acres) are fragmented by the combination of Wickenburg Way and Vulture Mine Road (a low volume windy improved road). I - 11 will have a greater barrier effect and, depending on															Direct 22462 acres Vulture Mountains County Park, 304 acres Vulture Mountains ACEC **Indirect:** 38,458 acres fragmentation of the White Tank Mountains Regional Park (29,195ac) and the Buckeye's Skyline Regional Park			

		7A		7B																7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*						*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**														
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**			Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**			Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
18	New	1	New 2 blocks 26,300 and 57,800 acres	6	30	5	1	1		21,984 (98%)		228		6,846	1,665	1,452			413	0	1,260	0	reduced equestrian OHV
19	Expand	4	Existing 1 block 1400,000 acres	8	39	7	4	2		17,739 (38%)		584		1,494	21,265					5,758 SDNM	2,593	0	Some reduced access to SDNM
20	Expand	3	Existing isolated block 29,500 acres	9	40	5	6	3		10,288 (22%)	2,235	313		3,103	10,291					31 AGFD Wildlife Area, 3,349 County Park, 846 AGFD PLO1015 Lands, 2,090 AGFD Robbins Butte Wildlife Area	5,250	4	Reduce access to Wildlife areas, reduce hunting opportunities
21	Existing	2	0 blocks	9	37	3				3,568 (13%)		498		925	11,315					0	2,302	0	No new impacts

		[illegible]																							
		7A		**7B**																	**7C**		**7E**	**8C**
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**															*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*						*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**														
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**			Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**			Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
[illegible]																								
22	Partial New	5	Sun Valley Parkway section expand split between 2 fragments (including White Tanks County Park)34,000 and 74,500 acres other section new split of 2 blocks of 63,900 and 70,300 acres	8	38	5	6	1		34,883 (68%)		612		14,788	24,182					Increase isolation of both the White Tank Mountains Regional Park (29,195ac) and Buckeye's Skyline Regional Park (9,263ac)from other habitats & wildlife populations	5,787	0	**Indirect:** effects possibly to the Vulture Mtns Recreational Area, a planned regional park in Maricopa County; **Cumulative:** development around the White Tank Mtns not compatible to hunting may result in closure of area to hunting (lost opportunity & revenue)

		Evaluation Criteria																							
		7A		7B																		7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*					*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**															
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**			**Special Status Species- species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**		Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
29	Expand	3	Expand existing 2 blocks 704,000 and 63,900 acres, expand existing between 704,000 acre and 85, 200 acre blocks. 85,200 acre block isolated by roads and the town of Wickenburg.	13	39	7	14	3	Yes: Southwestern willow flycatcher Acres: 468	28,374 (73%)	1,423	882		17,208	1,338	1,438			114	Direct 826 Hassayampa River Preserve 310 Vulture Mountain County Park	4,781	6	Reduced access to Hassayampa River Preserve
35	Existing	1	Existing between 2 blocks 178,000 acres and 14,500 acres	5	27	5	7	1	10J area for California condor	26,958 (60%)		911			16,069	13,892	114		28	0	5,842	0	Reduced access to wilderness

		7A		7B															7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**															*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*		*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**																	
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**	Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**	Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
36	Existing	6	Expand existing between 2 blocks 1,865,000 and 712,600, expand existing between 712,600 and isolated block 310,200 and 14,900 and 57,800	11	41	12	22	4	Yes: Southwestern willow flycatcher Acres: 1,910	98474 (99%)	2,932	1,637		51,282	4,996	11,814	2,761		9,721	6,665 Burro Creek ACEC, 9,590 Poachie Desert Tortoise ACEC, 887 Three Rivers ACEC	6,978	15	Reduced access to wilderness ACEC
43	Existing	2	Existing Interstate 2 blocks 124,500 and 30,500	10	37	7	12	1	10J area for California condor	22,631 (55%)		384		14	356	20,453	968	2021	1,167	0	1,353	0	No new impacts

		7A		7B																7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*		*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**																	
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**	Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**	Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
46	Existing	**1**	Existing between 2 blocks 7,500,000 and 449,300 acres and between 449,300 and 231,00 amd between 449,300 and isloated blocks 168,900 and 33,900 acres	6	36	9	13	3	Yes: bonytail (51 acres and razorback sucker (200 acres) 10J area for California condor	82,582 (78%)		2,192			48,991	34,672	541	57	1,039	30,348 Lake Mead	8,588	**4**	No new impacts
82	New	7	New split in 143,700 acre block	7	45	9	2	0		25,929 (78%)		712		2,491	14,959					3,700 SDNM		0	Reduced access to SDNM
83	Existing	6	Existing between blocks 143,700 and 767,000; Blocks in SDNM	7	43	9	5	2		43,599 (89%)		897		17,521	18,717				14	49,260 SDNM	1,277	0	No new impacts
84	New	3	New split 2 blocks 140,000 and 183,000 acres. 140,000 block in SDNM	7	42	6	**1**	1		16,178 (41%)		384		228	24,125					5627 SDNM	692	0	Reduced access to SDNM

		7A		7B																7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**																*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*						*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**														
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**					Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**	Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
85	Expand	2	0 blocks	10	41	5	7	3		2,408 (5%)	5,295	783		213	5,693					78 Buck Fire AGFD Wildlife Area, 150 Green Tract AGFD Wildlife Area 1545 AGFD PLO 1015 Lands 848 Robbins Butte Wildlife Area	19,060	13	No new impacts
86	Partial New	5	Expand 2 isolated blocks 157,300 and 29,500 acres	8	42	7	4	4		13,952 (36%)	2,320	712		1,665	12,995					1720 Arlington Wildlife Area, 373 Powers Butte Wildlife Area, 954 PLO 1015	10,604	7	No new impacts
87	Partial New	4	0 blocks	9	40	4	5	3		2,283 (7%)	1,722	584		1,808	8,867					383 PLO 1015, 356 SDNM	5,731	4	No new impacts
91	New	0	New split block of 1,317,000 acres	10	40	9	10	2	Yes: Southwestern willow flycatcher Acres: 332	62,586 (94%)	584	1,167		5,337	3,800	38,814	3,416	1779	413	11112 White Margined Penstemon ACEC	4,041	1	Reduce access to large area

		7A		7B															7C		7E	8C
		How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative? **Note: Direct effects are calculated using a 1 mile buffer on segments**		*How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?* **Note: Direct effects are calculated using a 1 mile buffer on segments**															*How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?*	*How many linear miles and/or acres of waterways, floodplains and aquifers are impacted?*		*How does this alternative impact outdoor recreational opportunities, including access?*
		Corridors	*Unfragmented Habitat Blocks*	*Habitat Loss or Degradation to Species*		*Habitat Loss or Degradation of Native Habitats* **(Reclassification of SWReGAP using Brown & Lowe communities)**																	
Segment No	**Proposed Change in infra-structure**			*SWAP Species-* **potential, historic or current habitat**	Special Status Species- **species occurrence within 3 mile buffer of segments (See Appendix B for list of HDMS Sensitive Species and Habitats from Environmental Review Layer)**	Undeveloped Native Habitat Note: **Calculated using AGFD Landscape Integrity Model**	Riparian	Xeric-Riparian	Mesquite Bosque	Upland Sonoran Desertscrub	Sonoran/ Mohave Desert Scrub	Mohave Desert Scrub	Pinyon-Juniper Woodland	Chaparral	Semidesert Grassland		Floodplains (acres)	Perennial (miles)	
95	Existing	1	Existing split between 3 blocks 1,864,300, 411,700 and 50,500 acres	8	Yes: Southwestern willow flycatcher Acres: 332; 10J area for California condor	43,490 (80%)	2,519	1,309		18,489	7,871	11,799	455		157	2385 Carrow Stephens Ranches ACEC	10,660	3	No new impacts

Table 4. Evaluation of I-11 Level 2 Segments

			Sensitivity Score (Low/Moderate/High)				
		Change in Infrastructure	How many wildlife corridors and unfragmented habitat blocks are crossed by the alternative?	How many acres and/or what magnitude of wildlife habitat loss or degradation results from each alternative segment?	How many acres of areas acquired or managed for conservation or wildlife purposes are impacted?	How many linear miles and/or acres of waterways, floodplains, and aquifers are impacted?	How does this alternative impact outdoor recreational opportunities, including access?
SEGMENT NAME	**SEGMENT NO**	**Existing/New/Expanded**	**7A**	**7B**	**7C**	**7E**	**8C**
I-8	10	Existing	Low	Low	Low	Low	Low
I-10	11	Existing	Low	Low	Low	Low	Low
Hassayampa Freeway	14	New	Moderate	Moderate	Low	Moderate	Low
Hassayampa Freeway	15	New	High	Moderate?	High	Moderate	High
Hassayampa Freeway	16	New	Low	Low	Low	Low	Low
Hassayampa Freeway	17	New & minor to Interstate	High	High	High	Moderate	High
Hassayampa Freeway	18	New	High	Moderate	Low	Moderate	Moderate
SR 85	19	Expand	Low	Low	Low	Moderate	Low
SR 85	20	Expand	Low	High	Moderate	High	Low
I-10	21	Existing	Low	Low	Low	Moderate	Low
Sun Valley Pkwy	22	New & minor to Interstate	High	Moderate	High	Moderate	Moderate
US 93	29	Expand	Moderate	High	High	High	Moderate
I-40	35	Existing	Low	Low	Low	Moderate	Low
US 93	36	Existing	Low	High	Low	High	Low
I-40	43	Existing	Low	Moderate	Low	Low	Low
US 93	46	Existing	Low	High	Low	High	Low
SR 303 Ext- Vekol Valley	82	New	High	High	Moderate	Moderate	High
I-8	83	Existing	Moderate	Moderate	Low	Moderate	Low
Hassayampa Freeway	84	New	High	Moderate	High	Moderate	High
SR 30	85	Expand	Low	High	Low	High	Low
Hassayampa Freeway	86	New & minor to Interstate	High	High	High	High	High
SR 303	87	New & minor to Interstate	Low	Low	Moderate	High	Low
Chicken Springs Road	91	New	High	High	High	High	Moderate
US 93	95	Existing	Low	High	Low	High	Low

Table 4. Evaluation of I-11 Level 2 Segments - continued

		OVERALL ASSESSMENT			
		Proposed Change in Infrastructure	Significant Impacts to Sensitive Areas	Impacts to Wildlife are Likely and Potential Strategies to Offset Impacts	Limited Impacts to Wildlife and Opportunities to Offset and Enhance*
SEGMENT NAME	**SEGMENT NO**	**Existing/New/Expanded**			
I-8	10	Existing			X
I-10	11	Existing			X
Hassayampa Freeway	14	New			X
Hassayampa Freeway	15	New			X
Hassayampa Freeway	16	New			
Hassayampa Freeway	17	New & minor to Interstate			X
Hassayampa Freeway	18	New			X
SR 85	19	Expand			X
SR 85	20	Expand			X
I-10	21	Existing			X
Sun Valley Pkwy	22	New & minor to Interstate			X
US 93	29	Expand			X
I-40	35	Existing			X
US 93	36	Existing			X
I-40	43	Existing			X
US 93	46	Existing			X
SR 303 Ext- Vekol Valley	82	New			X
I-8	83	Existing			X
Hassayampa Freeway	84	New			X
SR 30	85	Expand			X
Hassayampa Freeway	86	New & minor to Interstate			X
SR 303	87	New & minor to Interstate			X
Chicken Springs Road	91	New			
US 93	95	Existing			X

*Note: An "**X**" indicates there is opportunity to offset impacts to wildlife linkages and/or enhance linkage areas along existing roadways

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
I-8	10	Existing	7A: Existing interstate, there are 9 corridors and opportunities to improve permeability; increased traffic volumes/barrier effects; 7B: high species counts; 1 ESA species (desert tortoise); but low for impacts to habitat; 7C: Direct impacts -goes through the SDNM; 7D: No floodplain data in Pinal county, 670 acres xeric-riparian; no perennial waters; 8C: No new impacts because it is existing road; Overall: assessed as low due to the fact that it is expanding an existing interstate with less habitat loss despite increased fragmentation and/or barrier effect
I-10	11	Existing	7A: Existing interstate, no landscape blocks affected; 7B: lower species counts; 1 ESA species (desert tortoise); 7C: no conservation lands identified; 7E: No floodplain data, no riparian, no perennial8C: No new impacts because it is an existing interstate with high traffic volume/barrier effects
Hassayampa Freeway	14	New	7A: This is a new road and this segment is on the fringe of development (25% native intact habitat), 6 corridors- connectivity impacts on the western end of the segment which is native intact habitat; 7B: medium to high species counts; 1 ESA species (Tucson shovel-nosed snake); 7C: no conservation lands in the area; 7E: riparian (43 ac) and low amount xeric-riparian (399ac) ; no floodplain data; no perennial water; 8C: None that we are aware of
Hassayampa Freeway	15	New	7A: This is a new road; unmaintained dirt road for utility ROW exists, linkages in the area and new habitat block fragmentation;7B: Lower species counts in the area; 1 ESA species (desert tortoise);, high quality xeric riparian in the area; combined with segment 84 habitat loss/fragmentation impacts become more significant and impacts to species are indirect and cumulative over time due to potential isolation 7C: Depending on the alternative developed with this segment, the fragmentation effects might be more significant; in conjunction with segment 84 the SDNM will be fragmented from a wilderness and a county regional park in the Estrellas, the Buckeye Hills (east half) and Sierra Estrella Mtns will be isolated, and the AGFD Gila River Wildlife Area complex will be cumulatively impacted; ; 7E: lower amount floodplain (743 ac) and xeric-riparian (242 ac), no riparian or perennial water impacted; 8C: Reduces access to SDNM , Estrellas, Buckeye Hills OHV recreation is high in the Buckeye Hills East area; indirect and cumulative impacts to hunting and recreation opportunities due to isolation.
Hassayampa Freeway	16	New	7A: new road, no corridors or blocks identified; 7B: species count in mid-low-range, no special status species in the area; 7C: no conservation areas affected; 7E: no floodplain or riparian issues; 8C: None anticipated
Hassayampa Freeway	17	New & minor to Interstate	7A: New and existing road; not currently a lot of traffic on existing minor road; alignment choice may change recommendations;; 7 corridors and multiple habitat blocks affected will increase fragmentation of habitat blocks even if it follows the existing roads with increased traffic volume/barrier effect, and will further isolate the White Tank Mtn; 7B: high Tier 1A species count; 1 ESA species (desert tortoise); habitat loss high -mostly unfragmented intact native habitat (82%-especially north half), crosses several major washes and potentially CAP mitigation lands north of CAP; 7C: high direct impact to proposed Vulture Mountain County Park, indirect and cumulative impacts due to White Tank Mtn Regional Park and Buckeye

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
			Skyline Regional Park due to isolation; 7E: medium amount of floodplain (1790 ac), and xeric riparian (562 ac), no perennial; 8C: high impacts in the Vultures and will reduce access to the Belmonts and White Tank Mtns with indirect and cumulative impacts to hunting and recreation opportunities
Hassayampa Freeway	18	New	7A: New road, affects 1 corridor, fragments intact block; 7B: lowest species count, 1 ESA species (desert tortoise) and high amount of undeveloped native habitat (98%); 7C: no new impacts; 7E: medium amount of floodplain (1260 ac), no riparian or perennial; 8C: reduced equestrian and OHV opportunities; Overall: Combined with 17 the impacts of the segment are higher
SR 85	19	Expand	7A: Expanding existing roadway, there are 4 corridors and opportunities to improve habitat permeability and connectivity between the SDNM and Gila Bend Mtns; increasing fragmentation and/or barrier effects ; 7B: mid-range species counts; 2 ESA species (desert tortoise and Tucson shovel-nosed snake), limited habitat loss due (41% native intact) - 7C: minor impacts to SDNM; 7E: near Gila River, medium amounts of floodplain (2593 ac), and xeric–riparian (584 ac), no perennial; 8C: minor access issues to the SDNM; potential indirect and cumulative impacts to hunting and recreation opportunities are limited; Overall: assessed as low due to the fact that it is expanding an existing state highway in a partially intact native habitat; with less habitat loss despite increased fragmentation and/or barrier effect
SR 85	20	Expand	7A:Expanding existing roadway, there are 3 corridors and opportunities to improve habitat permeability and connectivity between the Buckeye Hills (AGFD Gila River Wildlife Area complex) and SDNM; limited habitat connectivity still exists between the Buckeye Hills,Gila Bend Mtns and SDNM; increasing fragmentation and/or barrier effects; on fringe of developed areas; 7B: species counts in mid-high range; 3 ESA species (clapper rail, yellow-billed cuckoo, desert pupfish) but potential habitat loss is low because interstate will likely use existing bridge crossing of Gila River and floodplain and existing alignment 7C: potential direct and indirect/cumulative impacts to AGFD Wildlife Area complex and Buckeye Hills where Maricopa County Parks, Buckeye, BLM and AGFD are developing a cooperative management plan for wildlife and OHV recreation; 7E: near Gila River, high amount of floodplain (5250 acres) and riparian (2,235 ac) along Gila River, xeric- riparian (313 ac), perennial water and near BLM restoration areas to eradicate salt cedar; 8C: may expand access issues to the SDNM, AGFD wildlife area, Maricopa county park, and public lands; potential indirect and cumulative impacts to hunting and recreation opportunities; Overall: assessed as low due to the fact that it is expanding an existing state highway with less habitat loss despite increased fragmentation and/or barrier effect
I-10	21	Existing	7A: Already fragmented due to I-10, linkages immediately north; 7B: Hassayampa River in the segment, but bridged, medium number of species; 7C: no new impacts; 7E: medium amount floodplains (2302); 8C: no new impacts
Sun Valley Pkwy	22	New & minor to Interstate	7A: New and existing road; not currently a lot of traffic on existing 4-lane parkway; alignment choice may change recommendation; 5 corridors and two habitat blocks affected; will increase fragmentation of habitat blocks even if it follows the existing roads with increased barrier effect, and will further isolate the White Tank Mtn; 7B: species count in mid-range, 1 ESA species (desert tortoise) habitat loss high mostly

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
			unfragmented intact native habitat (68%), crosses several major washes and potentially CAP mitigation lands north of CAP; 7C: indirect and cumulative impacts; contributes to further fragmentation to the White Tank Mtns , and isolation of the White Tank Mtns Regional Park and Buckeye Skyline Regional Park; 7E: high amount of floodplains (5,787 ac), , medium amount xeric-riparian (612 ac); no perennial or riparian 8C: high impacts to White Tank Mtns with indirect and cumulative impacts to hunting and recreation opportunities, access may be affected overtime and cumulative with future urban development; Overall: assessed as high and in conjunction with segment 29 the impacts of this segment present higher concern
US 93	29	Expand	7A: Expand existing state highway; increasing fragmentation and/or barrier effect, 3 corridors in the area; 7B: Highest Tier 1A and special status species count; 3 ESA species (Yellow-billed cuckoo, SW willow flycatcher, desert tortoise), SW willow flycatcher Critical Habitat; potential loss of native riparian habitat high, some urban development but mostly intact native habitat (73%); 7C: Hassayampa River Preserve and proposed Vulture Mtns County Park; 7E: high amount of floodplain (4,781 ac), high riparian (1,423 ac), xeric-riparian (882 ac) and perennial water; 8C: potentially reduced access to the Preserve; Overall: assessed high due to highest species counts, significance of special status species and riparian/perennial water habitat.
I-40	35	Existing	7A: existing highway; 1 corridor and opportunities to improve habitat permeability and connectivity between habitat blocks; increasing fragmentation and/or barrier effect; 7B:lowest species counts, 1 ESA species (desert tortoise); 10j area for California condor is irrelevant here; about half of the block undeveloped (60% intact native habitat) but less direct habitat loss due to existing interstate ; 7C: no new impacts; 7E: high amounts of floodplain (5,842) ,no riparian and medium amount of xeric-riparian (911ac), no perennial water; 8C: minor impacts on access to wilderness. Overall: assessed as low due to the fact that it is expanding an existing highway with less habitat loss despite increased fragmentation and/or barrier effect
US 93	36	Existing	7A: existing interstate;6 corridors and increasing fragmentation and/or barrier effect; opportunities to improve habitat permeability and connectivity between habitat blocks; 7B: goes through high quality tortoise habitat high counts of Tier 1A, Tier 1B, HDMS, and game species (12) here; 4 ESA species (SW willow flycatcher, roundtail chub, desert tortoise, Yuma clapper rail) and SW willow flycatcher Critical Habitat; highly intact native habitat (99%) but less direct habitat loss due to existing interstate7C: 3 BLM-ACECs in the area, desert tortoise mitigation already ongoing in the area; 7E: high amounts of floodplain (6978 ac) and riparian (2,932 ac), xeric-riparian (1,637 ac) and perennial water; 8C: minor access issues to public lands; Overall: assessed as low due to expanding an existing interstate; although many opportunities to improve connectivity, and high amounts of wildlife resources in area and significant riparian areas
I-40	43	Existing	7A: Existing highway; 2 corridors but a county assessment hasn't been completed yet so there may be more; opportunities to improve habitat permeability and connectivity; increasing fragmentation and/or barrier effect 7B: High on species counts for Tier 1A and game (7), 1 ESA species (desert tortoise), habitat about half undeveloped (55% intact native)7C: No new issues; 7E: no riparian, no perennial, low amounts

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
			of xeric-riparian (384 ac) and floodplain (1,353 ac); 8C: no new impacts.
US 93	46	Existing	7A: Existing roadway, 1 corridor, , a county assessment hasn't been completed yet so there may be more, permeability has been increased in area with bighorn crossings and there may be other opportunities to improve/enhance habitat permeability and connectivity; 7B:low counts for SGCN species but high counts for special status species ; 3 ESA species (desert tortoise, relict leopard frog, razorback sucker) and Critical Habitat for bonytail and razorback sucker; high game species count (9) and sportfish due to proximity to Colorado River; relatively intact habitat (78%) with perennial waters; 7C: no new issues; 7E: no riparian, medium amounts of xeric-riparian (2,192 ac) , high amounts of floodplain (8,588 ac) and perennial water; 8C: No new impacts; Overall: assessed low due to expanding existing highway; special status species and critical habitats associated with Colorado River are unlikely to be affected by interstate expansion
SR 303 Ext- Vekol Valley	82	New	7A: New road, 7 corridors and splits an unfragmented habitat block, goes through Vekol Valley which has remnant grassland ; 7B: high Tier 1B and game species (9) counts, lower Tier 1A and sensitive species counts; no ESA species; ; relatively intact habitat (78%) with high quality xeric-riparian along Vekol Wash; significant amount of new habitat loss will occur; 7C: borders the SDNM therefore less of an impact than 84; 7E: no floodplain data for Pinal county, no riparian or perennial water, medium amounts of xeric-riparian (712 ac) 8C: may create access issues for recreation in the SDNM, especially in conjunction with 84; Overall: assessed high due to new habitat loss and fragmentation and a medium to high number of species; in conjunction with segment 84, the impacts of this segment present higher concern; reducing access to SDNM; indirect and cumulative impacts to hunting and recreation opportunities due to habitat fragmentation and isolation of Palo Verde Hills and portions of Table Top Mtns
I-8	83	Existing	7A: Existing interstate: I-8 already fragments high quality habitat, 6 corridors and increasing fragmentation and/or barrier effect; opportunities to improve habitat permeability and connectivity between habitat blocks; other than the interstate, the surrounding integrity of the landscape is high (89%); 7B: high Tier 1B and game (9) species counts, medium Tier 1A and special status species counts, 2 ESA species (desert tortoise, Tucson shovel-nosed snake); 7C: SDNM fragmented already, but will increase fragmentation/barrier effect with increased traffic volume between SDNM and San Tank/Table Top Mtns and Vekol Valley; 7E: medium amounts of floodplain (1,277 ac) and xeric riparian (897 ac); no riparian or perennial water; crosses numerous washes including Vekol Wash ; 8C: low potential for reduced access due to existing interstate; Overall: assessed as low due to the fact that it is expanding an existing interstate with less habitat loss despite increased fragmentation and/or barrier effect
Hassayampa Freeway	84	New	See 15 for more comments. 7A: This is a new road, unmaintained dirt road for utility ROW exists ;3 corridors and splits an unfragmented habitat block, in conjunction with segment 15 and/or 82 the impacts of this segment present higher concern; 7B: high Tier 1B counts, low Tier 1A and special status species counts; 1 ESA species (desert tortoise) ; significant amount of new habitat loss will occur fragmenting last intact habitat of Rainbow Valley between SDNM & Estrellas7C: Depending on the alternative developed with this segment, the fragmentation effects might be more significant; in conjunction with segment 15

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
			the SDNM will be fragmented from a wilderness and a county regional park in the Sierra Estrellas, the Buckeye Hills (east half) and Sierra Estrella Mtns will be isolated, and the AGFD Gila River Wildlife Area complex will be cumulatively impacted; in conjunction with segment 87 there will be less fragmentation between SDNM and Buckeye Hills (east half) 7E: medium amount of floodplain (692 ac) and xeric-riparian (384 ac); no riparian or perennial water 8C: Reduces access to SDNM and to the Estrellas ; indirect and cumulative impacts to hunting and recreation opportunities due to isolation.
SR 30	85	Expand	7A: Existing 2 lane roadway; 2 corridors associated with the Hassayampa and Gila River bridged crossings; small amount of intact native habitat (5%) primarily agriculture some urban; 7B: high Tier 1A, 1B and sensitive species counts due to proximity to Gila River; 3 ESA species (Yuma clapper rail, desert pupfish, Yellow-billed cuckoo) all associated with Gila River; 7C: adjacent to AGFD Gila River Wildlife Area complex and potential for indirect impacts; 7E: High amount of floodplain(19,060 ac), riparian (5,295), xeric-riparian (783 ac) and perennial water; 8C: no direct anticipated because segment is on north side of Gila River in developed area; but indirect possible due to impacts to agriculture lands used by upland game birds and other game (primarily mourning dove, white-winged dove; but also javelina and mule deer) that are hunted along AGFD Gila River Wildlife Areas
Hassayampa Freeway	86	New & minor to Interstate	7A: New and minor road to interstate, 5 corridors and significantly increase the amount of fragmentation and/or barrier effect; opportunities to improve habitat permeability and connectivity between habitat blocks; 7B: high Tier 1A species count; medium Tier 1B, game (7 spp including transplanted bighorn sheep herd) and special status species counts; 4 ESA species (desert tortoise, Yellow-billed cuckoo, SW willow flycatcher, Yuma clapper rail; potential for habitat loss highest along Gila River where Gila Bends and Buckeye Hills meet including riparian; 7C: high impact on AGFD Gila River Wildlife Areas (closest proximity); cumulative impacts to SDNM, Buckeye Hills (east half) depending on alignment; 7E: high amount of floodplain (10,604 acres associated with Centennial Wash and Gila River), xeric-riparian (712 ac) and perennial water; 8C: increased fragmentation and barrier effects would isolate Buckeye Hills from Gila Bend Mtns; could negatively impact game populations (including AGFD efforts to reestablish bighorn sheep herd in Buckeye hills) therefore indirect and cumulative impacts to hunting and recreation opportunities due to isolation; Overall: high for all evaluation criteria
SR 303	87	New & minor to Interstate	7A: existing minor roads & development (7% intact native habitat) except at southern terminus and within Gila River corridor; 4 corridors and no unfragmented habitat blocks; 7B: high Tier 1A and medium Tier 1B counts and special status species counts; 3 ESA species (Yellow-billed cuckoo, Yuma clapper rail, desert tortoise) associated with Gila River and southern terminus of segment; closer to the Gila River and southern terminus the greater potential for habitat loss; 7C: depending on alignment AGFD PLO-1015 lands may be bisected vicinity of Gila River; further fragmentation/isolation of Sierra Estrella Wilderness, Estrella Mtn County Park, SDNM; 7E: high amount floodplains (5,731), riparian (1,722 ac) and perennial water; medium amount xeric-riparian (584 ac); traverses Gila River and Waterman Wash; 8C: effects similar to segments 15 and 84; Reduces access to SDNM and Sierra Estrella Mtns ; indirect and cumulative impacts to

Table 4. Evaluation of I-11 Level 2 Segments - continued

		Proposed Change in Infrastructure	OVERALL ASSESSMENT - Comments
			hunting and recreation opportunities due to isolation.
Chicken Springs Road	91	New	7A: New road; splits Arizona's largest intact habitat block at the convergence of 3 ecoregions; no corridors because no linkage assessment for Mohave county; 7B: High species counts- Tier 1A (10), Tier 1B(40), Special Status Species (10) , 2 ESA species (desert tortoise and SW willow flycatcher and Critical Habitat); significant amount of undeveloped habitat (94%), with riparian and perennial areas; 7C: fragmenting intact ACEC; 7E: high amount floodplain (4,041 ac), riparian (584 ac), xeric-riparian (1,167 ac) and perennial water; 8C: may increase access but indirect and cumulative effects to game populations due to fragmentation and barrier effects; Overall: assessment is high due to direct impacts to large unfragmented habitat block with high species and habitat diversity
US 93	95	Existing	7A: existing highway; 1 corridor area and existing fragmentation between 3 blocks; increasing fragmentation and/or barrier effect; opportunities to improve habitat permeability and connectivity between habitat blocks 7B: high counts for game (11) and special status species, medium counts Tier 1A, low count of Tier 1B; 3 ESA species (SW willow flycatcher, roundtail chub, desert tortoise) and Critical Habitat for SW willow flycatcher; 10J area for California condor not relevant here; potential for habitat loss high (80% native intact habitat) and high amounts of riparian ; 7C: 1 BLM ACEC; 7E: high amount floodplain (10,660ac), riparian (2,519 ac), xeric-riparian (1,309 ac); no perennial water8C: no new impacts; Overall: low because existing highway; but many opportunities to improve habitat permeability/connectivity; and there are many species in the area including some sensitive species, significant riparian areas

Analysis Notes:

1. High level assessment using evaluation metrics to compare relative differences between segments ; did not include a species by species impact analysis; assumed impacts may be significant or insignificant with further NEPA level analysis
2. Direct impacts assumed within a 1 mile buffer of each segment; indirect and cumulative impacts assumed beyond the 1 mile buffer
3. Species occurrence is based on potential, historic and/or current distributions created by AGFD for SWAP; ESA species occurrences are based on AGFD Heritage Database Management System element occurrence records which tracks heritage species
4. The % intact habitat is within the 1 mile buffer *??? (Bill did this analysis and needs to explain*)

Base Data Notes (*representation, accuracy and disclaimers*):

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

January 30, 2014

Mr. Michael Kies, PE
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, AZ 85007

Re: Comments on I – 11 Level 2 Draft Evaluation Results

Dear Mr Kies:

The Arizona Game and Fish Department (Department) appreciated the opportunity to participate in the stakeholders meeting on January 21, 2014 to review the preliminary results of the Interstate 11 Intermountain West Multimodal Corridor Evaluation. We have reviewed the Technical Memorandum: Draft Level 2 Preliminary Evaluation Results Summary and provide the following comments for your review.

The Department is pleased to note that our evaluation added value to the evaluation of Environmental Sustainability Criteria. We look forward to continuing our participation in the evaluation and impact analysis process for Interstate 11.

The Department notes that the orange Reasonable and Feasible Corridor running southwest off of State Route 85 on Figure 19, Alternative 3 South does not match any segment in the Level 2 evaluation. We recognize that the alignments brought forth for future analysis may vary within the shaded area on the figure. However, this corridor was not evaluated. Because this corridor crosses undeveloped habitat, the evaluation may have indicated higher impacts than did our initial evaluation. We recommend this be considered in finalizing the Results Summary.

The Department thanks you for the opportunity to provide these comments. If you have any questions or wish further information please contact Bill Knowles at 928-341-4047 or bknowles@azgfd.gov.

Sincerely

Joyce M. Francis

Joyce Francis
Habitat Branch Chief

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cc: Jim DeVos, Assistant Director WMD
Jim Hinkle, Assistant Director Field Ops
Pat Barber Regional Supervisor Region IV
Rod Lucas Regional Supervisor Region VI
Tom Finley Regional Supervisor Region III
Bill Knowles, Habitat Program Manager, Region IV
Jaclyn Kuechenmeisterv, AECOM

Appendix C:

Letters/Comments Received from Jurisdictions, Environmental Agencies and Non-Governmental Organizations

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Henry R. Darwin
Director

December 6, 2013

Dan Andersen@CH2M.com
for Arizona Department of Transportation

Re: Comments on I-11 Corridor Environmental Screening Ratings

Dear Mr. Andersen:

ADEQ is a stakeholder partner in the I-11 & Intermountain West Corridor Study. At the November 21st meeting, stakeholder comments were solicited and are due by December 6th.

We recommend that the shoulders of I-11 be paved or maintained with dust suppressants, such as chip sealant, to reduce particulate matter emissions significantly, especially those in or adjacent to PM-10 or PM-2.5 air quality planning areas. A significant portion of the corridor under study would bisect the Maricopa Serious PM-10 Area, which is subject to a plan to reduce emissions by 5% per year until attainment is achieved. Nogales is also an air quality planning area for both PM-10 and PM-2.5. Air quality that meets national public health standards must be maintained for at least two decades after redesignation to attainment status.

Wind barriers may be appropriate in portions of I-10 or the new I-11 alignment known to be subject to high winds. Particulate matter emissions and wind erosion can be reduced by constructing a fence or structure, or providing a woody vegetative barrier by planting a row of trees or shrubs, perpendicular or across the prevailing wind direction to reduce wind speed by changing the pattern of air flow over the land surface. To be effective, the wind barrier should have a density between 50 and 65 percent, and the height of the wind barrier should be proportionate to the downwind protected area. The downwind protected area is considered ten times the height of the wind barrier.

We continue to encourage connectivity of I-11 to underused I-8, which has advantages for air quality purposes. Alternative alignments that would route more traffic, especially more truck traffic, to I-10 south and east of the Phoenix metropolitan area would increase congestion even further resulting in more air pollution emissions from idling and during accident investigation delays. For the same reason, we recommend accident pullout areas be included in the I-11 design.

We also encourage the most energy efficient lighting fixtures, including solar where feasible; xeriscaping with native plants to reduce water needs and shade pavement; use of paving materials at rest stops that minimize runoff; truckstop electrification and plug-in recharge stations at rest stops; and recycling of bottles and cans at rest stops.

U.S. EPA is currently reviewing the National Ambient Air Quality Standards for ozone for possible strengthening by 2015, and mobile sources are significant contributors to ozone especially in the Phoenix metropolitan area. An alignment that reduces vehicle miles traveled for through traffic without increasing traffic accident frequency on already accident-prone segments of I-10 would be best for air quality. Should the ozone standards be tightened, many more air quality planning areas are anticipated in Arizona.

We appreciate the level of effort involved in corridor selection and the opportunity to participate as a stakeholder.

Sincerely,

Diane L. Arnst

Diane L. Arnst, Manager
Legal Support Section
Air Quality Division

I-11 Intermountain West Corridor Study

Comments from the BLM Phoenix District

Assumptions & Limitations of Comments

These comments are made based on the route alternatives provided to stakeholders in November of 2013 and represent a preliminary review of the proposed alternatives in light of key land-use restrictions. Rather than specific resource conflict information, BLM Phoenix District conducted a rough land use plan conformance analysis to determine if any of the alternatives conflicted with allocations in the four Governing Land Use Plans for the BLM Phoenix District. These "master" plans include:

- Bradshaw-Harquahala Resource Management Plan (2010)
- Lower Sonoran Resource Management Plan (2012)
- Agua Fria National Monument Resource Management Plan (2010)
- Sonoran Desert National Monument Resource Management Plan (2012)

As a primary land-managing agency, the BLM anticipates further, detailed involvement during subsequent phases of I-11 planning, NEPA compliance, and permitting. These initial comments are neither exhaustive nor final.

Review of Priority Section 1: Alternatives (G, H, I, LL, MM)

Land Use Authorization Restriction/Avoidance

- Portions of all Alternatives are located within or immediately adjacent Land Use Authorization exclusion areas within the Sonoran Desert National Monument. Any ROW requested beyond the rights already granted for existing ROWs within the Monument would likely require a land use plan amendment (see map 9 of the Approved LSFO RMP)
- Several of the alternatives are located within land use authorization avoidance areas for the purposes of protecting wildlife movement (see map 6 of the approved LSFO RMP).

Potential Visual Resource Class Conformance

- A small portion of one alignment (Alternative H) is adjacent to or within BLM Visual Resource Management Class II. The management objective for Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Accommodating a highway ROW may require amending the class to a lower level of visual resource preservation. The bulk of the alternatives are located within VRM Class III and IV, which have less stringent management objectives. Some alignments, however, are close to VRM Class II.

Other Resource Information

- Category 1 and 2 Tortoise habitat occurs throughout various portions of almost all alignments.

Review of Priority Section 2 (Alternatives Q, UU)

None of the proposed alignments are located within BLM land within the jurisdiction of the Phoenix District. Alignments do cross public lands managed by the BLM Kingman Field Office

Review of Priority Section 3 (Alternatives Y, Z, BB/QQ)

None of the proposed alignments are located within BLM land within the jurisdiction of the Phoenix District.

BLM INTERNAL

PRE-DESIGN REVIEW COMMENTS
Interstate 11 Proposal

SUBMITTAL:	**KFO to ASO December 5, 2013**	***PROJECT NAME:***	**Interstate 11**
RETURN DATE:	**Friday, December 6, 2013**	***PROJECT NO:***	**N/A**
REVIEWED BY:	**Tim Watkins, Rebecca Peck, John Reid**	***FED. AID NO.***	**N/A**
DISCIPLINE/ OFFICE:	**KFO Archaeology, Biology, Environmental Protection**	***DESIGNER/ CONSULTANT:***	**N/A**
KFO FAX NUMBER:	**(928) 718-3761**	***ADOT PROJECT MANAGER***	**N/A**

~~**ACTION CODES:**~~
~~**A= WILL COMPLY** ***B= CONSULTANT/DESIGNER TO EVALUATE**~~
~~***C= ADOT TEAM TO EVALUATE** ***D= DESIGN TEAM RECOMMENDS NO FURTHER ACTION**~~

~~**** REQUIRES A WRITTEN EXPLANATION AND FINAL DISPOSITION BY CONSULTANT/DESIGNER***~~

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	FINAL
1	RMP pg 66	Plan Conformance Page 66 of the KFO Resource Management Plan (1993) (RMP) and page 3 of the Record of Decision (1995) (ROD) discuss linear Rights of Way. The RMP section states: "nine right-of-way utility corridors were designated in the Management Framework Plan. Corridor six has been modified to exclude the Clay Hills Area of Critical Environmental Concern. Two of the corridors have been combined and eight have been carried forward as follows and as shown on map 14. Interstate 40 has been added to the corridor, but does not show on the map." (Table, showing eleven corridors omitted, jreid) "Large utility facilities would be restricted to the above eleven corridors where technically possible." The ROD states: "All major utility systems are required to route their systems through the designated corridors under the approved Resource Management Plan where practicable. Alternate Routes will be considered on a case-by-case basis." KFO prefers the U. S. 93 alignment, as it is located within an authorized corridor and previously disturbed, but other alignments could be considered on a case-by-case basis.		

DESIGN REVIEW COMMENTS
(CONTINUED)
ROADWAY ENGINEERING GROUP

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	DISPOSITION FINAL
2		The Chicken Springs to Alamo Road alignment would impact several (12 to 15) sections of land identified for acquisition within the RMP. The existing U.S. 93 corridor south of Kingman affects a few (3 to 5) sections identified for acquisition, and the corridor north of Kingman contains numerous (10 to 12) sections identified for disposal. The Hackberry utility corridor (not proposed) consists mainly of disposal sections.		
3		When considering the impacts of converting existing roads or highways to Interstate level highways, the wider footprint associated with frontage roads and Traffic Interchanges (TI) needs to be assessed. The facility would be "access controlled" so all gates and turn-outs would be removed and replaced with TIs and frontage roads. The primary concern with the footprint is allowing livestock and wildlife to have necessary access across the system infrastructure.		
4		KFO staff and Managers are aware of historic and cultural issues related the U. S. 93 corridor but the underlying resources located along the Chicken Springs / Alamo Road alignment are largely unknown.		
5		At this time KFO questions the long term probability of rail transit of the Hoover Dam/ Lake Mead area using the U. S. 93 north alignment. We understand the rail industry will make its' own determinations, but we feel that alternate alignments may be preferred if they can support a rail component.		
6		The Hackberry/Antares Road utility corridor alignment (not proposed) may provide additional benefits to 1) Hualapai Tribe and businesses; 2) reduction in bottleneck / traffic delays relative to the West Kingman I-40 Traffic Interchange (WKTI). Cost savings from reducing the scope of the WKTI project (+/- $80 million) could be reallocated to the I-11 project; and, 3) allow travelers on, and landowners adjacent to, U.S. 93 North to continue accessing the road as a non-traffic controlled State Highway.		
7		The Kingman Field office RMP (1993) and ROD (1995) identify several wildlife crossing corridors in the existing U. S. 93 alignment.		
8		The Kingman Field office RMP (1993) and ROD (1995) identify several areas of high quality desert tortoise habitat (Category I and II) in the existing U. S. 93 alignment.		
9		The Kingman Field office RMP (1993) and ROD (1995) identify several Areas of Critical Environmental Concern (ACEC) in the existing U. S. 93 alignment. Notably, the Burro Creek, Poachie, Clay Hills and Carrow/Stephens ACECs.		

DESIGN REVIEW COMMENTS
(CONTINUED)
ROADWAY ENGINEERING GROUP

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	DISPOSITION FINAL
10		Cultural resources: The proposed I-11 alternatives will undoubtedly affect both previously recorded, and as of yet undocumented or unknown, cultural resources. Accepting the unknowns, utilizing the existing US 93 corridor seems to be the most logical. Cultural landscape issues will also be a concern with potentially affected tribes in the region. Much of the proposed project alternatives within KFO are fairly well documented ancestral territories to the Hualapai Tribe and may have significance to numerous river tribes as well. We encourage FHWA to initiate the tribal consultation very early and solicit tribal participation in scoping and issue identification from an early point in the process. They should be afforded every opportunity to participate from pre-planning through the life of the project.		
11		The U.S. 93 corridor passes through the Cerbat Foothills Recreation Area (CFRA) north of Kingman, Arizona. The CFRA has been previously determined to be a protected area under section 4(f) of the U. S. Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act (LWCF).		
12		Significant archaeological and historic sites located in the existing U.S. 93 corridor are protected under the National Historic Preservation Act (NHPA).		

DESIGN REVIEW COMMENTS
(CONTINUED)
ROADWAY ENGINEERING GROUP

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	DISPOSITION FINAL
13		Wildlife Resources: Issues associated with the *proposed* I-11 alternative that traverses Chicken Springs Road to Alamo Road to I-40. This alternative would follow an unpaved graded road through the Hualapai Mountains then across the Dutch Flat Valley eventually intersecting I-40. This route cuts through Hualapai Foothills Category II Desert Tortoise Habitat (Kingman RMP) and through the White-Margined Penstemon Area of Critical Environmental Concern. The Sonoran Desert Tortoise is a Federal Candidate Species and the White-margined Penstemon is a BLM Sensitive Species. The footprint (roadway plus frontage roads plus interchanges) and associated impacts of an interstate through this largely undeveloped area of predominantly public land could have profound impacts on wildlife that inhabit this area. Associated impacts include increased commercial and residential development on surrounding private lands. This in turn would result in an increase in the human population within this area. Expected effects of increased human activity and occupation of this area would include increased habitat fragmentation, collection, harassment, and death by vehicle collision of all types of wildlife including desert tortoise. White-margined penstemon has limited distribution in Arizona and can be found growing alongside Alamo Road. The populations alongside of the road would be destroyed as the road footprint increases. Currently impacts associated with human activities and occupation occur but at a much lower level than would be expected should an Interstate Highway be constructed through these habitat areas.		
14		Wildlife Issues associated with the *proposed* I-11 alternative that follows the existing US 93 Route to I-40. This is currently a paved highway that has been in existence for over 80 years. It is expected that impacts to wildlife and wildlife habitats would be much *less* along this alternative than the Chicken Springs/Alamo Road alternative as the paved roadway is already in place. Expansion of this highway into an interstate would increase the road footprint as frontage roads and interchanges are installed. This road traverses desert tortoise habitat but not white-margined penstemon habitat. Because this road is currently in place impacts to tortoise would continue as well as increased habitat destruction would occur as a result of the expansion.		
15		The Kingman Field office RMP (1993) and ROD (1995) identify one wildlife crossing corridor in the proposed Chicken Springs/Alamo alternative.		
16		The Kingman Field office RMP (1993) and ROD (1995) identify several areas of high quality desert tortoise habitat (category I and II) in the proposed Chicken Springs/Alamo alternative.		

DESIGN REVIEW COMMENTS
(CONTINUED)
ROADWAY ENGINEERING GROUP

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	DISPOSITION FINAL
17		The Kingman Field office RMP (1993) and ROD (1995) identify the White-margined Penstemon Area of Critical Environmental Concern (ACEC) within the Chicken Springs/Alamo Road alternative.		

DESIGN REVIEW COMMENTS
(CONTINUED)
ROADWAY ENGINEERING GROUP

ITEM NO.	DWG, SHT, PAGE NO.	COMMENT	DISPOSITION INIT.	DISPOSITION FINAL

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Grand Canyon Chapter ● 202 E. McDowell Rd, Ste 277 ● Phoenix, AZ 85004
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December 6, 2013

Interstate 11 Corridor Team
Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

Arizona Department of Transportation
206 South 17th Avenue
Phoenix, AZ 85007

Sent via email to Dan Andersen (dan.andersen@ch2m.com).

Re: Comments on sensitive areas along draft alternative corridors for Interstate 11

Dear Interstate 11 Corridor Team:

Thank you for the opportunity to help identify sensitive areas along the draft corridor alternatives for the proposed Interstate 11 (I-11). We appreciate the planning team's request for this information from environmental and resource agency partners.

As noted in previous comments and during previous meetings, we continue to have significant concerns about this proposed project. Based on discussions at the Environmental and Resource Agency Coordination Meeting held in Phoenix on November 21, 2013, other stakeholders have similar concerns. The purpose of this meeting was to begin to identify sensitive areas and potential mitigation options, but, instead, we spent the full time expressing concerns and asking questions, many of which were not answered. Many participants expressed concern about the direction of the project, the limited scope of the screening criteria being used, the continued focus on roads over alternate modes of travel, and the inability to avoid or mitigate impacts to natural resources. In addition, questions raised by participants indicated an overarching sense of confusion about the project and the direction of the planning team; unfortunately, many of these questions were met with curt non-answers (e.g., "We appreciate that comment.") or longer responses that did not provide an actual answer.

One such question that we asked that received a long non-answer regarded the use of rail. During the presentation at the beginning of the meeting, it was mentioned that the planning team is looking at existing rail lines and how to fill in gaps. During the following discussion, we asked if the existing rail corridors and potential gaps are included in the current I-11 corridor study or if that is a separate study. The response was long and confusing, but we got the impression that those rail corridors are not part of this study. Please clarify this and provide any additional information on this matter.

We would again like to stress the importance of considering using *only* rail as part of this project. During the meeting, this idea was brought up by more than one group. The above-mentioned

consideration of existing rail lines and potential gaps should be included as part of the I-11 study with the possibility of completing these lines *instead* of constructing a new road or widening existing ones. Not only will the proposed interstate have significant impact on sensitive lands and resources, but, in the long run, it would do little to relieve congestion issues. In fact, construction of just an interstate would likely make congestion a more significant problem in the future. The study area has plenty of roads, but it does not have adequate alternate modes of transportation, such as rail, as was shown in the Corridor Justification Report. The focus on a single source of transportation has a significant negative impact on our communities and our economy. We must start planning *now* for long-term solutions and move beyond this one-dimensional approach to transportation.

As requested, below is information about some of the sensitive areas that occur along the draft corridors through Arizona. This is by no means a complete list. Please note, we did not include comments on the myriad of sensitive lands and wildlife corridors south of Phoenix as we only focused on priority section north of Phoenix.

Public Lands and Open Areas

All public lands – including Bureau of Land Management, National Park Service, Forest Service, Bureau of Reclamation, and State Trust Land areas – should be avoided whenever possible. These lands provide vital habitat for a wealth of wildlife species, as well as resources and recreation opportunities of great importance to people. In addition, state, county, and city parks and open spaces should be avoided. The draft corridors pass through and/or near a number of these areas, including Sonoran Desert National Monument, Mt. Wilson Wilderness Area, Robbins Butte Wildlife Area, parks/open space areas in Wickenburg and near Buckeye, etc. Again, this is not a complete list of such areas – the planning team should carefully assess maps of the draft corridors at a fine-scale level to determine what areas could potentially be affected and how to avoid these.

Rivers and Other Waterways

The draft corridors also have the potential to impact a number of waterways. The proposed project should not be placed near any rivers, streams, or washes, wherever possible. Examples of these include the Hassayampa River, Vekol Wash, Gila River, and more. These waterways provide important wildlife habitat and movement corridors and are also very sensitive to disruption and pollutants. Additionally, construction of infrastructure near these waterways may lead to increased human use of these areas, further degrading these important natural resources.

Wildlife Habitat

Each of the draft corridors crosses through extensive wildlife habitat for a diversity of species. Unfortunately, it is impossible to know which species could be impacted as exact data is not available. Resources such as HabiMap (http://arizonaexperience.org/live-maps/habimap-arizona) and the Heritage Data Management System (HDMS – http://www.azgfd.gov/w_c/edits/species_concern.shtml) can be useful tools, but they do not provide definitive data on which species may be present or absent within a given area. HabiMap may provide false positives as it relies on potential habitat based on environmental characteristics, but it also cannot conclusively state that a species may not be present in an area for that same reason. HDMS, on the other hand, relies on documented sightings and, therefore, provides a number of false negatives; it can be a useful tool to determine if a species *is* present in an area but cannot be used to determine if a species *is not* present.

The planning team should work closely with the U.S. Fish and Wildlife Service, Arizona Game and Fish Department, and land management agencies to identify wildlife habitat and species that have the potential to be affected by this project.

Wildlife Corridors and Linkages

A large number of identified wildlife linkages fall within the draft corridors. The following list was gleaned from the GIS files the planning team sent out and information from CorridorDesigner (http://corridordesign.org). Further information about each of these linkages, including target species, can be obtained from the Arizona Game and Fish Department, from the above-referenced website, or from associated county linkage stakeholder groups.

- Hualapai – Cerbat
- Gila Bend – Sierra Estrella
- Hualapai – Peacock – Kingman
- Wickenburg – Hassayampa
- Alamo Lake – Big Sandy River – Burro Creek – Santa Maria River (riparian movement area)
- Upper Date Creek – Lower Date Creek
- Gila River (riparian movement area)
- Gila River to Lake St. Claire (riparian movement area)
- Green Wash and Reservoir (riparian movement area)
- Casa Grande Mountains (diffuse movement area)
- Vekol Wash (riparian movement area and associated landscape movement areas)
- Waterman Wash
- Buckeye Hills West – Buckeye Hills East
- Sierra Estrella Mountains – Buckeye Hills
- Hassayampa River (riparian movement area)
- Wagner Wash
- Jackrabbit Wash
- Vulture Mountains East – West (diffuse movement area)
- Northern Sand Tank Mountains – I-8 (landscape movement area)

Special consideration also must be given to the Central Arizona Project canal (CAP). Currently, the CAP is considered a barrier for wildlife movement. If this project proceeds, it should be constructed in a way to mitigate the obstacle presented by CAP in order to facilitate movement. The planning team should coordinate with the Arizona Game and Fish Department, CAP, and other stakeholders to identify ways to increase wildlife movement through this area.

Current Projects Under Consideration

Many of the draft corridors utilize other planned projects, such as the proposed Hassayampa Freeway, planned State Route 30, possible Loop 303 extensions, etc. It is important to note that many of these projects have not been approved and may not be constructed. The planning team must carefully evaluate each of these areas and the likelihood of them being developed. Additionally, some of these routes, such as the proposed Sonoran Valley Parkway, are currently undergoing National Environmental Policy Act (NEPA) assessment. The planning team should utilize information from the NEPA assessments to determine potential resources that could be impacted and to help determine the suitability of those corridor segments. The team should also be conscientious about promises and assumptions

made in these analyses, such as that the Sonoran Valley Parkway will be constructed as a parkway, when determining suitable areas and possible impacts from the I-11 project.

Thank you again for the opportunity to provide comments on sensitive areas to be avoided or mitigated. This project has the potential to significantly impact a wealth of natural resources and sensitive areas while doing little to satisfy transportation needs. We urge the planning team to carefully assess the practicality of this project given the extent of resources that could be impacted. We look forward to learning more about this project and continuing to be involved.

Sincerely,

Sandy Bahr
Chapter Director
Sierra Club – Grand Canyon Chapter

Tiffany Sprague
Chapter Coordinator
Sierra Club – Grand Canyon Chapter

United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer to:
AESO/SE
02EAAZ00-2014-CPA-0017
02EAAZ00-2014-TA-0104

February 25, 2014

Mr. Michael Kies, Project Manager
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, Arizona 85007

Dear Mr. Kies:

Thank you for the opportunity to provide comments on the proposed Interstate 11 Intermountain West Corridor project in Pima, Pinal, Maricopa, and Mohave counties, Arizona, in compliance with section 7 of the Endangered Species Act of 1973 (Act) as amended (16 U.S.C. 1531 et seq.). In this letter, we provide our comments regarding the Draft Level 2 Screening document as it pertains to the proposed route alternatives. Our comments are primarily directed at the middle and northern Arizona portions of the proposed project.

In Maricopa, Yavapai, and Pinal counties, the proposed route alternatives have the potential to impact several important bird areas along riparian corridors. Riparian or wetland vegetation communities along perennial or intermittent streams, such as the Gila River, can provide suitable habitats for the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), the endangered Yuma clapper rail (*Rallus longirostris yumanensis*), and the proposed yellow-billed cuckoo (*Coccyzus americanus*). Similarly, the proposed route in Mohave County has the potential to impact the endangered southwestern willow flycatcher and its critical habitat along the Big Sandy River. We recommend your site-specific analyses consider potential effects to these species, and that you work with our office to determine the best route alignment to minimize impacts to these species and their habitats.

In northern Maricopa County and southern Yavapai County, the proposed alternative alignments, from Interstate 10 to the proposed junction with Arizona Highway 60 are located in habitat for the candidate Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*). This species is known to occur in sandy creosote flats throughout the area from northwest of Phoenix to the Wickenburg area. Our office is currently working to determine whether or not the overall status of the snake, combined with anticipated threats to the species warrant protection for the snake under theAct. We encourage you to include this species in your environmental and natural resources assessment for the proposed project.

We encourage you to keep the northern Arizona alignment between Wickenburg and Kingman along the existing Arizona Highway 93 route. Using this existing route will minimize impacts to the candidate Sonoran desert tortoise (*Gopherus morafkai*). As you develop the proposed action, we encourage you to continue working with our office to minimize the impacts of the proposed Interstate 11 construction and use to the tortoise and its habitat, including traffic interchanges and other transportation routes in the vicinity of the project.

In keeping with our trust responsibility to American Indian Tribes, for proposed actions that may affect Indian lands, Tribal trust resources, or Tribal rights, we encourage you to invite the affected Tribes and Bureau of Indian Affairs to participate in the planning process and, by copy of this letter, are notifying the Colorado River Indian Tribe, Fort Mojave Indian Tribe, Hualapai Nation, Hopi Tribe, Gila River Indian Community, as well as Bureau of Indian Affairs. We also encourage you to coordinate review of this project with Arizona Game and Fish Department.

For further assistance with the development of this project, please contact Brian J. Wooldridge (x105) or Brenda Smith (x101) of our Flagstaff Suboffice at (928) 226-0614.

Sincerely,

Brenda H. Smith

for Steven L. Spangle
Field Supervisor

ccs: (electronic)
Project Engineer, Nevada Department of Transportation, Carson City, NV
(Attn: Sondra Rosenberg)
Regional Supervisor, Arizona Game and Fish Department, Kingman, AZ (Attn: Trevor Buhr)
Chief Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ (Attn: Laura Canaca)
Conservation Planning Assistance Coordinator, Region 2, Ecological Services, Fish and Wildlife Services, Albuquerque, NM (Attn: Chris O'Meilia)
Assistant Field Supervisor, Fish and Wildlife Service, Phoenix, AZ
(Attn: Greg Beatty and Mike Martinez)
Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ (Attn: Brian Wooldridge)

ccs: (hard copy)
Environmental Specialist, Environmental Services, Western Regional Office,
Bureau of Indian Affairs, Phoenix, AZ
Cultural Compliance Technician, Museum, Colorado River Indian Tribes, Parker, AZ
Director, Aha Makav Cultural Society, Fort Mojave Indian Tribe, Mohave Valley, AZ
Program Manager, Tribal Historic Preservation Office, Hualapai Tribe, Peach Springs, AZ
Director, Hopi Cultural Preservation Office, Kykotsmovi, AZ
General Counsel, Office of the General Counsel, Gila River Indian Community, Sacaton, AZ

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December 10, 2013

Michael Kies
Director of Program and Planning
Multimodal Planning Division
Arizona Department of Transportation
206 S. 17th Ave.
Phoenix, AZ 85007

Dear Mr. Kies:

On behalf of the undersigned members of the Arizona Solar Working Group (ASWG), the Sonoran Institute submits the following comments on the study being conducted by the Arizona Department of Transportation (ADOT) on the new I-11 corridor. The ASWG was assembled to promote dialogue and cross-collaboration between conservation, environment, wildlife, utility and solar industry representatives toward a more viable sustainable energy future. The Working Group,[1] comprised of conservation and wildlife organizations, renewable energy advocates, utilities, and solar developers, believes it is important to look holistically when developing projects to ensure that they are planned and built to mitigate and reduce impacts on the state's magnificent lands and wildlife. Though we were unable to get unanimous support from the diverse groups within our group, this letter is to encourage ADOT to consider broader infrastructure needs than just road or rail when analyzing the I-11 corridor and is signed by a number of our members.

Arizona has some of the best renewable resources in the nation, and there is significant support to develop these resources to the benefit of the state and its citizens. Governor Brewer has been an advocate for the development of the state's solar resources to create jobs and draw manufacturers to the state. The Arizona Corporation Commission requires that the state's regulated utilities develop a portion of future resources from solar and wind technology and Salt River Project has developed renewable energy goals as well. Developing these resources presents significant economic opportunities for the state. The Arizona Commerce Authority recognizes the potential for economic development around solar. Solar is one of the authority's four focus areas. Additionally, the Phoenix Economic Development Council travels the world promoting our solar resource and proximity to Mexican and California markets.

[1] Organizations participating in the Arizona Solar Working Group include: Abengoa, Arizona Public Service, Arizona Wildlife Federation, Defenders of Wildlife, First Solar, Ibedrola Renewables, Salt River Project, Sierra Club, Solar Energy Industry Assocation, Sonoran Institute, The Wilderness Society, Tucson Electric Power, and Vote Solar.

Increasingly, studies are demonstrating the feasibility of achieving high levels of penetration for renewable energy. The U.S. Department of Energy's National Renewable Energy Laboratory (NREL) concludes that by 2050 nearly 80% of project U.S. electricity demand could be met with renewable energy technologies, using commercially available technologies and operational changes in the electric grid system.[2] However, the report notes that to achieve such high penetration levels additional transmission infrastructure will be required to deliver renewable power to markets, sometimes over large distances This additional transmission capacity will help address potential surpluses and deficits in regions and states where supply and demand are not necessarily aligned. This is especially true in the Southwest, thereby facilitating access to the region's high-quality solar and wind resources.[3]

For example, another recent NREL study assesses regional supply and demand conditions affecting future renewable energy development in the West. It identifies numerous instances, post-2025, where surplus high-quality resources in one state could be competitively delivered to markets in other states.[4] In Arizona, the study notes that there will be opportunities to diversify the state's renewable energy portfolio and improve grid operations by importing lower-cost wind and base-load geothermal to complement that state's high-quality solar resources.[5] At the same time, NREL suggests that California may be approaching supply constraints if limited to in-state resources, which may position Arizona as an important energy provider for California.[6] Finally, NREL acknowledges that New Mexico's high-quality wind resources, which are more than three times what it will need to meet its anticipated demand in-state, could help meet demand in Arizona and California.[7]

Recently, the U.S. Bureau of Land Management (BLM) issued a Final Environmental Impact Statement for the Restoration Design Energy Project (RDEP), a statewide assessment of potential low-conflict areas for siting solar and wind generation projects.[8] Through RDEP, the BLM has identified the southwestern portion of the state as being the most likely solar development region due to the high quality resource and proximity to the California. This makes the I-11 potentially one of the most important new corridors for utility infrastructure both for proximity to renewable energy generation facilities and for its delivery endpoints near planned substations in northwestern Arizona and southern Nevada.

A preliminary evaluation by the Sonoran Institute seems to indicate that electrical transmission would likely serve a burgeoning solar energy industry that is currently constrained by limited capacity. In a GIS analysis of Renewable Energy Development Area (REDA) lands identified through RDEP, SI discovered over 450,000 acres within 10 miles and over 700,000 acres within

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[2] National Renewable Energy Laboratory. (2012). *Renewable Electricity Futures Study*. Hand, M.M.; Baldwin, S.; DeMeo, E.; Reilly, J.M.; Mai, T.; Arent, D.; Porro, G.; Meshek, M.; Sandor, D. eds. 4 vols. NREL/TP-6A20-52409.
[3] Ibid, pp. xl-xli.
[4] National Renewable Energy Laboratory (2013). *Beyond Renewable Energy Portfolio Standards*. Hurlbut, DJ; McLaren, J; Gelman, R. NREL/TP-6A20-57830, August 2013.
[5] Ibid, pp. 14-21.
[6] Ibid, pp. 30-31.
[7] Ibid, p. 61.
[8]For more information about the Restoration Design Energy Project, go to: http://www.blm.gov/az/st/en/prog/energy/arra_solar.html.

20 miles of a selected I-11 corridor alternative. With the availability of these resources, coupled with REDA lands identified as having lower resource conflicts, they would seem to be more optimal choices for renewable energy projects than lands in other states that have not enjoyed a similar screening process. Under a reasonable development scenario, the greatest limitation to the realization of Arizona's solar industry is the lack of transmission capacity to California and Nevada; further highlighting the value of a transmission corridor along the I-11 route.

Interstate 11 Renewable Energy Opportunity

Renewable Energy Development Area Lands

Within 10 Miles of I-11 (Ac)	Acres	Energy Potential[1] (MW)	Homes Powered[2]	Carbon Displaced[3] (tons)
Non-BLM Nominated Sites	1,307	139	115,601	4,577,784
BLM Nominated Sites	1,606	170	142,046	5,625,036
Non-BLM REDA Lands	379,857	40,317	33,597,324	1,330,454,023
BLM REDA Lands	68,452	7,265	6,054,394	239,754,010
Solar Energy Zone	2,618	278	231,555	9,169,579
Total Energy Development Lands	**453,840**	**48,169**	**40,140,920**	**1,589,580,431**
Within 20 Miles of I-11 (Ac)	Acres	Energy Potential[1] (MW)	Homes Powered[2]	Carbon Displaced[3] (tons)
Non-BLM Nominated Sites	9,847	1,045	870,941	34,489,244
BLM Nominated Sites	4,616	490	408,273	16,167,599
Non-BLM REDA Lands	581,444	61,713	51,427,149	2,036,515,081
BLM REDA Lands	106,232	11,275	9,395,933	372,078,945
Solar Energy Zone	2,618	278	231,555	9,169,579
Total Energy Development Lands	**704,757**	**74,801**	**62,333,850**	**2,468,420,448**

[1]Energy potential assumes the development will achieve a realized .1061 MW/Acre which is the mean planned production of approved BLM Solar applications as of November 2013

[2]Assumes estimated energy demand of 12MW/10,000 homes

[3]Assumes 33,000 tons/MW photovoltaic panels

Building transportation and transmission infrastructure are complex and expensive endeavors that have traditionally been planned and designed separately. Often, these disjointed processes have resulted in exponentially higher impacts to wildlife habitat and other ecological resources as parallel facilities were developed all throughout the West. In recent years electrical transmission projects have been proposed throughout Arizona in locations separate from other linear infrastructure features. Some examples include the Palo Verde-Devers 2 and Sunzia lines which both presented broad direct and cumulative environmental impacts in sensitive landscapes, and therefore saw significant opposition from the environmental community. In light of this, a more contemporary approach to combine infrastructure projects into single designed "smart corridors" seems to allow for a more cohesive conservation and development strategy as well as focused mitigation. Clearly, both may benefit from greater coordination, whether through co-location or cumulatively identifying and mitigating impacts. Planning for I-11 offers an opportunity to set a new standard in joint planning that may create efficiencies and stimulate innovative approaches to project design.

In summary we believe it is imperative that the I-11 corridor fully integrate the broadest application of the multimodal vision embodied in the "smart corridor concept;" electrical transmission, rail, highway infrastructure, and data connectivity should be thought of as a four-legged stool for successful implementation of the vision. We trust that this more holistic approach will prove to both save time and money while providing a truly innovative corridor that serves the broadest cross-section of Arizona.

We look forward to working with ADOT on the I-11 corridor study and subsequent planning efforts. Please let us know if you have any questions or require any additional information.

Sincerely,

John Shepard
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Interstate 11

PRIORITY CORRIDOR ANALYSIS—PHOENIX TO LAS VEGAS

Figure 1: This area near Ship Rock is one of many amazing environmental resources that lie along the proposed Interstate 11 route. Careful avoidance and mitigation are necessary to protect this and other amazing features of Arizona.

The proposed Interstate 11 priority corridor from the area of Interstate 10 at Casa Grande north to the crossing of the Colorado River on U.S. 93 presents unique opportunities and challenges for the freight industry, renewable energy advocates, transportation engineers, environmentalists and all Arizonans concerned with the state's economic development. This preliminary evaluation of the priority corridor identifies challenges, constraints, and stakeholders who should have a greater role in the project planning process and establishes a framework for future considerations.

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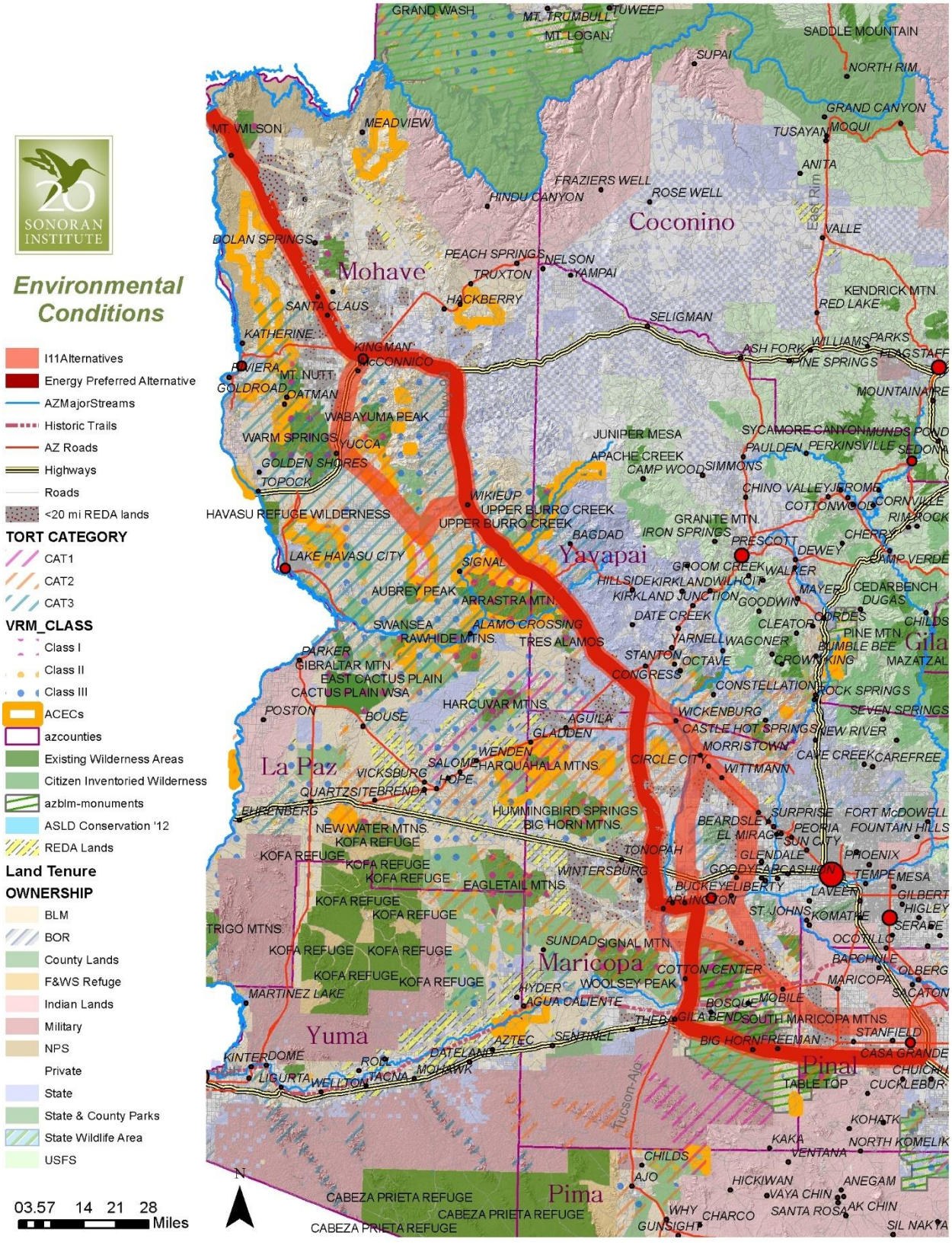

Figure 2: The Interstate 11 is proposed to go along US 93 south from Las Vegas and through the western Maricopa County communities of Wickenburg, Surprise, and Buckeye. The highlighted route is an alternative that, pending further analysis, seems to provide the most value for renewable energy development.

Vision

The proposed Interstate 11 is envisioned as a multi-modal "smart corridor" that may include elements such as an interstate highway, passenger and/or freight rail, electrical and other energy transmission facilities, and state-of-the-art data infrastructure such as fiber-optic cable. These features make the proposed corridor appealing to conservation interests as it provides the opportunity to embark upon a more sustainable approach to corridor planning and development. The current model of infrastructure typically mandates parallel yet distant infrastructure elements that compound the impacts on environmental resources; by placing transmission lines, rail corridors, and highways parallel, yet separate from each other—and thereby exponentially increasing the harm to natural landscapes and wildlife. The Interstate 11, as proposed, further distinguishes itself by providing a significant opportunity for local communities to benefit from trade stimulated by the CANAMEX corridor and renewable energy development that would be served by integrated electrical transmission infrastructure.

Location and History

The proposed Interstate 11 is a segment of the CANAMEX corridor that was initially envisioned in 1996. More than two decades later, it remains highly popular with communities that could benefit from associated economic development brought by increased international trade and industrial development. In 2012, Congress approved a transportation omnibus bill (MAP-21) that included funding for planning and study of corridors throughout Arizona and Nevada that could become portions of the future CANAMEX route.

Today, a key segment of CANAMEX is embodied in the proposed Interstate 11 which is to connect Phoenix to Las Vegas and eventually to undetermined points in Mexico and the northern Nevada border. In Arizona, Interstate 93 is considered to be the logical location for the I-11, taking advantage of the recently completed Mike O'Callaghan-Pat Tillman Memorial Bridge that bypasses the Hoover Dam crossing while connecting Phoenix and Las Vegas—the two largest cities in the U.S. that are currently not connected by an interstate highway. From Wickenburg south, existing roads and facilities become less capable of accommodating the proposed interstate, making it necessary to either perform significant and costly upgrades to constrained roadways or to find alternative locations for the highway.

Renewable Energy along the I-11

The I-11 "smart corridor" concept is attractive to renewable energy advocates due to the large amount of lands suitable for solar and wind development with few environmentally sensitive resources located near the proposed highway. These lands were screened through the Bureau of Land Management's (BLM) Restoration Design Energy Project (RDEP), a statewide assessment that was supported by environmental and wildlife groups, renewable energy developers, and utilities in Arizona. RDEP officially designated suitable BLM lands as Renewable Energy Development Areas (REDAs). However, because the assessment extended to other Arizona lands (excluding military and tribal lands), federal, state, and private lands with REDA-like qualities were also identified. As indicated in the table below, over 700,000 acres of REDA-quality lands are located within 20 miles of the highway. Significant renewable energy development of these lands will require additional electrical transmission lines to get power to markets, a costly but necessary measure in order to provide a more balanced and sustainable energy future.

Over the past year, the Arizona Solar Working Group (ASWG), comprised of environmental and wildlife advocates, utility companies, and solar energy developers, has been working to evaluate possible

corridors for renewable energy transmission throughout Arizona. Recently, a settlement with environmental advocates required the Departments of Energy and Interior to reevaluate corridors identified as West Wide Energy Corridors throughout 11 western states. The ASWG is evaluating and preparing recommendations for viable corridors with low ecological impacts. The proposed I-11 is one of the alignments likely to emerge as a preferred location for a transmission line; other locations near Interstates 10 and 8 are strong candidates as well. On December 17, 2013 five members of ASWG co-signed and submitted a letter to ADOT further articulating the need for energy transmission within the corridor.

Renewable Energy Development Area Lands				
Within 10 Miles of I-11	**Acres**	**Energy Potential[1] (MW)**	**Homes Powered[2]**	**Carbon Displaced[3] (tons)**
Non-BLM Nominated Sites	1,307	139	115,601	4,577,784
BLM Nominated Sites	1,606	170	142,046	5,625,036
Non-BLM REDA Lands	379,857	40,317	33,597,324	1,330,454,023
BLM REDA Lands	68,452	7,265	6,054,394	239,754,010
Solar Energy Zone	2,618	278	231,555	9,169,579
Total Energy Development Lands	**453,840**	**48,169**	**40,140,920**	**1,589,580,431**
Within 20 Miles of I-11	**Acres**	**Energy Potential[1] (MW)**	**Homes Powered[2]**	**Carbon Displaced[3] (tons)**
Non-BLM Nominated Sites	9,847	1,045	870,941	34,489,244
BLM Nominated Sites	4,616	490	408,273	16,167,599
Non-BLM REDA Lands	581,444	61,713	51,427,149	2,036,515,081
BLM REDA Lands	106,232	11,275	9,395,933	372,078,945
Solar Energy Zone	2,618	278	231,555	9,169,579
Total Energy Development Lands	**704,757**	**74,801**	**62,333,850**	**2,468,420,448**

[1]Energy potential assumes the development will achieve a realized .1061 MW/Acre which is the mean planned production of approved BLM Solar applications as of 6/2013

[2]Assumes estimated energy demand of 12MW/10,000 homes

[3]Assumes 33,000 tons/MW photovoltaic panels

Initial Evaluation

In September 2013, the Sonoran Institute (SI) performed an initial evaluation of the I-11 corridor through GIS analysis which included consideration of conflicts to Areas of Critical Environmental Concern (ACECs), Sonoran desert tortoise habitat, wilderness areas, citizen proposed wilderness, Arizona State Land Department (ASLD) lands with conservation value, riparian zones, Visual Resource Management (VRM) zones, and REDA lands. In addition, SI embarked on a three-day field tour for a first-hand look at the I-11 alternatives extending from Phoenix to Nevada while meeting with local stakeholders along the way. This preliminary evaluation seemed to provide enough information to

demonstrate that the I-11, at least through this alignment, could be accomplished with limited and potentially mitigatable environmental impacts. More research is needed.

The "Energy Preferred Alternative"

The Sonoran Institute has identified an alternative for purposes of further analysis that seems to align with limiting and mitigating environmental impacts, while providing easy access to lands with renewable energy development potential. This alternative meets the performance criteria of the transportation modes, and optimizes the corridor for multiple other uses including energy transmission. The following considerations illustrate the merits of this alignment for evaluation:

1. **Gila Bend:** This small town has become the leader and incubator of the most progressive utility-scale renewable energy-friendly policy in the United States. The combination of electrical transmission infrastructure with the I-11 will allow the town to flourish and provide needed economic development and regional clean energy supply. It can also benefit from increased access and the economic development that would be enabled by the proximity of this corridor.
2. **Buckeye:** This community has prepared to take advantage of the freight industry that could come as a result of the I-11. Vast swaths of land near SR-85 and the Union Pacific Railway have been allocated for heavy industry including warehouse and distribution centers.
3. **SR-85:** Utilizing the SR-85 north from Gila Bend allows this highway, recently expanded to four lanes throughout most of its stretch, to become better utilized. Traffic congestion is less likely to occur in this remote area, making it less necessary to develop a new corridor north of the Sonoran Desert National Monument.
4. **SR-801:** The I-10 bypass (SR-801), located north and parallel to the Gila River in Buckeye, is a perfect candidate to connect the I-11 off of the SR-85 while keeping traffic off of the congested I-10. This location is preferable to the proposed Hassayampa Freeway alternative south of the Buckeye Hills near the historic Old US-80 Bridge and Gillespie Dam for a variety of reasons including conflicts with the Arlington State Wildlife area and the Gila River riparian zone, which is among the most valuable desert waterways in the state.
5. **Hassayampa Freeway (North of I-10):** The Hassayampa Framework Study was completed over three years ago after a lengthy and deliberative process that included the Town of Buckeye, City of Surprise, Maricopa County, the Town of Wickenburg, and a host of stakeholders including local developers. One of the outcomes of the Framework Study was this freeway alignment, located west of the Hassayampa River, which would provide a valuable missing transportation link between I-10 and the US-60 and SR-93. This proposed facility would be developed largely on private lands in rights-of-way that have been set aside by private developers solely for this purpose. However, this alignment poses challenges that need detailed design treatments to resolve.
6. **BLM Lands:** Once the Hassayampa Freeway leaves private developments it enters a segment of BLM land that has some environmental conflicts, including Category 2 Sonoran desert tortoise habitat. Mitigation measures would need to be implemented to limit the damage to this species. Also, the new Vulture Mountain recreation area is near this alignment alternative. Careful articulation of the roadway and access management, along with robust environmental mitigation will need to be implemented throughout these public lands.
7. **State Lands:** ASLD lands are prevalent west of Wickenburg. Development of the I-11 in this location could provide long-term benefit to the beneficiaries of the Trust and immediate revenue through rights-of-way sales.
8. **US-93:** The existing roadway is an excellent location for the I-11 from Wickenburg north to the I-40 and then north from Kingman to Nevada. The US-93 is in need of safety and convenience

improvements for the benefit of travelers between Phoenix and Las Vegas. Though some environmentally sensitive lands will be traversed by highway construction and other proximate infrastructure, these impacts will likely be limited and subject to mitigation.

Segment Analysis

A wide variety of factors must be considered when selecting the appropriate corridor for Interstate 11. The following qualitative analysis provides a baseline for further evaluation. Not only should the environmental factors be carefully examined for avoidance and mitigation, but the complex social and cultural dynamics of communities throughout the study area should also be a major part of the alternative selection process. For example, the reliance of the Town of Wickenburg on their equestrian heritage, or the strong agrarian history of Buckeye and their unique ambitions and goals, among others should be factors into alignment selection and design features. Other factors that are unique to every community include ambitions for growth, desires for environmental protection, and capacity to embrace infrastructure development. This analysis provides a list of key stakeholders to be included in the discussion of how the Interstate 11 corridor should be articulated through this dynamic region. The West Valley, though ambitious, remains the home of some of Arizona's most precious natural resources; that must be respected.

Important Note on Modes and Engineering Feasibility

The Interstate 11 corridor is a project with a very long implementation horizon as it may not be fully realized for fifty or more years. For this reason, it is essential that certain constraints have less of an impact on the selection of appropriate modes and features of the corridor since it is impossible to determine whether adequate solutions will be developed by the time the corridor is fully utilized. Improvements in materials and changes in engineering approaches may resolve some of the challenges that may limit the successful integration of certain modes in various areas. For example, it may seem unfeasible to have electrical transmission parallel to the highway through areas where the road curves as the current design and cost considerations would declare it impractical. In fifty years, however, materials and design of this infrastructure could change significantly, thereby alleviating this concern entirely. Similarly, heavy rail was not considered practical along US-93 due to the slopes of the roadway but in the future, these concerns may be resolved. Engineering constraints need to be allocated to the roadway segments through the engineering process, not the high level planning. The Sonoran Institute advises that if a segment is adequate to accommodate the mode, enable it for planning purposes and allow future work to determine its feasibility at the appropriate time.

Segment 46—Pat Tillman-Mike O'Callaghan Memorial Bridge to Kingman

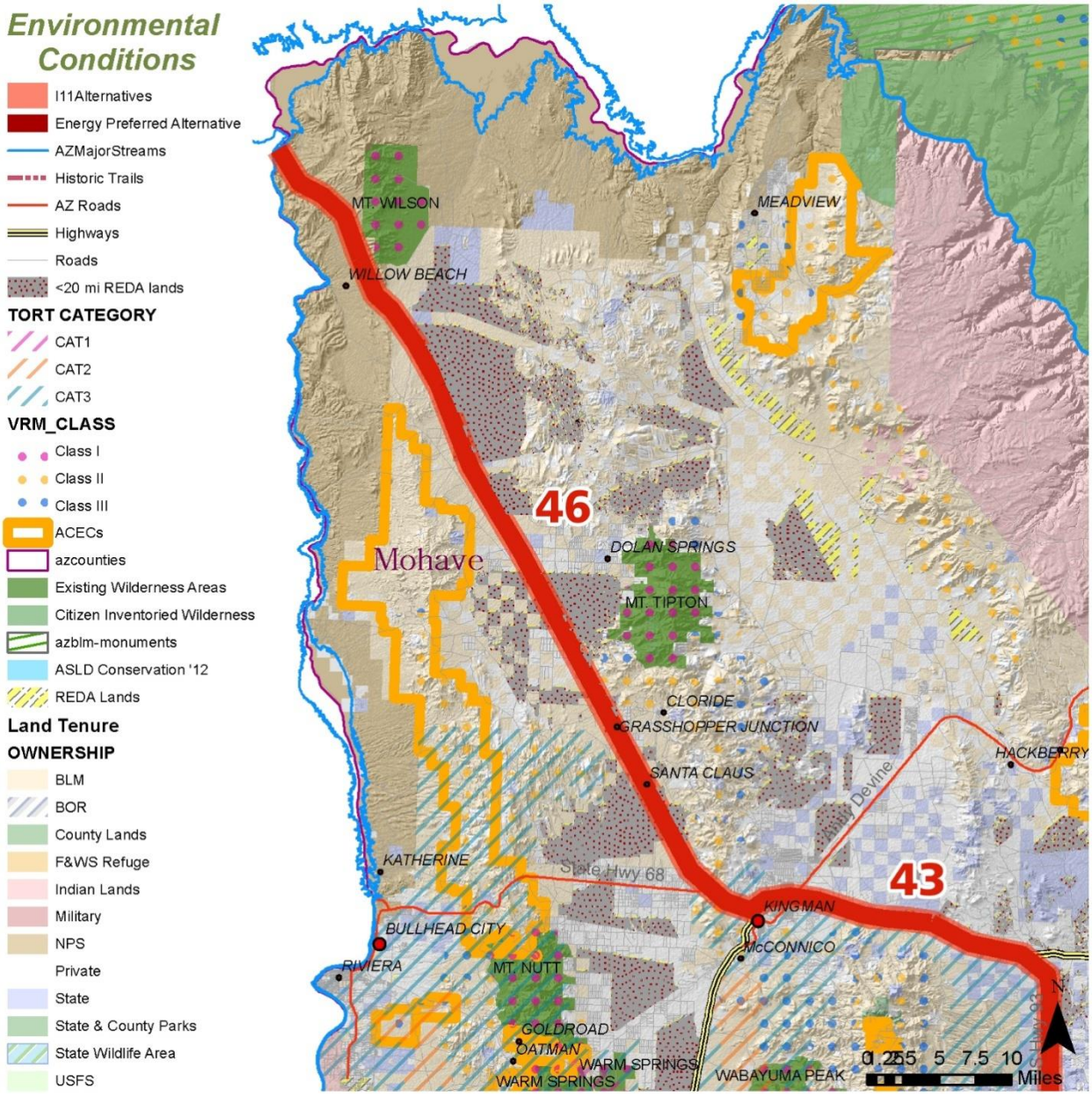

Figure 3: Segment 46 traverses the Lake Mead National Recreation Area and some impressive stretches of Mohave Desert. It also is adjacent to some valuable REDA lands and a proposed massive wind energy facility.

Segment 46
Opportunities
Provides an important connection to Nevada across the recently constructed Pat Tillman-Mike O'Callaghan Memorial Bridge.
Utilizes a corridor that has already been outfitted with wildlife crossing infrastructure over the roadway to minimize additional habitat fragmentation.
Is adjacent to significant REDA-quality lands that can benefit from an energy transmission corridor that can help move the energy to populous demand centers like Las Vegas, Phoenix, and California.
Much of the land is owned by the Bureau of Land Management

Challenges
The Lake Mead NRA has interest in protecting their view corridors which increases the complexity of aligning electrical transmission within the I-11.
Views from the Mt. Tipton and Mt. Wilson wilderness areas should a consideration as the roadway is designed.
Additional wildlife crossings may be necessary from the mountainous region east of the corridor to the Lake Mead NRA.
The interchange from I-11 to I-40 should be carefully designed to respect the community of Kingman and the recreation and natural resources in the mountains west of the city.
Stakeholders
Mohave Wind Energy: Has a large wind farm approved south of Lake Mead NRA and north of the proposed I-11
City of Kingman: Residents and town leaders should be engaged to help identify important design and alignment considerations.
Mohave County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Centennial West transmission line: Planned to cross northern Arizona from northeast New Mexico to California.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Wilderness Coalition: Has particular interest in Wilderness areas and should be consulted on visual resource impacts of the roadway with respect to Mt. Tipton and Mt. Wilson.
Arizona Game and Fish Department: Has data on wildlife movements that should be consulted to develop strategies to avoid and mitigate impacts.
Modal Considerations
Electrical transmission is challenging to articulate through this area though we feel it is important. The following comment was received from Jim Charters, Chairman of the Southwest Area Transmission Sub-Regional Planning Group (SWAT) with respect to transmission lines crossing the Colorado River. The full text of his comments will be included in the appendix to this report: *"The crossing of the Colorado River at Hoover is not trivial. Only one line crosses at this time, upstream. When the lake is up (it does this occasionally) all boat traffic must be restricted due to arc hazard. When the bridge was being designed Western considered additional crossings. There was a significant resistance to crossing in the recreation area downstream and very little space for crossing upstream because of the lake. Crossing the Colorado River south of the Recreation area and into the El Dorado Valley from the south via Searchlight was a logical path for the lines, if not for the highway."* Considering this comment, it may be worthwhile to study various crossing opportunities for the electrical transmission line separate from the Pat Tillman-Mike O'Callaghan Bridge.
Rail: It seems logical to locate rail freight and/or transit along the US-93 from Las Vegas to further enhance both tourism and freight connectivity. There are no known reasons why this segment is incompatible with rail development and operation though engineering constraints may be a factor.
Highway: The presence of the existing infrastructure along this corridor along with the limited environmental impacts known to be present seems to indicate that the highway portion of the I-11 is appropriately sited along the US-93 through this area.

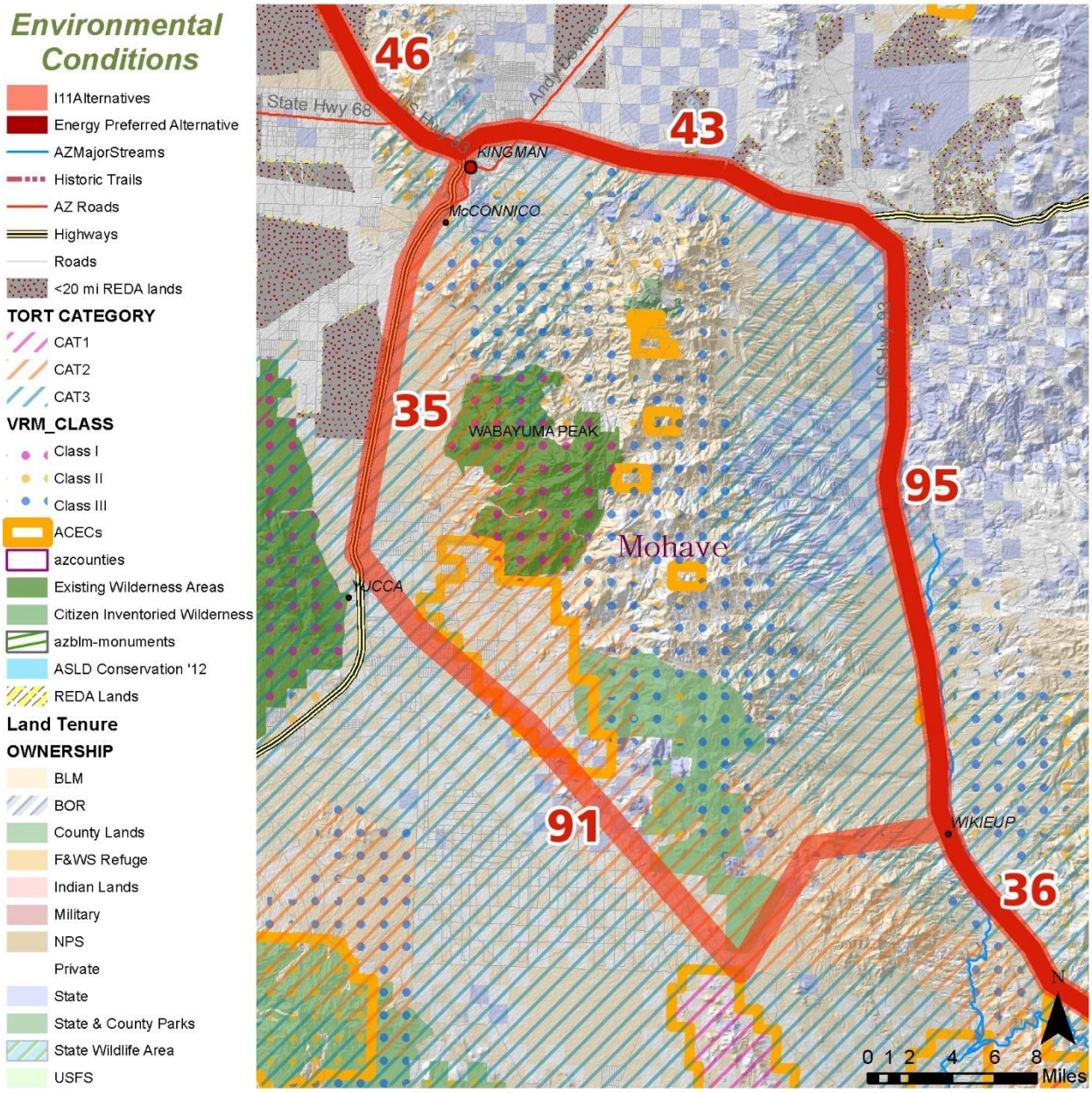

Figure 4: Segments 43, 95, 91, and 35 surround the Wabayuma Peak Wilderness area and a large number of other valuable environmental resources.

Segment 43—I-40 from Kingman East to US-93

Segment 43
Opportunities
Uses an existing highway corridor thereby reducing the impacts of creating a new segment.
Has a nearby railroad that could be used and/or upgraded for the multimodal aspect of the corridor.
Can utilize existing freeway interchange designs at each I-40—US-93 junction.
Provides economic development opportunity for the City of Kingman on private and state lands east of the developed area.
Has limited impact with Sonoran desert tortoise habitat though category 3 lands exist to the south.
Challenges
Private and state lands will need to be acquired which may present challenges to public opinion and concerns from impacted landowners.

Views from the Wabayuma Peak Wilderness area should a consideration as the roadway is designed.
The corridor may need wildlife infrastructure to respect historical migration patterns.
Stakeholders
Mohave Wind Energy: Has a large wind farm approved south of Lake Mead NRA and north of the proposed I-11
City of Kingman: Residents and town leaders should be engaged to help identify important design and alignment considerations.
Mohave County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Centennial West transmission line: Planned to cross northern Arizona from northeast New Mexico to California.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Wilderness Coalition: Has particular interest in Wilderness areas and should be consulted on visual resource impacts of the roadway with respect to Wabayuma Peak Wilderness area.
Arizona Game and Fish Department: Has data on wildlife movements that should be consulted to develop strategies to avoid and mitigate impacts.
A number of private developers have projects along this roadway that should be consulted to determine areas of collaboration and/or conflict.
The Hualapai Tribe has been engaged in projects in this area to protect their cultural resources. They should be consulted.
Modal Considerations
With the existing presence of rail, transmission, and a highway along this corridor it seems to reasonably accommodate all the considered modes within this smart corridor. Limited impacts to important wildlife and ecological resources are expected at this time.

Segment 35—I-40 from Kingman South to Approximately Yucca

Segment 35
Opportunities
Uses an existing highway corridor thereby reducing the impacts of creating a new segment.
Has a nearby railroad that could be used and/or upgraded for the multimodal aspect of the corridor.
Can utilize existing freeway interchange designs at the US-93 junction.
Provides economic development opportunity for the City of Kingman on private and state lands south of the developed area.
Has limited impact with Sonoran desert tortoise habitat though category 3 lands exist to the south.
REDA lands exist to the west of the corridor.
Provides access to developable private and state lands to the east.
Much of this corridor is under federal ownership, reducing the impact on private land owners.
Challenges
Private and state lands will need to be acquired which may present challenges to public opinion and concerns from impacted landowners.
Views from the Wabayuma Peak Wilderness area should a consideration as the roadway is designed.
The corridor may need wildlife infrastructure to respect historical migration patterns.
This segment can only connect to US-93 through an additional east/west roadway that currently does not exist. Segment 91, discussed in more detail below, has significant impacts on environmental resources.
Stakeholders
Lake Mead NRA: Needs to be consulted about how electrical transmission could be articulated through their lands toward Nevada.
City of Kingman: Residents and town leaders should be engaged to help identify important design and alignment considerations.
Mohave County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Community of Yucca should engaged in a discussion about the opportunities and challenges that the corridor would bring to them.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.

Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Wilderness Coalition: Has particular interest in Wilderness areas and should be consulted on visual resource impacts of the roadway with respect to Wabayuma Peak Wilderness area.
Arizona Game and Fish Department: Has data on wildlife movements that should be consulted to develop strategies to avoid and mitigate impacts.
A number of private developers have projects along this roadway that should be consulted to determine areas of collaboration and/or conflict.
Modal Considerations
The presence of rail and highway infrastructure are nice, though they remain difficult to connect with the Phoenix area. Based on comments cited with Segment 46, this corridor segment could be used to get electrical transmission to the Searchlight area to cross Lake Mead NRA.

Segment 91—US-93 to I-40 around Chicken Springs Rd

Segment 91
Opportunities
Provides access to developable private and state lands near Golden Valley.
Challenges
This segment impacts or is directly adjacent to a number of critical environmental resources including: Sonoran desert tortoise Categories 1, 2 and 3 lands, two ACECs, Citizen Inventoried Wilderness, and BLM Visual Resource Management Zone 2 and 3.
The roadway if built along the terrain and slopes going up and over the Hualapai Mountains will cause significant environmental degradation.
Private lands will need to be acquired for this roadway to be built in this location.
Stakeholders
Mohave County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Community of Wikieup: Needs to be involved to help articulate the corridor around their community.
Community of Yucca should engaged in a discussion about the opportunities and challenges that the corridor would bring to them.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
US Fish and Wildlife Service: Should be engaged in discussions around impacts to Sonoran desert tortoise habitat.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Wilderness Coalition: Has particular interest in Wilderness areas and should be consulted on visual resource impacts of the roadway with respect to Wabayuma Peak Wilderness area.
Arizona Game and Fish Department: Has data on wildlife movements that should be consulted to develop strategies to avoid and mitigate impacts.
A number of private developers have projects along this roadway that should be consulted to determine areas of collaboration and/or conflict.
Modal Considerations
This segment is not a good candidate for any of the modes, especially rail and highway due to environmental constraints and slopes.

Segment 95—US-93 from I-40 south to Wikieup

Segment 95
Opportunities
Uses an existing highway corridor thereby reducing the impacts of creating a new segment.
Has existing electrical transmission infrastructure nearby.
Can utilize existing freeway interchange designs at the I-40—US-93 junction.
Provides opportunity for the small community of Wikieup
Has limited impact with Sonoran desert tortoise habitat though category 3 lands exist to the west.
Provides opportunity to some private and state lands on the northern section of the corridor.

Some of the impacted lands are under BLM ownership which may be easier and/or less expensive to acquire.
Some REDA lands exist on the northern extent of the segment.
Challenges
Private and state lands will need to be acquired which may present challenges to public opinion and concerns from impacted landowners.
Sonoran desert tortoise habitat will be impacted.
Wildlife corridors are impacted throughout this segment.
This segment runs parallel to the Big Sandy River which is an important riparian area.
Stakeholders
Community of Wikieup: The US-93 currently runs through this small town. Future designs should take into account the interests of the community.
Arizona Wilderness Coalition: Has worked throughout the state on river preservation and should be engaged in how the proposal may impact the Big Sandy.
Mohave County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Audubon Society: Has interest in river preservation and should be engaged with how the corridor is designed with respect to riparian areas.
Modal Considerations
This segment may be appropriate for highway and utility infrastructure including electrical transmission.
Rail does not currently exist nearby but could, depending on the complexity of engineering the track and how much additional impacts are created around sensitive areas like the Big Sandy river.

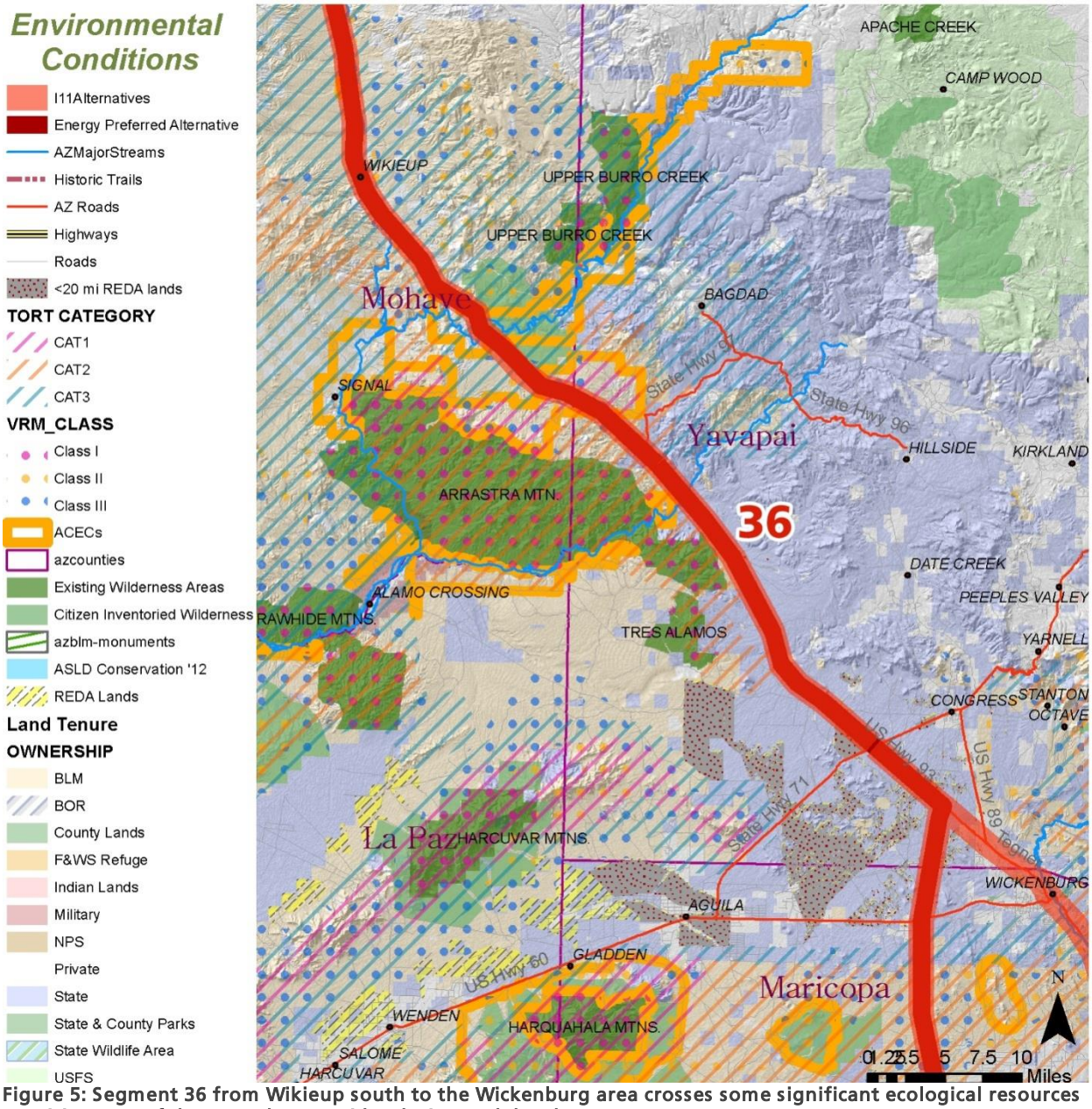

Figure 5: Segment 36 from Wikieup south to the Wickenburg area crosses some significant ecological resources requiring a careful approach to corridor design and development.

Segment 36—US-93 Wikieup South to the Wickenburg Area

Segment 36
Opportunities
Uses an existing highway corridor thereby reducing the impacts of creating a new segment.
Has existing electrical transmission infrastructure nearby.
Some of the impacted lands are under BLM ownership which may be easier and/or less expensive to acquire.
Can use existing upgraded bridge infrastructure over the Burro Creek and Santa Maria Rivers.
Some REDA lands exist on the southern extent of the segment near Wickenburg.
Challenges
Significant amounts of state lands will need to be acquired through much of this segment.
Sonoran desert tortoise habitat of Categories 1, 2, and 3 will be impacted by this corridor segment.
Wildlife corridors are impacted throughout this segment.

The Big Sandy River, Burro Creek, and the Santa Maria River are all crossed by this segment requiring significant care and disturbance avoidance.
Three different ACECs are impacted by this corridor.
A Citizen Inventoried Wilderness unit is directly adjacent to this segment along the east side of the corridor.
The Arrastra Mountain and Tres Alamos Wilderness areas are within view of this segment requiring care to avoid impacts to the solitude and visual values of these resources.
In a few areas, Visual Resource Management zones 1, 2, and 3 are near the corridor requiring care with how the facility is designed.
Stakeholders
Community of Wikieup: The US-93 currently runs through this small town. Future designs should take into account the interests of the community.
Arizona Wilderness Coalition: Has inventoried a proposed wilderness unit near Burro Creek on the east side of the corridor. Additionally, it is interested in the health and protection of the Santa Maria and Big Sandy rivers as well as Burro Creek. The Arrastra Mountain and Tres Alamos wilderness units are under their stewardship as well and may be impacted by views from this corridor.
Yavapai County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
American Rivers: May be interested in how the corridor can be articulated around these three challenging river crossings.
Town of Wickenburg: As the corridor gets closer to this community and enters their planning area, it will be important that they be engaged so they can plan the land uses and transportation elements around it.
Arizona State Land Department: A significant amount of ASLD lands are around the corridor around Wickenburg. They should be engaged to determine appropriate alignments to respect the value of lands for the Trust.
Audubon Society: Has interest in river preservation and should be engaged with how the corridor is designed with respect to riparian areas.
Modal Considerations
This segment requires significant design considerations to both integrate all modes and respect sensitive ecological features that are present throughout the corridor.
Electrical transmission is located near the corridor and could, with appropriate design considerations, be integrated into the highway design.
Rail does not currently exist nearby but could, depending on the complexity of engineering the track and how much additional impacts are created around sensitive areas like the Big Sandy, Santa Maria, and Burro Creek riparian areas.

Segments in Western Maricopa County

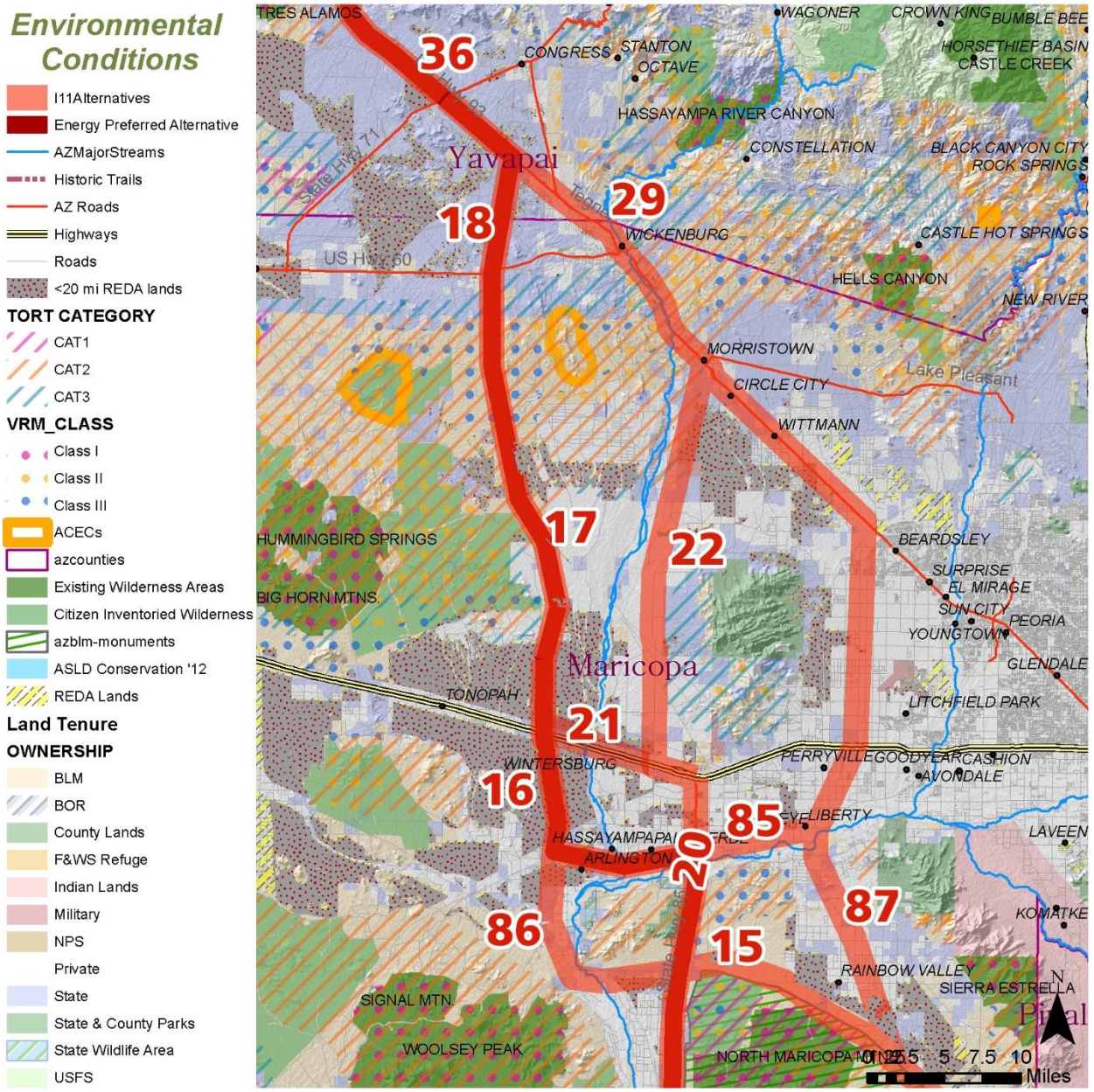

Figure 6: The corridor as it extends into Maricopa County becomes much more urban, going through areas that have been planned for development for many years. Notable areas of concern exist, however, including lands around Wickenburg and the Gila River.

Segment 18—Hassayampa Freeway Extended from US-60 to US-93
Opportunities
Bypasses the heart of Wickenburg allowing the community to expand into nearby state land parcels.
Has existing electrical transmission infrastructure nearby.
The development of this western highway connection will allow traffic to more easily bypass the Phoenix region and will provide access to US-93 from I-10 that is currently inadequate.
Some REDA lands exist west of the corridor on primarily state lands.
Challenges
Significant amounts of state lands will need to be acquired through much of this segment.

The community of Wickenburg could be adversely impacted if the corridor does not adequately respect their needs for access and tourism. Recent transportation efforts the community have resulted in negative views around infrastructure planning and development that need to be respected.
This segment relies on the development of the planned Hassayampa Freeway corridor through lands in segment 17 that are of high ecological value.
Stakeholders
Yavapai and Maricopa Counties: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Town of Wickenburg: As the corridor gets closer to this community and enters their planning area, it will be important that they be engaged so they can plan the land uses and transportation elements around it.
Arizona State Land Department: A significant amount of ASLD lands are around the corridor around Wickenburg. They should be engaged to determine appropriate alignments to respect the value of lands for the Trust.
Arizona Game and Fish Department (AZGFD): Has interest in preserving wildlife corridors in northern Maricopa County.
Modal Considerations
This segment could feasibly accommodate all modes.
Electrical transmission is located near the corridor and could, with appropriate design considerations, be integrated into the highway design.
Rail does not currently exist nearby but could, depending on the complexity of engineering the track. Currently rail takes another route through Wickenburg and north to Prescott.

Segment 17—Hassayampa Freeway from I-10 to US-60
Opportunities
Bypasses the heart of Wickenburg allowing the community to expand into nearby state land parcels.
Has existing electrical transmission infrastructure nearby.
Some REDA lands exist around the corridor on primarily state lands.
Utilizes land set aside by private developers for the corridor which will reduce the cost of property acquisition.
Provides access to growing segments of the City of Buckeye and surrounding Maricopa County.
The development of this western highway connection will allow traffic to more easily bypass the Phoenix region and will provide access to US-93 from I-10 that is currently inadequate.
Challenges
Significant amounts of state lands will need to be acquired through much of this segment.
The community of Wickenburg could be adversely impacted if the corridor does not adequately respect their needs for access and tourism. Recent transportation efforts the community have resulted in negative views around infrastructure planning and development that need to be respected.
This segment goes through some lands with high ecological value near the Vulture Mountain ACEC.
Impacts a large swath of Sonoran desert tortoise habitat Categories 2 and 3.
The corridor would disturb lands in visual resource management category 3.
The corridor could negatively impact ongoing efforts to develop the Vulture Mountain Cooperative Recreation Management Area (CRMA).
Lands west of segment 17 are included in legislation (HR 1799) to permanently designate a National Conservation Area and new wilderness units. The roadway needs to be located outside of this area.
Important wildlife corridors exist between the Belmont Mountains and the Hassayampa River. They will be interrupted by this corridor.
Equestrian access is an important feature of the Wickenburg culture and should be considered with corridor location and design.

Stakeholders
Wickenburg Conservation Foundation: A small group of individuals who are interested in protecting Wickenburg's unique sense of place and equestrian recreation opportunities. They are concerned about the development of a highway that may impact the Vulture Peak ACEC and the planned Vulture Mountain Cooperative Recreation Management Area (CRMA).
Maricopa County Parks: Leading the process to plan and implement the Vulture Mountain CRMA.
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations including a major project in the southern portion of this segment.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Game and Fish Department (AZGFD): Has interest in preserving wildlife corridors in northern Maricopa County.
Sonoran Desert Heritage Coalition: A collection groups and individuals who are advocating for the protection of about 1 million acres west of Phoenix and near this highway segment.
Town of Wickenburg: As the corridor gets closer to this community and enters their planning area, it will be important that they be engaged so they can plan the land uses and transportation elements around it.
Arizona State Land Department: A significant amount of ASLD lands are around the corridor around Wickenburg. They should be engaged to determine appropriate alignments to respect the value of lands for the Trust.
Town of Buckeye: Has lands and major developments near and adjacent to the roadway.
Modal Considerations
This segment could feasibly accommodate all modes.
Electrical transmission is located near the corridor and could, with appropriate design considerations, be integrated into the highway design.
Rail could be integrated into a corridor at this location which would also remove the need for goods and passengers to go through the heart of Phoenix to get to Wickenburg and points north.
The corridor may need to be wider than current development plans allow through the Douglas Ranch and Belmont communities. Design of the corridor should be coordinated with the community plans to ensure that there is adequate space for all modes.

Segment 29—US-60 from Sun Valley Parkway Extended to US-93
Opportunities
May be designed to integrate with the Town of Wickenburg to allow increased tourism and traffic for the community.
Uses an existing highway corridor allowing for reduced impacts of construction.
REDA lands exist adjacent to the corridor.
Has existing rail infrastructure in the corridor.
Challenges
Topography and natural resource constraints may restrict the full development of the corridor.
The community of Wickenburg could be adversely impacted as the corridor is large and may be difficult to navigate through the Town while preserving its unique identity and character.
This segment goes through some lands with high ecological value around the Hassayampa River Preserve.
Impacts a large swath of Sonoran desert tortoise habitat Categories 2 and 3.
The corridor may disturb lands in visual resource management categories 2 and 3.
Electrical transmission may be difficult to navigate through this segment due to ecological and environmental constraints.
Important wildlife corridors exist between the Hieroglyphic Mountains on the north and the Hassayampa River. These would need to be addressed.
Equestrian access is an important feature of the Wickenburg culture and should be considered with corridor location and design.
The Hassayampa River is an important feature to the ecology of this region. Impacts could be devastating to wildlife and the broader environment.

Stakeholders
Wickenburg Conservation Foundation: A small group of individuals who are interested in protecting Wickenburg's unique sense of place and equestrian recreation opportunities.
City of Surprise: A good portion of this segment goes through their planning area.
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Game and Fish Department (AZGFD): Has interest in preserving wildlife corridors in northern Maricopa County.
The Nature Conservancy: Has acquired land and manages the Hassayampa River Preserve. They should be consulted on the impacts of this corridor on their interests.
Town of Wickenburg: As the corridor gets closer to this community and enters their planning area, it will be important that they be engaged so they can plan the land uses and transportation elements around it.
BNSF Railroad: Should be integrated into the development and integration of the rail component of this segment.
Communities of Morristown, Whitman, and Circle City lay along the route and should be integrated into the design and routing discussions.
Modal Considerations
This segment could feasibly accommodate rail and highway as they already exist in this area.
Electrical transmission may be difficult to articulate through sensitive lands along the Hassayampa River through areas under VRM 2 classification.

Segment 22—Sun Valley Parkway Extended from I-10 to US-60
Opportunities
Provides a missing link between I-10 and US-60 west of the White Tank Mountains.
REDA lands exist adjacent to the corridor.
Existing electrical transmission and a natural gas pipeline are nearby this segment.
Challenges
Planned communities along the route could be significantly impacted by this corridor as it will be much larger than the existing infrastructure that has already been accommodated.
Important wildlife corridors exist between the White Tank Mountains and the Hassayampa River that will need to be addressed.
Stakeholders
City of Surprise: Some of this segment goes through their planning area.
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Wildlife Federation: A conservation group that is interested in protecting wildlife resources and finding win-win solutions for habitat protection and appropriate recreation.
Defenders of Wildlife: Should be engaged to evaluate and seek solutions for habitat loss and connectivity issues.
Arizona Game and Fish Department (AZGFD): Has interest in preserving wildlife corridors in northern Maricopa County. A significant linkage west of the White Tank Mountains is of high priority to them.
Town of Buckeye: Has significant interest in this corridor as it traverses a major growth area.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
Modal Considerations
This segment could feasibly accommodate all modes though the corridor width required may not be feasible considering long-standing development entitlements that exist along the segment.

Segment 21—Interstate 10 from SR-85 to Hassayampa Freeway
Opportunities
Uses an existing corridor.
Challenges
This segment of I-10 will be over capacity in the coming years, requiring significant upgrades to keep a marginal level of service.
Using this segment passes up the opportunity to develop additional east-west highway connections that are desperately needed.
This area may not be suitable for additional utility construction as much of the corridor is constrained by existing development plans.
Stakeholders
Maricopa County Flood Control: Has flood structures on the north side of the I-10 and should be involved in the discussion about the future of this corridor.
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Town of Buckeye: Has significant interest in this corridor as it traverses a major growth area.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
Modal Considerations
This segment may not be a good candidate to serve rail and utility modes, though both are present nearby.

Segment 16—Hassayampa Freeway from SR 801 (SR-30) to I-10
Opportunities
Serves a growth area in unincorporated Maricopa County.
REDA lands exist along this segment.
Relieves traffic off of I-10 through Buckeye.
Existing electrical transmission is in this area along with the Palo Verde Nuclear Generating Station.
Challenges
Wildcat development nearby may pose challenges to locating the corridor.
Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Arizona Game and Fish Department (AZGFD): Has interest in preserving wildlife corridors in western Maricopa County.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
Modal Considerations
This segment could feasibly accommodate all modes.

Segment 20—SR-85 from Hassayampa Freeway to I-10
Opportunities
Uses an existing highway corridor thereby reducing impacts.
Provides an important connection for rail and utilities from Gila Bend and I-8 north.
Connects the renewable energy development occurring in Gila Bend to regional markets.
Integrates freight, employment, and industrial development plans in Buckeye into regional transportation planning.
Challenges
Will need to be designed to protect the ecological values of the Gila River which is undergoing restoration efforts by Maricopa County, Buckeye, Goodyear, and a number of other organizations.
Is adjacent to Sonoran desert tortoise habitat Category 2.
Crosses the Gila River.

Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
Audubon Society: Has interest in the Gila River corridor and should be involved in the planning and design of this segment.
Defenders of Wildlife: Should be engaged to discuss ways the corridor can avoid impacts on desert tortoise.
Arizona Game and Fish Department: Has interest in protecting the ecological values of the Gila River and related wildlife benefits.
Modal Considerations
This segment could feasibly accommodate all modes.

Segment 86—Hassayampa Freeway from SR-85 to SR-801 (SR-30)
Opportunities
Provides connectivity to the community of Arlington.
Challenges
Crosses the Gila River in an ecologically sensitive area around the Arlington State Wildlife Area, the historic Old US-80 bridge and the Gillespie Dam.
Fragments critical wildlife connectivity from the Gila Bend Mountains to the Gila River and Buckeye Hills.
Adjacent to Sonoran desert tortoise habitat Category 2.
Within the viewshed of Woolsey Peak Wilderness and Signal Mountain Wilderness which are VRM 1 areas.
Located adjacent to lands in the Sonoran Desert Heritage conservation proposal (HR1799) and should be articulated to remove conflict with these protection areas.
Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
Audubon Society: Has interest in the Gila River corridor and should be involved in the planning and design of this segment.
Arizona Game and Fish Department: Has interest in protecting the ecological values of the Gila River and related wildlife benefits.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Great Bend of the Gila National Monument Coalition: Should be engaged to determine how this segment would conflict with this effort at a National Monument including lands in and around the Gila River.
Modal Considerations
All modes seem ill suited within this segment due to the cultural resources, historic heritage, and natural constraints.

Segment 87—SR-303 from SR-801 (SR-30) to Hassayampa Freeway
Opportunities
Serves a growth area through Buckeye and unincorporated Maricopa County.
REDA lands exist along this segment.
Provides a new connection from Mobile, SR-238 and I-8. Which also will serve the Cities of Goodyear and Avondale and their southernmost growth areas.
Existing electrical transmission is in this area.

Challenges
Will need to be designed to protect the ecological values of the Gila River which is undergoing restoration efforts by Maricopa County, Buckeye, Goodyear, and a number of other organizations.
May be challenged to go through the Rainbow Valley community which has scattered development.
Crosses the Gila River.
Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
City of Goodyear: The eastern edge of this corridor extends into Goodyear.
Audubon Society: Has interest in the Gila River corridor and should be involved in the planning and design of this segment.
Arizona Game and Fish Department: Has interest in protecting the ecological values of the Gila River and related wildlife benefits.
Community of Rainbow Valley: This unincorporated area of Maricopa County has a rural identity that should be considered in the planning process.
Modal Considerations
This segment could feasibly accommodate all modes.

Segments in Southern Maricopa County/Western Pinal County

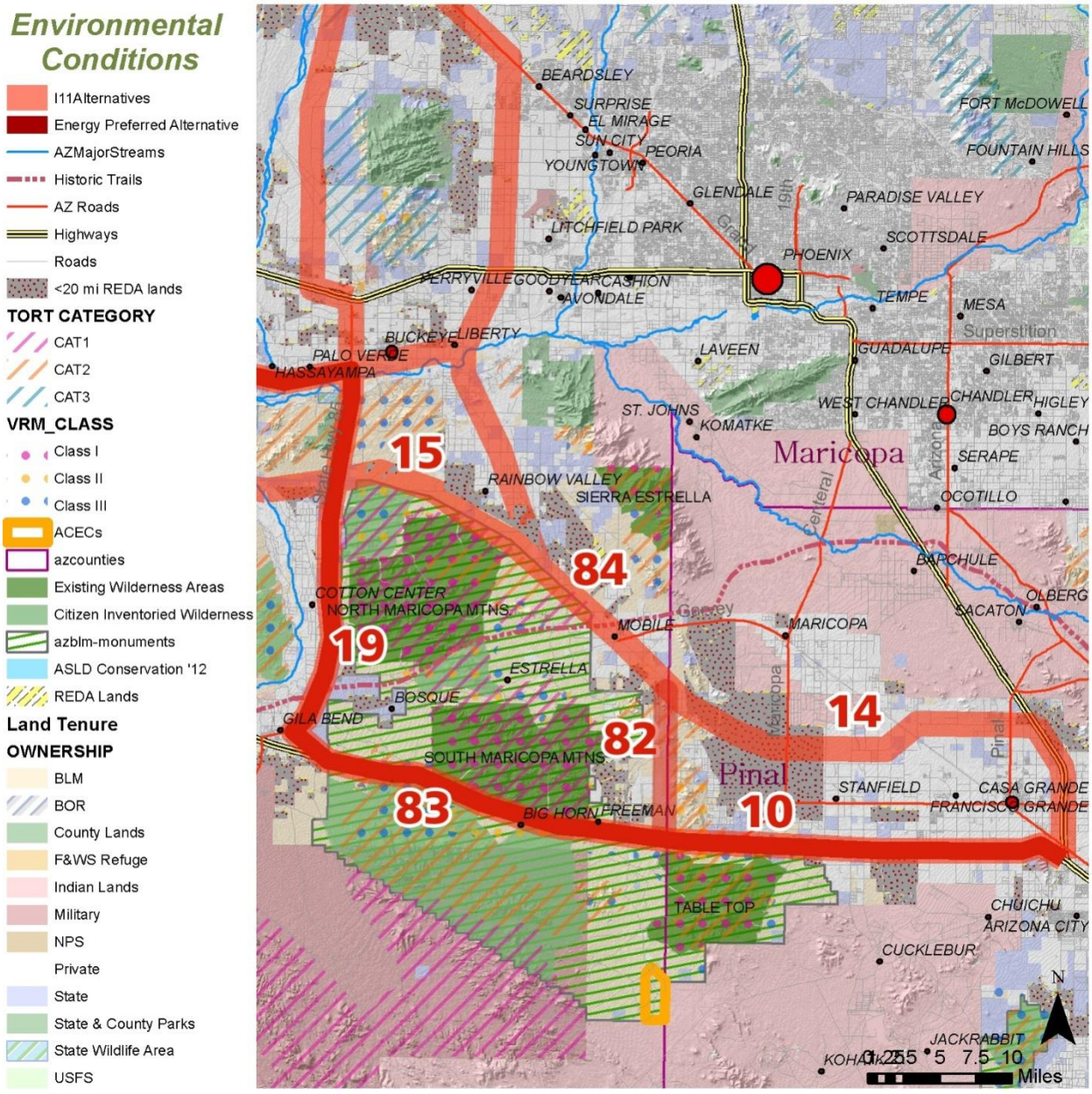

Figure 7: This portion of the corridor study centers around connecting Pinal and Maricopa Counties while avoiding impacts to the Sonoran Desert National Monument.

Segment 15—Hassayampa Freeway from SR-85 to SR-303
Opportunities
Has electrical transmission and natural gas infrastructure near the corridor.
REDA lands and the approved Sonoran Solar project exist adjacent to this segment.
Connects Rainbow Valley and surrounding areas to the regional transportation network.
Does not cross the Gila River which reduces impacts and cost.
Much of the land is under BLM ownership thereby reducing the costs of acquisition.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Interrupts wildlife connectivity from the SDNM north to the Gila River.
Adjacent to Sonoran desert tortoise habitat Category 1 and 2.

Within the viewshed of the North Maricopa Mountains and the Sierra Estrella Wilderness areas.
Adjacent to lands that are VRM zones 1, 2 and 3 which could impact the experience of users of the land.
Some of the lands are under private and state ownership which may increase the cost of development.
Citizen Inventoried Wilderness areas are near this proposal.
Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Maricopa County.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Arizona Wilderness Coalition: Has interest in protecting the quality of Arizona's wilderness areas including those near this segment.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Segment 19—SR-85 from the Hassayampa Freeway to Interstate 8
Opportunities
Uses an existing transportation corridor thereby reducing impacts and costs.
Has electrical transmission infrastructure near the corridor.
Connects Gila Bend to the regional transportation network and provides new economic opportunities to the community.
Provides an additional corridor to transmit renewable energy from Gila Bend: the leader in solar energy development.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Interrupts wildlife connectivity from the SDNM west to the Gila River and Gila Bend Mountains.
Adjacent to Sonoran desert tortoise habitat Category 1.
Within the viewshed of the North Maricopa Mountains Wilderness area.
Adjacent to lands that are VRM zones 1, 2 and 3 which could impact the experience of users of the land.
Much of these lands are under private and state ownership which may increase the cost of development.
Citizen Inventoried Wilderness areas are near this proposal.
Stakeholders
Maricopa County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
Town of Gila Bend: Should be engaged to coordinate the corridor with city planning efforts and policies.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Maricopa County.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Arizona Wilderness Coalition: Has interest in protecting the quality of Arizona's wilderness areas including those near this segment.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Segment 83—I-8 from SR-85 to Hassayampa Freeway/Vekol Freeway
Opportunities
Has rail infrastructure near the corridor.
REDA lands exist adjacent to this segment.
Uses an existing transportation corridor, thereby reducing costs and impacts.
Much of the land is under BLM ownership thereby reducing the costs of acquisition.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Interrupts wildlife connectivity across the SDNM.
Adjacent to Sonoran desert tortoise habitat Category 1 and 2.
Within the viewshed of the South Maricopa Mountains Wilderness area.
Adjacent to lands that are VRM zones 1, 2 and 3 which could impact the experience of users of the land.
Citizen Inventoried Wilderness areas are near this proposal.
Stakeholders
Maricopa and Pinal Counties: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Town of Gila Bend: Should be engaged to coordinate the corridor with city planning efforts and policies.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
City of Maricopa: Their planning area extends to the east side of the SDNM. They should be engaged to discover how the corridor would impact them.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Maricopa County.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Arizona Wilderness Coalition: Has interest in protecting the quality of Arizona's wilderness areas including those near this segment.
Modal Considerations
Highway and Rail modes seem to be feasibly developed in this segment with appropriate design and mitigation considerations.
Electrical transmission may prove challenging due to the high amount of visual sensitivity in wilderness nearby and to protect the character of the SDNM.

Segment 84—Hassayampa/Vekol Freeway from SR-303 to Segment 82
Opportunities
Has electrical transmission and natural gas infrastructure near the corridor.
REDA lands exist adjacent to this segment.
Connects Rainbow Valley and Mobile to the regional transportation network.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Interrupts wildlife connectivity across the Rainbow Valley linkage which is a high priority wildlife corridor.
Adjacent to Sonoran desert tortoise habitat Category 1 and 2.
Within the viewshed of the Sierra Estrella Wilderness area.
Much of the lands are under private and state ownership which may increase the cost of development.
Stakeholders
Maricopa and Pinal Counties: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
Developers and Landowners: Have existing entitlements on land near this corridor that would be significantly impacted by its development.
City of Buckeye: Roadway should integrate with city planning efforts and policies.
City of Maricopa: Roadway should integrate with city planning efforts and policies.

Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Maricopa County and has special interest in the Rainbow Valley linkage.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Arizona Wilderness Coalition: Has interest in protecting the quality of Arizona's wilderness areas including those near this segment.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Segment 82—From Hassayampa/Vekol Fwy to I-8
Opportunities
REDA lands exist adjacent to this segment.
Connects two major transportation corridors.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Conflicts with Sonoran desert tortoise habitat Category 2.
Stakeholders
Maricopa and Pinal Counties: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
City of Maricopa: Roadway should integrate with city planning efforts and policies.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Maricopa and Pinal Counties.
Sonoran Desert Heritage Coalition: Should be engaged to determine areas of conflict and/or concern.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Segment 10—I-8 from Segment 82 to I-10
Opportunities
Has rail infrastructure near the corridor.
REDA lands exist adjacent to this segment.
Uses an existing transportation corridor.
Challenges
Runs parallel to the Sonoran Desert National Monument (SDNM).
Conflicts with Sonoran desert tortoise habitat Category 2.
Within the viewshed of the Table Top Wilderness area.
Within or adjacent to VRM zones 1, 2 and 3 in the SDNM.
Much of the lands are under private and state ownership which may increase the cost of development.
Stakeholders
Pinal County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
City of Maricopa: Roadway should integrate with city planning efforts and policies.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Pinal County.

Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Arizona Wilderness Coalition: Has interest in protecting the quality of Arizona's wilderness areas including those near this segment.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Segment 14—Vekol/Hidden Valley Fwy from Segment 82 to I-10
Opportunities
Urban corridor with few environmental conflicts.
REDA lands exist adjacent to this segment.
Challenges
Adjacent to Sonoran desert tortoise habitat Category 2.
Much of the lands are under private and state ownership which may increase the cost of development.
Stakeholders
Pinal County: Should be engaged to allow the I-11 to respond to regional plans and considerations.
Sierra Club: Has shared specific concerns about the highway corridor and should be engaged to discover how the design and location can be better implemented to respect environmental issues.
City of Maricopa: Roadway should integrate with city planning efforts and policies.
Friends of Sonoran Desert National Monument: Are stewards of the monument and should be engaged with any proposal that would impact it.
Arizona Game and Fish Department: Has interest in protecting wildlife corridors in this area of Pinal County.
Gila River and Tohono O'odham Indian Communities: Some portions of this area have significant Native American ruins and heritage sites.
Modal Considerations
All modes can be feasibly accommodated in this segment.

Summary

Qualitative Segment Analysis Results

Though this analysis is purely qualitative, it is necessary to develop an approach to allow each segment to be compared with another. Some have greater impacts on private lands and development plans while others interrupt wildlife migration patterns. Indeed, all of the conflicts are important to be considered though the importance of each will vary depending on an individual's values. The following considerations should be noted while reviewing the results:

1. As this is a qualitative analysis the scores are given as a "gut instinct" result and are not intended to be a definitive judgment.
2. In most cases the scores are comparisons with other alternatives with similar impacts. For example, a segment that gets a very poor rating of 9 for riparian impacts simply means it is the worst among similarly situated alternatives. A 1 would indicate it is the best or among the best.
3. In many cases not enough information is available to judge an alternative, especially around complex and unknown development plans and cultural resources. In these cases a 0 was awarded.
4. As with any high level planning exercise, the true impacts will be determined based upon site-specific solutions to these conflicts. Appropriate wildlife crossing infrastructure, for example, could mitigate and reduce a poor score for wildlife corridor impacts.
5. The priority is to avoid impacts; mitigating only as a last resort.

	I-11 Corridor Segment											
Category	**46**	**43**	**35**	**91**	**95**	**36**	**29**	**18**	**17**	**22**	**21**	**16**
Private Property/Development Planning Alignment	1	3	2	1	1	1	8	1	1	9	1	3
Desert Tortoise Habitat	1	3	6	8	3	8	5	1	6	1	1	1
Citizen Inventoried Wilderness	1	1	1	5	1	5	1	1	3	1	1	1
Wilderness Areas	1	1	2	2	1	3	1	1	1	1	1	1
Wildlife Corridors	2	1	4	9	3	5	7	2	6	3	1	1
Riparian Areas	1	1	1	1	3	5	8	1	1	1	1	1
Use of Existing Corridor	1	1	1	9	1	1	1	5	5	7	5	5
Enhances Transportation Connectivity	1	1	1	1	1	1	5	1	1	8	9	2
Enhances Renewable Energy Development	1	2	5	1	1	1	4	1	1	7	6	1
Historic/ Cultural Resources	1	1	1	0	0	0	3	0	2	1	1	0
Visual Resources	3	1	4	8	2	6	5	2	4	1	1	1
Enhancing State Land Value	0	2	1	1	2	1	4	1	1	1	1	1
Appropriate Modes (Rail:R, Highway: H, Utilities: U)	UHR	UHR	UHR		UH	UH	UHR	UHR	UHR	H	UHR	UHR
Total: Higher value denotes higher conflict/harm	**14**	**18**	**29**	**46**	**19**	**37**	**52**	**17**	**32**	**41**	**29**	**18**

	I-11 Corridor Segment										
Category	**86**	**85**	**20**	**15**	**87**	**84**	**14**	**10**	**82**	**83**	**19**
Private Property/Development Planning Alignment	1	1	1	1	3	2	0	1	0	1	1
Desert Tortoise Habitat	2	1	3	2	1	3	1	2	4	5	1
Citizen Inventoried Wilderness	1	1	1	3	1	1	1	1	1	3	2
Wilderness Areas	1	1	1	3	1	1	1	2	1	3	2
Wildlife Corridors	9	1	3	3	1	9	1	3	2	5	1
Riparian Areas	9	3	4	1	3	1	1	1	1	1	1
Use of Existing Corridor	9	1	1	5	5	5	5	1	5	1	1
Enhances Transportation Connectivity	1	1	1	2	1	1	1	1	2	3	1
Enhances Renewable Energy Development	5	5	1	1	1	1	4	1	1	3	1
Historic/ Cultural Resources	9	4	3	3	1	4	0	0	0	0	1
Visual Resources	5	3	2	5	1	4	1	3	3	4	3
Enhancing State Land Value	1	1	1	1	1	1	1	1	1	1	1
Appropriate Modes (Rail:R, Highway: H, Utilities: U)		UHR	UHR	UHR	UHR	UHR	UHR	UHR	UHR	HR	UHR
Total: Higher value denotes higher conflict/harm	**53**	**23**	**22**	**30**	**20**	**33**	**17**	**17**	**21**	**30**	**16**

Key:	
Beneficial/Low Conflict	1-3
Moderate Conflict	4-6
Harmful/High Conflict	7-9
Unknown/Mixed Bag	0
N/A	

Figure 8: This chart summarizes in a numeric way the qualitative analysis that was performed on the alternative segments. Low numbers indicate lower conflict or higher benefit.

Conclusion

In conclusion, it appears that the I-11 corridor could serve a valuable purpose to communities all throughout Arizona. Clearly, if economic projections are realized resulting from enhanced international trade, more serviceable regional transportation, and renewable energy development, the region could benefit greatly. These benefits however, should not be viewed separate from the potential impacts on Arizona's wildlife, culture, and heritage. Some corridor segments appear to pose significant risks to irreplaceable treasures like wildlife, scenic areas, and riparian zones. Significant impacts to these resources would result in a loss of identity, opportunity, and economic value. Priority should be placed on protecting our resources and values before looking to enhance and capitalize on new opportunities.

The Interstate 11, in its broadest sense: with the successful integration of multiple modes including utilities, rail, and highway infrastructure, presents an incredible opening not only to capture new economic opportunities but also to define a new approach to infrastructure development that searches for win-win answers, seeks to provide transparent choices, and avoids impacts while mitigating the unpreventable. Through our research and analysis it appears that the I-11, though impactful in many instances, provides opportunity and could be articulated in ways that would allow such conflicts to be appropriately resolved.

The Sun Corridor and Interstate 11

The Sonoran Institute retains a pragmatic yet powerful vision of the future of the Sun Corridor which includes promoting a vibrant and diverse economy while enabling an environmentally-conscious, sustainable, and resilient community. The I-11 in its multi-modal sense fits within this vision if it meets the following conditions:

1. It is planned and implemented with a transparent public process that respects all people and communities;
2. It avoids impacts with natural and cultural resources to the extent practicable;
3. It mitigates harms that occur to natural and cultural resources;
4. It contributes to enhanced renewable energy development and utilization;
5. It enables choice in transportation options by establishing a framework for multiple modes to utilize the corridor;
6. It is malleable to a range of possible though uncertain future outcomes; and
7. It connects underserved and underrepresented people and communities to new opportunities and transportation options.

This region of western Arizona has experienced decades of explosive growth resulting in profound associated cumulative environmental impacts. The addition of a new interstate, if not prudently planned for, could further contribute to the degradation of the fragile Sonoran Desert landscape and ecosystem. Planning for I-11 provides an opportunity to effectively promote numerous economic development objectives in a collaborative, integrated, and environmentally sound fashion. By working together, Arizonans can leverage this important opportunity to bring a more sustainable future AND a more vibrant and resilient economy—a future we can all agree upon.

Brian Dalke, CEcD
City Manager

February 27, 2014

Mr. Scott Omer, P.E., Assistant Director
Arizona Department of Transportation
Multi-Modal Planning Division
206 South 17th Avenue, MD 310B
Phoenix, AZ 85007

RE: Interstate 11 & Intermountain West Corridor Study

Dear Mr. Omer:

The purpose of this letter is to provide the Arizona Department of Transportation (ADOT), and its Core Agency Partners on the Interstate 11 & Intermountain West Corridor Study, with comments regarding the Draft Level 2 Preliminary Evaluation Results Summary, dated January 2014, that has been prepared for this study.

The City of Goodyear appreciates the efforts of ADOT, jointly with the Nevada Department of Transportation (NDOT), the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), Maricopa Association of Governments (MAG) and the Regional Transportation Commission (RTC) of Southern Nevada, in undertaking this study that could lead to the development of a high capacity transportation link connecting Phoenix and Las Vegas and identification of a future corridor north from Las Vegas to Canada and south from Phoenix to Mexico. The City of Goodyear supports the goals of this project and would like to share with you information regarding our own transportation planning efforts and how they could be integrated into this study.

Over the years, the City of Goodyear, its residents and major landowners have gone to considerable effort to identify a preferred alignment for the Loop 303 Freeway and Hassayampa Freeway through our community.

In July 2003 the City of Goodyear adopted the Goodyear General Plan for 2003-2013 which included a Roadway Functional Classification Plan as part of the Circulation Element that identified a preferred alignment for the Loop 303 extension south of the future SR30 and the Gila River to the Patterson Road alignment. After taking considerable testimony from the public reviewing the alternatives identified and recommendations made in the "Corridor Improvement Study – SR303L Between Riggs Road and MC85" prepared by the Parsons Corporation for Maricopa County Department of Transportation, the Goodyear City Council approved the General Plan with the inclusion of an alignment similar to the northern portion of the black dashed line shown on the overall mapping for the study. The Goodyear General Plan was overwhelming approved by Goodyear voters in November 2003.

City Manager's Office
190 N. Litchfield Rd., Goodyear, AZ 85338
623-932-3910 Fax 623-882-7077 1-800-872-1749 TDD 623-932-6500 www.goodyearaz.gov

In February 2007, the City Council approved an Major Amendment to the General Plan to realign and continue the Loop 303 extension southward from the intersection of Rainbow Valley Road and the Pecos Road alignment in a southeasterly direction until it intersects with the future Hassayampa Freeway alignment roughly at Reems Road (the City's projected alignment was slightly farther east between Bullard Avenue and Litchfield Road). Likewise, this realignment generally corresponds to the black dashed line shown on the overall mapping for the study. This Major Amendment to the General Plan was sponsored by a major landowner in this area and was supported by virtually all of the landowners along the alignment.

In December 2009, the Goodyear City Council approved a Major General Plan Amendment for a comprehensive revision to the Roadway Functional Classification Plan within the Circulation Element of the General Plan so that it would conform to the previously approved alignments for the Loop 303 extension south and the roadway alignments contained within the regional transportation framework studies completed by the Maricopa Association of Governments. The Interstate 10/Hassayampa Valley Roadway Framework Study and the Interstates 8 and 10/Hidden Valley Roadway Framework Study provided the regional context for development of the future transportation system for the region and the City of Goodyear. The City participated in these regional transportation framework studies and supported the roadway alignments contained within them. The preferred general alignment for the Loop 303 extension is shown on the City's Roadway Functional Classification Plan in the General Plan, a copy of which is enclosed with this letter.

In short, the City of Goodyear supports a preferred alignment for the Loop 303 extension and the Hassayampa Freeway that conforms to the alignments shown in the Interstate 10/Hassayampa Valley Roadway Framework Study and the Interstates 8 and 10/Hidden Valley Roadway Framework Study prepared by MAG. The City has no objections to the Phoenix Metropolitan Area: Alternative 1 (North) or Phoenix Metropolitan Area: Alternative 2 (South), since the city is not impacted by any of the roadway alignments shown in those alternatives. However, the City would like to express its concerns regarding the alignments shown in Phoenix Metropolitan Area: Alternative 3 (South).

Alternative 3 (South) provides a variety of sub-alternatives, most of which generally conform to the alignments identified in MAG's framework studies and the City's adopted Circulation Plan for the Hassayampa Freeway and the Loop 303 South Spur to I-8. However, Alternative 3 (South) appears to introduce a new sub-alternative which is a hybrid of roadway Segments 85 and 87 shown on Alternative LL-South in the Level 2 analysis that runs in a southeasterly direction from SR85 in Buckeye to Loop 303 South in Goodyear. Even prior to introduction of this new sub-alternative, the location of Segments 85 and 87 shown on Alternative LL-South did not follow the projected alignments for the future SR30 and 303 Loop South shown on the City's adopted Circulation Plan or the MAG framework studies. Segment 87 appears to reflect an alignment that runs due south from Cotton Lane and the future SR30 which is an alignment not preferred by the City. If Segment 87 was intended to represent the extension of Arizona State Route 303 Loop (SR-303L) south of SR30 that is part of the MAG Regional Transportation Plan, it should follow the projected alignments recognized by the City or the MAG framework studies. This hybrid sub-alternative is not preferred by the City and would introduce additional traffic into an area that is projected to be at capacity in the future due to the limited number of river

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crossings. If continued to be shown, this sub-alternative should at least be reflected in the approximate location identified in MAG's framework studies for the future SR30 and 303 Loop South.

Roadway Segment 84 generally conforms to the location of the Hassayampa Freeway shown on MAG's framework studies and the City's adopted Circulation Plan, but it is important to note that this alignment be identified as being about one-mile east of the boundary of the Sonoran Desert National Monument. The City of Goodyear has done extensive work within this area on an Environmental Impact Statement for the Sonoran Valley Parkway Project, its own roadway project, and consulted with the Bureau of Land Management, the Sonoran Institute, Arizona Game and Fish Department, ADOT, Maricopa County DOT, MAG and other agencies and affected parties. The City has respected the one-mile transportation corridor identified by the BLM in this area and it should be reflected in the current study.

Lastly, the alignment for Segment 82 shown from Segment 84 south to I-8 is in the approximate location of the Arizona State Route 303 Loop (SR-303L) south of the Hassayampa Freeway alignment that is also part of the MAG Regional Transportation Plan and should be reflected in the approximate location identified in MAG's framework study. This alignment was developed in the Interstates 8 and 10/Hidden Valley Roadway Framework Study prepared by MAG to avoid known environmental issues in the Vekol Valley area. The City would suggest that the alignment for this roadway segment be revised to reflect the illustrative corridor adopted by the MAG Regional Council.

In closing, the City of Goodyear respectfully requests that some of the alignments shown in Phoenix Metropolitan Area: Alternative 3 (South) be revised to conform to the alignments shown in the Interstate 10/Hassayampa Valley Roadway Framework Study and the Interstates 8 and 10/Hidden Valley Roadway Framework Study adopted by the Maricopa Association of Governments and supported by the City of Goodyear.

Of all of the alignment alternatives identified, the City would prefer a route that follows the Hassayampa Freeway alignment shown on the Interstate 10/Hassayampa Valley Roadway Framework Study and the Interstates 8 and 10/Hidden Valley Roadway Framework Study and which more specifically utilizes roadway Segments 14, 15, 82 and 84.

The City would appreciate your thoughtful consideration of our comments and support for the preferred alignment for the Loop 303 extension as identified in the City's General Plan and MAG's studies. Thank you for your cooperation and we look forward to working with ADOT in developing this project which is critical to the future development of the region.

Sincerely,

CITY OF GOODYEAR

Brian Dalke

Brian Dalke, CEcD
City Manager

City Manager's Office
190 N. Litchfield Rd., Goodyear, AZ 85338
623-932-3910 Fax 623-882-7077 1-800-872-1749 TDD 623-932-6500 www.goodyearaz.gov

Enclosure: Goodyear General Plan 2003-2013 - Roadway Functional Classification Plan
Interstate 10/Hassayampa Valley Roadway Framework Study Recommendation
Interstates 8 and 10/Hidden Valley Roadway Framework Study Recommendation
Phoenix Metropolitan Area Section – Alternative LL South

City Manager's Office
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623-932-3910 Fax 623-882-7077 1-800-872-1749 TDD 623-932-6500 www.goodyearaz.gov

Proud past, Vibrant future!

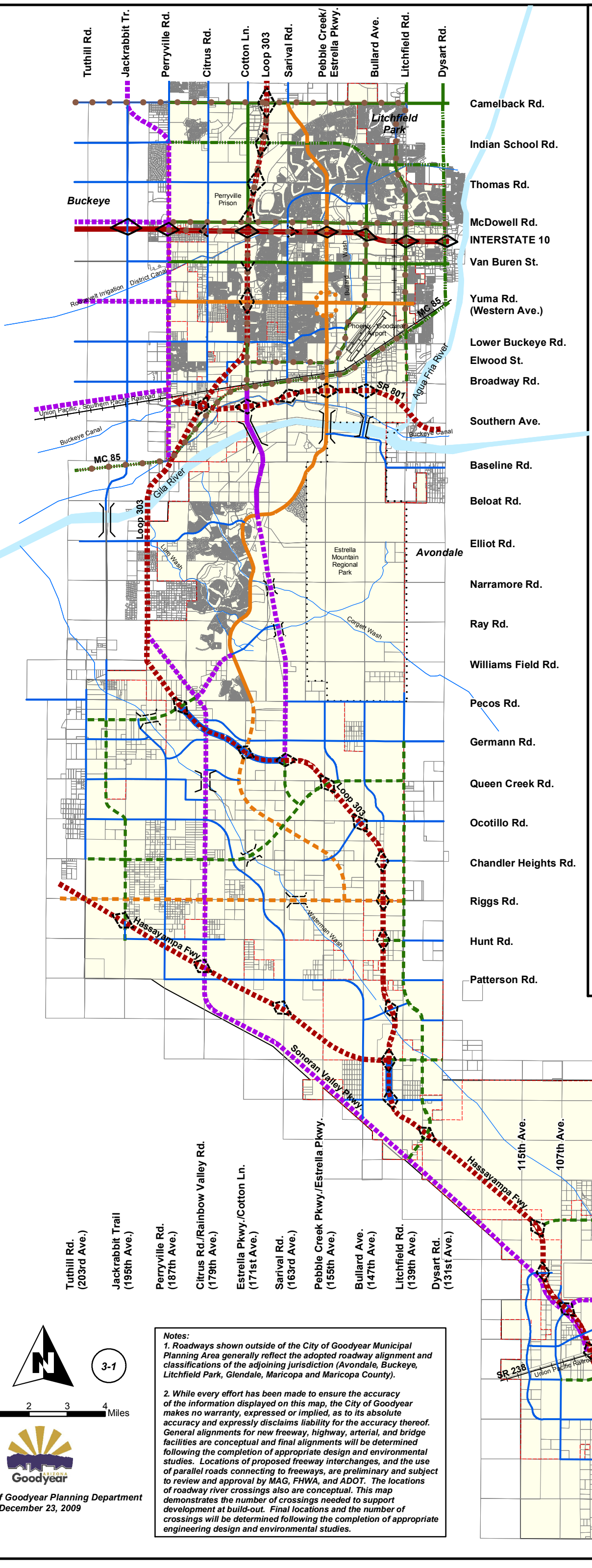
GOODYEAR

General Plan 2003 - 2013

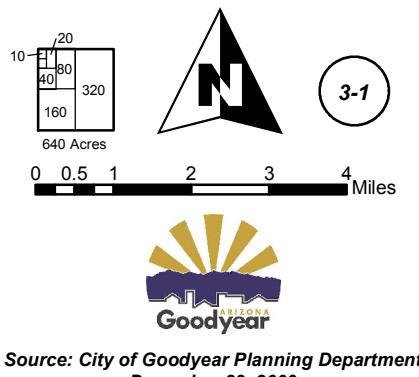
ROADWAY FUNCTIONAL CLASSIFICATION PLAN

2010 AMENDED PLAN

Adopted by City Council
Resolution No. 09-1345
December 7, 2009



- *Existing Freeway (300' ROW)*
- *Planned Freeway (300' ROW)*
- *Planned Freeway with Frontage Road*
- *Existing Parkway (200' ROW)*
- *Planned Parkway (200' ROW)*
- *Existing Scenic Arterial (150' ROW)*
- *Planned Scenic Arterial (150' ROW)*
- *City Center Arterial (150' ROW)*
- *Major Arterial/Road of Regional Significance (130' ROW)*
- *Existing Major Arterial (130' ROW)*
- *Planned Major Arterial (130' ROW)*
- *Existing or Planned Arterial (110' ROW)*
- *Truck Route*
- *Existing Bridge*
- *Proposed Bridge*
- *Existing Freeway Interchange*
- *Planned Freeway Interchange*
- *City Incorporated Area*
- *Municipal Planning Area*
- *Canals/Washes*
- *Estrella Mtn. Regional Park*
- *Parcels*

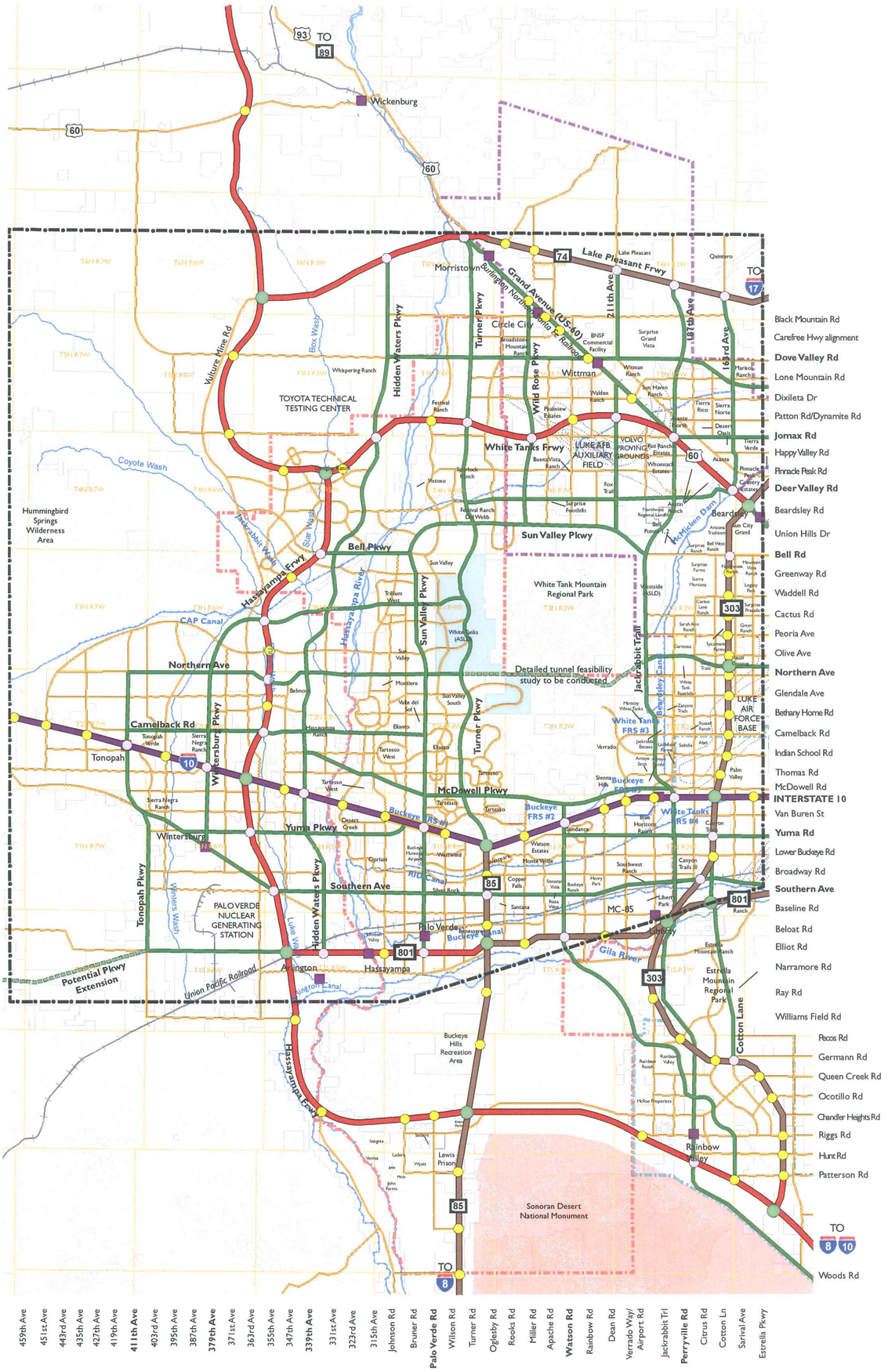


Source: City of Goodyear Planning Department
December 23, 2009

Notes:

1. Roadways shown outside of the City of Goodyear Municipal Planning Area generally reflect the adopted roadway alignment and classifications of the adjoining jurisdiction (Avondale, Buckeye, Litchfield Park, Glendale, Maricopa and Maricopa County).

2. While every effort has been made to ensure the accuracy of the information displayed on this map, the City of Goodyear makes no warranty, expressed or implied, as to its absolute accuracy and expressly disclaims liability for the accuracy thereof. General alignments for new freeway, highway, arterial, and bridge facilities are conceptual and final alignments will be determined following the completion of appropriate design and environmental studies. Locations of proposed freeway interchanges, and the use of parallel roads connecting to freeways, are preliminary and subject to review and approval by MAG, FHWA, and ADOT. The locations of roadway river crossings also are conceptual. This map demonstrates the number of crossings needed to support development at build-out. Final locations and the number of crossings will be determined following the completion of appropriate engineering design and environmental studies.



TRANSPORTATION FRAMEWORK RECOMMENDATION

Legend

- Study Area Boundary
- Railroads
- Roads
- Rivers/Washes
- Canals
- Unincorporated Communities
- Township/Range
- Noise Contours
- Topography (100' contours)
- Proposed Service Traffic Interchanges
- Proposed Parkway Traffic Interchanges
- Proposed System Interchanges
- Planned Developments
- BLM Raptor Protection Zone
- State Land Development Master Plan
- National Monument
- Wilderness Area

Land Ownership
- BLM
- State Land
- Regional Parks
- Military
- Bureau of Reclamation

Planning Areas
- Buckeye
- Glendale
- Goodyear
- Surprise

Proposed Roadway Network
- Improvements to Existing Freeways
- Future Regional Transportation Plan (RTP) Freeways (Prop 400)
- New Freeway Proposals
- New Parkway Proposals
- New Parkway Alternatives
- Future Major Arterial Network

Notes

General alignments for new freeway, highway, arterial, and bridge facilities will be determined following the completion of appropriate design and environmental studies. All projects are illustrative and unfunded.

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Locations of proposed freeway interchanges and the use of parallel roads connecting to freeways are preliminary and subject to review and approval of the FHWA and ADOT.

Arterial river crossings are conceptual to demonstrate the number of crossing needed to support development. Final locations and number will be determined in engineering and water resource studies.

Locations of proposed roadway facilities south of the study area are subject to refinement in the I-8 and I-10/Hidden Valley Roadway Framework Study to be completed in 2008, and roadways north to be planned in the New River Roadway Framework Study, schedule to be determined.

Olive Avenue traffic interchange on SR-303L to be a half-diamond.

0 5 Miles

7-1

Interstate 10/Hassayampa Valley Transportation Framework Study

MARICOPA ASSOCIATION of GOVERNMENTS

February 22, 2008

I-8/I-10 Hidden Valley Transportation Framework Study

MARICOPA ASSOCIATION of GOVERNMENTS

I-10/Hassayampa Valley Transportation Framework Study accepted by the MAG Regional Council on February 27, 2008

MAG Commuter Rail Study Phase II underway (estimated completion 2009)

ADOT Central Arizona Framework Study underway

Tolleson
Avondale
Goodyear
Buckeye
Phoenix
Tempe
Mesa
Guadalupe
Gilbert
Chandler
St. Johns
Queen Creek
Gila River Indian Community
Bapchule
Maricopa
Sacaton
Casa Grande
Stanfield
Mobile
Gila Bend
Eloy
Tohono O'odham Indian Community
Ak-Chin Indian Community

Hassayampa Frwy
Sonoran Valley Pkwy
Loop 303 Extension
Cotton Ln
Warren Rd
Ralston Rd
John Wayne Pkwy
Anderson Rd
Loop 303 Spur
Trekell Rd
Hidden Waters Pkwy
Proposed de Anza Scenic Way
SR-85 Scenic Way
Paloma Rd
Watermelon Rd
Union Pacific Railroad
Former Tucson Cornelia & Gila Bend Railroad; Out of Service
Potential freight rail extension to new or improved Mexican freight container ports.

GILA BEND MOUNTAINS
MARICOPA MOUNTAINS
SAND TANK MOUNTAINS
SIERRA ESTRELLAS
MARICOPA COUNTY
PINAL COUNTY

Buckeye Municipal Airport
Phoenix-Goodyear Airport
Phoenix-Sky Harbor International Airport
Mesa Falcon Field
Memorial Airfield
Stellar Airpark
Chandler Municipal Airport
Williams Gateway Airport
Gila Bend Municipal Airport
Ak-Chin Community Airfield
Casa Grande Municipal Airport
Eloy Municipal Airport
Estrella Sailport
Lufthansa Airlines Training Facility
Volkswagen Proving Grounds
Nissan Proving Grounds
Future Volkswagen Proving Grounds

Buckeye Hills Recreation Area
Estrella Mountain Regional Park
Phoenix South Mountain Park
Sierra Estrella Wilderness Area
Hohokam Pima National Monument
Signal Mountain Wilderness Area
Woolsey Peak Wilderness Area
North Maricopa Mountains Wilderness Area
Sonoran Desert National Monument
South Maricopa Mountains Wilderness Area
Table Top Mountain Wilderness Area
Arizona State Prison Complex: Lewis
Barry M. Goldwater Air Force Range

Salt River
Gila River
Hassayampa River
Centennial Wash
Waterman Wash
Santa Cruz Wash
Vekol Wash
Gila Bend

McDowell Rd
Lower Buckeye Rd
Baseline Rd
Warner Rd
Pecos Rd
Ocotillo Rd
Hunt Rd
Casa Blanca Rd
Seed Farm Rd
Farrell Rd
Waverly Dr
McCartney Rd
Storey Rd
Selma Hwy
Arica Rd
Battaglia Rd
Phillips Rd
Harmon Rd
Ellis Rd

459th Ave
427th Ave
403rd Ave
379th Ave
355th Ave
331st Ave
Johnson Rd
Wilson Rd
Rooks Rd
Watson Rd
Airport Rd
Perryville Rd
Sarival Ave
Litchfield Rd
115th Ave
91st Ave
67th Ave
Hidden Valley Rd
Garnet Ave
John Wayne Pkwy
White and Parker
Murphy Rd
Indian Valley Rd
Bianco Rd
Burris Rd
Trekell Rd
Sunland Gin Rd
Toltec Hwy
Eleven Mile Corner Rd

NOTES:

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Alignments for new freeway, highway, parkway, arterial, high occupancy vehicle, bridge, transit, and rail facilities will be determined following the completion of appropriate corridor planning, design and environmental studies.

Locations of proposed freeway interchanges are preliminary and subject to review and approval of the FHWA and ADOT.

Recommended Framework

Legend

- Study Area Boundary
- County Boundary
- Existing Railroad

Proposed Hidden Valley Network

- Arterial
- Arizona Parkway
- Arizona Scenic Way
- Improved/Proposed Freeway
- Potential Freight Railroad
- Safety and Operational Improvements Corridor
- Existing Traffic Interchange
- Potential Traffic Interchange
- Funded System Interchange
- Potential System Interchange

Proposed Transit Network

- Freeway Transit Corridor
- Parkway Bus Transit Corridor
- Proposed Commuter Rail
- Enhanced Transit Corridor
- Local Transit Service Area (including service to support regional transit)
- Park-and-Ride
- High Occupancy Vehicle (HOV) Lane

Note:
This proposed network is for a buildout scenario.

0 8 Miles

Sources: MAG, ADOT, ALRIS, Maricopa County, Pinal County, City of Casa Grande, City of Goodyear, City of Maricopa, Town of Gila Bend; 2007

July 27, 2009

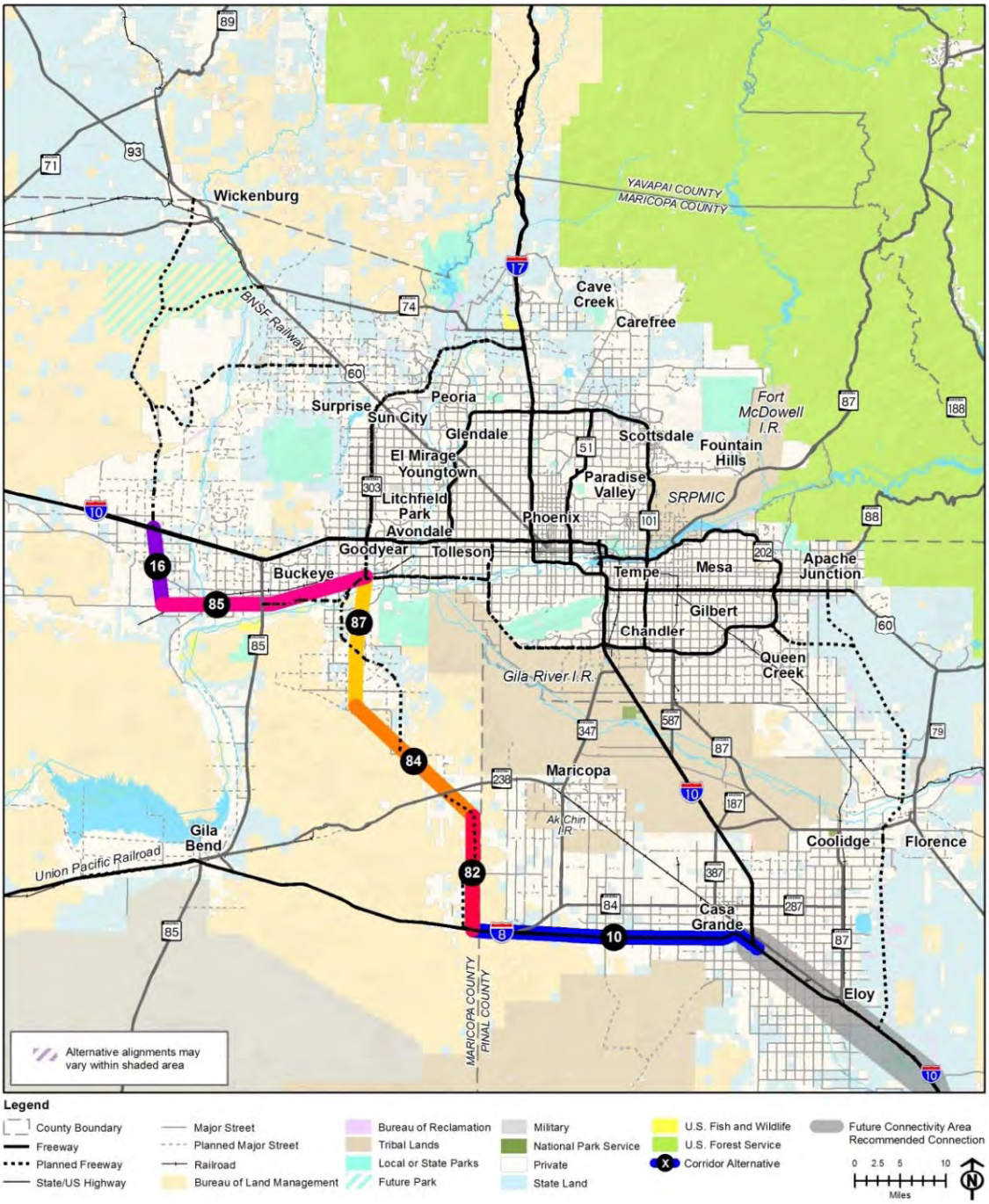
Alternative LL - South

Opportunities

- Entire corridor included as future freeways in the bqAZ Statewide Transportation Framework Study; reflected in consistent local transportation and land use plans
- Ability to accommodate multiple modes and uses through all of corridor

Constraints

- More circuitous route
- Targeted high impact environmental constraints, including habitat loss and degradation due to Segment 82 (Vekol Valley) and contributing to isolate habitat movement to/from the Sonoran Desert National Monument



ALL INFORMATION IS PRELIMINARY / SUBJECT TO REVISION

SURPRISE
ARIZONA

Community and Economic Development Department
16000 N. Civic Center Plaza
Surprise, AZ 85374
Ph 623-222-3154
Fax 623-222-3001
TTY: 623-222-1002

January 21, 2014

Michael Kies, PE
Arizona Department of Transportation
206 S. 17th Ave.,
Phoenix, AZ 85007

Subject: Level 2 Evaluation Results for: Phoenix Metropolitan Area Section

Dear Mr. Kies,

The City of Surprise has reviewed the Level 2 Preliminary Evaluation Results for Phoenix Metropolitan Area. Our review and comments are provided in coordination with the presentation at your stakeholder meeting and the supporting documentation that was provided. The City of Surprise submits the following comments for consideration based on the best interest of the Phoenix metropolitan area.

The City of Surprise supports ADOT's current proposal to include the Northern alignment east of the Hassayampa River in the final recommended alignments/zone. However, as the southern portion of the alignment has been depicted as the current Sun Valley Parkway, it has received a more stringent score than otherwise may have, during the review process. The proposed Turner Parkway would connect to I-10 at the junction of I-10 and SR-85, eliminating the need for I-11 traffic to travel along I-10. The City believes that the proposed Turner Parkway would be a more fitting alignment which is found within the ultimate shaded area and has been supported by MCDOT in prior meetings.

As the project represents a new interstate alignment within an urbanizing area, it is critical that Interstate 11 serve the Phoenix metropolitan area, by traveling along a route where the most significant growth is anticipated to occur, but that does not encourage skip development, or creates unnecessary out of the way travel. Alternative I would use a new north-south corridor originating near the junction of US-60 and SR-74 Highways, traveling south to I-10. The City of Surprise supports further examination of Alternative I in future NEPA evaluations.

The City of Surprise would also caution the use of an alternative that would encourage out of the way travel such as the Alternative Corridor Option of the northern alignment west of the Hassayampa River. The City supports the conservation of open space and the benefits that the Vulture Mountains recreation area would provide to the region. However, the additional miles added would need to be accounted for in the State Implementation Plan, and could create unanticipated consequences in regards to the Ozone 8-Hour - Non-attainment area. These costs should be evaluated against the more direct travel route of the alternatives that are available.

Thank you for the opportunity to comment on the Level 2 Preliminary Evaluation Results for the Phoenix Metropolitan Area. If you have any questions regarding these comments, please contact me at (623) 222-3141. The City of Surprise looks forward to being fully engaged as a stakeholder partner in the planning process for the I-11 & Intermountain West Corridor Study.

Sincerely,

Martin Lucero
Transportation Planning Manager

RESOLUTION NO. 14-02

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GILA BEND, MARICOPA COUNTY, ARIZONA, SUPPORTING SR85 AS THE PRIMARY ALIGNMENT FOR THE INTERSTATE 11 CORRIDOR, ALSO KNOWN AS "ALTERNATIVE H" IN THE LEVEL 1 EVALUATION RESULTS SUMMARY, DATED JANUARY 2014.

WHEREAS, Interstate 11 is a proposed Phoenix Bypass route connecting Las Vegas with Phoenix, while an exact alignment for I-11 is being determined through extensive future engineering and environmental studies; and

WHEREAS, work began in the summer of 2012 to examine a connection between Phoenix and Las Vegas, with the potential to extend north towards Canada and south to the Mexico border, creating a new corridor through the Intermountain West; and

WHEREAS, such a corridor would provide a new connection for communities, major trade hubs, existing and future domestic and international deep-water ports, as well as intersecting transcontinental roadways and railroad corridors; and

WHEREAS, The I-11 corridor could also be paired with rail and other infrastructure components, such as energy and telecommunications, to meet the region's needs; and

WHEREAS, in the Arizona Department of Transportation, the Nevada Department of Transportation, the Maricopa Association of Governments, the Regional Transportation Commission of Southern Nevada, Federal Highway Administration and Federal Railroad Administration are partners in this study; and

WHEREAS, the Town of Gila Bend's Pillars of Economic Development include the development of multimodal transportation, and Gila Bend is uniquely situated geographically, and possesses some key attributes that also make it ideal to develop multimodal transportation; and

WHEREAS, Gila Bend's multimodal resources include Interstate 8, State Route 85, State Route 238, the Union Pacific Railroad, the Gila Bend Municipal Airport, Rural Transit (Route 685) Utilities, and local transit.

WHEREAS, I-11 has been a cornerstone of the Governor's jobs and economic development agenda that examines current and future transportation and trade infrastructure needs to improve Arizona's competitiveness in a global marketplace; and

WHEREAS, Level 1 Evaluation Results Summary dated January 2014 ONLY recommends Alternative "H" as depicted in Exhibit A, attached hereto, and Alternative "I" as depicted in Exhibit B attached hereto, for Level 2 Analysis; and

NOW, THEREFORE, BE IT RESOLVED that the Gila Bend Town Council hereby strongly SUPPORTS Alternative H as the preferred corridor, specifically from I-10, connecting to I-8 solely by SR85; and

That the Gila Bend Town Council strongly OPPOSES Alternative I as the preferred corridor, specifically from I-10, partially traversing SR85, then creating a new west-east corridor, connecting to I-10; and

That the Gila Bend Town Council SUPPORTS Alternative I, ONLY as a parkway improvement, to be planned, funded, and constructed with monies and resources NOT associated with the I-11 corridor; and

That the Gila Bend Town Council strongly SUPPORTS the Alternative H corridor versus the Alternative I corridor as the Alternative H corridor, because:

(1) Alternative H an existing corridor with a full access management plan already in place,
(2) Alternative H is far less costly to acquire and construct,
(3) Alternative H serves an existing community that has experienced over $2 Billion in economic development since 2009,
(4) Alternative H does not incur new and highly significant environmental constraints and wildlife constraints south of I-10,
(5) Alternative H is far better suited for a by-pass route from an access management and efficiency standpoint,
(6) Alternative H does not bisect environmentally sensitive areas, requiring costly infrastructure elements to facilitate environmental remediation,
(7) Alternative H does not face strong opposition from stakeholder groups,
(8) Alternative I does not serve any multimodality, whereas Alternative H serves vehicular, rail, transit, utilities, and air,
(9) Alternative I does not serve any potential economic development locates, short term or long term,
(10) Alternative I does not support sustainable economic development but rather supports greater urban sprawl which is a model proven to be economically and environmentally unsustainable and as clearly experienced with the recent great recession, economically disastrous, and should not be repeated,
(11) Alternative H is the best and most efficient use of taxpayer money

PASSED AND ADOPTED by the Mayor and Council of the Town of Gila Bend, Arizona, this 28th day of January, 2014.

Steve Holt, Mayor

ATTEST:

Beverly Turner, MMC
Town Clerk

APPROVED AS TO FORM:

Steven W. McClure,
Town Attorney

EXHIBIT A
"Alternative H"

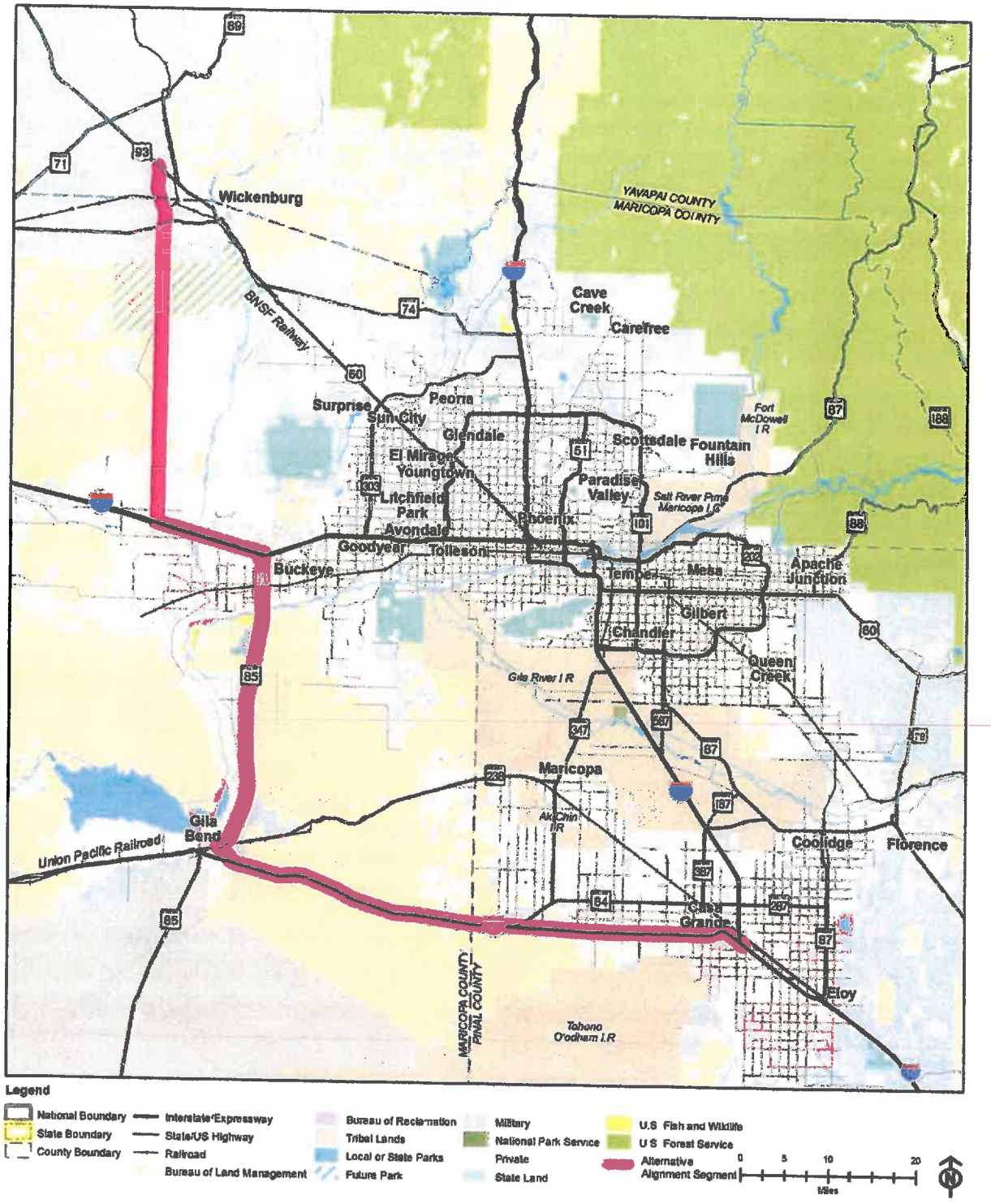
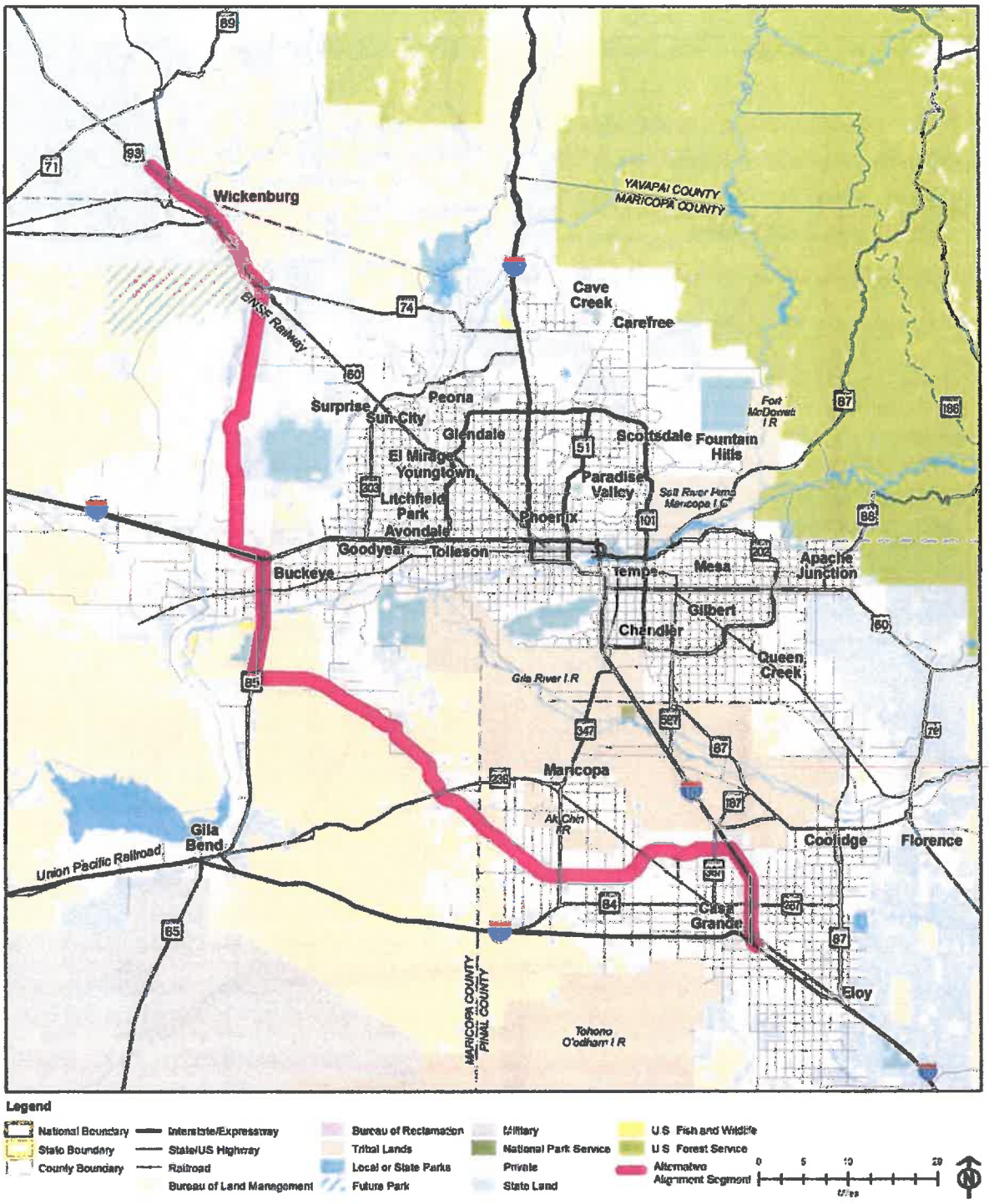


EXHIBIT B
"Alternative I"



February 5, 2014

Mr. Michael Kies, P.E.
Director of Planning and Programming
Arizona Department of Transportation
206 S. 17th Ave.
MD 310B
Phoenix, AZ 85007
MKies@azdot.gov

Dear Mr. Kies,

In your role as Project Manager for the Arizona Department of Transportation / Nevada Department of Transportation Interstate-11 and Intermountain West Corridor Study, I want to make you aware that on January 23, 2014, the Pima Association of Governments Regional Council approved a resolution related to this Study. For your records, I've attached the resolution. If you have any questions, please feel free to contact me at jliosatos@PAGregion.com or (520) 792-1093.

Respectfully,

John Liosatos
Transportation Planning Director

Enclosure

Cc: Mr. Farhad Moghimi, P.E., PAG Executive Director
Ms. Cherie Campbell, PAG Deputy Director

RESOLUTION NO. 2014-1

Resolution of the Pima Association of Governments supporting further study of the Southern Arizona Connectivity Segment's Alternative C through eastern Pima County as identified as part of the I-11 and Intermountain West Corridor Study

Recitals

Whereas:

A. Two interstate highways pass through Pima County – Interstate 19 (I-19) and Interstate 10 (I-10) – which connect communities within and outside of the region and the state of Arizona. Moreover, both of these facilities include segments of the CANAMEX Corridor, which is a federally designated high priority corridor of the National Highway System (P.L. 102-240 Section 1105, as amended), connecting Mexico, the United States, and Canada.

B. Current Arizona Department of Transportation (ADOT) plans for I-10 and I-19 in Pima County show the ultimate, future roadway configuration. While some segments have already been widened, ADOT may build out additional capacity on those roadways.

C. The most recently enacted federal surface transportation funding legislation, Moving Ahead for Progress in the 21st Century Act (MAP-21), amended the CANAMEX Corridor by adding the interstate I-11 (I-11) designation to U.S. Route 93 from the vicinity of Phoenix to Las Vegas.

D. ADOT and the Nevada Department of Transportation (NDOT) are jointly conducting a transportation planning study called the I-11 and Intermountain West Corridor Study (hereinafter "I-11 Study"), which was initiated in 2012 and is scheduled for completion in mid-2014.

E. According to the I-11 Study's "Corridor Vision Summary" from October 2012, "The Intermountain West is confronted with a rapidly growing population, expanding global trade, and aging transportation infrastructure that is reaching capacity." The document also states that, "If extended north of Las Vegas and south of Phoenix, this corridor has the potential to become a major multimodal north-south transcontinental corridor through the Intermountain West. The Corridor would connect major cities, existing and future trade hubs, existing and future domestic and international deep-water ports, intersecting Interstate highways, and railroads."

F. The current I-11 Study involves two levels of effort. Detailed alternatives analysis is being conducted for the segment between Phoenix and Las Vegas, while high level visioning is being conducted for the Southern Arizona Connectivity Segment from Phoenix to the Arizona/Mexico border.

G. For the universe of potential alternatives identified for the Southern Arizona Connectivity Segment of the I-11 Study, an October 2013 technical memorandum was developed, entitled "Draft Level 1 Evaluation Results Summary." This document recommends only one of the Southern Arizona Connectivity Segment alternatives for future analysis, which is Alternative C. This alternative travels through the Tucson region to connect to Mexico at Nogales. The opportunities for this alternative identified through this evaluation include connecting major freight and economic activity centers within Arizona and Mexico throughout the entire corridor. It also references the capacity of land ports of entry in Nogales to accommodate major passenger and freight traffic.

H. Federal guidance for MPO planning includes activities that increase the accessibility and mobility of people and freight. It also includes projects and strategies to "support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency" (23 USC 134(h)).

Resolution

Therefore, be it resolved that:

1. The PAG Regional Council understands that the I-11 and Intermountain West Corridor is an important surface transportation facility for trade, economic development, economic expansion, and mobility.

2. The PAG Regional Council supports the draft recommendation for the Southern Arizona Connectivity Segment calling for further study of Alternative C through eastern Pima County. Such further study should integrate efforts with those of the Phoenix to Las Vegas segment, resulting in a contiguous corridor from Arizona's southern border with Mexico to the state's northern border with Nevada. The comprehensive, statewide corridor plan could then be advanced as part of a federal funding request.

3. The PAG Regional Council understands that detailed analysis of the Southern Arizona Connectivity Segment's Alternative C must involve examining a range of feasible alternatives as required by the Federal Highway Administration's National Environmental Policy Act compliance regulations, guidelines, and policies.

4. The PAG Regional Council clarifies that this resolution only supports further study of Alternative C and, therefore, no support for any particular alignment is explicit or implied. Additionally, no regional transportation infrastructure project funding or programming priorities are implied based upon this resolution.

TOWN OF WICKENBURG
155 N. Tegner, Ste. A • Wickenburg, Arizona 85390 • (928) 684-5451
Phoenix Line (602) 506-1622 • FAX (602) 506-1580
Voice & TTY (928) 684-5411

May 27, 2014

Mr. Michael Kies, P.E.
Director of Planning & Programming
Arizona Department of Transportation
206 South 17th Avenue
Phoenix, Arizona 85007

RE: Town of Wickenburg Position Statement on Interstate 11 Alignments

Dear Mr. Kies:

Thank you for providing stakeholders the opportunity to comment on potential alignments during the final stages of the I-11 & Intermountain West Corridor Study. On May 19, the Wickenburg Town Council voted to formally endorse Alternative G/H/LL/MM and oppose Alternative I.

Alternative G/H/LL/MM provides Wickenburg with the most opportunities to enhance its economic base and maintain its unparalleled quality of life. Although the studies necessary to design the I-11 corridor have not yet been conducted, it is likely this alternative will also be the most sensible from technical and cost standpoints.

While we appreciate ADOT's consideration of Alternative I, it is not practical and would cause irreparable harm to Wickenburg's historic downtown. The amount of right-of-way necessary to implement Alternative I would require extensive condemnation of homes and businesses along US 60 and US 93, forever altering the landscape that has made Wickenburg a destination.

The Town's support of Alternative G/H/LL/MM hinges on several factors critical to Wickenburg's future:

- **Minimal Impact on Vulture Mountains Regional Park:** Outdoor recreation and preservation of the pristine desert environment are cornerstones of Wickenburg's economy and quality of life. In particular, ADOT should select an alignment that minimizes I-11's impact on the Vulture Mountains Regional Park and Recreation Area.

- **Continued Investment in US 60:** I-11's intersection with US 60 should be aligned as close as possible to Wickenburg's western boundary, facilitating future annexations and economic development. Further investment must also be made in US 60, including widening the highway from the future I-11 interchange to present-day Wickenburg and posting appropriate signage at both ends of the community. These improvements should emphasize I-11's role as a freight corridor while maintaining the US 60/US 93 "Interim Bypass" as the preferred route for leisure travelers and passenger vehicles.

- **Continued Investment in US 93:** ADOT should acknowledge that construction of I-11 is years away and continue to champion improvements to US 93 between Wickenburg and I-40. Investment in this corridor is critical for both safety and commerce; completion of a Design Concept Report (DCR) for the section known as "The Gap" remains among Wickenburg's highest priorities.

- **Elimination of SR 74 Extension:** The SR 74 connector between US 60 and I-11, as proposed in the Hassayampa Framework Study for the Wickenburg Area report, should not be considered. Its construction would have a negative impact on the Vulture Mountains Regional Park and Recreation Area and function as a true bypass of Wickenburg's existing business community.

Thank you again for the opportunity to participate in this important study. The Town looks forward to being included as a key partner as additional analyses occur and the corridor continues to take shape.

Please do not hesitate to contact me should you have questions at any time.

Sincerely,

John H. Cook

John H. Cook
Mayor

cc: Honorable Members of the Wickenburg Town Council
Mr. Joshua H. Wright, Town Manager, Town of Wickenburg
Ms. Julie Brooks, Executive Director, Wickenburg Chamber of Commerce
Mr. Dennis Smith, Executive Director, Maricopa Association of Governments
Mr. Rem Hawes, Hassayampa Field Manager, Bureau of Land Management
Mr. R.J. Cardin, Director, Maricopa County Parks & Recreation
Mr. Alan Abare, Chairman, Wickenburg Economic Development Partnership

Tucson Mountains
ASSOCIATION
SINCE 1934

June 22, 2014

To: Mr. Andersen

From: Bob Gilby, President, Tucson Mountains Association

Re: Proposed Southern Arizona Link of I-11

Tucson Mountains Association strongly opposes this current proposal.

- A new transportation corridor would lead to intensive residential and commercial development, further fragmenting habitat. The existing broad connections between the various Sky Islands along the proposed transportation corridor could not be mitigated by limited open space acquisition.
- The alignment through Avra Valley would harm Tucson Mountain Park, Saguaro National Park West, and Ironwood Hills National Monument.
- It would sever critical wildlife linkages including the Ironwood-Tortolita linkage zone, the Ironwood-Picacho wildlife linkage zone, and the Avra Valley linkage zone.
- Severed linkages will isolate wildlife populations, make it difficult for wildlife to move across the landscape to adapt to changing habitat due to climate change and make them more susceptible to extinction.
- It would harm lands in the county's Conservation Lands System which helps to protect the county's most biologically rich lands.
- This alignment would destroy and/or degrade important and increasingly rare riparian habitat, which protects against flooding, prevents erosion, protects water quality and groundwater recharge, and provides shelter, food and natural beauty.
- A new highway would divert cars and trucks away from existing businesses on or near the current Interstate 10.
- Finally, the construction of a new transportation corridor would have a huge carbon footprint, increase pollution, worsen the heat island effect, and cause local jurisdictions to incur large financial responsibilities for new infrastructure costs.

We would very much prefer an additional deck be constructed on the existing I-10 highway.

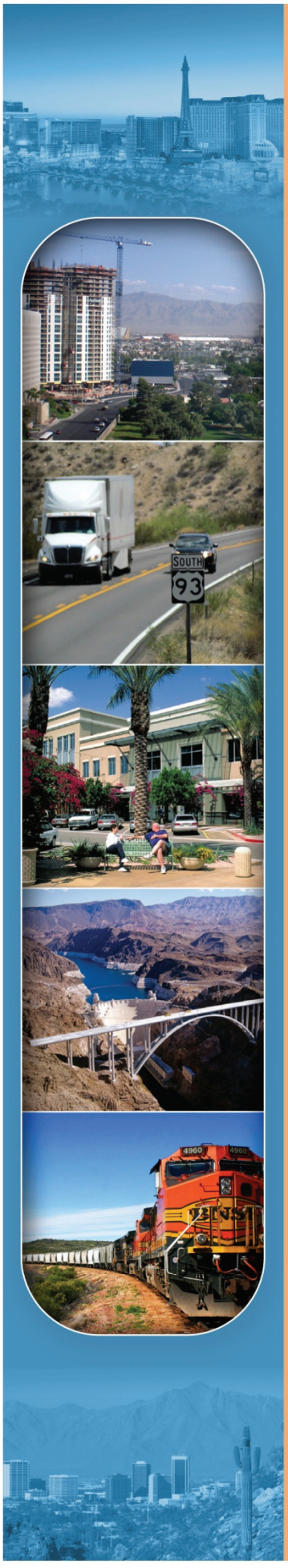
Sincerely,

Bob Gilby

Bob Gilby, President, Tucson Mountains Association

Appendix D:

Public Engagement Summary Report



I-11 & INTERMOUNTAIN WEST CORRIDOR STUDY

I-11 & Intermountain West Corridor Study

Project Engagement Summary Report

Prepared for

NEVADA DOT

ADOT

In partnership with

Maricopa Association of Governments

Regional Transportation Commission of Southern Nevada

Federal Highway Administration

Federal Railroad Administration

August 2014

I-11 AND INTERMOUNTAIN WEST CORRIDOR STUDY

Project Engagement Summary Report

Prepared for

Nevada Department of Transportation

and

Arizona Department of Transportation

August 2014

CH2MHILL® and AECOM

In association with:

HDR, Inc., ESI Corporation, and Partners for Strategic Action, Inc.

DISCLAIMER

The contents of this planning document are based on information available to the Arizona Department of Transportation and the Nevada Department of Transportation (herein referred to as the Sponsoring Agencies) as of the date of this report.

The Sponsoring Agencies' acceptance of this high-level, long-range planning study does not constitute a final decision regarding the study recommendations or a commitment to fund any such improvements. Additional project-level environmental impact assessments and/or studies of alternatives will be necessary.

The Sponsoring Agencies do not warrant the use of this report, or any information contained in this report, for use or consideration by any third party. Any use or reliance by third parties is at their own risk.

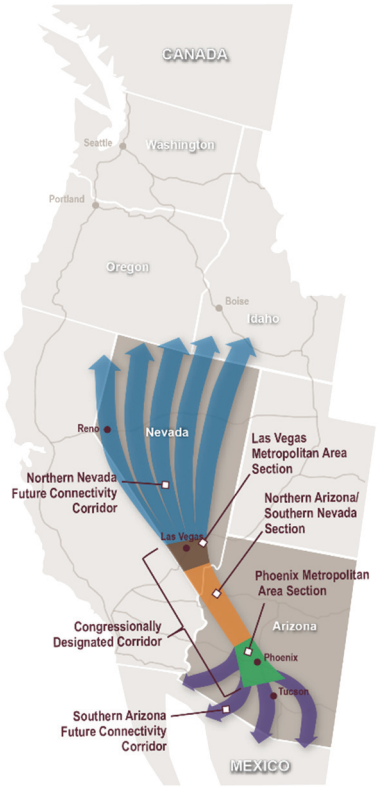
The Arizona and Nevada departments of transportation worked together on a two-year Interstate 11 (I-11) and Intermountain West Corridor Study (Corridor) that included corridor-level planning of a possible Interstate link between Phoenix and Las Vegas (Congressionally designed as I-11), and high-level visioning for potentially extending the Corridor north to Canada and south to Mexico. This Feasibility Study evaluated the long-range north-south transportation needs in the Intermountain West and identified planning-level Corridors that could address the needs. The Feasibility Study used the Planning and Environmental Linkages (PEL) process which incorporates National Environmental Policy Act (NEPA) principles in transportation planning studies so the information and decisions made can be used to inform future NEPA studies. The planning study has many components, but the PEL component focuses on documenting the following areas:

- Preliminary Purpose and Need Statement including goals and objectives (the focus of this document)
- An overview of the environmental setting
- Identification of a study area and general modes to be studied
- Identification of a range of alternative solutions
- Identification of screening criteria and the elimination of unreasonable alternatives
- Identification of a reasonable range of alternatives
- Identification of sensitive areas, unresolved issues, and potential mitigation to inform future NEPA studies
- Stakeholder and public involvement

Since the Feasibility Study is high level and long-range in nature, the information and decisions will need to be revisited, updated, and refined when detailed alignments are identified in future NEPA studies.

CONTENTS

Engagement Summary

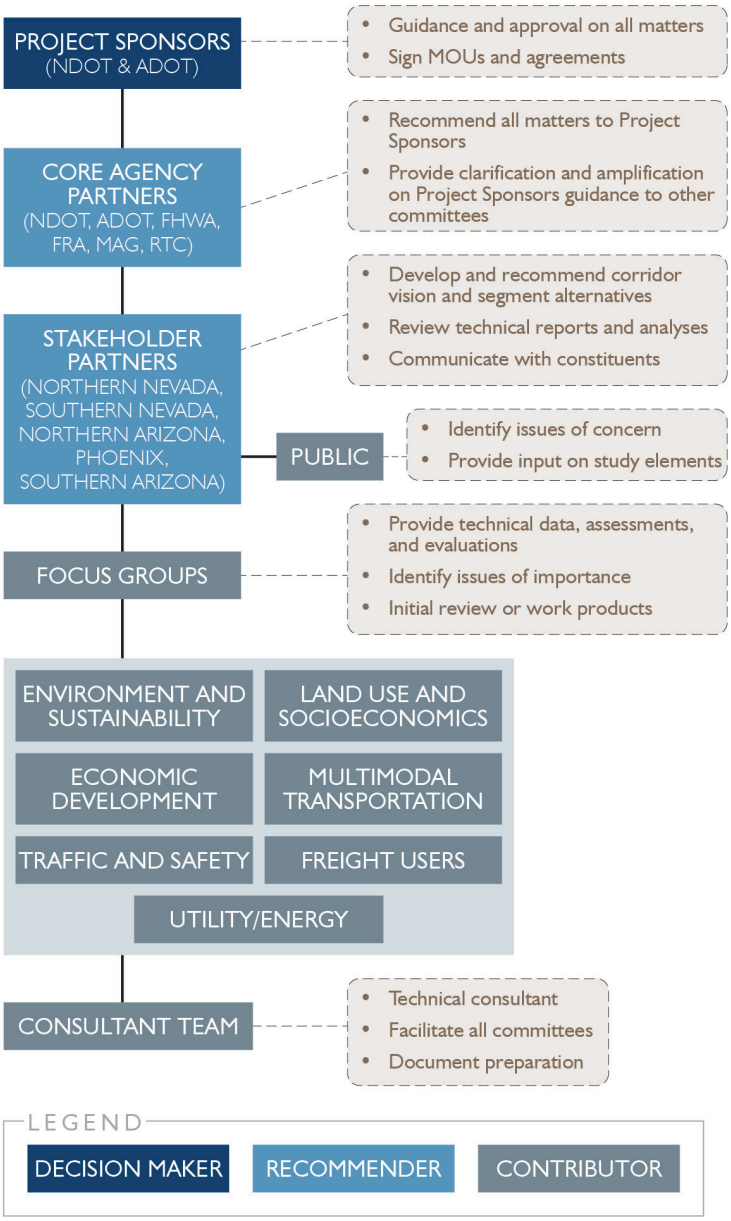


I-11 and Intermountain West Corridor Study Area

The Arizona and Nevada departments of transportation worked together on a two-year Interstate 11 (I-11) and Intermountain West Corridor Study (Corridor) that included detailed corridor planning of a possible Interstate link between Phoenix and Las Vegas (Congressionally designed as I-11), and high-level visioning for potentially extending the Corridor north to Canada and south to Mexico. Congress recognized the importance of the portion of the Corridor between Phoenix and Las Vegas and designated it as future I-11 in the recent transportation authorization bill, Moving Ahead for Progress in the 21st Century Act (MAP-21). The purpose of the Study was to determine whether sufficient justification exists for a new high capacity, multimodal transportation corridor, and if so, to establish and characterize the likely routes.

This Corridor is expected to increase the movement of people, goods, and services through local communities and from state to state—connecting them to a broader region—the Intermountain West. Therefore, the study involved discussion with a wide-range of stakeholders and individuals to best reflect regional needs (see Figure 1). The study team used a variety of venues to communicate and solicit feedback from stakeholders and the public. Using traditional meeting methods along with virtual technologies to bridge the challenging corridor length, various opportunities to learn and discuss the project were offered. At the project outset, the team launched an interactive website to communicate information about the project while also providing a venue to solicit feedback. In total, 750 representatives from more than 350 Stakeholder Partner organizations participated in 61 meetings and events during the study. Over 650 individuals signed in at 10 public meetings conducted at different times and locations throughout the study area, in addition to nearly 3,000 comments received through virtual meetings and online submissions.

Figure 1: Study Stakeholders and Associated Roles



While attendees at public meetings and participants in online "virtual" forums were not required to provide contact information, the scope of participation from those that did indicate engagement not just from across the states of Arizona and Nevada, but from 10 other states and Canada. Figure 2 depicts the scope of participation as reported by attendees.

Figure 2: Public and Virtual Meeting Participation by Reported Location

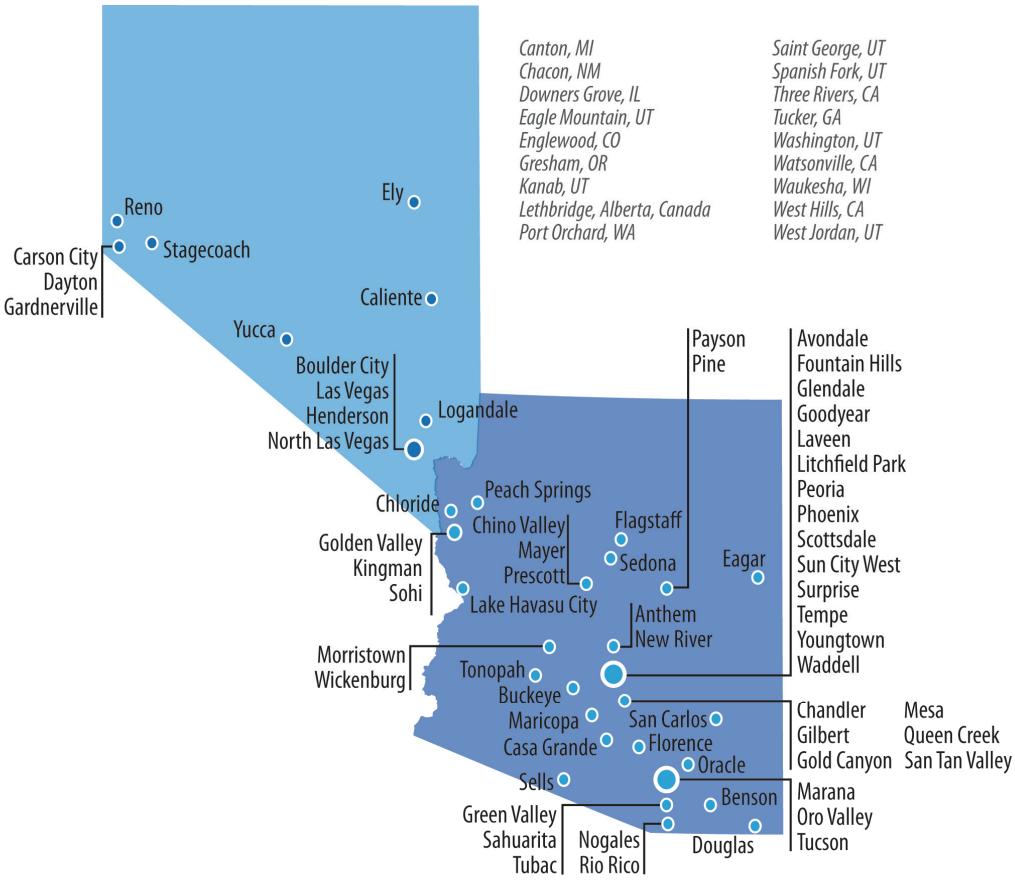


Table 1 lists the formal stakeholder and public meetings held during the project.

Table 1. Stakeholder and Public Meetings

Date(s)	Meeting	Location(s)	Attendees
9/26/12	Stakeholder Partners Meeting	Surprise, Kingman, Las Vegas, Carson City, Webinar	205
10/18/12 10/23/12	Public Information Meeting	Henderson Phoenix	193
1/8/13	Utility/Energy Focus Group	Phoenix, Las Vegas, Carson City, Webinar	59
1/22/13	Economic Development Focus Group	Surprise, Las Vegas, Reno, Webinar	67
1/29/13	Freight Users Focus Group	Surprise, Las Vegas, Carson City, Webinar	40
2/5/13	Environment and Sustainability Focus Group	Surprise, Las Vegas, Carson City, Webinar	50
2/12/13	Land Use and Community Development Focus Group	Surprise, Las Vegas, Carson City, Webinar	55
2/19/13	Corridor Operations Focus Group	Surprise, Las Vegas, Carson City, Webinar	30
2/26/13	Funding, Financing and Alternative Delivery Focus Group	Surprise, Las Vegas, Carson City, Webinar	34
7/16/13 7/17/13 7/22/13	Stakeholder Partners Meeting: Evaluation Criteria	Tucson Surprise Reno	175
8/12/13 8/13/13 8/13/13 8/14/13 8/15/13	Stakeholder Partners Meeting: Universe of Alternatives	Carson City Kingman Tucson Surprise Las Vegas	193
10/8/13 10/9/13 10/10/13 10/16/13 10/17/13	Stakeholder Partners Meeting/Public Information Meeting: Recommended Alternatives	Avondale Kingman Tucson Carson City Las Vegas	166/274
11/21/13	Environmental and Resource Agency Coordination Meeting	Phoenix, Las Vegas, Carson City	42
1/21/14 1/22/14 1/23/14	Stakeholder Partners Meeting: Level 2 Screening	Surprise Las Vegas Kingman	166
February – March, 2014	Public Information Meeting: Level 2 Screening	Online	2,028
3/19/14	Stakeholder Partners Meeting: Recommended Alternatives	Tucson, Surprise, Kingman, Las Vegas, Reno, Webinar	149
5/21/14	Stakeholder Partners Meeting: Draft Corridor Concept Report	Tucson, Buckeye, Kingman, Las Vegas, Carson City, Webinar	183
6/18/14 6/25/14 6/26/14	Public Information Meetings: Draft Corridor Concept Report	Tucson Buckeye Las Vegas Online	253

In addition to these meetings, the study team met with the Core Agency Partners, stakeholder groups, and other interests and responded to several requests for presentations to entities including the Inter-Tribal Council of Arizona and Inter-Tribal Council of Nevada, tribal governments, regional transportation commissions, councils of government, metropolitan planning organizations, municipalities, and other organizations. A list of stakeholder agencies and organizations that participated in study-sponsored meetings and events can be found in the appendix of this report.

The engagement efforts with stakeholders and the public produced thousands of pages of comments and ideas. Individual meeting and event reports were produced during the project to memorialize feedback received; each report was posted online[1] (www.i11study.com) for stakeholder and public review. Table 2 lists the meeting summary reports produced under unique titles.

Table 2. Meeting Summary Reports

Date	Report Title
September 2012	Stakeholder Partners Meeting Summary
October 2012	Public Information Meetings Summary
January 2013	Utility/Energy Focus Group Meeting Summary
January 2013	Economic Development Focus Group Meeting Summary
January 2013	Freight Users Focus Group Meeting Summary
February 2013	Environment and Sustainability Focus Group Meeting Summary
February 2013	Land Use and Community Development Focus Group Meeting Summary
February 2013	Corridor Operations Focus Group Meeting Summary
February 2013	Funding, Financing and Alternative Delivery Focus Group Meeting Summary
July 2013	Phases I and II Public Involvement Report
July 2013	Stakeholder Partners Meeting (Evaluation Criteria) Summary Report
August 2013	Stakeholder Partners Meeting (Universe of Alternatives) Summary Report
October 2013	Stakeholder Partners Meeting (Level 1 Screening) Summary Report
October 2013	Public Information Meetings Summary Report
November 2013	Environmental and Resource Agency Coordination Meeting
January 2014	Stakeholder Partners Meeting (Level 2 Screening) Summary Report
March 2014	Virtual Public Meeting Summary Report
March 2014	Stakeholder Partners Meeting (Recommendations) Summary Report
May 2014	Stakeholder Partners Meeting (Draft Corridor Concept) Summary Report
June 2014	Public Information Meetings (Draft Corridor Concept) Summary Report

[1] In the future, should the dedicated website be discontinued, study documents will be available on agency websites www.azdot.gov and www.nevadadot.gov

Summary of Phase I and II Feedback

Phase I and II of the study focused on Corridor visioning and investigated whether there was justification for pursuing a multimodal corridor through the Intermountain West. As such, feedback received during these phases focused more broadly on opportunities and issues of a future I-11.

Corridor Opportunities

Feedback often cited the immense economic development opportunities the Corridor could facilitate for Arizona, Nevada and the Intermountain West. Support for tourism activities, including connecting recreational assets, gaming and entertainment venues could prove valuable to the states' economies. However, much of the feedback concentrated on how the Corridor could increase trade by supporting the existing economies of mining, energy (solar, nuclear, alternative and renewable fuels), construction, agriculture and military activities as well as expansions to manufacturing, aerospace/high tech and transportation logistics throughout the Southwest Triangle of Las Vegas, Phoenix/Tucson (the Sun Corridor) and Southern California. As manufacturing and labor activities in the Pacific Rim, Central and South America, and Mexico evolve and nearshoring and integrated manufacturing opportunities grow, market access through the Intermountain West to Canada would be served by the Corridor, providing relief to already congested Southern California and Mexican ports.

Safety and Mobility

Comments regarding safety concerns of existing routes US 93 and US 95 were often cited. Because the mix of passenger and freight activities may not always be adequately accommodated by current infrastructure, respondents indicated that an I-11 Corridor could provide a more efficient and reliable transportation linkage for this underserved region. Freight stakeholders encouraged careful planning and placement of truck stops and rest areas to support long-haul operations and hours-of-service regulations. While many comments focused on safety concerns of using the existing/future infrastructure, several individuals asked that the study consider security issues related to the movement of hazardous materials or the potential for increased threats related to immigration, border security, terrorist activities and illegal drug trade.

Phoenix Public Meeting

Funding and Financing

Considerable feedback focused on concerns related to the availability or potential sources of Corridor funding. While tolling was the tool most frequently discussed—with some in favor, others against—appreciation for unique and alternative Corridor delivery options was acknowledged. While some dismissed the Corridor because of the potential capital cost alone,

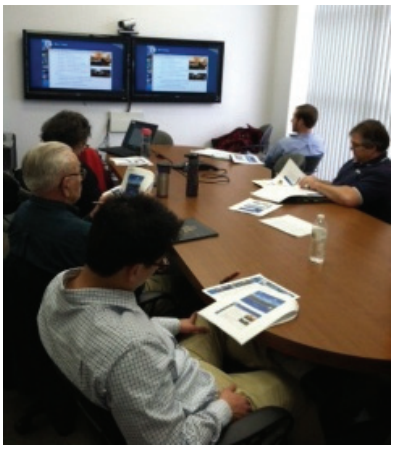
others underscored the importance of having an informed dialogue on the financial implications for designing, building and maintaining a future I-11.

Environmental Impacts

Consideration for environmental disturbances and impacts was emphasized. Research for, and subsequent protection of, wildlife habitat and migration corridors, waterways and wetlands, and cultural sites is critical, as is consideration of key species found within the study area (including the desert tortoise, big horned sheep and pronghorn antelope). While some comments noted that the environmental and climate impacts of a highway corridor outweigh any possible benefit, and disapproval of a future I-11 was reiterated, various strategies and mitigation tactics were recommended for potential use in the Corridor, including consideration of other modes instead, such as a rail corridor.

Land Use and Development

Emphasis was placed on the importance of connecting land use and transportation decisions to build the nation's first "smart" corridor. Feedback provided noted that while working with local jurisdictions to identify a future I-11 in land use plans is a good first step, facilitating compatible uses adjacent to the Corridor is equally important to maximizing the benefits of the asset; proactive land use and economic development planning, zoning, right of way designation and establishing easements are tools communities can use for these purposes. Some comments, however, noted that for communities the Corridor bypasses, there could be negative impacts; others worried that an I-11 might promote urban sprawl. Reiterating the focus on using existing corridors to the maximum extent possible and connecting existing activity centers and employment hubs was also offered as a more sustainable planning strategy.



Carson City Focus Group

Corridor Design

Feedback received demonstrates considerable support for the study of a multifunctional Corridor that not only provides multimodal transportation opportunities but also houses assets that require similar rights of way. Considerations ranging from biking/cycling, pedestrian and equestrian movements, and transit alternatives were offered, but high-speed passenger and freight rail were the most frequently suggested modes to consider, along with traditional vehicle movements. Utility (including transmission lines, telecommunications and fiber optics) and energy (including liquid/natural gas, wind and solar) and other emerging/future opportunities were offered as potential candidates for shared or combined rights of way or easements. While using a coordinated corridor for the movement of people, goods and utilities were supported, some questioned whether this type of "combination facility" would increase national security concerns. Any effort, however, would necessitate the consideration of separate requirements, size of footprint, asset compatibility and cost. Many noted I-11 could be the opportunity to build a

"smart" or "green" corridor of the future, serving as a new model for the movements of goods and people by learning from the best practices of previous corridor development.

Alignments

While Phases I and II of this study did not evaluate potential alternatives for a future I-11, public and stakeholders were anxious to propose potential alignments. Focus on existing corridors, including US 93, was routinely recommended. Additionally, comments ensuring a "no build" alternative would be considered were offered by many, with several questioning whether the results of this study would indeed identify a need for a future I-11 (or *any* new roadway). Others questioned whether future evaluations of potential corridors were even warranted, concerned that a preferred alignment was predetermined. For those who supported a future Corridor, connecting key activity centers, including inland ports, airports, and other logistical assets, was recommended. Connections beyond the Congressionally Designated Corridor (Phoenix to Las Vegas metropolitan areas) were also advised, with individuals reiterating the importance for the Corridor to be a true Intermountain West route connecting Mexico and Canada.

Constraints

Several key constraints were reiterated, most notably funding challenges and environmental considerations. Many emphasized the challenge of building consensus for a future Corridor and the need for long-term political will and the commitment necessary to implement a project of this magnitude. Other constraints cited include the locations of many decentralized population and employment centers throughout the study area, as well as the significant cost and complications of right of way acquisition.

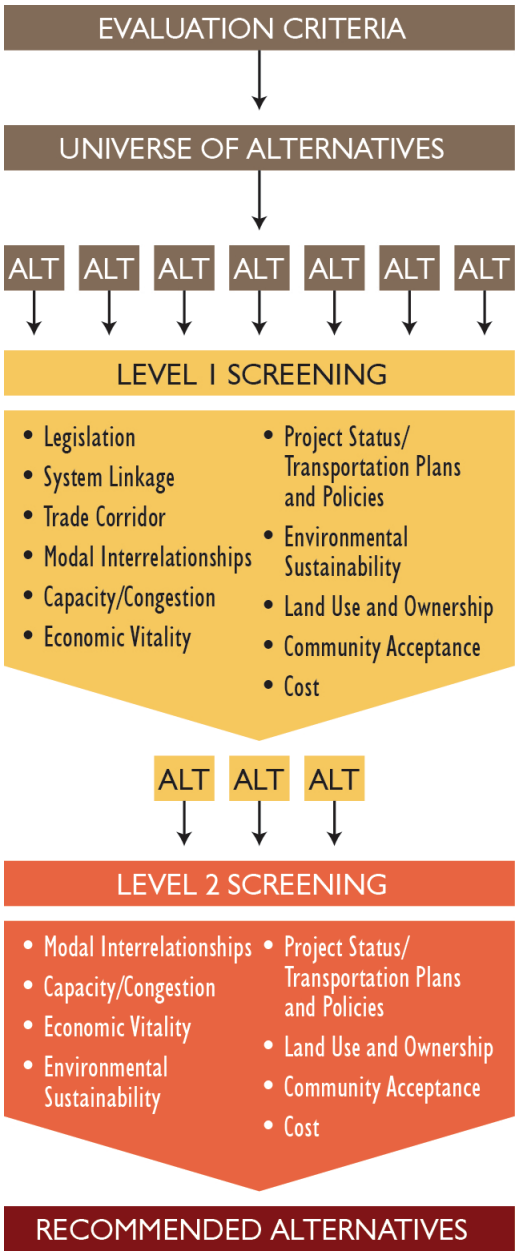
Buckeye Public Meeting

Summary of Phase III Feedback

After finding sufficient justification for a potential multimodal Corridor through the Intermountain West, Phase III of the study focused on Corridor details, including recommending corridor alternatives and developing a business case and implementation plan. As such, feedback received during Phase III focused largely around specific alternatives. Figure 3 depicts the alternative analysis process facilitated during Phase III.

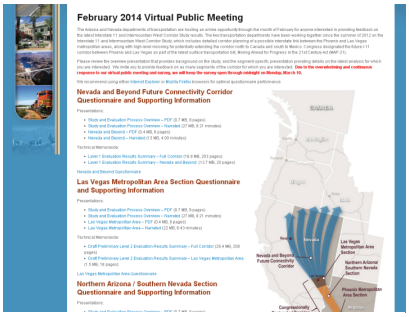
Feedback received indicated considerable support for I-11. Those in favor of moving forward with the corridor cite benefits of a diversified economy and growth of jobs, as well as improved freight mobility and safety. Comments opposed to or concerned with an I-11 Corridor focused on environmental disturbance and impact, with significant support for multimodal solutions for the movement of people and goods through the region, and/or use of existing corridors to avoid further disruption of natural spaces and sensitive environments.

Figure 3: Phase III Alternative Analysis Process



Southern Arizona

Feedback indicated support for I-11 and connecting the Corridor to Mexico through Nogales north to Tucson, although feedback varied as to whether a new corridor/infrastructure should be pursued or to improve the existing infrastructure (I-10, I-19) in the already established trade corridor. Supporters cited benefits including economic development as well as improved trade and connectivity with Mexico—a key trading partner. Concerns regarding the environment impact, and, specifically, opposition to an alignment through the Avra Valley, were also articulated, although consideration for a multimodal corridor was suggested as a potential solution.



Screen Capture of February 2014 "Virtual" Public Meeting

Phoenix Metropolitan Area

There was support for an I-11 and Intermountain West Corridor around the west side of the Valley, providing for a more direct connection from Tucson to Kingman by passing through or near Casa Grande and Wickenburg, and avoiding the congested freeways through the center of the Phoenix metropolitan area. While several comments were offered in regards to impacts on Wickenburg, consensus as to impacts and/or a preferred alternative was not achieved.

Northern Arizona/Southern Nevada

Feedback indicated strong support for an alternative maximizing use of existing infrastructure. While there was some support for using I-17 and I-40 via Flagstaff, most of the feedback expressed support for continuing the planned improvements on the US 93 corridor. Providing adequate access to adjust properties and utilities was often expressed.

Las Vegas Metropolitan Area

There was strong support for I-11, however, varying options were expressed on whether it was better to improve existing infrastructure or if that strategy would overburden already congested corridors. Those that articulated support for an alternative east of the Las Vegas metropolitan area (an alignment referred to as "BB-QQ" during the study) believed it would support mobility by "closing the loop" around the Valley. Significant feedback was received from Henderson-area residents, articulating strong opposition for an eastern corridor that could potentially pass nearby rural preservation areas and a portion of Lake Mead National Recreational Area; many fear such an alternative would negatively impact residential neighborhoods as well as environmental and recreational assets.

Northern Nevada

Feedback for northern Nevada generally supports an I-11 Corridor extending north of Las Vegas roughly following the US 95 corridor and connecting to the Reno-Carson City-Sparks region. Counties in eastern Nevada articulated support for a route roughly following the US 93 corridor.

Appendix

The following Stakeholder Partner agencies participated and signed in at one or more study meetings or events. This list may not be inclusive of all agencies that participated formally or informally during the study.

2424 Investors
Arizona Automobile Hobbyist Council
Arizona Department of Transportation
Aggregate Industries
Ak-Chin Indian Community
Akers and Associates
Altar Valley Conservation Alliance
Ames Construction, Inc.
ARC Consulting
Archaeology Southwest
Arizona Chamber of Commerce and Industry
Arizona Commerce Authority
Arizona Construction Association
Arizona Department of Environmental Quality
Arizona Forward
Arizona Game and Fish Department
Arizona Governor's Office of Energy Policy
Arizona Public Service
Arizona State Land Department
Arizona Transit Association
Arizona Wildlife Federation
Associated Minority Contractors of America
Arizona State University Foundation
Audubon Arizona
Bario Sapo Community
BEC Environmental
Brookings Mountain West
Brownstein Hyatt Farber Schreck
Buckeye Chamber of Commerce
City of Bullhead City (Arizona)
Bullhead Regional Economic Development Authority
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Land Management, Nevada State Office
Bureau of Land Management, Arizona State Office
Bureau of Land Management, Phoenix District
Bureau of Land Management, Southern Nevada
Caesers Entertainment
California-Nevada Super Speed Train Commission
Caltrans

CAN-DO Coalition
Central Arizona Economic Development Foundation
Carson Area Metropolitan Planning Organization
Carson City
CarterCommunications
Cascabel Conservation Association
Casita Luminosa
Churchill County Communications
Center for Biological Diversity
Central Arizona Governments
Central Yavapai Metropolitan Planning Organization
CenturyLink
Churchill County (Nevada)
Churchill Economic Development Authority
Citizens for Picture Rocks
Citizens Transportation Advisory Committee
City of Apache Junction (Arizona)
City of Avondale (Arizona)
City of Boulder City (Nevada)
City of Casa Grande (Arizona)
City of Chandler (Arizona)
City of Douglas (Arizona)
City of Eloy (Arizona)
City of Fallon (Nevada)
City of Fernley (Nevada)
City of Flagstaff (Arizona)
City of Glendale (Arizona)
City of Globe (Arizona)
City of Goodyear (Arizona)
City of Henderson (Nevada)
City of Kingman (Arizona)
City of Lake Havasu City (Arizona)
City of Las Vegas (Nevada)
City of Litchfield Park (Arizona)
City of Maricopa (Arizona)
City of Mesquite (Nevada)
City of Nogales (Arizona)
City of North Las Vegas (Nevada)
City of Phoenix (Arizona)
City of San Luis (Arizona)
City of Sparks (Nevada)
City of Surprise (Arizona)
City of Tucson (Arizona)
City of West Wendover (Nevada)
City of Yuma (Arizona)
Clark County (Nevada)
Coalition for Sonoran Desert Protection
Coconino County (Arizona)
Colorado River Indian Tribes
COMPASS: Community Planning Association of Southwest Idaho

Congressman Steven Horsford's Office
Congresswoman Dina Titus
Cox Communications
Cynthia Lester Consulting
Dean Barlow
Desert National Wildlife Refuge Complex
Desert Tortoise Council
Deserves, LLC
Diamond Ventures, Inc.
Dibble Engineering
Dignity Health-St. Rose Dominican
Dolphin Bay
Douglas County (Nevada)
Dueling Gardens Community Gardens
Duncan and Son Lines, Inc.
Economic Development Authority of Western Nevada
El Dorado Holdings
Engineering & Environmental Consultants
Esmeralda County (Nevada)
Federal Highway Administration, Arizona Division
Federal Highway Administration, Nevada Division
Flagstaff Metropolitan Planning Organization
Focus Commercial Group
Fresh Produce Association of the Americas
Friends of Nevada Wilderness
Friends of the Sonoran Desert National Monument
Frontier Communications
G&C Consulting LLC.
Gila River Indian Community
Glendale Community College
Goldwater Institute
Good Standing Outreach
Governor’s Office of Nevada
Governor’s Office of Arizona
Grand Canyon Chapter of Sierra Club
Great Basin Fire Science Delivery Project
Greater Phoenix Chamber of Commerce
Harrah's Ak-Chin Resort & Casino
Harsch Investment Properties
Havasupai Tribe
Help, Inc.
Henderson Chamber of Commerce
Holman's of Nevada, Inc.
House of Representatives-Rep. Ann Kirkpatrick
Hualapai Tribe
Hubbard & Hubbard
Huitt-Zollars, Inc.
IBA & Associates
Idaho Department of Transportation
Imagine Greater Tucson

Inter Tribal Council of Arizona
Interntational Union of Operating Engineers, Local #12
Inter-Tribal Council of Nevada
International Union for Conservation of Nature
Jacobs Engineering Group
Jaynes Corporation
Jemison Surveying
JMA Architects
Jokake Companies
Keeling Law Offices
Kimley-Horn and Associates
Kingman Airport Authority, Inc.
Kingman Area Chamber of Commerce
Kingman Visitor Center
Kittelson & Associates
Knight & Leavitt Associates, Inc.
Laborer's Local 872
Lake Havasu Metropolitan Planning Organization
Lake Industries
Lake Tahoe Visitors Authority
Land Advisors Organization
Las Vegas Chamber of Commerce
Las Vegas Convention & Visitors Authority
Las Vegas Metropolitan Police Department
Las Vegas Monorail
Las Vegas Review Journal
Las Vegas Valley Water District
Southern Nevada Water Authority
League of Women Voters
Lincoln County (Nevada)
LKY Dev. Company, Inc.
Louis Berger Group
Marana Chamber of Commerce
Maricopa Association of Governments
Maricopa Chamber of Commerce
Maricopa County (Arizona)
Mayo & Associates
Metropolitan Pima Alliance
Mexican Consulate in Tucson
MGM Resorts International
Moapa Band of Paiutes
Mohave County (Arizona)
Mohave Electric Cooperative, Inc.
Morningside
Mother Road Harley-Davidson
MR Diversified, INC
Northern Arizona Council of Governments
National Nuclear Security Administration
National Park Service
Saguaro National Park

National Parks Conservation Association
Nationwide Car Shows
National Cathedral School Institute
Nevada Department of Transportation
Nellis Air Force Base
Nevada Department of Wildlife
Nevada General Construction
Nevada Highway Patrol
Nevada National Security Site
Nevada Natural Heritage Program
Nevada Resort Association
Nevada State Historic Preservation Office
Nevada State Legislature
Nevada State Office of Energy
Nevada Subcontractors Association
Nevadans for Clean Affordable Reliable Energy
Newland Real Estate Group
Nuclear Waste Repository Project Office
NV Energy
Nye County (Nevada)
One Nevada Credit Union
Outside Las Vegas Foundation
Paiute Pipeline Company
Pascua Yaqui Tribe
PGAL
Picture Rocks Community
Pima Association of Governments
Pima County (Arizona)
Pima Natural Resource Conservation District
Pinal County (Arizona)
Port of Tucson
Prescott Valley Economic Development Foundation
PSOMAS Engineering
Pyramid Lake Paiute Tribe
R.H. Bohannan and Associates
Rancho del Conejo Community Water Co-op, Inc.
Rancho Sahuarita
RC Willey Home Furnishings
Regional Transportation Commission of Southern Nevada
Regional Transportation Commission of Washoe County
Reinforcing Ironworkers Local 416
Reno-Tahoe Airport Authority
Republic Services
ReSeed Advisors
Rick Engineering Co.
Rural Transportation Advocacy Council
Southern Arizona Home Builders Association
Sahuarita Unified School District
Southern Arizona Logistics Education Organization
Salt River Project

San Carlos Apache Tribe
Sharpe and Associates
Sierra Club
Sierra Club, Grand Canyon Chapter
Sierra Club, Toiyabe Chapter
Sierra Vista Economic Development Foundation
Southern Nevada Building and Construction Trades Council
Snell & Wilmer
Snider Consulting Services, LLC
Sonoran Audubon Society
Sonoran Institute
Southern Arizona Leadership Council
Southern Nevada Homebuilders Association
Southern Nevada Transit Coalition-Silver Riders
Southern Nevada Water Authority
SouthWest Action Network
Southwest Gas Corporation
Southwest Valley Chamber of Commerce
Storey County (Nevada)
Sundt Construction
Sustainable Arizona
SW Engineering
WestConnect/Southwest Area Transmission
SWCA Environmental Consultants
SX Allottees Association
Tarantini Construction Co. Inc.
Teamsters Local 631
The Nature Conservancy
The Planning Center
The Skancke Company
Thomas R. Brown Foundations
Tohono O'odham Nation
City of Buckeye (Arizona)
Town of Florence (Arizona)
Town of Gardnerville (Nevada)
Town of Gila Bend (Arizona)
Town of Marana (Arizona)
Town of Oro Valley (Arizona)
Town of Pahrump (Nevada)
Town of Prescott Valley (Arizona)
Town of Sahuarita (Arizona)
Town of Wickenburg (Arizona)
Town of Youngtown (Arizona)
Truckee Meadows Water Authority
Tucson Airport Authority
Tucson Electric Power
Tucson Metro Chamber of Commerce
Tucson Realtors Association
Tucson Regional Economic Opportunities
Tucson Utility Contractors Association

The Wilderness Society
TY LIN International
U.S. Army Corps of Engineers
U.S. Bureau of Reclamation
U.S. Bureau of Reclamation, Lower Colorado Regional Office
U.S. EPA, Region 9
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife, Pacific Southwest Region
U.S. Representative Dina Titus
ULI Arizona
Union Pacific Railroad
United States Postal Service
University of Arizona
University of Nevada, Las Vegas
UNLV Downtown Design Center
UNS Electric, Inc
Upper Santa Cruz Providers & Users Group
U.S. Department of Energy
U.S. Department of Agriculture
Valley Electric Association, Inc.
Western Arizona Council of Governments
Walter P Moore
Walton International
Washoe County (Nevada)
Western Area Power Administration
Western Arizona Economic Development District
Western Nevada Development District
WESTMARC
White Pine County (Nevada)
Wickenburg Regional Economic Development Partnership
Williams-Grand Canyon Chamber of Commerce
Wilson & Company
Wynn Resorts
Xerox CVO Services
Yavapai County (Arizona)
Yuma Metropolitan Planning Organization